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**Written Representation for the Rampion 2 Windfarm Examination
(Project Reference: EN010117)**

A Community-led Local Impact Assessment (LIA)

PCS: IP Registration Number: 20044835
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Submitted By:

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Preface

Many Residents firmly believe that the industrial transformation of our south coast by the proposed Rampion 2 wind-farm development would disproportionately and adversely affect people and the environment on the coast of West Sussex and affected inland areas.

Moreover, it would degrade our designated landscapes and inevitably our natural capital, in the process, making it even less resilient to climate change.

Given not all windfarms are the same and must be examined case-by-case, we assert that the evidence clearly indicates this Rampion 2 Application systematically understates its likely adverse and cumulative impacts across the social, environmental, and economic objectives of sustainable development. It overstates the national benefits, and it ignores national disbenefits.

In fact, that same pattern of claims is clearly seen looking at the DCO Examination Reports of two previous south coast windfarm applications and the respective Secretary of State Decision Letters; namely for: the existing Rampion 1 wind-farm installation consented in 2014, and the Navitus Bay Wind Park application refused consent in 2015.

We argue the evidence shows that overall, the adverse impacts far outweigh its national benefits. Local benefits are certainly limited and temporary and far outweighed by adverse local impacts.

We believe it is important and to consider in the Examination whether the Rampion 2 infrastructure is in breach of the European Convention on Landscapes (ECL) and closely aligned and reinforcing UK Marine Policy Statement (MPS 2021) and the Levelling up and Regeneration Act (LRA,2023).

Specifically, in terms of interpretation of any breach of commitments in the Rampion 2 case, the Government's own Offshore Energy SEA programme in its latest OESEA-4 (2022) states that its very objective is, "To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/ landscape including designated and non-designated areas."

The UK Government's own strategic environment advice, to be in accord with the ECL, is to provide visual buffers of 25 miles for turbines of the scale proposed for Rampion 2, up to 325m tall. That is higher than the 310m Shard building in London – up to 90 of them – If we could even imagine that infrastructure development along the Thames River?

Those concerns are dismissed outright by the Applicant as being irrelevant. The double irony is that the £3-4 billion Rampion 2 scheme, as proposed by the Applicant, a German-based multinational, would not be permitted under German law (the WindSeeG - Offshore Wind Act, 2017)!

This community-led Local Impact Assessment (LIA) is a highly collaborative effort that brings together local perspectives, knowledge, and multi-disciplinary evidence. It indicates that the Rampion 2 development risks undermining, rather than supporting the achievement of sustainable development on the south coast and affected areas.

Moreover, Rampion 2 would lead to net biodiversity loss both offshore and onshore. Those disruptions, many of which cannot be mitigated, would leave fragile ecosystems and natural capital even more vulnerable to multiple pressures – including long-term climate change.

Herein, we identify a range of adverse local effects across the mutually reinforcing social, environment and economic dimensions of sustainable development where net gains are to be achieved for each objective – for such infrastructure to be legally considered as sustainable and contributing to sustainable development. We cross-reference our concerns with those local effects with similar concerns that statutory consultees set out in their Principal Areas of Disagreement Statements (PADS) in Nov 2023, which also reflect their previous consultation responses and many Relevant Representations made in the Pre-Examination period.

We believe the evidence indicated that consenting Rampion 2 poses an unacceptably high risk of undermining, rather than advancing the achievement of sustainable development on the south coast and affected inland areas. That is due to the nature, sheer scale and location-specific significance of its adverse environment, social and economic impacts.

Stepping back, the UK is now preparing for a low-carbon future, where UK residents will be increasingly encouraged, even required, to limit travel abroad for recreation, vacations and to pursue new less carbon-intensive ways of life - at least for the foreseeable future. We will be encouraged to spend more time and money visiting, exploring, and enjoying our natural coasts and seascape.

As a caring and responsible society and for common sense future proofing, we should not despoil, put at risk or otherwise degrade these natural assets. They are a wonderful natural and heritage endowment for the enjoyment of current and future generations. We are all responsible for care-taking our environment as well as promoting local environment stewardship. We must respect, and heed national environmental and social safeguards put there to avoid unnecessary local harms as well as national self-harm and national disbenefit.

We sincerely hope the Rampion 2 Examination Authority will give these local concerns that we and others offer the substantial weight they deserve in framing their recommendations to the Secretary of State.

Apart from what we see through the OESEA is an apparent breach of commitments under international conventions and aligned UK policy and law, we believe that refusing the Rampion 2 Application development consent would be profoundly in the local, wider public, and national interest. This is also given the national benefit that alternatives for more efficient and dependable low emission generation are available, and these alternatives are now designated as critical national priorities in the NPS (Nov, 2023) update.

Moreover, the threat Rampion 2 poses to the achievement of sustainable development on the South coast and affected inland areas and the forcing of area residents to be “host communities” is avoided. We feel that is unfair as benefits and costs need to be share equitably in society in the energy transition.

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Who we are – a Local Community Alliance

Protect Coastal Sussex (PCS) is a group of informed residents and independent, voluntarily affiliated community organisations and groups along the Sussex Coast and inland who passionately support local environmental stewardship, renewable energy development and a common-sense approach to the clean energy transition delivered in a responsible manner.

PCS formed a team to consider the Rampion 2 proposal that brings together residents with diverse backgrounds and experience from the natural, physical, and social sciences disciplines to work alongside those with expertise and experience in law, businesses, and trades, and caring and working in the community, all who have all paid attention to offshore wind promotion including the proposed Rampion 2 windfarm development.

We have diverse views, no specific political affiliation, and seek to avoid ideological capture.

For further information see:

Protect Coastal Sussex PCS website, "Who we are":

[REDACTED]

Middleton on Sea Coastal Alliance MOSCA website

[REDACTED]

The Littlehampton Society website

[REDACTED]

The Cowfold Residents Action Group website

[REDACTED]

Summary

Community-Based Local Impact Assessment (LIA) Rampion 2 Windfarm Application (Project Reference: EN010117)

The Development Consent Order (DCO) Application for the 1,200 MW Rampion 2 windfarm proposal of the south coast of England submitted by the German-based multinational (RWE) in August 2024 was accepted for Examination by Planning Inspectorate (PINs) in early September 2023.

In the Applicant's PEIR 2021, the estimated development cost of Rampion in 2019 cost terms is £2.87 billion. Escalating market prices for these turbines (20-30%) in the past few years and dramatic construction cost escalations of late suggest the development cost of Rampion 2 through to 2030 or more would be closer to £3-4 billion.

Guidance from the Examination Authority

2-1 As Interested Parties (IPs) we were advised by the ExA's Rule 6 Letter that two overall or overriding considerations in the Examination are that the Rampion 2 Application must be decided, *"in accordance with any relevant NPS, "... subject to certain provisos. Essentially, the provisos are that the application must not breach legal or treaty obligations, and that any adverse impact of the Proposed Development would not outweigh its benefits."*

2-2 We feel it is important and relevant to note a third overarching consideration or proviso that is implicit in the NPS and national policy. That is the question as to whether Rampion 2 *would advance, or risk undermining the achievement of sustainable development on the south coast of England and affected inland areas for both current and future generations.*

2-3 In the interest of simplifying what is accepted to be complex and multi-faced, we see this is the sustainable development lens important in considering consider local impacts.

2-4 We thus see a trio of overriding and overlapping NPS policy issues as critical to inform the societal decision on whether to consent or refuse consent on the Rampion 2 Application or whether to advance alternatives for low emission alternatives that offer the same or greater national benefit as Rampion 2, with less cost and a smaller footprint.

Core values and key community concerns on local impacts

At the heart of local community concerns about this Application include a number of substantive ones. The statements here in the Summary are supported by argument, research, local knowledge, perspective, and hard evidence offered in topic-specific Chapters that follow in the main LIA and its Attachments.

Where possible, we cross-reference the local impacts we highlight with corroborating information and views in Principal Areas of Disagreement (PAD) Statements of statutory consultees and the Relevant Representations of interested Parties.

We also cross-reference relevant representations by Interested Parties, as well as how we see the relevant National Policy Statements (NPS) are best interpreted and applied in the Rampion 2 case.

Substantive Concerns on overriding considerations:

1. Whether the Rampion 2 breaches international treaty obligations and aligned UK national policy, advice, and law.

- This consideration applies to both the proposed design and location of the offshore and onshore infrastructure elements of Rampion 2.

In the case of the offshore infrastructure:

- Whether the Rampion 2 is in breach of the European Convention on Landscapes (ECL) and closely aligned and reinforcing UK Marine Policy Statement (MPS 2021) and the Levelling up and Regeneration Act (LRA,2023), as set out in Chapters 2 and 3.
- Specifically, in terms of interpretation of an ECL breach in the Rampion 2 case, the Government's own Offshore Energy SEA programme in its latest OESEA-4 (2022) states its very objective is, "To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/landscape including designated and non-designated areas."
- The OESEA updated its strategic environmental advice on visual buffers in 2020 to meet that ECL objective based on a comprehensive review of domestic and international experience at policy, spatial area planning and project levels in that regard.
- As we know the Rampion 2 design is clearly "off the scale" at the extreme end of the visual impact spectrum as regards to protection of areas of natural beauty, designated landscapes, and people (residents and visitors).
- Even if the ExA were to recommend setting aside the OESEA interpretation of the ECL, which a recommendation to consent would imply, Rampion 2 challenges any reasonable interpretation of the ECL aims and aligned UK policy and law.

In the case of the onshore infrastructure:

- The proposed Rampion 2 transmission route through (and disrupting) designated landscapes such as South Downs National Park (SDNP) clearly challenges its statutory objectives and functions and the Levelling up and Regeneration Act (2023)
- We very much appreciated the interest the ExA showed in the Topic Specific Hearing Days 1 and 2 in that respect (i.e., avoiding SDNP) and the relevant NPS policy requirement EN-1 Section 4.4 for the consideration of Alternatives in this Examination.
- As highlighted by the ExA's Rule 6 Letter, we feel these are highly important and relevant matters that should be given substantial weight in the Examination.

2. The adverse impacts of Rampion 2 would demonstrably outweigh the National benefits. Adverse impacts will be felt by both current and future generations of residents and visitors, as well as wider UK society nationally in the form of opportunity costs.

- We believe a judgement on whether "adverse impacts outweigh National benefits" needs balanced the consideration of facts and evidence using clear criteria, and quantitative metrics to the extent possible on both sides of the equation. The criteria should be explicit, understandable to stakeholders and transparent.

- In relevant representations it was argued as we do in this LIA:

To weigh Adverse Impacts:

- Sustainable development is an important lens to consider adverse impacts across social,

economic, and environmental dimensions and consider whether they are “net positive” in each dimension. That resonates with the 3rd overarching criteria in this Summary, that of contributing to the achievement of sustainable development - not undermining it.

To weigh national benefits:

- National benefits need to be broken down and considered in respect to the underlying aims of National Policy Statements, not done superficially as a “tick box” exercise such as if it is green and offshore the benefits automatically outweigh adverse impacts.
- In many relevant representations it was argued that judgement is best informed by a proper system value analysis to calibrate and measure the contribution to the National benefits with metrics for the National benefits explicitly specified in NPS.
- System value analysis modelling of with and without the proposed development, together with quantitatively benchmarking the economic value (and national benefits) against alternatives is offered in other DCO (Energy) Examinations.¹
- There are also disbenefits at the national level to consider, such as the opportunity cost of not pursuing other critical national priority (CNP) infrastructure for efficient low emission supply that would offer the same, or more national benefit across all policy metrics in the NPS, and at less cost to society than Rampion 2.

3. Consenting to Rampion 2 poses an unacceptably high risk of undermining, rather than advancing the achievement of sustainable development on the south coast and affected inland areas. This is due to the nature, sheer scale and location-specific significance of its adverse environment, social and economic impacts.

- Sustainable development is the stated “objective of the UK planning system” as noted in the National Planning Policy Framework (NPPF, 2023). It connects UK policy from international level commitments and treaties to National and down through local planning and development policies.
- Sustainable development is interpreted in policy and in NPS EN-1 (2011, Overarching):
 - Ensuring balance across mutually reinforcing environment, social and economic objectives to achieve net gains under each objective.
 - EN-1 Para 2.2.4, “It is important that the planning system ensures that development consent decisions take account of the views of affected communities and respect the principles of sustainable development.”
 - and EN-1 Para 2.2.7, “The Government’s wider objectives for energy infrastructure include contributing to sustainable development and ensuring that our energy infrastructure is safe ... Sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed

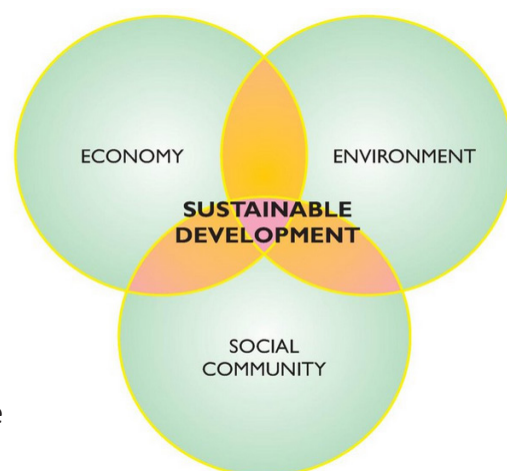


Figure 1: Sustainable Development

¹ Teesside Net Zero Carbon capture power station DCO Examination.

and affects the well-being of society and the economy. For example, the availability of appropriate infrastructure supports the efficient working of the market to ensure competitive prices for consumers.”²

- Each of the LIA Chapters provide evidence, perspective, and local knowledge in respect to whether there are net positive gains across each dimension to better calibrate whether Rampion 2 contributes or undermines the principal objection of sustainable development.

Additional substantive considerations

Other considerations emerging from this community base LIA work that we feel are important and relevant to the Examination include.

4 The inshore location in Sussex does not respect the Government’s own strategic environmental advice on where to put exceptionally large turbines such as Rampion 2 to avoid unwarranted multiple social, environmental, and economic harms in coastal areas and undermine the protection of designated landscapes.

- This links to the overriding consideration of whether the offshore infrastructure is in breach of the European Convention on Landscapes and aligned UK policy and law.
- The UK’s OESEA strategic environmental advice for locating large wind turbines, for the Rampion 2, case means providing a visual buffer of 25 miles (40km) from designated landscapes and highly sensitive visual receptors on the shore.
- The Applicant’s (ES) repeatedly dismisses the UK Government’s OESEA advice as essentially irrelevant and as being only, “a high level ‘buffer’ study ... it is a strategic tool and is not guidance or a roadmap for placing of wind farms ...”.

5 Comparisons of the local impact and public acceptance of the proposed Rampion 2 development with the far smaller Rampion 1 installation lack credibility and merit.

- There is no equivalence of 400Mw Rampion 1 and 1,200 MW Rampion 2 infrastructure as consistently claimed by the Applicant.
- Rampion 1 turbines are 140m tall versus Rampion 2 turbines up to 325m - not only 2.5 times taller, but also wider in profile and far more visible. Rampion 2 would also have far greater occupation of the horizon (spread along the coast) and greater occupation of the sea area (km 27.5 km² for R1 versus 75 km² for R2)
- There are cumulative impacts of Rampion 2 on top of Rampion 1 to consider across all dimensions of sustainability, including ecological, social and economic opportunity costs not only visual impacts that dramatically transform the character of the area.
- We argue that lessons from the Examinations of the other two DCO Applications for windfarms on the south coast: Rampion 1 (consented in 2014) and the Navitus Wind Park (refused consent in 2015) are helpful points of reference for this Examination.

2 The latter (competitive markets) also refers to the cost of electricity services. Thus, the social and socio-economic dimension includes the impact on local tariffs in turn that leads to considerations of value for money and generation efficiency, as we address in the LIA in Chapter 5 on economic effects and in companion Written Representations.

6 As cited in the PAD Statements there is high risk, uncertainty, and high probability that conservation benefits claimed in the Rampion 2 Environmental Statement (ES) will not be achieved due to limited, weak, or ineffective mitigation measures. There are considerable concerns about the adverse impacts on biodiversity due to the construction and operation offshore and onshore infrastructure

- Among these concerns we reinforce and agree with include those cited in PAD Statements by Natural England (NE) and the Marine Management Organisation (MMO).
- We believe the evidence clearly indicates construction and operation of Rampion 2 will degrade the natural capital on the Sussex Coast and affected inland areas already under multiple pressures.
- We, like others, believe Rampion 2 will adversely set back current efforts for nature and natural capital improvement now underway in the south, including kelp restoration after the ban on inshore trawling and biodiversity improvement efforts on land such as interrupting biodiversity corridors, as cited in Relevant Representations.
- Moreover, there is probable risk the 4–5-year construction and subsequent 20–25-year operation will lead to net biodiversity loss in the coastal marine environment, as well as in the air affecting migrating birds and flying insect populations moving cross-channel in massive numbers, the latter linking to loss of pollination services on both-sides of the channel and ultimately impacting food security. It is a cumulative impact.
- Overall, the construction and operation of Rampion 2, because of its unique setting, risks making sensitive marine and terrestrial ecosystems even more vulnerable and less resilient to long-term climate change.

7. Consideration of alternatives for low emission generation is a case-specific policy requirement for the Rampion 2 DCO Examination.

- Rampion 2 encroaches nationally designated landscapes, both physically and visually eroding natural beauty (i.e. adversely affecting statutory functions of SDNP (where SDNPA has objected to Rampion 2 on these and other grounds).
- EN-1 para 5.9.10, stipulates, “The development should be demonstrated to be in the public interest and consideration of such applications should include an assessment of: ... the cost of, and scope for, developing elsewhere outside the designated area or meeting the need for it in some other way, taking account of the policy on Alternatives set out in Section 4.4”.
- The Section 4.4 assessment can be rapidly facilitated by and efficiently accommodated in this Examination with system value modelling as mentioned under consideration 2 in this Summary. That in turn helps the EN-1 1.1.2 calculation on “whether adverse impacts outweigh benefits “, by providing an approach, metrics, and information to better inform discussion and ExA judgment on that aspect, as is warranted for a £3-4 billion investment commitment. Including opportunity cost as discussed in Chapter 5.
- It speaks to value for money on how the £3-4 bn is to be directed

by the DCO process in the local and national public interest.

8. The Applicant otherwise fails to recognise that as a national climate response more people will be encouraged by governments at all levels to remain on these islands for recreation and vacations to reduce their travel carbon footprint.

- Hence protecting the integrity of our natural coastal assets with all its intrinsic values and national benefit, and designated landscapes should be paramount and central to holistic thinking in the Examination.
- It means, as we argue, respect for the full application of available environmental and social safeguards such as the OESEA visual buffers advice should be given substantial weight in the Rampion 2 Examination in the national, wider public and local interest.

Chapter 1: Background and Terms of Reference

Pages: 1 - 12

Chapter 1: Background and Terms of Reference

1.1 Background:

1-1 This chapter provides context, background and Terms of Reference TOR for this Local Impact Assessment LIA. It explains why we believe it is important for the examination to take into account local views on the scope and scale of the transformative impacts of Rampion 2 and judgement as to whether the combined adverse impacts across three dimensions of sustainable development outweigh national benefits (less national disbenefits).

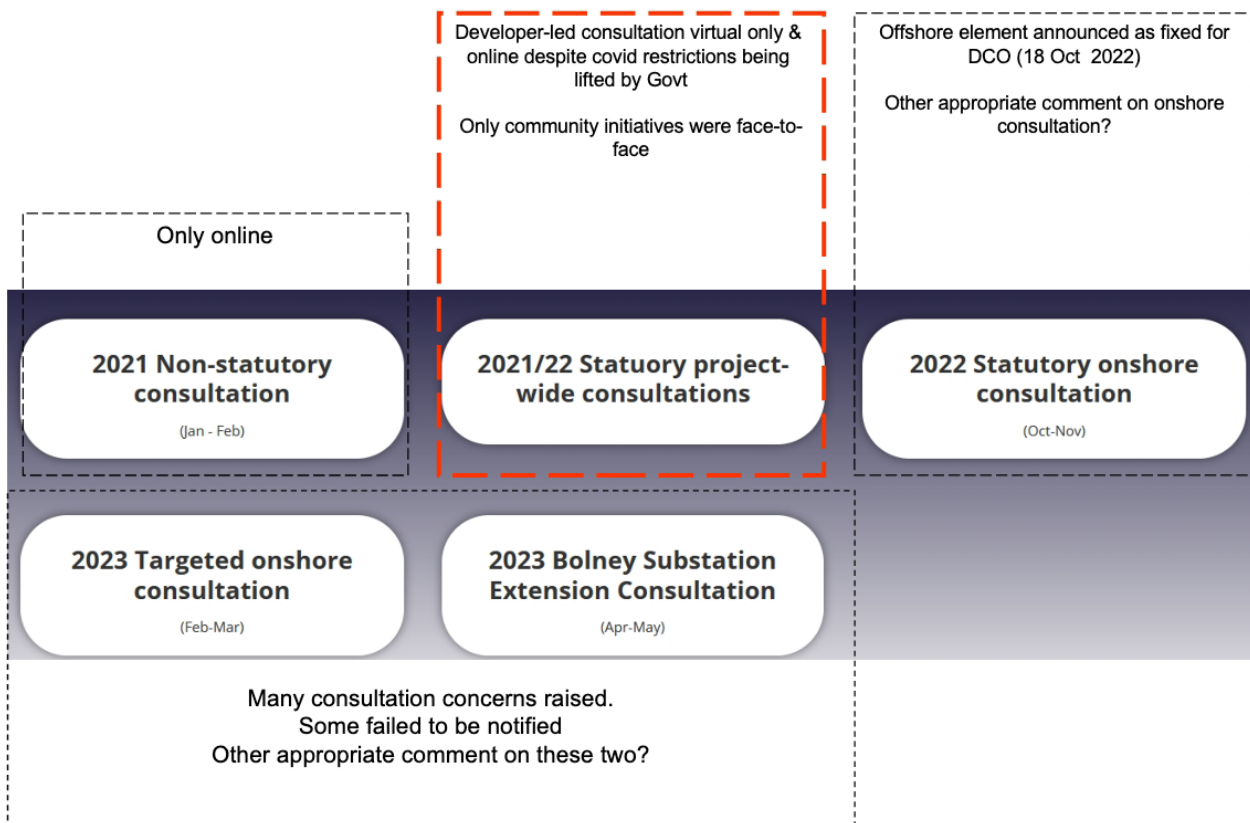
1-2 We also believe the tension between Rampion 2 and the protection of designated landscapes and adherence to sustainable development principles requires a careful examination of whether Rampion 2 would breach international and national obligations and public trust in these regards. Especially as the alternatives for low emission generation are available without the risk and uncertainty of disproportionate local harm to coastal and inland communities, their values, sense of place and the environment.

Overall:

1-3 Figure 1-1 below uses the Applicant’s graphic as a base to illustrate the approach to pre-application consultations. The upper portion of Figure 1-1 shows the initial non-statutory consultations in January/February 2021 were conducted on-line only.

1-4 The main statutory consultations in 2021-2022 were also conducted ‘virtually’ without any face-to-face engagements between the Applicant and stakeholders, even though the

Figure 1-1: Developer- led consultations Jan 2021 to May 2023



Government had, by then, lifted restrictions on gatherings and in-person public meetings.

1-5 Subsequent targeted community interactions on the onshore cable route in 2022-2023 were conducted without major constraints on meetings, though many of the consultation adequacy issues emerged at that time have yet to be resolved.

1-6 Of direct relevance is the pre-application consultation under the DCO process is front-loaded and led by the commercial developer, a single source of information.

- Essentially, at that stage, there was no scrutiny or challenge of the commercial developers pre-application claims by authorities of what the developer asserted were the benefits and adverse impacts.
- Essential public challenge and scrutiny can only be achieved in open face-to-face gatherings. The developer-led DCO consultation approach, established by the Planning Act (2008, updated), would never have envisaged a ‘virtual-only’ consultation.
- Thus, no adequate, critical public awareness or necessary scrutiny was achieved in the Rampion 2 pre-application stage; certainly not for the main public consultations depicted in Figure 1-1.
- This is important and relevant recalling that the aim of the pre-application consultation as stated in relevant PINs Advisory Notes is to ‘better inform the Examination’ so decision outcomes are more likely to enjoy public confidence and support. E.g.

“Effective pre-application consultation will lead to applications which are better developed and better understood by the public, and in which the important issues have been articulated and considered as far as possible in advance of submission of the application to the Secretary of State”. (MHCLG, 2015)

1-7 Our experience as community organisations active on the ground was that the Applicant’s choice and preference for mainly virtual consultations (when they did not need to be virtual) not only limited public understanding of the proposal and its local impacts at a critical stage in the DCO process, but also it had a significant “chilling effect”. It limited engagement with the Applicant. It would also have put many people off registering as interested parties for the Examination stage.

1-8 To help set the rationale and context for this written representation, we highlight our experience in these regards as follows:

Here We Note:

The balance of Chapter 1 sets out concerns and events that shape our views of the local impact of Rampion 2 and our approach to collectively engage constructively with all stakeholders in the DCO process up to the point of the Examination. We believe they were important and relevant in shaping the concerns of many stakeholders, as can be seen in Relevant Representations.

Otherwise, readers of this LIA are invited to proceed to Chapter 2.

At the pre-application stage:

1-9 A few people across our communities first became aware of the Rampion 2 proposal when an article appeared on the Middleton on Sea Parish Council website authored by Protect Coastal England (PCE) in January 2021. Rampion 2 was, at that time, marketed / messaged

by the developer, as a ‘simple extension to the existing Rampion 1 windfarm’ – Thus nothing to worry about; not concerning – It would, we were led to believe, help save people and the environment and lower the cost of electricity for us all.

1-10 Individually a few people from our communities participated in the informal ‘on-line’ consultation in January /February 2021, providing the developer their initial views based on information available in the Scoping Opinion and related documents offered on the developer’s and PINS websites. In fact, few were even aware of the informal consultation.

1-11 With the onset of Covid-19 lockdowns shortly after, in March 2021, members of our community who were finding it impossible to contact local authorities and obviously could not engage as normal in the community to discuss this major proposal, wrote to the Planning Inspectorate (PINs).

1-12 We explained problems contacting people, as we experienced, them including the lack of responses from local authorities during lock down, and requested a reasonable pause in the start of the formal statutory consultation on Rampion 2, at least until lockdown restrictions were lifted.¹

1-13 We sent the same communication by email to Councillors and area MPs, requesting a pause in the public engagement and consultation request. The aim was to avoid a situation where we, as host communities, would be forced to accept sub-standard consultations that fell far short of relevant PINS guidance and the on-line FAQs ². This was important as NSIP consultations are front-loaded into the pre-application stage.

- A pause, we argued would also provide the developer with more time to refine and improve its proposal which would lead to more informed consultation responses.
- It was also important to be prepared to quickly pivot to normal face-to-face conversations when COVID-19 restrictions were lifted, as they were, before the first statutory consultation round actually happened 14 July - 16 Sept 2021.
- Unfortunately, what Littlehampton residents and Civil Society Organisations (CSOs) saw as a common-sense consideration was rejected by the developer outright, and subsequently rejected by PINs. Letters to us cited that general planning policy of the Government at that stage was to carry on with DCOs ‘with no pause’ ³. No one had either foreseen or considered a Covid situation!

1 *Until people in the community were free to meet face-to-face, to discuss and genuinely understand what was being proposed. Few could, or would, wade through the thick incomprehensible Rampion 2 reports on-line. Few had the time or background to do that. The issues were serious and complex and, it seemed, almost hidden within the online report.*

2 *Planning Act 2008: Guidance on the pre-application process; March 2015, Department for Communities and Local Government.*

3 *See S51 Advice: Ref: EN010117, 23 April 2021. <https://infrastructure.planninginspectorate.gov.uk/projects/south-east/rampion-2-offshore-wind-farm/?ipcsection=advice&ipcadvic=b4e233abb2> And see Attachment A4, Item 3.*

While accepting the PINS ruling 23 April 2021 we did not agree with the reasons given (PINS correspondence, in the above link) which did not differentiate between different planning activities or circumstances (Attachment A4, Item 6), nor did Littlehampton CSOs agree it was wise to retain virtual-only approaches on reopened consultations 7 Feb 2022 as restrictions were lifted which was a breach of the SoCC.

1-14 Accepting that ruling by PINs, our community then offered to better inform the discussions between our local authority and the developer. The developer's Statement Of Community Consultation (SoCC) stated how we were to be consulted. We offered what we could do to help overcome the obvious barriers to good communications as host community organisations with much at stake.

1-15 As part of that SoCC input, Littlehampton CSOs proposed several proactive steps to help raise awareness of the developer's proposal within their memberships and wider Littlehampton community, including engaging with Councillors and other community organisations along the south coast.

- Many other communities at the same time sought to contact their own Parish and Town Councils about the Rampion 2 consultation challenges and the project itself.
- Our community input to the SoCC was shared with Arun District Council and West Sussex County Council (and acknowledged as received by them and forwarded to the developer). We also contacted the Littlehampton Town Council, the Developer and PINs.
- The developer chose to simply ignore and not acknowledge our SoCC suggestions, including our proposal to hold a community-led public meeting in Littlehampton (face-to-face) to discuss the project and potential consultation responses, once restrictions on holding meetings were lifted – which indeed they were in time for the main formal consultation August / Sept 2021.
- The developer instead chose to proceed with its virtual-only consultation approach and refused repeated requests to attend any community sponsored consultation meetings (either in-person, or virtually), even when the request was made by a member of the Community Project Liaison Group that the developer itself set up, and who would co-chair the Littlehampton public meeting.

1-16 Our Littlehampton community organizations thus went ahead and organised a large public meeting for 24th August in the Millennium Chamber of the Littlehampton Town Council. Funds were raised within the community for the venue rental and meeting logistic costs. It was attended by over 80 persons including several local Councillors and residents from across the south coast, senior councillors from ADC and WSCC and dignitaries.

1-17 The developer's representatives phoned in the late afternoon the day before the meeting indicating they urgently needed to participate but would need to do so virtually. We accommodated their request by renting the equipment. The meeting featured:

- Presentations and Q&A on the Rampion 2 project generally, as well as the policy context for acceptance or rejection of the project.
- Statements read out on behalf of the Rt. Hon Nick Gibb MP for Bognor Regis & Littlehampton the Hon Andrew Griffith, MP for Arundel and South Downs, offering their views that the development was unsuitable in the proposed location.
- Discussion of a collaborative approach to prepare the Local Impact Reports. We wanted to improve public awareness and to better inform our local communities, the stakeholders, and the Examination of our local concerns. Essential, should Rampion 2 be accepted for Examination. We also needed to help overcome the many limitations of their largely virtual consultations.

Participants overwhelmingly past resolutions including:

- i.) **Resolution 1:** Participants in this Community-led Public Meeting support and encourage all offshore wind power developments that fully respect relevant Government policy and guidelines to avoid and minimise local harm.
- ii.) **Resolution 2:** Participants encourage ADC & WSCC to share Terms of Reference (TOR) for local impact reports (LIR) with Residents and to have an open process to welcome community input / comment on draft conclusions on the scope & significance of local impacts.
- iii.) **Resolution 3:** Participants feel the Rampion 2 EIA should assess moving turbines 25 miles offshore as a “reasonable alternative”. A non-project alternative assessed in the EIA should be the extension of a wind farm application in Dogger Bank.⁴

1-18 Summary and full Reports of the meeting were prepared and submitted as formal consultation input to the developer in September before the deadline and there was media coverage.

1-19 Middleton on Sea Parish Council together with community groups including MOSCA similarly organised a public meeting for the 25th of August, where the developer’s representatives also chose to attend, virtually, at the last moment.

- Among the concerns that meeting exposed, was the fact that many residents on the coastal strip (designated as Zone C, within 100m of the shore) in Middleton on Sea had not received the mail notifications as provided in the Applicants statutory SoCC.
- After considerable back and forth involving the community, the Parish Council and MPs and the sharing of views and documentation of those failings, the developer finally agreed to open another ‘virtual’ statutory consultation window from 7 Feb -11 Apr 2022.

1-20 PCS was formed at that time. It was as an alliance of community organisations recognising the common challenges, we all faced as coastal settlements who would be required to host Rampion 2 if it were consented.⁵

- A key aim was to pool limited resources to collaborate on this LIA written representation, to share experiences with interactions with the developer and to jointly engage with stakeholders and the media where we could.
- Each Party could act independently.
- All sought to engage with the developer, Councils, and contact PINs to seek Section 51 advice on issues that mattered most to them.

1-21 Additionally, over the course of the pre-application period PCS affiliates individually and together participated in relevant government consultations that shaped the policy environment for considering Rampion 2 in the DCO process.

Among these included substantive consultation submissions to raise concerns about what we witnessed and encountered in the DCO process:

⁴ This question will be addressed in a separate PCS written representation on the consideration of Alternatives under Section 4.4 of NPS En-1 2011 in effect for the Rampion 2 Examination.

⁵ Cowfold joined the PCS alliance in 2023 as initially PCS membership was primarily from coastal settlements.

1. To MCHLD in 2021 on the unsuitability of virtual public consultations for major infrastructure projects of the scale and significance of Rampion 2, using Rampion 2 as an illustrative case study; and the need to encourage and facilitate community input to the SoCC and have the developer resource agreements.
2. To BEIS in 2022 on the OESEA4 public consultation draft, we argued that visual buffer advice needed to be clear and firm, equivalent to German Law. This would lead to efficiency, avoid wasting time, money, and uncertainty for all. In essence, screening out projects early, before they got to the examination stage, as a matter of common sense.
3. To BEIS / DESNZ consultation in 2023 on national policy statements (energy), proposing an amendment to the new critical national priority (CNP), which among other aspects included fast-tracking offshore wind projects that met criteria which fully respected the OESEA visual buffers and preferably connection to an offshore grid.

1-22 These submissions were relevant to the Rampion 2 DCO process. Through our MP the Secretary of State (SoS) responded to our NPS consultation submission proposing amendments to the CNP provisions (we also sent that to the Office of the SoS directly and to area MPs who contacted the SoS themselves on the matter.)

At the Acceptance stage

1-23 Once the Rampion 2 Application was submitted on 8 August 2023, PCS issued a press release to local media copied to stakeholders including Councillors and councils expressing our concerns relating to the adequacy of consultation (AoC).

- PCs and each affiliate then submitted substantive AoC representations as they saw the situation in their areas.
- These were submitted to local authorities to hopefully inform and be referenced in their statutory AoC Letters, as well as directly to PINs.
- Many of these AoC submissions argued that if PINs were inclined to accept Rampion 2 for Examination, it should only be a conditional acceptance.
- Separately community organisations offered sensible conditions that they felt were essential and would enjoy community and wider public support.

1-24 Major AoC concerns included the documented failure of the Applicant to respect the SoCC terms and as noted in figure 2-2 that follows, and failure even to respect the most basic concerns, such respecting and applying the “Rochdale envelope” in statutory consultation and public consultation on the “worst case”.

1-25 That aspect is elaborated in AoC consultation replies on record and highlighted below in Figure 2-2 in the next section and the text.

At the Pre-examination stage

1-26 When Rampion 2 was accepted for Examination 7 Sept 2023 community organisations were initially encouraged. The PINs Section 51 Advice Note issued to the Applicant the same day as the Acceptance Letter was issued under delegated authority identified concerns that we shared in AoC submissions.

1-27 The PINS Section 51 Advice was that the Applicant needed to remedy a number of significant shortcomings in the Application before calling for the Registration of Interested Parties. It was essentially a conditional acceptance that community organisations welcomed. What was important also is that there are no prescribed time limits for the duration of the Pe-examination stage.

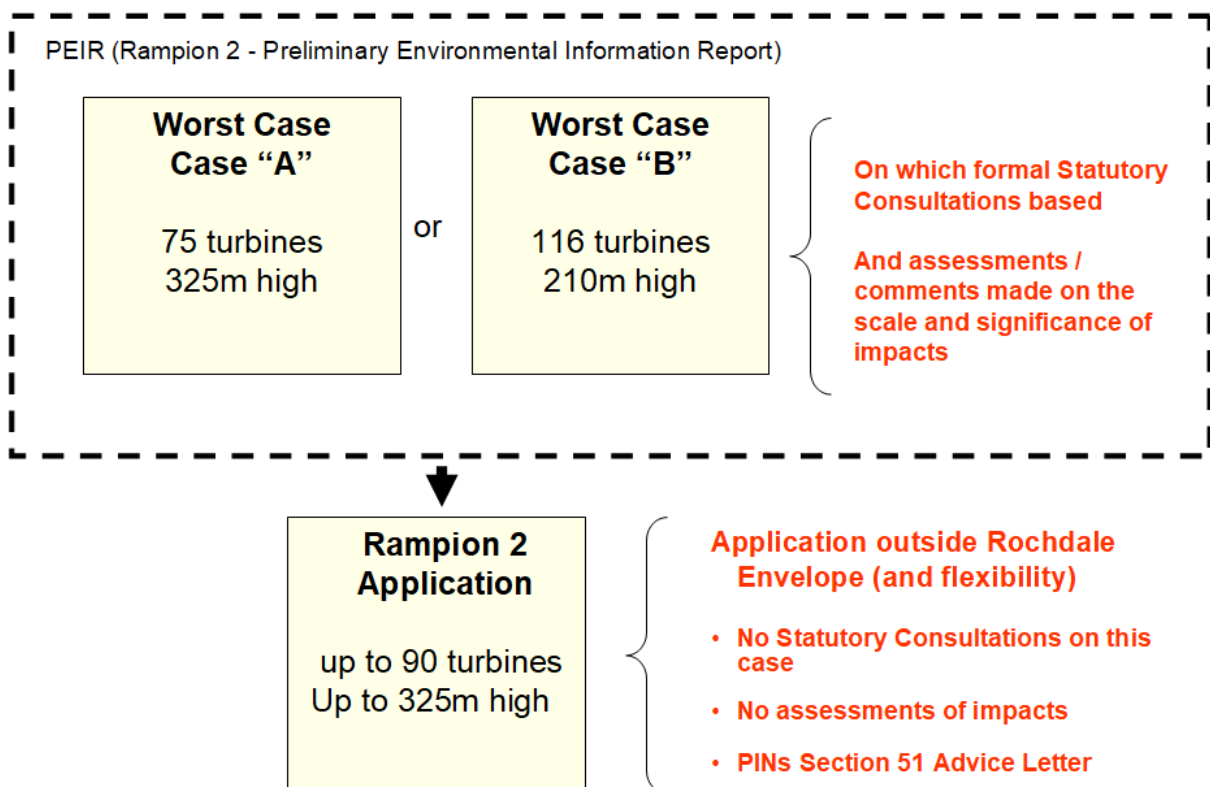
For example PINs wrote:

- *“The Inspectorate notes it is reference in Schedule 1 Part 1 for Work No.1, and in Part 3 Requirement 2 that the authorised development must not exceed 90 wind turbine generators (WTGs) and in Requirement 2(a), that they must not exceed a height of 325m.*
- *The Inspectorate notes, however, that no assessment of the effect of 90 WTGs appears to have taken place and evidenced in Chapter 15 of the Environmental Statement (seascape, landscape and visual impact assessment), where it appears that only 65 WTGs have been assessed. The Inspectorate considers that the DCO needs reviewing to ensure that the total quantum of turbines sought has been fully appraised and assessed in the ES taken as a whole. This is further discussed in the paragraphs below.”*

1-28 Communities were then soon dismayed to see the commercial Applicant’s immediate response was a categorical rejection of the PINs Section 51 Advice, the government regulator. We were shocked to see the tone of that rejection indicating that PINs had no authority, and that the Applicant would open registration days later on 20 Sept 2023 and ignore PINs advice.

1-29 We were further surprised to see that the newly appointed Examination Authority (ExA) chose, in our view hastily, to side with the developer by issuing its Part 9 Letter on 20 Sept 2023 allowing the Applicant to open the registration that same day - against the PINs Section 51 Advice already issued.

Rochdale Envelope: PINs Advice Note 9 and Planning Act (2008, updated)



1-30 The letters exchanged between PINs, the Applicant and the ExA were quite significant and concerning to us. They are available for all to see on the PINs website. We obviously understand what is at play, but, as responsible community organisations we were distressed to see what transpired. It only strengthened our resolve to speak out and prepare representations for the Examination.

- As one response PCS contacted MPs with their concerns. In parallel, PCS asked PINs for additional Section 51 Advice to explain essentially what was going on, and for the suspension of the Examination while the NPS (March 2023) were under review as is provided under Section 108 of the Planning Act (updated).
- PCS also asked area MPs if the Secretary of State (SoS) could be approached to suspend the Rampion 2 Examination until there was clarity regarding positions taken by the Government regulator (PINS), the commercial Applicant (RWE), and the Examination Authority on the Pre-Examination conditions and timing.
- On that matter of suspension of the Examination, we were advised by PINS to contact our area MPs and the Office of the Secretary of State (DESNZ), if we wished.
- Which we had done. In that period we also wrote to heads of Parliamentary committees asking for discussion among the MPs on their committees about suspending the Examination, for which we receive no response.

1-31 A letter from the Secretary of State thanking PCS for its consultation response to the NPS consultation was received in Dec 2023

1-32 Individually and as community organisations we applied to be Interested Parties in the Rampion 2 Examination and offered Relevant Representations (RRs) to inform the Examination Authority's (ExA's) consideration of principle issues for the Examination, noting that we would follow-up our RR's with written representations.

1-33 Seeing the relevant representations and Principal Areas of Disagreement Statements submitted by statutory consultees, we were both encouraged that statutory consultees had taken our local concerns on board, and/ or that they had similar views, a number of which we cross-reference herein.

1-34 Having set that background we are happy to say this community-based LIA representation enjoys considerable support within the community and elected representatives at all levels. This Representation also brings in relevant lessons and insights drawn from the available documentation on two other south coast windfarm applications, namely: the original Rampion windfarm installation consented in 2015, and the Navitus Bay WindPark that was refused consent in 2015.

Otherwise we note:

1-35 To communicate complex, interrelated concerns about this Application with argument, analysis and hard evidence and also given limited time and resources, civil society groups are collaborating in preparing mutually supporting Written Representations, namely:

- 1. This Local Impact Assessment (LIA):** A community-led LIA to set out how Rampion 2 will impact current and future residents, area visitors, the environment and natural capital with local to regional significance. The aim is to better inform consideration of the Rampion 2 Application with local voice, knowledge and experience, as well as hopefully inform the statutory LIRs prepared by external consultants engaged by Councils.

2. A Due Diligence Representation: To fact-check the credibility of uncontested claims the Applicant made as the single-source of information to date on effects (performance, benefits and impacts of the proposed development) – the subject of this registration comment, and

3. A Representation on Reasonable Alternatives: To support consideration of reasonable alternatives in the Rampion Examination triggered by provisions in (NPS 2011 and 2023 proposed), EN-1) on better ways to allocate £3-4 billion to ensure dependable clean, low-emission generation and genuinely provide for energy security, affordable supply and meet decarbonisation targets.

1-36 This approach of working together respects the Government’s Examination Guidance (MHCLD, 2015) that encourages groups with similar interests to work together to help make a more efficient Examination.

1.2 Terms of Reference for this Community LIA

1-37 The collective decision endorsed by over 80 concerned residents and councillors on the 24th August 2021 community-led consultation meeting, was to prepare a community-led LIA and pursue a collaborative approach . Our starting point in developing the TOR for a community-based LIA was to refer to the PINs Advice Note 1 as guidance for the statutory LIRs that local authorities will be invited by PINs to offer for the Rampion 2 Examination.

Under Content of the LIA, PINs Advice Note One, indicates:

4.1 The sole definition of an LIA is given in s60(3) of the Act as ‘a report in writing giving details of the likely impact of the proposed development on the authority’s area (or any part of that area)’. The content of the LIA is a matter for the local authority concerned as long as it falls within this statutory definition.

4.2 Topics which may be of assistance in the report include:

- Site description and surroundings/ location.
- Details of the proposal.
- Relevant planning history and any issues arising.
- Relevant development plan policies, supplementary planning guidance or documents, development briefs or approved master-plans and an appraisal of their relationship and relevance to the proposals.
- Relevant development proposals under consideration or granted permission but not commenced or completed.
- Local area characteristics such as urban and landscape qualities and nature conservation sites.
- Local transport patterns and issues.
- Site and area constraints.
- Designated sites.
- Socio-economic and community matters.
- Consideration of the impact of the proposed articles and requirements within the draft Order (such as the scheme) in respect of all of the above.

- DCO obligations and their impact on the local authority's area.

1-38 How we, as community organisations and “host community” residents could best inform the statutory LIRs of our local authorities, as set out in the PINs Advice Note 1 indicates:

Para 4.10: Parish councils, organisations and members of the public may have made representations to the local authority or directly to the applicant about the scheme (prompted, for example, by the applicant's consultation). The LIR could include reference to these representations, but only where they are relevant to a particular local impact which the local authority itself wants to highlight. Local authorities should therefore encourage such respondents to register with the Planning Inspectorate as ‘interested parties’ at the appropriate time so that their representations about the scheme will be considered by the Examining Authority.

Para 4.8: It would assist the Examining Authority if the local authority is able to give its view on the relative importance of different social, environmental or economic issues and the impact of the scheme on them.

Para 4.7: By setting out clearly evaluated impacts in a structured document, local authorities will assist the Examining Authority by identifying local issues which might not otherwise come to its attention in the examination process. It will also be very helpful to have the local authority's appraisal of the proposed development's compliance with local policy and guidance.

1-39 We also sought lessons from other wind farm applications on the south, namely:

- Rampion, 400 MW (applied in 2010, consented in 2014 - £1.3bn)
- Navitus Bay Wind Park, 973MW (applied in 2010, refused in 2015 - £3.5bn)
- Rampion 2, 1,200 MW (pre-application since mid 2020 ~ £2.85bn)

The above expressed in nominal currency relevant to the day.

We note further that:

1-40 Community organisations along the Sussex Coast initially sought a collaborative approach with local authorities at District and County levels to provide the ExA with local impact assessments that enjoy widespread community support (see Reference Littlehampton Community-led Public meeting to inform the first round of the Rampion 2 Consultation, Public Meeting Resolution 2).⁶

Specifically:

Resolution 2 of the Littlehampton Public Meeting 2021: Participants encourage ADC and WSCC to share Terms of Reference (TOR) for local impact reports (LIR) with residents and to have an open process to welcome community input / comment on draft conclusions on the scope & significance of local impacts.

⁶ *The offering of Community input to the Statement of Community Consultation (SoCC) to District and County Councils to inform their conversations with the Applicant in developing the SoCC were also rejected by Officers (reference attached).*

Recognising as discussed in Presentations:

As part of the 2008 Act process, local authorities will be invited to submit a local impact report (LIR) giving details of the likely impact of the proposed development on the authority's area once the application is accepted (likely in Q1 2022).

Government guidance strongly encourages the local authorities to use the pre-application period to start their own evaluation of the local impacts of proposed wind farm developments, starting with a Terms of Reference (PINS Advice Note 1)

Time in the process is tight. The invitation to submit a local impact report (LIR) will be made in the 3-month Pre-Examination following Acceptance and typically stipulates 3 months to submit the LIR for Examination. Councils can also make joint LIR and representations on them.

1-41 While direct collaboration was rejected by Officers at District and County levels, even to the point of refusing to share Terms of Reference (TOR) that Councils would necessarily require, to hire consultants to prepare and represent our views, and claiming that TORs did not exist (as in documentation in correspondence already on record). Faced with this situation, communities decided to make timely Representations to Councils to ask them to formally reflect our views in their LIRs, should they be so inclined.

1-42 We also make this LIA Written Representation directly to the ExA Panel of Experts appointed to conduct the Examination recognizing that only the District and County LIR representations have statutory effect.

1-43 We appreciate that by registering as Interested Parties as individuals and community organisations we can comment on our Local Authority LIR Representations made on our behalf during the Examination process as may be warranted.

1-44 We anticipate that will be in everyone's best interest given what we have witnessed unfold to date in this DCO process We remark that in addition to the PINS Advice Note One on Statutory LIRs we found the PINS Advice Notes 8 series most helpful and extend our thanks for those namely:

[Advice Note One: Local Impact Reports](#)

[Advice Note Eight: Overview of the nationally significant infrastructure planning process for members of the public and others](#) Published December 2016

Advice Note Eight as produced in six sections and aims to take the reader step by step through the planning process for Nationally Significant Infrastructure Projects:

- [Advice Note 8.1: Responding to the developer's pre-application consultation](#) (version 2)
- [Advice Note 8.2: How to register to participate in an Examination](#) (version 3)
- [Advice Note 8.3: Influencing how an application is Examined: the Preliminary Meeting](#) (version 4)
- [Advice Note 8.4: The Examination](#) (version 7)
- [Annex – Video Submission Proforma](#) (version 1)
- [Advice Note 8.5: The Examination: hearings and site inspections](#) (version 4)
- [Advice Note 8.6: Virtual examination events](#) (version 1)
- [Advice Note Nine: Rochdale Envelope Republished July 2018](#) (version 3)

1.3 The Proposed Rampion 2 Infrastructure

1-45 The Development Consent Order (DCO) Application for the 1,200 MW Rampion 2 windfarm proposal submitted by the German-based multinational (RWE) in August 2024 was accepted for Examination by Planning Inspectorate (PINs) in early September 2023.

- The Applicant proposes to provide and secure international finance to supply, install, operate and decommission up to 90 wind turbines, each up to 325m (1,066 feet) tall installed in the seabed visibly stretching over 50 miles (80km) along the Sussex Bay inshore from east of Brighton to west of Bognor Regis.
- It would extend the existing 400 MW Rampion project consisting of 116 turbines 140m tall occupying a sea area of 72 km² (27.8 sq mi) by an additional 196 km² (75 sq mi) to the south and west of the existing installation.
- Rampion 2 arrays would start 13km (8 mi) from shore, the same as Rampion 1, but would be far more visible in profile, height, and spatial extent to residents in coastal communities and visitors to the coast, as well as seen from protected designated landscapes / seascapes including the South Downs National Park (SDNP).
- Associated offshore infrastructure would include up to 250km inter-array cables cut 1m into the inshore seabed; cables to connect up to 3 offshore substation platforms, and; export cables to connect the offshore substations to landfall on Clymping beach west of Littlehampton, a designated Site of Special Scientific Interest (SSSI).
- Along with the Clymping landing, the onshore infrastructure would include over 35 km (22 miles) of power cable buried in a right-of-way cut through the SDNP to a new substation at Oakendene, Cowfold, 2.9 km (1.8 miles) from the Bolney national substation where grid connection will be made.
- Local impacts would be felt over the construction, operation, and decommissioning stages of Rampion 2 from construction start around 2026, over the operation stage starting from commissioning around 2030 or later through to the end of the project life around 2050 or a few years more (20-25 years), and then through a multi-year decommissioning or re-powering stage similar to the construction phase.

1-46 The Applicant's PEIR 2021 estimated the development cost of Rampion in 2019 cost terms was £2.87 billion. Escalating market prices for these turbines (20-30%) in the past few years and dramatic construction cost escalations of late suggest the development cost of Rampion 2 through to 2030 or more would be closer to £3-4 billion.

1-47 That debt must be repaid at commercial rates of return via UK consumer tariffs, along with the operation and maintenance (O&M) cost, plus the international investor Return on Investment (ROI), risk guarantees and other renewable energy subsidy implicit in the CfD subsidy arrangement for offshore wind contracts.⁷

7 CfD is the "contract for differences" subsidy regime introduced for payments to offshore wind companies once they start to produce power was increased up to 66% in Sept 2023.

Chapter 2:

Relevant policy, planning and legislative context

Pages: 14 - 60

Chapter 2: Relevant policy, planning and legislative context

2.1 Chapter Summary and Overview

2-1 This Chapter highlights what many residents and community organisations living in coastal and inland settlements engaging with the Development Consent Order (DCO) process for Rampion 2, understand is the policy, planning and legislative context for this Examination.

2-2 It offers a lens through which those who would be required to “host” Rampion 2 infrastructure, if consented, view these matters.

The aims of this Chapter are to:

- i.) Highlight relevant policy and a reasonable interpretation of that policy which we believe should be given substantial weight in the Examination, and
- ii.) To offer the policy backdrop for topic-specific local impacts elaborated in each chapter of this LIA offering analysis, evidence, local knowledge, and perspectives.¹

2-3 Chapter 2 notes that while the National Policy Statements (Energy NPS, 2011) are the main basis for this case-specific Examination, a range of policies referenced by or called up by NPS are also material. These extend from the UK’s commitments in international treaties and conventions to national and local policy.²

2-4 As Interested Parties (IPs) we were advised by the ExA’s Rule 6 Letter that two overall or overriding considerations are that the Rampion 2 Application must be decided, “in accordance with any relevant NPS, “... subject to certain provisos. Essentially, the provisos are that the application must not breach legal or treaty obligations, and that any adverse impact of the Proposed Development would not outweigh its benefits.”

- From our understanding of the policy landscape and our perspective on the likely impacts of Rampion 2 on our communities and the environment, we add a third overarching consideration or proviso that is implicit in the NPS and national policy.
- The question as to whether Rampion 2 would advance or risk undermining the achievement of sustainable development on the south coast of England and affected inland areas for both current and future generations.
- In the interest of simplifying what is accepted to be complex and multi-faced, we see this trio of overriding and overlapping policy issues as critical to inform the societal decision on whether to consent or refuse consent on the Rampion 2 Application.

Overriding Issue 1: Does Rampion 2 breach international treaty obligations or UK Law?

2-5 In respect to the first provisos or policy “test” that the ExA highlights, this Chapter explains what we feel are the important and relevant considerations, namely:

- The European Convention on Landscapes (ECL) to which the UK is a signatory emphasizes the protection, management, and planning of landscapes. The ECL recognizes the importance of landscapes for cultural, ecological, and recreational purposes. And the ECL links and affords equal legal status to the protection of landscapes and seascapes – and that protection has cross-cutting environment, social and economic aspects.

¹ Using a similar chapter structure but with different styles of authors they offer a mix of local perspectives, knowledge, and evidence of the significance of those adverse impacts. Some have Annexes.

² Those Chapters highlight some of the main shortcomings and flaws in the Applicant’s impact analysis assumptions, methods and conclusions as seen by community organisations.

- The tension between the presumption for consent to a Nationally Significant Infrastructure Projects (NSIPs) in the energy sector as well as adhering to treaty obligations such as the ECL, we believe raises valid questions about whether Rampion 2 is in compliance with international treaties.
- The South Downs National Park (SDNP) is known for its scenic natural beauty and ecological significance. We note that the SDNP Authority, as a statutory body, has raised significant objections to Rampion 2 related to landscape / seascape protection. Rampion 2 would interfere with the SDNP’s integrity and statutory functions as a high-status designated landscape and associated seascape, which together also define the quality and character of the area.
- The latest Marine Policy Statement (MPS, 2021) is significant as it underpins and reinforces the UK’s treaty commitments under the ECL. The MPS links and affords equal protection to seascapes and designated national landscapes.
- As explained in this Chapter, we believe the UK’s new Levelling-up and Regeneration Act 2023 connected to the Planning Act (2008, revised)³ is highly significant, as it further increases the required level of statutory protection of National Parks and their statutory functions under UK law.
- The Act in fact reinforces the interpretation of how ECL commitments apply to the consideration of Rampion 2. In this respect, the new Levelling-up Act (2023):⁴
 - Rather than “take note of, or take into account” it imposes a duty to seek ways to further the statutory purposes of protected landscapes including National Parks and Area of Outstanding Natural Beauty.
 - The new duty to ‘seek to further’ is an active duty, not a passive one.⁵
 - The new duty not only underlines the importance of avoiding harm to the statutory purposes of protected landscapes and associated seascapes, but also to seek to further the conservation and enhancement of such landscapes.
 - That goes beyond mitigation and like-for-like measures and replacement.
- Similarly, it is important to consider the alignment of the UK’s Offshore Energy SEA (OESEA) with the ECL Convention and its reinforcing nature. Specifically, in the Rampion 2 case the rolling OESEA programme’s strategic environmental advice to provide visual buffers between large offshore turbines and impacted designated landscapes is material in this Examination. That advice which is in keeping with the ECL commitment and the Levelling-up Act should not, and we believe legally cannot be dismissed lightly.

Here we observe that:

- OESEA-4 states the UK objectives and indicators for seascape / landscape protection include the, “Objective: To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/landscape including designated and non-designated areas.” Our in-bold text underlining for emphasis.

³ The National Planning Policy Framework was revised in response to the Levelling-up and Regeneration Bill

⁴ Text in paragraph 245, 3(b) I, page 263 in the Levelling up Act 2023, under Protected Landscapes is stricter than before (“must seek to further the purposes” rather than “have regard to”). It states that if it appears that there is a conflict between those purposes (protection versus Rampion 2 purposes), decisions must attach greater weight to the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the area comprised in the National Park.

⁵ Opinion of Natural England in December 2023 in a DCO Examination as explained in this Chapter.

- The OESEA visual buffers updated in 2020 and adopted in OESEA-4 (2022) are based on a comprehensive review of domestic and international experience with visual buffers for offshore windfarms, including project-level assessments and laws associated with the application of the ECL in European jurisdictions.
 - The proposed design for the offshore component of Rampion 2 (up to 90 WTGs up to 325m tall in arrays starting 6 nautical miles from shore, so visibly fixed in the legally defined and ecologically sensitive inshore seabed ⁶ (i.e., not offshore that starts 12 nautical miles from shore) - is at the extreme end of the visual impact spectrum due to its scale, expanse or spread along the coast and proximity to people and designated landscapes.
 - Our view is it cannot be disputed that Rampion 2 is literally “off the charts” in regard to the UK Government’s ECL commitments and its own strategic environmental advice (OESEA) that derives from the ECL interpretation and experience as clearly stated in the OESEA-4 objectives.
- We thus see the evaluation of the visual impact, ecological consequences, and adherence to sustainable development principles as converging and crucial in determining whether Rampion 2 would breach obligations, especially those under the Convention (ECL), as well as commitments to pursue sustainable development. The latter is expressed in many international conventions and treaties. (We elaborate on that a bit as Overriding issue 3 below).
 - If in the judgement of the ExA Rampion 2 is not an outright breach of the ECL,^{7 7} both the offshore and onshore elements that are proposed, then it certainly challenges the ECL’s underlining objective and spirit of safeguarding landscapes for current and future generations. Similarly, it challenges a reasonable interpretation of the Levelling Up and Regeneration Act (2023) as it applies to Rampion 2 and SDNP.

2-6 Other factors in this regard:

- We believe the above mentioned should be a substantial consideration in this case-specific Examination.
- Moreover, the consideration of alternatives as a policy requirement in this Examination, under EN-1, Section 4.4 Alternatives, should be explored to avoid the legal breach, as well as avoid actual adverse effects that the offshore and onshore elements of Rampion 2 would have on landscapes and their protected status under the ECL and aligned UK policy and law.
- We also believe the ExA should also consider how the Convention (ECL) is interpreted to establish visual buffers for large offshore wind turbines in other European jurisdictions.
- That includes Germany, where under the Wind Energy at Sea Act (WindSeeG), in effect since 2017, to help accelerate offshore wind (in the Baltic and North Seas) while maintaining strict adherence to visual buffers that would not permit a “Rampion 2” situation, as well relevant policy in the Netherlands and Belgium.
- That is reported in the UK Government’s own rolling OESEA programme indicating how its own visual buffer advice was derived and is applicable to Applications

⁶ Marine Management Organisation (MMO) legal definition of offshore is beyond 12 nautical miles (22.2 km) from shore.

⁷ Which we argue would appear to override the OESEA findings and strategic advice as expressed in the OESEA-4 Objectives and in the visual buffer advice itself.

such as Rampion 2 (as in OESEA-4, 2023, and the 2020 visual buffer update).

- Here we note the irony that the German-based multinational categorically rejects the relevance of the UK Government’s OESEA visual buffers in its Environment Statement (ES) and in documented responses to statutory consultees.

Overriding Issue 2: Do adverse impacts of Rampion 2 outweigh national benefits?

2-7 Regarding the second proviso or “test” that the ExA highlights for our attention in the Rule 6 Letter, whether adverse impacts outweigh national benefits, this Chapter explains our views on the interpretation and application of that NPS policy, namely that:

- It is important and relevant to avoid an overly simplistic, highly subjective, tick box exercise in making this calculation and judgement. If it is a wind farm tick, the assumption being all offshore windfarms are the same - all are green.
- Reality is adverse impacts and benefits are location and case specific. A tick box approach is not only unfair to residents in local communities that would be required or forced to host the project, if consented, but also on a societal level where the equitable distribution of costs (adverse impacts) and benefits in society is valued.
- A tick box approach risks controversy and undermining public confidence in the DCO process and sustainability, especially when construction starts around 2026 and people are awakened to the scale and scope of the industrial transformation of the landscape /seascape and are open to hearing about the ecological and economic consequences – and against the backdrop of even higher electricity bills – when many understood power would suddenly be cheaper, even free.⁸
- Otherwise, the consideration of a £3-4 billion infrastructure investment reasonably warrants a degree of rigour, as well as a transparent and systematic approach to inform this key judgement. That requires clear criteria to assess both sides of the equation and the balance: (1) on the one hand, the aggregated and cumulative adverse local impacts, and (2) on the other hand the national benefits – less national disbenefits.
- A comprehensive evaluation framework that is sufficiently quantitative is needed. We argue that can reasonably and systematically consider:
 - The local impacts across the various dimensions including social, environmental, and economic factors.
 - Both national benefits and disbenefits, the latter including the consequences degrading designated landscapes/seascapes in coastal areas and its impact on all UK citizens (reducing their choices where they can seek the natural beauty of the coast)
 - As well as the actual economic opportunity costs of pursuing Rampion 2.
- We appreciate this is challenging in the 6 months time allocated to the Examination. Nonetheless, as provided in Relevant Representations in the fall of 2023 we believe there are reasonable steps that the ExA can take to engage relevant expertise to significantly enhance the range and quality of information it must draw upon relatively quickly to inform this critical judgement in the next 5 months plus 3 months.
- As local community organisations we were disappointed to hear the ExA state in

⁸ *Investments in offshore wind will not translate into lower electricity bills for the short to medium term as increasingly acknowledged in policy.*

the Preliminary Meeting on 6 February 2024 that it was disinclined to invite relevant expert testimony or expertise to offer “outside views” to add to the evidence. We assume this is as regard to either adverse impacts or national benefits.⁹

- Looking at both sides of EN-1, para 1.1.2 on weighing adverse impacts and benefits.

On Adverse impacts side:

- In this LIA we offer our views and marshal evidence and local knowledge on the magnitude and significance of likely adverse local impacts across the social, environment, and economic dimensions, as provided in separate Chapters herein.
- We also highlight and point to Relevant Representations and PAD Statements that offer corroborating analysis, views and / or opinion.
- We accept that it would be overly challenging to attempt to monetise all the adverse impacts of Rampion 2. As stated in relevant representations, we believe the definition of sustainable development is thus helpful to qualitatively assess whether there are net positive gains across each of the three objectives of sustainable development based on the concerns raised by stakeholders and comments on the Applicants ES.
- That approach and break down is reasonable and logical as it helps both to calibrate and judge the adverse impact side of the calculation. That has a positive overlap with what we regard as Overriding Issue 3 on whether Rampion 2 advances or undermines the achievement of sustainable development.
- We also recognise there is considerable complexity, uncertainty, gaps in research and knowledge and that the degree of uncertainty and appetite for risk needs to be considered.

On the National benefit calibration:

- We believe the benefit side of the equation must go beyond a simple tick such as a contribution to technology-specific political target for installed capacity by 2030 or 2050.
 - Firstly, those technology-specific targets are subject to constant revision and political controversy, as we have seen multiple times in the past few years. Those specific targets did not exist in 2011 as we are using NPS (2011).
 - More substantively, the critical national priority (NPS, 2023) sensibly defined benefits (and alternatives to deliver the benefits) in terms of increasing low emission generation.
 - Secondly, an alternative considered under Section 4.4 Alternatives can deliver that same offshore wind “tick” as Rampion 2, but without the unique case-specific disbenefits of Rampion 2.

⁹ *In particularly we were deeply disappointed that the ExA has signalled it has little interest in allowing expert testimony to inform the judgments on biodiversity impacts (whether they are net positive, or not); nor as we assume for system value analysis modelling to apply to the consideration of Alternatives and inform the national benefit side of this policy equation (adverse impacts outweigh benefits). Here we note the PA (2008) Procedure Rules allow, “the Examining Authority to call expert witnesses to give evidence on specific points at hearings. They may also consider requests from the applicant and other interested parties to call expert witnesses in support of representations they make about the application.” Source: Planning Act 2008: Guidance for the examination of applications for development consent” DCLG, 2015 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/418015/examinations_guidance-final_for_publication.pdf we do remain hopeful, however, that the ExA may reconsider its decision not to invite, pursue or allow relevant expert witnesses.*

- That is due to the alternative of locating the same turbines truly offshore to achieve higher efficiency output in better wind regimes, but without the adverse ecological impacts of disturbing the more ecologically sensitive balance of nature inshore, and without the landscape / seascape transformation and loss of natural beauty.
- It is centrally important to break down or unpack national benefit in terms of underlying policy aims set out in the NPS and other relevant Energy Policy documents.
- This can be done qualitatively and quantitatively (the latter to the extent possible) in matrix or simple spreadsheet formats so that the criteria are clear, explicit, understandable, and transparent for the public and stakeholders. Here we refer to listing the wide range of national benefits and disbenefits over the 2030 -2050 period when Rampion 2 would operate before decommissioning sometime around 2050.
- The single most important step and opportunity to help calibrate the national benefits would be for the Examination to ask for system value economic modelling analysis from Ofgem, National Grid or a competent power authority who already have the necessary data, expertise, and that capacity. There are precedents and reports on how that analysis informed DCO (Energy) Examinations of recent.¹⁰
- The key aspect is that system value analysis modelling is available and has been used to quantify the value associated with proposed infrastructure additions to the UK energy supply mix (such as Rampion 2), including the flexibility that a particular project would offer in terms of meeting power system reliability criteria and wider energy security and climate policy objectives and constraints.
- This analysis requested by the ExA would be performed as expert advice offered to the Examination in a timely manner. It is something we hope the ExA will reconsider.
- Again, we believe these steps would add significant value to the Examination. They are warranted in the Examination of a £3-4 billion infrastructure development, the cost of which must be repaid via consumer tariffs and taxes plus a healthy rate of return for developers and investors.¹¹
- Value for money in delivering low-emission power supply is important and relevant to local communities in the sense that it is a major factor in upward pressure on the cost of local services, electricity bills and the local cost of living. That cascades down from national level impacts (disbenefits).

2-8 Other factors in this regard:

- The EN-1 Section 4.4 requirement to consider alternatives in this Examination and the manner it is prescribed affords the opportunity to benchmark the benefits and disbenefits of Rampion 2.
- That would offer the ExA a more complete picture and lead to a less subjective and better-informed understanding of national benefits

¹⁰ *The UK's Net Zero Teesside Power (NZT Power) will be the world's first commercial scale gas-fired power station with carbon capture. Power system value analysis was offered to inform the Examination. That undertakes least-cost optimisation of the capacity mix and operation of the power sector from now to 2050 considering a range of key inputs assumptions and constraints. The Rampion 2 ExA in conjunction with PINS and DESNZ can request it be done by competent power sector authorities who have the data, modelling capacity and expertise. It adds value to the application of NPS (2011) and NPS (Nov 2023) where critical national priorities expand the scope for considering Alternatives in DCO Applications when appropriate.*

¹¹ *Including investor incentive and the contract for differences (Cfd) subsidy enjoyed by the offshore wind industry along with multiple risk guarantees that apply whether there is too much or too little wind*

to weigh against adverse impacts in EN-1 para 1.1.2.¹² ¹²

- This benchmarking, for example, would include setting out clearly, even if only on a 1-10 scale (or high, low medium basis) where Rampion 2 stands in relation to other critical national priorities for low emission generation, or using simple rating, weighing, and scoring techniques for NPS policy-relevant factors such as:
 - Contribution to decarbonisation of the power sector by 2035
 - Quantum of low-emission electricity, variability and power output
 - Ability to boost dependable power supply to meet electrification mandates in the transport and heating sectors.
 - Role and contribution to National Grid system flexibility and stability, and the avoidance of local and societal disruption and economic dislocation from power brownouts and blackouts (weather dependent load shedding)
 - Relative economic life of alternatives (for the stream of benefits)
 - Energy security contribution, such as accounting for:
 - i) Resource supply and availability risk (e.g., wind, domestic or international natural gas (LNG) supply, or nuclear fuel)
 - ii) Vulnerability of the offshore infrastructure and assets to attack in future by hostile actors (geopolitical risk)
 - iii) Degree of import dependency supply chains for technology (market and geopolitical risk)
 - iv) Dependence on other countries for supply of proprietary technology in terms of price and availability risk.
 - Extent of economic boost for UK business and core industry strategies
 - Supply chain opportunities for UK businesses locally to nationally
 - Extent of high-value permanent job creation (locally or regionally)
 - Support for UK export and development assistance to help other countries on their low emission journeys (can UK export the technology, or know how).
- We also see achieving sustainability as a practical organising framework and lens to weigh up the local impacts to systematically assess whether the combined adverse impacts of Rampion 2 outweigh case-specific national benefits.
- Compensation for the degradation of protected national landscapes and their functions will not offset the loss to future generations, not only for people living on the south coast but nation-wide. Everyone is and will be increasingly encouraged to travel less abroad and to remain to enjoy our natural coastal heritage as island people.
- In this respect loss of natural beauty and the landscape / seascape transformation should be counted among the national disbenefits, alongside other national level disbenefits such as economic opportunity costs. ¹³

12 Discussed later in this Summary.

13 The opportunity cost includes the forgone opportunity to allocate financial resources elsewhere for power system expansion with low-emission generation and demand-side management where the same or greater benefit may be realised for less cost to society. It may also impact on the economic viability and efficient use of existing transmission and generation infrastructure leading to more costly back-up. Even with demand side management it is expected power demand will double between 2035 and 2050 (over the economic life of Rampion 2) due to electrification mandates for transport and heating end-uses.

- The latter arises in the case of variable and intermittent generation (such as weather dependent Rampion 2 power output) and the need to invest more to reliably balance supply and demand while maximizing the utilization of least cost or dependable generation sources. ¹⁴¹⁴
- In the longer term of course energy storage systems (e.g., in a hydrogen economy with surplus wind or even low emission nuclear providing electrolysis and coupled with hydrogen storage systems) may become viable, scalable and affordable.
- As indicated in the NPS that would eventually displace abated gas-fired backup generation, though possibly that vision expressed in the NPS is beyond the economic life of Rampion 2 (about 2050).

Overriding Issue 3: Would Rampion 2 advance or undermine sustainable development?

2-9 Sustainable development is an important and material consideration and highly important to residents and local communities who would be forced to host Rampion 2, if consented.

- Sustainable development is a golden thread running through many of the UK’s international treaty obligations. The achievement of sustainable development is stated as the overarching objective of the UK planning system.
- To our understanding that also implies avoiding activities and refusing consent on DCO infrastructure proposals that would undermine sustainable development. We believe a body of national to local policies in that regard are material to the case-specific Rampion 2 Examination and its setting.
- The NPS in EN-1 is explicit on the need to balance between the three objectives of sustainable development (i.e., social, environmental and economic objectives, and not pursue one at the expense of others). For instance:
 - In NPS EN-1, Para 2.2.7 we also note, “The Government’s wider objectives for energy infrastructure include contributing to sustainable development and ensuring that our energy infrastructure is safe ... sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed and affects the well-being of society and the economy”
 - The UK’s National Planning Policy Framework (NPPF, 2023) under Section 2 “Achieving sustainable development”, paragraph 8 states that “.... means that the planning system has 3 overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives)”.
 - The latter point on securing net gains across each objective we believe is highly significant and helpful as a basic “test” of whether Rampion 2 advances or undermines the achievement of sustainable development.

We further note that the NPPF provides a **presumption in favour of sustainable development** that is reflected in the NPS EN-1 for nationally significant infrastructure projects (NSIP) hence Rampion 2.

2-10 Other factors in this regard:

¹⁴ Under high renewable generation future scenarios, overall electrical grid stability is more challenging and costly to maintain, so dispatchable low carbon generating capacity will be required.

- As noted, we also see achieving sustainability as a practical organising framework and lens to weigh up local impacts and to assess conformity with various NPS provisions.
 - It helps to clarify things and reduce the degree of subjectivity in judging whether Rampion 2 advances or undermines sustainability for current and future generations.
 - Therefore, analysis and the metrics, such as achieving net positive gains for each of the three mutually reinforcing objectives are considered in our LIA Chapters.¹⁵

The consideration of Alternatives as an NPS policy requirement

2-11 Rampion 2 is examined under the 2011 version of NPS EN-1 (Overarching, 2011) and EN-3 (Renewable Energy Infrastructure, 2011); however, we were advised by PINs in Section 5.1 Advice that the Secretary of State when considering what the ExA recommends may take into account the NPS update (November 2023) that becomes law in early 2024.

2-12 This has local impact ramifications in respect to Overriding Issue 2 as we noted earlier, as well as offering policy guidance to actually identify viable low-emission alternatives to Rampion 2, as stipulated in the NPS.

We note that:

- Both the 2011 and Nov, 2023 versions of EN-1 make the consideration of Alternatives a case-specific government policy requirement in the Rampion 2 Examination.
- Energy infrastructure DCO decisions have recently been overturned in Judicial Reviews for not fully taking Alternatives fully into account or in a cursory manner.¹⁶
- The requirement under in EN-1 (2011) is in Policy 5.9.10, and in Section 4.4. These apply in the Rampion 2 situation because the onshore infrastructure physically interferes with designated landscapes (e.g. with SDNP via the transmission route). And the offshore infrastructure is hugely problematic in respect to landscape / seascape effects and protections on designated landscapes (i.e., SDNP); and in view of the policy protections as noted earlier in this summary in Overriding Consideration 1.
- The NPS policy requirement under policy 5.9.10 EN-1 Alternatives¹⁷, requires the Examination specifically to consider:

“ ... the cost of, and scope for, developing elsewhere outside the designated area or meeting the need for it in some other way, taking account of the policy on alternatives set out in Section 4.4.” Our underlining for emphasis:
- EN-1 (2011) also states the three key elements of the Government’s policy and strategy for moving towards a decarbonised, diverse electricity sector are: (i) renewables; (ii) fossil fuels with carbon capture (CC on existing gas-fired power stations to make them NetZero and new gas-fired power station both with CC

¹⁵ This LIA concluded with evidence and cross-referencing other relevant representations that proceeding with Rampion 2 would undermine rather than advance the achievement of sustainable development of the Sussex Coast, lead to net biodiversity loss, and have other effects such that and the adverse impacts outweigh the National benefits.

¹⁶ A 2,000 MW sub sea and underground bi-directional electric power transmission link between the south coast of England (to the west of the proposed Rampion 2 location) and Normandy in France <https://www.judiciary.uk/wp-content/uploads/2023/01/Aquind-v-SSBEIS-2023-EWHC-98-Admin-24.1.2022-Lieven-J.pdf>

¹⁷ Because the transmission infrastructure physically disrupts the South Downs National Park and the offshore infrastructure have adverse seascape / landscape effects on the natural beauty, character and functions of the National Park which enjoys high protection status.

and hydrogen-ready high efficiency turbines); and (iii) new nuclear where the new generation of small modular reactors (SMRs) are important in the NPS.

- Now that EN-1 (Nov, 2023) has made all three above low-emission generation systems critical national priorities, we argue that it is important and relevant for each to be considered as Section 4.4 alternatives where they could achieve the same, or greater national benefit over the same timeframe (or longer) than Rampion 2 from its commissioning around 2030 and over the Rampion 2 life span of 20-25 years.¹⁸
- As noted:
 - Paying serious attention to the consideration alternatives under the Section 4.4 policy requirement, apart from identifying a genuine better way forward than Rampion 2, is highly useful to inform judgements on whether Rampion 2 adverse impacts outweigh national benefits – by informing the benefit side of the equation.
 - These national benefits are identified in the NPS, especially, but not only, including the supply of dependable, reliable and affordable low-emission generation to achieve decarbonisation of the power sector by 2035.
 - System value analysis modelling would make the ExA task of considering alternatives in the Rampion 2 Examination far easier.
 - At the same time as being highly useful to help benchmark Rampion 2 against alternatives, as warranted for a £3-4 billion infrastructure investment that has a cascade of effects from national to local levels.
 - Similarly, the EIA requirements for within-project alternatives require considerable attention in the Examination, in particular relating to alternatives to the onshore cable right-of-way cutting through South Downs National Park and the proposed substation location. We welcome that attention to that question to date in the Examination.
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Other policy considerations

2-13 In broader terms, drawing lessons on how NPS policy was applied in the Examination for previously proposed south coast windfarms, from the Examination Documents and especially the ExA Report and Secretary of State (SoS) Decision Letters is helpful, namely:

- The Application for the Rampion 1 installation consented in 2014 and the Application for the Navitus Bay Wind Park scheme further

18 *Three technologies as in the PCS Submission acknowledged in writing by the SoS of DESNZ: (1) allocating the Rampion 2 turbines to an existing licence for an offshore windfarm at a very early stage of project preparation on south Dogger Bank in a high density wind regime, truly offshore, to take advantage of economies of scale and synergies that are in the interest of the same developer and the national interest (where a win-win negotiation is feasible given the political will); (2) carbon capture retrofit of existing gas-fired power stations already having high efficiency combine cycle gas turbines (CCGT) to make them net-zero (as a point source), and; (3) flexible, fast delivery factory-built small modular reactors (SMRs) driving steam turbines co-located on decommissioned large nuclear sites where all the transmission connections are in place (7 UK locations to be decommissioned by 2030). The latter two are areas of advanced UK expertise and basis for an industrial strategy as noted in the NPS.*

west along the south coast that was refused consent in 2015.

This in particular regarding:

- Complexity and divergent views on the application of visual buffers in both cases. The case study write ups for both in the OESEA visual impact update (2020) and the OESEA-4 are also of particular interest.
- The assessment of impacts of the offshore element on local residents and the tourism economy in the Navitus Bay case, including the merits of properly conducted visitor surveys compared to what the Rampion 2 Applicant offers (we address that concern in Chapter 4);
- Consideration of the poor experience with restoration and efficacy of mitigation in the transmission right-of-way on Rampion 1 development as cited in PAD Statements and Relevant representations for Rampion 2; and
- The recent Awel y Môr offshore windfarm extension project in Wales that was proceeding at roughly the same time as the Rampion 2 proposal in the DCO process, with the same Applicant, but was genuinely reduced in scale due to impacts on the tourism economy and residents in Wales is also insightful and helpful.

2-14 There are several outstanding policy questions that local communities have raised with stakeholders during earlier DCO stages that did not receive a clear response. We hope the Examination can shed light on these and take them into account.

Among these include:

- How did the Rampion 2 extension bid in 2017 where the competitive bid criteria was extensions could be no larger than the project it was extending end up with Rampion 2 a 1,200 MW project?
- Rampion 2 will create a four-fold increase over the 400 MW of Rampion 1 infrastructure (400MW + 1200MW = 1,600 MW). We see that as beyond the capacity to absorb that degree change to the character of our area.
- We assume there were valid reasons for the bid criteria to limit extensions to the size of the original installation, to avoid unacceptable cumulative impacts and wholesale industrial transformation of the seascape.
- Another aspect to consider is taking into account the existing DCO provisions for Rampion 1 in legal effect. The Rampion 1 DCO signed in 2014 explicitly states that in any change / extension the turbines can be no more than 15% taller than 140m (as explained in this Chapter). Is this lawful?

The Applicant's consideration of national policy

2-15 It is acknowledged that the Applicant's Preliminary Environment Impact Report (PEIR) carried forward and repeated in the Environment Statement (ES) in the Application largely intact describes many aspects of the extensive policy landscape, reasonably thoroughly and in many cases accurately.

However, there are key omissions and shortcomings.

- These include the Applicant's failure to represent policies and practices accurately, or take account of certain policy, where the Applicant's ES

dismisses or ignores policies that argue against consenting Rampion 2.

- These relate to the three overriding considerations noted in this Summary.
- Similarly, the way that the Applicant categorically rejected PINs Section 51 Advice in early September 2023 when the Application was Accepted for Examination – essentially conditionally (as described in Chapter 1) - the Applicant categorically rejects the relevance of visual buffers.
- And it is silent on the European Convention on Landscapes in this regard.
- At the same time the ES is silent on the fact that the ECL, as interpreted in the German Offshore Wind Law in effect from 2017, would not permit a scheme of the scale and proximity to the German coast as Rampion 2.

Chapter 2 Conclusions:

2-16 Overall, we feel the three overriding considerations highlighted in this Summary weigh substantially against recommending consent for this Rampion 2 Application.

2-17 The evidence we gathered, digested and present in these Chapters suggest that:

- Ecosystem functions and the integrity of natural capital on the south coast will be rendered even less resilient and vulnerable to long-term climate change, because of Rampion 2 construction and operation.
- Moreover, viable alternatives that are designated in NPS as critical national priorities for low-emission generation are available.
- We believe the evidence shows alternatives would do more and offer greater value for money to achieve national benefits, and in particular to decarbonise the power sector by 2035 and increase dependable power supply to meet policy-mandated electrification for transport and heating and help back up variable Renewable technology.
- Critically for us, is the fact that, alternatives are available that will reduce upward pressure on household and small business electricity bills as compared to Rampion 2. Reality is that despite the UK having achieved among highest share of variable wind and solar in its national generation mix among major economies in the world, we have among the highest electricity prices in the world, certainly in Europe.¹⁹
- Overall the £3-4 billion capital outlay for Rampion 2 does not represent value for money for UK society, relative to other critical national priority alternatives for bulk low-emission electricity supply - at least for the near to medium term.²⁰

2-18 We agree with the former BEIS in its strategic policy statement in August 2022 that, *“Clearly there are choices within the future electricity system pathway over which technologies to build, when to build them, and how to operate them.”*²¹

19 Evidence is that despite the UK having achieved among the highest share of variable wind and solar in its national power generation mix among major economies in the world, we have among the highest electricity prices in the world, certainly in Europe. UK power tariffs are expected to increase for the foreseeable future.

20 Overall the £3-4 billion capital outlay for Rampion 2 and considering the low efficiency of turbine on the south coast inshore as compared to the same turbines located in truly offshore in higher and steadier wind regimes (and in locations respecting the ECL) indicates (1) Rampion 2 does not represent value for money for UK society relative to other critical national priority alternatives for bulk low-emission electricity supply at least for the near to medium term.

21 Source: *Electricity Networks Strategic Framework: Enabling a secure, net zero energy system*, Department

2.2 International Treaties and Commitments

2-19 In its Environment Statement (ES) on Rampion 2 the Applicant cites a range of international commitments and agreements that are reflected in the UK's own national legislation and policy framework relevant to environment protection and management, achieving sustainability, addressing climate change, low-emission energy promotion, and reduction in carbon emissions to achieve decarbonisation of the power sector.

- Rampion 2 as a low-carbon renewable aligns with the UK international commitments for the accelerated integration of renewable energy in the generation mix to decarbonise the power sector by 2035.
- But then the Applicant completely ignores the policy requirement for the consideration of alternatives in Section 4.4 of En-1 and their relative merits.
- Where the Rampion 2 Application is most problematic and not aligned to international commitments and treaties, as we argue the evidence shows, is it becomes specifically challenging in relation to commitments under the European Convention Landscapes and the commitment to sustainable development and the body UK policy and law in that regard.

2-20 There are number of international agreements on sustainable development, habitat protection, climate change and renewable energy promotion relevant to the consideration of Rampion 2. Among these include:

- **The Convention on Biological Diversity:** a legally binding treaty which has among its main objectives the sustainable use of the components of biological diversity.
- **The Ramsar Convention on Wetlands** of International Importance and Waterfowl Habitat that has some relevance to the Rampion 2 onshore component and indicated in PAD Statements.
- **The European Convention on Landscapes:** Which we focused on in the summary section where we believe Rampion 2 breaches and if not, an outright breach is against the principles and spirit of the ECL and aligned UK policy and Law.
- **EU Directives** adopted into UK Law, such as:
 - Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (the Habitats Directive')
 - Directive 2009/147/EC on the conservation of wild birds (the 'Birds Directive')
- **The United Nations Framework Convention on Climate Change (UNFCCC):** adopted in with the dual objective to invest in (a) in climate change adaptation, and (b) in climate mitigation, e.g.:
 1. Kyoto Protocol (1997)
 2. The key Paris COP Agreement
 3. Subsequent Annual Conference of Parties (COP meetings and statements of commitments
 4. The Inter-Government Panel on Climate Change (IPCC) Reports every 4 years.

2-21 Again, we acknowledge the description the Applicant offers of these international commitments and obligations and agreements. Where we differ and take issues with the ES is of Business, Energy and Industrial Strategy (BEIS), August 2022.

whether any of them imply that Rampion 2 should be consented.

- Rather we argue that among many concerns Rampion 2 is not consistent with body environment protection policy / obligations regarding accepted international definition of sustainable development.
- Nor is the Rampion 2 Application respectful of the UK’s OESEA strategic environmental safeguards based on UK and international experience.
- This considering there are reasonable alternatives to achieve national policy objectives that cost less in the public interest.
- In Figure 2-1 below the ExA Rule 6 Letter indicates a failure of Rampion 2 would lead to a recommendation not to consent. We also believe a failure in overriding issue 3 is fundamental to rejecting the Application. While they overlap a failure in one consideration in our understanding would lead to a recommendation to refuse consent.

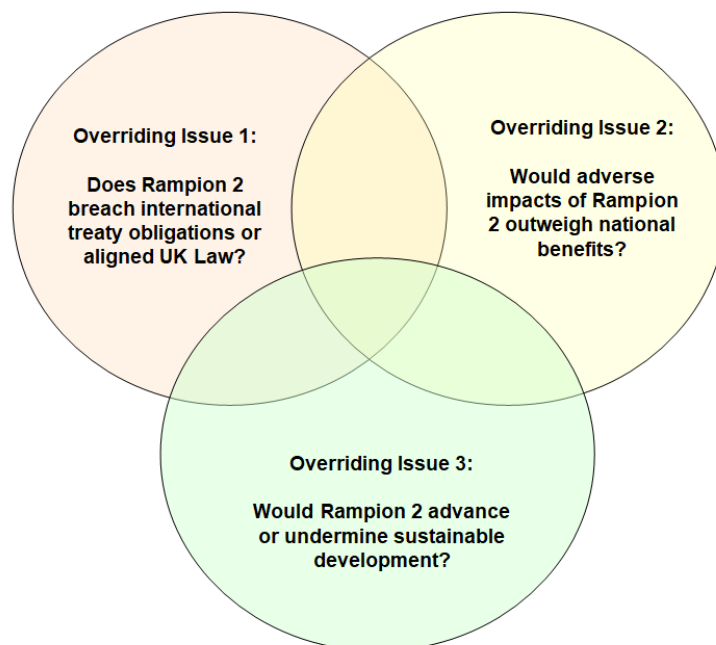


Figure 2-1 Overriding issues overlap and reinforce

2.3 National-to-Local Policy

National Level Polices

2-22 A variety of evolving national legislation, policies and strategies are directly relevant to the consideration of Rampion 2. As mentioned, the consistent golden thread running through them is “the overarching purpose of the planning system to contribute to the achievement of sustainable development” (NPPF, Sept 2023).

2-23 Among key driving legislation and different policy fields that provide the policy context for the consideration of the Rampion 2 Application include:

In the Planning Policy Field

2-24 Only to indicate some main ones:

- The Planning Act (2008) under a Labour government first established the Development Consent Order (DCO) process for central government to consider

applications from international and national private sector developers for Nationally Significant Infrastructure Projects (NSIP), including offshore wind energy projects.

- The PA2008 (updated) subsequently under a coalition Government provides roles, authorities, and statutory deadlines that the Examination and DCO process must respect.
- The Localism Act 2011 amended the Planning Act (2008) and reframed the institutional roles and decision authorities for the (DCO) process for NSIPs.²² The notion of local environmental stewardship was also reconfirmed at that time in Law, although somewhat contradictory in the eyes of many.
- The National Planning Policy Framework, (2023, updated) cites and elaborates as noted above, “the overarching purpose of the planning system is to contribute to the achievement of sustainable development”.
- In respect to the voice of the SDNPA in the Rampion 2 Examination this is significantly enhanced by the Levelling-up and Regeneration Act 2023.
- The National Infrastructure Strategy, (HM Treasury, 2020) presents the UK Government’s plans to deliver significant improvements to UK infrastructure to enable economic growth and progress towards the net zero by 2050 ambition.

2-25 These simply illustrate policy ambitions under different Government’s that now provide the context for interpretation of the NPS 2011 in this Examination.

In the Energy Policy Field

2-26 Among the relevant legislation and policies include:

- i.) The Energy Act 2004 (amended) - from our perspective, one of the most significant aspects was the legal definition of the renewable energy zone or (REZ) stating 12 nautical miles (22.2 km) from shore, coupled with the MMO defining offshore as beyond 12 nautical miles. Rampion 2 turbine arrays start just over 6 nautical miles from shore.
- ii.) Relevant White Papers: The UK Government Energy White Paper (HM Government, 2020). The Energy White Paper notes that the current NPS remain in force for the Rampion 2 Examination during the NPS review process.
- iii.) National Policy Statements for Energy - the suite of 6 National Policy Statements that form the main basis for Examinations to consider NSIP energy projects such as Rampion 2.
 1. Overarching National Policy Statement for Energy (EN-1)
that sets out general assessment principles relevant to all energy projects. Part 5 (2011) sets out “generic impacts” that may arise from the development of energy infrastructure covered by the energy NPS.
 - NPS EN-3, the Statement for Renewable Energy
That specifically looks at offshore windfarms. Section 4 of this Chapter looks at the relevant NPS in effect for the Rampion 2 Examination in greater detail.
- iv.) The Energy Policy Update April 2022. The National Grid network plans for offshore energy, and

22 Transferred DCO decision-making responsibilities to DECC (present-day Department for Energy Security and Net Zero) and established the Planning Inspectorate (PINs) under the then Ministry for Housing Community and Local development (MHCLD) and NSIP planning process and provided for an Examining Authority to make a recommendation to the Secretary of State on whether to approve a Development Consent Order (DCO) Application.

v.) The NPS, Nov 2023 that comes into effect in 2024 which the Secretary of State may consider the final decision on Rampion 2.

The Environment Policy Field:

2-27 Several including:

- The Conservation of Habitats and Species Regulations (2017) and the Conservation of Offshore Marine Habitats and Species Regulation (2017). The Habitats Regulations is regarded as England’s most effective protection for nature.²³
- The Environment Act (2021) with powers to amend parts of the Habitats Regulations by statutory instrument, meaning they don’t have to go through Parliament.
- The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (EIA Regulations, 2017) that are important in several respects including consideration of within-project alternatives for the onshore component of Rampion 2.
- The Offshore Energy Strategic Environment Assessment (OESEA) process – the latest in the rolling programme being the OESEA (2020) update of visual buffers for offshore windfarms and subsequent OESEA-4 (2022) which is singularly important to the consideration of the design of the proposed offshore element of Rampion 2 and as a sustainable development safeguard for windfarm Duos that conforms to the ECL and is reflected in the NPS.
- The Wildlife and Countryside Act (1981, as amended), and
- Countryside and Rights of Way Act 2000 (as amended).
- The Environment Impact Assessment (EIA) Regulations have specific relevance to the considerations of within-project alternative as regard to the transmission route and substation element as in the Rampion 2 ES.

For Sustainable coastal and marine development

2-28 Among the relevant marine policies for the Rampion 2 Examination include:

- The Marine and Coastal Access Act (2009, amended).
- National Marine Policy Statement (MPS, 2021 update)²⁴ that was prepared for the purposes of section 44 of the Marine and Coastal Access Act 2009.

2-29 The 2021 MPS among other actions relevant to the Rampion 2 Examination reinforces the consideration of the European Convention on Landscapes (ECL) as it related to the inseparability of Seascape/ Landscape protection.

- Marine Policy Statements as such include, “landscapes with views of the coast or seas, and coasts and the adjacent marine environment with cultural, historical and archaeological links with each other.”
- The coasts and seas of the UK have a diverse character, which has or is being defined through the existing and ongoing identification of landscape and seascape character areas which account for the key characteristics of these areas.
- The OESEA-4 I (2022) describing MPS note the wider the wider recognition

23 [REDACTED] *Wildlife and countryside link*

24 <https://www.gov.uk/government/publications/uk-marine-policy-statement/guidance-to-the-uk-marine-policy-statement-from-1-january-2021>

of landscape (with seascape) in the UK is now being brought about through national and regional planning policy, including marine planning.

“Such characterisation and assessment may be undertaken at the regional and more local scale. The protection of areas regarded to be of particular importance in full or part for their landscape, has to date in the UK been through designation of, for example Areas of Outstanding Natural Beauty, National Scenic Areas and National Parks, however the wider recognition of landscape in the UK is now being brought about through national and regional planning policy, including marine planning.”

- The MPS also provide policy for preparing area plans aiming to contribute to sustainable development of the UK marine areas. These include:
 - The Conservation of Offshore Marine Habitats and Species Regulation, 2017
 - The South- East Marine Plan
- All the above are part of the body of policies that have relevance to the Rampion 2 Examination. In the South-East Marine Plan these include:
 - It is necessary to consider the impact of the (any) proposal on the marine environment and the relevant policy consideration in the South Inshore and Offshore Marine Plan including those, for example:
 - **Policy S-TR-1** 'Proposals supporting, promoting or facilitating tourism and recreation activities, particularly where this creates additional utilisation of related facilities beyond typical usage patterns, should be supported'.
 - **Policy S-TR-2**, 'Proposals that enhance or promote tourism and recreation activities will be supported. Proposals for development must demonstrate that they will, in order of preference: a) avoid, b) minimise, and c) mitigate significant adverse impacts on tourism and recreation activities’
 - **Policy SCP-1** “Proposals that may have a significant adverse impact upon the seascapes and landscapes of an area should only be supported if they demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate d) if it is not possible to mitigate, the public benefits for proceeding with the proposal must outweigh significant adverse impacts to the seascapes and landscapes of an area and its significance. Underlining ours)

National Policy Planning Framework (NPPF)

2-30 The following NPPF (2023) paragraphs are relevant to the consideration of local impacts of Rampion 2 and for the ExA weighing whether the proposed development and its design would support or undermine the achievement of sustainable development. ²⁵ [\[1\]](#)

2-31 These same principles are supported explicitly by the NPS (Energy) and the body of national to local policies as noted previously.

2-32 To illustrate:

25 EN-1 States, “The (NPPF) Framework does not contain specific policies for nationally significant infrastructure projects. These are determined in accordance with the decision-making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the National Planning Policy Framework) - NPPF.” PCS points to the similar and consistent consideration of sustainable development as the overarching objective of the UK planning system in the NPPF and suite of relevant NPSs (Energy).

- Under NPPF (Dec 2023) Section 2, Achieving Sustainable Development, it notes that “Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):
- Under the NPPF Section 15: “Conserving and enhancing the natural environment, now Para 180. “Planning policies and decisions should contribute to and enhance the natural and local environment by:
 - a. protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
 - b. recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
 - c. maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
 - d. minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks that are more resilient to current and future pressures;
 - e. preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, considering relevant information such as river basin management plans; and
 - f. remediation and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.”

Levelling-up and Regeneration Act 2023

2-33 Participants in the Rampion 2 Examination should be aware of changes in Protected Landscapes provisions (paragraph 245) of the Levelling-up and Regeneration Act 2023 that came into force on 26 December 2023.

2-34 The text in para 245, 3(b) page 263 under the Protected of Landscapes section is stricter than before (“must seek to further the purposes” rather than “have regard to”). Our understanding is It places the onus on the Applicant to justify to the ExA and Secretary of State in the Rampion 2 Examination there will be little or no harm to the natural beauty of the SDNP, as the Applicant’s ES asserts.

The Act in para 245 3(b) states:

- In section 11A (duty to have regard to purposes of National Parks)— (a) in the heading, for “to have regard” substitute “in relation”; (b) after subsection (1), insert—

“(1A) In exercising or performing any functions in relation to, or so as to affect, land in any National Park in England, a relevant authority other than a devolved Welsh authority must seek to further the purposes specified in section 5(1) and if it appears that there is a conflict between those purposes, must attach

greater weight to the purpose of conserving and enhancing the natural beauty, wildlife and cultural heritage of the area comprised in the National Park.

“(2A) The Secretary of State may by regulations make provision about how a relevant authority is to comply with the duty under subsection (1A) (including provision about things that the authority may, must or must not do to comply with the duty).”

2-35 Natural England provided the following response 15 Dec 2023 to the ExA in another DCO examination on the effect of the Levelling up Act, which has specific relevance to its application the Rampion 2 Examination.

2-36 Because of its relevance and connection with the interpretation in the Rampion 2 Examination of whether Rampion 2 is in breach of the European Convention on Landscapes (how the ECL is interpreted by the Rampion 2 ExA) we cite that Natural England comment in full below.²⁶

“2 Annex 2: Natural England’s addendum to our Deadline 9 response in relation to the enhanced duty in relation to Protected Landscapes including the Kent Downs Area of Outstanding Natural Beauty.

2.1.1 Natural England apologise for inadvertently omitting our advice in relation to the enhanced duty on public bodies in respect of Areas of Outstanding Natural Beauty provided through the Levelling Up and Regeneration Act in our Deadline 9 Response.

2.1.2 As discussed during Issue Specific Hearing 11, Section 245 (Protected Landscapes) of the Levelling Up and Regeneration Act 2023 places a duty on relevant authorities in exercising or performing any functions in relation to, or to affect, land in a National Park, the Broads or an Area of Outstanding Natural Beauty (‘National Landscape’) in England, to seek to further the statutory purposes of the area. The duty applies to local planning authorities and other decision makers in making planning decisions on development and infrastructure proposals, as well as to other public bodies and statutory undertakers.

2.1.3 It is anticipated that the government will provide guidance on how the duty should be applied in due course. In the meantime, and without prejudicing that guidance, Natural England advises that:

- The duty to ‘seek to further’ is an active duty, not a passive one.(PCS underlining) Any relevant authority must take all reasonable steps to explore how the statutory purposes of the protected landscape (A National Park, the Broads, or an AONB) can be furthered;
- The new duty underlines the importance of avoiding harm to the statutory purposes of protected landscapes but also to seek to further the conservation and enhancement of a protected landscape. That goes beyond mitigation and like for like measures and replacement. (again PCS underlining) A relevant authority must be able to demonstrate with reasoned evidence what measures can be taken to further the statutory purpose. If it is not practicable or feasible to take those measures the relevant authority should provide evidence to show why it is not practicable or feasible.

(PCS Note: this applies to the Applicant in the Rampion 2 Examination where the South Downs National Park Authority has objected to the Application on these and other grounds)

²⁶ Natural England provided a response 15 Dec 2023 to the Lower Thames Crossing Examination within annexes appended to this letter. Letter title, “Application by National Highways for an Order Granting Development Consent for the Lower Thames Crossing, Natural England’s response to Deadline 9a”.

- The proposed measures to further the statutory purposes of a protected landscape, should explore what is possible in addition to avoiding and mitigating the effects of the development, and should be appropriate, and proportionate to the type and scale of the development and its implications for the area and effectively secured. Natural England’s view is that the proposed measures should align with and help to deliver the aims and objectives of the designated landscape’s statutory management plan. The relevant protected landscape team/body should be consulted.

Methods and Standards

2-37 In addition to policy, an array of methods and standards apply in major infrastructure development of the complexity of Rampion 2, a number of which are relevant to local impacts. For example, these range from visual impact assessment standards, to tolerated thresholds for underwater noise and landscape noise levels (traffic and construction), to mitigation standards for biodiversity and environment and social effects.

2-38 There are also many performance, technical and safety standards. Some of these concerns about these standards are raised in Relevant Representations and PAD Statements as cited in other Chapters of this LIA.

2.3.2 Local Level Policies

2-39 There are local policies that genuinely support sustainable development, such as where Sussex County and District and Town and Parish Councils indicate Rampion 2 would have significant adverse impacts (environmental, social, and economic) for coastal and inland communities framed around achieving sustainable development.

- The Applicant’s PEIR that was carried over to the ES noted that, “Although the DCO Application should take into account environmental, social and economic benefits and adverse impacts at a local level, the onshore area of the Proposed Development falls within the jurisdiction of Arun District Council, Horsham District Council and Mid-Sussex District Council”.

Local Plans that apply include:

- The Arun Local Plan (Arun District Council, 2018);
 - The Horsham District Planning Framework (Horsham District Council, 2015)
 - The Mid-Sussex District Plan (Mid-Sussex District Council, 2018); and
 - The South Down National Park Local Plan.
- Only to illustrate, among the policies in Local Plans that apply include the Arun District Local Plan 2011 - 2031: Policy C SP1 Countryside, that states:

“Proposals that may have a significant adverse impact upon the seascapes and landscapes of an area should only be supported if they demonstrate that they will, in order of preference: a) avoid b) minimise c) mitigate d) if it is not possible to mitigate, the public benefits for proceeding with the proposal must outweigh significant adverse impacts to the seascapes and landscapes of an area and its significance.”

2-40 The latter is particularly relevant taken together with relevant NPS EN-1 provisions and the Levelling-up and Regeneration Act (2023) giving weight to Boards of designated

landscapes and the fact SDNP after considerable evaluation has objected strongly on multiple grounds in respect to both the offshore and onshore infrastructure.

2.4. The National Policy Statements (NPS)

2.4.1 General

2-41 The Planning Act (2008, amended) indicates the suite of NPS (2011) provide the primary basis for the Examination of the Rampion 2 Application and basis for the recommendation on whether the Secretary of State should grant, or withhold development consent. In particular, two of the six NPS (Energy) prevail in the Rampion 2 Examination:

- NPS-1 Overarching (2011): containing policies that apply to the DCO assessment of Applications across the range of energy technologies and concerns and impacts common to all energy technologies (generic impacts).
- NPS-3 Renewable Infrastructure (2011): containing policies to apply unique to each technology, in this case the sections on offshore wind (specific impacts).

2-42 Other NPS in the suite of 6 NPS are important in the Rampion 2 Examination in the sense the policy requirement for considering alternatives is established in EN-1 Alternatives because the proposed Rampion 2 infrastructure encroaches on a designated landscape, as is noted in NPS policies in Tables 3-1 and 3-2 that follow.

2.4.2 Application of NPS EN-1 and EN-3 Policy on Rampion

2-43 Tables 2-1 and 2-2 highlight policies PCS feels are important and relevant in NPS EN-1(2011) and EN-3 (2011) respectively, for the Rampion 2 Examination considering local impacts and more generally. Concerns with the application of that policy are indicated in the right-hand column, alone where we provide argument and evidence to support the interpretation we would like the ExA to give weight.

2-44 For brevity the text on those policies is truncated. Appendix 1 offers more complete list for tracking the NPS policies in Tables 2-1b and 2-2b.

**Table 2-1: Highlighted National Policy Statement Paragraphs
EN-1 Overarching (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
1.1.2	<p><i>The Planning Act 2008 also requires that the IPC must decide an application for energy infrastructure in accordance with the relevant NPSs except to the extent it is satisfied that to do so would:</i></p> <ol style="list-style-type: none"> <i>1. lead the UK being in breach of its international obligations.</i> <i>2. be in breach of any statutory duty that applies to the IPC;</i> <i>3. be unlawful.</i> <i>4. result in adverse impacts from the development outweighing the benefits; or</i> <i>5. be contrary to regulations about how its decisions are to be taken.</i> 	<ul style="list-style-type: none"> ▪ 1 and 4 of this overarching policy and its application is crucial to the Rampion Examination. ▪ 1 in relation to the European Convention on Landscapes (seascapes / landscape) protection is indivisible (equal) ▪ 4 as a central judgement owing to the scale and nature of the Rampion ▪ Otherwise, the fair societal allocation of adverse impacts is an underlying value in UK society; thus equitable allocation of benefit and cost is part of this calculation and judgement.
2.2.4	<p><i>It is important that the planning system ensures that development consent decisions take account of the views of affected communities and respect the principles of sustainable development.</i></p>	<ul style="list-style-type: none"> ▪ Public consultations are front loaded in the pre-application stage of the DCO Process. ▪ There are ongoing, deep concerns that views of local communities have been taken adequately into account by the Applicant as set out in Adequacy of Consultation (AoC) representations and indicated in many Relevant Representations during pre-Examination
2.2.7	<p><i>The Government's wider objectives for energy infrastructure include contributing to sustainable development and ensuring that our energy infrastructure is safe. Sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed affects the well-being of society and the economy..."</i></p>	<p>Safeguards such as visual buffers for offshore wind farms there for that very reasons, as is consideration of alternatives (a policy requirement in this case) to understand the national benefit and opportunity cost of consenting Rampion 2 given it has a £3-4 billion development cost.</p>
5.9.9	<p><i>Under Development proposed within nationally designated landscapes: ... may grant development consent in these areas in exceptional circumstances. The development should be demonstrated an assessment of:</i></p> <ul style="list-style-type: none"> <i>- (item 2 of 4) the cost of, and scope for, developing elsewhere outside the designated area or meeting the need for it in some other way, taking account of the policy on alternatives set out in Section 4.4</i> 	<p><i>The NPS policy pertinent to the consideration alternatives for low emission generation in the Rampion 2 Examination.</i></p> <p><i>This analysis will better inform judgments on the national benefits of Rampion 2 in Policy 1.1.2 (adverse impacts outweigh benefits)</i></p>

Table 2-2b: Highlighted National Policy Statement Paragraphs: EN-3 Renewable Infrastructure (NPS 2011)		
EN-3 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
2.4.2	<i>Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology.</i>	The requirement is reiterated in Section 3.5 of the draft NPS EN-3 (DESNZ, 2023b), <i>respect of landscape and visual amenity and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.</i> "
2.6.17	<i>Applicants should set out how they have drawn on the Government's Offshore Energy SEA in making their site selection.</i>	<i>Crucial to applying OESEA visual buffers for the minimum distance turbines can be to designated landscapes and highly sensitive visual receptors. The Applicant did not. It dismissed them as irrelevant,</i>
2.6.43	<i>The applicant should assess the effects the project could have (as set out in EN-1 paragraph 4.2.8) to ensure that the project as it may be constructed has been properly assessed (the Rochdale Envelope). In this way the maximum adverse case scenario will be assessed, and the IPC should allow for this uncertainty in its consideration of the application and consent.</i>	This did not happen. The PEIR worst cases that were consulted, and the Application were different. The Pins S51 Advice Letter to the Applicant 10 Sept 2023 which was explicit on the failing.
2.6.59	<i>Under Biodiversity: Biodiversity considerations to which applicants and the IPC should have regard concerning offshore infrastructure include: fish; seabed habitats – intertidal and subtidal; marine mammals; and birds.</i>	<i>Points to biodiversity impacts considered in the LIR chapters 6 and 7.</i>
	<i>Policies are further elaborated in Chapter 2 for: fish; seabed habitats – intertidal and subtidal; marine mammals; and birds.</i>	As above. The concern in each case being Rampion 2 leads to net biodiversity loss not net gain

2.5. Local impacts across important policy themes

2-45 This section looks at the consideration of impacts and the application of relevant NPS policy in the Examination and other relevant factors wish the ExA to consider.

2-46 It offers reasons for that consideration in the ExA's recommendation on whether the Secretary of State should grant or withhold development consent. These are:

1. Advancing not undermining the Achievement of Sustainable Development
2. Full respect for OESEA Strategic Environment advice for visual buffers
3. Full respect for Habitat Regulations and the protection of Natural Capital
4. Consideration of Alternatives
5. Ensuring Respect for Existing DCO Terms, and
6. Lessons from South Coast Windfarm DCO Applications

2-47 These have relevance to applying the NPS 2011 (EN-1 and EN-3).

2.5.1 Advancing not undermining the achievement of Sustainable Development (SD)

2-48 Part 2 of the NPPF (updated in Sept 2023) 1 sets out the centrality of the presumption in favour of sustainable development, “Achieving Sustainable Development *“The purpose of the planning system is to contribute to the achievement of sustainable development”* (para 7) *“So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development”* (paras, 10 and 11). The NPS similarly have a presumption for sustainable development as in Table 2.1 previously.

2-49 While evidence suggests that consenting Rampion 2 would undermine rather than support the achievement of sustainable development and the substantial policy relevance is clear we note the following.

Practical Point of View

2-50 From a practical point of view and for efficiency in the Rampion 2 Examination, sustainable development is helpful for Interested Parties and the ExA to better weigh up whether:

- The adverse impacts of Rampion 2 outweigh the benefits (relevant to NPS EN-1 para 1.1 as cited previously), and
- Rampion 2 would undermine, rather than support the achievement of sustainable development of south coast inshore waters and affected coastal and inland communities.

2-51 In this respect the sustainable development framework offers the ExA and IPs a tangible, less subjective way of understanding, discussing and judgement about the Application. When broken down and explained it is immensely important to people:

- That is in the context of considering the local impact reports offered by statutory consultees and comment by other Interested Parties in relevant and written representations.
- It enables the ability to look at the balance across the 3-pillars of sustainable development (social, economic, and environment dimensions) from construction, through operation and decommissioning stages, thus considering how Rampion 2 impacts current and future residents and the visitor economy.

2-52 Specifically, achieving sustainable development is defined in Law as pursuing three overarching objectives (environment, social and economic objectives) that are “interdependent and need to be pursued and balanced in mutually supportive ways”.

- The essence of balance is that one objective of sustainability must not eclipse the other two objectives. Three pillars must be balanced to achieve benefit, stability, and fairness for the

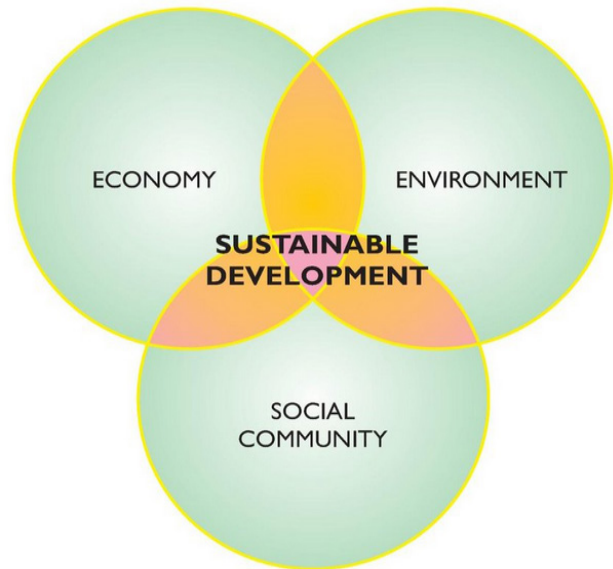


Figure 2-1
Overriding issues overlap and reinforce

needs of both current and future generations.

- PINS Advice Note One on Local Impact Reports reinforces this view where it indicates that the Examining Authority is assisted if submissions “give views on the relative importance of different social, environmental or economic issues and the impact of the scheme on them”.

- Similarly this is reinforced in EN-1 policy:

- Para 2.2.4, “It is important that the planning system ensures that development consent decisions take account of the views of affected communities and respect the principles of sustainable development.” and

- Para 2.2.7, “The Government’s wider objectives for energy infrastructure include contributing to sustainable development and ensuring that our energy infrastructure is safe ... sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed and affects the well-being of society and the economy. For example, the availability of appropriate infrastructure supports the efficient working of the market so as to ensure competitive prices for consumers.” Our underlining for emphasis.

2-53 When many residents and community organisation who would be required or forced to be “host communities” for Rampion 2 look across three principal objectives of sustainable development we see:

As a contribution to the environment objective:

- There is no question that RWE has funded extensive environmental investigations to inform its Environmental Statement and RWE’s commercial preferences for the design and layout of the £3-4 bn proposed development and that environmental surveys are ongoing.
- Equally, there is no question that complexity and uncertainty in assessing the magnitude and significance of ecological disturbances (in construction and decades of operation) means that any avoidance, mitigation and management measures proposed by the developer will never eliminate inherent risks to ecosystem functions and the environment.
- Moreover, there is risk and a high probability the 4-5 year construction and operation 20-25 years from 2030 will lead to net biodiversity loss in the coastal marine environment, as well as in the air affecting migrating birds and flying insect populations that move cross-channel in massive numbers, the latter also linking to loss of pollination services rendered on both-sides of the channel and ultimately impacting food security, and on the land affecting terrestrial ecology.
- Beyond that, it is universally recognised there are limitations in marine science and experience assessing long-term cumulative impacts of this recent generation of large wind turbines installed in ecologically sensitive inshore locations. Seemingly, the precautionary principle is suspended for the ecosystem impacts of strategic infrastructure located inshore.
- Rampion 2 construction and operation risks making sensitive marine and terrestrial ecosystems even more vulnerable and less resilient to long-term climate change.

As a contribution to the social objective:

- Statements from local authorities including Arun District Council, West Sussex

County Council, and Horsham Council suggest the Rampion 2 project will have adverse impacts on tourism and beneficial enjoyment of coastal living of many residents.

- As in Chapter 4 we develop these concerns along the lines of the likely significant effects on people which are unique to the design, construction, operation and eventual decommissioning of Rampion 2 and its setting under seven themes:

- Social values
- People’s health, well-being, tranquillity
- Sense of place, character of the area and capacity to absorb change
- Community cohesion
- Loss of cultural and heritage value
- Risk and uncertainty
- Transparency and perceptions of fairness
- Indirect effects impacting local services and the cost of living

- There are also National-level social impacts (disbenefits) resulting from degraded south coast natural beauty assets and designated landscapes that limit opportunity for enjoyment of the coast and all the intrinsic social values.

As a contribution to the socio-economic objective:

- Statements from local authorities including Arun District Council, West Sussex County Council, and Horsham Council suggest the Rampion 2 project will have little local socio-economic benefit, as noted in Chapters 4 and 5 in this LIA.
- The likely adverse impacts on the tourism economy are noted in Chapter 5.
- In fact, we argue with evidence they would be negative, due to potentially serious net adverse impacts on tourism and beneficial enjoyment of coastal living of many residents.
- There are also negative economic impacts at the National level to take into account, such as the economic opportunity cost (linked to value for money) of not pursuing other critical national priority (CNP) infrastructure for low emission bulk generation that offer the same, or even more National benefit across all policy metric at less cost, as well as national-level social-economic impacts resulting from degraded south coast assets.

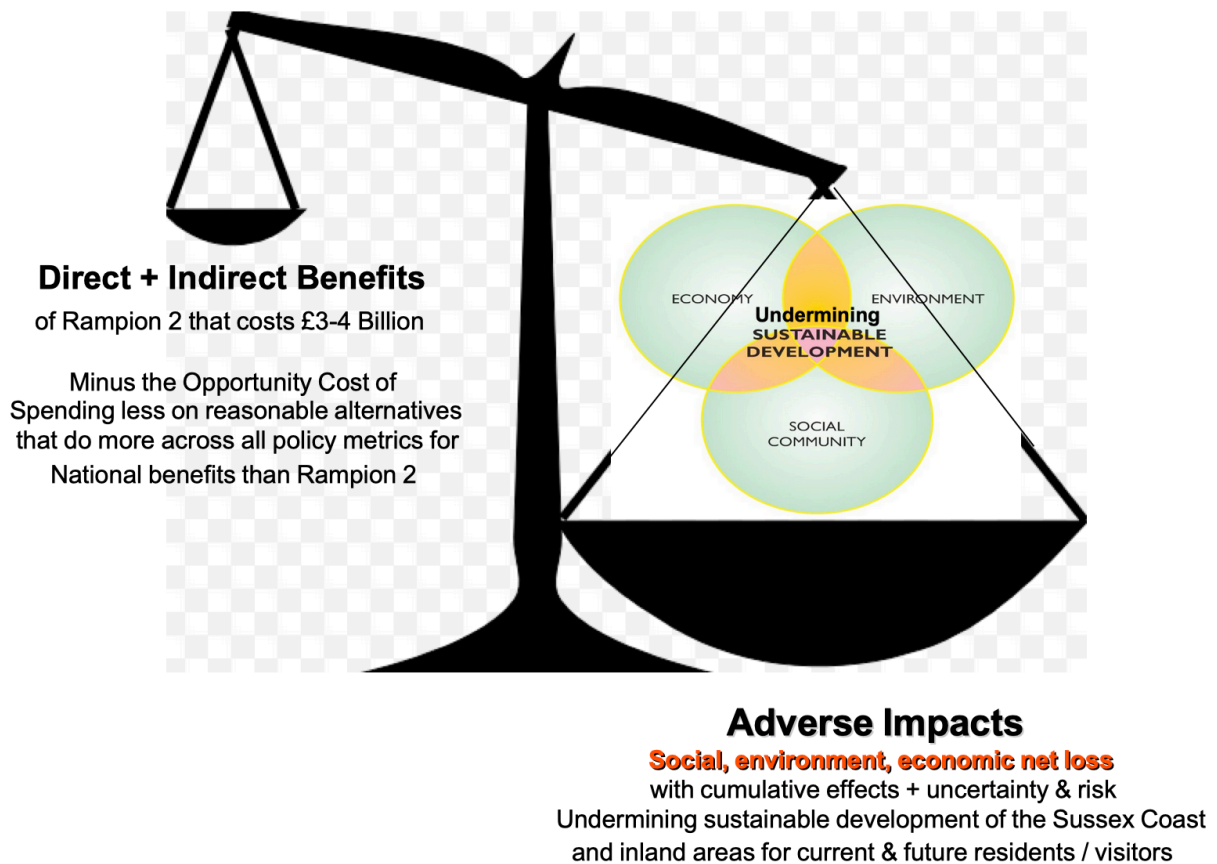
Our perspective based on the Sustainable Development framework and policy lens

We believe Rampion 2 does not achieve or advance sustainable development in light of the UK planning systems 3 overarching objectives which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives).

2-54 How we see this in graphical form combine with the task of understanding whether the adverse (+ national disbenefit) outweigh the national benefit is as follows.

2-55 Consensus on this issue as argued by 18 leading UK environmental organisations in 2020, including the RSPB, Friends of the Earth and the Wildlife Trusts is one of concern. They called for better coordination to ensure minimum of disruption of the environment across the whole UK offshore wind portfolio. In summary:

Figure 2-3: Adverse impacts of Rampion 2 outweigh potential benefits



The groups warned that the current planning system (now under review by Government even as this Rampion 2 proposal advances), “ has failed to take a strategic view of how windfarm infrastructure could be accommodated in a way that allows fragile and degraded marine ecosystems to recover from disturbances.” These national environmental groups argue, “Offshore wind infrastructure can be designed sensitively for nature if a transparent system of strategic and spatial planning of future offshore wind and associated grid infrastructure is put in place”.²⁷

12.5.2 Ensuing respect for OESEA Strategic Environment advice

2-56 The Rampion 2 Environment Statement (ES) repeatedly dismisses the OESEA advice as being only, “a high level ‘buffer’ study ... it is a strategic tool and is not guidance or a roadmap for placing of wind farms...” (ES, Volume 2, Chapter 15: Seascape, landscape, and visual impact assessment. Pages 52, 53 and further on).

- That was the Applicant’s primary response when statutory consultees raised concerns about the failure to consider and the lack of conformance to the OESEA visual buffer advice, including in comments by local authorities and the South Downs National Park Authority (SDNPA).
- Contrary to the Applicant’s assertions the OESEA (BEIS) commissioned

research and analysis, “Review and Update of Seascape and Visual Buffer study for Offshore Wind farms”, 2020, as in the link below is clear that:

- i.) Offshore wind turbines do have significant impacts on people, when in visible close proximity to coastal communities and designated landscapes, and
- ii.) The suggested buffer distances that the OESEA offers are precisely to be taken into account on wind farm proposals such as Rampion 2
- iii.) These are based on a comprehensive review of domestic and international experience (buffer policy and project-level experience).

https://assets.publishing.service.gov.uk/media/5ef9a3abd3bf7f769a4e7742/White_Consultants_2020_Seascape_and_visual_buffer_study_for_offshore_wind_farms.pdf

- The OESEA research (2020, above link to the Govt website) goes on to state that its purpose is to support: “Analysis of wind farms coming forward in respect of their seascape and visual impact assessments (SVIAs), focussing on visual impact of a proposed development alone and cumulatively with other wind farms.”
- And in respect to the DCO processes where buffers have the legal status of advice to be considered in the Examination as to “how it is taken into account” (as in NPS EN-3), the OESEA research (2020) says while the (buffers), “... do not necessarily suggest no-go areas for development. These areas would need to be subject to careful further assessment and consideration should development be proposed within them (that is for Applications like Rampion 2 that are clearly in the buffer zones).”
- The wording of the Advice was intended to be flexible and non prescriptive to reflect the general philosophy of allowing for exceptions provided there where sound reasons where the visual impacts were not significant in a given context.

2-57 As a point of reference, the White Report (2000) on visual buffers commissioned by BEIS for the OESEA in its International Review of visual buffers in the case of Germany indicated that:

- “6.29. *The German market regulation changed with the introduction of the WindSeeG (Offshore Wind Act) which became law on 1 January 2017. The WindSeeG introduces a centralised planning approach, which involves an Area Development Plan. This outlines the location and construction schedule of future transmission assets, currently out to 2025.*
- “6.30. *The majority of new areas coming forward are 115km or more offshore in the North Sea. In the Baltic, the areas defined are extensions of existing wind farms at the outer edge of the German exclusive economic zone (above 25 km from the coast). The draft environmental report of the draft Site Development Plan for the North Sea (BSH (1), 2019) indicates that there is a limit of a height of 125m wind turbines within sight of the coast and islands (2.15, page 148).”*

2-58 The BEIS updated advice on visual buffers is adopted in the in the OESEA-4 (2022) where it also discusses the application of visual buffers for offshore wind in European jurisdictions that conform to the European Convention on Landscapes (ECL).

2-59 For context, under the EN-3 (2023) section titled Offshore Energy Strategic Environmental Assessment (page 33) it says:

- para 3.8.25, “ *In proposing sites for offshore wind, NSIP applicants should demonstrate that their choice of site takes into account the*

government’s Offshore Energy SEA 4 and any successors to it.”

- Para 3.8.26, “The government is undertaking a rolling Offshore Energy SEA programme, including a research programme and data collection to facilitate future strategic and project specific assessments to achieve the 50GW ambitions.”

The OESEA Advice

2-60 As to the magnitude of change that Rampion 2 would have, we looked to OESEA experience and evidence base.

- OESEA research offered the following regarding magnitude of the likely impact of offshore wind turbines on people linked to change in the character of the areas the ability to absorb change.
- As noted in Table 2.3 below, Rampion 2 is described in the right-hand column. Rampion 2 has an overwhelming number of factors that increase the magnitude of the impact and change.
- One might argue that Rampion 1 may be in between or even better described by factors in the left-hand column.

Table 2.3	
Likely magnitude of Change of the Character of the Areas due to offshore windfarms	
Factors that tend to decrease apparent magnitude (sample):	Factors that tend to increase apparent magnitude (sample): The Rampion 2 Situation
Long-distances; Small proportion of horizon occupied Small percentage of development visible; Integration through siting Sky lining Low visibility Absence of visual clues Wind farm not focal point Complex scene Low contrast; and High elevation	Short distances; Large proportion of horizon occupied Large percentage of development visible Strong contrast due to poor siting or layout Backgrounding High visibility Visual clues Wind farm is focal point Simple scene High contrast Low elevation, and Night-time lighting.
Source: Table 5.1, BEIS Update of OESEA Seascape and Visual Buffer Assessment: White Consultants Page 34 Final Report March 2020	

2-61 The OESEA-4 further in Table 2.4 provides a further interpretation of language used to describe the magnitude of likely change as below.

Table 2.4: Rampion 2 in relation to magnitude of Change to the Character of the Area by offshore wind turbines.

Magnitude	Other terms used	Name	Descriptors – appearance in central field of vision	Definition
Very Large	high, very high substantial, very substantial,	Dominant	Commanding, controlling the view, foremost feature, prevailing, overriding	Proposed offshore wind farm causes very large alteration to key elements / features / characteristics of the baseline seascape or visual conditions (pre-development) such that there is a fundamental change.
Large	Medium, high Moderate - substantial	Prominent	Standing out, striking, sharp, unmistakable, easily seen	Proposed offshore wind farm causes large alteration to key elements / features / characteristics of the baseline seascape or visual conditions (pre-development) such that there is an unmistakable change.

Source: OESEA-4 derived material from the BEIS Update of OESEA Seascape and Visual Buffer Assessment: White Consultants Page 34 Final Report, March 2020. The OSEA-4 notes “Useful definitions of magnitude of change are set out to assist consistency of approach in Table 5.2. These are derived originally from the University of Newcastle Study (2002).”

2-63 That OESEA evaluation based on domestic and international experience is for a 500 MW windfarm that is offered for illustration purposes. Rampion 2 at 1,200 MW is over twice that size of the example and where the Rampion 2 Application proposes up to 90 turbines up to 325m tall with arrays starting 13 km from shore (yellow range in Table 2.5).

Table 2.5: OESEA-4 (2022) Assessment of Relative Magnitude of effect turbine height/capacity and distance from shore / viewpoint

Turbine Height / Capacity MW	Distance from Shore / Viewpoint			
	13km	18km	24km	35km
250m Tall 15 MW	Large	Moderate / Large And Large	moderate	Very small
350m Tall 20 MW	Large and Very Large	Large	moderate	small

Note: Yellow indicates where Rampion 2 falls plus Rampion 2 is 1200MW.
Source: OESEA – 4 (2022) Table 5-28
View of potential magnitude of effects for 500MW offshore wind farm scenarios viewed at 22m AOD (Above Ordnance Datum or mean sea level). Rampion 2 is 1200MW.

2-64 OESEA-4 otherwise explicitly states that the UK’s objectives and indicators for seascape / landscape protection include:

- Objective: To accord with and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/landscape including designated and non-designated areas.
- Guide Phrases: Activities do not adversely affect the character of the landscape/seascape, or do not exceed the capacity of the character of an area to accommodate change.
- Indicator: No significant impact on nationally designated areas (including the setting of heritage assets).

2-65 In question and response correspondence with BEIS in April 2022, PCS asked for clarification on the status of the BEIS commissioned visual buffer update with two questions which BEIS kindly responded to: ²⁹

- PCS Question: “Does the White Report (2020a) remain in effect as part of the BEIS rolling SEA programme?”
- BEIS Response: “The report was commissioned to inform OESEA4 and given the scale of the turbines it covers, is it considered that it will usefully inform the SEA programme for some time. The report is an independent piece of research and is not considered to have a time limited period of currency; it relies on a review of project level assessment outputs, current policy, wireline assessment and other factors affecting visibility which may need to be updated at some point in the future to reflect technology and other advances.
- PCS Question: Specifically, do the suggested distances for visual buffers in the White Report (2020a) as shown Table 13.4 at the end of this email, remain in effect?”
- BEIS Response: There have been no updates to the distances in Table 13.4 of the White Consultants (2020a) report since its publication. It is recommended that Table 13.4 be read and interpreted in conjunction with the rest of the report. The table does not reflect universal distances within which wind farms should not be sited, but instead reflects a combination of the review of seascape visual impact assessment and wireline assessment outputs interpreted in relation to current policy for the protection of different landscape designations, providing a generic level of guidance on the possible range of distances within which such landscapes may be affected.

2-66 We note the Applicant’s PEIR offered a set of assumptions and expert judgements by its consultants to derive the seascape and visual amenity impact conclusions that it reached – essentially no adverse impact. ³⁰ We also note the inadequacies of the Applicant’s assessments in LIA Chapters 3 and 5 including:

- lack of clarity in the judgements behind the sensitivity and magnitude (degree of change) of the natural seascape, as may be seen by different groups of residents and visitors to the Sussex coast.

²⁹ Email correspondence with BEIS is available.

³⁰ Thus the Applicants PEIR, on the basis of a limited Desk Study using what it cites as professional judgement about the sensitivity and magnitude (degree of change) to define visual impacts concludes: that the 1200 MW Rampion 2 scheme with turbines up to 325m, far larger in profile than the existing Rampion 1 installation (Rampion 2 at 9-16 MW each WTG versus Rampion 1 at 3.5 MW per WTG, 140m tall) and far more expansive in occupying the Sussex Bay - would have similar (negligible) impacts as Rampion 1.

- the mode of pre-application consultation with Applicant-led virtual engagements controlling the nature and pace of dialogue and the know inadequacy of visual representations on small screens.

2-67 Chapter 3 indicates where we raised issues with the SLVIA / LVIA and in Chapter 5 challenges the efficacy of the subjective PEIR hypothesis and conclusions on impacts or residents and tourism carried forward to the ES that are at odd with the substantive OESEA review of national and international experience. We again point out that Laws in the Applicant's home county have similar effect as the OESEA buffer advice in keeping with commitments under the European Convention on Landscapes (which is a stated objective in OESEA-4 as noted earlier in this section).

2.5.3 Ensuring full respect for Habitat Regulations and protection of Natural Capital

2-68 Alongside commitments under the Convention on Biodiversity, we believe that ensuring full respect for the conservation and protection of natural capital as provided in a body of national-to-local legislation and policy, as well as in international obligations is important and relevant in this Examination

2-69 These link to sustainable development and local stewardship of natural capital and achieving net biodiversity gains in resource utilisation and management

2-70 Rampion 2 significantly and adversely impacts these concerns, we believe, under any reasonable interpretation of policy. In fact, we believe the evidence indicates that it will make sensitive and fragile ecosystems now under multiple pressures, even more vulnerable and less resilient to the effects of climate change from the day construction starts.

2-71 The Conservation of Habitats and Species Regulations (2017 as amended) protect hundreds of wildlife sites in England—across millions of hectares of land, freshwater and sea—and over one hundred rare or vulnerable animal, bird, and plant species. The Habitats Regulations cover the sites of greatest significance and international importance for nature, for which the UK has a special responsibility: breeding and resting sites for rare and threatened species, plus precious natural habitats that are at risk.

2-72 The Regulations provide these sites with protection through the designations of Special Areas of Conservation (SACs), which in turn provide protection to a variety of special species and habitats, and Special Protection Areas (SPAs), that in turn provide protection for rare and vulnerable birds and their habitats.

- These protections also extend to internationally important wetland Ramsar sites as a matter of policy.
- These Habitats Regulations designations (SAC and SPA) give a higher level of legal protection than domestic protections, such as Sites of Special Scientific Interest (SSSIs), including through a legal requirement to assess potential impacts on protected sites (Habitats Regulations Assessment or HRA).

2-73 There is a hierarchy of protection rules for SACs, SPAs and Ramsar sites and SSSIs with protection, conservation of Ramsar sites having high status in international obligations (The RAMSAR Convention on Wetlands) and the UK's National Parks and Areas of Natural Beauty enjoying high status under the European Convention on Landscapes and aligned UK laws, policy

and strategic environment advice as set out earlier in this Chapter.

2-74 The specific biodiversity impacts and cumulative ecological impacts of Rampion 2 on the Sussex Coast seabed, in the water, in the air and on land arising from the construction and operation and eventual decommissioning of the infrastructure makes ecosystems even more vulnerable to future climate change and so much sooner that those losses would in fact be felt – from as early as 2025 if construction starts then.

2-75 In chapters 6 and 7 of this LIA we argue with evidence and local knowledge (and perspective) that the construction of Rampion 2 poses a range of very significant threats to wildlife and ecosystem functions, and loss of biodiversity corridors that are also reflected in comments by statutory consultees including Natural England and the Marine Management Organisation and Interested Parties. There is uncertainty in the impacts as well as the efficacy of mitigation measures.

2-76 There is no question that complexity and uncertainty in assessing the magnitude and significance of ecological disturbances (construction and 20-25 years of operation) means that any avoidance, mitigation and management measures proposed by the Applicant will never eliminate inherent risks to ecosystem functions and the environment.

2-77 Beyond that, there are well-documented limitations in marine science and experience in assessing long-term cumulative impacts of this recent generation of large wind turbines installed in ecologically sensitive inshore locations. Seemingly, the precautionary principle is suspended for the ecosystem impacts of strategic infrastructure located inshore.

2.5.4 Consideration of Alternatives

2-78 Consideration of within-project alternatives is a requirement of EIA Regulations (2017). It is a case-specific policy requirement under the NPS EN-1 Section 4.4 titled Alternatives to consider the scope and cost of low-emission alternatives to the entire Rampion 2 proposal that offer the same or greater national benefit. It appreciated that Applicants are under no obligation to assess alternative outside their scoping area - except as required by National Policy Statements (NPS).

Within Project Alternatives: Under EIA 2017 Regulations

2-79 Schedule 4 of the EIA Regulations requires the Environmental Statement (ES) to provide, "A description of the reasonable alternatives (for example in terms of development

Box 2-1: Are inshore marine ecosystems more sensitive to windfarm installations than locations well offshore?

“Richard Benwell, chief executive of Wildlife and Countryside Link, which coordinated the letter to ministers, said: “It’s heartbreaking when action to improve one aspect of our natural world harms another. A headlong race to build offshore wind could be ruinous for marine ecosystems, but it’s not inevitable.

With intelligent reform of offshore planning to prioritise space for clean energy and for nature in our seas, the UK can achieve its laudable net zero aspirations at the same time as bringing life back to our ocean.”

design, technology, location, size and scale) studied by the developer, which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects.”

2-80 We note this matter has been taken up in the Examination for the onshore element of Rampion 2 and offer no further comment in this Chapter on that aspect.

2-81 The question of within-project alternatives for the offshore component was raised by PCS members in consultation responses and directly with the Applicant during the pre-application consultation period. That is not mentioned in the Applicant’s Consultation Report submitted with the Application in August 2023. We do not have the resources to revisit the topic in this LIA.

2-82 We note also that the Applicant under EIA Regulations is to identify and assess a without-project case. We believe that it would add tremendous value to the Examination if that was done in conjunction with the consideration of alternatives to Rampion 2 under the NPS EN-1 Section 4.4 requirement.

EN-1 Section 4.4 Alternatives

2-83 As noted in the Chapter Summary there is a policy requirement to consider alternatives outside the scoping area in the Rampion 2 Examination which is triggered by NPS EN-1 (2011) provision under the section titled, “Developments Proposed within Designated Landscapes”.

- EN-1. para 5.9.10, “... may grant development consent in these areas in exceptional circumstances. The development should be demonstrated to be in the public interest and consideration of such applications should include assessment of:
 - the cost of, and scope for, developing all or part of the development elsewhere outside the designated area, or meeting the need for it in some other way, taking account of the policy on Alternatives set out in Section 4.4.” (Our underlining)
 - EN-1 Section 4.4 goes on to stipulate the conditions that need to be met in policies.
 - The SDNP Authority has objected to Rampion 2. This is also important as the NPS (2023, EN-1) para 5.10.31 maintains the same stipulations for developments that encroach a National Park, and states further that the views of the Boards responsible for the Park (i.e., the SDNPA in the Rampion 2 case) “... should be given substantial weight by the Secretary of State in deciding on applications for development consent in these areas”.

2-84 Section 4.4 in NPS EN-1 stipulates:

- In para 4.4.2, “in some circumstances, the relevant energy NPSs may impose a policy requirement to consider alternatives (as this NPS does in Sections 5.3, 5.7 and 5.9).” It is case specific. In the Rampion 2 case it is 5.9.10, as noted above.
- In para 4.4.3, “Where there is a policy or legal requirement to consider alternatives the applicant should describe the alternatives considered in compliance with these requirements,”
- We offer further comment on the relevant NPS provisions in the Chapter 2 Attachment 1 that satisfy the requirements in set out in para 4.4.3.

2-85 The three alternative for low emission generation to deliver national benefits equal to or

greater than Rampion 2, over the operational life of Rampion 2, and possibly even longer than Rampion 2 and for better value for money that emerge from the national policy statements and priorities and include:

- i.) Moving Rampion 2 turbines to an existing licence for an offshore windfarm at a very early stage of project preparation on south Dogger Bank in a high-density wind regime, truly offshore, to take advantage of economies of scale and synergies that are in the interest of the same developer and the national interest (where a win-win negotiation is feasible given the political will);
- ii.) carbon capture on new gas-fired power stations also made hydrogen-ready, having high efficiency combine cycle gas turbines (CCGT) where this starts off as being net-zero compliant (as a point emission source)³¹, as well as:
- iii.) flexible, fast delivery factory-built small modular reactors (SMRs) driving steam turbines co-located on decommissioned large nuclear sites where all the transmission connections are in place (7 UK locations to be decommissioned by 2030). The latter two are areas of advanced UK expertise and basis for an industrial strategy as noted in the NPS.

2-86 Other NPS (2011) policies thus come into play, including para 3.5.6 that stipulates the three key technology choices in the Government's strategy for moving towards a decarbonised, diverse electricity sector by 2050 are (i) renewables in this case, an alternative offshore wind location; (ii) fossil fuels with carbon capture and storage (CCS); and (iii) new nuclear.³²

2-87 The NPS (November, 2023) reinforce this selection of alternatives as it makes all three low-emission systems a critical national priority. We believe that adds sufficient weight to their consideration in the Section 4.4 obligation in the Rampion 2 Examination.

2-88 Again we see the consideration of alternatives under Section 4.4 as massively helpful to inform the ExA's consideration of whether "adverse benefits outweigh the national benefits", as noted in the Summary, so that critical judgment is less subjective, also recognising the alternatives must offer realistic prospect for equal or more National benefit than Rampion 2 over the economic life of Rampion 2.

2-89 Apart from pointing to viable alternatives, the Section 4.4 consideration of alternatives also important to understand the degree of national disbenefit (economic opportunity cost) with Rampion 2 and provide a benchmark (Rampion 2 versus Section 4.4 alternatives) that everyone can see and understand in the Examination.³³

³¹ As in the Net-Zero Teesside gas-power station expected to be operational 2026-2027. <https://infrastructure.planninginspectorate.gov.uk/projects/north-east/the-net-zero-teesside-project/> As NPS indicate to meet the 2035 ambition of a decarbonised power sector it will be essential to retrofit existing natural gas-fired power stations with carbon capture (CC). Otherwise, if they are shut down there will not be enough dependable power to back up the build out variable and intermittent renewable sources including offshore wind. This is especially important given demand on the national Grid is expected to at least double between 2035 and 2050 due to various factors, especially electrification mandates for heating and transport.

³² For the foreseeable future low-emission gas turbines (abated) and steam turbines run by reactors (SMRs) will be the main source dependable power supply. In future energy storage systems and possibly hydrogen will play a role (as per the NPS) though possibly not at scale during the economic life of Rampion 2.

2.5.4 Respect for existing Development Consent Order terms

2-90 The Rampion 1 DCO signed in 2014 explicitly states that when considering additional turbines, such as by extension of the array fields the new turbines can be no more than 15% taller than the Rampion 1 turbines (which is 140m). That we understand would apply to the Rampion 2 extension area.

2-91 That is not mentioned, clarified, or taken into account in the Applicant's PEIR and ES. Previous PCS correspondence with PINs asking about the matter of conformity with existing 2014 Rampion DCO terms before the Rampion 2 team was set up at PINs was:

- From PINs, "A DCO for an offshore wind farm extension can amend an extant DCO for the original offshore wind farm and include all or part of the original DCO order limits within the proposed order limits of the extension application".
- We responded that while we now appreciated the Inspectorate has the powers to alter existing DOC terms; in the Rampion 2 DOC process local communities would still like to understand and have the matter clarified, for example:
 - i.) What was the purpose and rationale of the DOC this limitation to "extensions" to Rampion 1 in the first place in 2014? and
 - ii.) What rationale and quantifiable evidence has changed in terms of adverse visual impacts on our coastline that would warrant relaxing any 2014 terms agreed?
- At that time in April 2021 we felt that this question needed to be pursued, given the proposed Rampion "extension" development which Natural England saw as an entirely new project with a different scope and scale (i.e. size of turbines in relation to the existing installation and the mitigation potential in terms of an open mind on the part of the Developer to possible within-project alternatives), and what later came to our attention, the assessment of alternatives under Section 4.4 of NPS, as a rationale safeguard to avoid bad decision to the tune of £3-4 bn.

2.5.5 Lessons learned from other south coast windfarms

2-92 It is important to draw lessons, as the OESEA has done of domestic and international experience on visual buffers and as the NPS advise in EN-1 para 5.9.19 as in Appendix 1 as we not in Appendix 1. We believe how the Applicant was narrow, one-sided, and entirely misleading by not even mentioning Navitus Bay Examination experience in their Desk study and insisting that Rampion 1 offers the only lessons is concerning.

2-93 Our view of the Applicant's failing on this aspect, or that of failing to consider previous relevant experience and lessons emerging from other DCO offshore windfarm applications, is not only on the south coast but elsewhere is addressed in Chapter 5. There now have been three NSIP windfarm DCO Applications on the Sussex coast, namely:

³³ *Recognising also international financing (yet to secured with financial closure on Rampion 2) may not be 100% fungible unless creative solutions are sought such as granting the Applicant (RWE) additional license for up to 90 turbines up to 325m as "an extension" to the two recent awards in the southern area north sea of Dogger Bank in the Forth Offshore bid round concluding Jan 2023, <https://www.thecrownestate.co.uk/our-business/marine/Round4>. That would result in massive savings to the UK consumer due economies of scale and far higher capacity or load factors (outputs) and connection to an offshore grid – while avoiding the unwelcome and unnecessary national disbenefits (economic opportunity costs) and south coast landscape/ seascape disruption and biodiversity loss Rampion 2 would bring if consented.*

- Rampion, 400 MW (applied in 2010, consented in 2014 - £1.3bn)
- Navitus Bay Wind Park, 973MW (applied in 2010, refused in 2015 - £3.5bn)
- Rampion 2, 1,200 MW (pre-application since mid 2020 ~ £2.85bn)

2-94 SDNPA in its RR refers to the importance of drawing lessons from those and other Applications. In preparing this submission PCS drew on lessons comparing DCO activities and outcomes around three windfarm proposals to date. PCS also followed the experience with the same Applicant’s proposals for the Awel y Môr offshore windfarm extension project in Wales proceeding at roughly the same time as the Rampion 2 proposal in the DCO process, both having been awarded to RWE in 2017.

2-95 Attachment LIA points to several lessons on large turbines in inshore waters. The following only illustrates concerns raised in this LIA:

- What all these schemes proposed for UK territorial waters close to shore, or actually “inshore” have in common is they are not in offshore Renewable Energy Zone (REZ). That starts from 12 nautical miles, as declared in the Energy Act (2004).
- Large wind turbines not in the REZ re more visible to coastal residents and visitors. It has more significant impacts across a range of economic, social and cultural values, day and night.
- They affect sensitive and complex inshore ecology, habitat for marine life, coastal as well as migratory birds and insects and disrupt ecosystem functions more so than infrastructure in the REZ further offshore, which typically have significantly better wind regimes and energy generation.
- Where the three south coast windfarm schemes differ significantly is in respect to turbine size and height affecting their visibility, and their expanse across the seascape; thus the nature, magnitude and relative significance of their adverse social, environmental and economic impacts that challenge sustainable infrastructure credentials and public acceptance.
- The NPS acknowledge the impacts of windfarms in full view of residents and visitors of coastal communities are mostly negative across short, medium, and long terms.

Navitus Bay Wind Park

2-96 As mentioned we looked in detail at the approach and methods Bournemouth Borough Unitary Council (BBC) employed in its LIR as a starting point for the PCS LIA. The final sections of which cover the shortcomings of the visual impact assessments and the importance to Bournemouth of a continuing commitment to a green and sustainable environment.

Bournemouth Council (Written Representation Extract)

2-97 Among these:

- “The key issues arising from the proposal focus around damage to the environment undermining the achievement of sustainable development and consequential harm to the residents and the tourism industry. These issues are inextricably linked.
- Secondly, it is considered that the negative impact caused by the imposition of an “industrial landscape” on what is currently natural seascape will be to the detriment of the community aims and intentions and how the character is defined.

2-98 What the Bournemouth LIR said about paying more attention to residents' interests is noted as follows in 5.2. 24 of the Bournemouth LIR:

- "it will be important to recognise that residents may be particularly susceptible to changes in their visual amenity - residents at home, especially using rooms normally occupied in waking or daylight hours, are likely to experience views for longer than those briefly passing through an area.
- The combined effect on a number of residents in an area may also be considered, by aggregating properties within a settlement, as a way of assessing the effect on the community as a whole. Care must, however, be taken first to ensure that this really does represent the whole community and second to avoid any double counting of the effects."
- The potential impact on the tourists and visitors to the Borough are key concerns of the Council so we would not seek to substitute one group for the other just to give more appropriate weight to the adverse impact upon those who will always be able to view the wind farm.
- What residents in the Navitus Bay area stated, also applies to the Rampion 2 situations, "This is not a decision about wind power or no wind power. The issue is whether this huge industrial development is sensibly located as proposed." [REDACTED]

2-99 The Examination Panel have concluded the impacts are somewhere between the competing claims. That is in the Decision Letter on Navitus Bay

Awel y Môr Windfarm in Wales

2-100 PCS also suggests it relevant for the Examination ExA to recognise and take into account that RWE's PEIR for an extension wind farm pre-application in Wales proceeding at the same time essentially as the Rampion 2 pre-application was withdrawn in December 2021 after the formal consultation stage.

2-101 The extension wind farm pre-application in Wales was proceeding at the same time essentially as the Rampion 2 pre-application was withdrawn in December 2021 after the formal consultation stage. The RWE's Wales consultation came just after RWE's first Rampion 2 consultation round. There County (a unitary) Council objected. The key concerns as reported in two BBC media articles were:

- *"But Conwy planning officers advised councillors to oppose the plans, citing damage to the visual landscape, seascape, and harm to tourism.*

- **Conwy council: RWE's Awel y Mor offshore wind farm opposed:** [REDACTED]

- **Awel y Môr offshore wind farm plans scaled back:** [REDACTED]

2-102 Other notable items reported by the BBC Media in text as messaging there included :

- The original plans had caused concerns locally that green energy policies by both the UK and Welsh government were being forced on communities who would bear the brunt of their impact.

- There is an element of disconnect between local and national government - there needs to be a dialogue or what is the point of local government?"
- It was the "sheer scale" of the wind farm they were opposed to.
- RWE claimed they had taken the views of local communities into consideration when drafting their bid for Awel y Môr.

2-103 Common Lessons included:

- The pattern is the Applicant's consultants underplayed the impacts whereas the council local impact reports expose them.
- This is revealed clearly in the Navitus Bay and the Wales. The applicant's consultants will provide methods and assumptions and narrow selection of data to essentially prove there are no impacts. Or they are minor and can easily be mitigated.
- Claims without any basis were not contested. and
- Alternatives can be proposed and considered during Examinations.

6.3.4 Which National Policy Statements and the CNP

2-104 A final aspect is that PCS notes that the Rampion 2 Applicant references the NPS (2023, March) in various Chapters in the ES, led to some confusion. PCS thus asked PINs Section 51 Advice on the status of the NPS after the Rampion Application documents became public in September 2023.

An extract of PINs Advice to PCS available on the PINs website is noted in the footnote, which essentially said: ³⁴

- The 2011 version of the NPS (EN-1-6) which came into force in July 2011 remain in effect and will be applied in the Rampion 2 Examination; and
- The NPS (2023, revised) are potentially capable of being considerations in deciding the Application to the extent that the Secretary of State considers them relevant, regarding the specific circumstances of each development consent order application'.

2-105 Among concerns PCS then expressed to PINs, was that while the 2011 and 2023 versions of the NPS are similar in many respects, the 2023 version contains the Critical National Priority (CNP) clauses proposed in March 2023. Those clauses have substantial implications for offshore wind farm DCO Application such as Rampion 2.

³⁴ Extract from Pins Section 51 Advice to PCS dated 10 Sept 2023. "The SoS DESNZ has decided to conduct a review of the 2011 Energy NPS EN-1 to EN-5 under s6 of the Act. However, they have not decided to suspend those statements during the review period under s11 of the Act. Hence, the current suite of energy NPS' (EN-1 – EN6, which came into force in July 2011), remain as the designated policy for the purposes of s104. However, emerging draft NPSs are potentially capable of being 'important and relevant' under s104(2)(d). This is explained in the consultation document for the draft energy NPS' which sets out the transitional arrangements and specifies 'The Secretary of State has decided that for any application accepted for examination before designation of the updated energy NPSs, the original suite of energy NPS should have effect. The amended energy NPSs will therefore only have effect in relation to those applications for development consent accepted for examination after the designation of the updated energy NPSs. However, any emerging draft energy NPSs (or those designated but not having effect) are potentially capable of being important and relevant considerations in the decision-making process. The extent to which they are relevant is a matter for the relevant Secretary of State to consider within the framework of the Planning Act and with regard to the specific circumstances of each development consent order application'.

2-106 Following PINs Section 51 advice PCS has based this LIA and other PCS Written Representations on the 2011 NPS version in effect. Attachment 2 to this LIA further elaborates unresolved concerns this raises. PCS wrote to ask PINs and then to the Secretary of State's Office directly to consider a reasonable suspension of the Rampion Examination until the NPS (2023, proposed) review is complete. This is provided under Section 105 of the Planning act 2008. (need to update)

"The Inspectorate notes it is reference in Schedule 1 Part 1 for Work No.1, and in Part 3 Requirement 2 that the authorised development must not exceed 90 wind turbine generators (WTGs) and in Requirement 2(a), that they must not exceed a height of 325m. The Inspectorate notes, however, that no assessment of the effect of 90 WTGs appears to have taken place and evidenced in Chapter 15 of the Environmental Statement (seascape, landscape and visual impact assessment), where it appears that only 65 WTGs have been assessed. The Inspectorate considers that the dDCO needs reviewing to ensure that the total quantum of turbines sought has been fully appraised and assessed in the ES taken as a whole. This is further discussed in the paragraphs below.

Chapter 2 Appendix 1: NPS (2011) Tracking EN-1 and EN-3

**Table 2-1b: Highlighted National Policy Statement Paragraphs
EN-1 Overarching (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
1.1.1	<p>... This NPS, when combined with the relevant technology-specific energy NPS provides the primary basis for decisions by the IPC. Under the Planning Act 2008 the IPC must also have regard to any local impact report submitted by a relevant local authority, any relevant matters prescribed in regulations,</p> <p>Marine Policy Statement (MPS) and any applicable Marine Plan, and any other matters which the IPC thinks are both important and relevant to its decision.</p>	<p>IPC meaning the Infrastructure Planning commission subsequently revised with Planning Inspectorate and Examination Authority roles.</p> <p>Due to how NPS are worded the interpretation of the specific policy provisions is highly important.</p>
1.1.2	<p>The Planning Act 2008 also requires that the IPC must decide an application for energy infrastructure in accordance with the relevant NPSs except to the extent it is satisfied that to do so would:</p> <ol style="list-style-type: none"> 1. lead the UK being in breach of its international obligations. 2. be in breach of any statutory duty that applies to the IPC. 3. be unlawful. 4. result in adverse impacts from the development outweighing the benefits; or 5. be contrary to regulations about how its decisions are to be taken. 	<ul style="list-style-type: none"> ▪ 1 and 4 of this overarching policy and its application is crucial to the Rampion Examination. ▪ 1 in relation to the European Convention on Landscapes (seascapes / landscape) protection is indivisible (equal) ▪ 4 as a central judgement owing to the scale and nature of the Rampion ▪ Otherwise, the fair societal allocation of adverse impacts is an underlying value in UK society; thus equitable allocation of benefit and cost is part of this calculation and judgement.
2.2.4	<p>It is important that the planning system ensures that development consent decisions take account of the views of affected communities and respect the principles of sustainable development.</p>	<ul style="list-style-type: none"> ▪ Public consultations are front loaded in the pre-application stage of the DCO Process. ▪ There are ongoing, deep concerns that views of local communities have been taken adequately into account by the Applicant as set out in Adequacy of Consultation (AoC) representations and indicated in many Relevant Representations during pre-Examination
2.2.7	<p>The Government's wider objectives for energy infrastructure include contributing to sustainable development and ensuring that our energy infrastructure is safe. Sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed affects the well-being of society and the economy..."</p>	<p>Safeguards such as visual buffers for offshore wind farms there for that very reasons, as is consideration of alternatives (a policy requirement in this case) to understand the national benefit and opportunity cost of consenting Rampion 2 given it has a £3-4 billion development cost.</p>
3.5.6	<p>New nuclear power therefore forms one of the three key elements of the Government's strategy for moving towards a decarbonised, diverse electricity sector by 2050: (i) renewables; (ii) fossil fuels with carbon capture and storage (CCS); and (iii) new nuclear.</p>	
5.9.9	<p>Under Development proposed within nationally designated landscapes: National Parks, the Broads and AONBs have been confirmed by the Government as having the highest status of protection in relation to landscape and scenic beauty. Each of</p>	<p>This relates to the strengthening of protection of National Parks and their designated functions under the new Levelling-up and Regeneration Act (2023),</p>

**Table 2-1b: Highlighted National Policy Statement Paragraphs
EN-1 Overarching (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
	<p><i>these designated areas has specific statutory purposes which help ensure their continued protection and which the IPC should have regard to in its decisions. The conservation of the natural beauty of the landscape and countryside should be given substantial weight by the IPC in deciding on applications for development consent in these areas.</i></p>	<p><i>now in effect as noted in Chapter 2 text.</i></p>
5.9.10	<p><i>Nevertheless, the IPC may grant development consent in these areas in exceptional circumstances. The development should be demonstrated an assessment of:</i></p> <ul style="list-style-type: none"> <i>- the need for the development, including in terms of national considerations, and the impact of consenting or not consenting it upon the local economy.</i> <i>- the cost of, and scope for, developing elsewhere outside the designated area or meeting the need for it in some other way, taking account of the policy on alternatives set out in Section 4.4; and</i> <i>- any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.</i> 	<p><i>The NPS policy pertinent to the consideration alternatives for low emission generation in the Rampion 2 Examination. This analysis will better inform judgments on the national benefits of Rampion 2 in Policy 1.1.2 (adverse impacts outweigh benefits)</i></p>
4.4.1	<p><i>Under 4.4 Alternatives</i></p> <p><i>.... From a policy perspective this NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option.</i></p>	<p><i>4.4.2 applies and overrides this to create the requirement in the Examination</i></p>
4.4.2	<p><i>However:</i></p> <p><i>.... in some circumstances, the relevant energy NPSs may impose a policy requirement to consider alternatives (as this NPS does in Sections 5.3, 5.7 and 5.9).</i></p>	<p><i>This is met by paragraph 5.9.10 under Development proposed within nationally designated landscapes</i></p>
4.4.3	<p><i>Where there is a policy or legal requirement to consider alternatives the applicant should describe the alternatives considered in compliance with these requirements</i></p> <ul style="list-style-type: none"> <i>- the consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner;</i> <i>- the IPC should not reject an application for development on one site simply because fewer adverse impacts would result from developing similar infrastructure on another suitable site,</i> <i>- alternatives not among the main alternatives studied by the applicant (as reflected in the ES) should only be considered to the extent that the IPC thinks they are both important and relevant to its decision;</i> 	<p><i>Considering alternatives is proportionate in a £3-4 billion infrastructure proposal, as well as the context and the three overriding policy considerations noted in the Chapter 2 Summary related to NPS EN-1 paragraphs 1.1.2, 1.2.4 and 1.2.7.</i></p> <p><i>It would not be simply due to fewer adverse impacts. It is due to multiple factors <u>including</u> far fewer adverse impacts.</i></p> <p><i>The alternatives are important are relevant as they are all critical national priorities. The alternatives are important are relevant to the actual decision-making on Rampion 2 in a number of respects including (1) genuine alternatives to Rampion 2 in the</i></p>

**Table 2-1b: Highlighted National Policy Statement Paragraphs
EN-1 Overarching (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
	<p><i>- it is intended that potential alternatives to a proposed development should, wherever possible, be identified before an application is made to the IPC in respect of it (so as to allow appropriate consultation and the development of a suitable evidence base in relation to any alternatives which are particularly relevant). Therefore where an alternative is first put forward by a third party after an application has been made, the IPC may place the onus on the person proposing the alternative to provide the evidence for its suitability as such and the IPC should not necessarily expect the applicant to have assessed it.</i></p>	<p>public interest (2) to benchmark and better inform judgement on the overriding considerations noted in the summary of this chapter related to NPS EN-1 paragraphs 1.1.2, 1.2.4 and 1.2.7., and (3) the convergence of the above considerations that add substantial weight to the decision on whether to consent Rampion 2.</p> <p>We argue both important and relevant to the decision and directly inform the consideration of national benefits.</p> <p>Section 4.4 Alternatives were raise with the Applicant in written statutory consultation responses and verbally in consultation meetings. The Applicant's Consultation Report is silent on these matters of these Alternatives being raise.</p> <p>PCS and IPs have proposed in Relevant Representations on the fall of 2023 how this consideration of alternatives can be conducted efficiently engaging with competent power authorities.</p> <p>Here we note the PA (2008) Procedure Rules allow that," <i>the Examining Authority to call expert witnesses to give evidence on specific points at hearings. They may also consider requests from the applicant and other interested parties to call expert witnesses in support of representations they make about the application.</i>"</p> <p>Reference: Planning Act 2008: Guidance for the examination of applications for development consent" DCLG, 2015</p> <p>https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/418015/examinations_guidance_final_for_publication.pdf</p> <p>Thus we remain hopeful the ExA may reconsider its decision not to invite, pursue or allow relevant expert witnesses.</p>
5.8.2	<p>Section 5.8 Under Historic Environments</p> <p>A heritage asset may be any building, monument, site, place, area or landscape, or any combination of these. The sum of the Heritage interests that a heritage asset holds is referred to as its significance 118 .</p>	<p>Natural Seascapes are to be considered part of Landscapes as under:</p> <ul style="list-style-type: none"> - The European Landscape Convention - The reinforcing Marine Policy Statement (2021) - The OESEA-4 (2023)

**Table 2-1b: Highlighted National Policy Statement Paragraphs
EN-1 Overarching (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
	Footnote 118 of 5.8.2: Additionally, part of the purpose of designating National Parks is to protect their cultural heritage and the conservation of cultural heritage is an important consideration in all Areas of Outstanding Natural Beauty.	
5.8.13	<p>The IPC should take into account the desirability of sustaining and, where appropriate, enhancing the significance of heritage assets, the contribution of their settings and the positive contribution they can make to sustainable communities and economic vitality</p> <p>Footnote 122 to 5.8.13: The IPC should consider the desirability of new development making a positive contribution to the character and local distinctiveness of the historic environment. The consideration of design should include scale, height, massing, alignment, materials and use. The IPC should have regard to any relevant local authority development plans or local impact report on the proposed development in respect of the factors set out in footnote 122.</p> <p>122: This can be by virtue of:</p> <ul style="list-style-type: none"> - heritage assets having an influence on the character of the environment and an area's sense of place; - heritage assets having a potential to be a catalyst for regeneration in an area, particularly through leisure, tourism and economic development; 	All factors that need to be taken into account and given weight in the Examination in our view.
	Under Section 5.9 Visual impact	
5.9.18	All proposed energy infrastructure is likely to have visual effects for many receptors around proposed sites. The IPC will have to judge whether the visual effects on sensitive receptors, such as local residents, and other receptors, such as visitors to the local area, outweigh the benefits of the project. Coastal areas are particularly vulnerable to visual intrusion because of the potential high visibility of development on the foreshore, on the skyline and affecting views along stretches of undeveloped coast.	<p>We also refer to the European Convention on Landscapes (ECL)</p> <p>The OESEA strategic environmental advice on visual buffers is provided in respect to the ECL and a comprehensive review of domestic and international experience at policy and project levels with visual effects and the importance and role of visual buffers.</p>
5.9.19	It may be helpful for applicants to draw attention, in the supporting evidence to their applications, to any examples of existing permitted infrastructure they are aware of with a similar magnitude of impact on sensitive receptors. This may assist the IPC in judging the weight it should give to the assessed visual impacts of the proposed development.	<p>We refer the ExA to the Examinations of the two other south coast windfarms in Chapter 2 and in Relevant Representations.</p> <p>We also refer to the developer's experience with a DCO windfarm application in Wales that was significantly (and genuinely scaled back) before being consented.</p> <p>Otherwise the OESEA in offering its strategic advices has taken relevant project experience into account.</p>
	Under Section 5.12 Socio-economic	
5.12.2	Where the project is likely to have socio-economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts as part of the ES (see Section 4.2)	<p>The Applicant did undertake assessments. We indicate how we see them as deeply flawed and misleading in this LIR Chapter 5.</p> <p>We point to PAD Statements by Councils that take a similar view.</p>
5.12.3	This assessment should consider all relevant socio-economic impacts, which may include: (item 3) effects on tourism	As above
5.12.5	Socio-economic impacts may be linked to other impacts, for example the visual impact of a development is considered in Section 5.9 but may also have an impact on tourism and local businesses.	As above

**Table 2-2b: Highlighted National Policy Statement Paragraphs:
EN-3 Renewable Infrastructure (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
2.4.2	<i>Proposals for renewable energy infrastructure should demonstrate good design in respect of landscape and visual amenity, and in the design of the project to mitigate impacts such as noise and effects on ecology.</i>	The requirement to demonstrate good design is reiterated in Section 3.5 of the draft NPS EN-3 (DESNZ, 2023b), which states that “proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence / co-location with other marine uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.”
2.6.17	<i>Applicants should set out how they have drawn on the Government’s Offshore Energy SEA in making their site selection.</i>	<p>Crucial to applying OESEA visual buffers for the minimum distance turbines can be to designated landscapes and highly sensitive visual receptors.</p> <p>The Applicant did not. It categorically dismissed the OESEA as irrelevant to its Rampion 2 Application repeatedly in its Environment Statement and in statutory consultations (documented).</p> <p>The Applicant compromises NPS EN-1 para 1.1.2 (breach of international convention to which the UK has commitments. OESEA-4 states the UK objectives and indicators for seascape / landscape protection include the, “Objective: <u>To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention</u> and minimise significant adverse impact on seascape/landscape including designated and non-designated areas.” Our underlining for emphasis.</p>
2.6.18	<i>Government is undertaking a rolling SEA programme for offshore energy, including a research programme and data collection to facilitate future assessments. These future offshore SEAs and data will be relevant to the applicants and the IPC as and when they become available.</i>	<p>The applicant categorically rejects the relevance of the OESEA and is silent on the European Convention on Landscapes (ECL)</p> <p>The ECL, NPS and OESEA that derives from the ECL all acknowledge the impacts of windfarms in full view of residents and visitors of coastal communities are mostly negative across short, medium and long terms.</p>
2.6.43	<p>Under Flexibility in the project details</p> <p><i>In accordance with Section 4.2 of EN-1, the IPC should accept that wind farm operators are unlikely to know precisely which turbines will be procured for the site until some time after any consent has been granted Where some details have not been included in the application to the IPC, the applicant should explain which elements of the scheme have yet to be finalised,</i></p>	<p>Sufficient detail is known in the Application which is up to 90 WTGs up to 325m tall, in arrays starting 6 nautical miles from shore the same distance as the existing but far smaller in scale and spread along the coast.</p> <p>In the original PEIR plan published in 2021 for public consultation the “worst case</p>

**Table 2-2b: Highlighted National Policy Statement Paragraphs:
EN-3 Renewable Infrastructure (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
	<p><i>and the reasons. Therefore, some flexibility may be required in the consent. <u>Where this is sought and the precise details are not known, then the applicant should assess the effects the project could have (as set out in EN-1 paragraph 4.2.8) to ensure that the project as it may be constructed has been properly assessed (the Rochdale Envelope)23. In this way the maximum adverse case scenario will be assessed and the IPC should allow for this uncertainty in its consideration of the application and consent.</u></i></p>	<p>scenario” was either (a) 75 large turbines 325m high or (b) the alternative of 116 turbines 210m high.</p> <p>The Application for 90 WTGs up to 325m high is effectively “moving the goalposts” and beyond reasonable flexibility in applying the Rochdale Envelope.</p> <p>Announcing a reduction from 116 turbines to up to 90 (up from 75), despite keeping the height option at up to 325m was misleading. It means the worst case was not consulted. This was addressed by PINS Section 51 Advice in Sept 2023 which the applicant categorically rejected.</p>
2.6.59	<p><i>Under Biodiversity: Biodiversity considerations to which applicants and the IPC should have regard concerning offshore infrastructure include: fish; seabed habitats – intertidal and subtidal; marine mammals; and birds.</i></p>	<p>Points to biodiversity impacts considered in the LIR chapters 6 and7.</p> <p>The concern being Rampion 2 leads to net biodiversity loss not net gain</p>
2.6.73	<p><i>Under Fish: There is the potential for the construction and decommissioning phases, including activities occurring both above and below the seabed, to interact with seabed sediments and therefore have the potential to impact fish communities migration routes, spawning activities and nursery areas of particular species. In addition, there are potential noise impacts, which could affect fish during construction and decommissioning and to a lesser extent during operation.</i></p>	<p>Points to biodiversity impacts considered in the LIR Chapter 6.</p> <p>As above the concern being Rampion 2 leads to net biodiversity loss (not net gain) .</p> <p>The efficacy of mitigation measures is doubted by statutory consultees including Natural England and MMO</p>
	<p><i>Under Intertidal: The intertidal zone is the area between high tide and low tide marks. Intertidal habitat and ecology are often recognised through statutory nature conservation designations.</i></p>	
2.6.91	<p><i>Under Marine Mammals: Offshore piling may reach noise levels which are high enough to cause injury, or even death, to marine mammals. If piling associated with an offshore wind farm is likely to lead to the commission of an offence (which would include deliberately disturbing, killing or capturing a European Protected Species), an application may have to be made for a wildlife licence to allow the activity to take place.</i></p>	<p>Points to biodiversity impacts considered in the LIR Chapter 6.</p> <p>As above the concern being Rampion 2 leads to net biodiversity loss (not net gain) .</p> <p>The efficacy of mitigation measures is doubted by statutory consultees</p>
2.6.101	<p><i>Offshore wind farms have the potential to impact on birds through:</i></p> <ul style="list-style-type: none"> - collisions with rotating blades; - direct habitat loss; -disturbance from construction activities such as the movement of construction/ decommissioning vessels and piling; - displacement during the operational phase, resulting in loss of 	<p>Points to biodiversity impacts considered in the LIR Chapter 6</p> <p>As above the concern being Rampion 2 leads to net biodiversity loss (not net gain).</p> <p>The efficacy of mitigation measures is doubted by statutory consultees</p>

**Table 2-2b: Highlighted National Policy Statement Paragraphs:
EN-3 Renewable Infrastructure (NPS 2011)**

EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
	<p><i>foraging/ roosting area; and</i></p> <p><i>-impacts on bird flight lines (i.e. barrier effect) and associated increased energy use by birds for commuting flights between roosting and foraging areas.</i></p>	
2.6.138	<p>Under Historic Environment:</p> <p><i>Heritage assets, as described in Section 5.8 of EN-1, may exist offshore and within the intertidal areas (the area between high tide and low tide marks). Such heritage assets can include remains from pre-historic settlements which existed prior to sea level rises as well as wreck sites and other features of historic maritime significance.</i></p>	<p>Points to heritage impacts considered in the LIR Chapter 4 and lack of full consideration as highlighted in PAD Statements.</p>
2.6.139	<p><i>Heritage assets can be affected by offshore wind farm development in two principal ways:</i></p> <p><i>- from the direct effect of the physical siting of the development itself such as the installation of the wind turbine foundations and electricity cables or the siting of plant required during the construction period; and</i></p> <p><i>- from indirect changes to the physical marine environment (such as scour, coastal erosion or sediment deposition) caused by the proposed infrastructure itself or its construction (see the policy on physical environment starting at paragraph 2.6.189 of this NPS)</i></p>	<p>As above</p>

Chapter 3: Seascape, Landscape and Visual Impacts

Pages: 62 - 90

Chapter 3: Seascape, Landscape and Visual Impacts

3.0 Introduction

This chapter seeks to identify and, where possible, quantify the visual impact caused by the physical presence of the Turbines, Substations and Infrastructure of Rampion 2.

The focus is principally on the impact of the in-sea generating equipment at a distance, as the effect extends over a wide area. On-land visual effects are usually less detectable at a distance (although cable trench reinstatement can be highly visible for several years). The on-land substations will be highly visible and intrusive locally and from some higher viewpoints inland, but will be more shielded by topography and vegetation from other views. The scarring effect and changes to vegetation caused by cable-laying will sometimes be visible from a distance, but will be more subtle, and the greatest impact, both visually and ecologically, will mainly occur at closer distances.

Protect Coastal Sussex is, as the name suggests, primarily interested in the effects experienced from and around the shore. Other inland-based Groups will be better placed to identify visual effects away from the coast.

Assessing the visual impact of Rampion 2 seems to resolve itself into two spheres:

- Interpretation of presentations, illustrations and data provided by the Developer
- Looking for a balance and consensus between varying personal reactions to the scheme

Visual impact is something that requires an Observer. The impact on every observer will be different and result in a wide spectrum of reactions, ranging from indifference to extreme psychological turmoil. There may or may not be consequences to the reaction.

But a most important consideration is whether the existing visual impact of the open ocean as it exists has characteristics that will be altered by the introduction of new visual elements with their own new impact. And to assess the balance between beneficial and destructive impacts on the existing characteristics.

And above all to assess whether these changes would result in reactions that have an effect on how the population values and benefits from the character of Coastal Sussex.

3.01 Arrangement of Sections of this Chapter

- 3.1 Extent of Impacts
- 3.2 The Fundamental Objection
- 3.3 Has the Scale of the Project and its Visual Impact been fairly represented?
- 3.4 How PCS disagrees with the PEIR & SLVIA Impact Assessments
- 3.5 THE ISSUES
- 3.6 Can PCS quantify the Visual Impact of the Rampion 2 Farm?
- 3.7 Section 3 - Is PCS over-valuing the Heritage Coast and the SDNP?
- See also APPENDIX for Chapter 3 - Relevant and Supporting Principal Areas of Disagreement by Statutory Consultees
- See also sections of Chapter 2 relating to Planning and National Park Legislation and to the Levelling-Up Act and its relationship with the European Convention on Landscapes.

3.1 Extent of Impacts

The impact of the Second Rampion scheme is not confined to West Sussex, it spans coastal West Sussex and Brighton and Hove, and would have an effect on almost half of coastal East Sussex. It would have an effect on almost two thirds of the Historic County of Sussex. And it would actually have an effect on two global Hemispheres, West AND East. (Its Easternmost side is close to the Greenwich Meridian)

The Sussex Bay forms a Natural Amphitheatre that is practically optimised for overlooking the Expanded Arrays of the Rampion Wind Farms. The entire length of this coastline has a long and continuing history as a destination for recreational, remedial and retirement purposes, much of which is primarily attracted and influenced by the nature of the seascape.

Along this coast and inland behind it, the entirety of the Bay is designated as National Park and/or Heritage Coast. This means that almost all of the coast contains sensitive receptors either at the coast or some distance back within the Scoping Area.

It is beyond question that the visual appearance of the proposed Wind Farm will have negative effects on the setting and outlook of the National Park and Heritage Coast, and on businesses that depend on the qualities of the visual attraction and openness of the seascape, and on the mental welfare of residents, both retired and active, and of the many visitors who come to the area to benefit from its natural appeal.

The proposal does not comply with legislation underlying National Parks, nor with the Government's Offshore Energy Strategic Environment Assessments.

3.2 The Fundamental Objection

The siting of the new Rampion 2 Turbine Field will cause a much greater Visual Impact than the existing Rampion 1 Field and will change the nature of the Sussex Bay.

On balance, Protect Coastal Sussex considers that the Visual Impact of the Rampion 2 Wind Farm would be such as to tip the balance from an existing intrusion - Rampion 1 – that appears to have been accepted initially at a Local level although some Communities are questioning the expected benefits at this examination stage, to an overwhelming grid of turbines dominating the inshore waters along a 50 kilometre stretch of coast, that would radically change the nature of seascape, coast and landscape.

Although described as an "offshore" windfarm, almost all the turbine field currently planned is technically INSHORE, less than 12 Nautical Miles (22 km) from the shore.

The proposed Scoping Area of the development is a zone with a radius of 50km based on the outer limit of the area where significant effects could occur– which extends from Newport loW to Hastings E Sussex, including the whole extent of the Sussex Bay from Selsey Bill to Beachy Head.

Nor is this an ordinary coastline as the whole length runs in step with a National Park and Heritage Coast – National Assets that are within the protective scope of National Park and Planning Legislation, the Government's Offshore Energy Strategic Environment Assessment, the Levelling-Up and Regeneration Act 2023, the European Convention on Landscapes which gives equal weight to seascapes and landscapes and is confirmed in the Government's 2021 Marine Policy Statement.

3.3 Has the Scale of the Project and its Visual Impact been fairly represented?

People interested or curious about the Rampion 2 scheme are likely to have looked at the RWE / RED website that has been the main information outlet in the stages leading up to the formal Application for a DCO. The website features a number of photographs showing wind farms and associated transmission platforms, substations, etc, and it would be easy to conclude these are representations of the proposed scheme. But on closer inspection, the scale of the images seems very similar to that of the existing Rampion 1 scheme – which is a great deal smaller than the proposal. For instance, the page <https://rampion2.com/latest/> carries this image....



Which appears to show a Rampion 1 scale Wind Farm. If it does, a fairer representation of the Rampion 2 proposal would be more like this...



3.4 Section 1 - How PCS disagrees with the PEIR & SLVIA Impact Assessments

3.41 FOR THE MOST PART Visual Impact is a LOCAL MATTER that impacts on the local population and other sections of the general population, national and international, who beat a path to the area in order to enjoy its special character. But there is also a NATIONAL MATTER arising from the importance of parts of this coastlines as an ICON OF NATIONAL IDENTITY

Protect Coastal Sussex feels the Rampion Preliminary Environmental Impact Report (PEIR) and seascape, landscape and visual impact assessment (SLVIA) as presented does not provide a detached impartial evaluation of the Visual Impact of the Scheme as it repeatedly tries to minimise all potential adverse effects, and frequently draws conclusions that show no particular causal connection with the arguments and information presented, resulting in an undervaluation of the importance of seascapes and landscapes to the public, and an understatement of the impact of the proposals.

We are not disputing the facts gathered, but we do feel that certain vital issues have been excluded, and we also suspect that some valuations ascribed to public attitudes may be based on insupportable extrapolation of the views of unrepresentative survey samples.

3.42 The excluded and understated Issues that PCS is particularly concerned about are:

A. The Government's Offshore Energy Strategic Environment Assessment 4 (OESEA4) and the White Report, that limit the installation of Turbines over 225m tall to locations not less than 33-40 kilometres (20.5-25 miles) distant from National Parks and similar sensitive features, should apply in full to this scheme.

B. The effect the installation would have on the Nationally Significant characteristics of the Shore, Coastline and the Landscape beyond, when viewed TOWARDS the Coast, is not considered.

C. The PEIR presumes that the Turbine Array only has an effect on homes and buildings within 100 metres of the shore, which completely ignores the principal reason since Regency times for locating huge areas of development stretching two miles or more inland – the importance of a sea view.

D. The added visual disruption caused by placing two farms with substantially different heights and spacings side by side and overlapping rather than adopting a uniform size overall.

E. The PEIR underrates the value of the empty ocean and sky in all their transient variations as a feature of the coastline and seaside settlements that contributes enormously to the mental welfare of a large section of the local population as well as to visitors and much of the region.

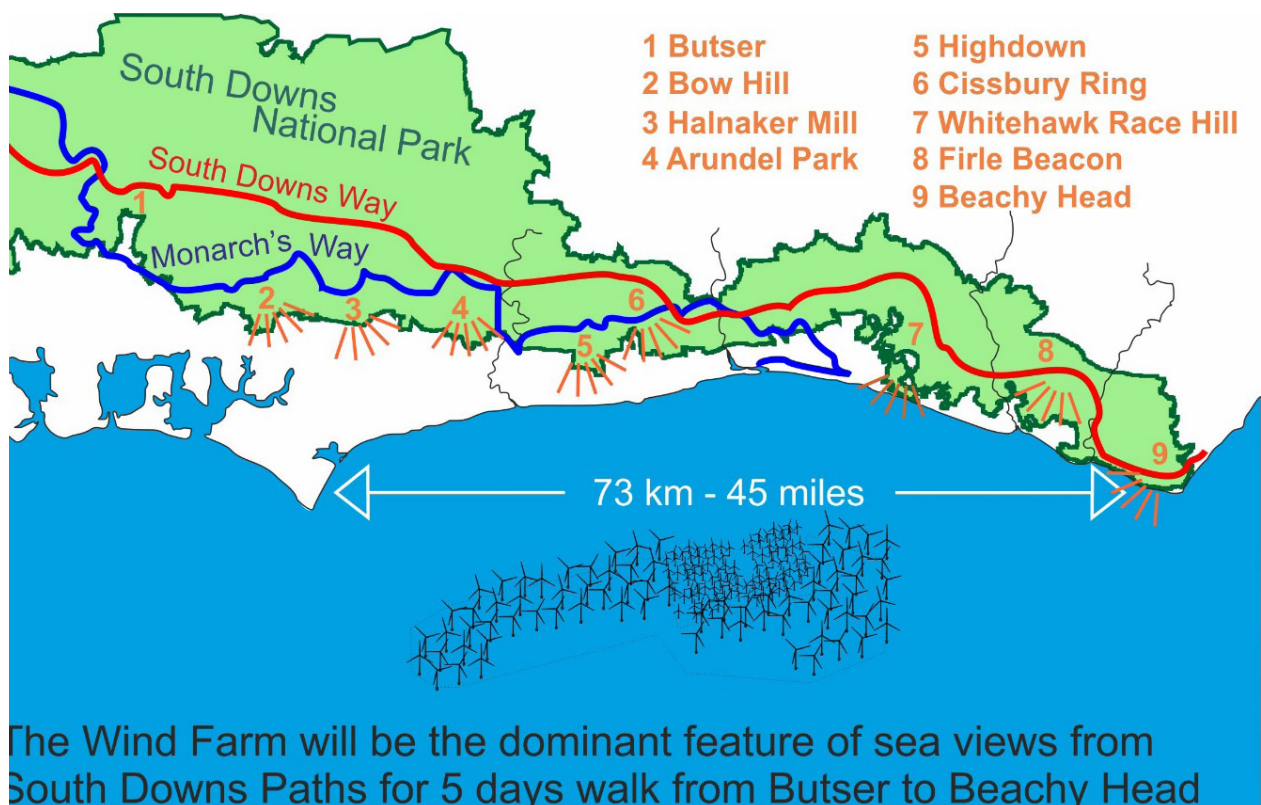
F. The Rampion 2 PEIR promised more appropriate images of the seascape than the winter-time images included, but these have not been forthcoming. Similarly no simulations have been provided that offer realistic representations of the views from points on land. Likewise no simulations or illustrations have been produced to show the night time impact of the Aviation Lights viewed from the National Park and elsewhere. This makes it hard to assess the impact of the Wind Farm.

G. The Rampion 2 PEIR recognises the importance of uninterrupted sea views from the Heritage Coast and the South Downs National Park, and recognises that the proposed Wind Farm will have significant effects, but then seems to suggest that this is of little consequence since Rampion1 has been in commission since 2017 and has already degraded the “stunning panoramic views”.

3.5 THE ISSUES

3.5.1 Issue A) - Compliance with OESEA Visual Buffer recommendations

The entire Sussex Bay is alongside, and visible from, the South Downs National Park. At the East end of the Bay the National Park extends to the shore, forming a Heritage Coast.



The White Report “White Consultants 2020 Seascape and Visual Buffer study for Offshore Wind farms” was commissioned by BEIS and is incorporated into OESEA4.

As well as considering other, often location-specific, factors, the report quantifies the Visual Impact effect of wind farms by considering Height of Turbines, Distance from Shore, Spacing of Turbines and Proportion of Horizon occupied by the array.

The report reviews “Offshore Wind Farms”, which includes a few older arrays that are technically closer than the Inshore Boundary – however, these older turbines are much smaller than any current installations, and are often around 100m tall.

The Rampion 2 proposal is for turbines up to 325m tall, and nearly all would be technically “Inshore”, and the East-West size of the new arrays would mean that a considerable length of shore between Shoreham and Bognor Regis would be faced with a forest of turbines that filled the centre of the horizon. At the centre of this length of shore, around Ferring to East Preston, more than half the panorama would be blighted.

OESEA4 and the White Report limit the installation of Turbines over 225m tall to locations not less than 33-40 kilometres (20.5-25 miles) distant from National Parks and similar sensitive features. The closest inshore rank of the Rampion 2 proposal is only 13 kilometres (8 miles) from the shore.

The irony is that the £3-4 billion Rampion 2 scheme, as proposed by the Applicant, a German-based multinational, would not be permitted under German law (the WindSeeG - Offshore Wind Act, 2017). Nor does it respect the DCO issued in 2014 for the smaller Rampion 1 installation as regard to the height of any additional turbines in the area being no more than 15 percent taller than Rampion 1, such as by an extension project.

When the first Rampion Wind Farm was proposed, both the National Trust and Natural England raised objections because of expected destructive interaction with the Heritage Coast. Neither body was satisfied by the small concessions that were made. Revisions to the original proposals (as considered in the PEIR) were included in the scheme published in October 2022, but considering the Order of Magnitude difference between the impact of the 140 metre Rampion 1 turbines and that of the 325m Turbines proposed for Rampion 2, the effect of the October Revisions would be at best marginal and not even register as an amelioration.

And although Local Planning Authorities only control development on shore, Section 7 of the Arun Local Plan sets out the requirements for the Protection of landscape character (Policy LAN DM1). In particular, "Development within the setting of the South Downs National Park must have special regard to the conservation of that setting, including views into and out of the Park, and will not be permitted where there would be harmful effects on these considerations."

Comparison of the different effect of the two Wind Farms isn't only influenced by distance.

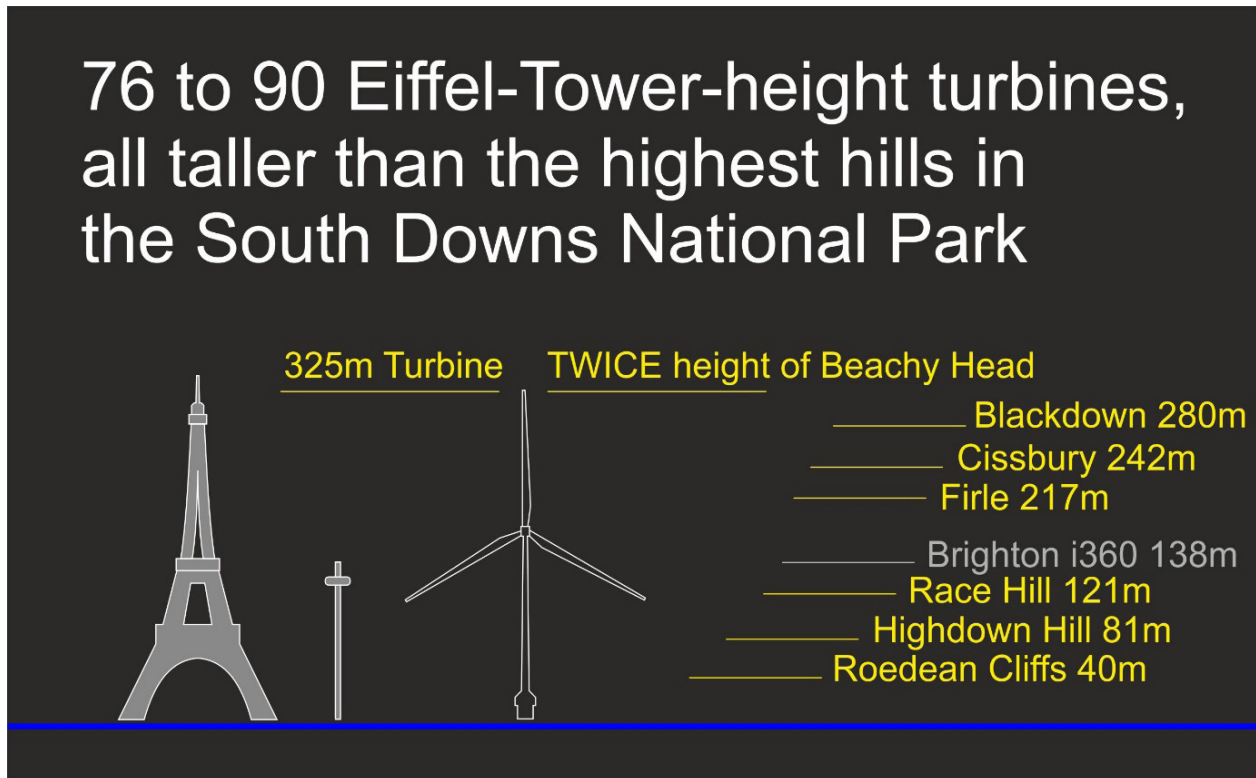
While it is accepted that for much of the time visibility is limited so that the turbines may only be partially visible or completely hidden, nevertheless the proposed larger turbines are likely to be visible for more of the time as an effect of their greater height, as they will more often be visible above mist and fog banks.



The bigger turbines of Rampion 2 would be more than twice the height of the Rampion 1 generators, and the width of the masts and sweeps would be in proportion, meaning their visibility at a distance would be much greater. The existing turbines are regularly clearly and distinctly visible from 25 kilometres, it seems highly probable that most of the Rampion 2 array will be frequently visible from the Isle of Wight and Beachy Head.

But while long-distance visibility may occur less frequently, it is still quite common, and at certain times of the day and/or the turbines are startlingly visible over considerable distances, thirty kilometres or more. The Eastern end of the Seven Sisters cliffs are frequently visible from West of Worthing, and less frequently visible from the Selsey peninsula. These are views that are highly valued by many. In the reverse direction, both in the morning due to light from the East shining towards the West, in the evening silhouetted against the sunset, the Isle of Wight is frequently visible all the way across the Bay from Beachy head Westwards. This is also a highly valued and uplifting view that is already compromised by the smaller turbines of the first Rampion Scheme.

The two Existing Landmark Observation Destinations within sight of the Rampion 2 are not as tall as the proposed masts, and as a result their appeal to visitors could be somewhat devalued: Spinnaker Tower Portsmouth 110metres ; i360 Brighton 138 metres.



3.52 Issue B) - The Sussex Bay as an Iconic Edge to the Nation

PEIR Chapter 19 is specifically concerned with Onshore effect on Landscape and Visual amenity, but ignores the destructive or inappropriate effects on the coastline when viewed from offshore or from the air.

This may be consistent with the fact that the Bodies taking an interest in the offshore area are interested in commercial or ecological issues and place no particular importance on visual aspects.

However this seriously neglects the priorities and interest of other important groups such as holiday makers, maritime leisure activity participants and travellers passing through or over the area.

Offshore is hugely important both locally and at a National level, and certainly should not be allowed to be overlooked or ignored as it is in the Rampion 2 PEIR.

In considering ‘receptors’, there is no acknowledgement of the existence of mobile receptors such as Ferries, Passenger Aircraft, Leisure Watercraft, which in some instances are providing memorable first impressions of the UK.

This is particularly remiss when evaluating the Heritage Coast from Roedean to Beachy Head as it ignores the exceptional national importance of this length of coast to both aerial and seaborne approaches to the UK from abroad.



In recent years the Heritage Coast has replaced the White Cliffs of Dover as the emblem of the United Kingdom in Advertisements and general imagery



From Roedean at the east side of Brighton the South Downs start to meet the Channel, forming an exceptional wall of white chalk cliffs and green plunging valleys that runs as far as Beachy Head at the extreme east end of the bay, where the north escarpment summit final meets the sea.

The national importance of these cliffs and valleys is tremendous, to the extent that when images are selected for advertising or for use as product or broadcasting 'idents' that appear to be representing the White Cliffs of Dover, it's the Seven Sisters and Beachy Head are invariably used, because by comparison the White Cliffs of Dover are rather dismal and grubby. 'The Snowman' (film) flew over the Heritage Coast, not Dover. Even the town of Dover has been caught using images of the cliffs west of Eastbourne to advertise the White Cliffs!

There is no doubt that this what was being referred to in the ICONIC COASTLINE STATEMENT December 7, 2020:

The UK Government and The Crown Estate have launched a new partnership focused on the growth of the local offshore wind sector and protecting and restoring the marine environment.

The Offshore Wind Evidence and Change Programme will be led by The Crown Estate, which has committed to a five year GBP 25 million kick-starter investment, alongside the Department for Business, Energy and Industrial Strategy (BEIS) and the Department for Environment, Food and Rural Affairs (Defra) as strategic partners.

"Delivering clean, affordable and homegrown energy is an urgent priority for this government as we made clear in the British Energy Security Strategy," the UK's Energy Minister Greg Hands said.

"This investment will help support that, boosting our status as an offshore wind superpower while protecting our iconic island coastline."

Placing more, larger turbines near to this Heritage Coast is wholly contrary to the above intentions.

The marine sea lane approach to the United Kingdom through Newhaven is less used than previously, but this coastline is also criss-crossed by numerous air routes, and is a landfall from many destinations as varied as France, Spain, Portugal, Greece, Turkey and the Middle East, and the Iconic National value of this coastline is already altered significantly from sea and air by the existence of turbine arrays, both by day and night, detracting in different ways from the symbolic impact.

Users of the Ferry services would lose much-loved approach and departure views, but that in itself would be unlikely to deter them from using the service, however the turbines would be far more significant to the many local and visiting leisure watercraft users, because it would totally change the nature of their sailing or motoring, exchanging a short transit to an open ocean and clear horizon with hours-long threading between turbine pylons, and destroying the feeling of remoteness that is part of the small boat sailing experience. The visual effect of being five or six miles offshore looking at a distant coastline will be radically different if the nearest turbine is a few hundred metres away and the whole field of view is interrupted by generators. The consequences of this change would impact both at a Local level on Tourism and associated occupations, but also at a national wellbeing level by degrading the therapeutic benefits to mental health.

3.53 Issue C) - Coastal Communities and Landscapes are symbiotically linked with the Sea

It is an absurd proposal that only properties within 100 metres of the shore are impacted.

The of growth of Coastal Towns from tiny Fishing Villages and Small Ports into impressive seafronts and suburban sprawls was almost entirely driven by the object of providing sea views. Hence the trend of tall terraces and multi-storey flats, that unlike the fishermen's cottages that had small windows and were huddled against the weather, were highly exposed to the prevailing weather and storms – so much so that at least one technical solution to resisting high winds is still marketed as the Brighton-Pattern window catch.

Even where there is considerable development on flat land between the Downs and the shore, there is also development and individual building and dwellings on the rising ground to the north which were positioned with the intention of providing long sea views.

Much of Brighton and Hove, and Westwards towards the River Adur, parts of Newhaven and Seaford, and complete suburbs of Worthing cloak the rising slope of the Downs facing the sea.

The visibility of the Turbine Array is increased because the Sussex Bay forms a Natural Amphitheatre that is practically optimised for overlooking the Expanded Arrays of the Rampion Wind Farms, and the numerous towns and settlements that grew up to capitalise on the views are complemented by a series of high elevated recreation locations in happy union with sea views all along the cliffs and downs, from Beachy Head to Hampshire.

Rampion 2 will therefore massively degrade the quality of 50 kilometres of Coast for generations to come.

From Hilaire Belloc poem "The South Country":

The great hills of the South Country

They stand along the sea;

And it's there walking in the high woods

That I could wish to be,

I never get between the pines

But I smell the Sussex air;

Nor I never come on a belt of sand

But my home is there.

And along the sky the line of the Downs

So noble and so bare.

I will hold my house in the high wood

Within a walk of the sea,

And the men that were boys when I was a boy

Shall sit and drink with me.

3.54 Issue D) – Mixing large and small turbines increases the prominence of the scheme

As revealed by animations prepared for Protect Coastal Sussex, of which some 'stills' are included in this chapter, the combination of two sizes and spacings of turbines gives the impression of a larger and closer array as of result of there being two perspective 'vanishing points', which might also be aggravated because the different sized turbines being subjected to different windspeeds due to their heights may result in different rates of rotation, which would be detected by eye and be more noticeable.

Additionally, all views of windfarms suffer from the effect caused by the parallel rows of turbines, so that parts of the array appear uniformly spaced, whereas other parts align into ranks so that only the nearest turbines of some rows are visible with large gaps between the ranks – which makes the whole array appear as disorganised random series of interruptions to the seascape, which is far more intrusive than an evenly spaced and sized set of masts.

The Rampion 1 offshore wind farm was given development consent in July 2014. The development control order (DCO) specified that no turbine would exceed 210m above LAT or exceed a rotor diameter of 172m. These size limitations were almost certainly fixed because of concerns of Visual Impact. The proposal for Rampion 2 does not provide any justification for the proposed much larger turbines other than economic and evolving industrial capacity considerations.



Littlehampton Beach as Existing - the turbines of Rampion1 on horizon at the left
(closest turbine approx 18km from viewpoint)



Littlehampton Beach with Rampion 2 (closest turbine approx 13km from viewpoint)

3.55 Issue E) – Wilderness and Tranquillity disruption

The PEIR suggests that Tranquillity is negated if a particular location is popular - and to some extent that is true, but is far from absolute, there are many locations in the world which are thronged but still are valued as places for tranquil connection with a notional space outside the human realm.

Solitude can be found even at Beachy Head...



Protect Coastal Sussex considers the visual qualities of this shore and seascape are an important National resource that can have a great beneficial mental health value to the entire region and country. A resource that can help reduce the cost of care and support sizeable service industries along the Sussex coastline. A resource that works outwards as an appendage to the South Downs National Park, and inwards as an instantly recognisable and special edge to the land.

The scale of the Rampion 2 Scheme would be immensely unbalancing and destructive to both those aspects of this Resource. And for those who need an escape from the mental pressures of the mechanised and technology-controlled tyranny of urban life, the sight of the geometric gridded array of the turbine field would be an unwelcome reminder of what they need to get away from.

The PEIR argues that while many people head for places where they hope to find some tranquillity, that tranquillity will not be found because of the hordes of people heading there to find tranquillity.

And argues that in some cases the purity and tranquillity has anyway been ruined by the construction of Rampion 1. So as everything has been spoilt already, it's OK to spoil it some more.

This is a clear admission of the degrading effect of the first installation. But the first installation does have a relatively limited zone of impact compared to the proposed one, which without question would impinge destructively on areas that were untouched by the first installation - particularly at the West end of the County where the National park is more wooded and tranquil, where at night the pulsing background of red aviation and navigation warning lights across a huge field of view will change the whole nature of the woods.

The Therapeutic value of the seaside was revealed and highlighted in 2020 and 2021 when a very widespread feeling of holiday deprivation after the 2 years of lockdown became evident, and large numbers flocked to the coast. This period was associated with elevated levels of mental difficulties, which is still being re-evaluated. Through the lock-down periods every seaside promenade was thronged with health-walkers throughout every day, clearly drinking in the sight and scale of the seascape in whatever state it was at the time.

This is a small and crowded island with few large scale unoccupied spaces - something Julius Caesar commented on in 60BC, and 2080 years later and twenty times the population it's far more extreme now - the Sea is our national Wilderness. The only places you feel that Nature is infinitely bigger than man. The boundary between tamed and wild. Fill the shallows with Turbines and that boundary moves far away and is no longer accessible.

And the feeling of loss of an open view comes not only from familiarity, attachment, dislike of man-made devices, or other aesthetic considerations, but also from loss of a rare empty space that is an escape route to a place that shrinks the worries and frees the constraints of daily life

Inspiring Natural Landscapes and Seascapes can often co-exist with man-made intrusions, but the threshold of over-intrusion is low. A single Lighthouse or Maunsell Fort, a Castle or even a Nuclear Power Station can be a heroic picturesque object in a seascape, but a large sub-station standing among ranks of turbines covering square kilometres of inshore waters is more likely to be a visually polluting utilitarian intrusion.

But Seascapes are changing constantly, and don't only, or always, offer tranquillity. They also offer drama, animation, mystery, abstract patterning and astonishing beauty, and sometimes anxiety or fear. All of which engage the observer physically and mentally. Some of these effects happen at times of poor visibility when wind farms would be invisible, and others, often the ones people appreciate most, happen when visibility is good or excellent. But once there is a windfarm, much of the time, whenever the visibility is above a dozen kilometres, the exhilarating view of a open ocean stretching to a far horizon has been lost forever.

3.56 Issue F) – Applicants' failure to provide photographs taken in conditions of good visibility and absence of realistic simulations cause difficulty in quantifying the Impact

In the PEIR, the Applicants made the following undertakings...

16.16.2 and 3: Following stakeholder consultation, Summer viewpoint photography will be undertaken from the following viewpoints in order to improve the baseline viewpoint photography undertaken during winter surveys currently presented in the PEIR in which low sunlight to the South is less than optimal, (from twelve named viewpoints)

16.16.4 Baseline viewpoint photography will be undertaken from these viewpoint locations in Summer 2020 and will be included in the ES with photomontage and/or wireline visualisations.

16.16.5 Night-time viewpoint photography will be undertaken from a further viewpoint within the core area of the South Downs IDSR, with the viewpoint location to be agreed in consultation

with the SDNPA, potentially at Bignor Hill (Viewpoint 21) (Dark Skies Discovery Site 5). NOTE: Bignor Hill is well inland and Trees on the long dip slope to the sea may well shield direct views of the coastline

16.16.6 SDNPA sample survey data for areas of relative tranquillity within the SDNP identified in the SDNPA Tranquillity Study (2017) could not be sourced as part of the baseline data collation but may be sourced and considered to further inform the assessment of effects on SDNP special quality 3 as part of work undertaken for the ES.

None of the above appear to have been implemented as promised.

The PEIR included 'wire-frame' representations of the views from various viewpoints, however these are highly diagrammatic, and are nowhere near as lifelike as the animations produced by Protect Coastal England, and consequently seem much more innocuous than the truer impressions given by the animations.

No simulation of imaging has been provided in respect of the Red Aviation Lights,

The much smaller Rampion 1 Wind farm is highly visible at night under conditions of good or moderate visibility. For some years after installation the pulsing was synchronised across the whole field. It has been noted that synchronisation has now been lost, so the appearance is of a constant rippling of many red points of light. There would be concentrations of aviation lights at Eastern and Western ends of the Rampion 2 array.

The absence of accurate, realistic images and simulations is a considerable barrier to assessing the impact of the scheme, both by day and night, however, based on the impact of the small Rampion 1 scheme, the impact of the Rampion 2 Windfarm would be expected to be several times greater.

3.57 Issue G) – The suggestion that the value of the views from the Heritage Coast and National Park have been degraded so much by Rampion 1 that they are not worth further protection.

The South Downs National Park is England's newest national park, designated on 31 March 2010.

The SDNP carried out a poll in 2011 to find out what visitors valued most, the result was as follows:

1. Diverse, inspirational landscapes and breathtaking views;
2. A rich variety of wildlife and habitats including rare and internationally important species;
3. Tranquil and unspoilt places;
4. An environment shaped by centuries of farming and embracing new enterprise;
5. Great opportunities for recreational activities and learning experiences;
6. Well-conserved historical features and a rich cultural heritage;
7. Distinctive towns and villages, and communities with real pride in their area.

The Applicants' Consultant expanded on this in the PEIR as follows...

Special Quality of SDNP

Description (SDNP Special Qualities Report)

1. Diverse, inspirational landscapes and breathtaking views: The geology of the South Downs underpins so much of what makes up the special qualities of the area: its diverse landscapes, land use, buildings and culture. The rock types of the National Park are predominately chalk and the alternating series of greensands and clays that form the Western Weald. Over time a diversity of landscapes has been created in a relatively small area which is a key feature of the National Park. These vary from the wooded and heathland ridges on the greensand in the Western Weald to wide open downland on the chalk that spans the length of the National Park, both intersected by river valleys. Within these diverse landscapes are hidden villages, thriving market towns, farms both large and small and historic estates, connected by a network of paths and lanes, many of which are ancient. There are stunning, panoramic views to the sea and across the Weald as you travel the hundred mile length of the South Downs Way from Winchester to Eastbourne, culminating in the impressive chalk cliffs at Seven Sisters. From near and far, the South Downs is an area of inspirational beauty that can lift the soul.

The statement clearly recognises the integral value of seascape in the appreciation, and no doubt in the discussions and evaluations that took part in the designation process, of the National Park.

However, when discussing the effect on views from the Heritage Coast and the East end of the Sussex Bay, the Consultant had this to say...

16.15.37 Changes to the seascape baseline conditions have occurred since publication of the MMO Seascape Assessment (MMO, 2014), such that it is no longer the case that 'views seaward are frequently to an unbroken horizon'. Rampion 1 became operational in November 2017 and forms a large-scale offshore wind farm influence within this seascape, consisting of 116 x 140m blade tip WTGs, approximately 13km from the closest part of the West Sussex coastline. The array of Rampion 1 WTGs is a prominent feature in sea views in good visibility, partially interrupting sea views from the urban coastline between Shoreham and Bognor Regis in good visibility.

So, while admitting that the fears expressed by Natural England in the approval process for Rampion 1 had been justified, the Applicants' conclusion seems to be that changes to the seascape baseline conditions caused by the first, smaller, Rampion Scheme have so compromised the value of the seascape that there will be no noticeable increase in adverse impact if a new, larger, array of far bigger turbines is added!

The Applicants justification for this questionable view is that taking the existence of Rampion 1 as a baseline condition is compliant with the Planning Inspectorate's Advice Note 17 for Cumulative Projects where the part of the project has already been installed, however that can only be argued if Rampion 2 is considered to be an Extension to Rampion 1.

The Applicant pointed out during the Issue Specific Hearing 1 of the Examination process that that Rampion 2 is a stand-alone scheme.

And this gives no consideration to the bulk of the SDNP along Sussex Bay eastwards towards Hampshire which will be considerably closer to the turbines. As stated by the SDNP in its representations, the visual impact of the Turbines will not be insignificant at all. And they will impact equally on residents and visitors alike. In a statement to the Issue Specific Hearing 1 the Applicant's Consultant admitted that harm would be done to views, but that the panoramas

will still exist. What he did not admit is that it would be a very different panorama, not a clear, wild, open and virtually unlimited panorama, it would be a down-scaled, cluttered and tamed outlook.

Apart from older legislation that is intended to protect Designated Landscapes and associated Seascapes, this degradation of one of the important characteristics of the National Park appears to contravene Section 245 (Protected Landscapes) of the Levelling Up and Regeneration Act 2023 which places a duty on relevant authorities in exercising or performing any functions in relation to, or so as to affect, land in a National Park, the Broads or an Area of Outstanding Natural Beauty ('National Landscape') in England, to seek to further the statutory purposes of the area. The new duty underlines the importance of avoiding harm to the statutory purposes of protected landscapes but also to seek to further the conservation and enhancement of a protected landscape. That goes beyond mitigation and like for like measures and replacement.

A more comprehensive listing of legislation that applies to Protected Landscapes, National Parks, and Seascapes is included in Chapter 2 of this LIA.

Using Images submitted by RED, this is a view from Beachy Head, a very popular visitor destination, as it would have been before Rampion 1 was installed...



And with Rampion 1...



And with Rampions 1 and 2...



The impact of the large turbines and the extended arrays is considerably greater than the impact of Rampion 1, even at a distance of 25 kilometres and more.

There was discussion in the Examination Process of Rampion 1 that a distance of 20 kilometres (12.5 miles) could be considered 'remote', however when viewed from the top of the Seven Sisters it becomes clear that from that elevation, 20km is not remote at all, although from beach level it could be.

And the degradation of the outward views of the Seascape may also contravene obligations under the European Convention on Landscapes (ECL) to which the UK is a signatory, which emphasizes the protection, management, and planning of landscapes and recognizes the importance of landscapes for cultural, ecological, and recreational purposes, and also links the protection of seascapes to designated landscapes and affords them equal protection.

National Park Status is not lightly granted, it generally occurs because a significant body of opinion that values a landscape very highly has managed to gain support and make a case that a significant amount of concern exists that the special nature of the valued landscape is potentially under threat from development or gradual change of some kind.

The central purpose of the National Parks and Access to the Countryside Act is to protect Landscapes and, where applicable, Seascapes, against exactly this kind of degradation. Offshore Energy proposals should follow and respect the recommendations of the Offshore Energy Strategic Environmental Assessment, which sets out to protect sensitive receptors.

What value is National Parks Legislation if the newest National Park cannot exist for six years without being seriously compromised? And face a further and much more damaging assault eight years on?

3.6 Section 2 - Can PCS quantify the Visual Impact of the Rampion 2 Farm?

Protect Coastal Sussex simply does not have the resources to carry out adequate Surveys and to employ Consultants to review and assess the likely impact of a project of this magnitude.

But Bournemouth Borough Council did produce a properly researched LIA for the Navitus Bay Wind Farm proposal, and there are many similarities in the issues that applied in Dorset to those facing Coastal Sussex.

There will be impacts of some kind all along the coast from Beachy Head to Selsey, which will bear to different extents on all the Communities and Local Authorities, and their Residents, Businesses and Visitors.

The Navitus Bay Project LIR gives an idea of the variation and scale of the impacts, and above all it shows that the overall losses and costs to the communities are considerably greater than what is being put forward in the Applicants' assessment of impacts.

PCS cannot suggest actual figures, other than by adjusting Bournemouth's figures in proportion to populations, however in terms of Visual Impact there is a valuation that, while it cannot be stated in financial terms, can be expressed on a value to the Nation and Region.

That is the value of the Heritage Coast and the National Park, and the associate Landscapes and Seascapes.

The Heritage Coast, the Seven Sisters, the Coastguard Cottages at Birling Gap, Belle Tout Lighthouse, and Beachy Head have replaced the White Cliffs of Dover as the National Icon of the UK.

So much so that Dover Council have used images of the Seven Sisters instead of their own cliffs:

How the imagery of the Sussex Cliffs have replaced the White Cliffs of Dover <https://www.theargus.co.uk/news/8682143.the-white-cliffs-of-dover-are-in-sussex/>The white cliffs of Dover..... are in Sussex

23rd November 2010

A scene of Sussex is being used to promote one of the country's most famous landmarks – in a different county.

Council officials in Dover have admitted the image of the area's iconic white cliffs on their official website is actually that of the Seven Sisters in Seaford.

And it is this length of Heritage Coast that gets used in Advertisements, TV Channel idents, and on Book Covers. Beachy Head has become an internationally recognised emblem as well-known as the Grand Canyon or Mont Blanc or Mount Fuji.

This is a feature of National Importance that needs to be protected both Outwards from Land and Inwards from the Sea.

And exactly the same applies to the South Downs National Park. The fact that it is of National importance is in the name.

Both these Landscapes and Seascapes are predefined as highly sensitive receptors, and the Government's Offshore Energy Strategic Environment Assessment 4 (OESEA4) and the White Report define the minimum level of distancing and visual separation that should be provided, in other words it recognises an unacceptable level of Impact if these standards are not met.

It is understood that National Policy Statement EN-1 Energy Paragraph 5.9.9 says:

Under Development proposed within nationally designated landscapes: ... may grant development consent in these areas in exceptional circumstances. The development should be demonstrated an assessment of: - (item 2 of 4) the cost of, and scope for, developing elsewhere outside the designated area or meeting the need for it in some other way, taking account of the policy on alternatives set out in Section 4.4

Protect Coastal Sussex asserts that in this case the need can be better met by carrying out an equivalent development in a location with a greater Wind Power Density.

3.7 Section 3 - Is PCS over-valuing the Heritage Coast and the SDNP?

Protect Coastal Sussex's valuation of the National Park and Heritage Coast is supported by such as the South Downs Inspector's report, the Park Authority, English Heritage, and the Marine Management Organisation.

The MMO's investigation and assessment were undertaken before the first Turbines had been installed, and identified qualities that have since been compromised by the Visual Impact of the Rampion 1 scheme, to the extent that the Applicant is able to state...

Changes to the seascape baseline conditions have occurred since publication of the MMO Seascape Assessment (MMO, 2014), such that it is no longer the case that 'views seaward are frequently to an unbroken horizon'.

PCS believes this degradation of Nationally Important Landscapes and Seascapes should have

been avoided, and rather than taking the degradation as a green light signal for an even greater assault on the Coast and Downs, it shows that enough is enough, and the Park and Coast should be protected as intended.



3.71 *Extracts from* Seascape Assessment for South Marine Plan Areas (MMO Copyright 2014)

3.71.1 Visibility of the sea from land

3.71.1.1 Land with sea views

At a strategic scale, the most extensive views of the South Inshore and South Offshore marine plan areas are generally found within 5km of the HWM. A notable exception to this is the South Downs where there are extensive sea views experienced further inland at these higher elevations. It also demonstrates that viewers on the Isle of Portland would enjoy some of the most extensive views of the two marine plan areas. Due to its elevated topography and position, the west of the Isle of Wight also provides viewers with extensive views of the sea.

At a more local level, the MCA descriptions include an interpretation of the VRM maps for each MCA – highlighting where viewers on land may expect to have the most extensive views of each MCA. The analysis at MCA level includes reference to areas on land within nationally protected landscapes and on national trails that have views of the sea within them.

3.71.1.2 Visibility of the sea from land

At a strategic scale, the VRM has highlighted areas of sea within the South marine plan areas

that are especially visible to viewers on land. Particularly noticeable is the extent to which the Solent and adjacent waters (between Selsey Bill and Seaford Head) can be seen from numerous locations on land. This is likely to be a result of the extent to which views of the sea extend inland to elevated areas around the South Downs. There are opportunities to view this area of sea from both directions (from the Isle of Wight as well as Hampshire and West Sussex).

3.71.2 Summary of Workshop Comments

MCA 7 Selsey Bill to Seaford Head

- Be aware that other bits of the South Downs National Park come to the coast here as at Rottingdean and these gaps are very important for visual connections to and from the sea.
- Note that the Heritage Coast also extends into this area (don't place all emphasis for South Downs in MCA 7). Also note the views to seascape over Brighton and developed coastal edge to the sea from South Downs inland are also important
- Note presence of chalk reef west of Brighton Marina
- Major developments in SE along coastal plain here – urban sprawl. Valleys, gaps, rivers to sea = important communications routes historically and today
- Piers, jetties and groynes = immediate seascape
- The strategic gaps between conurbations are very significant to people and in views from and to the sea
- Popular seaside resorts e.g Brighton
- Shingle beaches – seaside heritage and vernacular – piers, etc.
- Note crustacean fishery at Selsey Bill
- Static gear fisheries
- Selsey Bill and gasometer – distinctive features from sea to land
- Static gear fisheries
- Selsey Bill and gasometer – distinctive features from sea to land

MCA8 South Downs Maritime

- See South Downs website for special qualities and strong relationship to the sea (also see South Downs inspector's report plus South Downs Landscape Character Assessment)
- Importance of visual and physical links between the Downs and coast
- Cuckmere Haven is the only undeveloped estuary in the SE
- Strategic gaps in development such as at Newhaven are vital in maintaining relationship/connection between Downs and sea. Important to bring these out MCA baseline key characteristics and description
- Chalk ledges – European designated. Beachy Head west – wave cut platform (MCZ)
- Importance of dark skies along undeveloped Heritage Coast (in this MCA and others)
- A changing landscape at Cuckmere Haven – future EA will withdraw sea defences – area of managed retreat
- Key issues in relation to Rampion offshore wind farm and relationship with National Park special qualities and historic character

- Landfall and terrestrial cabling relating to offshore windfarm proposals in National Park and substation at Bolney
- Importance of estuaries of Arun, Adur and Ouse – (hydrological impacts of any developments here)
- Pressures for development in Worthing, Littlehampton, Arundel (development squeeze along the south coast)
- Pressures for marine aggregates
- Port development at Newhaven – visual impact landward and seaward. This is an important strategic gap in the MCA (views from sea to land) – need to bring out in MCA baseline description
- Iconic coastline of Seven Sisters, cliffs and important stretch of undeveloped coast
- Internationally recognised
- Strong cultural links – Armada, wrecks

APPENDIX for Chapter 3

Principle Areas of Disagreement (PAD) Statements

Principle Areas of Disagreement (PAD) Statements submitted under the Pre-Examination Rule 9 Letters in November relating to Topics in Chapter 3.

APPENDIX for Chapter 3

Table 3-1: Pads on SLVIA and LVIA Visual Impacts			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIA	Remedy Measures / What needs to change to overcome disagreement
ADC-09	Scale and Extent of Wind Turbine Generators	The spatial extent is greater than Rampion 1 and ADC continues to have significant concerns regarding the scale relative to the proximity to the coastline and the resulting significant visual effects.	We recognise that the spatial extent has been reduced. However, there will still be significant visual effects on the coastline, for example, from Clymping Beach and Littlehampton seafront, which are tourist and recreational destinations. ADC is of the opinion that as no further mitigation is possible, compensation is the only route
		SCCS Under Seascape, Landscape and Visual Impact (SLVIA) Section	
WSCC-5	Lack of night-time view assessment for West Sussex receptors outside of the International Dark Sky Reserve (IDSR).	Although acknowledged as agreed in the consultation table of the SLVIA chapter, no assessment of night-time views has been outlined for non IDSR receptors.	The Applicant must provide an assessment of effects upon night-time views to viewpoints agreed with WSCC
WSCC-6	Confirmation a worse case Maximum Design Scenario has been assessed.	The Maximum Design Scenario has balanced the number of turbines between both Zone 6 and the western Extension Area. If the dDCO does not secure the location or placement of these, has the worst case been assessed for the receptors of West Sussex.	This requires further demonstration by the Applicant that it is the worst case for receptors in West Sussex
WSCC-7	Development of further design principles	Concerns about the layout and extent of offshore wind turbines and the securement of a Project with lesser impacts to receptors in West Sussex.	The Applicant must continue to work with stakeholders to further develop commitments to the layout and extent of turbines, to reduce the significant visual impacts as presented.
		WSCC Under Landscape and Visual Impact (LVIA)	
WSCC-14	Downplays the potential visual and landscape impacts of construction activities, with too strong a reliance on it being short term, and reinstatement being phased / carried out as soon as possible (with reference to Commitments C7 and C19).	Although understood that key excavation/HDD activities may be intermittent and shorter term, visual/landscape construction related impacts (particularly for the cable corridor and any new side accesses) will likely be dominated by haul routes/tracks which may be in place for the entire construction period (dependant on phasing which is not specified/known at this stage)	There is a need to recognise and give greater weight to the potential construction impacts, which is arguably longer term (at 3.5 to 4 years). Details of how C-19 will be secured and the type of information that will be provided on detailed phasing, sequencing of construction activities is required.
WSCC-15	Viewpoint locations (and associated visualisations) at Oakendene substation, cable route and mpounds are lacking, and / or not representative of worst-case impacts	The LVIA places a heavy reliance on the specific viewpoint locations assessed, and chosen locations underplay and/or underestimate the magnitude of impacts. Given this will be the only visible permanent onshore structure, a greater number of viewpoint locations is	Further viewpoints should be considered (and visualisations provided where appropriate). E.g. at the substation, this should include Footpath 1787, the A272 looking directly south at newly-created access point, Footpath 1786 south of Oakendene Manor (north of pond), and Footpath 1786 west of industrial estate. There is a need to provide a full

Table 3-1: Pads on SLVIA and LVIA Visual Impacts			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIA	Remedy Measures / What needs to change to overcome disagreement
		warranted. There is also a need to reconsider viewpoint locations in light of the latest substation footprint/design. It is also not clear how the full extent of visual receptors likely to be affected have been considered – limited commentary provided on how all wider receptors have been assessed.	assessment/quantification of all landscape visual receptors impacted which will be wide ranging as indicated by Zones of Theoretical Visibility (ZTVs), and to recognise that selected viewpoints are only indicative of impacts for a limited proportion of receptors affected. Likelihood of Resolution: Possible – it is in the applicant’s gift to provide.
WSCC-	Concerns about the methods, scope and scale of assessment in the Residential Visual Amenity Assessment (RVAA	The RVAA is not fit for purpose, with an unclear methodology and conclusions drawn which lack objectivity. Recognises that it is possible that other residential properties not included in the RVAA may be significantly affected but has only considered those ‘most affected’ – Contrary to that suggested this is not consideration of a ‘worst case’ scenario. Concern about lack of views from upper floors, and not clear how conclusions of RVAA (in terms of the magnitude of visual impacts) has been factored into the LVIA. Impacts on visual receptors underplayed.	Engagement with WSCC is needed on the scope of the RVAA to understand the rationale of all properties potentially affected and rationale for those selected and those omitted. The LVIA needs to consider all visual receptors and consider key findings of RVAA in terms of the potential visual impacts. Review and reconsider the impacts on settlements, with clear definitions and consideration of the findings of the RVAA.
WSCC-	Lack of detail/clarity in the Design and Access Statement	At present design principles (which it is assumed will be tied to detailed design and ‘requirements’) are not presented in a clear manner relevant to each topic, or confusingly overlap. No engagement on these principles has been undertaken or clarity on any independent design review. Design elements within the outline landscape plan need securing and further developing.	A clear and consolidated table of design principles should be provided, ordered by topic as relevant, including more site- specific elements. As well as engagement on these principles, with a clear understanding of how independent design review has fed into the process
HDC-22 thru HDC-26	Issue is raised with the consistently applied to the execution of the Landscape and Visual Impact Assessment methodology regarding receptors.	This might mean that a potentially significant effect will be overlooked if effects are diluted down due to their limited geographical extents. These include visual receptors at Washington recreation ground. Key visual receptors are being assessed as part of a group and not being given due consideration to reflect the actual likely effects experienced by those receptors.	LVIA to refine and fix more precise parameters to the development of the Oakendene substation site is identified. These are key and heavily relied upon to the success of the Project’s embedded environmental measures and proposed mitigation measures on the LVIA conclusions.
	The scope of a Landscape Visual Impact Assessment (LVIA) does not include visiting or assessing individual private views.	Landscape features at Oakendene substation are not described and assessed within the core assessment of effects, but rather dealt as part of the character area.	This overlooks the actual likely effects on the landscape features as receptors in their own right, and the need arising from the LVIA to refine and fix more precise parameters to the development of the Oakendene substation site

Table 3-1: Pads on SLVIA and LVIA Visual Impacts			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIA	Remedy Measures / What needs to change to overcome disagreement
			is identified.
	Concerns about limited scope of consideration of viewpoints	The proposals would have an adverse impact on the landscape character and visual resources of the Low Weald National Character Area; and direct and indirect effects on the National Park designated landscape. In turn, this would change the character of the landscape of Local Character Areas	The Applicant has sought to mitigate this harm by use of engineering measures along the routing of the underground cabling, to avoid significant residual visual impacts. The DCO submission sets out in principle how removed hedgerows will be effectively restored and replanted. This is a key approach to mitigation to be implemented correctly
	Concern is raised over the impact arising the outlook from the South Downs National Park, particularly elevated viewpoints within the Park.	In terms of construction phase, the temporary works compounds at Washington would be visible from and would sit within views to the South Downs National Park.	These have not been identified as likely significant effects but will need to be considered as part of the receptors accessed.
8	Landscape elements and recreational destinations are identified as receptors (in the scope of the assessment) but not assessed as likely to result in significant effects during construction, operational and decommission stage.	HDC has concerns the effects on landscape elements are understated, as the loss of the internal boundary hedgerows and trees, as landscape features, to facilitate the new proposed Oakendene station for example, are significant. Additionally, in the baseline conditions for the onshore substation at Oakendene – landscape receptors, the site's landscape features are not identified. Only the character areas are discussed.	The site's landscape features need to be part of the assessment as they are also identified (as receptors in the scope of the assessment).
	Washington Recreation ground effects are assessed within the settlement receptor rather than a receptor on its own right	HDC disagree that the level of effect is considered minor and not significant, mostly justified by the fact that the cabling is underground and view H1 (acknowledges the compound as significantly visible) is not considered as being representative of views from the settlement	It is considered that users of the recreation ground, are not being given a proportionate assessment and in this case, it may perhaps make more sense to include it as a receptor within recreational and tourist destination receptor group
	In the draft Development Consent Order, pre-planting is discussed as being part of the 'on-shore site preparation works'	There is no reference to this as a commitment or to which geographical area this would be implemented. This is important to help mitigate temporary effects during construction but also where possible, it will offer advanced screening prior to operation stage.	This is important to help mitigate temporary effects during construction but also where possible, it will offer advanced screening prior to operation stage. One example will be to action the management and maintenance of the hedgerow along the A272 to soften views of the temporary compound, but also introduce any enhancement planting along this boundary and Kent Road.
Including HDC-25	Operational phase of Oakendene Substation site	Landscape and visual impact assessment recognises significant impacts at	Applicant to amend Commitment 68 to take account of WSCC's land management

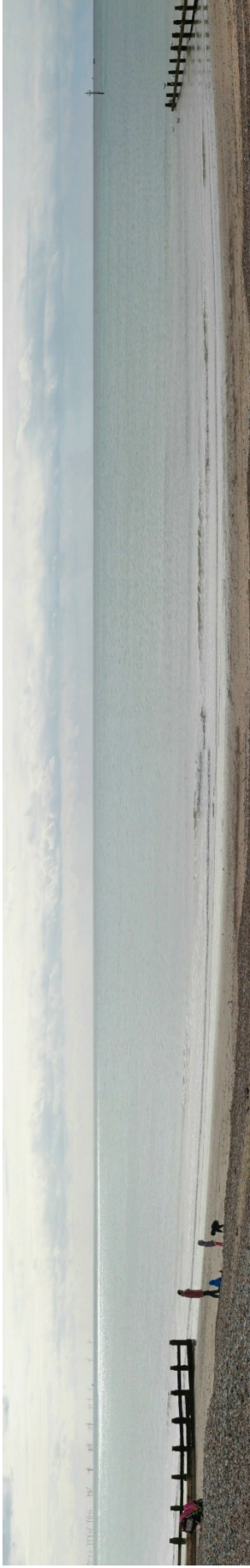
Table 3-1: Pads on SLVIA and LVIA Visual Impacts			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIA	Remedy Measures / What needs to change to overcome disagreement
		operational stage around the Oakendene substation Identified effects are assessed as softening and reducing in significance, based on design landscape principles and parameters proposed for the Oakendene substation presented in the documents, included DAS (including, amongst others, indicative developable area, site layout, building scale and form, heights (including concrete base) and materials palette), and as proposed mitigation measures (planting) matures. The LVIA conclusions are also based on the inclusion of these measures	guidelines and local character areas guidelines and characteristics within the J3 Cowfold and Shermanbury Farmlands, of the Horsham District Character assessment. Applicant to amend and refine draft DCO 8(1) (a) - (f) for onshore substation for more precise parameters to be fixed, to reflect the indicative site plan and building shown within DAS
HDC-26	Landscape and Visual Impact Assessment	<p>i) LVIA does not include assessment of relevant individual receptors within the core assessment document.</p> <p>ii) The grouping of some of the receptors into a wider bracket is minimising some effects that are considered significant.</p> <p>iii) Equally, over reliance by the assessor on the success of the general concept of replacement planting, is currently playing down the identified adverse effects in the core document which without delving down into the various associated appendices, this will not be picked up and is difficult to follow.</p>	Consistently apply the proposed LVIA methodology so that all receptors are given due consideration and the adverse effects are clear to the reader
SDNP-08	Offshore proposals: Impact of Turbines on SDNP	Significant concerns of size of turbines proposed; the maximum sizes are significantly greater than the existing Rampion 1 turbines. The geographic extent of the proposals and significant visual effects on uninterrupted seascape views, particularly from the South Downs Way (a National Trail), will also give rise to significant visual effects for which appropriate mitigation and/or compensation has not been demonstrated.	<p>Applicant to address in Assessment amendments and updates, including in respect of mitigation, compensation through a S106 Agreement and Commitments Register.</p> <p>Likelihood of resolution: Possible - it is in the applicant's gift to provide.</p>
SDA-09	SLVIA - Assessment	Rampion 1 is assessed as part of SLVIA baseline and is not considered in terms of cumulative effects. We disagree that Rampion 1 should be part of the baseline, on account of it having only a limited lifespan and the eventual decommissioning a probability.	<p>Applicant to address in Assessment amendments and updates, including in respect of mitigation, compensation through a S106 Agreement and Commitments Register.</p> <p>Likelihood of resolution: Possible - it is in the applicant's gift to provide.</p>
SDA-10	SLVIA - Assessment	Despite being requested during the pre-application stage, there is still no separate assessment of effects of Rampion 2 proposals after the decommissioning of	Applicant to address in LVA amendments and updates, including in respect of mitigation, compensation through a S106 Agreement and Commitments Register.

Table 3-1: Pads on SLVIA and LVIA Visual Impacts

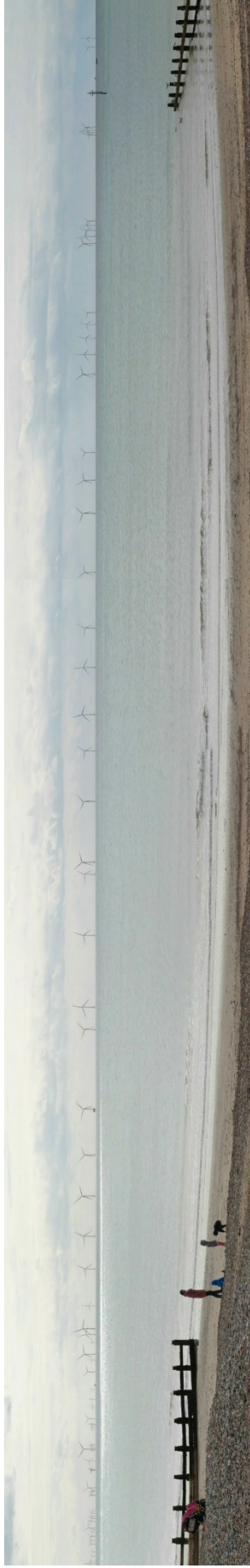
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIA	Remedy Measures / What needs to change to overcome disagreement
		Rampion 1. We therefore consider the current assessment is insufficient.	Likelihood of resolution: Possible – it is in the applicant’s gift to provide.
SDA-11	Onshore Cable Corridor – Landscape and Visual Impact	<p>Significant concern that the geographic extent of effects on landscape character is underestimated and therefore effects are downplayed.</p> <p>Limited consideration of perceptual qualities in assessment. This is likely to have resulted in missing effects and therefore has not sufficiently informed an appropriate mitigation strategy. Lack of consideration of historic landscape character in assessment. Likely missing effects cannot be considered to inform appropriate mitigation strategy.</p> <p>Significant concerns over assessment of construction effects, which are assessed as ‘negligible to zero’ on South Downs Integrated Landscape Character Area (LCA) I3 Arun to Adur Scarp Down. It is difficult to see how this conclusion has been reached given the construction immediately abuts this LCA above and below scarp, as well as going under. Scarp area is open access land.</p>	<p>Applicant to address in LVIA amendments and updates, including to the Commitments Register, with appropriate mitigation and compensatory measures including through a S106 Agreement.</p> <p>Likelihood of resolution: To be discussed</p>
SDA-12	LVIA – Landscape Character Assessment	It is not clear how views have been selected and assessed in respect of the effect on landscape character, including tranquillity	Clarification of process used required.
SDA-13	LVA Viewpoint siting	<p>At the Third Statutory Consultation Exercise (Further Supplementary Information Report – 2023) the SDNPA advised micro-siting of viewpoints be undertaken in consultation with Stakeholders. This has not taken place and viewpoint locations have not been agreed</p>	Further work by the applicant required to refine the locations in collaboration with stakeholders.
SDA-14	LVIA: Viewpoints from South Downs Way	Sequential testing viewpoints do not adequately reflect the continuous views as a visual receptor moves along the South Downs Way available that will be affected by the proposals. The SDNPA therefore considered the impacts on receptors have been underestimated.	<p>Suggest applicant undertakes kinetic viewpoint testing (example document: Shoreham Airport application reference</p> <p>AWDM / 1093/17 LVIA additional Information). Mitigation measures and Commitments Register to be updated.</p>
SDA-19	Lighting and Dark Night Skies	Lack of consideration of effects on Dark Skies in assessment of landscape and visual impact and on sensitive ecological features. Trenchless crossings are in the most vulnerable ecological locations by definition (excepting roads) and are located within a dark skies landscape.	<p>A detailed, bespoke lighting constraints plan must be provided for each HDD area following up to date BCT/ILP Guidance (2023) and suitable mitigation measures demonstrated at determination stage. The impacts must also be properly addressed in the</p>

Table 3-1: Pads on SLVIA and LVIA Visual Impacts			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIA	Remedy Measures / What needs to change to overcome disagreement
		As HDD areas will be lit at night during active drilling operations, it is critical that artificial light spill and glare is avoided around sensitive features	Likelihood of resolution: Yes, provide sufficiently detailed lighting constraints plans
MM0	Under DCO: Discrepancy between the ES and the DCO	The DCO states 'no more than 116 wind turbines', whilst the ES (non-technical summary, Section 1.2.3 states' up to 90 offshore wind turbines'. The DCO and ES and differing chapters within the ES should contain the same specifications for consistency, and the ensure impacts are accurately described, mitigated and monitored properly.	MMO is hopeful that these concerns will be resolved during Examination.
NE	Significant seascape impacts on the South Downs National Park (SDNP), including the Sussex Heritage Coast (SHC).	Critical issues remain around the magnitude of impact due to size, proximity, and lateral spread of the turbines that will cause harm to the statutory purposes of the SDNP and SHC.	No turbines should be constructed in the eastern array/Zone 6. Reduce the combined horizontal extent (lateral spread) of turbines associated with the combined R1 and R2 schemes. Further impact assessment is needed to clarify specific impacts on the SDNP and SHC. Likelihood of resolution: Unless a fundamental design change is presented, it is highly unlikely that this issue can be resolved.
NE	Significant seascape impacts on the Isle of Wight Area of Outstanding Natural Beauty (IoWAONB) and Chichester Harbour Area of Outstanding Natural Beauty (CHAONB)	Critical issues remain around the potential for the lateral spread of the turbines to cause harm to the statutory purposes of the AONBs	Further assessment of the westward expansion is required when considering the effects on the seascape setting of the CHAONB and the eastern portions of IoWAONB. Likelihood of resolution: It is possible this could progress with further information/ assessment.
NE	Significant landscape impacts on SDNP due to onshore cable installation	Natural England advises that due to the substantial lack of credible and detailed evidence in relation to the mitigation proposed, the assessment of effects as set out in the LVIA cannot be relied upon, and that there will be significant residual adverse landscape and visual effects on the SDNP and on its special qualities, setting or integrity.	Further information needs to be provided to evidence that the proposed mitigation measures are feasible and effective. It is possible this issue could be somewhat addressed if further information is provided.

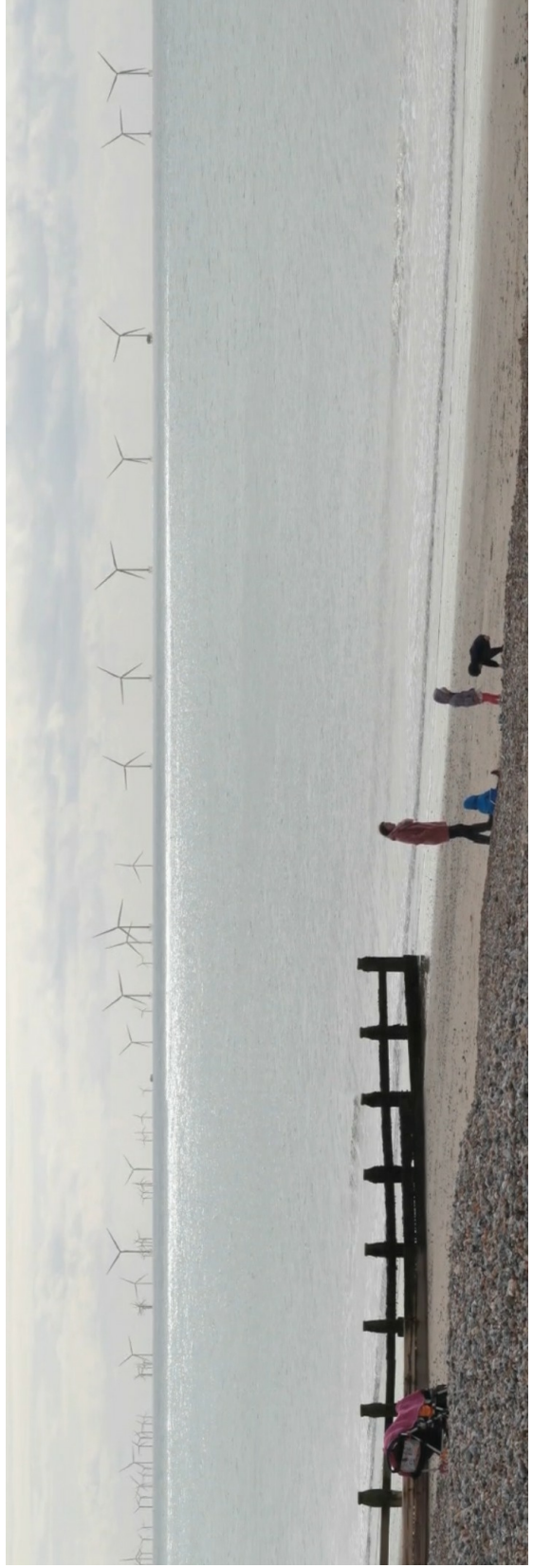
LARGER PANORAMIC IMAGES to show greater detail



Littlehampton Beach with Rampion1



Littlehampton Beach with Rampion 1 and Rampion 2





Beachy Head with Rampion 1



Beachy Head with Rampion 1 and Rampion 2

Chapter 4:
**Social effects on local residents
and communities - Offshore
and onshore elements**

Pages: 92 - 121

Chapter 4: Social effects on local residents and communities - Offshore and onshore elements

Chapter 4 Summary

4-1 In this chapter we highlight significant adverse impacts that we believe Rampion 2 would have on many residents and host communities, that will affect their social and emotive values, sense of place and quality of life. This is relevant for the Examination to assess whether Rampion 2 would lead to net positive gains or not, across the social dimension of sustainable development.

4-2 If Rampion 2 gets consent, residents would be required or forced to “host” the scheme whether they were: (a) aware of the proposal; (b) were complacent or objected to it, or (c) whether in future they will view the likely scale of the landscape / seascape transformation and change of the character of the area and environmental consequence in a positive or negative light.

4-3 This chapter considers the likely scale and significance of social impacts as we see them including those:

- On wellbeing, peace-of-mind, tranquillity and intrinsic values – all reasons why many of us choose to move to or remain on, the south coast and what motivates many living outside the area to visit and enjoy the coast as it is today.
- On community cohesion across a variety of social values that we see as important and the “sense of place”. This includes emotive bonds and attachment to the distinctive and unique character of the area, its natural beauty and ecology, as we see it.
- It includes perceptions of transparency, good faith, and fairness in terms of how we are engaged in the DCO process considering Rampion 2, and whether we feel our voices actually count and if they are given weight, and
- It includes perceptions of inter-related social effects arising from the multiple impacts of Rampion 2 over the 4-5 years of construction, operation from 2030 to about 2050, and the subsequent decommissioning or replacement of the infrastructure.

4-4 In respect to the last point above, the direct economic and socio-economic effects that negatively impact residents and visitors are identified and elaborated with evidence in Chapter 5. Chapters 8 and 9 consider construction noise, disruption, local access restrictions and other local impacts such as traffic congestion.

4-5 To set out the range of interrelated social concerns, we borrow from practitioner literature on emerging techniques for social impact assessments (SIA) applied to offshore wind developments in the UK. And from evidence-based research on ways to carry out landscape / seascape assessments with genuine community engagement.

4-6 Here we refer to advice:

- On seascape and marine character assessment tools and techniques recently developed by the Marine Management Organisation (MMO) and now offered as a resource or “toolbox” with a range of assessment techniques to consider seascape quality, value and capacity to absorb visual change, in relation to social effects.

- On the techniques that Marine Scotland has developed to better assess impacts of offshore wind energy developments on residents and host communities using two-way conversations and social value analysis. Their findings are considered here to illustrate and to benchmark our social impact concerns with the Rampion 2 proposal against other UK experience.¹

4-7 Here we also note the Marine Scotland work published in June 2022 that offers a conceptual framework for social impact assessments (SIAs) based on different clusters of social values identified and explored through close dialogue within potentially affected local communities.

- That two-way conversation was entirely missing from the Rampion 2 pre-application consultations, as explained in Chapter 1 of this LIA.
- Among the relevant findings of the Marine Scotland work was that, **“socio-economic assessments do not reflect impacts on the things (issues or values) that are important to local communities, and that risks and opportunities may be overlooked, or only emerge when there is less scope to make changes.”**
- We agree. Moreover, based on our “Rampion 2 experience” and dealings with the Applicant it is clear that the many social impact concerns we and other stakeholders raised during pre-application consultations are not featured, or even mentioned, in the Applicant’s Consultation Report.
- That was submitted with the Application in August 2023 to inform the ExA.
- We fear that many relevant concerns will be lost in the rush and volume of activities in the Examination. Realistically, they can only re-emerge in this Examination if they are raised by stakeholders and local communities themselves and the ExA is genuinely open to receiving such information.

4-8 Our view of the likely significant effects on people which are unique to the design, construction, operation and eventual decommissioning of Rampion 2 and its setting are illustrated as follows, under seven sections. These extend across social, environment and economic dimensions, namely effects on:

- Social values
- People’s health, well-being, tranquillity
- Sense of place, character of the area and capacity to absorb change
- Community cohesion
- Loss of cultural and heritage value
- Risk and uncertainty
- Transparency and perceptions of fairness
- Indirect effects impacting local services and the cost of living

¹ Commissioned by Marine Scotland to design and run a two-way conversation with people around Scotland about the social impacts of their offshore renewable energy developments. We refer to the technique to help express how we see the scope and significance of the adverse impacts of Rampion 2 on residents and on shared community social values.

4-9 Where practical and possible this Chapter points to and draws on the evidence in the following to calibrate and support our views, including:

- The empirical research base in the rolling OESEA programme including the BEIS commissioned visual buffer update study (2020) that provides a comprehensive review of domestic and international experience on adverse social and other effects of offshore wind turbines; and the OESEA-4 published in 2022.²
- Relevant representations by Interested Parties (IPs) and Principal Areas of Disagreement (PAD) Statements by statutory consultees indicating how the offshore and onshore elements of Rampion 2 will adversely impact many residents and communities and that they are net negative.
- Community-led public consultations on Rampion 2 held in-person in 2021 during the statutory consultations, including a gathering in Littlehampton attended by over 80 persons from across the south coast.
- Informative visual animations of Rampion 2 turbines to scale as seen from different viewpoints along the coast. These visual animations are on the PCS website and are far more informative than the static visual images the Applicant offers, which in our experience few if any residents are aware of, or have access to, and ³
- Corroborating lessons from the Bournemouth Borough Council local impact assessments that highlights impacts on local residents were largely ignored or underplayed by Applicant in the Navitus Bay Case, as in the Rampion 2 case.

4-10 We believe all the evidence taken together comprehensively indicates that If Rampion 2 were to receive consent:

- Positive social impacts would be limited, short term, and limited to the perceptions of a few only. Adverse social impacts overwhelmingly dominate for the majority of the host communities and people in the wider area.
- Adverse social impacts will intensify over the construction period of 4-5 years to 2030, then over the longer-term operation of 20-25 years and through the decommissioning starting around 2050.
- Future residents would then be engaged in the decision to either remove the Rampion infrastructure or replace it and essentially start the construction again.⁴

4-11 As in any local community, we are diverse and have all kinds of views. Among those actively engaging the DCO process and actually aware of what the Rampion 2 Application proposes, there are different aspects people want to emphasise:

- Some remain deeply concerned about the likely ecological impacts of Rampion 2 and how innate common-sense responsibility for local environment stewardship is violated, plus the emotional violation of their environmental consciousness and the frustration and acute sense of despair it is not recognised by others, or authorities;

² As well as experience underpinning policy and law in Europe to implement seascape buffers that bar large wind turbine installations the scale of Rampion 2 that are visible from the coast.

³ One such animation was shown in the above-mentioned community-led public meeting in Littlehampton during the consultations.

⁴ In respect to the Rampion 2 DCO and its unique context (i.e. towering turbines situated in close proximity to shore dominating the seascape/landscape also physically interrupting designated landscapes, that will in our view, have profound impacts on coastal and affected inland communities).

- Some focus more on concerns about the likely negative long-term effects on the tourism economy and the consequent net local job loss due to reduced tourism income, that combined with adverse impacts on electricity prices and the cost of living - as the public is now awakening to - impacting residents and local businesses at least for the foreseeable future, as well as the national economic opportunity costs that cascade to local cost impacts (as explained in Chapter 5);
- Others focus on what they see as an assault on collective wellbeing, cultural and intrinsic values and the clear and present threat to the quality and character of the area; impacting social values that are major factors in quality of coastal life and sense of place for many, and why we chose live, raise families, and retire here.

4-12 Where communities come together, is around shared values, that welcome and support offshore wind power installations, provided that the approach respects people and the environment and genuinely advances sustainable development on the south coast. ⁵

- Fundamentally, the Rampion 2 proposal, like any energy infrastructure, must be demonstrated to advance sustainability (specifically as legally defined as balancing across the three mutually reinforcing objectives and achieving net gains across each objective); and demonstrate responsible environmental stewardship.
- Our community values are also that statutory consultations and commercial developer engagements with residents and community groups must be conducted in an open, fair, and transparent manner.
- The Planning Inspectorate itself in every email communication to our questions indicates its own values are openness, transparency, and impartiality.
- Community organisations also believe in the fair and equitable sharing of benefits **and** costs of energy infrastructure development, not a situation where one group in society, in this case residents and communities in Rampion-2 affected coastal and inland areas alone bear all adverse impacts.
- That is particularly important and relevant to many because the UK's critical national energy priority is now defined in terms of delivery of **low emission generation to decarbonise the power sector by 2035.** ⁶
- Alternatives designated as critical national priorities are available to achieve that end, without the disproportionate disruption and violation of social values that we as enforced host communities see Rampion 2 would entail.

4-13 After digestion of the relevant social policy, practitioner research and guidance on social impacts of offshore wind as well as direct community feedback, taken together with information in the Applicant's Environment Statement, we conclude that:

- Rampion 2 offers no net gains across the social dimension of sustainable development; rather there is the very real risk of net loss in social terms.
- That applies to current and future residents and their families.
- Moreover, that social loss and burden would be borne solely, and disproportionately, by local residents and project affected communities and not share out across UK society.

⁵ Also, in keeping with the NPS EN-1 provision that it cannot default on international commitments to pursue sustainable development and the protection of landscapes; and adverse impacts outweighing the benefits.

⁶ In NPS, Nov 2023

4-14 From the social value perspective, our view is that Rampion 2 already undermines present-day community cohesion. It has divided communities into what may be simplistically described (for lack of a more refined analysis) as three main groups, namely:

- 1.) People who would lobby for and welcome Rampion 2 wind turbines installed prominently and on display in the Sussex Bay inshore, under any circumstances, at any cost the environment, the local economy or to other people's values.
- 2.) People (we suggest a majority of residents and the wider public) who are not aware of Rampion 2 at all, or what is proposed, let alone its scale, transformative nature, and likely social, environmental and economic impacts; and
- 3.) People who have paid attention and engaged in the DCO consultations and registered as Interested Parties who for the most part strongly object to this Application. The time, understanding and application to continue to Hearings and Written Statements adhering to rules laid down would, does appear daunting to a large group – many, area related are retired.

We believe a majority of people will stampede to group 3, the objecting group, if and when the construction starts around 2026 and people are shocked and rudely awakened, i.e., when they see the actual scale of the transformation and change to the character of the area, and thus step up to engage – unfortunately too late.

4-15 We further conclude:

- Rampion 2 risks a net loss of local employment opportunities for local residents and their families, (as provided in the Chapter 5 evidence that addresses the likely adverse impact on the tourism economy, jobs and related local businesses investment).
- This view is reflected in many PAD Statements of local authorities, along with the concerns there are few opportunities for local businesses or jobs in the supply chain apart from a few temporary low-skill jobs – thus affecting the prospects of local families.
- In terms of national-level social and socio-economic impacts, Rampion 2 risks being a significant national disbenefit. It disadvantages all UK residents.
- This is in the sense that Rampion 2, as indicated in PAD Statements (such as offered by South Downs National Park) will degrade designated national landscapes / seascapes on the south coast and undermine their statutory functions and objectives that aim to promote social wellbeing for all UK residents to enjoy.
- This has national-scale social implications. It comes at a time when people across these islands are increasingly encouraged by the government to travel less abroad and instead visit and enjoy the character of our natural coastal heritage, the sea, and the natural beauty of designated landscapes for recreation and vacations.
- By 2030 people nationally will have less choice and opportunity to enjoy natural seascapes / landscapes on the south coast without what many see as the transformative industrial-scale machine imprint of Rampion 2.

4-16 We therefore see the Rampion 2 Examination as posing a major social safeguarding question, not only in the local interest but in the national interest. At the same time, we do recognise it is a “David and Goliath” situation.

4-17 If Rampion 2 is consented, many residents on the south coast will have their “sense of place” and emotive bonds severed. By their moral compass and values, they will feel they must

move out of the area. Other residents may choose to remain to do the best that they can to advocate far stronger and effective compensation and mitigation measures. Those who can, will also direct their energies to prevent “a Rampion 2” happening in other coastal communities.

4.1 The Policy Context for Social Impacts

4-18 National Policy Statement EN-1 (2011) is one main basis for considering Rampion 2. Under Section 4.2, the “Applicants Environment Statement”, (para 4.2.2) it says Applicants are:

- *“... to consider the potential effects, including benefits, of a proposal for a project, the IPC will find it helpful if the applicant sets out information on the likely significant social and economic effects of the development, and shows how any likely significant negative effects would be avoided or mitigated. This information could include matters such as employment, equality, community cohesion and well-being. (the underline is our emphasis)*

4-19 As noted in Chapter 2, the European Landscape Convention (LCS) is an international treaty that requires signatories to acknowledge that landscapes are integral to the quality of life for people everywhere, including those living in degraded areas, areas of high quality, and in areas recognised as being of outstanding beauty - especially designated and highly protected landscapes / seascapes such as we have in the Rampion 2 case.

74-20 The Marine Policy Statement (2021) reinforces this LCS consideration that landscape legally includes land, inland water and marine areas and they are afforded equal protection under the law and in the interpretation and application of policy in DCO processes.

4-21 We note also that there are social and heritage dimensions relating to the protection of designated landscapes in the national Marine Policy Statement, such as where, “The statutory purposes of National Parks are to conserve and enhance the natural beauty, wildlife, and cultural heritage of an area and to promote opportunities for the understanding and enjoyment of the special qualities of an area by the public. The purpose of AONBs is to conserve and enhance natural beauty. The special qualities for which areas are designated vary, as does their relationship with the coast and related seascape”.⁸

4-22 As noted in the Chapter summary, the MMO offers a range of methods and techniques to apply to programmes and projects to assess seascape quality, value, and capacity for change. These are relevant to the Rampion Examination as discussed in section 4.2 of this chapter that follows, in that they emphasise the importance of community participation and engagement in such assessments at both planning and project-levels and in making judgements.⁹

4-23 Again, we see that genuine engagement with the host community involving two-way conversation was entirely missing in the pre-application consultations, as extensively documented in the Adequacy of Consultation (AoC) submissions made by residents, community organisations and Councils as statutory consultees.

⁷ European Convention on Landscape, ratified by the UK emphasizes protection, management, and planning of landscapes and recognizes the importance of landscapes for cultural, ecological, and recreational purposes.

⁸ MMO (2019) page 24, under Seascape/marine character assessments.

⁹ Seascapes sensitivity assessment (MMO1204) Technical report: produced for the Marine Management Organisation, MMO Project No: 1204, December 2019, 83pp

4-24 Cultural and historic conservation objectives that are valued by local communities cover a range of designated landscapes and areas of character that Rampion 2 will either physically disturb, or interrupt or visually challenge, whether residents live on the coastal strip or other parts of the south coast.

4-25 For example, conservation areas and Areas of Character cited by ADC within its District as being impacted in respect to cultural and historic value (beyond the intrusion into the South Downs National Park and Clymping Beach area site of Special Scientific Interest) include:

- Aldwick Bay Conservation Area;
- Craigweil House, Aldwick Conservation Area;
- Aldwick Road, Bognor Conservation Area;
- The Steyne, Bognor Conservation Area;
- Littlehampton (River Road) Conservation Area;
- Littlehampton (Sea Front) Conservation Area;
- Lyminster Conservation Area; and
- Poling Conservation Area.

4-26 Chapter 2 otherwise illustrates the range of policies at all levels from international commitments in treaties to Local and Neighbourhood Plans that define sustainable development as an overarching planning objective that seeks to achieve net positive gains across the social dimension, as well as the economic and environment dimensions.

4.2 Calibrating social Impacts of Rampion 2

4-27 This section considers what the Relevant Representations of Interested Parties and the PAD Statements say that we highlight and draw attention to in this Examination. It offers a simple benchmarking of our views with emerging practice in social impact assessment (SIA) of offshore windfarms on host communities and preparing landscape /seascape character assessments to consider the quality, sensitivity to change and capacity to absorb change.

4-28 The common feature is the importance of genuine community engagement in social impact assessments to help get beyond the “expert opinion” only approaches which can be misleading and not fully capture local concerns.

The Applicant’s Environment Statement (ES)

4-29 What we observe is the Applicant’s EIA handles impacts on residents and communities primarily through a socio-economic lens including heritage aspects. While this is not unusual, we see it as problematic and counter to current best practice in the literature cited.¹⁰

- Bournemouth Borough Council’s LIR for the Navitus Bay Wind Park Examination cited in Chapter 2 as a source of valuable lessons also raised this concern.

10 The Rampion 2 Applicant’s Evidence Plan Included Expert Topic Groups (ETG) meetings on “Onshore and Offshore Archaeology, Cultural Heritage and LVIA/SLVIA. There was no instances of the acronym “SIA” in the Rampion 2 ES Volume 5 Approach to the EIA, and only one instance of the word “social” , which was in relation to Covid-19 restrictions in 2020-2021 “... whilst applying social distancing measures to keep surveyors and members of the public safe”. The only mention of the word “residents” in the Applicant’s ES Volume 5 was to cite the failure to provide residents in the coastal strip notification of the statutory public consultation in 2021.

- It noted that little attention was paid to the likely impacts of that project on residents, and where they did consider issues such as landscape noise, disturbance and visual impact on residents (as receptors) they were mainly dismissed as inconsequential or negligible.
- For example, among what the Bournemouth LIR said on the need for the Navitus Bay Examination to pay more attention to impacts on local residents was:

Para “5.2. 24 “ it will be important to recognise that residents may be particularly susceptible to changes in their visual amenity - residents at home, especially using rooms normally occupied in waking or daylight hours, are likely to experience views for longer than those briefly passing through an area. The combined effect on a number of residents in an area may also be considered, by aggregating properties within a settlement, as a way of assessing the effect on the community as a whole.... “

- That is similar to the findings in Scotland cited previously on the rationale for the extension of SIAs to project-level assessments. And the need for genuine two-way interactions with residents to establish the true impact on values and the statement, ie: “socio-economic assessments do not reflect impacts on the things (issues and values) that are important to local communities.”
- The MMO work similarly states assessments of the quality of the landscape / seascape, the magnitude of change and the capacity to absorb change should reflect and make explicit the range of social values found within an area using techniques to ensure direct engagement of the community.

The MMO guidance notes:

- Valued attributes such as coastal form, perceptual qualities, cultural and natural features and associations, special qualities, and community values these may be ascertained by engagement with communities.
- This information is important as it relates to people’s quality of life.
- Communities’ views may contrast with, or reinforce, ‘expert’ opinion.
- Other MMO studies to develop a baseline of social information to considers people’s perception of “sense of place” in relation to seascape along the designated North Devon coast indicate that,

“sights and views and expanse of sea were important features of special places. Presence of wildlife was also important in the unspoilt nature of the study area seascapes. Diminished well-being was experienced as a result of negative changes to the environmental qualities of seascapes and the threat of further changes.” ¹¹

11 Seascape value, quality and links with sense of place (MMO1132): <https://www.gov.uk/government/publications/social-baseline-data-for-marine-planning-mmo1132>

“This emerging baseline social information study considers people’s perception of sense of place in relation to seascape along the designated North Devon coast. The study used a focus group and a public participation GIS mapping exercise. Special seascapes were associated with a range of positive feelings including solitude, feeling happy and relaxed and in association with happy memories. They also engendered feelings of respect and very strong emotional attachment as well as feelings of awe related to physical characteristics such as the size and scale of cliffs. There was general agreement about the coast being vitally important for well-being, and providing clarity or peace of mind which cannot be found in other places. The sights and views and expanse of sea were important features of special places.” “Presence of wildlife was also important in the unspoilt nature of the study area seascapes. Diminished well-being was experienced as a result of negative changes to the environmental

4-30 We recognise and share those concerns about Rampion 2. What we as community organisations disagree with in the Applicant’s ES are the assumptions and conclusions made through engagement with “expert groups” there are no significant social impacts on residents, communities and visitors, or if there are impacts, they are negligible and should be disregarded.

4-31 That in our view, allowed the same false narrative on Rampion 2 as seen in the Navitus Bay Wind park Application and more recently in the Applicant’s PEIR on the Awel y Môr offshore wind farm windfarm in Wales pause in Dec 2022 by the same developer as Rampion 2 (RWE) and then dramatically scaled back – and genuinely scaled back - not actually increased in scale from the Rochdale Envelope as Rampion 2 has been. We elaborated that in Chapter 1 referencing the PINs Section 51 Advisory Note to RWE when it was accepted for Examination in Sept 2023.

4-32 To highlight one aspect of the Rampion 2 Applicant’s assertions that we view as misleading, we saw a serious conflation of local support for renewable energy with support for the Rampion 2 proposal in the survey of public attitudes that was commissioned by the Applicant and made available on its website late in the Pre-Examination stage.

- Annex 2 of this community LIA provides a critique of the public telephone survey of 1,001 persons the Applicant commissioned in 2022 to deliver a series of conclusions that included a key statement, **“on balance 84% (of respondents) think that the advantages of the proposed Rampion 2 offshore windfarm far outweigh the disadvantages”**.
- We saw that commissioned work as obviously tailored to influence perceptions and judgements in the Examination on the critical NPS EN-1 policy 1.1.2 concerning whether adverse impacts outweigh national benefits.
- The Applicant’s survey on page 14) has the telling admission that, “two-fifths are aware of the Rampion 2 proposal”. Meaning, most respondents did not know any details of Rampion 2. As a community organisation we are all aware that this is true for the majority of residents along the coast.
- Of the total of 1001 telephone survey respondents, 118 were from Littlehampton and Bognor Regis, so 11.8% of the total. This despite the fact that residents along this stretch of the coast will be the most affected - should Rampion 2 be consented. 175 respondents were from Lewes, which will have no impact from the Rampion proposal. None at all were from the Cowfold / Horsham area.
- Moreover, the Applicant’s asserted percentages of support for Rampion 2 are NOT reflected in the Relevant Representations, including most who say they are welcoming of renewable energy, but cannot support the Rampion 2 Application.
- We also note that PCS sponsored a 3-hour in-person meeting during the formal consultations and after detained(?) **sustained** discussions of the Rampion 2 design and proposal, produced a different and almost unanimous result that is not misleading. That is discussed in Section 4.3 of this Chapter under PCS Pre-Application Consultation Meeting Resolutions.
- Therefore, for multiple reasons further elaborated in Annex 2, we see the Applicant’s survey of public and local community support for Rampion 2 as unfounded claims that should be given no weight in the Examination.

qualities of seascapes and the threat of further changes.” The study findings indicate that local views can contribute to the assessment of values.

Relevant Representations (RRs) and Principal Areas of Disagreement (PAD) Statements

4-33 Tuning to the Relevant Representations and PAD Statements we sought to identify the views of other stakeholders to calibrate and compare with our views on social impacts.

4-34 ADC stated in its Relevant Representation:

“... as a host authority of the Project, ADC has some concerns regarding disruption and impacts to residents, businesses, the local economy, and the environment. The benefits of the Project as a whole or beyond Arun will be of limited value to residents and local businesses who face disruption during construction. We will continue to engage with the Applicant to make sure that should the Project be granted, the Project delivers social, economic, and environmental benefits to Arun that outweighs the disruption.”

4-35 We agree with ADC and add that - additionally the loss of visual amenity during the operation stage and the permanent disruption across a range of social and cultural values would lead to detrimental effects and adversely affect community cohesiveness. Confidence in the government’s ability to deliver decarbonisation of power supply by 2035 in a sustainable way will be reduced, especially if the DCO process is seen to be unable to consider or give weight to legitimate local concerns.

4-36 Table 4.1 illustrates some relevant concerns in the PAD Statements submitted by three councils (ADC, WSCC, and HDC) as well as SDNPA, MMO and Natural England (NE). A number of the PAD Statements cited in other Chapters of this LIA especially on SLVIA and LVIA visual impacts overlap and apply to social impacts on residents.

Our observations on the PAD Statements included in Table 4.1 are:

- Many statements cite and connect to important social impact concerns that we wish to highlight.
- These apply to both the offshore and onshore components of Rampion 2.
- They also relate to the character of the area and landscape capacity to the extent it can accommodate change of the scale Rampion 2.
- As noted, Chapters 5 addresses the socioeconomic aspects that affect residents over all stages of the economic life of Rampion 2. Chapters 8 and 9 look at other significant social impacts related to construction and operation.

Table 4.1 Social Impacts - From the Principal Areas of Disagreement Statements			
Consultee / Number	Principal Issue / Concern	Explanation / concern	Remedy Measures / What needs to change to overcome disagreement
WSCC	Concerns about the methods, scope and scale of assessment in the Residential Visual Amenity Assessment (RVAA)	<p>The RVAA is not fit for purpose, with an unclear methodology and conclusions drawn which lack objectivity.</p> <p>Recognises that it is possible that other residential properties not included in the RVAA may be significantly affected but has only considered those 'most affected' - Contrary to that suggested this is not consideration of a 'worst case' scenario.</p> <p>Concern about lack of views from upper floors, and not clear how conclusions of RVAA (in terms of the magnitude of visual impacts) has been factored into the LVIA. Impacts on visual receptors underplayed.</p>	<p>Engagement with WSCC is needed on the scope of the RVAA to understand the rationale of all properties potentially affected and rationale for those selected and those omitted.</p> <p>The LVIA needs to consider all visual receptors and consider key findings of RVAA in terms of the potential visual impacts. Review and reconsider the impacts on settlements, with clear definitions and consideration of the findings of the RVAA.</p>
ADC24	Listed buildings, locally listed buildings and Area of Character	Listed buildings at No's 45-47 South Terrace, locally listed buildings at 4, 8-95 South Terrace & 16 Granville Road and South Terrace Area of Character	To provide an assessment for listed buildings at No's 45-47 South Terrace, locally listed buildings at 48-95 South Terrace & 16 Granville Road and South Terrace Area of Character.
SDA-20	Impact on Historic Environment	The risk to areas of known highly significant archaeology have not been appropriately weighted, investigated and assessed through the selection process for the cable corridor or the final assessment of the proposed development	Further investigation should be carried out through the examination to identify the risk and impacts and an appropriate mitigation and compensation package proposed and secured. Likelihood of resolution: to be discussed
HDC-26	Landscape and Visual Impact Assessment	<p>i) LVIA does not include assessment of relevant individual receptors within the core assessment document.</p> <p>ii) The grouping of some of the receptors into a wider bracket is minimising some effects that are considered significant.</p>	Consistently apply the proposed LVIA methodology so that all receptors are given due consideration, and the adverse effects are clear to the reader
SDA-11	Onshore Cable Corridor - Landscape and Visual Impact	<p>Significant concern that the geographic extent of effects on landscape character is underestimated and therefore effects are downplayed.</p> <p>Limited consideration of perceptual qualities in assessment. This is likely to have resulted in missing effects and therefore has not sufficiently informed an appropriate mitigation strategy. Lack of consideration of historic landscape character in assessment. Likely missing effects cannot be considered to inform appropriate mitigation strategy. Significant concerns over assessment of construction effects, which are assessed as 'negligible to zero' on South Downs Integrated Landscape Character Area (LCA) I3 Arun to Adur Scarp Down. It is difficult to see how this conclusion has been reached given the construction immediately abuts this LCA above and below scarp, as well as going under. Scarp area is open access land.</p>	<p>Applicant to address in LVIA amendments and updates, including to the Commitments Register, with appropriate mitigation and compensatory measures including through a S106 Agreement.</p> <p>Likelihood of resolution: To be discussed</p>
NE	Significant seascape impacts on the Isle of Wight Area of Outstanding Natural Beauty (IoWAONB) and	Critical issues remain around the potential for the lateral spread of the turbines to cause harm to the statutory purposes of the AONBs	<p>Further assessment of the westward expansion is required when considering the effects on the seascape setting of the CHAONB and the eastern portions of IoWAONB.</p> <p>Likelihood of resolution: It is possible this could progress with further information/ assessment.</p>

Table 4.1 Social Impacts - From the Principal Areas of Disagreement Statements

Consultee / Number	Principal Issue / Concern	Explanation / concern	Remedy Measures / What needs to change to overcome disagreement
	Chichester Harbour Area of Outstanding Natural Beauty (CHAONB)		
NE	Significant landscape impacts on SDNP due to onshore cable installation	Natural England advises that due to the substantial lack of credible and detailed evidence in relation to the mitigation proposed, the assessment of effects as set out in the LVIA cannot be relied upon, and that there will be significant residual adverse landscape and visual effects on the SDNP and on its special qualities, setting or integrity.	Further information needs to be provided to evidence that the proposed mitigation measures are feasible and effective. It is possible this issue could be somewhat addressed if further information is provided.
ADC24	Listed buildings, locally listed buildings and Area of Character	Listed buildings at No's 45-47 South Terrace, locally listed buildings at 4, 8-95 South Terrace & 16 Granville Road and South Terrace Area of Character	To provide an assessment for listed buildings at No's 45-47 South Terrace, locally listed buildings at 48-95 South Terrace & 16 Granville Road and South Terrace Area of Character.
ADC05	Community Benefits Package	Arun is of the opinion that the District will not significantly benefit from the Project, rather the area will experience disruption and significant Adverse effects, some of which are unlikely to be mitigated. Concerns about the mechanism regarding which the Community Benefits Package is secured and the criteria/funds involved as not referenced in the draft DCO.	Further information on a Community Benefits Package. Commitment (and securing mechanism) needs to be made to ADC for this package to compensate and offset adverse effects within the District.
WSCC13	Community Benefits Package	Reference within the OSES is made to a Community Benefits Package, however it is described as 'remaining separate' from the planning process. Due to the adverse effects identified by the Project, the Community Benefits Package should be a firm commitment and secured through the DCO.	The Applicant should provide a firm commitment to this and secure this approach through the DCO. Engagement with stakeholders on the scope and scale of this Fund should also be developed, including with the local community, as outlined in the OSES.
HDC21	Community Benefits Package	HDC is of the view that the district will not significantly benefit from the Project, rather the district will experience disruption and significant adverse effects.	Applicant to align community benefits package with mitigations

Benchmarking Rampion Impacts on Social Values against best practice

4-37 The Marine Scotland conceptual framework for social impact assessment offers the opportunity for a simple but relevant benchmarking of the social impact concerns that we have on the Rampion 2 proposal against evolving best practice.

- The Marine Scotland technique is based on clusters of social values that are identified and explored through 2-way facilitated dialogue within local communities. ¹²

¹² <https://www.gov.scot/publications/two-way-conversation-people-scotland-social-impact-offshore-renewables/pages/3/>

- While aimed at the marine planning level, the technique has value looking at projects and for benchmarking.¹³
- The approach is to first identify clusters of social values under categories in discussions with residents as:
 - 1.) Individual
 - 2.) Community
 - 3.) Wider political and environmental context
- Then consider impacts of planned offshore wind developments on the clusters of social values deemed important to residents.

4-38 Table 4.2 below shows the results of the Marine Scotland work. The left-hand column of the table lists the 15 principal concerns identified by Scotland residents who would be host communities for offshore renewables. The right-hand column indicates the degree to which we see those issues as applying to our situation.

4-39 Recognising it is case and context specific the relevant point we make here is that neither the concerns of residents in Scotland nor ours as community organisations on the south coast of England expected to host Rampion 2 are adequately recognised or reflected in the Applicant’s ES for Rampion 2.

13 The recommendations in the Scotland work included: “Consider the implications for the private sector: the dialogue was undertaken with Marine Scotland and with SIAs of sectoral marine plans in mind. The use of social value clusters would need to be taken through from the plan level into the development of individual projects. Marine Scotland may therefore also consider the value of developing specific guidance for developers on how social values can be better incorporated within project Environmental Impact Assessments (EIA).”

Table 4.2 Benchmarking Community Social Impact of Rampion 2 with Best Practice	
Clusters of importance as identified in Scotland SIA	Perspectives on how Rampion 2 Within affected communities on these issues (impact)
Individual Cluster	
1. Way of life: Family / family life / intergenerational issues	Neutral to Very High Varies depending on location and individual and family circumstances over the life of Rampion 2. Intrinsic value change of character of area impacts all. Cumulative effects over time for future generations
2. Way of Life: Jobs / career / employment	Neutral to Very High Adverse impacts on families and youth in respect to jobs and tourism economy - from diverted tourism
3. Way of life: Money / cost of living	Substantially and Very High Cascading impacts on cost of living via higher tariffs for households and small business in the foreseeable future well beyond 2035 – (when people have the facts and are aware until energy storage is available at scale and affordable)
Community Cluster	
4. Community: Local jobs / local industry / community sustainability	Very High as it related to community cohesion
5. Community: Transport connections / technology connections	Neutral for the Offshore High to Very High for the onshore
6. Community: Education	Neutral overall
7. Community: Healthcare	Neutral overall
8. Community: shops / housing	Impacting housing expansion west of Littlehampton, but mainly property value concerns of Residents in coastal zone areas. High adverse impact on trade in shops affected by localised construction disruptions (over 4-5 years) and over the long term or permanently via adverse impacts on tourism value and volume (through operation (of large visible turbines)
9. Community: socialising / recreation / parks / leisure	High to Very High Impact in respect to common enjoyment of the character of the area impinged by industrial transformation and designated landscapes affected including the diminution of aesthetic values and natural beauty
10. Community: Friends / being involved / supporting others	High to Very high in terms of social cohesion in local communities most affected by physical infrastructure and especially the scale of the transformation of the quality and character of the area
11. Culture: local identity / cultural heritage /	Very High, Substantial Disturbing for many individuals, households and groups that value cultural heritage and proactively support its conservation and protection
12. Local environment: connection to nature / landscape	Very High, Substantial Disturbing for many individuals, households, and groups. For many it will be seen as a violation of responsibility of local environment stewardship
13. Local political and decision-making systems	Very High, Substantial

Table 4.2 Benchmarking Community Social Impact of Rampion 2 with Best Practice	
Clusters of importance as identified in Scotland SIA	Perspectives on how Rampion 2 Within affected communities on these issues (impact)
Individual Cluster	
	Including relating to how the pre-application consultations were handled as documented in Adequacy of Consultation submissions and weight and voice given to local concerns affected by many factors for complacency to impacts of Covid-19 restrictions on meetings and sharing information.
Wider political and environmental context	
14. Environment: landscape / seascape / wildlife / environmental change	Very High, Substantial As elaborated in Section 4.2 of this chapter
15. National and EU level political and decision-making systems	Very High, Substantial Deeply frustrating when rules are not followed or perceived to be ignored such as safeguarding by providing the advised visual buffers. Where's the government on this issue and perceived unfairness that Rampion 2 would not be permitted in EU jurisdictions

4-40 To follow through with the benchmarking exercise, the results of the close engagement with local communities in Scotland indicated their four main social value clusters that may be affected by offshore renewables in their setting were seen as: ¹⁴

- Local jobs, industry, and community sustainability – mixed opinions positive and negative.
- Transport and technology connections – generally positive, but some negative.
- Environmental change – generally negative, but some positive.
- Political and decision-making systems – mixed opinions, positive and negative.

4-41 Other findings in the Scotland work that we believe are helpful to discuss the social effects of Rampion 2 and how they are handled in our context include:

- Early and meaningful engagement of the local community in planning and project specific SIAs is fundamental.
- Effective dialogue requires fun and easily understood materials that can facilitate wide-ranging conversations.
- Creating a successful public dialogue is an iterative process.
- Presenting information in terms of values that people recognise should enable a ‘no surprises’ consultation and outcome.

4.3 Significant Effects of Offshore Infrastructure on Residents

4-42 We start by repeating that as community organisations, we see an overwhelming lack of awareness of the Rampion 2 proposal details, let alone the likely scale, range and significance of social impacts on host communities.

¹⁴ Further explanation of each value cluster can be found in the Marine Scotland report as cited previously.

4-43 For people on the coastal strip aware of the transformation and magnitude of change to the landscape / seascape character of the area, there is a sense of impending loss and emotional frustration that they may be forced to accept a dramatic change to the character of the area they choose to live.

- That concern extends to how this project was conceived in the first place and frustration with how it was consulted largely under the radar in virtual-only modes of community interaction during the main statutory consultation period in 2021-2022, where there were COVID-19 restrictions on meetings and many people were distracted.
- The concern applies to residents who live on the coastal strip, as well as residents in communities nearby and in inland areas who visit the shores to enjoy the seascape character of the area parks and engage in various social and recreational opportunities – but remain unaware even today of what will change with Rampion 2.
- The pre-Application messaging was effective: I.e., it is only an extension to the existing Rampion 1 installation, nothing to be concerned about; only nimby's would challenge Rampion 2, and after all, "beauty is in the eye of the beholder".

4-44 Our view of the likely significant effects on people which are unique to the design, construction, operation and eventual decommissioning of Rampion 2 and its setting are illustrated as follows under seven sections, namely:

1. People's health, well-being, tranquillity, and intrinsic values
2. Sense of place, character of the area and capacity to absorb change
3. Community cohesion
4. Loss of cultural and heritage value
5. Perceptions of risk and uncertainty
6. Transparency and perception of fairness
7. Indirect effects impacting on services and the cost of living

1. People's health and well-being, tranquillity, and intrinsic value

4-45 The obvious disruption of wilderness and tranquillity was addressed in Chapter 3. Looking across various social values, many in our communities who have engaged in the DCO process have concerns about the likely effects on well-being, health, and happiness as a consequence of the transformation of seascape / landscape by Rampion 2 and what it does for their mindfulness, tranquillity, and heritage connection.

- That includes impacts on all the intrinsic values of coastal living that are essentially why many residents choose to move to, or remain here, and why families outside the area choose to visit for breaks, vacations and recreation and to enjoy the sea heritage, and natural beauty and character of the area.
- Many, if not most individuals and families derive benefits from living near the sea or visiting the area when they can afford the time and expense to do so.
- Those who follow what the Rampion 2 proposal actually entails and the design share concerns about dramatic change in visual amenity they enjoy currently, and their children can enjoy in future, should Rampion 2 be consented.
- As mentioned, the Bournemouth Council LIR in 2014 say there was little attention

to the direct adverse impacts on the health and well-being of local residents.

4-46 For residents along the Sussex Bay coastal strip who now enjoy unobstructed or even partial views of the natural sea, and those living in the community nearby, obviously among the most significant impacts of Rampion 2 are the reduced visual benefits.

4-47 Rampion 2 will also reduce access to visual benefits for other residents in the south.¹⁵ They include people that visit the coast or live in coastal areas but not in close proximity to the sea, as well as people that want to see the coast and designated landscapes / seascapes preserved for the benefit of all - regardless of whether they personally visit the coast often.

4-48. In community discussions and in Relevant Representations concerns of other disturbances and loss were raised based on their direct experience with Rampion 1, including:

- The excessive noise during construction operation was disturbing to the family – with all the pile driving;
- Loss of enjoyment and tranquillity of the natural seascape, knowing at the same time the turbine construction and operation “is doing unimaginable harm to nature and the ecologically sensitive inshore marine life”.
- We now have spinning turbines with flashing lights disturbing sleep and transforming our visual enjoyment of the landscape and seascape.

2. Sense of place, character of the area and capacity to absorb change

4-49 The character of the area as being defined by landscape and seascapes is stated in neighbourhood and local plans and otherwise what make our area distinct, unique, and vibrant. Part of the sense of place that we ascribe to that character is the attachment to the area and environment we all feel, and what makes us happy and belong.¹⁶ Rampion 2 in our view is a development that risks altering that balance in a significant way.

4-50 We as proactive community organisations were not asked to be part of any rigorous assessment of social impacts of Rampion 2 or the character of our areas using techniques suggested by Marine Scotland and the MMO, as noted previously. If we were asked by the Applicant or authorities applying such methods and guidance we would say:

- i) the landscape / seascape visual quality is high.
- ii) the landscape /seascape we have now that defines the character of the area.
- iii) many residents are highly sensitive to change that would diminishes that character, though of course not all residents.
- iv) the sheer scale and spread of Rampion 2 and magnitude of change it entails is well beyond the capacity of the landscape / seascape to absorb, and

15 There are people that value a landscape for homes that they own and occupy, or households or hotels that rent property with a natural sea view. There are people that relate to the value of a landscape from individuals who are not occupiers of property on the coast. Some attempts have been made in the academic literature to quantify the benefits of living near the coast, but a simple calculation is the difference in property values and rentals of equivalent properties with views of the sea and those without. Ref: Values of amenities in coastal zones. https://www.coastalwiki.org/wiki/Values_of_amenities_in_coastal_zones#References

16 There are various definitions of sense of place linked to social values. We take it as in order to maintain an area's sense of place, it needs to remain a place that people recognize as being unique and distinct from other places. The area needs to retain its character to enable residents to maintain connection to the environment.

v) We would be happy to list and explain how Rampion 2 would impact on the various social values in our community and the diversity of perspectives.

4-51 As community organisations we in fact would struggle to understand why any reasonable landscape / seascape impact assessment or SIA integrating across social values would conclude otherwise, and we would challenge the basis for that judgement.

4-52 To support and help get our views across we offer the following:

- What we see in the technical literature offered by Natural England and the MMO as good practice in defining seascape / landscape character values.
- What is provided in actual UK government guidance including the rolling OESEA and MMO information and guidance that reinforces our views and perceptions of the need to conserve and protect the character of the area including highly valued designated landscapes, and
- Our own informal assessment and what we asked 80 participants to offer as the local view on Rampion 2 and offshore wind alternatives in a community-led consultation meeting 24 Aug 2021 the offered to the Applicant as formal consultation input.

Natural England and MMO

4-53 To start with, we are comfortable to simply adopt the range of cultural/social and perceptual / aesthetic aspects (under people) that are reflected in Figure 4.1. It was developed by Natural England to inform seascape character assessments in the UK.

Where the definition of seascape is, ‘an area of sea, coastline and land, as perceived by people, whose character results from the actions and interactions of land with sea, by natural and/or human factors.’ The diagram is referred to as the Seascape Wheel. ¹⁷

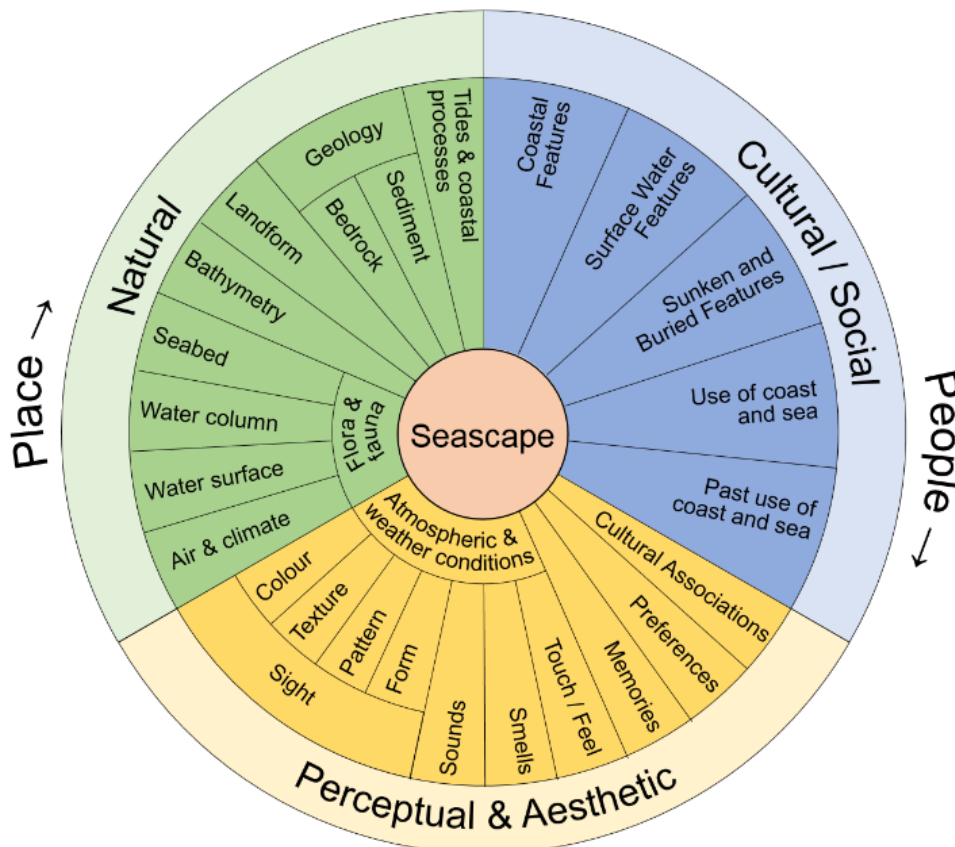


Figure 4 .1: Natural England’s view of Seascape / Landscape Character

4-54 The seascape wheel was helpful to us to understand the language used by practitioners on this aspect. We understand and further note that:

- This wheel is reflected in the MMO’s 2019 technical guidance on assessing seascape quality, value, and capacity for change. That is relevant to how we consider what is offered by the Applicant in the ES.^{18 19}
- The MMO notes assessments are applied at different scales from marine areas to projects using the same techniques and principles.
- Landscape character values and value criteria include sense of place and other attributes e.g. cultural and historic features and associations, community values, recreational value and intrinsic value.
- Criteria against which landscape susceptibility is judged we understand are organised in a similar way to landscape or seascape character assessments i.e. natural, cultural/ social, aesthetic and perceptual, landscape condition and visual characteristics.
- Landscape capacity as is broadly defined in the literature as the extent to which a type of landscape can accommodate change without significant effects on its local distinctiveness, its landscape character or landscape type.
- Community input and participation throughout is important.

OESEA Advice

4-55 This is elaborated in Chapter 2. It is nonetheless helpful to repeat or highlight certain aspects here, as people dip in and out of Chapters depending on their time and interest.

4-56 The fact that OESEA advice on visual buffers exists and relates to the buffer distance advice to the size of turbines refutes the Applicant’s claim there is no evidence of adverse impacts of offshore wind farms on tourism or people – essentially anywhere. That is categorical nonsense as all evidence shows.

As to the magnitude of change that Rampion 2 would have, we looked to the OESEA experience and evidence base.

- OESEA research offered the unbiased information regarding the magnitude of the likely impact of offshore wind turbines on people linked to change in the character of the areas the ability to absorb change.
- Rampion 2 and its setting is described as having an overwhelming number of factors that increase the magnitude of the impact and change (table 2.4) in Chapter 2 – i.e., very large effect.

4-57 OESEA-4 then specifically notes that wind turbines over 250m tall sited 13 km from shore (as proposed by the Rampion 2 design) would have large to very large magnitude of effects viewed from the shore.²⁰

17 From MMO, citing, “What is seascape character? Adapted from Natural England (2012a), Figure 1, page 9

18 MO (2019), Seascapes sensitivity assessment (MMO1204) Technical report, produced for the Marine Management Organisation, MMO Project No: 1204, December 2019, 83pp.

19 Due to the sheer scale and complexity of Rampion 2 we as community organisations, if asked by the Applicant or any authorities seriously applying the methods and guidance would conform would the quality of the landscape / seascape visual is high and defines the character of the area, that residents are sensitive to the change, and the magnitude of change is beyond the capacity of the landscape / seascape to absorb.

20 OESEA- 4, page 369, Table 5.28: View of potential magnitude of effects for 500MW offshore wind farm scenarios viewed at 22m AOD,

4-58 That evaluation is based on domestic and international experience is for a 500 MW windfarm for illustration purposes. Rampion 2 at 1,200 MW is over twice that size of the example provided in table 4.5 where the Rampion 2 Application proposes up to 90 turbines up to 325m tall with arrays starting 13 km from shore).

PCS Pre-Application Consultation Meeting Resolutions

4-59 Views of many local residents who would be required or forced to be host communities of Rampion 2, if it were consented, are reflected in resolutions adopted in the community-led public meeting 24 August 2021 in Littlehampton, as noted in Chapter 1, attended by over 80 persons. Among the resolutions passed almost unanimously included.

Resolution 1: Participants in this Community-led Public Meeting support and encourage all offshore wind power developments that fully respect relevant Government policy and guidelines to avoid and minimise local harm.

Recognising as discussed in Presentations:

- Govt Policy (i.e. to meet the offshore wind target of 40 GW by 2030 with windfarms far offshore) to utilise the best wind regimes and to avoid / minimise coastal harm.
- Gov Guidelines (i.e. from the Offshore Energy Strategic Environmental Assessment processes: OESEA2 (2011) - the bulk of new offshore wind farm generation capacity should be sited away from the coast, generally outside 12 nautical miles + OESEA3 (2016) to site industrial-scale large turbines >25 miles from National Parks.
- White Report (2020, commissioned by BEIS) to avoid and minimise local harm siting industrial-scale large turbines greater than 25 nautical miles offshore (visual buffer).

Opinion by show of hands: Majority of the more than 80 participants were in favour of Resolution 1: Against 3

PCS Visual Animations

4-60 To support discussions in the community meeting that passed that resolution visual animations that Protect Coastal England (PCE) commissioned were shown to help raise awareness of the scale of Rampion 2 and help to people assess for themselves the impact Rampion 2 turbines would have on the character of the area.

- These animations were shared with PCS and show Rampion 2 as seen from different viewpoints along the Sussex coast from the shore.
- We offer those for the Examination with the caveat as always that some residents will welcome the sight of wind turbines on display in Sussex Bay displacing natural seascape, and despite the effect on others in the community.²¹

4-61 Our collective view is the body of research and evidence noted above supports the common-sense view of many community organisations that Rampion 2 is **off the scale** in respect to impacts on people and designated landscapes /seascapes and substantially exceeds the capacity of the character of the Sussex coast to accommodate that very large change.

21 For many well-meaning reasons or ideological conviction or commercial self-interest

3. Community cohesion

4-62 When we speak of community cohesion around the DCO consideration of Rampion 2 we refer to the degree of unity, social integration, and positive relationships among residents in communities in forming their response to Rampion 2 and the consideration of alternatives to meet what is a common goal - decarbonising power supply by 2035 in a fair and sensible and affordable way, consistent with policy.

4-63 The lengthy pre-examination activities and engagement with the Rampion 2 DCO process over more than 3 years in fact has already served to disrupt community cohesion and to an extent fostered conflict among residents. It divides and polarises people. This is readily seen in local print media and in social media.

4-64 The concern is that community division will dramatically grow if and when Rampion 2 gets consent, and construction starts around 2026.

- It is not a simple matter.
- There is a clash of views over divergent perceptions of the likely local impacts of Rampion 2 across a range of social values, from those value the natural beauty and the character of the areas and want environmental safeguards and designated landscapes respected, and those in the community who believe otherwise. that Rampion 2 must proceed regardless of any other considerations.
- Pre-application consultations have also sparked disagreement within the community over whether people are paying attention to the actual details of what the Applicant proposes or not, or whether they are simply adhering to fixed ideological positions regardless of the facts.
- There are differences of view on whether there are any local economic benefits as well as questions about the equitable distribution of profits and compensation for local disruption and loss.
- Another source of tension arises from divergent views and perceptions of the actual national benefits and national disbenefits of Rampion 2, the latter ranging from value for money in decarbonising power supply by 2035 and the role of other low-emission alternatives to whether it is wise or counterproductive to degrade designated national landscapes / seascape at this time when we are encouraging the whole UK population to travel less and thus need to maintain the integrity of coastal areas.

4-65 Needless to say, these issues are complex and there is much uncertainty, misinformation and future events may further divide what would be host communities.²²

4-66 We can see the pressure on community cohesion surrounding the Rampion 2 questions is partly do to the lack of information and awareness of the likely magnitude of change of the character of area that in turn is due in large part to what we believe was a mix of:

- The poor quality of the pre-application consultations
- The unfortunate impact Covid-19 restriction had on the ability to meet to discuss concerns openly, and

22 Moreover, concerns about the potential impact on property values can further strain community relations. Homeowners may worry that the presence of large turbines will diminish the market value of their properties, leading to economic anxieties and disputes over compensation.

- More fundamental divides about fairness, including perceptions of whether it is fair to impose one group's the values of another group in this context.

4-67 As noted in the chapter summary from the social value perspective our view is that Rampion 2 undermines present-day community cohesion and divides communities into what may be simplistically described as three main groups, namely:

- People who would lobby for, and welcome Rampion 2 wind turbines, installed visibly and prominently on display in the Sussex Bay inshore, under any circumstances, want them imposed at any cost the environment, the local economy and to other people's values.
- People (we suggest a majority of residents and wider public) who are unaware of the Rampion 2 proposal at all, or what is proposed, let alone its scale, transformative nature, and likely social, environmental and economic impacts; and
- People who have paid attention and engaged in the DCO consultations and registered as IPs, who for the most part strongly object to this Application.

4-68 We believe a majority of people move to the objecting group, if and when the construction starts around 2026 and people are shocked and rudely awakened to the actual scale of the transformation and change to the character of the area.

4. Loss of cultural, environment stewardship and heritage value

4-69 These are values that are deeply emotional for many residents and tied to the identity of coastal communities. There is a clear sense that Rampion 2 will erode the culture of connection to the sea and coastal heritage for many, due to what they perceive as an alien machine transformation of the natural seascape and the actual physical disruption and disturbance of functional ecosystems on the land and in the sea. It occupies the horizon to the east, south and west as discussed in Chapter 3.

4-70 Perhaps the main one concern for many in our communities (again not every resident) is what many see as an assault on, or loss of local environment stewardship and the noble promises to advance that under the Localism Act (2011).

4-71 In this sense the most significant decisions about the environment to be made transforming the character of our area and infrastructure will be imposed externally – and contrary to our vision of achieving sustainable development, and transgressing what we see are policy safeguards against such occurrences that have been developed based on domestic and international experience. Here we refer the reader to evidence of ecological impacts of Rampion 2 in chapters 6 and 7 of this LIA.

4-72 Many are concerned about the negative impact on all wildlife - marine, animals, insects, and birds. With up to 90 large wind turbines up to 325m tall on towers that are pile driven into the seabed close to shore the Rampion 2 scheme will be far more intrusive and transformative than Rampion 1 for many residents.

5. Perceptions of Risk and uncertainty

4-73. Residents in our communities who have engaged with the Rampion 2 DCO process recognise there are serious uncertainties, contradictive views and emerging research to be taken

into account in the Examination. Rampion 2 turbines fixed in the inshore so close to populated areas and then the onshore transmission traversing protected landscapes introduces many risks and uncertainties that in turn will influence how social impacts unfold.

4-74 Only to illustrate among the risks and uncertainties we see include:

- Risk: Cultural impacts, potentially affecting historical sites or traditional activities that are important to local communities.
- Uncertainty: In assessing the exact impact on cultural heritage is uncertain and involves considerations of community values, historical significance, and effectiveness of mitigation measures.
- Risk: The overall well-being of the community will be affected by changes in the local environment, increased traffic during construction, and disruptions to daily life for many residents over a period of 4-5 years.
- Uncertainty: In predicting the precise social impacts on community well-being is uncertain and involves factors such as the magnitude of the effect, effectiveness of community engagement, mitigation measures, and adaptation over time.
- Risk: The risk and reality that Rampion 2 will not reduce upward pressure on household and small business electricity bills in the foreseeable future well beyond 2035.
- Uncertainty: how the local economy will perform and the extent to which that results in net job loss and how local businesses will react.
- Risk: Poorly managed community engagement or negative perceptions can lead to growing social resistance, lack of community cohesion and undermine government aims.
- Uncertainty: It is uncertain how the community will perceive and respond Rampion 2 once construction starts and residents who have not paid attention are suddenly alarmed and shocked.

4-75 The concerning aspect again is safeguard policies are there for a reason – that they do address the fact there is uncertainty and to avoid unnecessary risk of disproportionate local harm.

6. Transparency and perceptions of fairness

4-76 Perceptions of transparency and fairness help to shape the overall community view of Rampion 2 and trust and confidence in the DCO process and the outcome.

- This relates to what information is openly and transparently provided, or not clearly provided on the design and likely impacts on the environment and local communities by the developer during the pre-application consultations.
- It includes how accessible the information was to the potential host community, how it was conveyed, and now how it can be demonstrated that the Examination has taken these concerns into account in a reasonable way.
- The aspect for transparency and fairness extends to the consideration of whether there was balanced, good faith and fair disclosure of information to enable people in the host community to form opinions and add their voice meaningfully in the DCO process.
- We refer to the concerns about the “chilling effect² of the developer-led

public consultation during the pre-application stage in Chapter 1, where the developer's choice to have mainly virtual consultations on Rampion 2 (when it did not have to be virtual) not only severely limited public understanding of Rampion 2 and its likely local impacts, but also it had a significant chilling effect limiting informed feedback not only within the front-end consultation process and put many people off registering as interested parties for the Examination.

- This was evident in discussions within community organisations about who engaged with the DCO process and what influenced them most to speak up, or let others speak on their behalf.

4-77 The perception of fair, open and transparent DCO procedure is important (accepting the challenges due to the volume and complexity of the information to digest, number of stakeholders and the time pressures) and ultimately that the outcome itself is perceived by potential host communities to offer a fair and equitable distribution of adverse impacts, costs and benefits and not unduly burden one group.

4-78 And again, we feel it is important to note that Rampion 2 would not be permitted in Germany in the Baltic or North Sea under its own offshore windfarm laws because the scale of the project is far too large. Being so close to the coast it risked harm to coastal residents and essentially would not conform to commitments under European Convention on Landscapes that emphasize the protection and management of landscapes and recognizes the importance of associated seascapes for cultural, ecological, and recreational purposes.

- Many in our community feel the Rampion 2 Application made by an international commercial entity has the presumption, as indicated in the Applicant's Environment Statement, that overriding UK national policy protections and safeguards is completely reasonable, and that safeguards simply do not apply to the Rampion project.
- That runs counter to strongly held community social values of fairness and responsible good faith behaviour in the face of all the evidence to the contrary.
- Our feeling about how unreasonable that is, is made worse by what we have to-date actually witnessed in the pre-application consultations, in the acceptant stage and the pre-examination. Our concerns in that regard are explained in Chapter 1.

4-79 Community organisations have a very real and legitimate set of concerns about transparency and fairness with respect to the whole consideration of Rampion 2. We feel those concerns should be explicitly recognised and considered in the Examination.

- The concerns started with the windfarm extension bid award for the Rampion 2 owners in 2017 (Eon at that stage).
- The question in respect to fairness and transparency is how did we on the south coast end up 1,200 MW "extension project" in inshore waters, when the commercial complete bid criteria in 2017 was that no windfarm extension project could be larger than the size of the installation that it extended (using the size proxy of MW installed capacity).
- There were valid reasons for the Government setting that criteria that relate to scale and cumulative impacts. Rampion 1 is 400MW. Rampion 2 is now 1,200 MW. So, the combined installation will be quadruple in size - from 400 to 1,600 MW installed capacity.
- In discussions with ADC local authorities in Littlehampton in 2022 attended

by community organisations and several elected ADC councillors from along the coast it was established that the (elected councillors) were not aware of or consulted on that arrangement to increase the scale of the Rampion 2 extension so dramatically and using far larger turbines than the current Rampion 1.²³

- As noted in Chapter 2 the Rampion 1 DCO signed in 2014 explicitly states that any change or extension to Rampion 1 the new turbines can be no more than 15% taller than those selected for Rampion 1 (140m).
- We have explained the many concerns about the low quality of the developer-led pre-application consultations and what is seriously concerning to local residents in Chapter 1 and in AoC representations on file. We saw the developer making untenable claims about performance, benefits and impacts virtually unchallenged by authorities.
- It was also disappointing to hear mocking dismissal of objections to Rampion 2 as being concerns only about “aesthetics” and the phrases used in consultation literature and messaging that “beauty is in the eye of the beholder” implying that only local Nimbys would object to Rampion 2. We also saw that charge in local print and social media responses.
- We then encounter the Acceptance stage issues as referred to in Chapter 1 where the commercial developer outright rejected the Section 51 Advice of the Planning Inspectorate and challenged the regulators authority.

4-80 If Rampion 2 is gets consent many in the host communities would find it difficult to accept the equitable sharing of benefits, impacts and costs between large inland cities centres such as London and coastal and inland rural community who disproportionately bear the cost and adverse impacts was given sufficient weight in the decision.

7. Indirect effects on community values, services, and cost of living

4-81 We believe it is important not to gloss over the fact the Rampion 2 will lead to incremental upward pressure on local tariffs for the foreseeable future and well beyond 2035 as acknowledged in the NPS (November, 2023).

- The evidence clearly shows Rampion 2 does not offer the same value for money compared to other offshore windfarms in strong wind zones, and especially relative to alternatives for dependable low-emission generation that are now designated as critical national priorities.²⁴
- Frustrating to many residents forced to host Rampion 2 is the fact there cannot be an open conversation about impacts of Rampion 2 on local and national affordability, specifically the upward pressure on electricity prices.

4-82 The economic impact on the cost of living and local services is expanded slightly in Chapter 4 in respect to the relevance as a local impact that will put upward pressure on household and small business electricity bills due to higher system costs in the short to medium term.²⁵

23 We were puzzled to hear the response from The Crown Estates that basically said it was up to the Applicant to follow the rules and Government advice.

24 Analysis and hard evidence to be supplied in companion PCS Representations indicates that Rampion 2 scheme is not optimal part of that complementary mix of low-emission generation sources now designated as critical national priorities (in NPS, Nov 2023) to achieve decarbonisation of the UK power sector by 2035 with the most secure, affordable and reliable power supply for many complex reasons.

25 Outside this DCO process considering Rampion 2, such as responding to the NPS (March, 2023) public

4.5 Effects of onshore Infrastructure on Residents and social values

4-83 Many concerns about how Rampion 2 would affect inland communities and residents in respect to impacts on social values are similar to those described above.

4-84 Coastal community organisations are concerned about how inland communities and designated landscapes such as South Downs National Park are affected, as we enjoy those areas and assets. Equally inland communities utilise and enjoy the coastal assets.

4-85 Here in the interest of Examination efficiency we refer the reader to and cross-reference Cowfold v Rampion (Cowfold Residents Action Group) Local Impact written representation that provides an assessment of the impacts of the onshore component on residents.

Attachment to Chapter 4

Essential critique of Applicant's Survey of local attitudes on Rampion 2

This critique is in 4 parts.

1. Context, issue and claim
2. The PCS response:
3. Further relevant observations
4. Further survey evidence and data refuting the claim

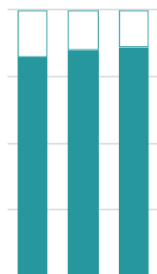
1. Context, issue, and claim:

The Applicant commissioned and telephone opinion survey of 1001 people spread along 7 constituencies along the coast of Sussex in 2022 on local attitudes towards offshore wind farms and Rampion 2. The telephone survey was conducted between 20 Oct and 22 Nov 2022

This opinion survey report dated Dec 2022 appeared on the Applicant's Rampion 2 project website in November 2023 when it was first noticed by PCS. This was after the period for Relevant Representations from the public had closed, as we understand hence there was no opportunity to comment on it in a Relevant Representation.

Among other claims, the survey says:

A large majority support the proposed Rampion 2 offshore wind farm across the entire survey with **82%** supporting principally, **85%** supporting with more information and **86%** supporting after hearing all policy proposals



On balance, **84%** think that the advantages of the proposed Rampion 2 offshore wind farm **outweigh any disadvantages...**



...and just **9%** think the disadvantages outweigh any advantages

On balance, **88%** think the advantages of Rampion 2 such as increased renewable energy and securing energy supplies means that they support the project despite any potential visual impact...



...and just **7%** think the potential visual impact means they oppose the project despite any advantages

consultation we ask the question, why does the UK today have among the highest share of renewable generation of any major economy in the world today, yet at the same time, the highest electricity tariffs of any major economy? Wind and solar today make up over 43% of UK electricity supply on an average annual basis ignoring the intermittency. That share is expected to rise to at least 66% across the ESO (National Grid Operator) Future Energy Scenarios (FES) scenarios by 2030.

Figure 1: Applicant Commissioned telephone survey that conflates public support for offshore wind with support for Rampion 2

This requires due diligence critique as it is clear the telephone question as to whether the “advantages of Rampion 2 outweigh the Disadvantages” was aimed at informing (we argue misinforming) the National Policy Statements central to the consideration of Rampion 2, specifically:

NPS EN-1: Para 1.1.2 The Planning Act 2008 also requires that the IPC must decide an application for energy infrastructure in accordance with the relevant NPSs except to the extent it is satisfied that to do so would (item 4) result in adverse impacts from the development outweighing the benefits”

This issue is also a central consideration in other national policy such as Marine Policy and Consideration of Habitat Regulations and the Public Interest.

2. The PCS Response:

Summed up as:

- There is a spectrum between what people may imagine and what they say when they know about a project and see it.
- The Yonder Survey conflates support for the Rampion 2 scheme with more generalised support for renewable energy development and offshore wind.
- We ask the Rampion Examination Authority to give no weight to the Yonder attitude Survey on Rampion 2 proposal commissioned by the Applicant.
- The Yonder survey lacks credibility due to the problem with the survey logic and questions the level of error and subjectivity. And it contradicts other surveys and information sources as referenced in part 4 of this attachment.
- The questions are unclear and leading. What disadvantages? What advantages? Questions are totally inappropriate for a telephone survey.
- It is implausible to offer a credible measure of opinion on whether "Advantages of Rampion 2 outweigh Benefits" without a proper face-to-face survey using clear and unbiased information on the adverse impacts and claimed benefits.
- The vague and fuzzy questions and wording only leads to unhelpful data - designed to provide justification for a presumption or a bias.
- The inescapable question is how it even possible to pretend that a member of the public - in a telephone can balance the advantages and disadvantages offer when the project does not exist and respondents have no actual information, knowledge of it, except what the project proponent chooses feeds the respondent.
- It is inconceivable that 10 percent of the 1,000 survey respondents had been to a Rampion 1 Visitor Centre, if indeed it were a random selection of respondents and not a biased sample.
- It is then dressed up as being a representative sample by being weighted for demographics.
- The Yonder Survey is thus largely misdirection, designed and framed to bias interpretation of highly important and relevant NPS policy and is without merit.

3. Further relevant observations:

This was a telephone survey of 1001 people aged 16+ (11.1% of total), comprising male and female, and spread along 7 constituencies along the coast of Sussex. You might wonder how much knowledge or interest a young person of 16 might have in the subject.

- Of the total of 1001 respondents, 118 were chosen from Littlehampton and Bognor Regis, so 11.8% of the total. This even though residents along this stretch of the coast will be the most effected should Rampion 2 get permission to proceed.
- The questions posed were presented in a different way to those posed in the Populus survey carries out in 2019, no doubt deliberately, and making a true comparison difficult. Questions were presented with often several subcategories and phrased in a manner designed to elicit a supportive response from the respondent. For example, on pages 19 & 20, the respondent is fed with some “positive” input about the benefits in the first sub question, before being told of the potential negative effects.
- The survey kicks off on page 6 posing a series of questions designed to set the scene for the respondent. Sub question 1 asks the respondent to rate their attitude towards the “development of offshore windfarms off the UK’s coast” and to choose between “strongly support” all the way down to “don’t know “.
- Clearly a question all would give a positive response to despite the lack of qualifying attributes. In sub questions 3 & 4, there is clearly little knowledge by the respondents of the essential part to be played by Nuclear and Gas powered energy sources.
- Sub question 4 on page 7 is interesting, asking the question “renewables generate expensive electricity?” 29% either strongly agreed or somewhat agreed with this question and 29% were “neither/nor”. A strong indicator of the lack of specific knowledge on this topic in the public domain.
- On page 10, sub question 5 asks for an opinion on “the way the project was communicated” with only 14% very positive and 20% fairly positive.
- Page 11 shows the response between various parts of the coast to the visual impact. Littlehampton and Bognor are well down compared to the rest. What might have been the result had all respondents been given the opportunity to see the simulation available on the PCS website of the turbines?
- **Page 14 has the telling admission “Two-fifths are aware of the Rampion 2 proposal, though many don’t know any details and younger people are less likely to be aware. As a community organisation we are all aware that this is true for the greater majority of residents along the coast.**
- ***Moreover, these percentages are NOT reflected in the percentage of responses supporting the project in the RRs, including from people who say they are in favour of renewable energy in principle but cannot support the Rampion 2 Application.***

4. Further evidence and data refuting the claim

Community organizations do not have financial resources nor is there time to commission a properly designed, unbiased survey to counter misleading survey input commissioned by the Applicant. Local Councils have not done a detailed survey like Bournemouth Burroughs Council commissioned Visit England to undertake on the Navitus Bay Wind Park application refused consent in 2015.

We therefore offer directly relevant evidence to provide unequivocal support of the above statements that the ExA should give no weight.

The evidence includes:

a. **"Wind power getting headwind in Germany"**, from the German state broadcaster, a DW documentary, 2020.



The DW documentary indicated Germany may soon close more wind farms than it opens each year after assumed public acceptance by local politicians turned to conflict / rejection in the face of reality. While many of these large German wind turbines now heading to the shredders were onshore, similar negative reactions may be expected to seashore / near shore turbines of the scale and proximity of the 1,200 MW Rampion 2 scheme in this coastal setting.

The documentary clearly shows sustainability requires community consensus and acceptance based on actual and unbiased metrics.

In 2017, what is particularly galling for local residents who are informed about the project, is this developer's own home country laws in Germany would not permit Rampion 2. The WindSeeG (Offshore Wind Act -2017) requires wind turbines the size of Rampion 2 to be more than 25 miles from land, and limits turbines to a height of 125m wind turbines within sight of the coast and islands as compared to their Application for up to 90 wind turbines up to 325m tall in arrays that start 8 statute miles from shore, visibly transforming and affecting seascape and landscape values, and adversely impacting inshore ecosystems, designated landscapes and heritage values.

b. Review and Update of Seascape and Visual Buffer study for Offshore Wind farms, 2020

The Report Commissioned by Department for Business, Energy and Industrial Strategy (BEIS) for its rolling "Offshore Energy Strategic Environment Assessment" programme, on which the UK Government's strategic advice visual buffers applicable to Rampion 2 are based.

https://assets.publishing.service.gov.uk/media/5ef9a3abd3bf7f769a4e7742/White_Consultants_2020_Seascape_and_visual_buffer_study_for_offshore_wind_farms.pdf

This provided the OESEA programme with a comprehensive review of UK and International experience of the adverse impact (disadvantages) of large turbines in close proximity to the shore. The Yonder survey contradicts and is not consistent with the OESEA research and findings. We do believe neither the information on Rampion 2 impacts nor the need for and rationale for visual buffers was made available to telephone respondents participating in the Yonder Survey.

That OESEA Advice effect suggests turbines the scale of Rampion 2 need to be no less than 40km (25 statute miles) away to avoid harm to coastal communities and designated landscapes. This conforms to international experience including laws in the developer's home country (Germany) as noted above as noted in Chapter 2 of this LIA.

c. The Populus Survey conducted in 2019 on attitudes to Rampion 1

In this generalised survey commissioned by the Applicant on attitudes about the Rampion 1 scheme in 2019, respondents asked about visual impacts of Rampion 1 reportedly responded as follows:

- Under the question aspects - the appearance of the windfarm" -
- Only 54.9% had a positive view. We assume this survey was given to those attending the Rampion Visitors Centre.
- Under the question, "Why do you support the Rampion 1 Offshore Wind Farm?" for the sub question, "Like the appearance?", the average overall result was 9% positive, with individual areas like Brighton Pavilion 16% and dropping to 5% for Littlehampton/Bognor areas.

The Populus survey and Yonder survey commissioned by the Applicant lead to different conclusions.

Moreover, with up to 90 large wind turbines up to 325m tall on towers close to shore the Rampion 2 scheme will be far taller, more visible, and far more intrusive and transformative than Rampion 1 for many coastal residents certainly those living, working or recreation in the coastal strip and currently enjoying natural seascape views from designated landscapes.

d. Bournemouth Borough Council Visitor survey conducted by Visit England on the Navitus Bay Wind Park Application refused consent in 2015

For the Navitus Bay Examination, in its objections and in its subsequent Local Impact

Assessment report the Bournemouth Borough Council (BBC) established that the impact on residents as well as tourism and the visitor economy would be a principal effect. The Applicant (EdF Energy - led) argued there was no robust empirical evidence that windfarms had socioeconomic effects at local or regional levels just as the Rampion 2 Applicant now argues.

The Council argued that the Navitus Bay Applicant failed to properly quantify the net impacts on tourism and explains why the developer would need to provide annual mitigation or compensation of just over £100 million p.a. or £2.5 billion over the life of the project to offset the expected loss of trade, as well as further compensation for investment loss in the area. Bournemouth (BBC) argued this rose to £6.3 billion over the lifetime of the project over all affected districts.

That estimate was based on a detained visitor survey conducted by Visit England where respondents were shown "before and after" images of the turbines to scale and asked detailed questions on how it would impact their decision to visit the coast in future. The survey established that while some visits would be unaffected, a significant proportion would be, especially including the longer stays.

This is especially important given that the UK public will be strongly discouraged from leaving these islands in future for vacation and recreation. Rampion 2 would be operational from 2030. For obvious reasons the industrial-machine transformation of our natural seascape would not be an asset for residents or visitors of current and future generations, nor will it protect our natural capital - quite the opposite.

Conclusion:

All these data reinforce our request for the Examination Authority and other Interested to give no weight to the Yonder attitude Survey on Rampion 2 commissioned by the Applicant.

**Chapter 5:
Tourism Economy,
Other Socio-Economic and
National-To Local Economic
Impacts**

Pages: 123 - 148

Chapter 5: Tourism economy, other socio-economic and national-to local economic impacts

5.0 Chapter 5 Introduction and overview

5.1 This Chapter explains how many in our communities, who are reasonably informed about the Rampion 2 Application and what is proposed, see the likely adverse effects on the area's tourism economy, other local socio-economic effects, and national economic effects and disbenefits. These are relevant to interpret and apply National Policy Statements in the Rampion 2 Examination, and specifically to help inform key judgements:

- Firstly, on whether adverse effects of Rampion 2 outweigh its national benefits (as per NPS EN-1, para 1.1.2), and
- Secondly, on whether Rampion 2 offers net positive gains across the economic objective of sustainable development (NPS EN-1, para 2.2.7, and other policies).

5.2 The Chapter considers how Rampion 2 would likely affect the prosperity and opportunities of local residents and families living and working here, both directly and indirectly, and the area's comparative advantage to attract tourism. The latter is clearly significant to economic activity, for revenue flows to the area including the tax base, as well as local jobs and tourism related investment opportunities.

5.3 Simple proxy estimates are that Rampion 2 could lead to a £ multi-billion loss over its assumed economic life due to the diversion of tourism away from the south coast and otherwise reduce the quality of the experience for many who do visit.

The combine adverse socio-economic and economic effects will be multi-generational:

- The effects would start and continue over the 4–5-years of construction from about 2026, if Rampion 2 is consented;
- Continue over the operation stage from 2030 or so, for 20-25 years to around 2050;
- And last through the decommissioning or replacement / re-powering stage; which largely repeats the cycle of the original construction disruptions.

5.4 Economic effects of course include the positive local impacts that the Applicant's Environment Statement (ES) asserts. However, in the absence of economic input-output modelling to cross-check and validate these assertions, a simple question is whether those benefits are significantly overstated by the Applicant, as viewed through the eyes of statutory consultees and local authorities with the mandates to plan and manage local economic development.

5.5 Equally concerning are economic opportunity costs¹ and national disbenefits that Rampion 2 would have, and how those issues are handled in the Examination.

1 Opportunity cost represents the potential benefits missed out on when choosing one alternative over another. In this case consenting Rampion 2, thereby committing to repay the £3-4 billion development cost to the Applicant and international investors when other alternatives are available that do more for less money.

5.6 Here we refer to the likely chain of national-to-local effects, including economic opportunity costs that result from allocating £3-4 billion to Rampion 2, where all things considered, it is comparatively low-efficiency energy infrastructure in terms of where it is located, and comes with significantly more impactful footprint (in terms sea and land area, landscape impacts and ecological impacts) and at a high relative cost.²

5.7 Our perception via the broader economic lens is that national level economic effects of consenting Rampion 2 (as a less efficient infrastructure choice) through its impact on UK power system economics on the National Grid:

- Will have an incremental but nevertheless measurable cascading impact on the local cost of living and other essential factors, such as electricity bills for local households and small businesses (hence jobs and business opportunity going forward).
- At the same time it subtracts from national benefits, by requiring higher importation of LNG from price volatile international markets to provide power when the wind drops, while the UK domestic supply of natural gas is reduced or unavailable, and also heavier reliance on expensive undersea power imports, if available.
- That adversely impacts on the national balance of payments.
- It is a missed opportunity for greater reduction of carbon emissions, and incrementally adds to national energy security and energy self reliance pressures and risk that translates from national to local levels over the 30 years from 2030-2050.

5.8 Additionally, there are the environmental opportunity costs. These stem from the mix of temporary and permanent marine habitat disruption and biodiversity loss that Rampion 2 will be responsible for; increasing pressure on ecosystem functions and services due to construction activities and operation, as addressed in LIA Chapters 6 and 7.

- In economic terms, Rampion 2 risks eroding the value of those ecosystem services and their important role and contribution to local and regional economies.³

5.9 The Chapter 5 analysis and evidence that we offer herein draws on:

1. The Applicant's PEIR and ES assertions in regard to Rampion 2 (as having no effect on the tourism economy and even offering the potential to increased tourism), and socio-economic and economic issues, focusing mostly on the tourism aspect.
2. Requirements in NPS to address tourism, socio-economic and economic effects and the related policy requirements.
3. The views in Relevant Representations and PAD Statements of Councils and other statutory consultees on the ES that we believe pertain.
4. Relevant Information on domestic and international experience in the rolling OESEA programme research database, including the visual buffer update study (2020) as an information resource, together with the OESEA-4 (2022).
5. Analysis provided for the Navitus Bay Wind Park Examination that was based on actual detailed visitor surveys properly done by Visit England. That led to quantification of the likely impact of the Navitus Bay scheme on the volume and value of tourism in that area.

² The multi-billion £ question is whether Rampion 2 will cost UK society more money than other viable low-emission alternatives which offer the same, or greater national benefits and thus better value for money.

³ Ecosystem services defined as services provided by the natural environment that benefit people. <https://www.gov.uk/government/publications/an-introductory-guide-to-valuing-ecosystem-services>

6. Using the Bournemouth LIR report findings as a simple proxy and adjusting for the location context and relative tourism volume and value in the two affected areas indicates:

A reduction of £44M per year for Arun District and almost £200M per year for West Sussex is suggested as possible.

The impact on West Sussex, if one assumes 25 years (construction plus operation) would be in the order of £5 billion, cumulatively in today's money.

Even if it were half that figure, it is massively significant.

7. Relevant transferable experience and reports of labour unions and other stakeholders on the lack of local economic benefit promised from offshore wide development in Scotland, where reportedly:

Only 1/10th of the jobs that were forecast materialised and those were mostly temporary, low skilled and low paid jobs.⁴

5.10 We observe in PAD Statements and Relevant Representations made in reference to the assertions in the Application documents and our from our own analysis as follow:

On Tourism economy, related local jobs and investment

i. ADC and WSCC expressed concern regarding adverse effects on tourism and tourism assets, including potential displaced tourism to other coastal areas. A common concern that we share with Interested Parties was the Applicant offers no quantification of the impacts on the tourism sector.⁵

ii. For the offshore component, the Applicant's PEIR / ES hypothesis and assertions are unfortunately based on a narrow, selective and dated desk study. The Applicant's conclusion that there is no evidence (anywhere in the world) of adverse impacts on coastal tourism from offshore windfarms - is simply not credible.

Specifically we point to the Applicant's assertion in the ES: **"there is no evidence that suggests any relationship between the construction (operation or decommissioning) of offshore wind farms and a reduction in tourism activity, visitor spending or tourism-related employment."**

The Applicant's ES does concede that during the construction phase of Rampion 2 there would be major / moderate effects on tourist destinations along the onshore route.

iii. The Applicant then states the tourism statistic for the Rampion 1 scheme validates its hypothesis that Rampion 2 (like all windfarms) would have no impact on tourism volume and value. It also offers the Dudgeon Offshore Wind Farm 32 km (20 miles) off the coast of Norfolk in the North Sea as further validation of its ES claims.

iv. If the Applicant's assertions were indeed credible, we ask the rhetorical questions:

⁴ <https://www.heraldscotland.com/news/homenews/23489568.offshore-wind-delivers-one-tenth-jobs-promised-ministers/> In terms of claimed job creation and other benefits - versus the actual outcomes (i.e., one tenth of local employment generation that was claimed) and very few high skilled jobs owing to that fact that much of wind technology the UK is buying is supplied by European consortium, who thereafter will own and operate wind turbine power stations under 60-70 year seabed leases with substantial subsidy and risk guarantees.

⁵ In its statutory LIR, the Bournemouth Borough Council argued that the Navitus Bay Applicant failed to properly quantify the net impacts on tourism and explains why the developer would need to provide annual mitigation or compensation of just over £100 million p.a. or £2.5 billion over the life of the project to offset the expected loss of trade, as well as further compensation for investment loss in the area. Bournemouth (BBC) argued this rose to £6.3 billion over the lifetime of the project over all affected districts.

- Why would laws, policy and advice to provide visual buffers for offshore wind locations related to turbine size and visibility even exist in European jurisdictions?
 - Why would an offshore wind project of the proximity and scale of Rampion 2 be banned by the German Offshore wind law, in effect since 2017 for the North and Baltic seas?
 - Why would the UK's own Offshore Energy SEA programme, with its stated objective of alignment with the articles and commitment under the European Convention on Landscapes, update its visual buffer advice in 2020 basing that on a comprehensive review of domestic and international experience with visual buffers at policy, spatial planning and project levels?
 - Why would the Navitus Bay Wind Park Application west along the South Coast be refused consent in 2015? (where we argue that it is more relevant to compare the likely Rampion 2 impacts to likely impacts of the Navitus Bay Application).
 - Why was there no mention whatsoever of the Navitus Bay DCO Application and Examination in the Rampion 2 Applicant's PEIR or ES?
- v. Councils in their PAD Statements and RRs have flagged the absence of commitments from the Rampion 2 Applicant to support the area tourism sector when it is disrupted during construction (4-5 years) and then for 20-25 years of operation from 2030.
- vi. The PAD Statements note there was no effective mechanism to monitor, offset and compensate for actual loss of tourism revenue, or to address the associated local jobs and investment opportunities at District and County levels.

5.11 Bournemouth Borough Council in its LIR on the Navitus Bay Application stressed the degree of risk that large inshore windfarms pose to growing the tourism economy on the South coast of England, especially with the scale of turbines today, together with close proximity to coastal settlements and designated landscapes.

- The Secretary of State (SOS) Decision Letter when explaining why consent was refused on the Navitus Bay Application implied the likely loss to the area tourism economy may be somewhere between the Applicant's claim and the estimate from processing the detailed visitor survey information conducted by Visit England.
- It noted the Examination found that the Applicant erred in some assessments by lessening negative impacts on tourism-related jobs, and that there would be "significant residual harm to tourism" in some local areas.
- We argue the same pattern of underplaying adverse local economic impacts is present in the Rampion 2 Application, a concern seen in PAD Statements.

Future Proofing

5.12 An further important consideration in respect to the likely impact of Rampion 2 on the tourism economy on the south coast is all UK citizens today, and for the foreseeable future will be encouraged to stay in the UK to vacation and seek quality of life, peace and tranquillity and recreation opportunities and vacation breaks on the natural sea coasts of these islands – meaning not to travel abroad as much for the foreseeable future.

5.13 Thus from a national and local perspective, now is not the time to industrialise or transform the character of our coastal areas which presently have much to offer, casting aside

national environmental safeguards like the OESEA visual buffers that are closely aligned with respect of treaty commitments and domestic law, as discussed in Chapter 2.

On Non-Tourism Job and other socio-economic effects?

5.14 There clearly will be some local and regional economic spin-offs in the form of direct and indirect jobs during the Rampion 2 construction period. But again consensus is the jobs will be limited, mostly temporary, low paid and fall away during the operation stage. Plus they will be massively small for a £3-4 billion infrastructure development.

5.15 An further question is are the job impacts of Rampion 2 net positive, reasonable and adequate in respect to relevant UK economic policy objectives (e.g., job creation and green industry development) and truly concerning, are they proportional to a £3-4 billion infrastructure development that communities will be required or forced to host and pay for in the form of electricity prices and taxes – all things considered.⁶

5.16 PAD Statements note that local authorities, such as Arun District Council, are of the opinion that the District will not significantly benefit from Rampion 2 in respect to jobs or the economy generally; rather the area will experience construction disruption and significant adverse effects, some of which are unlikely to be mitigated. Horsham District Council expressed a similar view in its PAD Statement.

Project-related Jobs?

5.17 The bulk of the advanced equipment for the Rampion 2 development is European supplied (turbines, generators, substation equipment and all associated controls and extensive cabling as well as steel and cement). We also assume much of the highly specialised construction equipment, ships and tender vessels for offshore installations and their maintenance are all proprietary technology, and similarly European supplied.

- As one consequence, the lions share “high value green jobs” in design, manufacturing and services for Rampion 2 would be non-UK and non transferable.⁷
- As is cited in PAD Statements of local authorities, there are uncertain and limited supply chain opportunities available to boost local content and for local companies and business to participate in the Rampion 2 construction and post-construction.
- Here we also note the European Commission sued the UK in the WTO when in 2020 the UK tried to introduce minimum local content rules for UK offshore wind developments that plan to access the UK’s CfD subsidy regime for offshore wind companies.
- The UK Government subsequently abandoned trying to achieve local content standards or requirements in UK offshore wind developments in 2022 (i.e., thus any offshore wind Application from an EU-based commercial entity such as the Applicant, whether EU state owned or backed, can offer 100% non-UK content).
- Moreover, in September 2023 the UK Government increased the CfD subsidy for offshore wind developers in the form of the maximum strike price (payments to

6 Recognising the £3-4 billion development costs needs to be wholly repaid to international investors by UK consumers either via their power bills or taxes.

7 Similarly, the Contracts for Difference (CfD) subsidy payments, the related commercial profits that fund technology advances, and the weather-related risk guarantees providing payments (if there is too little or too much power output. e.g., constraint payments) put there as incentives to investors transferring risk to the consumer, would mainly flow to the Applicant and international investors.

offshore wind companies for power production with no market risk) by 66%.⁸

- As one consequence, we assume there are no likely prospects for gains in local content and supply chains access for UK businesses, suppliers companies (local jobs) through any negotiations with the Rampion 2 Applicant, as requested in PAD Statements. We assume there are no commitments or mechanism for that in policy.⁹

On National-to-Local Economic effects

5.18 Consenting Rampion 2 (a low-efficiency infrastructure choice) has opportunity costs that in turn will affect UK power system economics (i.e. , incrementally increasing average system costs on the National Grid)¹⁰ which will cascade down to create indirect adverse local impacts with socio-economic consequences:

- That Rampion 2 is inefficient infrastructure (or rather would be inefficiently located infrastructure) as is made clear in the load duration curves for the performance of Rampion 1 since commissioning in 2017, as compared to other UK offshore windfarms (illustrated in the economic section of this Chapter in Figure 5-1).
- This is relevant as the variability of power output from Rampion 2 turbines will be of a similar pattern to the existing Rampion installation being located in the same inshore sea area and wind regime.
- The average annual output of Rampion 1 is comparatively low and there are more frequent and longer periods of low or no output than other wind infrastructure.¹¹

5.19 We as community organisations obviously do not have money to pay for the modelling analysis needed to quantify these aspects and national-to-local economic impacts, or to pay for expert testimony in support of our written representations on the matter.

- Thus we have urged the Rampion 2 ExA through Relevant Representations to request expert testimony on that matter to be provided, following Examination guidance that is offered under the Planning Act Guidance.¹²

8 <https://www.gov.uk/government/news/boost-for-offshore-wind-as-government-raises-maximum-prices-in-renewable-energy-auction>

9 The European Commission sued the UK in the WTO Courts when the UK tried to introduce minim local content rules in UK offshore wind development almost exclusively awarded to EU consortium to be developed, owned and operated under seabed use licenses issues by the Crown Estates now up to 60-70 years. No local contend is required as the UK backed down as reported from the EU perspective on the matter. https://policy.trade.ec.europa.eu/news/eu-and-uk-agree-way-forward-wto-dispute-concerning-uks-green-energy-subsidy-scheme-2022-07-01_en

10 Due to investing in a comparatively inefficient offshore windfarm, together with the opportunity costs, leading to more reliance on expensive imported LNG, more required investment in ancillary power system equipment and infrastructure for stability control and load balancing, higher imports via undersea power cables and the higher prospects for unserved energy demand (load shedding).

11 Rampion 1 has an observed capacity factor of around 38% since commissioning 2017. Output varies year to year, seasonally and daily. Rampion 2 would have similar though possible slightly higher capacity factor being in the same wind regime due to its size. That is far lower than the capacity factor of similar wind turbines properly sited offshore in steadier and higher wind regimes. Relying on less efficient infrastructure that costs £3-4 billion (to be repaid by consumer electricity bills and taxes) would add to the upward pressure on power system costs, all things considered.

12 Planning Act 2008: Guidance for the examination of applications for development, para 33 rules for expert advice (para 33) https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/418015/examinations_guidance-_final_for_publication.pdf

- Specifically, we again urged the ExA to in concert with PINs and DESNZ arrange for competent power sector authorities to provide power system value modelling for this Examination, as is warranted for a £3-4 billion project and the public interest.
- Ofgem and National Grid Operators for example have the requisite data, modelling capacity and expertise, and, as we understand, the mandate.
- We believe that important step would be more than warranted to inform this Examination of a proposed £3-4 billion investment, especially given the case-specific circumstances and setting of Rampion 2.
- In addition, system value modelling will help the ExA to efficiently meet the NPS policy requirement to consider low-emission alternatives in this Examination.¹³

5.20 Additionally, there are other national economic disbenefits and opportunity costs that would manifest as adverse local impacts. For instance:

- There is the opportunity cost of not pursuing alternatives with higher local content and job multipliers (unaffected by EU opposition to UK local content on wind energy infrastructure, which we assume also apply to onshore wind infrastructure), that is a forgone national benefit.
- Rampion 2 offers little to no contribution to any comprehensive UK green industrial strategy. None of the equipment or technology can be exported to 3rd Countries or used in overseas development assistance programmes as it is proprietary technology.
- The degradation of designated landscapes / seascapes and places of natural beauty that have economic value, impacts on all UK residents nationally to the extent that people divert elsewhere to visit or have vacations that cost more.
- That is a national disbenefit as it affects all UK citizens by limiting choice of where to go to enjoy natural beauty and may impose higher costs on them. It otherwise lowers the quality of enjoyment and well-being effects of visitors who do come to the south because they cannot afford to go elsewhere.

National Energy Security - via the economic lens:

5.21 The question of national energy security in relation to the Rampion 2 and links to economic effects is complicated. There are many “tricky issues” and various policy interpretations are possible. Obviously much depends on the weight given to the various factors and policy trade-offs. National energy security concerns nevertheless do have national-to-local consequences that we believe should be taken into account as being NPS relevant.

5.22 Specifically on the judgement to be made in this Examination (NPS, EN-1 para 1.1.2: whether adverse impacts outweigh national benefits) and where Rampion 2 locates in the Energy Security nexus we simply observe that:

- The vulnerability of technology supply chains as well as imported fuel or imbedded critical minerals is an important aspect of Energy Security and Energy Self-Reliance.
 - Meaning, whether it is imported LNG needed for dispatchable gas-fired generation (abated) when the wind drops, or the supply chains wind turbines, such as for the rare earth minerals needed for the wind turbine generators and related offshore

13 We noted in Chapter 2 of this LIA that power system value modelling analysis (e.g., with and without the proposed development 2) is offered in other DCO energy infrastructure Examinations.

wind infrastructure components – there are energy security considerations.

- In other words, because offshore wind farms are powered by a “free” wind resource (variable and weather dependent), it does not mean that Rampion 2 poses no Energy Security or energy self-reliance risk.¹⁴
- The ability of other States to hold the UK to a disadvantage, either by withholding the supply of contracted energy technology (wind machines or related investment), or threatening to cut off energy supply (gas or electricity) is another Energy Security factor.

As we have seen, recent examples of such risks include:

- trading-off fishing access to UK waters for undersea power supply (with the French State threatening to cut power to Jersey in a fishing row in 2021);
- blocking local content requirements to access UK infrastructure subsidy (the European Union Commission suing the UK at the WTO in 2020);
- Policy pressure by European wind energy consortium (including the Rampion 2 Applicant as widely reported in the trade media) for the UK Government to increase its CfD subsidy in Sept 2023 (Footnote 8).
- Risks in the geopolitical realm where hostile states threaten to physically attack and blow up UK offshore energy infrastructure including offshore wind infrastructure (Russia) as we move forward in the 21st century. That invokes the “too many eggs in one basket” security and dependency risk dilemma.

5.23 Most NATO and western Government’s are awakening to the fact that these are not abstract or hypothetical concerns. There are real energy security and reliance risks. And they have very real consequences from national-to-local levels. Hence there are considerations to take into account in interpreting policy with respect to a DCO on a proposed national strategic energy infrastructure project as regard to its genuine national Energy Security credentials considering that it is multi-factorial.

Overall Chapter Conclusions:

5.24 We conclude that while there are obviously some local economic and national benefits of Rampion 2, there is no net gain in local socio-economic benefit or economic benefit across that objective of sustainable development. It is highly doubtful.

- This conclusion is shared by many stakeholders as expressed in the PAD Statements and RRs; in fact the converse is likely true – it is net negative.
- It is largely due to the risk of significant adverse impacts over the longer term on the south-coast tourism economy, jobs and cost of living, as well as the national-to local impacts that reflect the very significant opportunity costs of Rampion 2 when considered against other critical national priorities to deliver low-emission generation.
- Overall, the impression it is likely that new jobs generated locally by Rampion 2 are far fewer than promised by the Applicant, mostly would be temporary and low skilled.
- At best job creation attributable to the £3-4 billion cost of Rampion 2 would be a zero-sum

14 It can be reasonably argued that at this stage in the UK’s energy transition is very much reliant, even over-reliant, on other Continental Europe especially. Thus apart from being comparatively inefficient infrastructure Rampion 2 adds to that reliance on Europe as a separate state and its global supply chains.

game, again due to the job loss in overall in tourism also considering the potential for adverse induced local impacts or indirect effects.

- Consenting comparatively low-efficiency offshore wind farms, such as Rampion 2, has many adverse and far-reaching implications for additional infrastructure expenditures and costs on the National Grid as well as Energy Security through incremental increases in reliance on imported LNG and costly undersea power imports.

5.25 By prioritizing efficiency in offshore wind development programme, at the same time as respecting the European Convention on Landscapes and OESEA visual buffers that, in our view, already interprets the ECL relevance in the Rampion 2 case, UK society can maximize the economic benefits pursuing a least-cost, stable and affordability electricity supply.

5.1 Effects of Rampion 2 on the Area Tourism Economy

Policy Aspects:

5.26 With reference to Chapter 2, NPS EN-1 provisions relevant to tourism and the tourism economy under Section 5.12, Socio-economics, include:

- “Para 5.12.2 Where the project is likely to have socio-economic impacts at local or regional levels, the applicant should undertake and include in their application an assessment of these impacts as part of the ES (see Section 4.2)
- Para 5.12.3 This assessment should consider all relevant socio-economic impacts, which may include: (item 3) effects on tourism
- Para 5.12.5: Socio-economic impacts may be linked to other impacts, for example the visual impact of a development is considered in Section 5.9 but may also have an impact on tourism and local businesses.”

5.27 EN-3 para 2.6.17 “Applicants should set out how they have drawn on the Government’s Offshore Energy SEA in making their site selection” also applies as is if did in Chapter 4 discussing social effects on residents and communities.

5.28 Various national to local policies also apply as noted in Chapter 2.

- South-East Marine Plan policies say it is necessary to consider the impact of the (any) proposal relevant policy considerations where:
- Policy S-TR-1 states, *“Proposals supporting, promoting or facilitating tourism and recreation activities, particularly where this creates additional utilisation of related facilities beyond typical usage patterns, should be supported.”*
- Policy S-TR-2 *‘Proposals that enhance or promote tourism and recreation activities will be supported. Proposals for development must demonstrate that they will, in order of preference: **a) avoid, b) minimise, c) mitigate significant adverse impacts on tourism and recreation activities.**’* Our underlining and bold.

RRs Principal Areas of disagreement (PADS)

5.29 As a point of reference, Arun District Council draft Local Impact Report considered in a Planning Committee Meeting January 2024, on page 22 indicated:

“ADC is of the view that the volume and value of tourism within the District would be reduced

during the construction period – a negative effect for the local economy. Tourism assets within the District would see significant negative visual and landscape effects (see Section 6), which are highly likely to deter visitors during the construction period. One of the main attractions of the area is its natural beauty, for example, the undeveloped Climping beach and rural stretch of land between Littlehampton and Middleton-on-Sea. The quiet, undeveloped character of the Climping area makes the tourism industry particularly sensitive to negative impacts to views or landscapes. Negative local noise effects (see Section 8) will also contribute to the deterrence of visitors during the construction period who are attracted to the area by its peaceful, rural setting. Increased traffic as a result of construction in the local area may also cause disruption to the visitor experience or deter visitors from particular visitor assets which are heavily impacted by congestion.”

ADC operation p23 – “During operation, the Project is considered to have negative visual impacts on the views from a number of locations in Arun most notably along the coastline at Bognor Regis seafront promenade, Climping beach and Littlehampton seafront promenade, as reported in Chapter 15 of the ES. These locations, which are identified in Chapter 15 of the ES as having a medium to high sensitivity, are important visitor/tourist locations for Arun as well as having resident amenity. The detrimental impact of the Wind Turbines on seascape in the District is likely to reduce the volume and value of tourism within Arun throughout the operational period, thus having the potential for a long-term negative effect on the local economy. Whilst it is recognised that the evidence is mixed in terms of ex-post evaluation for other areas (as per the ES), the scale of the Wind Turbines and the acknowledged negative visual impact is considered to be particularly prominent in Arun and likely to have a more discernible negative effect.”

5.30 Similar the statutory consultee’s including ADC made the following comment in their PAD Statements in Nov 2023.

Table 5.1 From the Statutory Consultees Principal Areas of Disagreement Statements (PADS) on Tourism Economy Impacts

Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
ADC07	Tourism and Tourism Assets	<p>ADC has concerns regarding adverse effects on tourism and tourism assets, including potential displaced tourism from Arun. Chapter 17 of the Environmental Statement (ES) states that regarding construction effects of wind farms ‘the research typically focuses on measuring opinions of what the impacts on the visitor economy could be prior to implementation of the scheme. However, ex-post research suggests that even where there have been negative effects, these often occur in the form of displaced tourism with visitors diverting to neighbouring areas instead’.</p> <p>Whilst this may be considered a neutral effect at County level, it suggests areas directly affected by construction such as Arun will experience at least temporary adverse effects, even if Sussex overall has a neutral effect.</p> <p>Chapter 17 also notes that at the local level ‘installation activity along the onshore cable corridor may have a negative impact on walking and cycling routes, coastal paths, holiday parks</p>	<p>Further information is necessary on the effects and mitigation at the local – Arun District – level as the list of tourism assets is not considered complete. Furthermore, mitigation such as ‘C-33 An Outline COCP will be adopted to minimise temporary disturbance to residential properties, recreational users and existing land users. It will provide details of measures to protect environmental receptors’ is not considered actual mitigation as it is an attempt to minimise disruption, which is not to say that significant disruption will not occur.</p>

Table 5.1 From the Statutory Consultees Principal Areas of Disagreement Statements (PADS) on Tourism Economy Impacts

Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
		<p>and other tourism-related assets that are located in close proximity to onshore construction works... the assessment concludes that during the construction phase there would be major / moderate, and therefore significant effects on a limited number of tourist destinations.</p> <p>These locations are Clymping Beach, Climping Camp Site, Climping Caravan Park and Washington Caravan Park'. Many of these locations are in Arun and there are also other local assets which are omitted which will experience adverse effects. When this is measured at the Sussex the effect is negligible, however, for residents and local businesses in Arun, the effects may be significant and this should be recognised.</p>	
WSCC10	Lack of measures and commitments that would support a boost to the tourism sector during operation and maintenance.	No identification of measures and commitments that would support a boost to the tourism sector. There is a lack of assertion within the assessment of potential impacts on the perception of Sussex as a place to visit beyond visitor trend analysis for Brighton and Hove which may be influenced by other unrelated factors.	The tourism sector is a priority in economy plans across Sussex. The Applicant should identify measures and commitments that would support a boost to the tourism sector during operation
WSCC9	Concerns about the approach to the methodology	<p>More clarity is requested on aspects of the assessment methodology, including:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Selection of Sussex as a receptor area for economy and impact on volume and value of tourism economy; - Uncertainty over population estimates data; - Implications over data limitations across the assessment; - The implications of not considering induced impacts in respect of economic effects are not explained and is unclear as this is not stated as a limitation; - Reference to Project impacts and construction methods within the description of the baseline. 	<p>The Applicant should provide clarifications in respect of these aspects of the assessment methodology so these are clearly understood when the assessment is interpreted. In respect of induced impacts, an assessment of these should be provided. The Applicant should refer to impacts and construction methods used in relation to resources and receptors within the Assessment of Effects, rather than baseline conditions.</p>
WSCC10	Lack of measures and commitments that would support a boost to the tourism sector during operation and maintenance.	No identification of measures and commitments that would support a boost to the tourism sector. There is a lack of assertion within the assessment of potential impacts on the perception of Sussex as a place to visit beyond visitor trend analysis for Brighton and Hove which may be influenced by other unrelated factors.	The tourism sector is a priority in economy plans across Sussex. The Applicant should identify measures and commitments that would support a boost to the tourism sector during operation

PCS Team Critique of the ES Approach and Methods – General

5.31 What we observe about the Applicants PEIR and ES analysis that led to the conclusion there will be no or little impact on the tourism economy, contrary to what local authorities clearly state in their PADS, boils down to is this:

- i.) There appears to be little change in the approach, assumptions and methods moving from the Applicant’s PEIR on which the consultations were based to the ES.
- ii.) The PEIR stated, “The assessment of the tourist economy draws primarily on desk-based research about the impact of both onshore and offshore wind farms on visitor numbers and the visitor economy, and the application of this evidence to the characteristics of Rampion 2.” PEIR Chapter 18 (Socio-economic Impacts, para 18.8.11).
- iii.) It employed a simplistic approach without the benefit of comprehensive visitor surveys, or offering any appropriate visual animations to arrive at the conclusion that, **“offshore wind farms do not impact on tourism”** - not here in the UK, or anywhere.
- iv.) It then inferred this approach was adopted due to COVID-19 lockdown constraints and that a Rampion 2 Expert Topic Group (ETG) accepted it. Thus the PEIR relied on a simple desk literature survey together with abstracted remote digital interactions (Teams or Zoom) largely carried over to the ES.

The narrow Desk Study and flawed Hypothesis

5.32 We note the literature review of was highly selective and relied mostly on decades-old reports / research where wind turbines were small (nothing compared to the current generation of very large turbines today a Rampion 2 proposes).

5.33 For instance, the main research references for the PEIR desk study to develop the hypothesis taken into consultations were given as: ¹⁵

- North Hoyle (Arup Economics and Planning, 2002)
- Gwynt Y Môr (RWE N-Power Renewables, 2005)
- McGowan and Sauter (2005)
- The Tourism Company (2012)
- North Carolina State University (2016)
- RCUK (2009) and Soini et al. (2011)
- Failte Ireland (2012) and Cardiff City and County Council (2012)
- National Grid (ERM, 2014)
- Scottish Government’s Renewables Inquiry (Aitchison, 2012)
- University of the West of England (2004);
- Ipsos MORI (2014) and Glasgow Caledonian University (2008)
- Using dated examples the PEIR Desk Study concludes that a majority of people hold positive views of offshore windfarms, but with little context or differentiation of attitudes of residents and different types of visitors due to turbine scale and location.

15 The list of those old studies RWE cites is provided in Chapter 18 Socio-economics Rampion 2 PEIR. Volume 4, Appendix 18.2: Socio-economics technical baseline, starting page 48 Para 1.4.7.

- And as a hypothesis the applicant then proposes:
 - “*there is no evidence that suggests any relationship between the construction (operation or decommissioning) of offshore wind farms and a reduction in tourism activity, visitor spending or tourism-related employment*” (PEIR, 18.9.36 and many subsequent paragraphs). Carried over to the ES
- RWE then turned to two UK coastal wind farms to “verify” or confirm the above hypothesis , namely: the 400 MW Rampion 1, and 402 MW Dudgeon wind farm 32 km north of Cromer off the coast of Norfolk in the North Sea (commissioned in 2017).
- That constituted the PEIR findings of no tourism impacts due to Rampion 2.
 - On Rampion 1 - the Applicant concluded their literature review hypothesis was verified because Brighton-Hove tourism data show visitor numbers and visitor expenditures grew by 8% and 11% respectively by 2019 over and above 2014 estimates. (PEIR Ch 18.9.34), and
 - On Dudgeon – The Applicant said it was further confirmation of the literature review hypothesis because there was no change in employment data for tourism-related activity in Norfolk whilst the number of visits and visitor spend both increased between 214 and 219 (by 18% and 13% respectively). (PEIR Ch 18.9.34).

5.34 We disagree with the Applicant’s view that such comparisons with Rampion 2 are valid or helpful, rather we argue they are totally misleading:

1. Rampion 1 is far smaller in scale, sea area, visibility and spread or occupation of the horizon than Rampion 2.
2. The Dudgeon Offshore Wind Farm 32 km (20 miles) off the coast of Norfolk in the North Sea. While Dudgeon commissioned in 2017 has the same size turbines as Rampion 1 and arrays start further offshore (32 km) as compared to 14km for the proposed Rampion 2 turbine arrays.

Both projects (Rampion 1 and Dudgeon) thus offer misleading comparisons and are not reasonable validations of what we see as a narrow self-serving desk-study hypothesis.

5.35 From discussions in the community on the Applicant’s PEIR and ES and the response we offer in this LIA among the among specific comments include the following:

- 1.) The Rampion 2 ES documents continues to offer the same highly selective, narrow and limited desk study with mostly dated research from times when turbines were small - to then arrive at a desk-study hypothesis.

At the same time, the PEIR consultation material side-steps the obvious information that contradicts the Desk Study hypothesis, for instance:

- The OESEA strategic advice on visual buffers for windfarms exists for a reason that included respect for commitments under the European Landscape Convention. Its very existence of the OESEA advice invalidates a central hypothesis in the Applicant’s consultation material.
- The Navitus Bay Windfarm application was refused for reasons that include socio-economic impacts and loss of visual amenity impacting tourism and landscape / seascape values, which also contradict the PEIR desk study hypothesis and consultation material offered.

2.) The ES did make some adjustments to cite two more recent studies in the ES namely which don't actually apply and did not change anything. We suggest that was only cosmetic.

- As the ES stated, ***“The evidence suggests that offshore wind farm developments generate very limited or no lasting negative impacts on tourism and recreational users during both construction and operational phases.”*** ES, Chapter 17, p81.
- That assertion is made by the Rampion 2 Applicant RWE - despite the fact that RWE's Awel y Môr offshore wind farm proposal in Wales was scaled back in 2021-2022 based on those very concerns - visual impacts with likely adverse consequences for local residents and their tourism economy.
- Please see: [REDACTED]
- Equally the ES implies that no impact conclusion applies to coastal residents (negligible impact).

3.) As in the PEIR, the ES offers no robust resident or visitor surveys to conclude there would be a “negligible” impact on people.

- For example, it does not use before and after images of the proposed (up to) 90 turbines 325m tall spread across the seascape to ask clear and meaningful questions on the effect, as was done in surveys to inform the Navitus Bay Wind Park Examination.
- The Rampion 2 Applicant relied on mostly generalised attitude and opinion surveys about the role of renewables and wind farms plus the collection of Seascape Landscape Visual Impact Assessment images that are buried deeply in ES volumes on-line.
- Similarly that was done for the PEIR in virtual consultations – where the SLVIA images were not accessible to most people, and in fact were hard for most people to understand or process. Again there were no accessible visual animations for people to grasp what is proposed.
- As noted in Chapter 4 we discussed and raised serious concerns about the two generalised surveys the Applicant commissioned in 2019 and 2022 to measure public attitudes about Rampion 1.

4.) The ES notes the professional judgement the ES indicated was used to assess: a) the sensitivity of residents and visitors as visual impact receptors on the south coast b) the magnitude of change they would perceive that Rampion 2 would bring for visual amenity from construction, through operation (20-25 years) and decommissioning stages.

- The ES acknowledges that with the statement: ***“Otherwise, the likely effects of Rampion 2 on the other receptors identified (i.e., jobs, GVA and the visitor economy) is based on professional judgement of the sensitivity of each receptor in addition to the magnitude of change to the receptor brought about by Rampion 2.”*** Chapter 17: Socio-economic (p98).
- Residents in some settlements and visitors (tourism) were classed as “highly sensitive” receptors, but then their ES, they concluded that any adverse impacts of the physical transformation of the natural seascapes would be negligible.
- It means that, the professional judgement of the commercial developer and their consultants, essentially believe that, in the eyes of all coastal community residents and visitors, the adverse impacts would be negligible.

7.) On the interpretation of evidence that the Applicant's ES offers and only to illustrate:

- Arun District Council, for example stated that it, *“recognises that the views to the sea are one of the prime attractions for residents and visitors to the district. They state that the potential impact on the economy and tourism is unknown and believe more information and assessment is required.”* (ES Vol 2 Chapter 17, Socioeconomics, p32).
- The Applicant’s response to ADC, again as repeated many times in the ES was: *“The ES assessment provides a comprehensive and detailed review of the available evidence on the impact of offshore wind farms on tourism. Although this identified some gaps in the literature, the weight of available evidence suggests there will be no significant adverse effects on tourism in the study area.”* (Chapter, 17, p32)
- The ES thus draws primarily on its selective, narrow desk study, that fails to acknowledge and reflect the OESEA research and evidence (as cited above (2020 embodied in OESEA4), which indeed was comprehensive, detailed and international.
- That fact that this is a policy requirement should be taken into account in the Examination.

8.) It is also important to highlight that relevant Rampion 2 ES Volumes also make many contradictory assumptions and assertions about visual amenity that lack credibility:

- Such as, it is suggested that the volume of visitors to the south coast may actually show a net increase overall, due to Rampion 2. People will come to the coast because they will be curious, at least during construction.
- While assessing coastal residents and visitors in West Sussex as *“highly sensitive visual receptors”* and that, *“views from these settlements are often experienced by a relatively large number of people, residing in the settlements”*, the ES concludes the contiguous, linear urbanised coastline between Shoreham-by-Sea to Bognor Regis is a “degraded urban area”, where the character of the area is not defined by natural seascapes and has already has changed by Rampion 1.
- The ES argues, *“the visual amenity experienced by the viewers is already influenced by the presence of the existing Rampion 1 WTGs. This clear and prominent existing wind farm influence in sea views moderates susceptibility to change as WTGs are characteristic elements in the sea views and further WTGs will be viewed in the context of this wind farm developed skyline”.*
- In effect the Applicant is arguing that more turbines and taller turbines occupying the whole of the seascape and horizon - will do no harm.
- To the contrary, many would agree that most local residents and visitors to Littlehampton are not overlooking a degraded urban landscape, rather we overlook and /or enjoy a natural open seascape in our daily lives as we move about, socialise, work and play.
- That same is true for many communities and their visitors along the coast.

In response to those ES statements we argue that Rampion 2 has cumulative impacts with Rampion 1 and is otherwise, on its own, a clear breach of the European Convention on Landscapes as is interpreted by the UK Government in its OESEA programme that offers strategic environmental guidelines applicable to offshore windfarm DCO applications - including and especially Rampion 2.

9.) The Rampion ES Application documents failed to mention the Navitus Bay Wind Park Application along the south coast which was refused consent in 2015, and thus Interested Parties collectively will not benefit from the lessons The Navitus Bay Application provides.

- The Rampion 2 Applicant subtly dismisses the Navitus Bay Examination findings with the statement, *“No empirical, ex-post evidence for existing wind farms off the Sussex coast could be found.”* (ES Vol 2, Ch 17, pg 63)
- The Applicant thus focused on marshalling argument and information to support its assertion that Rampion 2 will have no more adverse visual amenity impacts than the Rampion 1 installation, and if any, they would be negligible.
- We argue that it is not reasonable to make assumptions about the impacts Rampion 2 likely would have on the volume and value of the Sussex tourism economy based on the impacts of the existing Rampion installation. Rampion 2 is of an entirely different scale, with much taller towers and much more dominant turbines, extending along the full coastal horizon, unlike Rampion 1.
- Moreover, Rampion 2 also impacts communities far west of Brighton-Hove along the Sussex coast, which offer tourism attractions that are more tied to the natural seascape and its enjoyment, and are closer to the tourism values and attractions associated with Navitus Bay south of Dorset and the Isle of Wight, as shown in Visit England surveys.
- Rampion 2 is thus more comparable to the Navitus Bay Wind Park Application (refused consent in 2015) on which there were detailed analyses with both resident and visitor surveys far beyond what is on offer as "evidence" to claim that Rampion 2 is benign (and that based on desk studies and comparison with Rampion 1)

5.36 We offer extracts from an essay on tourism impacts of Rampion 2 prepared by a local resident and shared with area councils and stakeholders.

5.2 Narrative on likely impact on the Tourism Economy

Rampion 2, if it goes ahead, would be an INSHORE wind farm fencing in the whole of the Sussex bay and would be likely to harm the local tourism economy income and related business.

The local impact report (LIR) undertaken by the Bournemouth Borough Council in 2014 on the Navitus wind farm proposal underlined the risk inshore wind farms like Rampion 2 pose to growing the valuable tourism economy on the South coast. Based upon that report a reduction of £44M per year for Arun and almost £200M per year for West Sussex is possible.

Direct Experience

During this last summer, two families were sitting relaxing on the beach at Felpham. They commented on how wonderful it was here in Felpham. They then went on to say that they lived in Lancing and would have gone to the beach there except for the wind farm. Instead, they had come all the way to Felpham for the wonderful, peaceful seascape. They thought we were so lucky in this part of the coast having easy access to a beach with no wind farm. In Lancing the current Rampion wind farm is 8 miles from the shore with 140m tall turbines. If Rampion 2 goes ahead the whole coastline all the way from Newhaven to Selsey Bill will have wind turbines more than 2 times as tall (with almost 4 times the swept area) 8 miles off the coast. The impact on the seascape will be much more significant with no part of the horizon unaffected.

Fundamentals of different tourism offerings in Sussex

The impact on tourism for a coastal community depends on the importance of the seafront and the general environment in the offering. In towns/cities like Brighton, for example, the seafront is only part of the offering. Brighton has become known as a 'free-thinking city' where it aims to have a distinctive free-spirited atmosphere not to be found anywhere else. Brighton is also on the edge of the South Downs; it is popular for hosting conferences; it has a direct train link to London and Gatwick airport; it is home to Britain's oldest cinema; many actors, public figures and musicians live and have lived in Brighton; the Brighton Dome concert hall hosted the Eurovision song contest in 1974 where ABBA won, and so on. There are many other attractions.

Consequently, and setting aside the fact that Rampion 2 is a far different scale and expanse, the impact of the Rampion 1 wind farm on tourism there may have been limited. By contrast, for places like Littlehampton and Bognor Regis and the surrounding coastal areas, where the major attraction (apart from the interior of Butlins) is the seafront and an unspoilt, open seascape, the impact is likely to be significant.

Specific and significant evidence

During the comparable Navitus Bay wind farm planning application, Bournemouth Borough Council submitted its case in opposition.¹⁶ In its Local Impact Report, it identified that the tourist economy, as a whole, amounted to £500M/year. Bournemouth projected a reduction of around 20% as a consequence of the wind farm because of the importance of the environment in its tourism offering, resulting in a net loss of £109M/year and 2,018 jobs.

- In its statutory LIR, the BBC argued that the Navitus Bay Applicant failed to properly quantify the net impacts on tourism and explains why the developer would need to provide annual mitigation or compensation of just over £100 million p.a. or £2.5 billion over the life of the project to offset the expected loss of trade, as well as further compensation for investment loss in the area. Bournemouth (BBC) argued this rose to £6.3 billion over the lifetime of the project over all affected districts.
- That estimate was based on a detailed visitor survey where respondents were shown before and after images of the turbines to scale and asked detailed questions on how it would change their decision to visit in future. That survey was conducted by Visit England. It established that while some visits would be unaffected, a significant proportion would be, especially including the longer stays.
- The Secretary of State Decision Letter when explaining why consent was refused on Navitus Bay implied that the likely adverse impact and loss to the tourism economy may be somewhere between the Applicant's estimate and the estimate arrived at processing the detailed visitor survey information conducted by Visit England.
- It noted the Examination found that the Applicant erred in some assessments by lessening negative impacts on tourism-related jobs, and that there would be "significant residual harm to tourism" in some local areas.

Please See:

<https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010024/EN010024-000055-Secretary%20of%20State%20Decision%20Letter%20and%20Statement%20of%20Reasons.pdf>

¹⁶ 2014 Navitus Bay Wind Park Local Impact Report, Bournemouth Borough Council, PINS reference EN010024.

Still there has been no detailed study on the effects of the proposed Rampion 2. Rampion 2 has the potential to impact the seascape of the whole of the Sussex bay and, in particular all of Arun's coast east of Selesy Bill including Bognor Regis, Littlehampton and the surrounding coastline - far more than Navitus bay would have impacted Bournemouth - because of the proximity, size and spread of the turbines.

Potential Impact on Coastal West Sussex

The annual visitor revenue for Coastal West Sussex amounted in 2015 to £983M¹⁷. As will be seen below, the fall in income for the coastal region in a reasonable worst-case scenario could be the 20% figure identified by:

Bournemouth Borough Council. This would amount to a loss of £198M in annual income, which is equivalent to 2,800 jobs. A report commissioned by Coastal West Sussex³ identified in its section 1.3 that "85% of staying visitors were there on a holiday and, as expected, the presence of beach and water-based/seaside activities is an important factor in influencing visitors to come but a lot of visitors considered it to be an area to relax, with enjoyable scenery and opportunities for walks. Outdoor activities such as cycling or water sports were only mentioned by a relatively small number of visitors." It is clear that visitors come for the calm and relaxing scenery. Rampion 2, however, would affect 50 miles of the coastal path and be visible from a large section of the South Downs National Park.

Potential Impact on Arun District

The annual visitor revenue for Arun in 2019 amounted to £221M according to a report produced in 2020⁴ for the Arun District Council Littlehampton Regeneration Sub-committee. There were 4360 full-time equivalent (5972 actual) jobs in this Tourism sector. The focus for Tourism here is Bognor Regis, Littlehampton and Arundel. The report identified that:

"Looking at what motivates and attracts visits, and what visitors associate with each town, there are clear distinctions in the towns' appeal:

- Bognor Regis – beach and seafront, Butlins, family holidays and fun
- Littlehampton – beach and seafront, parks, gardens and open spaces, eating & drinking, summer holidays.
- Arundel – Castle, history & heritage, eating & drinking."

Given the importance of the beach and the seafront then, and given the comparison above with Bournemouth and the published research reports listed below, a drop in Tourism of 20% is a reasonable worst-case scenario. This would amount to a fall in annual income by £44M and a loss of 872 FTE (1194 actual) jobs.

The report on Arun tourism referred to above focuses on the regeneration of Arun's tourism and identifies the need to attract higher-spending tourists, and to compete in a national environment which is becoming increasingly competitive. Having a coastline blighted by the proposed Rampion 2 wind farm would make these ambitions exceedingly difficult, if not impossible to fulfil.

¹⁷ Coastal West Sussex Tourism Research Project 2016, Summary report of findings by TSE Research. [REDACTED]

RWE's response on the tourism impact

When RWE was questioned by local councillors about the impact on tourism during the Project Liaison Group meetings, RWE reportedly responded that they expected tourism to rise. RWE justified this by saying people would come to see the wind farm, but gave no evidence to back up their case. Whilst there is some evidence that, in the very short term, some tourists would come out of curiosity, this curiosity soon wanes and they would not come a second time. The attraction of an industrial power plant is neither general nor long-lived - and the effects are far more likely to be negative where the natural environment is an important aspect of tourist attraction. It takes only a small proportion of tourists to have a preference for undeveloped destinations for any potential gains to be reversed.

Funding from the developer, RWE.

It should be noted that any money offered by the developer as a community fund would, when spread out over a 25-year life, be insignificant and would never compensate for the loss and potential reduction in tourist income.

Coastal West Sussex Tourism Research Project 2016, Summary report of findings by TSE Research. 4 Blue Sail, Sept 2020, STRATEGIC REVIEW OF TOURISM SERVICES. A fund of £3.1M RWE set up of which £1.6M has already been distributed. Even if there were only a 1% drop in tourism in Coastal West Sussex as a consequence of the proposed Rampion 2, then this would be equivalent to a fall in annual income of £9.8M. The contribution from the proposed Rampion 2 spread out over the 25-year life would be only 1.2% of that loss.

Some published research evidence

The following offers some hard evidence of potential economic impact.

- A minority of tourists are negative about wind turbines, feeling they spoil the landscape. In a study by Visit Scotland (2008), 75% of tourists claimed not to be concerned by wind farms, but 25% were, and 27% of the total would not return. This is a very significant minority and can be extremely damaging to an economy (Riddington et al, 2008: Fialte Ireland, 2008).
- Tourists' reaction to turbines is affected by where they see them and they prefer to see them far off-shore or on farmland rather than in wilder places or coastal locations (Fialte Ireland, 2008). (Rampion 2 would be very close inshore for its size) .
- There may initially be a positive interest with some tourists visiting wind farms, and visitor centres may be well attended, but this interest has been shown to be very short lived as the novelty factor soon wears off (Tourism Co. 2012). As wind farms become more common, their novelty value diminishes.
- Negative impacts on the tourism economy arise from two sources: a reduction in the number of visitors and all of the associated multiplier effects, and a reduction in prices that can be charged for hotel accommodation. Riddington et al (2010) found that the premium on the price of a room with a view fell by 18 – 25% where the view was compromised by a wind farm.

Produced for ProtectCoastalEngland.

References

Fialte Ireland (2008), *Wind Farms. Visitor Attitudes on the Environment*, 2008/No.3

Riddington G, McArthur D, Harrison A, Gibson H (2008), *The Economic Impacts of Wind Farms on Tourism in Scotland*, Scottish Government Research Report

Riddington, McArthur, Harrison and Gibson (2010), *Assessing the economic Impact of Wind Farms on Tourism in Scotland: GIS, surveys and Policy Outcomes*, International Journal of Tourism Research, 1:12, 237- 52

The Tourism Company (2012), *The impact of wind turbines on tourism – a literature review*, Prepared for the Isle of Anglesey County Council

VisitScotland (2008), WindFarms. [REDACTED]

5.3. Other local socio-economic impacts

5.37 As required by the EIA Regulations the ES Volume 2, Chapter 17: Socio-economics considers adverse and beneficial socio-economic aspects of Rampion 2 . The socio-economic baseline assessment found that Sussex has a total population of around 1.71 million people in 2020, of whom 60% are of core working age (i.e. aged 16-64).

5.38 Community organisations don't have resources to offer due diligence on all the socio-economic assumption and economic, methods and conclusions that the Applicant's ES offers. Therefore we cross-refer comment provided by Councils which we feel are important and relevant for the ExA to take into account.

5.39 We agree and support the view as reflected in PAD Statements highlighted in Table 5.3:

Table 5.3: From PADS on other socio-economic impacts			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
ADC-04	Outline Skills and Employment Strategy	Concerns that limited detail is given within the Outline Skills and Employment Strategy and that ADC is not listed as a consultee.	ADC to be listed as a consultee. To provide more information on the strategy and benefits for ADC, including linking to apprenticeships and local education institutes in Arun. Objectives need to include support for local SMEs and opportunities for SMEs to access the supply chain. Measures to also be secured through the Outline Code of Construction Practice.
ADC-06	Jobs	Job creation (construction and operation) has not been assessed at the district level within the administrative area of Arun	Employment effects, including job numbers should be assessed at district level and not just at County level. Employment relates to the Skills and Employment Strategy insofar as the outcomes of the Strategy in terms of developing skills and employment opportunities may influence the spatial distribution of benefits.
WSCC-8	Lack of clarity on how the limited local economic impact of the Project during construction is being addressed.	Concerns have been highlighted on the low local economic impact during construction phase. The submission acknowledges consideration of the issue further without clarifying how and when this will occur.	The Applicant should clarify what work has been undertaken or is ongoing or planned to address this issue, including any findings or outcomes as relevant.
WSCC11	Concerns about Outline Skills and Employment Strategy (OSES)	The OSES lacks detail with regards to existing skills gaps and current levels of provision. Baseline data included has no source/year. OSES also lacks detail on potential initiatives which are directly aligned with local specific issues and need. It provides no explanation on whether it would differentiate between the provision and outputs offered through the DCO versus provision and outputs offered in a 'business as usual' scenario. It does not demonstrate net additional benefit.	The Applicant should provide an up-to-date baseline with all sources referenced. Provide details of existing skills gaps and current support provision from a skills and employment perspective. Also provide further detail on specific initiatives which are tailored to local issues and need. A route map in terms of how the Applicant intends to develop the OSES should be provided
WSCC12	Opportunities for local business to access the supply chain	The Applicant states they will identify opportunities for companies based or operating in the region to access the supply chain for the Project, and that this is secured through a commitment (C-34) in the OCoCP. This measure, however, is not included within the OCoCP.	The Applicant should provide a firm commitment to this in the OCoCP and outline the mechanism to enable access to the supply chain. The Applicant should clarify what work has been undertaken or is ongoing or planned to address this issue. Further work is expected in respect of local supply chain expenditure, to increase from that forecasted.
HDC-19	Outline Skills and Employment Strategy (OSES)	Lack of information on implementation Plan, performance, measures targets, funding, and financial management, monitoring, and reporting. Implementation plan is not identified.	Applicant to provide more detail on performance, financial management, monitoring and reporting systems will be set out in detail in the Implementation Plan
HDC-20	Alignment with local needs	Lack of detail/clarity around how the OSES will deliver benefits to Horsham District residents and businesses. HDC is not listed as a consultee.	HDC to be listed as a consultee. Applicant, as part of the OSES should provide more detail on potential tailored initiatives that would specifically align with and support Horsham District residents and businesses. The strategy should ensure that the economic benefits are delivered to Horsham District.
ADC05	Community Benefits Package	Arun is of the opinion that the District will not significantly benefit from the Project, rather the area will experience disruption and significant adverse effects, some of which are unlikely to be mitigated. Concerns about the mechanism regarding which the Community Benefits Package is secured and the criteria/funds involved as not referenced in the draft DCO.	Further information on a Community Benefits Package. Commitment (and securing mechanism) needs to be made to ADC for this package to compensate and offset adverse effects within the District.
WSCC13	Community Benefits Package	Reference within the OSES is made to a Community Benefits Package, however it is described as 'remaining separate' from the planning process. Due to the adverse effects identified by the Project, the Community Benefits Package should be a firm commitment and secured through the DCO.	The Applicant should provide a firm commitment to this and secure this approach through the DCO. Engagement with stakeholders on the scope and scale of this Fund should also be developed, including with the local community, as outlined in the OSES.
HDC-21	Community Benefits Package	HDC is of the view that the district will not significantly benefit from the Project, rather the district will experience disruption and significant adverse effects.	Applicant to align community benefits package with mitigations

5.40 These views as a whole indicate that local job creation due to the Rampion 2 would be mostly offshore (in all senses of the word) and not proportional to any normal £3-4 billion development. At best it would be zero-sum game employment wise, as job losses would occur overall, taking into adverse impacts on tourism industry growth and the induced or indirect local effects of Rampion 2 including national level opportunity costs that would translate to adverse socioeconomic effects locally.

5.41 That is discussed in the next section.

5.4 Economic Effects: National-to-Local

5.42 PINs Advice Notes say National Policy Statements (NPS) cannot be challenged in a DCO Examination process as they are set by Parliament. Any concerns relating to NPS must be submitted to Government through elected MPs. We have done so separately on issues we felt were relevant to the consideration of Rampion 2.¹⁸

5.43 For the Rampion 2 Examination, as we understand:

- DCOs on offshore windfarms address case-specific circumstances. That implicitly recognises that all windfarms are not the same and are examined on their merits.
- Policies, whether NPS or other policies are subject to interpretation and views on how they are applied and weighed in an Examination by the ExA.
- ExAs have a degree of latitude to take into account what they feel is material, important and relevant, as well as risk, and uncertainty around prediction of effects (e.g. whether they are significant or not in the scheme of things), and
- Equally, the Secretary of State (SoS) is not bound by the ExA's recommendations. The SoS can take any matters deemed important and relevant into account, including the amended NPS (Nov, 2023).

5.44 The national economic effects of Rampion 2, in respect to delivering national benefits, are important in the policy equation that the ExA highlighted in the Rule 6 letter relating to the judgement as to whether, "adverse impacts outweigh national benefits". This must also take into account national disbenefits of Rampion 2 (e.g. opportunity costs) That is logically consistent with the application and interpretation of NPS policy. But also, as we argue as in Chapter 2, there needs to be some clear and transparent criteria and metrics to reduce the subjectivity of the judgement. And to enable stakeholders to understand the basis for that judgement.

5.45 It is also important to have a clearer picture on how the national economic effects of Rampion 2 translate to local impacts, via power system economics and the costs of operating the national grid, to balance supply and demand reliably, and with a mix of different generation sources. Our perception of that data and evidence in this regard is:

- Rampion 2 is at the lower end of the efficiency scale for a variable offshore wind generation project in the UK. That is undeniable, given the turbines will be

18 Outside this Examination PCS offered views to national public consultations on revisions to the NPS (March, 2023) and welcomed the amendments to the critical national priorities in the final NPS (Nov, 2023). PCS also contacted the office of the Secretary of State directly and via our MPs with proposed amendments as we felt they impacted on consideration of Rampion 2. We were pleased to see that the critical national priorities were amended to include all low emission generation alternatives (not just offshore wind as in NPS March, 2023) to thereby pursue a complimentary mix that is more likely to achieve an affordable and reliable supply and decarbonisation of the power sector by 2035.

located in a comparatively low wind density area in the south coast inshore.

- The incrementally higher average system cost on the National Grid, that would result from a generation feed from Rampion 2, needing more backup from dependable and dispatchable power, where other more efficient windfarms would not need as much, means higher average power system costs on the National Grid.
- That will translate to incrementally higher electricity bills for all consumers, including local households and small businesses in the south, all things considered.¹⁹
- That will have an incremental but nevertheless measurable cascading impact on local jobs, the local cost of living and other essential factors.
- It simply adds to the adverse local impacts, where many families are already just hanging on and trying to cope with higher energy costs, especially those in energy poverty and sadly many small businesses, which as a group are among the most important employers on the south coast.
- At the same time, it subtracts from national benefits, requiring higher importation of LNG from volatile international markets just as the UK domestic supply of natural gas is being reduced or becomes unavailable.
- Similarly, it incrementally increases the need for costly under seas power interconnection imports
- That all adversely impacts on the national balance of payments.
- It thereby incrementally adds to national energy insecurity over the economic life of Rampion (2030 to 2050 or so).

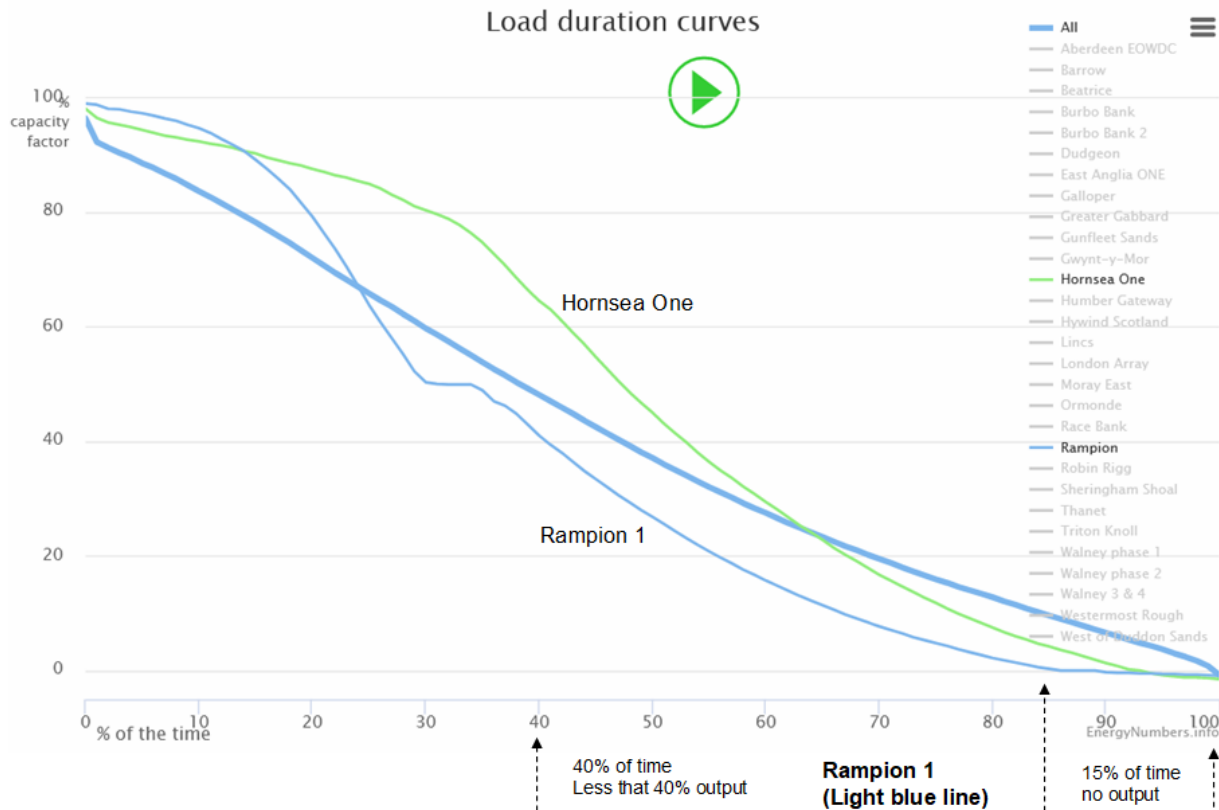
So, Is Rampion 2 less energy efficient and less value for money?

5.46 An illustration of the relative performance of Rampion 2 compared to moving the same turbines offshore to the North Sea is seen in the data in Figure 5-1 below.

- That figure shows the load duration curves for offshore windfarms comparing Rampion 1 in the Sussex Bay inshore with Hornsea One on Dogger Bank.
- That shows the percentage of time over its life to-date (on the horizontal axis) against the different power outputs it achieved.
- The chart shows the (capacity factor or load factor, on the vertical axis) as a percentage of the installed capacity.
- The lower the capacity factor, the lower the relative efficiency.

19 Under high renewable generation future scenarios, overall electrical grid stability is more challenging and costly to maintain, so dispatchable low carbon generating capacity will be required.

UK Offshore Windfarm



Source: <https://energynumbers.info/uk-offshore-wind-capacity-factors>

Figure 5-1: Comparison of Loads Duration Curves (capacity factor versus % of time) for Rampion 1 on the South Coast (light blue line) versus Hornsea One in the North Sea (green line) and, the average for all UK Offshore windfarms (thicker blue line).

That graphical data tells us that:

- For 15% of the time over this period the existing Rampion windfarm turbines produce no output at all.²⁰
- That compares with 7% of the time that the Hornsea One turbines placed in the North Sea produces no output. Rampion thus has no output twice as often.
- 60% of the time Rampion 1 output is 40% or less of its installed capacity; or conversely, Rampion only produces above 40% of installed capacity 40% of the time.
- In contrast, the Hornsea One windfarm spends 55% of time generating above 40% of its installed capacity (compared to 40% for Rampion).
- Hornsea One produces above the UK average capacity factor 65% of the time.

5.47 Rampion 2 will obviously deliver some benefits in terms of low-emission variable renewable energy supply to the national grid.²¹ Rampion 2 will nevertheless is sub-optimal in

20 15% of the time is equivalent on average to 1 day a week with no power. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% its installed capacity.

21 The efficiency directly affects the value wind turbines contribute to the National Grid. High-efficiency wind farms generate more electricity per unit of installed capacity, enhancing the overall reliability and resilience of the power grid. Conversely, low-efficiency wind farms like Rampion under perform in relative terms, leading to intermittent energy generation and increased reliance on backup power sources. This undermines the stability of the power system and diminishes its overall value to consumers and utilities alike, increasing average costs.

energy performance terms (power output and capacity factor) due to its location in a low wind density area on the south coast, as seen in all technical data.²²

5.48 The important aspect is whether the £ value is quantifiable through power system value modelling to demonstrate the extent to which Rampion 2 is a sub-optimal investment in economic terms as well as against other criteria and metrics for national benefit. Those, as set out in the NPS, can be illustrated, including the increased dependence on imported LNG, and /or expansive imports from undersea power cables and less emission reduction.

The importance and relevance of power system value economic modelling

5.49 What we feel is missing, is that highly important, relevant information, and essential evidence to fully understand the situation, and to inform policy judgments, is to ensure power systems value modelling is done, and made available. This would properly weigh the economic merits as well as national benefits and disbenefits of Rampion 2 as an addition to the UK generation mix.

- The modelling can be done by competent power authorities who have the capacity.
- This has been made available to other DCO Examinations, as argued in Chapter 2 under the section 2.5.4 Consideration of Alternatives.
- At the same time the models can run scenarios to address the consideration of the alternatives for low-emission generation, which is already a policy requirement under EN-1 Section 4.4 and 5.9.10. That relieved the ExA of that task which is massively important to many stakeholders.
- That will offer a helpful benchmark of what the benefits of Rampion 2 are against economic and other metrics of national benefit as are set out in the NPS.
- It will significantly add to the understanding the overall impact of this £3-4 billion Application on the economy and power system costs.^{23 24}

- Analysis will quantify how much upward pressure that puts on average power system costs that in turn feed through to upward pressure on local power costs.
- That upward pressure will be for the foreseeable future, certainly well beyond 2035 and possible 2050, at least until viable, affordable and scalable energy storage exists.²⁵

5.50 In summary among the economic opportunity costs and effects to take into account in the Rampion Examination, when assessing the benefit side of the policy equation (whether adverse local impacts outweigh national benefits - less national disbenefits) in quantitative and qualitative terms would include:

22 Rampion 2 will have a slightly higher capacity factor than Rampion 1 as it is much taller and has more swept area but will likely remain low (likely under 40%). Advice may be sought on this independent of the Applicant.

23 It will also demonstrate the simple fact is that investment in variable output offshore wind cannot be considered in isolation of requirements for parallel investment in dependable low emission generation.

24 Under high renewable generation future scenarios, overall electrical grid stability is more challenging and costly to maintain, so dispatchable low carbon generating capacity will be required.

25 As mentioned adverse impacts of lower efficiency investments on average power system costs and the requirement to invest more in dependable supply translates to upward pressure on household and small business energy bills locally and the cost of living – at least in foreseeable future. As recognised by the NPS, that will be the case until energy storage systems are available, scalable and affordable to deal with variable supply that Rampion 2 offers at a relatively low capacity factor.

- Loss (forgone benefit) of higher electricity generation that could and would be achieved by directing £3-4 bn. in public or private investment to more efficient and reliable low-emission generation.²⁶
- Related missed opportunities for greater reduction of carbon emissions.
- Related missed opportunities for a greater reduction in reliance on costly LNG imports and costly undersea power cable imports when the wind drops – which have national security, affordability, self-reliance, and balance of payments implications.²⁷
- The extent that national level economic effects, through direct effects on UK power system economics (incrementally increasing average system costs on the National Grid for the foreseeable future)²⁸ cascade down to adverse local impacts. Among these include upward pressure:
 - on local electricity bills
 - on local costs of living, and
 - on local cost other essential services for local families and small businesses.
- The environmental opportunity costs that stem from the marine habitat disruption and biodiversity loss due to Rampion 2 from increasing pressure on marine and land ecosystem functions and services due to construction activities and operation, as addressed in LIA Chapters 6 and 7.
- Rampion 2 risks steadily eroding the value of those ecosystem services and their important role and contribution to local and regional economies.²⁹

5.51 A further important and relevant aspect is the energy security consideration as noted in the summary of this Chapter. These energy security issues cross-cut economic considerations in terms of the actual costs we pay, which again has highly significant national-to-local effects.

26 Again we note the case-specific policy requirement to consider alternatives in the Rampion 2 Examination.

27 Due to investing in a comparatively inefficient offshore windfarm, together with the opportunity costs, leading to more reliance on expensive imported LNG, more required investment in ancillary power system equipment and infrastructure for stability control and load balancing, higher imports via undersea power cables and the higher prospects for unserved energy demand (via brownouts and load shedding).

28 The efficiency directly affects the value that wind turbines contribute to the National Grid. High-efficiency wind farms generate more electricity per unit of installed capacity, enhancing the overall reliability and resilience of the power grid. Conversely, low-efficiency wind farms like Rampion under perform in relative terms, leading to a higher degree of variable and intermittent energy generation, lower capacity utilisation factors, and increased reliance on backup power sources. This undermines the stability of the power system and diminishes its overall value to consumers and utilities alike, increasing average costs.

29 Ecosystem services defined as services provided by the natural environment that benefit people. <https://www.gov.uk/government/publications/an-introductory-guide-to-valuing-ecosystem-services>

Chapter 6: Environment, Biodiversity and Ecosystem Impacts

Pages: 150 - 18

Chapter 6: Environment, Biodiversity and Ecosystem Impacts

Introduction and overview

6-1 This chapter considers the likely impacts that Rampion 2 would have on the environmental objective of sustainable development on the south coast and affected inland areas. This includes the biodiversity and ecosystem impact considerations that we feel are important and relevant when examining the offshore and onshore infrastructure effects.

6-2 Chapter 6 analysis draws on:

1. Consideration the Applicant's Preliminary Environment Impact Report (PEIR) and Environment Statement (ES).
2. The views in Relevant Representations and Principal Areas of Disagreement (PAD) statements of statutory consultees on the ES.
3. Relevant representations of other Interested Parties (IPs) during the pre-Examination.
4. And some independent research around the Habitat Regulations and their application to the Rampion 2 case and their application to designated landscapes / seascapes and protected area.
5. We also cross reference the Cowfold Local Impact Assessment on the onshore works.

6-3 In addition to the environment and biodiversity concerns set out in the PAD statements by statutory consultees the main issues we wish to highlight include:

Biodiversity Threat and Net Biodiversity Loss

i.) Cross-channel Insect Migration and Ecosystem impacts

ii.) Inshore Ecosystem Sensitivity and Effects

- Kingmere Marine Conservation Zone (MCZ), Offshore Overfalls MCZ
- Kelp regeneration, Sedimentation and Smothering
- Seahorse populations and their protected status
- Effects of Underwater Noise on marine mammals, fish & crustaceans

iii.) Other Sensitive Environmental Receptors

- Birds and Bats

iv.) Onshore Ecological Systems

- The 'Biodiversity Corridor'
- Climping Site of Special Scientific Interest (SSSI), West Beach Nature Reserve
- Cowfold, West Sussex Local Impact Report summary

6-4 As attachments we include detailed information on the threat to rare and protected seahorse species as one biodiversity threat indicator and offer other information we see as relevant to likely ecosystem and biodiversity threats.

Offshore Infrastructure Effects

6-5 Based on these considerations this Chapter concludes that there is no likely net Marine Biodiversity Gain (BNG) from the Rampion 2 development in the inshore waters. In fact, there is a high risk of net biodiversity loss in the marine environment. The conclusion of that risk is shared by many stakeholders who indicated over issues:

- Marine Biodiversity Net Gain was not considered at the District Level.
- Habitat suitability assessments, including pre and post construction surveys and impacts on special marine protection areas were challenged by stakeholders.
- Impact on marine mammals, including many rare and protected species that are in the proposed zone where habitat is fully protected out to the 12 nautical miles.
- Lack of consideration of vast research of the adverse impact on flying insects impacting on biodiversity as well as pollination services, thus food chain integrity, on both sides of the English Channel. Here research concluded that 3.5 trillion insects migrate across southern England, at 150-1500m (3,200 tonnes of biomass) ¹. It is estimated 1.2 trillion insects of different species are killed each year ²; 1 turbine kills 40 million per annum in temperate zone (mainly migrating, swarming and hill-topping species interact with turbines). ³
- Underwater noise (UWN) disturbance of fish and crustaceans impacting on spawning cycles and bio-productivity notably from piling for turbine and substation erection was cited and concerning. ⁴
- Threats to the benefits which would otherwise be naturally achieved and contribution (such as the marine kelp restoration project) include deleterious sediment releases from cutting the seabed to bury over 250km of array cabling and power evacuation cabling exist.
- Perceived benefits would be limited and specific but overwhelmed by the adverse impacts from construction through operation and decommissioning.

Onshore Infrastructure Effects

6-6 We also see biodiversity net loss from the Rampion 2 development onshore route through protected and conservation areas. The conclusion of that risk is shared by many stakeholders who indicated over the following issues:

As indicated in PAD Statements and Relevant Representations

- The commitment to delivering at least 10% biodiversity net gain is welcome, but as stakeholders specify, the Applicant's biodiversity gain information lacks detail and certainty as to whether and how this will be achieved. Among the concerns:
- Significant concerns regarding the cable route passing beneath and

¹ Dr Jason Chapman, Exeter University 2016; Rothamsted Research publication.

² Dr Franz Trieb, Stuttgart, 30.10.2018; Institute of Thermodynamics. Department of Systems Analysis and Technology Assessment.

³ Christian Voigt, 2021; Insect Fatalities at Wind Turbines as Biodiversity Sinks. Conservation Science and Practice 3(5) German publication.

⁴ [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000477-20231106_Rampion_2_MMO_Relevant_Representation%20\(002\)_Redacted.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000477-20231106_Rampion_2_MMO_Relevant_Representation%20(002)_Redacted.pdf)

near to Climping, the highly mobile beach of dunes and rare vegetative shingle, home to a Site of Special Scientific Interest, West Beach Nature Reserve and surrounding ecologically sensitive areas.

- Impact of the proposed transmission corridor (cable route) on proposals for delivering Natural Capital improvements in the area. For instance, the effect on the 'Weald to Wave' wildlife corridor is a major concern.
- Construction phase impacts on Arun Valley SPA and Ramsar site – loss of functionally linked land (FLL) used by water birds.
- Clarity on BNG delivery to ensure it is separate from and additional to the essential requirements under the mitigation hierarchy.
- Consultation responses such as from Sussex Wildlife Trust, where the likely impacts have been assessed, the categories applied tend to underplay the true impacts. "Many are wrongly listed as 'not significant' when we believe they will have a significant impact on wildlife."
- The lack of information on advanced habitat creation (both on-site and off-site), including locations, specifications, timescales and how it will be secured is noted
- The need to consider lessons learned from Rampion 1 to improve effectiveness of habitat restoration e.g. improved monitoring of reinstated hedgerows to avoid delays to remedial action is in comments made by SDNP and Sussex Wildlife Trust. They note the works as proposed will do permanent damage to landscape and biodiversity and appear more extensive than were envisaged for Rampion 1 at a similar stage.

6-7 Overall, it must be accepted there is a high degree of uncertainty in the magnitude of significant impacts and the effectiveness of mitigation measures where there is currently limited research, data, and survey by the RED Applicant.

6-8 Those disruptions during construction and operation, many of which cannot be mitigated, risk leaving fragile ecosystems and natural capital even more vulnerable to multiple pressures – not only including long-term climate change. What comes to mind of many is:

Destroying nature in the attempt to save the environment?

Rampion 2 has a massive environmental footprint in sensitive locations both in terms of sea area and land area which challenge environmental safeguards and related policies.

6.1 Environment Policy Context

6-9 The policy context is broadly addressed in Chapter 2. That includes the section on Habitat Regulations. Chapter 2 also has an Annex that details how National Policy Statements (NPS. 2011) on which the Examination will be based indicates how environment and biodiversity matters are to be addressed in Applications.

6-10 NPS EN-1 has (generic impact) and EN-3 has technology specific impacts for offshore wind. These include policy requirements under Biodiversity Section to consideration of impacts that include: Fish; Seabed Habitats; Intertidal and subtidal; Marine Mammals; Birds.

6-11 And noted in the first open public hearing in Brighton we feel the impact on cross-Channel insect migration is a highly important and relevant consideration that was not considered at all by the Applicant. It has fundamental ecosystem purpose such as pollination services, already under threat from multiple pressures that links to food security and is a growing field of concern in emerging research in Europe, where insect biomass loss in the order of 10% is reported. The related loss of 1,200 tons [in Germany per 2018] per year during the last fifteen years could be relevant for population stability. ⁵

6-12 The following citation from the National Planning Policy Framework (2023) is included simply to illustrate the consideration of local impacts in respect to the environment objective and the need to see net positive gains.

That is important in weighing whether the proposed Rampion 2 development and its design would support, or undermine, the achievement of sustainable development. ⁶ This is NPS relevant as indicated in Chapter 2.

Under NPPF Section 15: “Conserving and enhancing the natural environment, Para 174. “Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a. protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils;*
- b. recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;*
- c. maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
- d. minimising impacts on, and providing net gains for, biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*

6-13 “*Together for Nature* – our Strategy to 2030 – was launched on 22 May 2023. It outlines the areas of work that Joint Nature Conservation Committee (JNCC) will undertake, focusing on our role in terrestrial and marine nature conservation and recovery, at the UK level, working with the UK Overseas Territories and the Crown Dependencies, and inputting evidence and advice to global nature issues.”

- 6-14** The core values of the JNCC include:
- Align nature and climate change actions
 - Support transitions to sustainable blue/green economies
 - Integrate nature into decisions
 - Respond to the global biodiversity crisis

⁵ Dr Franz Trieb, Stuttgart, 30.10.2018; Institute of Thermodynamics. Department of Systems Analysis and Technology Assessment.

⁶ EN-1 States, “The (NPPF) Framework does not contain specific policies for nationally significant infrastructure projects. These are determined in accordance with the decision-making framework in the Planning Act 2008 (as amended) and relevant national policy statements for major infrastructure, as well as any other matters that are relevant (which may include the National Planning Policy Framework) - NPPF.” PCS points to the similar and consistent consideration of sustainable development as the overarching objective of the UK planning system in the NPPF and suite of relevant NPSs (Energy).

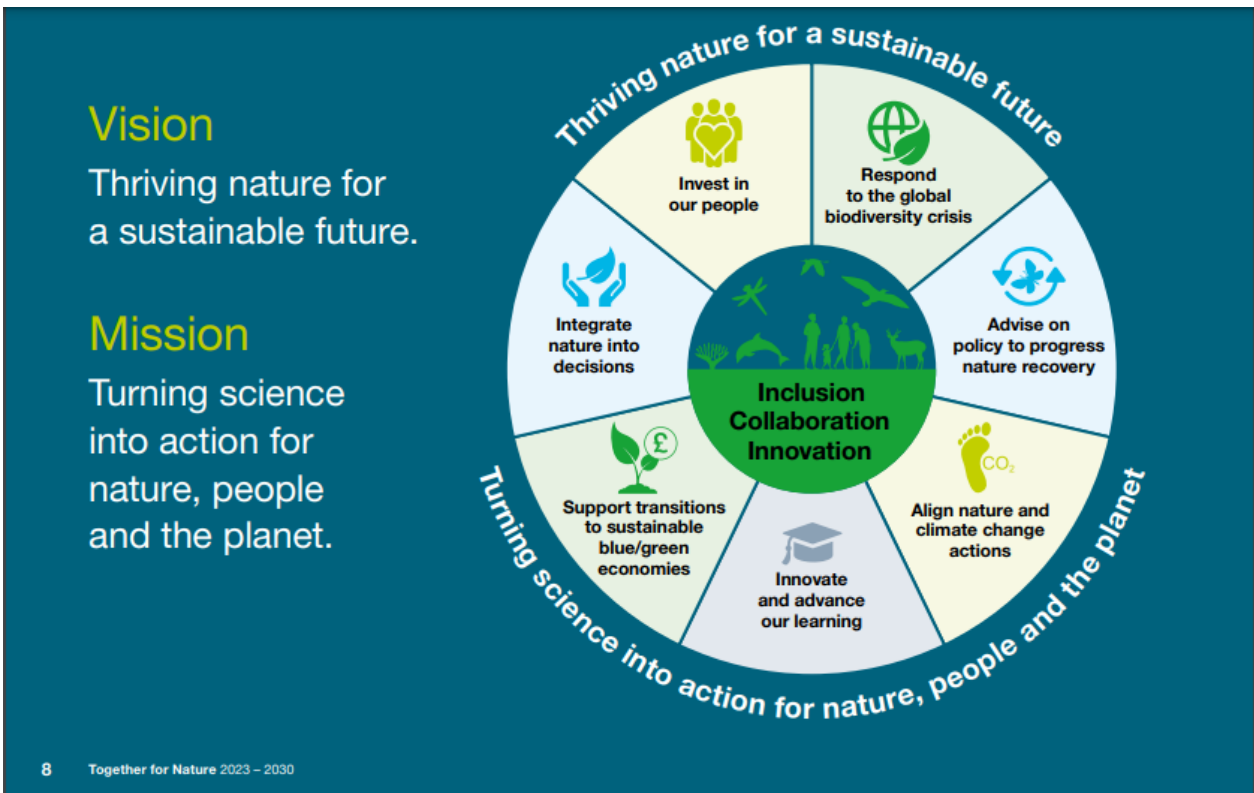
- Advise on policy to progress nature recovery⁷

“Together for Nature – our Strategy to 2030 – was launched on 22 May 2023. It outlines the areas of work that JNCC will undertake, focusing on our role in terrestrial and marine nature conservation and recovery, at the UK level, working with the UK Overseas Territories and the Crown Dependencies, and inputting evidence and advice to global nature issues.”

The core values of the JNCC include:

- Align nature and climate change actions
- Support transitions to sustainable blue/green economies
- Integrate nature into decisions
- Respond to the global biodiversity crisis
- Advise on policy to progress nature recovery⁷

The following graphic from the JNCC’s Together for Nature 2023-2030 ‘Thriving nature for a sustainable future’ document. It clearly shows that the overriding aim is to harmonise with nature such as in their graphic highlighting: **response to the global biodiversity crisis; advise on policy to progress nature recovery; align nature and climate change actions; integrate nature into decisions.**



6.2 Offshore Infrastructure Effects

6.2.1 Principal Areas of Disagreement Statements

6-15 As a point of reference Table 6.1 illustrates relevant concerns noted in the PADS submitted by statutory consultees including local authorities. A number of the statements provided in other Chapters overlap and apply in particular Chapter 9 on underwater noise. Those important overlaps that we highlight in this Chapter are included in Table 6.1

⁷ <https://data.jncc.gov.uk/data/ccb9f624-7121-4c32-aefa-e0579d7eaaa1/together-for-nature.pdf>

Table 6.1:			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
ADC12	Marine biodiversity net gain	Biodiversity net gain has not been assessed at the district level ADC. We would expect biodiversity net gain to be achieved within the administrative area of Arun.	ADC expect marine benefits to be achieved and contribution to marine restoration projects such as Help the Kelp. Consideration should be given to a marine biodiversity net gain assessment.
MMO	Under Benthic Ecology Assessment of Significance	There is information missing from Table 9-14 and the sensitivity from smothering should be reconsidered. Please see comments in Section 4.3 of our relevant representative.	The comments should be reviewed and updated or further justification provided. Likelihood of Resolution: MMO is hopeful that the Applicant will update the information required for this to be resolved during Examination
MMO	Under Fish Ecology Noise	Discrepancies between the maximum duration of piling per day state in the UWN Impact Assessment and throughout Chapter 8	Discrepancies to be amended with the correct maximum duration of piling per day, so that impacts can be assessed properly and mitigated. MMO is hopeful that the Applicant will update the discrepancies and provide any additional information required so this will be resolved during Examination.
MMO	Habitat suitability assessments including Herring and Sandeel mapping	Whilst the applicant has completed a herring potential spawning habitat and Sandeel potential habitat suitability assessment. The Applicant has not followed the recommended Marine Space (2013a) and (2013b) methodologies.	MMO requests that the Applicant revises their habitat suitability assessments by following the MarineSpace (2013a and 2013b) methods and provides 'heat' maps of herring potential spawning habitat, and sandeel potential habitat, for the fish ecology study area as an addendum to the ES and update the conclusion from this information. MMO is hopeful that the Applicant will update the assessments and Maps to accord with the recommended methods so this will be resolved during Examination.
MMO	Black seabream UWN disturbance Threshold Noise	A threshold approach has been based on a threshold of 141dB re 1µPa SELss as defined by Kastelein et al., (2017). This has also been used to form the basis of mitigation. MMO does not consider a SELss of 141 dB re 1 mPa2 s used for a 44cm captive seabass to be an appropriate or conservative threshold. MMO understands there was no agreement between MMO, Natural England (NE) and the Applicant on a noise threshold or proxy species for black seabream prior to submission of the Application. If the Applicant wants to pursue a noise threshold route the MMO would expect to see more noise modelling based on the 135 dB threshold. However, even if this is provided the MMO is unlikely to agree a threshold approach for black seabream. Further mitigation may be required.	MMO believes this may not be fully resolved during Examination but is hopeful that the Applicant will provide the modelling and further discussions can take place. MMO hopes these concerns will be resolved during Examination, noting they have not been resolved through pre-examination.

Table 6.1:

Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
MMO		A number of impacts MMO identifies on fish are noted as MMO concerns in the Noise Chapter below. These can be cross referenced as appropriate in this chapter.	
MMO	Pre- and post-construction habitat surveys	<p>4.6.64 Pre- and post-construction surveys should be implemented to enhance the baseline data and to validate any predictions made in the ES on nesting habitat recoverability. These surveys should be suitably timed and use appropriate methods.</p> <p>Therefore, MMO recommends that a requirement for pre- and post-construction monitoring of black bream nesting habitat be included in the DML to ensure that the habitat recovers and continues to support black bream nesting, and that comparisons of nest location and density pre- and post-construction can be made. This should be clearly referred to within conditions 16-18.</p>	MMO believes this may not be fully resolved during Examination but is hopeful that the Applicant will provide the updates and further discussions can take place. MMO hopes these concerns will be resolved during Examination, noting they have not been resolved through pre examination.
NE	Flamborough and Filey Coast Special Protection Area (FFC SPA) - in-combination impacts on kittiwake	<p>Kittiwake – the additional impact from Rampion 2 risk furthering adverse effects from existing and proposed windfarms.</p> <p>(PCS Note The Flamborough and Filey Coast SPA protects the UK’s largest mainland breeding seabird colony)</p>	<p>Further detail is needed in relation to the proposed compensatory measures for kittiwake.</p> <p>Likelihood of resolution: It is possible this issue could be progressed with further provision of information.</p>
NE	Flamborough and Filey Coast SPA – in-combination impacts on guillemot and razorbill and Farne Islands SPA – guillemot.	The effects of Rampion 2 in-combination with other projects on these qualifying features need to be fully considered.	<p>A full in-combination assessment of impacts on these qualifying features is required</p> <p>Likelihood of resolution: Once an in-combination assessment is provided, NE can advise on adverse effects and whether a derogations case is needed or not.</p>
NE Cross reference with Noise in Chapter 8)	Black seabream (Spondyliosom a cantharus) in Kingmere Marine Conservation Zone (MCZ) - impacts of piling on underwater noise levels	Natural England does not agree with that there will be no significant risk of hindering the achievement of the conservation objectives of Kingmere MCZ due to Temporary Threshold Shift (TTS) and behavioural impacts due to piling noise.	<p>Piling activities from 1st March to 31st July inclusive have the potential to hinder the conservation objectives of Kingmere MCZ for black seabream, and therefore a full seasonal restriction is needed.</p> <p>Likelihood of resolution: This matter could be resolved by a commitment to a full seasonal restriction, as was required for Rampion 1. Otherwise, this issue is highly unlikely to be addressed</p>
NE	Short snouted seahorse (Hippocampus	Natural England does not agree that there will be no significant risk of hindering the achievement of the conservation	Further evidence is required on the modelling impacts and the efficacy of noise abatement measures.

Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
	hippocampus) features of MCZs – impacts of piling on underwater noise level	objectives in relation to Beachy Head West MCZ (TTS and behavioural impacts due to piling), and Beachy Head East MCZ, Selsey Bill and the Hounds MCZ and Bembridge MCZ (behavioural impacts)	Likelihood of resolution: There is potential for resolution if evidence is provided to demonstrate that TTS and behavioural impacts will not arise within the MCZs.
NE	Impacts on priority habitats and species in the intertidal and subtidal environment	Habitats of Principal Importance (including but not limited to Sabellaria spinulosa, chalk, and peat and clay exposures), Annex I habitats (stony reef, bedrock reef) and black seabream nests could be affected. It is currently unclear whether the proposed mitigation will be effective.	We advise that geotechnical information is collected to inform a Cable Burial Risk Assessment and is submitted into the Examination. Comprehensive pre-construction surveys will also need to be agreed with Natural England to inform mitigation proposals. Likelihood of resolution: It is possible this could progress with further information/ assessment.

6-16 We very much agree with and support the concerns raised in the PADs Statements and note they offer corroborating evidence to our concerns.

6-17 Other concerns in Relevant Representations raise alarm bells in relation to uncertainty and risk to the environment and whether proposed mitigations will be carried out and effective. For instance, the Sussex Wildlife Trust RR noted:

- *“The Commitments Register lacks detail and includes frequent caveats i.e. commitments to be delivered ‘where practical’ or ‘where possible’. This reduces confidence that commitments will be adhered to.*
- *We seek clarity as to how the developer will be held to account on the commitments made at this stage in the process, and how they will be monitored and enforced during construction.*
- *It is also unclear from the Register which are commitments, and which are essential requirements.”*

6-18 Our broader observations and concerns include lack of proper studies desk studies, uncertainty and consideration of risk including the efficacy of the Applicant’s proposed mitigation measures as expressed also by others.

6.2.2 Biodiversity threat and Net Biodiversity Loss: Selected Biodiversity and Ecosystem Services Concerns

i.) Cross-channel Insect Migration and Ecosystem impacts

6-19 Our view is the turbines will represent a physical, and, in the case of bats and insects – attractive obstacle to regular, unmitigable natural processes such as Insect and Ornithological and Bat migration.

6-20 Large amounts of Bats and Birds killed by wind turbines. 800,000 bats and 573,000 birds

at 51 megawatts of installed capacity in USA in 2012. ⁸

6-21 The South Coast is an important insect migration highway. Insect impacts have the potential to arise when considering:

- The Woodland Trust states **“Without insects we could not grow food, or sustain wildlife, which would be lost forever.”**
- At least 75 percent of global food crop types depend on insect pollinators, including 70 of the 100 most important human food crops.
- Insects are key pollinators and without them human life would not be sustainable in its current density. They are crucial to ecosystems with respect to energy, nutrient, and biomass transport; regulation of crop pests; pollen transfer.
- 4 billion Hoverflies (80 tons of biomass) travel above southern Britain each year in seasonally adaptive directions, redistributing tons of essential nutrients and billions of pollen grains between Britain and Europe. 6 trillion aphids are consumed, and billions of flower visits are carried out by Hoverflies alone.
- 300 – 1,000 tons of insect biomass migrate across the Channel to and from the Southern area of the UK annually.
- 3.5 trillion insects fly or windsurf over southern UK each year. The loss of insects via wind turbines is now a known phenomenon.
- Insects are numerically the largest of animal groups to be destroyed by wind farms.
- 18 Red List species of insects found at Climping Beach & West Beach Nature Reserve.
- **List of migrating insects (Red List, rare & common) in Annex 1**

6-22 Model calculation of the amount of insect biomass that traverses wind rotors during operation provides a first estimate of the order of magnitude of 24,000 tons of insects crossing the German wind park throughout the summer season. Based on conservative model assumptions, five percent of the insects flying through a rotor could be actually damaged. The related loss of 1,200 tons per year since more than fifteen years could be relevant for population stability. ⁹

6-23 Recently, the annual loss of insect biomass at wind turbines was estimated for Germany to amount 1,200 t for the plant growth period, which equates to about 1.2 trillion killed insects per year, assuming 1 mg insect body mass. Accordingly, a single turbine located in the temperate zone might kill about 40 million insects per year. Furthermore, Scheimpflug Lidar measurements at operating wind turbines confirm a high insect activity in the risk zone of turbines.¹⁰

6-24 The lack of consideration of emerging research of the adverse impact on flying insects/ arthropods impacting on biodiversity as well as pollination services on both sides of the channel indicates a lack of understanding of the important area sensitivities by the Applicant.

⁸ Introduction: Wind-Energy Development and Wildlife Conservation, March 2013 Wildlife Society Bulletin 37(1) K. Shawn Smallwood [REDACTED]

⁹ Interference of Flying Insects and Wind Parks Franz Trieb Stuttgart, 30.10.2018

<https://docs.wind-watch.org/Interference-of-Flying-Insects-and-Wind-Parks.pdf>

¹⁰ Insect fatalities at wind turbines as biodiversity sinks Christian C. Voigt First published: 26 January 2021, <https://doi.org/10.1111/csp2.366>

ii.) Inshore Ecosystem Sensitivity and Effects

Kingmere Marine Conservation Zone (MCZ), Offshore Overfalls MCZ

6-25 From the Joint National Conservation Committee (JNCC)/Natural England's advice: Kingmere MCZ This MCZ is designated for Black bream (*Spondyliosoma cantharus*), infralittoral rock and thin mixed sediment, and subtidal chalk. All features have a recover conservation objective. **Cabling impacts to this MCZ should be avoided on the basis of impacts to nesting black bream and their breeding habitat which is rock covered in a thin layer of sediment. Impacts to the rock habitat are not able to recover morphologically.** The breeding season is currently understood to be April 1st to June/July; during which time there is high sensitivity to smothering and siltation rate changes. Consideration should also be given to avoiding noise impacts out with the MCZ during nesting periods for black bream. It is considered that there is little space in the MCZ to micro-route around these sensitive habitats given existing aggregates licence areas within the sites and the need to also avoid impacts on sensitive chalk habitat. ¹¹

6-26 Offshore Overfalls MCZ The sensitive features of this MCZ are subtidal coarse sediment, subtidal mixed sediment and subtidal sand. Currently, there is only a small amount of industry activity (fishing and low-level military) within the MCZ. Although human activity is low, the MCZ has been given a recover objective, therefore new disturbance and infrastructure should be avoided if possible.¹²

Kelp Regeneration, Sedimentation and Smothering

6-27 There is burgeoning kelp regeneration in the Sussex Bay. This is verified with the help of free divers, universities and Sussex IFCA who are regularly checking the growth of the kelp and seeing big gains in species diversity and numbers. The sedimentation and change to the seabed from construction and decommissioning is, from the PEIR of Rampion 2: Seabed disturbance during construction: Temporary disturbance to seabed habitat 26,421,466 sq. mtrs Total clearance of seabed for cables 4,500,000 sq mtrs Total clearance for foundations and legs 1,900,000 sq mtrs Estimate weight of the removed material hundreds of metric tons of 'sand and boulders', will be scoured. There is no mention of the life that resides there.

6-28 The blanketing or smothering of benthic animals and plants, may cause stress, reduced rates of growth or reproduction and in the worse cases the effects may be fatal (Bray, Bates & Land, 1997). The impact of smothering on fish and shellfish will be a function of the settling behaviour of sediment resulting from increased suspended sediment concentrations relative to background levels, the sensitivity of certain species and/or lifestages to those increases and their ability to move to other areas. The significance of this impact is dependent on many variables including hydrography, seasonality, sediment type, species and the technique used to bury the cable (see Sections 4.2 and 4.3 (of the referenced document) for more details). The main impact on fish is the irritation and clogging of gills. Juveniles are more susceptible to this as adult fish would normally be able to detect significantly elevated levels of suspended sediment and move away from the affected area (ABP Research, 1997). Smothering can result in significant mortalities on shellfish beds as they are less mobile than fish species, with many having lifestages that are sensitive to variations in sediment particle size within the water.

¹¹ Natural England and JNCC advice on key sensitivities of habitats and Marine Protected Areas in English Waters to offshore wind farm cabling within Proposed Round 4 leasing areas. <https://data.jncc.gov.uk/data/3c9f030c-5fa0-4ee4-9868-1debedb4b47f/NE-JNCC-advice-key-sensitivities-habitats-MPAs-offshore-windfarm-cabling.pdf> page 23

¹² <https://data.jncc.gov.uk/data/3c9f030c-5fa0-4ee4-9868-1debedb4b47f/NE-JNCC-advice-key-sensitivities-habitats-MPAs-offshore-windfarm-cabling.pdf> page 24

Respiratory and feeding apparatus may be clogged by the settlement of significant amounts of sediment that is mobilised by cable-laying operations. Filter feeders such as mussel, oyster and scallop are therefore among the most vulnerable to smothering effects. Shellfish are particularly susceptible during spring when spatfall occurs (Posford Duvivier & Hill, 2001). If sensitive spawning or shellfish beds cannot be avoided entirely, seasonal avoidance may be required.¹³

6-29 Total introduced hard substrate at seabed level 1,117,400 sq.mtrs. Decommissioning 25-30 yrs, disturbance of seabed habitat, 9,916,000 sq mtrs. Sediment is known to retard growth of kelp, due to dimming of light, smothering of surface area, and creating an increase in silt/ loose sediment that prevents the holdfast (the attachment system of the kelp) from securing itself to the seabed, therefore making it unviable for growth. **Kelp is an excellent carbon sink, sequestering carbon at a rate of around 6 times faster than a tree. In fact, algae such as kelp are more efficient at processing carbon than the Amazon rainforest.** The seabed is therefore a vast carbon sink that has since time immemorial has been locking away carbon in the benthic layer - piling will certainly unlock some amount of sequestered carbon and increase the likelihood that anthropogenic chemicals, such as pyridine from anti-fouling on boats (the English Channel is the busiest shipping lane in the World), could be released with devastating toxic effects.

6-30 Rampion 2 risks interrupting and degrading the short/medium-terms process of Sussex Bay kelp regeneration because of the timing, just as the seabed is stabilising enough for the kelp to regrow.

6-31 The Sussex Bay kelp is a permanent sustainable climate action as it will continuously sequester carbon, and will be beneficial to Marine Biodiversity Net Gain in perpetuity.

European Protection List of Marine Mammals and Seahorses

6-32 This inshore/nearshore (not Offshore by definition) proposal would also create unprecedented Sound Pressure Levels (SPLs) of noise activities, well beyond the threshold of injury and even death for fish (including seahorses) and marine mammals. These predicted (by the Applicant -240dB are unmitigated) SPLs are based on the piling of 13.5m wide piles (the most likely scenario as used in the Applicant's Environmental Statement). The Sussex Bay is a delicate and sensitive ecological zone, a safe harbour for a number of species including protected species:

Seahorses (*Hippocampus hippocampus*, *Hippocampus guttulatus*) both known to exist in large numbers and populations known to overwinter in the Sussex Bay area. They are protected by law via the Wildlife and Countryside Act (as amended 1981) (WCA): Schedule 5, section 9. **This has been completely downplayed and basically scoped out by the Applicant. Please see Annex 2 for further information.**

Seahorses are found at a depth of 1.5mtrs below low water mark up to 70mtrs deep. Average is 30mtrs. *H. guttulatus* can grow to 34cms.

Stress is a killer i.e. flash photography. Very sensitive to noise. Protected from April 2008. There is a Judicial Review, to protect seahorses and the seagrass in Studland Bay. Can survive in freshwater e.g. way up the Tamar.

"They (*Seahorses*) are by the pontoon outside County Wharf (there is a walkway between 2 sets

13 https://tethys.pnnl.gov/sites/default/files/publications/Cabling_Techniques_and_Environmental_Effects.pdf

of flats and they are directly there.) There is a bench on the walkway as a guide.”¹⁴

Black Sea Bream. Numbers are beginning to return after focussed efforts by the Inshore Fisheries Conservation Authority (IFCA), helped vastly by the Trawler Byelaw that in turn has promoted the early stages of the return of the kelp forests. The Kingmere MCZ’s conservation objective includes maintaining a safe haven for Black Sea Bream. The Rampion 2 Area of Search borders this MCZ and therefore threatens it.

Fish will actively avoid affected areas. The worst-case area that this might affect varies greatly with the species for example, just 100m for Sandeel, to potentially 80km for herring. Indirect impacts of piling noise are a big concern in relation to herring. Although herring are not protected, they are known to be both sensitive to noise and a key prey item to rare and protected breeding seabird (tern) colonies that contribute to designated SPAs (Special Protection Areas) in the wider region, and the SPAs where they breed.

Elasmobranch (cartilaginous fish, including modern sharks (superorder Selachii), rays, skates, and sawfish (superorder Batoidea)) species that have been included as ‘Priority Species’ on the UK Biodiversity Action Plan (UK BAP) that have the potential to occur within the study area include Undulate Ray, Spurdog, Porbeagle Shark, Shortfin Mako, Basking Shark, Tope, and Blue Shark and Angel Shark. The Electromagnetic Fields (EMFs) from cabling during operation can affect behaviour of elasmobranch, teleosts (fish) and some crustacean species

Elasmobranchs can detect minute electromagnetic fields, <1 nVcm⁻¹, using their ampullae of Lorenzini.¹⁵ Electrical discharge problems for elasmobranchs are created by the cabling for wind turbines.

Submarine power cables can generate electromagnetic fields (EMF) in the surrounding seabed and water. The potential impact of EMF on fisheries is discussed in Section 5.4 (of this reference document). Potential impacts and mitigation measures: It is currently unknown which invertebrate species could be affected but magnetic sensitivity has been demonstrated for the following: Decapoda (Crangon crangon), Isopoda (Idotea baltica) and Amphipoda (Talorchestia martensii and Talitrus saltator)(Greater Gabbard Offshore Winds Ltd., 2005). In all cases, magnetic sensitivity is understood to be associated with orientation and direction finding ability such that the animal may become disorientated; depending on the magnitude and persistence of the confounding magnetic field the impact could be a trivial temporary change in swimming direction or a more serious impact on migration (Greater Gabbard Offshore Winds Ltd., 2005).¹⁶

Teleosts (classification of fish (96% of all extant species)) are of conservation importance that have the potential to occur within study area include Black Bream, Sea Trout, European Eel, Smelt, Allis Shad and Twaite Shad. Shad are protected from intentional killing, injuring, or taking (Allis Shad) or damage to, destruction of, obstruction of access to any structure or place used for shelter and protection (both Allis Shad and Twaite Shad).

6-33 Other common elasmobranchs (i.e. sharks and their relatives, which have a cartilage skeleton) include Lesser-spotted Dogfish, Smoothhound, and several species of rays. Bony fish are the most abundant and diverse. Smaller, abundant, species include Gobies, Dragonets, Solenette, Weever, Pouting, Gurnard and Dab. Abundant and commercially exploited demersal roundfish include Whiting, Bass, Black Bream and Cod, while pelagic species include Mackerel, Horse mackerel, and Herring. Flatfish that live on the seabed include Dover Sole, Plaice, Brill, and Turbot. A few fish species in the area have life cycles that use both rivers and the sea and

¹⁴ Anecdotal evidence from Colin Hitchcock-Thompson, previous Littlehampton Harbour Master

¹⁵ Effects of an Electric Field on White Sharks: In Situ Testing of an Electric Deterrent

Published online 2013 May 2 Charlie Huveneers, Paul J. Rogers, Jayson M. Semmens, Crystal Beckmann, Alison A. Kock, Brad Page, and Simon D. Goldsworthy, Jacob Engelmann, Editor doi: 10.1371/journal.pone.0062730

¹⁶ https://tethys.pnnl.gov/sites/default/files/publications/Cabling_Techniques_and_Environmental_Effects.pdf

are likely to at least pass through the wind farm area occasionally; these include Sea Trout and Protected Species of Shad and Eels.

6-34 Overall, a diverse fauna of fish and shellfish is found in the area. As the ecology and breeding cycle of each of these species is different, the result is a complex system that changes both throughout the seasons, and geographically. A good example of this is the Cuttlefish (a squid-like mollusc), which arrives in abundance close inshore (peaking in April/May) to breed and lay eggs. A fish species of both conservation and commercial importance – the Black Bream – is also confined geographically, as it appears to require thin, coarse sediment in rocky, shallow (<20m) areas in which to excavate a ‘nest’ to lay its eggs. Spawning periods for different species span across the year and an important population of herring have their peak spawning (in the middle of the English Channel, to the east of the Project site) in winter months.

6-35 Shellfish found encompass a wide range of molluscs and crustacean types, many of which are of commercial importance. Mussels and native Oysters are found attached to the seabed, also Scallops, Whelks, Crab, Lobster, Cuttlefish, and Squid.

6-36 The threat to Shellfish is based on the high probability of change of species distribution due to the creation of artificial reefs by turbine stanchions. The possibility of Invasive Non-native Species being introduced by vessel traffic is considered Significant by the Applicant (so why ignored?), with the further potential of changing the habitat distribution of the Sussex Bay; this would have a domino effect on the ecosystem of this marine environment and the fisheries industry of the area.

6-37 The RWE PEIR report says whelk, lobster, scallop, and cuttlefish, all will be unable to avoid disturbance, and this needs more assessment.

Effects of Underwater Noise on marine mammals, fish & crustaceans

6-38 There is increasing concern over the impacts of underwater noise as a result of anthropogenic activities upon marine life in general. This issue is of greater relevance to marine mammals, given both their physiological capacity for detecting and responding to sound, and the high levels of protection that they are afforded.

6-39 The sources and intensities of sound associated with offshore wind farm construction and the related impact on marine life has been investigated by Nedwell et al. (2003) and Nedwell & Howell (2004). Further useful information is provided in Jansy et al. (2005) and Madsen et al. (2006). The impact of noise on marine mammals can be divided into three levels;

- Those that cause fatal injury;
- Those that cause non-fatal injury such as deafness and other auditory damage such as temporary threshold shift (TTS); and
- Those that cause behavioural change (e.g. avoidance, cessation of feeding, etc.). Similarly to the impacts of underwater noise on fish, available information suggests that species of marine mammal will show a strong avoidance reaction to sound levels of 90dBht(species) and above.¹⁷

6-40 It is necessary to specify, completely assess and monitor future safe operating noise levels and to ensure strict adherence to levels such as stated in the Marine Management Organisation’s recommendations, namely a maximum of 135dB (inc. mitigation) during

17 https://tethys.pnnl.gov/sites/default/files/publications/Cabling_Techniques_and_Environmental_Effects.pdf

construction.

6-41 It is important to investigate the operators claims as read on max decibel numbers as offered in the application against current real-world data for size turbine/monopile, and have the operator evidence reliable mitigation measures and capability to ensure safe levels. **Sonic levels experienced at other wind farm construction sites off New Jersey, USA are now showing much higher decibels for similar pile than stated in the ES by the operator, and are as such potentially much more dangerous to all forms of life.** These turbines are farther offshore than R2 proposed, starting 15 miles from shore. **An underwater piling was acoustically measured at 241db (with mitigation). This level of acoustic blasting (as much as a 155mm Howitzer going off every strike) will cause much damage to the underwater life and environment and would be a huge detriment to our biodiversity.**

6-42 A consideration should be a cut-off point where decibel levels are deemed to be too high to allow construction of this nature so close to shore and amongst sensitive marine receptors and conservation zones. Consider the figure of 135db as the threshold of pain. Evidence shows excessive levels and/or certain frequencies can affect life detrimentally in many ways, in the sea this noise effect can carry for tens of miles.

6-43 Concern that noise levels purported during construction/piling heavily underplayed.

6-44 Measured noise levels (with mitigation) now coming out of other similar size OWF construction is at levels reaching up to 240db during piling.

iii.) Other sensitive receptors

Birds

6-45 With respect to Ornithology, the Applicant's PEIR used short (one year only), incomplete (not entire area of search) and desk- studies for their analyses. Many birds are known to migrate through a channel roughly situated from the south of the Isle of Wight, via Worthing, Telscombe Cliffs, Splash Point (Seaford) and Beachy Head. The proposed Rampion 2 project would reduce this 'corridor' by approximately 35%, resulting in an increased barrier effect and an increased collision risk. Birds of particular concern include Brent Geese, Common Scoter, Auks, Skuas, Gulls and Terns. Also affected would be Gannets. Many hundreds of thousands (perhaps over a million) seabirds must be moving up and down the Channel each year. Indeed, the English Channel is a major European Flyway for seabirds.¹⁸

6-46 The Royal Society for the Protection of Birds (RSPB) has declared this stretch of coast to be unsuitable for wind farms because of its known heavy bird migration paths. Construction phase impacts on Arun Valley SPA and Ramsar site would be the loss of functionally linked land (FLL) used by water birds.

6-47 Campaigns.england@rspb.org.uk says not enough is known about migrating birds and interaction with turbines. Offshore renewables should be planned in harmony with nature.

6-48 RSPB says "We are deeply concerned that without a system change the UK will continue to lose nature and fail to reach 2030 offshore wind targets" (Dec. 2021)

6-49 Experimentation on colour of rotor blades revealed that painting one of them black reduced the fatalities of birds by 70%, the greatest effect on Raptors.¹⁹ This should be presented by the developer as a mitigation technique.

6-50 Diving bird numbers plunge 90% near offshore wind turbines.²⁰

Bats

6-51 Unprecedented numbers of migratory bats are found dead beneath industrial-scale wind turbines during late summer and autumn in both North America and Europe.²¹

6-52 From Tony Hutson, one of the founders of the Bat Conservation Trust: “I have to confess that 25 years ago we rather dismissed wind turbines as unlikely to be a serious problem for bats, but that has proved to be far from the truth, both from the increased knowledge about the movements and migrations of bats (but about which we still lack a lot of detail) and from studies of the behaviour of bats in relation to wind turbines. There has been, and still is, a great deal of research going on on the topic and a European group (that I was a member of in its early days) is trying to address the matter and has global links for its discussions. That group has published guidelines on the use of wind turbines and bats and produces up-dated annual reports (if not in the last year).

But that doesn’t really address the question of the Rampion offshore wind farm which proposes to double in size. While we know that bats do migrate across the channel in this area we have no idea at what scale and what resultant mortality this (extended) wind farm might cause and it is extremely difficult to get that kind of data. There are measures that can be (and I think are) taken to reduce the mortality, but I will enquire as to what is going on with specific reference to this wind farm and get back to you.” Sadly, Tony Hutson passed unexpectedly.

6-53 Bats are heavily affected by wind turbines. Bats die from sudden drops in air pressure, as their lungs cannot accommodate for the change in pressure caused by the turbine-induced wind vortex. Though bats are typically able to detect man-made structures and avoid them by using echolocation, turbine blades are undetectable due to the pressure drops. As such, wind turbines kill bats in two ways: turbine blades directly collide with bats, and wind vortexes cause bats lungs to collapse.

6-54 Some large wind energy facilities (e.g., 100–300 MW) are estimated to have fatality rates of 10–20 bats/MW/yr,⁵⁰ which means that single wind energy facilities are causing the deaths of thousands of bats per year. With approximately 40,000 MW of turbines currently installed in the United States⁵¹ and Canada,⁵² and an average published bat fatality rate of 11.6 bats/MW/yr,⁵³ more than 450,000 bats may already perish at turbines each year in North America.²²

6-55 Bats are protected by national and international legislation in European countries, yet many species, particularly migratory aerial insectivores, collide with wind turbines which counteracts conservation efforts.²³

19 Paint it black: Efficacy of increased wind turbine rotor blade visibility to reduce avian fatalities. Roel May, Torgeir Nygård, Ulla Falkdalen, Jens Åström, Øyvind Hamre, Bård G. Stokke. First published: 26 July 2020.

20 Telegraph, 2023 13th April J. Pinkstone, Science correspondent. Quoted by windwatch 14 April 2023

21 GAL.CRYAN.DOC 5/20/2011 5:33 PM [355] WIND TURBINES AS LANDSCAPE IMPEDIMENTS TO THE MIGRATORY CONNECTIVITY OF BATS BY PAUL M. CRYAN.

22 GAL.CRYAN.DOC 5/20/2011 5:33 PM [355] WIND TURBINES AS LANDSCAPE. IMPEDIMENTS TO THE MIGRATORY CONNECTIVITY OF BATS BY PAUL M. CRYAN.

23 Wind turbines without curtailment produce large numbers of bat fatalities throughout their lifetime: A call against ignorance and neglect Christian C. Voigt, Klara Kaiser, Samantha Look, Kristin Scharnweber, Carolin Scholz

iv.) Onshore ecological systems

The 'Biodiversity Corridor'

Climping Site of Special Scientific Interest (SSSI), West Beach Nature Reserve

6-56 The sand lizards are rare enough to warrant European protection, and four Nationally Scarce burrowing bees and wasps have been seen in the dunes. The vegetated shingle, though locally common, is internationally rare, and is used by a Red Data Book ant species. The sand flats host large numbers of migratory waders in the winter months.²⁴

6-57 Protected and Notable Species within 2km the Climping SSSI and West Beach Nature Reserve include, and are not limited to:²⁵

- Under Schedule 2 of the Conservation of Habitats and Species Regulations 2010 and under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).
 - Great Crested Newt, Common Frog, Smooth Newt
 - Sand Lizard, Common Lizard

- NERC Act (2006), Birds Directive A1, Schedule 1 Wildlife and Countryside Act 1981 (as amended), Red List, Amber List, UK BAP Priority, Sussex Notable Bird
 - House Sparrow, Starling, Dunnock, Bullfinch, Song Thrush
 - Barn Owl

- Schedule 2 of the Conservation of Habitats and Species Regulations 2010, NERC Act (2006), Schedule 5 of the Wildlife and Countryside Act 1981 (as amended).
 - Bat species include serotine, myotis, Daubenton's Bat, whiskered/Brandt's bat, noctule, common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, brown long-eared

- UK BAP Priority, Red List.
 - West European Hedgehog

- Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), NERC Act (2006), UK BAP Priority, Nationally Rare
 - Invertebrates including resident and migratory species: Refer to Attachment 1.

Cowfold, West Sussex Local Impact Assessment summary can be found in written representations by Cowfoldvrampion.

6.3 Onshore Infrastructure Effects

6-59 There is a high degree of uncertainty in the magnitude of significant impacts and the effectiveness of mitigation measures where there is limited research, survey and data. Consultations on the onshore proposals have been heavily criticised in RRs. This includes the biodiversity considerations to which applicants should have regard concerning designated landscapes and protected areas including South Downs National Park.

24 <https://www.arun.gov.uk/download.cfm?doc=docm93jjjm4n3097.pdf&ver=2748>

25 Sussex Biodiversity Record Centre (SxBRC).

Table 6.2 Principal Areas of Disagreement (PADS) onshore environment

Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
ADC1 2	Climping SSSI	Significant concerns regarding the cable route passing beneath and near to the Climping SSSI and ecological sensitive areas. Nationally scarce invertebrates have been identified on the sand dunes of Climping beach. We note access would be restricted in the SSSI and no groundbreaking activity. However, there remains the potential for unplanned events and Rampion 2 Offshore Wind Farm Principal Areas of Disagreement Statement: Version 1 November 2023 Page 10 of 13 localised degradation of habitat within the SSSI, which is of a concern.	To undertake an invertebrate survey of Climping SSSI. To provide an assessment of indirect effects to the SSSI.
WSCC 3	Under Project Description and Construction detail. Lack of construction information.	Lack of detail regarding community engagement and construction phasing details, including securing commitment 19, which outlines cable route being constructed in discrete sections to reduce environmental impact.	The Applicant must provide further details on community engagement plans and how construction phasing will be secured.
WSCC 4	Under Project Description and Construction detail. The detailed design for trenchless crossings (HDD) will be confirmed at the detailed design stage as part of Construction Method Statements (CMS) (APP-255). This leaves significant uncertainty as the potential for impacts.	The OCMS suggests for any changes to trenchless crossings (currently identified as preferred options) confirmation will be provided that there are no new or materially different environmental effects arising compared to those assessed in the ES. However, no methodology as to how this will be assessed/established has been provided.	The Applicant must provide further details on how this will be secured.
WSCC Under Ecology and Nature Conservation			
WSCC 24	Compensation for temporary loss of habitat and landscape features along the cable corridor and at the construction compounds and access routes	Ecological impacts of temporary habitat loss and inherent risk of poor reinstatement (failure with tree planting, hedgerow 'notching' and other habitat restoration) are greater than assumed.	Additional compensation, such as restoring hedgerows to better condition, advance tree planting and other habitat enhancements. Opportunities for habitat enhancement should be actively sought and included in the stage specific Landscape and Ecology Management Plans (outline version APP-232).
WSCC 25	The reliance on off-site compensation and Biodiversity Net Gain (BNG).	Through being delivered off-site, and by a third party, there are concerns that it will not achieve the intended nature conservation benefits, and in	Information is required on the details of BNG, such as locations, type and extent of habitat creation/enhancement, timescales, management and monitoring. Detail is also

Table 6.2 Principal Areas of Disagreement (PADS) onshore environment			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
		the expected time frame.	required on the mechanism to secure off-site BNG
WSCC 26	Advance habitat creation, to be implemented before and during the early stages of construction.	There is a lack of information on advance habitat creation (both on-site and off-site), including locations, specifications, timescales and how it will be secured	Confidence in delivery is required. Information could be presented in the stage specific Landscape and Ecology Management Plans (LEMPs) and landscape plans.
		WSCC has further Principal issues under Arboriculture	
WSCC 27	Incompleteness of Arboricultural Impact Assessment (AIA) and hedgerow survey	Unknown impact/reasoning on arboricultural features.	Include keys on plans for temporary and permanent access points. Set out how and when further tree and hedgerow surveys will be implemented. Justify the removal of: G251 (partial), T609, T611, T613 & T617.
WSCC 28	Removal of potential near future veteran trees	Loss of significant arboricultural features.	Demonstrate tree loss at Oakendene Substation are not detrimental to historical parkland at a local context, and how proposed landscaping compensates for such loss. Safeguard trees T1273 & T1236 from potential removal.
WSCC 29	Assessments do not recognise impacts on land allocated for large scale woodland planting.	Loss of potential woodland within the County.	Address how this has been considered along the Oakendene to Bolney substation cable route.
WSCC 30	Important hedgerows are not adequately identified across multiple documents and plans	Removal or damage caused to hedgerows including those determined as 'important'.	The following must be consistent with hedgerow references and survey findings: Schedule 13; Tree Preservation Order and Hedgerow Plan; Hedgerow Survey Report; and Hedgerow Retention and Treeline Retention Plan.
WSCC 31	Vague explanation of methodology, aftercare, and assessment of suitable hedgerows/tree lines for the mitigation technique of 'notching'.	Unsuitable methods of notching. Negligent aftercare and commitment to care requirements during movement of hedgerows. Unknown suitability of method for the hedgerows proposed for this technique.	Both the OLEMP and OCoCP should reflect how this will be addressed.
WSCC 32	Replacement planting proposed within the AIA not secured within the OLEMP	Essential planting rates stated not being secured as a requirement within the DCO.	Amend the OLEMP to require the replacement planting required as stated within the AIA and include a planting strategy that creates landscape features rather than planting numbers alone.
WSCC 33	Lack of enhancement measures proposed for trees, hedgerows or woodland.	Enhancement of existing features were expected as mitigation.	Enhancements of existing retained features should be adopted within the OLEMP.

Table 6.2 Principal Areas of Disagreement (PADS) onshore environment

Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
WSCC 28	Removal of potential near future veteran trees	Loss of significant arboricultural features.	Demonstrate tree loss at Oakendene Substation are not detrimental to historical parkland at a local context, and how proposed landscaping compensates for such loss. Safeguard trees T1273 & T1236 from potential removal.
WSCC 29	Assessments do not recognise impacts on land allocated for large scale woodland planting.	Loss of potential woodland within the County.	Address how this has been considered along the Oakendene to Bolney substation cable route.
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WSCC 33	Lack of enhancement measures proposed for trees, hedgerows or woodland.	Enhancement of existing features were expected as mitigation.	Enhancements of existing retained features should be adopted within the OLEMP.
SDA-15	Loss of key Landscape Features	Significant concerns over likely success of proposed hedge notching. The examples cited for use of the technique in the Lake District and Norfolk Broads are not likely to have encountered the challenges of dry, free draining chalk soils. No proven testing undertaken to evidence proposals. If this would not work, the landscape, ecological and visual impact would be significant. Clarity required to explain why 6m width notching technique cannot be used for all hedges regardless of importance.	Applicant to provide further evidence on achievability on shallow chalk soils in Southern England. Applicant to provide further evidence on reasoning
SDA-	Lessons learnt from	Disagree with assertion that Rampion	Applicant to provide further evidence on

Table 6.2 Principal Areas of Disagreement (PADS) onshore environment			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
05	Rampion 1	1 cable corridor was successfully reinstated – there remain several areas where corridor is still visible and it took much longer in other sections (3+ years) for the corridor to demonstrate improvement. There also remain outstanding issues regarding ongoing management and maintenance of the route including failure of wildflower, hedgerow and grass planting, retention of fencing and reluctance to manage as agreed.	how Rampion 1 lessons have been taken into consideration and demonstration of how these will be dealt with through Commitments Register, Requirements and S106 Agreement (where appropriate). Likelihood of Resolution: Possible – it is in the applicant's gift to provide
SDA-16	Terrestrial Ecology and Nature Conservation	Significant concern that the conclusion 'no significant effects have been identified on terrestrial ecology features' is based on insufficient survey data, ecological assessment and mitigation proposals. We therefore disagree with this conclusion.	Robust ecological surveys need to be carried out to properly inform the impact assessment process, ensure that suitable mitigation and compensation measures can be identified and designed and to determine whether residual effects are acceptable prior to determination. The assessment should consider temporal and spatial changes in landscape connectivity and how these can be assessed through targeted survey, avoided, and mitigated in the short term (through e.g. timing of works) and long term (e.g. through ongoing monitoring and management) Survey to UK Habitat Survey Level 4/5 within entire DCO limit (plus appropriate buffer), plus to National Vegetation Classification level in grassland and woodland areas within zone of influence, using surveyors with demonstrable competence.
SDA-18	Horizontal Directional Drilling (HDD): Ancient Woodland and Veteran Trees	Insufficient evidence provided to demonstrate 25 metre stand-off & HDD 6 metres underneath ancient woodland ground level will not cause the loss or deterioration of this irreplaceable habitat by damaging roots, damaging or compacting soils, increasing levels of air and light pollution, noise, and vibration, changing the water table or drainage, damaging functional habitat connections or affecting the function of the woodland edge. Insufficient evidence is provided to support the conclusion of low frac-out risk.	Provide further evidence/justification based on relevant case studies and trials, etc Likelihood of Resolution:
NE	Terrestrial Ecology and Nature Conservation – feasibility of trenchless techniques	Natural England has major concerns regarding the feasibility of Horizontal Directional Drilling (HDD) and therefore its likely effectiveness in mitigating impacts.	Geotechnical information needs to be provided to understand the feasibility and effectiveness of this approach. Likelihood of Resolution: It is possible this could progress with further information/ assessment.
NE	Impacts on Arun Valley	There is the risk of a temporary loss	We advise that this extended

Table 6.2 Principal Areas of Disagreement (PADS) onshore environment			
Num ber	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
	SPA and Ramsar site – loss of functionally linked land (FLL) used by waterbirds	of FLL (during the construction phase) lasting for several years longer than predicted before it is returned to its previous agricultural condition	time frame needs to be further assessed with the ES. Likelihood of Resolution: It is possible this could progress with further information/ assessment.
NE	impacts on Arun Valley SPA and Ramsar site – requirement for water neutrality.	Natural England advise that development proposals within the Sussex North Water Supply Zone area that would lead to an increase in water demand will need to demonstrate and robustly evidence 'water neutrality.'	An assessment of water neutrality is Required Likelihood of Resolution: It is possible this could progress with further information/ assessment.

6-60 Many comments indicate the Applicant’s proposals seem to be highly indicative in nature and lack the detail necessary for directly affected residents and organisations to assess impacts and have limited the opportunity to offer local input and voice as to the extent of the impact, as well as avoidance and mitigation priorities.

6-61 We note there are a number ecologically sensitive areas affected by onshore infrastructure that have status:

- Climping Beach is a Site of Special Scientific Interest (SSSI), and West beach a Local Nature Reserve.
- WSCC has designated Littlehampton Golf Course and Atherington Beach as Sites of Nature Conservation Importance.
- The vegetative shingle which is an Internationally Rare Habitat stretches intermittently from East of Littlehampton (e.g. Shoreham) over Littlehampton Beach West Beach Climping Beach and Atherington Beach to Selsey Bill.
- They will say that this is underground drilling, however, machinery is needed on ground obviously. Disturbance of any kind can be destructive to vegetative shingle beaches
- Where the Cable run crosses the 259 road, ADC when looking at River Defences 2013 states that badgers, bats, reptiles, etc, are vulnerable in this area.

Principal Areas of Disagreement (PADS) - onshore

6-62 As a point of reference, the relevant PADS statements from the statutory consultees are cited in Table 6.2. We appreciate those comments and feel the ExA should give them weight.

6-63 Again, we very much agree with and support the concerns raised in the PADS Statements and now the offer corroborating evidence to our concerns.

6-64 The evidence points to **no apparent Biodiversity Net Gain BNG** from the Rampion 2 onshore infrastructure development.

6-65 Replanting of trees and hedgerows cannot improve biodiversity. It takes many decades for a diverse habitat, perfectly balanced in its own harmonious way, to be established. The only proven way to have BNG is to remove pressures from the considered habitat. There is a lack of information on advanced habitat creation (both off - and on - site), including locations, specifications, timescales and how it would be secured. Reinstatement measures after the construction of Rampion 1 were not satisfactory, and to compound this, the Rampion 2 works as proposed appear more extensive than were envisaged for the original Rampion project.

Relevant Representations

6-66 There are a number of relevant representations that offer views and information that we concur with and support. Two we wish to highlight are.

- CPRE Sussex (CPRE Sussex) who objected to Rampion 2 on multiple grounds relating to impacts on the ecology of the countryside and designated landscapes.
- Representation in connection with the adverse impact on exiting natural capital improvement effort and biodiversity corridors the enhance biodiversity connectivity.²⁶

On CPRE Sussex

6-67. Among the reasons CPRE Sussex gave for objecting to Rampion 2 that we support concerning the onshore works

- ***“The onshore works for Rampion 2 appear to be needlessly destructive and disruptive to Sussex’s countryside. The works as proposed will do permanent damage to the landscape and biodiversity of Sussex and appear to be more extensive than were envisaged for Rampion 1 at a similar stage.***
- ***The proposals appear to favour convenience of engineering over the respect for the environment*** that would deliver a more sustainable and less damaging outcome. The proposal to substation major infrastructure works at Oakendene adjacent to the established settlement of Cowfold has been made without any effective communication with the residents of that settlement or surrounding ones.
- ***This failure to consult properly is against best consultation practice and is likely to lead to an unsustainable outcome*** especially as the impacts on the environment have not been (i) assessed as well as necessary or (ii) accounted for local knowledge. The resultant shortfall in essential information matters greatly because how these developments will impact on the historic village of Cowfold and its community, and the locality’s character, ambience, biodiversity and ecology and the adequacy or otherwise of proposed indicative mitigation ought to be major considerations for decision taking.
- Many of the proposals seem to be indicative in nature and lack the detail necessary to make an examination of the proposals practicable. For example, the ground investigation required prior to construction, to determine whether the site of the proposed onshore substation at Oakendene is suitable for the proposed use and that risks from land contamination have been properly managed, has yet to be undertaken, and apparently won’t be undertaken until after the completion of the DCO process.

26 Included The Baird Farming Partnership who objected to Rampion 2 on multiple grounds

- We are concerned that the proposal to land cabling at Climping Foreshore has been prepared without due regard to the implications of increasing coastal erosion and flooding in this area nor with due regard to the SSSI between Climping Foreshore and the mouth of the river at Littlehampton. Substantial erosion and flooding are commonplace and needs to be accounted for as this may worsen under climate change.
- CPRE Sussex are supportive of the comments of the Sussex Wildlife Trust in respect of Rampion 2 and believe a number of public bodies hold not dissimilar views to our own on various aspects of these proposals.”²⁷

6.3.3 Selected Biodiversity and Ecosystem Services Concerns

i) The Biodiversity Corridor: Effect on Natural Capital Improvement and Terrestrial Biodiversity Connectivity

6-68 Concerns in the Relevant Representation that we very much agree with that should be given weight in the Examination include:

- “Impact of the proposed easement corridor for the cable on proposals for delivering Natural Capital improvements and the ‘Weald to Waves’ wildlife corridor.
- There seems to be a fundamental flaw in RWEs approach to the future management of the cable corridor; the assumption is that the pre-development landscape will be restored and maintained in that condition for the lifetime of the scheme. ...“
- Natural Capital markets are emerging with a whole range of eco-system services on offer from payments for carbon sequestration from tree planting, to biodiversity crediting and flood management, being just a few examples.”²⁸
- It goes on to state the prohibition on any tree planting in the easements is deeply concerning and in direct conflict with their landscape recovery ambitions.

6-69 **Britain is one of the most nature depleted countries in the world. Farmers and land managers are actively creating a nationally significant wildlife corridor 100 miles in length,** from the Ashdown Forest, via Knepp Wildland, taking in three rivers to bolster the kelp forests off the Sussex Coast. This corridor starts at the place of the landfall of the proposed cable route, at Climping, West Sussex. This programme clashes with the Rampion 2 project due to the tight restrictions the Applicant has placed on the route of the cable. There are restrictions on the height of trees, for instance. In a rewilding project, trees are seeded via the animals that pass through and the concept of rewilding involves as little human interaction as possible.

6-70 This programme is supported by Natural England, Sussex Kelp Restoration Project, South Downs National Park Authority, Sussex Wildlife Trust, Wilder Horsham District, and many others. Climping is home to a Site of Special Scientific Interest (SSSI) and the West Beach Nature Reserve. These are Internationally rare habitats of vegetative shingle, grassy and sandy dunes, and home to Common Lizard, rare Hymenoptera, Burrowing bees, wasps and ants. There were many notable and restricted distribution (locally important) species recorded at Climping Beach

27 CPRE Sussex indicated Evidence for comments includes: - Climate Change Committee (2020) The Sixth Carbon Budget - The UK’s path to Net Zero - Climate Change Committee (2020) Policies for the Sixth Carbon Budget and Net Zero - The ES to the proposal itself and various drawings within the proposal - Correspondence with the company (no reply received) and others - The Gunning Principles (set out in 1985 by Mr Stephen Sedley QC) - Concern on coastal erosion and flooding expressed in letters and reports involving the Climate Change Committee and other bodies such as the National Infrastructure Commission.

28 Representation by The Baird Farming Partnership: <https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010117/representations/59084>

and West Beach Nature Reserve over one night in July 1992 (list available). The South Downs National Park (SDNP) is clearly home to myriad species both common and rare. This topic is covered in depth by the SDNP Authority and shall not be repeated here.

ii) **Cowfold (cowfoldvrampion) Local Impact Assessment.**

6-71 We cross-reference the cowfoldvrampion LIA which is independent and affiliated with Protect Coastal Sussex.

6-72 Cowfold is the host village to the proposed substation – erroneously titled Oakendene. The proposed substation in Cowfold has not been properly evaluated by Rampion for its environmental impact, other than by a desk study. A full environmental survey was omitted before choosing the substation site. Sussex Wildlife Trust have noted Nightingale nesting sites and Natural England report great crested newts in one corner, this advice being ignored after being invited to provide input.

6-73 The Cowfold Local Impact Assessment can be found in Written Representations by Cowfoldvrampion.

Chapter 6 Attachment 1

List of migrating insects (Red List, rare & common)

BUTTERFLIES (Lepidoptera Rhopalocera):

- Papillio machaon ssp gorganus from continental Europe
- **rare** Pale Clouded Yellow, from N Fr./ cent Eur.-rare
Berger's Clouded Yellow, from Cent.& s. Eur.
- **rare** Clouded Yellow, Annual migrant breeder from
N. Africa/ S. Eur. Bath White, from S Eur.
- **rare** Long Tailed Blue, from cont. Eur.
- **rare** Red Admiral, Annual migrant breeder from cent. Eur. Painted Lady, Annual
migrant Breeder from N. Africa Camberwell Beauty, migrant from cont Eur.
- **rare** Queen of Spain Fritillary, migrant/ occasional breeder from E & S Eur.
- **rare** Monarch, migrant from USA and possibly from
estab. Populations in S. Eur & Micronesia

FLIES (Diptera):

- **rare** Marmalade Hoverfly *Eupeodes corollae*, (hoverfly)

ODONATA (Dragonflies):

- Red Veined Darter
- Vagrant Emperor

Most people are aware of the Lepidoptera Rhopalocera, butterflies, that migrate here ie Painted

Lady from Africa to UK and back, there are 9 other butterflies that migrate to and from the UK.²⁹

Migrating Lepidoptera Heterocera, moths, there are 112 migrating Large moths that are labelled Rare, 13 that are labelled Red Data Book. There are 1600 species of Micro moth in UK, many of whom would be migrants. No figures as yet.³⁰

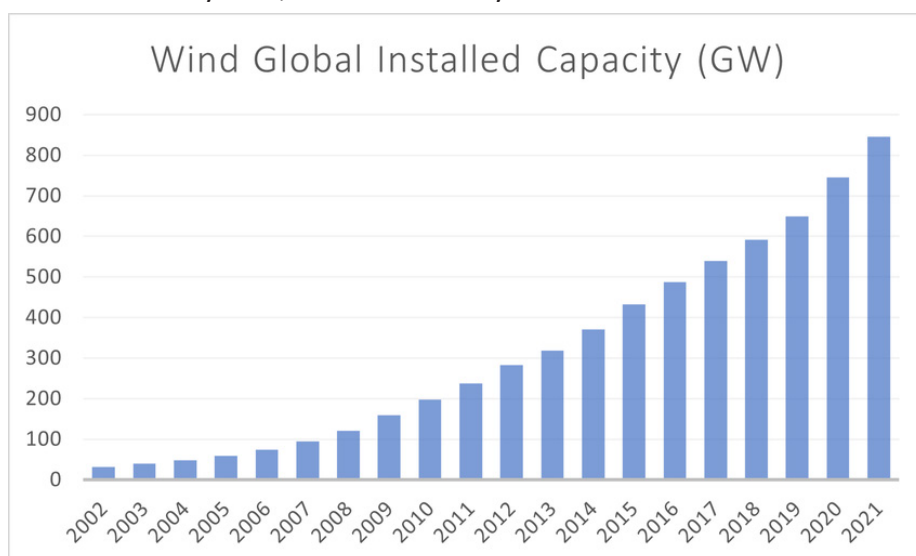
There are many more orders of insect that migrate across the south coast of the UK.

Diptera, flies Syrphidea, hoverflies. Between 1 and 4 million hoverflies migrate into and out of the UK each year. They consume 3 – 10 trillion aphids so provide an important pest control. They are also pollinators. Quote “Migrant hoverflies play a vital role due to declines of other beneficial insects.”³¹

Some Odonata, dragonflies. The British Dragonfly Society have started a research programme to improve our understanding of dragonfly migration and reasons for it. The records of the migration in some European species are increasing. The resident population of dragonflies are added to each year by European members of the same species.

For three decades, scientists have reported the build-up of dead insects on wind turbine blades in different regions around the world. Researchers in Germany found a 76 percent decline in flying insects biomass in conducting a 27-year population monitoring study. The threat to insects is also a threat to birds and bats, and wind turbines are a threat in themselves to the latter. Researchers have found that wind turbines in Germany resulted in a loss of about 1.2 Trillion insects of different species each year. Insect die-off also reduces the efficiency of the wind turbines. In 2001, researchers calculated that the build-up of dead insects on wind turbine blades can reduce the electricity they generate by 50 percent. They found that wind turbines are akin to adding a top predator to the ecosystem, killing off birds, but allowing small animals to increase their populations resulting in a trickle effect throughout the ecosystem. Wind turbines are the single greatest human threat to migratory bats, which live in different habitats during summer and winter months.

Germany says wind industry causes death of 1/3 of total migration in South England, comparison scientists say that equals 1 trillion per year. In 2007 researchers calculated that insects had been reduced by 50%, now 2023 it's by 70%.³²



The above figure shows the increase in Installed Global Wind Capacity (GW). The studies

29 Newland and Still, 2010, Britains Butterflies, 2nd Edit

30 Townsend and Waring, 2019, Concise Guide to Moths of Great Britain and Ireland, 2nd Edit

31 Wotton et al, 2019, Current Biology 29, 2167-2173

32 Forbes Magazine, 2023 M. Schellenberger

referring to insect mortality/wind turbines are from the last two decades, and thus, it can be reasoned that the mortality recorded would be increasing proportionate to installed wind capacity.

Chapter 6 Attachment 2:

Submission on Likely Rampion 2 Effects on Seahorses

Dear Panel Members for Application Examination of Rampion 2 RED Project,

It is my pleasure to contribute to your examination of the above stated project.

In the Hearing Session 7 on 8 February 2024 the issue of Seahorses was brought to the attention of representatives of the applicant. It was stated by the applicant, despite the concerns of Natural England, that “there would be no adverse impact from that injury mechanism (referring to construction related noise)” You asked, at 22:22 “is that because they're not particularly affected by that sort of noise impact”. The applicant’s representative responded at 22:27 “and population level, they, you know, very patchy in their numbers, they any number that of individuals that would potentially be subject to it would be extremely small and considered negligible.”

At this stage I offered anecdotal evidence that Seahorses have been found not only near the mouth of the Arun River, but also all along the coast from Selsey Bill to Newhaven and beyond. They are found in considerable numbers, cannot swim in the traditional sense so cannot move away from source-points of noise, and are legally protected. If there are extremely small numbers, this would evidence that this is a very limited and thus more likely an ‘at risk’ species. The fact that there are numbers spreading throughout the Sussex Bay signifies to me that due diligence has not been carried out by the applicant. This animal is so sensitive by nature it has been scheduled as legally protected:-

Under the Wildlife Countryside Act (as amended 1981) (WCA): Schedule 5, section 9 states, it is illegal to:

Section 9

Part 1	intentional killing, injuring,
Part 2	Taking possession or control (live or dead animal, part or derivative)
Part 4 (a)	damage to, destruction of, obstruction of access to any structure or place used by a scheduled animal for shelter or protection
Part 4 (b)	disturbance of animal occupying such a structure or place

Further evidence is offered by Neil Garrick-Maidment, Executive Director and Founder, The Seahorse Trust, Fellow of the British Naturalist Association, Visiting Fellow to the faculty of science and technology, Bournemouth, recipient of the David Bellamy Award for distinction as a field naturalist 2023, leading expert on UK Seahorse populations and conservation. He writes:

“Please find the image below as an indication of where seahorses have been found in the area. Bear in mind also that as I said before, we have records from the fishing industry of seahorses overwintering offshore in large numbers.

There is every good reason to suggest they do this every winter. Many thanks for the email and the map (of Rampion 2 search area) and yes indeed that area has a high concentration of seahorses in it, especially during the winter, where the Short Snouted Seahorse (*Hippocampus hippocampus*) in particular over winters. In one winter we had 172 records, near to that area and there is no reason to suggest that numbers are not the same in that boxed area."



Above: Recorded Seahorse sightings. Data from The Seahorse Trust: [REDACTED]

Further information from [REDACTED]

"In 2008, both British seahorses were protected as named species under the Wildlife and Countryside Act (1981 as amended) as a direct result of our survey work and the World Seahorse Database (WSD). This was as a result and the hard work of the 5,000+ volunteers who have helped us since the start of the survey. We owe them a massive vote of thanks for all their hard work.

Another achievement was the banning, in 2010 of the use of flash photography on welfare grounds. After 47 years of experience, we knew flash photography is harmful and can kill seahorses.

It is now illegal to kill, take or disturb seahorses in British waters. The habitat where seahorses are found is also protected which means that if you find a seahorse in a seagrass bed, that seagrass bed is protected. This is good news for the seahorses and other species that live there.

Due to our knowledge of British seahorses, we have advised many governments, including the British government, through its departments such as Natural England, Joint Nature Conservation Committee (JNCC) and Department for Environment and Rural Affairs (DEFRA), amongst others. We also helped to shape the seahorse licence that is required from MMO to set up seahorse surveys in our waters."

Following this is further supporting evidence. Please feel free to make contact for more

information if necessary.

Sincerely,

Elizabeth Marogna

IP no 20045425

Included below:

- 1) Seahorse status under the Wildlife Countryside Act (1981)
- 2) the Precautionary Principle which is enshrined in law
- 3) IUCN and CITES article

Attached:

- 1) Hippocampus hippocampus Fact Sheet
- 2) Hippocampus guttulatus Fact Sheet

Inclusions:

- 1) Wildlife and Countryside Act (as amended 1981)

http://jncc.defra.gov.uk/PDF/waca1981_schedule5.pdf <http://jncc.defra.gov.uk/page-3408>

The Wildlife and Countryside Act became part of national law in 1981 (as amended) to protect wildlife and habitats (and includes the intentions of the BERN Convention). It took many years for seahorses to be recognised through this legislation, added on the 6th of April 2008 and they have been listed in Schedule 5 section 9.

The Seahorse Trust got them added on the 6th of April 2008 after 6 years of lobbying and submission of data following on from work of their British Seahorse Survey (BSS) and data submitted to the National Seahorse Database (NSD) run and organised by The Seahorse Trust.

There are five sections, made up of 6 parts of the WCA Act and schedule 5, section 9 that are of importance to our native seahorse species and their place of shelter and it clearly states:-

The WCA schedule 5, section 9 states, it is illegal to:

Section 9

Part 1	intentional killing, injuring, taking
Part 2	possession or control (live or dead animal, part or derivative)
Part 4 (a)	damage to, destruction of, obstruction of access to any structure or place used by a scheduled animal for shelter or protection
Part 4 (b)	disturbance of animal occupying such a structure or place
Part 5 (a)	selling, offering for sale, possessing or transporting for the purpose of sale (live or dead animal, part or derivative)
Part 5 (b)	advertising for buying or selling such things

The Wildlife and Countryside Act 1981

The Wildlife and Countryside Act 1981 consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the conservation of wild birds (Birds Directive) in Great Britain (NB Council Directive 79/409/EEC has now been replaced by Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version)). Equivalent provisions for Northern Ireland are contained within the Wildlife (Northern Ireland) Order 1985 and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985.

The Act received royal assent on 30 October 1981. It is supplemented by the Wildlife and Countryside (Service of Notices) Act 1985, which relates to notices served under the 1981 Act. Various amendments have occurred since the original enactment, some of the most significant being via the

- Wildlife and Countryside (Amendment) Act 1985,
- Wildlife and Countryside (Amendment) Act 1991,
- Countryside and Rights of Way (CROW) Act 2000 (in England and Wales),
- Wildlife and Countryside Act 1981 (Amendment) (Scotland) Regulations 2001,
- Wildlife and Countryside Act 1981(England and Wales) (Amendment) Regulations 2004,
- Wildlife and Countryside Act 1981 (Amendment) (Wales) Regulations 2004,
- Nature Conservation (Scotland) Act 2004 (in Scotland),
- Equivalent provisions for Northern Ireland are contained within the Wildlife (Northern Ireland) Order 1985 and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 and
- the Natural Environment and Rural Communities Act 2006 (in England and Wales).

There are also numerous country-specific Orders pertaining to Variation of Schedules of the Act. In Northern Ireland legislative amendments have taken place through the Wildlife (Amendment) (Northern Ireland) Order 1995 and the Environment (Northern Ireland) Order 2002.

The original Wildlife and Countryside Act 1981 text is available and an updated version is available on <https://legislation.gov.uk> website.

There is also a statutory five-yearly review of Schedules 5 and 8 (protected wild animals and plants respectively) and period review of Schedule 9 (in relation to non-native

species). These reviews are undertaken by the country agencies and coordinated by JNCC. Containing four Parts and 17 Schedules, the Act covers protection of wildlife (birds, and some animals and plants), the countryside, National Parks, and the designation of protected areas, and public rights of way. (Further details on the Schedules>>>) ???

Wildlife - other animals

The Act makes it an offence (subject to exceptions) to intentionally (or recklessly] - only under the Nature Conservation (Scotland) Act 2004) kill, injure, or take any wild animal listed on Schedule 5, and prohibits interference with places used for shelter or protection, or intentionally disturbing animals occupying such places. The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Quinquennial Review

Every five years, the statutory nature conservation agencies Natural England, Natural Resources Wales (formally Countryside Council for Wales) and Scottish Natural Heritage, working jointly through the Joint Nature Conservation Committee (JNCC), are required to review Schedules 5 and 8 of the Wildlife and Countryside Act 1981, and to make recommendations to the Secretary of State and Ministers for the Environment. Schedule 5 lists animals (other than birds) which are specially protected, and Schedule 8 lists plants (vascular plants, bryophytes, lichens and fungi) which are specially protected.

The statutory nature conservation bodies and JNCC prepare recommendations which are sent to the Joint Committee for approval prior to being submitted as JNCC advice to Defra and the Devolved Administrations in Great Britain.

There have been five QQRs and recommendations from the sixth QQR are under review.

5th QQR was submitted by JNCC in 2008. Defra and the Welsh Government responded to these recommendations in 2010.

Sites of Special Scientific Interest and other protected areas

Sections 28 to 33 of Part 2 of the Wildlife and Countryside Act detail the law regarding SSSIs. See Sites of Special Scientific Interest. Sections 34 to 53 deal with other protected areas within Great Britain.

The Act provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) – these sites are identified for their flora, fauna, geological or physiographical features – by the country conservation bodies in England (Natural England) and Wales (Natural Resources Wales). (NB In Scotland similar powers are afforded to Scottish Natural Heritage under the Nature

Conservation (Scotland) Act 2004 and in Northern Ireland the

Council for Nature Conservation and the Countryside have powers under the Environment (Northern Ireland) Order 2002) to designate Areas of Special Scientific Interest (ASSIs).

A notification must be served on the relevant local planning authority, all landowners and occupiers, and the Secretary of State, specifying the time period within which representations and objections may be made. The country conservation bodies must consider these responses and may withdraw or confirm the notification, with or without amendment. The Act also contains measures for the protection and management of SSSIs.

The Act provides for the making of Limestone Pavement Orders, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of Marine Nature Reserves. The Act prohibits the undertaking of agricultural or forestry operations on land within National Parks which has been either moor or heath for 20 years, without consent from the relevant planning authority. Planning authorities are also required to make available to the public up to date maps of moor and heath land within National Parks, which are important for the conservation of natural beauty.

Short Snouted Seahorse Hippocampus hippocampus 2008 With respect to England and, since 12/8/2008, Wales

Spiny Seahorse Hippocampus guttulatus 2008 With respect to England and, since 12/8/2008, Wales

2) Precautionary Principle

<http://jncc.defra.gov.uk/default.aspx?page=2519> <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=LEGISSUM:l32042>

Introduction

The Precautionary Principle is one of the key elements for policy decisions concerning environmental protection and management. It is applied in the circumstances where there are reasonable grounds for concern that an activity is, or could, cause harm but where there is uncertainty about the probability of the risk and the degree of harm.

The Precautionary Principle has been endorsed internationally on many occasions. At the Earth Summit meeting at Rio in 1992, World leaders agreed Agenda 21, which advocated the widespread application of the Precautionary Principle in the following terms:

'In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.' (Principle 15)

In Fisheries Management this precautionary approach has been defined in two international instruments:

The Food and Agriculture Organisation of the United Nations (FAO) Code of Conduct for

Responsible Fisheries (CCRF); and the Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (UNIA).

Both of these share common wording and ideas. The wording used in the CCRF is:

'States should apply the precautionary approach widely to conservation, management, and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. The absence of adequate scientific information should not be used as a reason for postponing or failing to take conservation and management measures.'

The CCRF is a voluntary, non-binding agreement, while the UNIA is now a binding agreement amongst signatory States and entered into force on 11 December 2001.

If there is good reason to suspect a species is in danger or it is being threatened, the authorities can invoke the Precautionary Principle which is in British Law and mentioned in European law. <http://jncc.defra.gov.uk/default.aspx?page=2519>

It can be used to support existing legislation and to intervene if there is good reason to be concerned for example as in the case of Studland Bay where the seahorse numbers dropped from 40 known individuals down to zero in a few years. (Sadly it was never enforced at Studland). This course of action should have been put into place when data was presented showing a disturbing decline in population numbers.

Precautionary Principle and the European Union

The EC Treaty contains a reference to the Precautionary Principle, but does not define it. The Council sought clarification by requesting the Commission to develop clear and effective guidelines for the application of the principle.

In 2000, the European Commission adopted a Communication on the use of the Precautionary Principle, which set out a number of steps to be followed. These were:

if a preliminary scientific evaluation shows that there are reasonable grounds for concern that a particular activity might lead to damaging effects on the environment, or on human, animal or plant health, which would be inconsistent with the protection normally afforded to these within the European Community, the Precautionary Principle is triggered;

Decision-makers then must determine what action to take. They should take account of the potential consequences of taking no action, the uncertainties inherent in the scientific evaluation, and they should consult interested parties on the possible ways of managing the risk. Measures should be proportionate to the level of risk, and to the desired level of protection. They should be provisional in nature pending the availability of more reliable scientific data; action is then undertaken to obtain further information enabling a more objective assessment of the risk. The measures taken to manage the risk should be maintained so long as the scientific information remains inconclusive and the risk unacceptable.

European implementation

The European Community is in the process of integrating the Precautionary Principle into the Common Fisheries Policy (CFP).

Following a request from the European Commission, the International Council for the Exploration of the Sea (ICES) have developed a procedure for implementing a precautionary approach in its advice to the Commission on fish stocks and future catch levels. This is done by setting reference points - in effect trigger levels at which management action should be taken. ICES identify two types of reference points: 'limit' and 'precautionary'. The intention is that fish stocks are managed so they do not exceed the precautionary limit reference point. Fisheries managers can, therefore, be reasonably confident that limit reference points - at which there is a serious risk of stock collapse - are never reached.

The precautionary reference figures produced by ICES are used by Member States to negotiate catch quotas. Unfortunately, these negotiations often result in quotas exceeding the ICES recommendations. Many fish stocks are now at levels below the precautionary reference point and some are below the limit reference point, thereby requiring drastic recovery plans.

Limitations of the precautionary approach as currently applied

Current action is far from being effectively precautionary: catch quotas tend to be set too high, and neither allowable catch nor recorded landings reflect actual mortality. Catch quotas are set a target for 'catch' which only relates to what is officially landed. Other unquantified elements of mortality arise through (i) bycatches, (ii) discards, and (iii) misreported landings. The incentives for fishermen 'at the point of catch' are inconsistent with the overall objective of sustainable use for the fishery as a whole. In the mixed demersal fishery of most European waters, this creates huge wastage of fish through the anomalous incentive for fishers to catch and discard species which have reached their catch quota for the year, and only land the most marketable individuals of species which are below the catch quota; the approach has only been applied to a selected sub-set of commercial fish stocks for which ICES advice has been requested.

Stocks of other species have not yet received such consideration, for example, sharks, rays and many deep-water species whose stocks are particularly sensitive to fishing; the precautionary approach, as currently applied, does not address the wider effects of fisheries on the ecosystem and marine environment. There is compelling scientific evidence to introduce measures to reduce cetacean (specifically harbour porpoise) bycatch, and to better protect sensitive offshore habitats such as Lophelia reefs.

These latter issues may be addressed through an ecosystem-based approach to fisheries management and wildlife conservation. This aims to protect or restore the function, structure, and species composition of an ecosystem while providing for its sustainable socio-economic use. However, quite clearly, the current implementation of the Precautionary Principle in relation to fisheries management is partial and inadequate.

Effective precautionary approaches

For all fisheries, assessing the need for closer oversight of actual fish mortality rather than landings, this may involve more effective monitoring of fishing effort at sea - e.g. via;

Broadening the use of vessel monitoring systems and assessing the need to decrease outputs (i.e. lower catch limits) especially for fisheries at the limit.

Another widening approach could be taken through input controls - e.g. through spatial management using permanent and temporary exclusion zones, or by limiting days at sea. Considering the need to develop indicators (both for the fishery and for the wider environment)

to provide feedback on the effects of fishing activity; reviewing the responsiveness of existing management structures to different interests; non-quota and new fisheries should be the subject of environmental assessment and improved methods of control; habitats and species afforded strict protection under EC legislation should be subject to a high level of precaution.

Strategic implications

In the longer term, they who see the need to build confidence amongst all interest groups that a sustainable fishery is a desirable outcome. This will include removing the fear of 'precaution' as a management principle, encouraging confidence that precaution will not be used unreasonably to restrict sustainable fishing activity, and thereby create a permissive environment for decision-makers to take precautionary decisions.

They see the need to move towards management regimes which reward, and foster the values of, good stewardship. The effectiveness of precaution will be greatly enhanced where it reinforces this kind of ownership and stewardship of the resource. Under these circumstances precautionary measures are more likely to be widely supported and implemented by fishermen, meanwhile reducing reliance on stringent (and costly) enforcement mechanisms.

Further reading

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3) IUCN Red List of Threatened Species where is 1 and 2?



Introduction

The IUCN Global Species Programme working with the IUCN Species Survival Commission (SSC) has been assessing the conservation status of species, subspecies, varieties, and even selected subpopulations on a global scale for the past 50 years in order to highlight taxa threatened with extinction, and thereby promotes their conservation.

Although today they are operating in a very different political, economic, social and ecological world from that when the first IUCN Red Data Book was produced, the IUCN Global Species Programme, working with the Species Survival Commission and many partners, remains firmly committed to providing the world with the most objective, scientifically-based information on the current status of globally threatened biodiversity.

Red list of threatened species

The IUCN Red List of Threatened Species™ is widely recognized as the most comprehensive, objective global approach for evaluating the conservation status of plant and animal species.

The plants, fungi and animals assessed for The IUCN Red List are the bearers of genetic diversity and the building blocks of ecosystems, and information on their conservation status and distribution which provides the foundation for making informed decisions about conserving biodiversity from local to global levels.

The IUCN Red List of Threatened Species™ provides taxonomic, conservation status and distribution information on plants, fungi and animals that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those plants and animals that are facing a higher risk of global extinction (ie. those listed as **Critically Endangered, Endangered** and **Vulnerable**). The IUCN Red List also includes information on plants, fungi and animals that are categorized as **Extinct** or **Extinct in the Wild**; on taxa that cannot be evaluated because of insufficient information (i.e., are **Data Deficient**); and on plants, fungi and animals that are either close to meeting the threatened thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e., are **Near Threatened**).

Please Note:

It is important to note that just because a species is not on the 'Extinction Risk' section of the chart below, does not mean it is not at risk. It could be that due to a lack of data its exact determination and status is not known. On the chart below it shows a direct link (in red) from Data Deficient to Endangered in the Extinction risk section.

Plants, fungi and animals that have been evaluated to have a low risk of extinction are classified as **Least Concern**. The Least Concern assessments did not appear on IUCN Red Lists produced before 2003 (except for a few that were listed in 1996) because the main focus of attention has been on threatened species. However, for the sake of transparency and to place threatened assessments in context, all Least Concern assessments are now included on The IUCN Red List. Thus, despite its title, The IUCN Red List of Threatened Species™ does not just focus on threatened species; it considers the status of all species across an increasing number of taxonomic groups. In the past, there has unfortunately been no formal reporting process to capture all the Least Concern assessments; hence the list of Least Concern species on The IUCN Red List is not comprehensive (i.e., many species have been assessed to be Least Concern, but as that information was never formally captured, the listings do not appear on the Red List).

The IUCN Global Species Programme maintains the information behind The IUCN Red List in a centralized database as part of the **Species Information Service (SIS)**. An extract of that information is made publicly available via a searchable database on their web site.

Only a small number of the world's plant, fungi and animal species have been assessed. In addition to the many thousands of species which have not yet been assessed (i.e., are Not Evaluated), other species that are not included on The IUCN Red List are those that went extinct before 1500 AD and Least Concern species that have not yet been data based. The species groups that have been comprehensively assessed include the amphibians, birds, mammals, freshwater crabs, warm-water reef building corals, conifers and cycads. The vast majority of plants listed in the **1997 IUCN Red List of Threatened Plants have not yet been evaluated against the revised Red List Criteria** and are therefore not included.

In-depth analyses of the data contained in the IUCN Red List is published periodically (usually at least once every four years). The results of these analyses are made available in publications which are made freely available via the Publications page of their website.

The Red List of species provides details on the conservation status and global distribution of over 76,000 species along with taxonomic details to support the protection of these species for the future. By assessing species and providing this information, the Red List aims to provide enough background to allow informed decisions to be made on an international, national and local level as regards the protection and conservation of the world's biodiversity. There are still many species to be assessed, mostly due to the lack of data available on them and this includes many species of seahorse.

Seahorses on the IUCN Red List

Seahorse classification is ongoing and new species are being named all the time and as such not all species are listed or represented here.

Hippocampus abdominalis (Pot-bellied Seahorse)

Status: Data Deficient ver 3.1

(needs updating)

Pop. trend: unknown

Hippocampus algiricus (West African Seahorse)

Status: Vulnerable A2cd+4cd ver 3.1

Chapter 7: Landscape and Underwater Noise Effects

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Chapter 7: Landscape and Underwater Noise Effects

Chapter Summary

7-1 This Chapter considers the effects of Landscape Noise (LN) and Underwater Noise (UWN) and from the construction, operation, and decommissioning stages for offshore and onshore elements of the project. Adverse landscape noise impacts include various construction activities and increased traffic over the years of construction that affect residents and communities. Both underwater noise affecting marine life and ecology and landscape noise affecting people were raised as concerning issues in a number of PAD Statements and RRs. Noise and Vibration were a Principle Issue in the Navitus Bay Wind Park Examination.

7-2 Chapter 7 analysis of noise also draws on:

- Review of the Applicant's Preliminary Environment Impact Report (PEIR) and Environment Statement (ES) in this regard.
- The views expressed in Relevant Representations of IPs and PAD Statements of statutory consultees on the ES.
- Our own observations, local experience with Rampion 1 and specialist technical knowledge.

7-3 Based on these considerations, this chapter concludes there are major issues with noise where there is a policy requirement to avoid significant adverse impacts on health and quality of life and ecology. These effects cross-cut environment and social concerns in other Chapters. The concern about disturbance, risk and uncertainty is shared by many stakeholders who indicated issues including:

1. Landscape noise as an environmental human health problem. It is shown to have significant deleterious physiological and psychological effects, such as stress, high blood pressure, deafness, and tinnitus.
2. Landscape noise consists of construction noise for 4-5 years from both offshore and onshore activities (e.g., piling to install turbine bi-poles, horizontal drilling, construction work camp activities, traffic noise, support vessels helicopters, etc.)
3. UWN impacts on marine mammals and fish regarding spawning and local migration risks significant adverse consequences for net biodiversity gain implications.
4. PAD statements indicate methods proposed for identifying (noise) receptors are unclear and incomplete.
5. Concerns that construction noise impacts have been underplayed in the ES, requiring that a true 'worst-case' scenario is considered, and to avoid relying on mitigation measures which remain uncertain at this stage.

7-4 Noise otherwise adds to the accumulation of adverse impacts and uncertainty which may be seen to outweigh benefits, certainly in respect to undermining the environment and social dimensions of sustainable development.

7.1 Policy Context

7-5 Adverse noise impacts are felt during the construction operation and decommissioning

stage for the offshore elements of the project thus impacting marine life and nearby residents. Adverse Noise impacts from the offshore elements mainly relate to the construction activities and traffic.

7-6 Section 2.4 of NPS EN-3 (2011) indicates that renewable energy proposals should demonstrate good design in relation to landscape and visual amenity whilst also demonstrating how design has evolved to mitigate impacts such as noise and effects on ecology (paragraph 2.4.2).

7-7 NPS EN-3 also addresses the need for flexibility in the Application process for offshore wind NSIPs to allow for situations where full parameters of the project may be unknown at the time of submission (NPS EN-3, paragraph 2.6.43). In such instances, EN-3 recommends the use of the 'Rochdale Envelope' method which allows for the maximum adverse and positive scenario to be assessed in the EIA and a Development Consent Order (DCO) granted on this basis (NPS EN-3, paragraph 2.6.43).

7-8 The requirement to demonstrate good design is reiterated in Section 3.5 of the draft NPS EN-3 (DESNZ, 2023b), which states that “proposals for renewable energy infrastructure should demonstrate good design, particularly in respect of landscape and visual amenity, opportunities for co-existence / co-location with other marine uses, and in the design of the project to mitigate impacts such as noise and effects on ecology and heritage.”

7-9 National Planning Policy Framework (NPPF) (Ministry of Housing, Communities and Local Government, 2019) Section 127 of the NPPF sets out the design considerations helping decision-making for developments and indicates that developments:

- a.) Will function well and add to the overall quality of the area, not just for the short term but over the lifetime of the development;
- b.) Are visually attractive as a result of good architecture, layout and appropriate and effective landscaping;
- c.) Are sympathetic to local character and history, including the surrounding built environment and landscape setting, while not preventing or discouraging appropriate innovation or change (such as increased densities);
- d.) Establish or maintain a strong sense of place, using the arrangement of streets, spaces, building types and materials to create attractive, welcoming, and distinctive places to live, work and visit;
- e.) Optimise the potential of the site to accommodate and sustain an appropriate amount and mix of development (including green and other public space) and support local facilities and transport networks; and
- f.) Create places that are safe, inclusive, and accessible and which promote health and well-being, with a high standard of amenity for existing and future users; and where crime and disorder, and the fear of crime, do not undermine the quality of life or community cohesion and resilience.

7-10 Chapter 21, Paragraph 5.11.9: of the Applicant’s ES notes that NPS policy is, “The IPC [now the Planning Inspectorate] should not grant development consent unless it is satisfied that the proposals will meet the following aims:

- avoid significant adverse impacts on health and quality of life from noise;
- mitigate and minimise other adverse impacts on health and quality of life from noise; and

- where possible, contribute to improvements to health and quality of life through the effective management and control of noise”.

7-11 Additional local policy considerations are incorporated in the PCS Team responses to the Applicant’s ES statements, such as relevant policy relating to Arun District Local Plan. We anticipate there would be similar concerns in other Local Plans including the Local Plan for the South Downs National Park.

7.2 Landscape Noise

7.2.1 Principal Areas of Disagreement Statements (PADS)

7-12 As a point of reference and starting for the PCS Team comment and observations, the relevant statements on noise impacts of onshore infrastructure and works as provided in the statutory consultees’ PADS included the following. These we see as corroborating evidence for the PCS Team views and comment that follows.

Table 7.1 Principal Areas of Disagreement –Landscape noise			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
ADC15	Potentially detrimental effects of Climping Compound on Land to the west of Church Lane, South of Horsemere Green Lane, Climping (planning ref. CM/48/21/RES , CM/1/17/OUT).	Climping Compound is located adjacent to Land to the west of Church Lane, South of Horsemere Green Lane, Climping. This site has permission for 300 dwellings and therefore has reasonable certainty of coming forwards and there is the potential for new residents whilst Climping Compound is in use. No assessment of the noise effects of these future residents nearest to the compound has been undertaken. Although classified as ‘temporary’, this compound will be in place for a minimum of 3.5 years with potential for protracted noise detriment	Provide modelling and assessment of the noise effects on future receptors introduced by the residential development west of Church Lane and adjoining Climping Compound. Location of receptor(s) to be agreed with ADC.
ADC16	Noise from Horizontal Directional Drilling (HDD). Section 61 Applications - The Control of Pollution Act 1974	Potential for prolonged exposure of sensitive receptors to noisy drilling and ancillary works 24 hours per day over consecutive, often multiple days. Section 61 applications allow the Applicant to apply for prior consent to extend the agreed hours of (noisy) working for specified purposes to be agreed with the Environmental Health Department at ADC. This is likely to apply in the case of HDD for 24-hour consecutive, often multiple days	The Applicant to consider temporary relocation of people affected by 24-hour drilling as a method of mitigation where HDD (or other noisy working) is scheduled to proceed for 24 hours per day for longer than 48 consecutive hours
ADC17	Determination of Requirement	Chapter 21 of the ES states with respect to construction noise effects that determination of the need for Section 61	Clarification required on level of competency of contractor to review construction noise predictions. Quantify what is considered a

Table 7.1 Principal Areas of Disagreement –Landscape noise			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
	for Mitigation / Section 61 Consents	consent will be determined by contractor at detailed design stage following review of construction noise assessments, if it is determined that there is 'significant deviation' from initial predictions	'significant deviation' from predicted construction noise levels.
ADC18	Table 21.23 of Chapter 21 of the ES - Construction Noise 'Trigger Values'	These values replicate the values set out in Table E.2 of British Standard (BS) 5228 in particular for the 0800 – 1800 time period. Proposed construction hours are stated as 0700 – 1900 hours where for the shoulder hours (0700 – 0800 and 1800 – 1900) Table E.2 suggests a trigger value of 70dB LAeq, T	Confirm that trigger values of to align with lower trigger value as set out in Table E.2 for the proposed construction periods construction Table E.2. Review/update construction noise assessment against revised criterion.
ADC19	Construction Noise Predictions /Assessment	For some locations that are close to exceeding the 65dB threshold value, the assessment outcome has been increased to reflect potential impact. This has not been done consistently and where there are predicted values that are also close to the threshold value, the outcome has not been increased.	Review construction noise assessment and increase assessment outcomes where they are within 2dB of threshold/trigger values. This will address the inherent uncertainties that are discussed 21.5.10 – 21.5.11
WSCC18	Methodology for identifying (noise) receptors unclear/ incomplete.	Paragraph 21.4.10 and Figure 21.2 identifies key receptors that have been scoped in for consideration. However, there is limited information on the methodology adopted to establish a 'key' receptor, and or how receptors (e.g. residential properties) were established. There is a concern some receptors have been missed, including PRow.	Provide a clear methodology identifying how receptors have been identified / selected for assessment
WSCC 19.	Concern that construction noise impacts have been underplayed.	Despite noise level predictions identifying several properties/receptors close to construction compounds that would be significantly above BS5228 thresholds (for medium impacts), conclusions downplay the magnitude of impacts as 'low' based on estimated duration of works (1 month), and/or by switching to a methodology whereby impacts are assessed using average noise levels. The justification / evidence for these conclusions is limited and seemingly predicated on mitigation measures or duration of activities which at this stage cannot be guaranteed	Ensure a true 'worst-case' scenario is considered, and do not rely on measures which remain uncertain at this stage
WSCC20	Concern that noise impacts from construction compounds have been	Despite noise level predictions identifying several properties/receptors close to construction compounds that would be significantly above BS5228 thresholds (for medium impacts), conclusions downplay the magnitude of impacts as 'low' based	Ensure a true 'worst-case' scenario is considered, and do not rely on measures which remain uncertain at this stage.

Table 7.1 Principal Areas of Disagreement –Landscape noise			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
	underplayed.	on estimated duration of works (1 month), and/or by switching to a methodology whereby impacts are assessed using average noise levels. The justification / evidence for these conclusions is limited and seemingly predicated on mitigation measures or duration of activities which at this stage cannot be guaranteed.	
WSCC21	Lack of consideration and/or underplay noise impacts of cable route construction and side access routes.	Consideration of impacts of cable route construction and use of side accesses are largely excluded as considered short in duration, despite having the potential to result in noise levels above 75dB at sensitive noise receptor locations.	Need to consider the full extent of all potentially noisy onshore cable route works and recognise that some impacts (e.g. HGVs/Staff/machinery traversing the cable route) may occur for significantly longer periods. Noise contours for cable route should be provided, and all proximate sensitive receptors identified and assessed.
WSCC22	Concern that Oakendene Substation operational noise impacts have been underplayed	Despite noise level predictions identifying three properties/receptors close to the substation being above background levels by +4 or +5dB (night-time) conclusions downplay the magnitude of impacts as 'low' and not significant. As a result, it is concerning that permanent night-time noise impacts on these properties are downplayed given their rural location with low background noise levels.	Reconsider weighting applied to noise impacts where over background levels. (noting BS4142 thresholds are 'thresholds' for a medium impact' i.e. above these levels, impacts will be greater). Reconsider noise limit levels set in the DAS, closer to background levels. Provide a greater commitment to the installation of physical noise attenuation measures on substation plant to demonstrate that noise levels will be 'minimised'.
WSCC23	Concerns about lack of detail in the OCoCP	Concerns about a number of matters regarding noise in the OCoCP, including: Reliance on future noise assessments, and trigger points for further mitigation is unclear, lack of detail on how phasing/sequencing will be secured, clarification on communications plan during construction and uncertainty regarding trenchless crossing methods and impacts.	Concerns to be addressed by the Applicant through updates to the relevant control documents, including the OCoCP

7.2.2 PCS Team Comment and observations

The PCS Team elaborates on the consideration of landscape noise from construction and operation of the Rampion 2 infrastructure as follows.

Construction

Sequential installation monopiles (for towers)

Piling of up to 90 smaller monopile wind turbine generator (WTG) foundations (13.5m diameter) Up to 3 offshore converter substations. The maximum spatial design scenario equates to the greatest effect from sub-sea noise at any one-time during piling. This scenario assumes monopile foundations installed sequentially, with a higher hammer energy. The maximum temporal design scenario represents the longest duration of effects from sub-sea noise.

This scenario assumes maximum hammer energy 4,400kJ of 12 months duration pin-pile foundations, which could result in a longer duration of piling per foundation. Maximum spatial design scenario (monopiles): 2 monopiles per day = 45 days piling. Total of 396 pin piles in the array = 99 piling days. Installation of 396 pin piles (4 pin piles piled sequentially at separate locations within a period of 24 hours).

Up to 3 offshore converter substations (maximum of 6 legs per multi-leg foundation, up to 12 pins per multi-leg foundation) Maximum hammer energy 2,500kJ 4 pin piles per day 30-minute soft-start ramp up.

Support vessels – maximum number of return trips: 60 Transport vessels – maximum number of vessels: 6 Transport vessels – maximum number of return trips: 60 Crew Transfer vessels – maximum number of vessels: 6 Crew Transfer vessels – maximum number of return trips: 500

Helicopters: maximum number of vessels: 2 Helicopters – maximum number of return trips: 500

The greatest number of vessels operating within the array will lead to the greatest potential for seabed interaction.

The greatest number of vessels operating within the array will lead to the greatest potential for seabed interactions and pollution. Duration: **six months**

Number of WTGs: up to 90 Rotor diameter: up to 325m maximum height of lowest blade tip above MHWS: 22m . The total frontal area is higher using larger WTG, operational lifetime: around 30 years helicopter total trips (per year): 120 Jack-up WTG visits (per year): 10 Jack-up platform visits (per year): 9 Jack-up total trips (per year): 19 Crew vessels wind WTG visits (per year): 850

Most scheduled maintenance is expected to occur April – September.

Figure 7.1 indicates the construction period as in the ES.

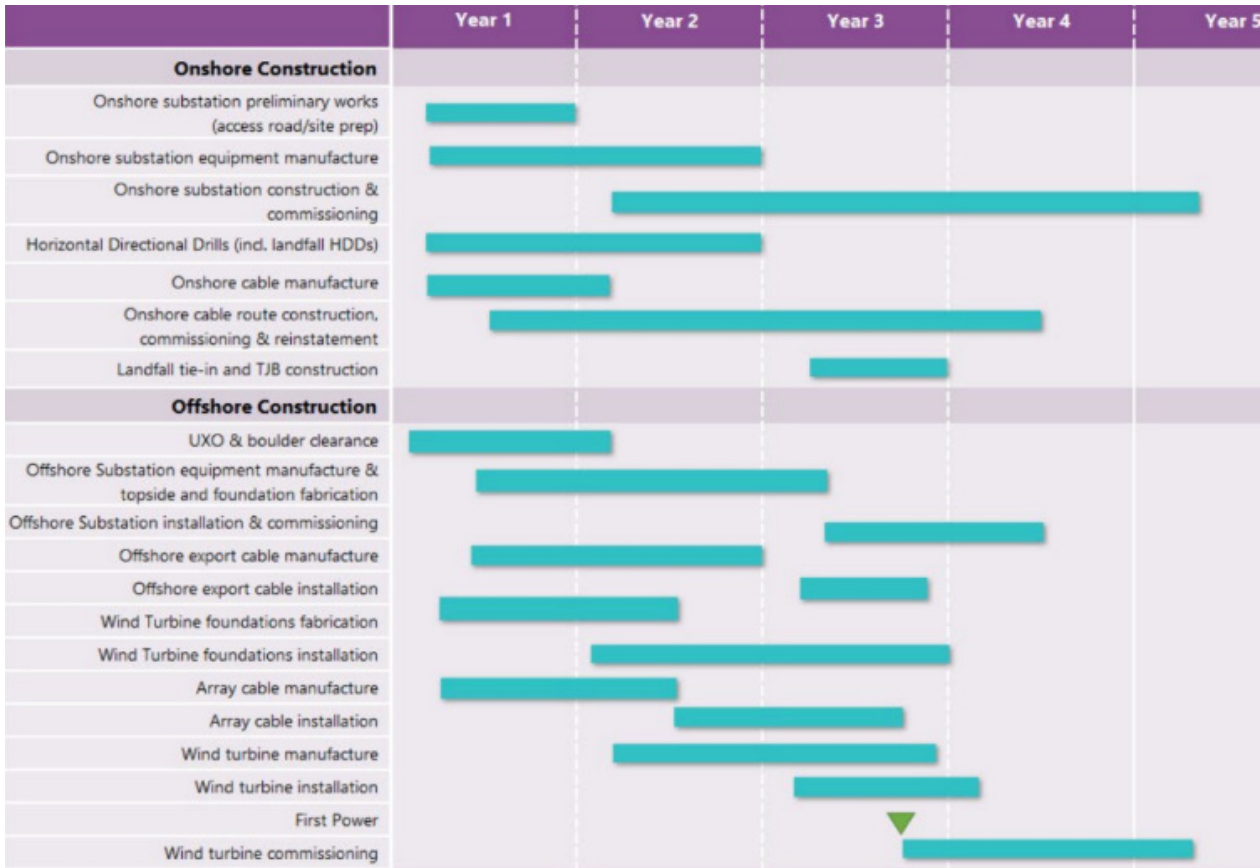


Figure 7.1: Construction Schedule for Rampion 2

There is also a need to consider if there is the potential for in-combination effects to arise with the operation and maintenance of Rampion 1.

Operation and decommissioning stages will also have landscape noise effects. For decommissioning the removal of offshore structures Offshore as for construction phase (regarding seabed and visual/ noise disturbances) MDS is identical (or less) to that of construction phase.

Decommissioning will be from underwater cutting required to remove structures. This is much less than pile driving and therefore impacts will be less than as assessed during the construction phase/**piled foundations will likely be cut approximately 1m below the seabed.**

Landscape Noise Observations

Rampion 2 Wind Farm Category 6: Environmental Statement Volume 2, Chapter 21: Noise and vibration Date: August 2023 Revision A is relevant:

It states: The coastline is interspersed with villages largely backed by agricultural land with the A259 running east / west. Sound levels in the area are likely to be influenced by road and rail traffic and additional sources such as gardening activities, conversation, and music closer to areas of habitation, as well as the sea on approaching the coast. The largest settlement in the Study Area is Littlehampton. Sound levels here are principally likely to be influenced by local road traffic and rail traffic, as well as other sources of human activity.

PCS Team Observation 1: Littlehampton is not affected by A259 except the northern boundary, however, the southern and coastal part of the settlement is not affected by the transport and there is not disturbance from the rail traffic due to the position of the station, the tracks, and the frequency of trains. Gardening activities, conversation and music are activities associated with an enjoyment of human beings and the sea approaching the coast is natural/pleasant sound which is incomparable with a technical/mechanical repetitive noise produced as an outcome of construction, running WTG and all substations, accommodation of cables and maintenance.

Core working hours for construction of the onshore components will be **0700 to 1900 Monday to Friday**, and **0800 to 1300 on Saturdays**, apart from specific circumstances to be set out and agreed in the Outline COCP (C-22);

Where noisy activities are planned and may cause disturbance, the use of mufflers, acoustic barriers and other suitable solutions will be applied (C-26);

PCS Team Observation 2: There is no definition of noisy activities' provided and how 'noisy' they are supposed to be.

Paragraph 5.11.9 of NPS EN-1 indicates, "The IPC [now the Planning Inspectorate] should not grant development consent unless it is satisfied that the proposals will meet the following aims:

- avoid significant adverse impacts on health and quality of life from noise;
- mitigate and minimise other adverse impacts on health and quality of life from noise; and
- where possible, contribute to improvements to health and quality of life through the effective management and control of noise".

PCS Team Observation 3: None of the above bullet points is adequately addressed. The proposed development should not be built in this area due to its detrimental impact on natural environment, impact on visual amenity and an unacceptable impact on the health and quality of life of local residents from noise.

It indicates the Rampion 2 should not be granted development consent since it is contrary to all the above aims, deteriorating the natural environment and health and quality of life all people living in the nearby settlements. How many? The impact on health and quality of life from noise is not even mentioned in the proposal.

As Regard to the ADC Local Plan and Policies

Policy QE DM1: *"Developers proposing new noise generating development must seek advice from an early stage to determine the level of noise assessment required. Proposals will need to be supported by:*

- a.) Evidence to demonstrate that there are no suitable alternative locations for the development.*
- b.) A noise report which provides accurate information about the existing noise environment, and the likely impact of the proposed development upon the noise environment. The report must also demonstrate that the development meets appropriate national and local standards for noise, as set out in Annex 1 of the Planning Noise Advice Document: Sussex, and any mitigation measures required to ensure noise is managed to an acceptable level.*

c.) Evidence to demonstrate that the development will not impact upon areas identified and valued for their tranquillity, including Gaps Between Settlements which are important to the enjoyment of Arun’s countryside, its habitats and biodiversity.”

In relation to point a), the discussion of alternatives is provided in Chapter 3: Alternatives, Volume 2 of the ES (Document Reference: 6.2.3). This concern is being addressed in the Examination as we say in the preliminary Principal issues and we welcome that consideration.

In relation to point b), accurate information about the existing noise environment is detailed in Section 21.6. Section 21.2 outlines the national and local standards the noise assessment has considered. In relation to point c), Tranquillity is considered further within Chapter 18: Landscape and visual impact, Volume 2 of the ES (Document Reference: 6.4.18.3), Appendix 18.3: Landscape assessment, Volume 4 of the ES (Document Reference: 6.4.18.3) and Appendix 18.4: Visual assessment, Volume 4 of the ES (Document Reference: 6.4.18.4). Policy ECC DM1 Renewable Energy:

“The Council will support proposals for appropriately located renewable energy development, and their ancillary development where they meet the following criteria: a) The proposal is located and designed to minimise adverse impacts to landscape, habitats, the historic environment and local residents.”

This provides advice for developers and their consultants when making planning applications which includes: guidance to developers on the level of information that will be required to be submitted with planning applications and seek to implement the aims of the NPSE (Defra, 2010, paragraph 1.7)

- “Avoid significant adverse impacts on health and quality of life;
- Mitigate and minimise adverse impacts on health and quality of life; and
- Where possible, contribute to the improvement of health and quality of life.”

The noise effects from the operation of the offshore substations on onshore receptors are therefore scoped out of the noise assessment in this chapter due to the large distances between noise source and receptor.

PCS Team Observation 4: What is meant by the large distances between noise source and receptor? How large is large enough to be omitted and what kind of noise would the residents would be exposed to? Closest distance to shore of wind farm area is 13km. Is it a large distance for a sound/noise? Acoustic space is non-locational, spherical and all surrounding, has no obvious boundaries and tends to emphasize a space itself rather than objects in the space.

There would be additional noise turning the seafront in to an industrial power park adding to the visual transformation of the character of coast. Such as from

- **Support vessels – maximum number of return trips: 60**
- **Transport vessels – maximum number of vessels: 6**
- **Transport vessels – maximum number of return trips: 60**
- **Crew Transfer vessels – maximum number of vessels: 6**
- **Crew Transfer vessels – maximum number of return trips: 500**
- **Helicopters: maximum number of vessels: 2 Helicopters**
– **maximum number of return trips: 500**

“The Scoping Report has scoped out noise and vibration disturbance during decommissioning works on the basis that **the effects of decommissioning will be lower than those experienced during construction.** “

No mention is made however of a noise mitigation plan. The Inspectorate expects that such a plan or specific noise mitigation measures would be set out and secured through the COCP or otherwise where they are relied upon in the assessment of significance of residual effects.” Noise measures are included within the Outline Code of Construction Practice (CoCP) (Document Reference: 7.2).

Furthermore, it was agreed with MSDC that, whilst not considered standard procedure, an **additional indicative noise ‘break-in’ assessment would be undertaken to predict indoor noise at the nearest residential properties to further mitigate the risk of low frequency noise.** “The degree and extent to which residential sensitive receptors (within 20m, or 10m) may be exposed to unsatisfactory levels of noise needing careful evaluation, particularly in consideration of any evening or night-time working, or where evening/night-time working is continuous with day-time working and where noise screening has been evaluated as impractical for the works.”

PCS Team Observation 5: Why indoor noise only? During summer people spend more time outdoor than indoor, keep windows open.

There will be temporary periods of time where noise will be high outside residences. The effects on residences from temporary high noise levels will be minimised using best practice measures and an agreement to reevaluate noise once a contractor has been commissioned for the work (embedded environmental measure C-263).

PCS Team Observation 6: Best practice measures, for example.... How high will be this noise in decibels?

“Document refers to many work items as ‘temporary’;

PCS Team Observation 7: The construction may be for a period of months or even years, not temporary as such, and is unlikely to be viewed as acceptable by noise sensitive receptors.

Noise and vibration Page 34 Stakeholder Theme How this is addressed in this ES Council (MSDC associated with excessive noise will be a sensitive issue for local residents.” 2014a) does not necessarily cover the sensitivity of a group to construction, the embedded environmental measures (see Table 21-20) have been reviewed to ensure **that noise disturbance is minimised and managed proactively.**

PCS Team Observation 8: Noise disturbance minimised and managed proactively! This statement has no meaning. How it would be managed in the practice?

Consideration of low frequency is part of the assessment © WSP Environment & Infrastructure Solutions UK Limited August 2023 Rampion 2 Environmental Statement Volume 2, Chapter 21: Noise and vibration Page 35 Stakeholder Theme How this is addressed in this ES **it can be mitigated and circumstances when this would be permitted.** Mid Sussex wishes to be consulted upon these details as soon as they are available once the substation location is finalised.” methodology agreed with MSDC.

PCS Team Observation 9: It should not be permitted.

The use of WHO criteria for the SOAEL relates to noise exposure over a longer-term rather than short-term construction effects.

PCS Team Observation 10: The period of months, years are a long term construction effects.

Consideration of local residents within the context of the construction of Rampion 1 where the effects of traffic and noise were a common complaint. The Council requests reassurance “that construction activity and associated noise **will be adequately managed** as to not be detrimental to local residents and that any agreed working hours would be properly adhered to” through the DCO.

Rampion 1 is incomparable with Rampion 2. The scale, the position is entirely different. Every case should be judged on its own merits.

The assessment considers construction activities likely to require 24 hour working (e.g. trenchless crossings) in Section 21.9.

The temporal character of construction works has been noted within the assessment and considered when assessing significance in Section 21.9.

As PAD Statements note, more detail is required on how works would affect Climping Beach and environs and mitigation requirements. An assessment of piling noise has been undertaken for offshore works in Section 21.9.

Otherwise associated offshore works are not considered to result in adverse effects onshore are noted in Figure 7.2 and include:

Figure 7.2 Other offshore works creating landscape noise

Night-time (23:00-07:00)	45	50	55
Evenings and weekends^{D)}	55	60	65
Daytime (07:00-19:00) and Saturdays (07:00-13:00)	65	70	75

NOTE 1 A potential significant effect is indicated if the $L_{Aeq, T}$ noise level arising from the site exceeds the threshold level for the category appropriate to the ambient noise level.

NOTE 2 If the ambient noise level exceeds the Category C threshold values given in the table (i.e. the ambient noise level is higher than the above values), then a potential significant effect is indicated if the total $L_{Aeq, T}$ noise level for the period increases by more than 3 dB due to site noise.

NOTE 3 Applied to residential receptors only.

A) Category A: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are less than these values.

B) Category B: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are the same as category A values.

C) Category C: threshold values to use when ambient noise levels (when rounded to the nearest 5 dB) are higher than category A values.

D) 19.00–23.00 weekdays, 13.00–23.00 Saturdays and 07.00–23.00 Sundays.

21.6.11 The results of the baseline sound surveys indicated that for construction noise, all receptors will be assessed on the basis of Category A during all time periods from the BS 5228-1 'ABC method' (BSI, 2014a), with the exception of the receptors identified in **Table 21-16** below. For these receptors, baseline noise levels for at

Where noisy activities are planned and may cause disturbance, the use of mufflers, acoustic barriers (or shrouds) and other suitable solutions will be applied. For HDD work sites near to noise sensitive receptors where predicted levels may exceed the BS 5228 thresholds of significance, mud pumps that operate overnight will be shrouded and the drill will be fitted with acoustic (i.e. high mass) panelling and louvres as well as engine silencers where diesel powered drills are used.

PCS Team Observation 11: This information is unhelpful for any member of public and there is no information about predicted levels of noisy activities in decibels and what would be expected after using above mentioned means.

Referring to Applicant's statements in the ES

21.8.2 The noise and vibration assessment compares either current noise levels or acceptable threshold values at identified receptors with those noise levels that are predicted should Rampion 2 proceed. The results of this comparison are then assessed against a suite of criteria depending on the noise source. In addition, absolute levels of noise from the Proposed Development are assessed in relation to adverse effect levels as described within the NPSE (Defra, 2010).

The noise from offshore piling at onshore receptors has been predicted using Danish Statutory Order no. 1284 (2011), which is currently the most reliable prediction methodology for noise over water. Calculations have been based on two piles a day at the closest boundary of the wind farm area to the shoreline.

PCS Team Observation 12: What is 'Danish Statutory Order'? What distances does it apply? How many Danish Windfarms are in or proposed for inshore waters and at what scale?

A tonal penalty from the onshore substation low frequency 'hum' has been applied to form a rating correction. No other corrections have been applied (i.e. impulsivity, intermittency, or other sound characteristics).

PCS Team Observation 13: An explanation is missing. What was applied and what is an effect?

21.8.19 The World Health Organisation (WHO) Night Noise Guidance for Europe (NNG) (2009) found that below the level of 30dB Lnight, outside there are no observed effects © WSP Environment & Infrastructure Solutions UK Limited August 2023 Rampion 2 Environment Statement Volume 2, Chapter 21: Noise and vibration Page 76 on sleep.

Furthermore, **there is no evidence that biological effects observed at levels below 40dB Lnight, outside are harmful to health. At levels above 55dB Lnight, outside,** the NNG detailed that adverse health effects occur frequently and there is limited evidence that the cardiovascular system is coming under stress.

21.8.20 Low frequency noise is specifically not considered as part of BS 4142 (BSI, 2019) and the standard refers to a report by Moorhouse et al. (2011), which concludes with a reference curve for assessing low frequency noise down to 10 Hz. The ANC technical guidance on BS 4142 (ANC, 2020) clarifies that lower frequencies are not precluded from being part of a BS 4142 (BSI, 2019) assessment. **It is considered that applying a rating correction for low frequency noise may not appropriately protect residential amenity and may unnecessarily affect mitigation design.**

PCS Team Observation 14: The Applicant in this statement admits that the protection of residential amenity from low frequency noise would not be secured.

21.8.22 Screening predictions⁵ using SoundPLAN computer noise modelling software (version 8.2) have been undertaken to assess whether the proposed offshore wind farm would result in noise levels at residences of above LA90, 10 mins 35dB in conjunction with other wind farms (specifically Rampion 1) at a wind speed of 10m/s. This is the threshold within ETSU-R-97 (The Working Group on Noise from Wind Turbines, 1996) at which exceedances would necessitate detailed assessment, incorporating baseline surveys. The model was based on a worst case version of an early design for the wind farm; the numbers of turbines since reduced. **The results of the assessment have shown that there are no residential receptors predicted to experience noise above 35dB and therefore a detailed noise assessment incorporating noise monitoring is not required.** The full technical report associated with this screening exercise is presented in Appendix 21.3:

21.8.31 For residential receptors, context mainly applies to the existing levels and type of industrial noise. Residents near an industrial area are likely to be less sensitive to onshore substation noise during the operation and maintenance phase, which may also be masked by other existing industrial noise. Conversely, if an existing substation is the only source of industrial noise in an otherwise quiet rural area, residents could be more sensitive to any increase in onshore substation noise.

21.8.32 In addition, as discussed in Section 21.8, contextual consideration is also given to the absolute noise level from the onshore Oakendene substation. If the background sound level is low, **such as 30 dB at night, a Rating Level of 35 dB would only be considered a minor effect as this level of noise would not be disturbing to sleep.**

PCS Team Observation 15: The receptor can better hear higher frequencies, it means if background sound level is 30 dB (it can be natural) the sound of substation would prevail (technical, monotone which is the most annoying).

Construction phase noise (fixed and mobile plant) Weekday Daytime (07:00-19:00) LAeq, 12hr Saturday morning (07:00-13:00) LAeq, 8hr LOAEL 65dB SOAEL 75dB (1m from building façade) Weekday evening (19:00-23:00) LAeq, 1hr Saturday (13:00-23:00) LAeq, 1hr Sunday (07:00-23:00) LAeq, 1hr LOAEL 55dB SOAEL 65dB (1m from building façade) Night-time (23:00-07:00) LAeq, 1hr LOAEL 45dB SOAEL 55dB (1m from building façade)

21.9.2 The assessment methodology set out in Section 21.8 has been applied to predict indicative noise and vibration levels arising from the Proposed Development. The results (average rather than the maximum levels) of the construction noise assessments (except cable trenching and traffic) are illustrated Figure 21.4, Volume 3 of the ES (Document Reference: 6.3.21).

Construction noise Overview 21.9.3 Separate assessments of temporary noise effects have been undertaken for the different elements of the construction phase, which include:

- temporary noise effects from the construction, deconstruction, and operation of the temporary construction compounds (this assessment assumes that the construction of each will be up to 8 weeks, and the deconstruction will be up to 8 weeks. Each temporary construction compound will be in use for up to 3.5 years);
- temporary noise effects from the construction works at the landfall and trenchless crossings at specific sections of the onshore cable route (drilling durations varied between 2 to 7 weeks for trenchless crossings and 18 weeks for landfall);
- temporary noise effects from onshore substation construction (up to 3.5 years) at Oakendene;

- temporary noise effects from the existing National Grid Bolney substation extension works (up to 3 years);
- temporary noise effects from onshore cable installation, with the trenching

21.9.10 The results show a comparison of levels against the BS 5228 (BSI, 2014a) threshold values, exceedance of which would be a medium to high impact if this level of noise continued for a month or more. Predictions have been presented for both the maximum and average noise levels from the temporary construction compounds, noting the caveat in paragraph 21.8.4 about those receptors in close proximity to the temporary construction compound where the maximum predictions would be considered unrealistically high.

PCS Team Observation 16: No obvious consideration was considered with regards to the impact of the proposed development on health, quality of life and visual amenity of residents of Littlehampton or any coastal community.

Academic Research on Noise Impacts on People

Noise is a major environmental health problem and in contrast to many other environmental problems, noise pollution is growing. Roda (1957) and Staples (1996) as cited by Atkinson (2007) believe that noise has been shown to have significant deleterious physiological and psychological effects, such as stress, high blood pressure, deafness and tinnitus.

Environmental noise is calculated depicted in noise maps with the A-weighted sound pressure level and the expected corresponding noise annoyance, this often differs widely from the evaluations made by concerned residents. As Genuit and Fiebig (2006) argue, the human hearing in contrast to a sound level meter is not absolute measuring instrument but on the other hand can classify complex soundscapes into single sound events because of its bi-natural hearing.

It is generally assumed, Raimbault et al. (2003) report that noises are negatively annoyance or pollution for cities but, the criteria for sound comfort in an urban environment haven't been determined.

As Porteous and Mastin (1985) discuss, although sound and light are both wave phenomena, aural perception differs from visual perception in many ways (cited in Yang & Kang, 2005). Unlike visual space, which is sectorial, acoustic space is non-locational, spherical and all surrounding, has no obvious boundaries and tends to emphasize a space itself rather than objects in the space.

The question of noise is often avoided in planning as being too difficult to deal with. Noise annoyance measurement usually refers to situations where people feel disturbed or annoyed because of activities which are interfered by noise which is unexpected or moreover not wanted.

People in neighbourhood have unique understanding of its landmarks, its sights, sounds and smells, its pedestrian patterns and social organisation (Hayden, 1995). What is more, there are people among us who cannot appreciate the visual part of ambient environment through visual senses. We are probably not able to understand how they would feel in space full of noise (in contrast to disability awareness).

7.3 Underwater Noise Effects

7.3.1 Comment on and Critique of the Application

Principal Areas of Disagreement (PADS)

As a point of reference and starting for the PCS Team comment and observations, the relevant statements on underwater noise impacts as provided in the statutory consultees' PADS included the following:

Table 7.2 PADS Statements on Underwater Noise			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
MMO	Under Fish Ecology - Noise	Discrepancies between the maximum duration of piling per day state in the UWN Impact Assessment and throughout Chapter 8	Discrepancies to be amended with the correct maximum duration of piling per day, so that impacts can be assessed properly and mitigated. MMO is hopeful that the Applicant will update the discrepancies and provide any additional information required so this will be resolved during Examination.
MMO	Black seabream UWN disturbance Threshold	<p>A threshold approach has been based on a threshold of 141dB re 1µPa SELs as defined by Kastelein et al., (2017). This has also been used to form the basis of mitigation.</p> <p>MMO does not consider a SELs of 141 dB re 1 mPa2 s used for a 44cm captive seabass to be an appropriate or conservative threshold.</p> <p>MMO understands there was no agreement between MMO, Natural England (NE) and the Applicant on a noise threshold or proxy species for black seabream prior to submission of the Application. If the Applicant wants to pursue a noise threshold route the MMO would expect to see more noise modelling based on the 135 dB threshold. However, even if this is provided the MMO is unlikely to agree a threshold approach for black seabream. Further mitigation may be required.</p>	MMO believes this may not be fully resolved during Examination but is hopeful that the Applicant will provide the modelling and further discussions can take place. MMO hopes these concerns will be resolved during Examination, noting they have not been resolved through pre examination.
MMO	Mitigation for spawning herring conclusion	The Applicant has concluded in paragraph 8.9.195 that, as the UWN contours do not directly overlap with the spawning grounds as indicated by the Coull et al. (1998) shapefile, the magnitude of a behavioural impact to spawning herring from UWN is considered to be negligible. Whilst the Coull et al. (1998) spawning maps are valuable for providing an indication of the location of herring spawning grounds based on	<p>Updated to the conclusion should be made and further discussion on mitigation should take place.</p> <p>MMO believes this may not be fully resolved during Examination but is hopeful that the Applicant will provide the updates and further discussions can take place. MMO hopes these concerns will be resolved during Examination, noting they have not been resolved</p>

Table 7.2 PADS Statements on Underwater Noise			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
		<p>historic data, it is more appropriate for the Applicant to draw their conclusions from overlap with areas of higher IHLS larval abundance as this is a more recent, direct measure of herring spawning intensity for this region. Further to this, Figures 8.18, 8.19 and 8.21, which present UWN for sequential pin-piling, sequential mono-piling, and simultaneous pin-piling, all indicate that the likely range of impact of TTS in fish is also anticipated to overlap the herring spawning grounds.</p>	through pre examination.
MMO	Noise abatement during – exclusion of July	<p>It is not clear why July has been treated separately within the Applicant’s proposed mitigation zoning plan. Black seabream are at their most sensitive when undertaking spawning and guarding their nests, and as a result, the conservation objectives of the Kingmere Marine Conservation Zone (MCZ) are of heightened importance during the spawning period. As we have clear evidence that black seabream continues to</p>	<p>July should be included in the defined mitigation period for the zoning plan however as above any mitigation must have the correct modelling.</p> <p>MMO believes this may not be fully resolved during Examination but is hopeful that the Applicant will provide the updates and further discussions can take place. MMO hopes these concerns will be resolved during Examination, noting they have not been resolved through pre examination</p>
MMO	Seasonal Piling Restriction	<p>The MMO considers it necessary for a seasonal piling restriction to be implemented in order to prevent disturbance to spawning herring and their eggs and larvae at the Downs spawning ground during the spawning period of 1st November to 31st January (inclusive).</p> <p>This restriction may be subject to refinement, providing the additional UWN modelling (135Db) and further discussions on mitigation. However, at this time, the MMO considers that a seasonal piling restriction be implemented</p>	<p>MMO believes this may not be fully resolved during Examination but is hopeful that the Applicant will provide the updates and further discussions can take place. MMO hopes these concerns will be resolved during Examination, noting they have not been resolved through pre examination.</p>
MMO	Appendix 8.3 Underwater noise study for sea bream disturbance, August 2023.	<p>Please see section 4.7.12 onwards of our relevant representative in relation to this document. Updates are required to this document. Updates are required to this document</p>	<p>MMO is hopeful that the Applicant will update this document for this to be resolved during Examination</p>
MMO	Appendix 11.3 Underwater noise Assessment technical report	<p>Please see section 4.7.7 onwards of our relevant representative in relation to this document.</p>	<p>MMO is hopeful that the Applicant will update this document for this to be resolved during Examination.</p>
MMO	Permanent	In the Environmental Statement, the	MMO is hopeful that the Applicant will

Table 7.2 PADS Statements on Underwater Noise			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
	Threshold Shift	<p>sensitivity of all cetaceans to PTS-onset is assessed as Low. In the PEIR, all cetaceans were originally assessed as having a 'Medium' sensitivity to PTS.</p> <p>Until and unless empirical evidence can shed light on whether this opinion holds water, the precautionary principle will continue to apply. Therefore, cetaceans should be assessed as having a high sensitivity to PTS</p>	update the sensitivity and provide anything additional

7.3.2 PCS Team Comment and observations on UWN effects reflecting on Relevant Representations

From the MMO

- Chapter 11, Marine Mammals 4.7.11 In paragraph 11.9.42, “the results of the underwater noise modelling have been misinterpreted, and it is incorrect to state that “to be at risk of auditory injury, an animal would have to stay within the immediate vicinity of the noise source for 24 hours. This is considered unrealistic and therefore, the risk of auditory injury to marine mammals from these activities is considered to be de minimis”. The underwater noise assessment (presented in Appendix 11.3) concludes that for non-impulsive (or continuous) noise sources, any marine mammal would have to be less than 100 m from the continuous noise source at the start of the activity, in most cases, to acquire the necessary exposure to induce PTS as per Southall et al. (2019). This is because the noise assessment assumed a fleeing animal receptor. Furthermore, the noise assessment assumed that non-continuous sources were operating for a worst-case of 12 hours in any given 24-hour periods apart from vessel noise (which was assumed to be present for 24 hours). Thus, Chapter 11 should be corrected accordingly.”¹

Recommendation to conduct the underwater modelling again based on current data in line with MMO guidelines.

The independent underwater acoustic assessment presentation (Thrown To the Wind, by filmmaker Jonah Markowitz) stated that any whale within half a mile would instantly and irreversibly lose their ability to hear. The excessive sound pressure from the hammer blows would render it completely deaf. One would presume that this would also have a similar or greater effect on any other sea creatures (i.e. teleost, elasmobranch species) in the vicinity with similar receptors, especially ones more delicate who could not stand the protracted noise levels, habitat displacement or be able to move far enough away to make a difference.

Seahorses are a protected species, it is an offence to disturb or destroy any seahorse or habitat. Seahorses are all along the Sussex coastline. Please see relevant representations on seahorse habitat locations. There are also cetaceans, a European Protected Species, whales, and porpoises, in the Sussex Bay. Please refer to Chapter 6, Attachment 2 for more detail.

¹ [https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000477-20231106_Rampion_2_MMO_Relevant_Representation%20\(002\)_Redacted.pdf](https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000477-20231106_Rampion_2_MMO_Relevant_Representation%20(002)_Redacted.pdf)

Between Autumn 2023 and February 2024 two whales (Beaked, Minke) stranded and died on the shores to the west of Rampion 1 and directly in front of the proposed site for Rampion 2, so they are travellers in these waters. It is common knowledge that cetaceans can be profoundly affected by construction and operational noise arising from wind turbines in the sea. **Sound can be affected by many things underwater but roughly travels around 1500m per second. This is 4 times faster than on the surface.** Sound levels underwater, though affected in various ways by temperature, salinity, absorption into the sea bed, reflection and refraction, dissipate much more slowly.

Looking at potential mitigation tools and how many decibels could be reduced, there does not seem that a combination of current measures can successfully reduce the levels to a safe operating level according to the MMO's recommendations of **135 dB(A) re 1 µPa**

Potential noise levels during construction would be way in excess of Marine Management Organisation or other precautionary guidelines as this is a level of noise pollution currently unmitigable with today's tools such as bubble screens, or other measures, when working efficiently in calm waters. Given that this recent (independent) measurement of **241 dB(A) re 1 µPa** was including a level of mitigation, (confirmed as being correct for a 13.5m mono-pile by the applicant's representative though it was not asked at the time whether this was mitigated, to his understanding) this sonic blast wave of noise and the way it conducts through the water would make the area for miles around at the very least unimaginably disturbing to mammals and other aquatic life during the construction phase, remove ecological diversity and minimise life around the pilings. It would make the sea potentially harmful to divers for miles around.

The construction would be too close to the Marine Conservation Zone of Kingmere Rocks as the excessive energy created would not attenuate enough prior to entering the MCZ.

4.7.8 "MMO notes that some of the language and statements presented in this report are misleading and unsubstantiated. The MMO does not agree that the resulting predictions are "highly precautionary and very unlikely to be realised".

4.7.9 As raised during the PEIR consultation, the information presented in section 2.5.3 onwards (TTS Assessment) only demonstrates what is not known about the significance of TTS – there is no evidence presented to confirm that it isn't significant, only conjecture. One could equally argue that at lower received sound levels, animals are less likely to flee (see Figure 2-2 on page 24), and so proportionally more likely to induce TTS than this assessment suggests. The TTS/PTS assessment seems to consider only an animal fleeing directly away from the source, whereas Fig. 2-2 demonstrates that even at received SELs of 160 dB, around 10% of animals will not flee, so there are uncertainties which tend toward underestimation of risk here too. 4.7.10 In the ES, the sensitivity of all cetaceans to PTS-onset is assessed as Low. In the PEIR, all cetaceans were originally assessed as having a 'Medium' sensitivity to PTS. However, it was raised by MMO that the consultant had not demonstrated that PTS would have merely a medium risk, only that there is uncertainty about how significant PTS may be for individual animals. Until, and unless, empirical evidence can shed light on whether this opinion holds water, the precautionary principle will continue to apply. Thus, it is recommended that cetaceans should be assessed as having a high sensitivity to PTS."

If you consider the much higher baseline level of noise from piling of 240dB re 1 µPa it is recommended to re-examine the methods of mitigation as an essential tool before coming to any conclusions.

"The designated features of each MCZ's and their conservation targets vary spatially, however

there are recurring features such as black seabream (*Spondyliosoma cantharus*), lagoon sand shrimp (*Gammarus insensibilis*), short snouted seahorse (*Hippocampus hippocampus*) and subtidal sediments (chalk and mixed) present across multiple MCZs. In assessing the MCZ's from project alone effects, the magnitude of the effect is typically deemed to be negligible based on the evidence provided within this MCZ assessment. **The development has the potential for inter-related effects including, 'proposed development lifetime effects', where multiple phases of the proposed development interact to create a potentially more significant effect on a receptor than in one phase alone. Additionally, 'receptor-led effects', where effects from different environmental aspects combine spatially and temporally on a receptor. *** These have been considered for potential interactions between fish and shellfish ecology and benthic ecology aspects. Through the implementation of appropriate embedded environmental measures, the MCZ assessment concluded that based on the Stage 1 assessment of relevant features, there is no significant risk of the proposed development hindering the conservation targets of the identified attributes or the achievement of the conservation objectives stated for the following MCZs: Kingmere MCZ; Offshore Overfalls MCZ; Beachy Head West MCZ; Beachy Head East MCZ; Selsey Bill and the Hounds MCZ; Bembridge MCZ; and Pagham Harbour MCZ."²

There are seven MCZs that could be affected. These seem to have been scoped out of the assessment, but all of these sensitive receptors could be affected by construction noise.

Sound modelling should be conducted based around levels, both SPL and SELs as well as propagation underwater, decay levels, cumulative effects of multiple arrays etc.

*** this is quite significant. What this is saying is that the combined effects of the development may provide a more significant effect on the receptor than the individual aspects of the development, ie: turbines. That the effects on the environment will be amplified due to the array nature of the turbines. The multiple coupling of the turbines will create a sonic array that will transmit low frequency signals above the water for the duration of the operation. This has not been assessed on its effect on humans and should be added to any noise modelling exercise.**

Operational Noise Including Infrasound

4.7.14 Section 4 Soundscape at Kingmere MCZ:

- *"MMO agrees that acoustic disturbance should only be considered for audible sound. At a minimum, an introduced noise must be (a) above the hearing threshold and (b) exceed the background noise. Nonetheless, and with reference to the following statement in Section 4: "The "loud vessel" is approximately only 25 dB above the seabream hearing threshold. This implies that as a result of the seabream sensitivity, the "loud vessel" would be audible to the fish but is unlikely to be perceived as "loud".*

4.7.15 MMO is unsure how this is relevant, especially as we are concerned primarily with piling noise (not vessel noise).

Furthermore, whether a sound is perceived as "loud" does not necessarily indicate its potential for behavioural disturbance."

It is not agreed that acoustic disturbance should only be considered for audible sound.

Wind turbines create what would seem to be a lot of the wrong type of noise, such as the specific frequencies and levels generated, as well as the distance they carry above and below
2 <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000141-5.11%20Rampion%202%20Draft%20Marine%20Conservation%20Zone%20assessment.pdf>

the waterline. Sound can be very dangerous, not just the noise you can hear. High levels of infrasound or excessive sound pressure or exposure levels carry their own risks.

Sound pollution created during operation of wind turbines in water.

Infrasound is classed as inaudible sound waves below 20 Hertz.

It is an issue to be aware of as although you can't hear it, it doesn't mean it does not exist, nor that organisms are not affected by it, according to its influence. **High amplitude low frequency generation underwater could affect divers considerably as well as many sea creatures.**

What may be inaudible to us as noise (but could still affect us physiologically and/or physically especially at higher amplitudes), the same frequency or level could elicit impulsive behaviour from avoidance to fatigue, even organ failure, in all kinds of life subjected to it. Humans and aquatic life all have different hearing and body frequency responses so inaudible for us might be deafening to a fish.

Fish overall use the lower frequency ranges in the low 100's hertz to hear and communicate, while mammals such as porpoise are much higher, up to the 10khz range.

Wind turbines are very efficient large capacity sound generators indeed. They create large levels of infrasound (below 20hz), audible (20hz to 20khz) and ultrasound (above 20khz). Turbines work as a perfect transmitter through the column, in an omnidirectional manner, the pile acting as the resonator into the seabed. It also works in a directional manner, via the turbine blades. Both create high sound pressure waves that the low frequency noise created during operation will resonate through the foundations and sicken the sea and air around it with its constant droning when operating.

It is recommended that the modelling of turbine noise during operation be conducted, including the recording of infrasound (20 hertz and below, 10hz at least, according to BS5228,) to ascertain its propagation through water, individually and as an array, the frequencies generated (which one can expect to change according to stresses placed upon it, wind speed, etc) cumulative values and amplitudes be considered before assessing its potential impacts.

Operational noise should be classed as an adverse noise impact due to its capacity to introduce infrasound at high levels into the surrounding areas for the duration of the project. Infrasound travels faster through water and solids and does not dissipate. Its physical and psychological effects are varied but the overt characteristic is an intense feeling of oppression. Fatigue, blurred vision, irritability, headache, nausea, difficulty concentrating, tingling skin and aching limbs are all effects of infrasound. Infrasound is created by the action of the gearbox and turbines and is carried into the sea by its foundations. These low frequencies generated at higher amplitudes can cause adverse reactions in sea life as well as in humans. A small percentage of the population is so sensitive to infrasound that they become nauseous near the ocean (which naturally generates low-frequency signals). NASA has documented 17 Hz infrasound produces extreme blurring of vision. Walt Disney once conducted an experiment slowing down the 60-cycle tone of a soldering iron in a short cartoon. At a low-frequency 12 cycles, they became sick for days afterwards. The issue is not so much what the cochlea "hears," but the sound pressure that messes up the vestibular organs—the sound pressure that, depending on intensity, duration of exposure, and pulse of the infrasound, can do a lot of unseen damage.

Long term exposure to high levels of infrasound during operation could have a detrimental

effect on protected species and create areas of low environmental diversity

Barotrauma is trauma from intense pressure changes, in the inner ear and lungs typically—this is what bats die from when they encounter wind turbines—“exploding lungs”

If the noise from piling does not dissipate enough prior to reaching the spawning grounds MCZ it could cause issues with the Black Sea Bream such as barotrauma and affect spawning and eggs. There are also a number of protected sites of Seahorse all along the Sussex Bay coastline and an offence to disturb or harm any habitats.

These issues should be examined in much greater detail before coming to any conclusions.

There should be no piling of such large piles so close to shore and in the same bay as such sensitive receptors as the Marine Conservation Zone or protected species such as the Seahorse or cetacean. The main potential impact to fish from the Project is from the underwater noise generated when piling. Fish sensitivity to noise varies greatly: Herring are considered to be the most sensitive. Many fish will actively avoid affected areas, but a percentage will stay in situ. The worst-case area that this might affect a fish is potentially 80km for herring therefore impacts of piling noise are a big concern in relation to Herring. Although not protected, they are known to be both sensitive to noise and a key prey item to rare and protected breeding seabird colonies that contribute to designated SPAs (Special Protection Areas).

Piling noise would disturb both herring and nationally important black bream particularly during their most sensitive, peak spawning period. Black Sea Bream nests could be damaged. Electromagnetic fields (EMF) emitted from live power cables could have the potential to affect fish and shellfish, particularly elasmobranchs and little work has examined whether these have any implications or negative effects at habitat level. Beside the many protected species mentioned above Protection of Marine Mammals is of significant importance.

UXO clearance

“The maximum equivalent charge weight for the potential UXO devices that could be present at Rampion 2 has been estimated as 525 kg. This has been modelled alongside a range of smaller charge weights of 25, 55, 120, and 240 kg. It is appropriate that the estimation of the noise source level for each charge weight has been carried out in accordance with the methodology of Soloway and Dahl (2014). It is noted that an attenuation correction has been added to the Soloway and Dahl (2014) equations for the absorption over long ranges (i.e., of the order of thousands of metres), based on measurements of high intensity noise propagation taken in the North Sea and Irish Sea. The maximum PTS range (SPL_{peak}) calculated (based on the worst-case UXO) is 13 km for VHF cetaceans (SPL_{peak} criteria) (with a TTS range of 23 km). For fish, the maximum range is 810 m. MMO has conducted a spot check of the worst case predictions which look reasonable (assuming the methodology from Soloway and Dahl and no attenuation correction).”³

Taking these numbers as a guide and that the North and Irish Sea due to their more potentially turbulent natures would tend to attenuate sound slightly quicker than in the Sussex Bay, it is of value to note that a Permanent Threshold Shift could occur in EPS cetaceans up to 13km away from source of detonation.

Given that 13km is the approximate distance to shore from the proposed turbine park, this infers that there is increased risk for cetaceans and other life anywhere between the turbine areas and shore. Concerns are for aquatic life and health during construction. Most aquatic life

³ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000811-ISH1%20Action%20Points.pdf>

would be affected; many are habitat based. It is a myth that any sea creatures can just leave the affected area, for example, the seahorse, which are living at various places in the Sussex Bay. The affected area can run into many miles in size and there cannot be an expectation that fragile life extant can just 'pack up and go'. Go where if everywhere is affected by the same disturbance?

There would be huge a habitat displacement/loss as opposed to any Net Gain.

The sound of piling has now reached a concussive level which is on par in comparison with the above biggest UXO charge weights. So counting the 45,000 concussions into the seabed at 240 dB(A) re 1 μ Pa it can be concluded that a similar distance of effect (or exclusion zone) as above, on marine life and users including divers would be created by the piling and construction noise.

Anecdotal Evidence from members of the Public

Reg Phillips – Facebook

"The pile driving has severe impacts on finfish, during the Angling Trust four year juvenile fish surveys along our open beaches in West Sussex we experience a drop (in) species being caught so it does disrupt the spawning, nesting and juvenile life cycles of finfish. The threat to the Kingmere black bream stocks is huge, but not just them, dover sole, plaice, turbot, brill, and just about every other demersal species that uses our nearshore waters to spawn could be severely impacted upon. There is talk of extending the Kingmere black bream spawning season from 12 to 16 weeks as more science is gathered on their spawning cycle, that is 4 months of each year construction of the site will have to stop which will extend the time in which the site is completed, the cable route laid and nature can take back the environment. We could be looking at 4 years of disruption at which point our commercial fishermen will be justly compensated but our charter skippers and clubs will be ignored like last time. There is lots to consider and digest guys."

Sound Issues Concerning Rampion 2 During Construction and Operation

After a career in sound reinforcement design, construction and maintenance, a recreational diver and fishkeeper, it is my understanding that the Rampion 2 proposal has the potential to cause far greater damage from construction and operation than is currently being understood. I have grave concerns for the noise levels of sound pressure and exposure levels that could be generated should the application be approved under seemingly understated and underrepresented parameters.

"The decibel scale is a logarithmic scale used to measure the amplitude of a sound. If the amplitude of a sound is increased in a series of equal steps, the loudness of the sound will increase in steps which are perceived as successively smaller. A decibel doesn't really represent a unit of measure like a yard or meter, but instead a pressure value in decibels expresses a ratio between the measured pressure and a reference pressure. On the decibel scale, everything refers to power, which is amplitude squared. And just to confuse things, the reference pressure in air differs from that in water. Therefore a 150 dB sound in water is not the same as a 150 dB sound in air. So, when you are describing sound waves and how they behave it is very important to know whether you are describing sound in the sea or in air."

Note on Acoustic Noise Level Units: Hydrophones measure sound pressure, normally expressed in units of micropascals (μ Pa). Early acousticians working with sound in air, realized that human

Amplitude of Example Sounds	In Air (dB re 20μPa @ 1m)	In Water (dB re 1μPa @ 1m)
threshold of hearing	0 dB	--
whisper at 1 meter	20 dB	--
normal conversation	60 dB	--
painful to human ear	130 dB	--
jet engine	140 dB	--
blue whale	--	165 dB
earthquake	--	210 dB
supertanker	128 dB (example conversion)	190 dB
13.5m monopile single strike (for comparison)	178 dB	240 dB

ears perceive differences in sound on a logarithmic scale, so the convention of using a relative logarithmic scale (dB) was adopted. In order to be useful, the sound levels need to be referenced to some standard pressure at a standard distance. The reference level used in air (20μPa @ 1m) was selected to match human hearing sensitivity. A different reference level is used for underwater sound (1μPa @ 1m). Because of these differences in reference standards, noise levels cited in air do NOT equal underwater levels. To compare noise levels in water to noise levels in air, one must subtract 62 dB from the noise level referenced in water. For example, a supertanker radiating noise at 190 dB (re 1μPa @ 1m) has an equivalent noise level in air of about 128 dB (re 20μPa @ 1m). These numbers are approximate, and amplitude often varies with frequency.

Faster than the Speed of Sound...

The speed of a wave is the rate at which vibrations move through the medium. Sound moves at a faster speed in water (1500 meters/sec) than in air (about 340 meters/sec) because the mechanical properties of water differ from air. Temperature also affects the speed of sound (e.g. sound travels faster in warm water than in cold water) and is very influential in some parts of the ocean. Remember that wavelength and frequency are related because the lower the frequency the longer the wavelength. More specifically, the wavelength of a sound equals the speed of sound in either air or water divided by the frequency of the wave. Therefore, a 20 Hz sound wave is 75 m long in the water (1500/20 = 75) whereas a 20 Hz sound wave in air is only 17 m long (340/20 = 17) in air. **Sound, and especially low-frequency sound, can travel thousands of meters with very little loss of signal.”**⁴

For extrapolation purposes, Rampion 2 documentation does not mention the instantaneous sound pressure level (SPL) of a 13.5m diameter mono-pile at every strike?

A comparable wind farm construction currently is Orsted off the east coast of the USA.

Independent professional acoustician Robert Rand recorded the mitigated piling decibel level of a **13.5m diameter pile** ½ a mile (750m approx) from point of impact registered underwater at;

241 dB(A) re 1 µPa.

Above the waterline this registered at; **188 dB(A) re 20 microPascals (µPa)**

This is described as the equivalent to the shock wave of a 155mm artillery Howitzer going off every hammer strike into the seabed.⁵

It would then radiate omni-directionally for miles.

Assuming **1 pile @ 5000 strikes per pile x 90 piles = 45,000 concussions into the seabed** (or the sonic blast equivalent of 45,000 heavy artillery shells being fired off during the construction phase into the Sussex Bay.) That is independent of and in addition to, the UXO detonations of a similar capacity of destructive noise levels.

N.B. An almost identical figure for peak instantaneous sound pressure level (Lpk) of a 13.5m diameter pile being driven into the sea bed of 240 dB re 1 µPa (underwater) was given by the Rampion 2 representative at the Planning Inspectorate hearing on noise levels during construction, when specifically asked.

Quick calculation (using the applicant's figure of maximum instantaneous SPL (Lpk) of a 13.5m pile):

240 dB(A) re 1 µPa

The MMO's recommendation for maximum SPL for mitigated piling noise

135 dB(A) re 1 µPa

Difference for purposes of mitigation reduction necessary to achieve the MMO's figures

105 dB(A) re 1 µPa

There are no sound mitigation methods that can reduce the noise from piling by 100 dB(A) re 1 µPa.

The maximum might be around -25 dB with a combination of mitigation devices, this is still way off.

At these levels more modelling should be done to evidence not just mitigation specifics which are lacking but also legitimate capability to achieve levels set out as the defined minimum by the MMO.

More accurate noise propagation modelling should be presented based on current data and not historic, as current size piles were not included in the modelling, so of no comparison to modern noise levels. This is significant due to the higher noise levels now being generated so close to shore with potential to affect so much life, for many miles, below and above the waterline.

The comparison figures quoted in the ES have no relevance with modern piles and the ES noise levels are much lower than can be expected.

⁵ Thrown To the Wind, Part 2", filmmaker Jonah Markowitz documents acoustician Rand measuring illegal levels of noise from pile-driving by the wind industry off of Martha's Vineyard. [REDACTED]

If we use Rampion 1 as a baseline comparison, then noise levels onshore during its construction especially at night with a calm sea (worst case scenario) was at times excessive, caused a number of complaints and was something personally experienced. Rampion 2 has scoped the use of much larger turbines (up to 2.5 times larger) than Rampion 1 so there must be an expectation of that level of noise to become much more disturbing than previously.

In this case, everything is that much larger and therefore louder so more accurate modelling is necessary.

Sussex Wildlife Trust have also asked for a commitment on noise abatement technology.

4.6.65 *“To summarise MMO has major concerns outstanding and considers further information is required on modelling along with further discussions on mitigation.*

- ***Monopile foundations (worst-case assuming 2 monopiles):*** *The largest ranges are predicted at the S modelling location (with the deeper water depths of 53.4 m). For marine mammals, the following maximum PTS (SELcum) injury ranges are predicted:*

- 15 km for low frequency cetaceans (i.e., minke whale),
- 7.4 km for very-high frequency cetaceans (i.e., harbour porpoise), and
- < 100 m for phocid pinnipeds (i.e., seals).
- TTS ranges of 46 km
- 34 km and 16 km were predicted for LF Cetaceans,
- VHF cetaceans and phocids respectively. PTS SPLpeak ranges of <50 m,
- 680 m and 60 m were predicted for LF Cetaceans,
- VHF cetaceans and phocids respectively.

For fish, a maximum range of 41 km (stationary receptor) was predicted for TTS using the Popper et al. (2014) criteria (for 2 sequentially installed piles), as well as potential mortal injury (7.4 km) and recoverable injury (12 km). Based on a (behavioural) threshold of 135 dB SELs from Hawkins et al. (2014), effects are predicted out to 67 km (for a single monopile).

- ***Jacket pile foundations (worst-case of four sequential piles):*** *The largest ranges are also predicted at the S modelling location. For marine mammals, the following maximum PTS (SELcum) injury ranges are predicted:*

- 13 km for low frequency cetaceans (i.e., minke whale),
- 5.9 km for very-high frequency cetaceans (i.e., harbour porpoise), and
- < 100 m for phocid pinnipeds (i.e., seals).
- TTS ranges of 43 km
- 31 km and 15 km were predicted for LF Cetaceans
- VHF cetaceans and phocids respectively.
- PTS SPLpeak ranges of <50 m,
- 560 m and <50 m were predicted for LF Cetaceans,

- VHF cetaceans and phocids respectively.
- For fish, a maximum range of 44 km (stationary receptor) was predicted for TTS using the Popper et al. (2014) criteria, as well as potential mortal injury (8.9 km) and recoverable injury (14 km). ***Based on a (behavioural) threshold of 135 dB SELs from Hawkins et al. (2014), effects are predicted out to 63 km (for a single jacket pile).***

That's a very long distance of effect especially being omnidirectional in nature. 63 km means the whole of the Sussex Bay will be affected. As water is basically incompressible, these levels could cause hearing damage so the waters of the Bay would be out of bounds to divers. Those levels would not be safe, especially that it's not a single strike, but thousands...

This is also assuming the applicant can achieve 135dB SELs or preferably less

4.7.3 “Following finalisation of the project design and pre-construction surveys, if construction activities are expected to cause significant disturbance or injury to a European Protected Species (EPS) (cetaceans), an EPS licence(s) will be applied for where applicable. MMO would encourage early engagement with the MMO conservation team.”

The modelling outlined in 4.6.65 shows high potential for causing significant disturbance or injury to a European Protected Species.

“The guidance document illustrates a preventative approach to ensure the strict protection of EPS in their natural range as required by Article 12 of the Habitats Directive. It provides an interpretation of the offences of deliberate capture, injury, killing or disturbance of any wild animal of an EPS, under regulations 41(1)(a) and (b) in The Conservation of Habitats and Species Regulations 2010 (HR) and 39(1)(a) and (b) in The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (amended in 2009 and 2010, OMR).”⁶

“In June 2020, JNCC together with Natural England (NE) and the Department of Agriculture, Environment and Rural Affairs in Northern Ireland (DAERA) published advice to competent authorities on what could constitute Significant Disturbance within harbour porpoise SACs in England, Wales and Northern Ireland marine areas. In addition, guidance was provided on a noise management approach to keep underwater noise within levels that do not affect a site's integrity.”

The JNCC advise:

*“In harbour porpoise SACs, the advice on avoiding significant disturbance applies to plans/projects alone and in-combination. For the largest SACs such as the SNS SAC, most individual operations/projects are unlikely on their own to result in an adverse effect on site integrity. This is due to a relatively small spatial footprint when compared to the area of the site combined with the temporary nature of noise effects. For smaller sites, some individual operations will likely have to modify their planned approach in order to reduce their spatial and temporal footprint. For many, this is likely to take the form of noise mitigation/abatement systems which will reduce the disturbance ranges. **In areas outside (but also within) the SACs, operations/projects with the potential to result in injury or disturbance can only go ahead if mitigation measures can be employed in order to reduce the risk to individual animals.***

To reduce the risk of hearing damage in the immediate area around the noise sources, measures such as a 'soft start', marine mammal observers enforcing mitigation zones and acoustic deterrent devices are routinely employed. It is more challenging to reduce the risk of disturbance at larger ranges and therefore an activity can only go ahead with a licence under

⁶ <https://jncc.gov.uk/our-work/marine-mammals-and-offshore-industries/#legal-protection-for-marine-mammals>

the EPS regulations. Licences should only be issued when there are no satisfactory alternatives (alternative methods that would not cause disturbance) and if the activity does not have an effect on a species' FCS. All projects that could result in disturbance according to the EPS regulations will need to undertake an assessment of the impacts on the species' FCS from the project alone and in combination with others.

If an impact cannot be ruled out, then the project cannot not be licensed as planned.

For those licences that are issued, it is incumbent on competent authorities to monitor the effect of these on the population(s) of the species to ensure that there is no detriment to FCS from cumulative effects of the licences."

Interpretation of the injury offence.

- *"Certain activities that produce loud sounds in areas where animals of an EPS could be present have the potential to result in an injury offence, unless appropriate mitigation measures are implemented to prevent the exposure of animals to sound levels capable of causing injury. Mitigation measures such as those presented in Annexes A, B and C of this document, when used appropriately and adequately, are likely to reduce the risk of an injury offence to negligible levels. This guidance proposes that a permanent shift in the hearing thresholds (PTS) of an EPS would constitute an injury offence and suggests the use of the Southall et al. (2007) precautionary criteria for injury. These criteria are based on quantitative sound level and exposure thresholds over which PTS-onset could occur for different groups of species. If it is likely that an EPS could become exposed to sound at or above the levels proposed by Southall et al. (2007) then there is a risk that an injury offence could occur. The risk of an injury offence will be higher in areas where EPS occur frequently and/or in high densities."*

4.6.54 *"Based on the UWN contours presented in Figure 8.20 of Chapter 8 which present the 135 dB contour, UWN from piling undertaken at the Rampion 2 array, particularly from piling activities at the west and south modelling locations, will overlap the Downs herring spawning ground. Given that the UWN abatement scenarios in the mitigation plan have been presented based on a threshold of 141 dB, the range of behavioural impact for herring will likely be higher than has been presented. **The Applicant should repeat the modelling exercise and present UWN modelling for the noise abatement reduction scenarios using a behavioural response threshold of 135 dB SELs. The MMO also requests to see the unmitigated UWN contours provided alongside each noise abatement scenario for comparison. Piling restriction, March to June and July.**"*

- **Point 1** "Vibration and noise might induce avoidance behaviour and reduce fitness of sensitive organisms, thereby potentially changing population structure and distribution patterns &
- **Point 30** "Direct mortality or reduction in fitness through damage caused by sound waves of the natural substrates. Changes in distribution: introduced noise will cause distribution changes in natural and artificial hard-substrate fauna"

For fish close to piling activity, the impact of strong impulsive sound can lead to barotraumas and hair cell damage (Halvorsen et al., 2012a, 2012b, Casper et al., 2013a, 2013b; De Backer et al., 2014). The risk of barotrauma occurrence depends on the presence/absence of a connection between a swim bladder and a gut. The most numerous and most severe injuries are observed in physoclistous fishes lacking that connection, which makes them unable to adjust their swim

bladder fast enough to avoid injury. In contrast, physostomous fishes which have the swim bladder connected to their gut, are able to adjust the swim bladder relatively quickly making them less susceptible to injury. Adult flatfishes are the least susceptible to these types of injuries, since adults lack a swim bladder (Bolle et al., 2012; Halvorsen et al., 2012b). Recovery after injuries were observed under laboratory conditions for both physostomous and physoclistous fishes (Casper et al., 2012, 2013b, Halvorsen et al., 2012a, 2012b). Field studies have shown that the severity of the swim bladder barotrauma and internal bleeding in Atlantic cod is related to a distance from piling activity (De Backer and Hostens, 2017). Physiological changes indicating stress, such as decreased oxygen consumption rate (50%) have been recorded in young sea bass during piling activities (Debrusschere et al., 2016).

All fish are capable of detecting particle motion via the otolith and lateral line therefore may still be exhibit behavioural responses (Andersson et al., 2017).

Knowledge on the impact of sound on epibenthos, particularly invertebrates remains poor and is generally lacking on the impact of impulsive sound (Edmonds et al., 2016; Roberts and Elliott, 2017). Recently, offshore experiments have shown cephalopod sensitivity to noise (particle motion and sound pressure) resulting in statocyst injury with a severity which was proportional to the distance from source (Solé et al., 2017). Invertebrates (e.g. bivalves) and epibenthic life stages (e.g. eggs) that are not able to escape, may experience a higher risk of direct damage from exposure to sound and vibrations, although changes in behaviour and sensitivities are also likely to be important (Edmonds et al., 2016; Roberts and Elliott, 2017). For example, it has been shown that anthropogenic sound repressed burying behaviour in *Nephtys norvegicus*, with important consequences for bioirrigation and associated ecological processes (Solan et al., 2016). At present, there is not a full understanding of all the causal underwater sound parameters and their effect on marine fauna. This knowledge is needed to establish valuable mitigation measures and sound criteria.⁷

From MMO Relevant Representation

4.6.52 *“The UWN modelling upon which the UWN mitigation plan is based has used a received noise threshold of 141 dB in relation to black seabream. The MMO does not consider this to be sufficiently precautionary and has maintained that modelling should be done based on 135 dB SELs, as per Hawkins et al., (2014), noting the threshold approach has not been agreed.*

4.6.53 *135 dB SELs, as per Hawkins et al., (2014) is also relevant for modelling impact ranges for likely behavioural effect herring and should have been modelled in this mitigation plan. Additionally, the noise abatement options have not been modelled in the context of the Downs herring spawning ground, based on the Applicant’s conclusion that “there is a low risk of any adverse effects arising even without mitigation as set out within Chapter 8: Fish and shellfish ecology”. Please refer to points 4.6.38 - 4.6.39 as to why the MMO disagrees with this conclusion.”*

Mitigation

4.6.41 *“The Applicant has outlined a number of proposed environmental measures under table 8.13 in Chapter 8, which are intended to minimise significant disturbance to sensitive receptors (identified principally as black sea bream, herring and seahorse). These are outlined*

⁷ Review of current knowledge on the hypothesised cause-effect relationships (hypothesised paths); a literature backbone of 233 publications (all references are publically available in a library at [redacted] - access date: 15.01.2019)

*in Annex 2. It is noted that the Applicant has asserted that these measures will be secured either through inclusion in the DCO requirements, or through conditioning onto the DML. The MMO is supportive of the Applicant implementing targeted mitigation however, the **MMO considers that some of these measures need further refinement, to be agreed and secured through focussed and targeted consultations in which the relevant evidence can be carefully examined, and each issue can be adequately addressed.***

Please see relevant representations on the seahorse regarding habitats in the Sussex Bay. Rather than there being too few to be an issue as mentioned at the relevant Planning Inspectorate hearing, there are a number of protected seahorse habitats in the Sussex Bay.

4.6.51 “A series of mitigated piling scenarios have been presented using various noise abatement techniques in Figures 5.4 – 5.9. Some of these scenarios present multiple noise abatement techniques (low noise hammer technology and double bubble curtains (DBBC)) which appear to produce significant noise reductions (up to 25dB), however, the **MMO notes from previous advice that the likely achievable noise reduction in dB will depend on the site conditions at Rampion 2. This should be taken into account and presented within the documents.**”

4.6.37 “Further to this, Figures 8.18, 8.19 and 8.21, which present UWN for sequential pin-piling, sequential mono-piling, and simultaneous pin-piling, all indicate that the likely range of impact of TTS in fish is also anticipated to overlap the herring spawning grounds. Given the proximity of the Rampion Array to the active Downs herring spawning ground, **the MMO has serious concerns as to the level of impact that piling within the Rampion Array will have on spawning herring unless suitable mitigation is implemented.**”

More noise assessment is needed including propagation and decay rates.

Herring and Black Seabream UWN Conclusions

4.6.36 “The MMO disagrees with the Applicant’s assessment of potential impacts to herring from UWN. The MMO notes from the Underwater Noise Impact Assessment that the Applicant has calculated that the range of effect of behavioural responses in herring, based on the recommended modelled threshold of 135dB (Hawkins et al., 2014) may occur as far as 67km from the source of piling.

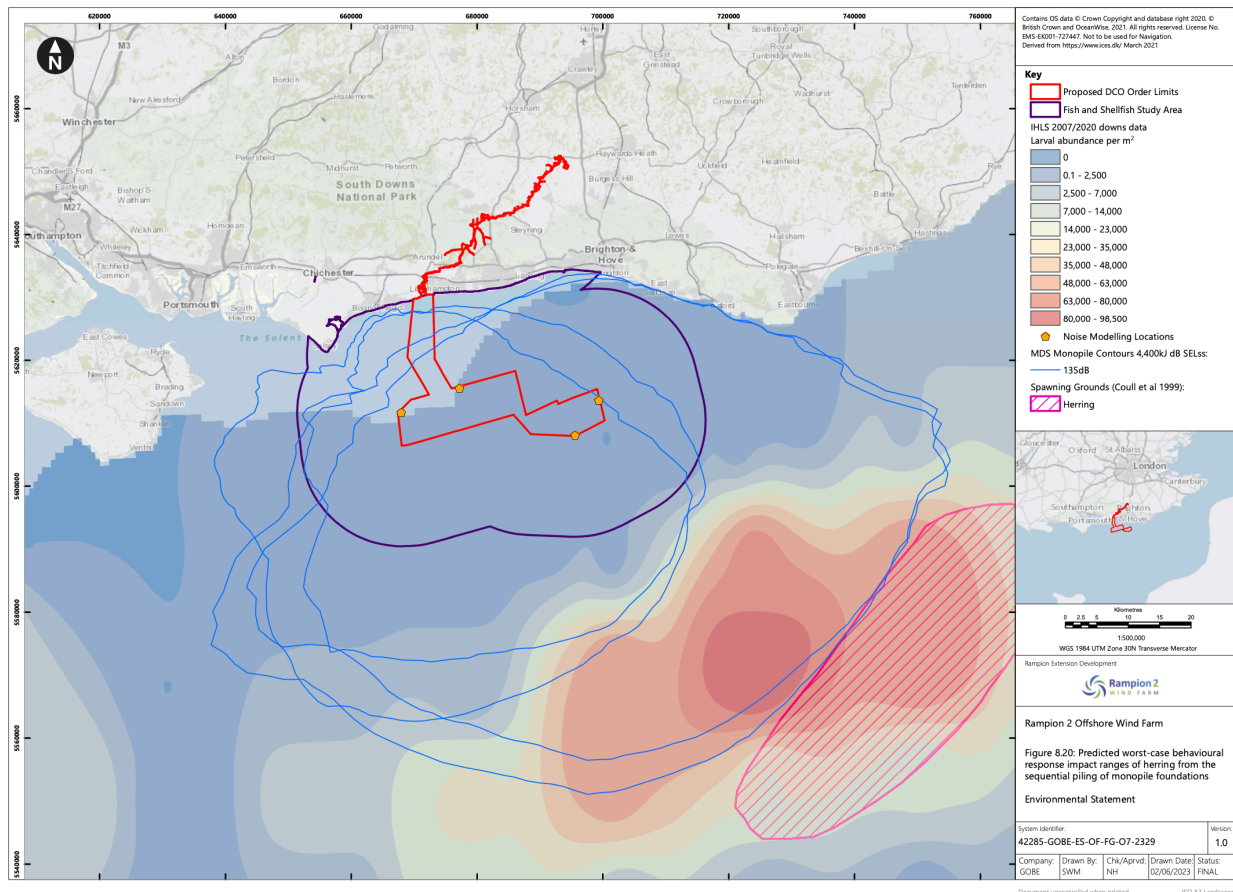


Figure 8.20 Predicted worst-case behavioural response impact ranges of herring from the sequential piling of monopile foundations

Figure 8.20 presents the SELs contours for sequential mono-piling in the four modelling locations of Rampion Array, with noise contours presented based on the unweighted SELSS 135dB as per Hawkins et al. (2014). This is appropriate, and Figure 8.20 indicates significant overlap with the Downs herring spawning ground, as indicated by IHLS larval abundance data.”⁸

[The modelling evidences high sound pressure levels travelling across dozens of miles with little attenuation. This is likely to cause severe disturbance.]

4.6.34 “The Applicant has acknowledged that the installation of foundations within the Rampion 2 Array Area has the potential to lead to significant injury and/or disturbance to fish species due to underwater noise generated during pile driving. UWN modelling is based on worst-case scenarios of a 13.5m diameter monopile installed with a maximum hammer energy of 4,400kJ, and for a 4.5m diameter pin pile installed with maximum hammer energy of up to 2,500kJ. Tables 8.20 and 8.21 outline the likely impact ranges for mono- and pin-piling at the south location, carried out as a single piling scenario and sequential piling scenario. Likely impact ranges for mortality and potential mortal injury (207 Sound Exposure Level, cumulative (SELcum)), recoverable injury (203 SELcum), and temporary threshold shift (TTS) (186 SELcum) for stationary fish receptor, as per the pile driving threshold guidelines described by Popper et al. (2014) have been presented.”

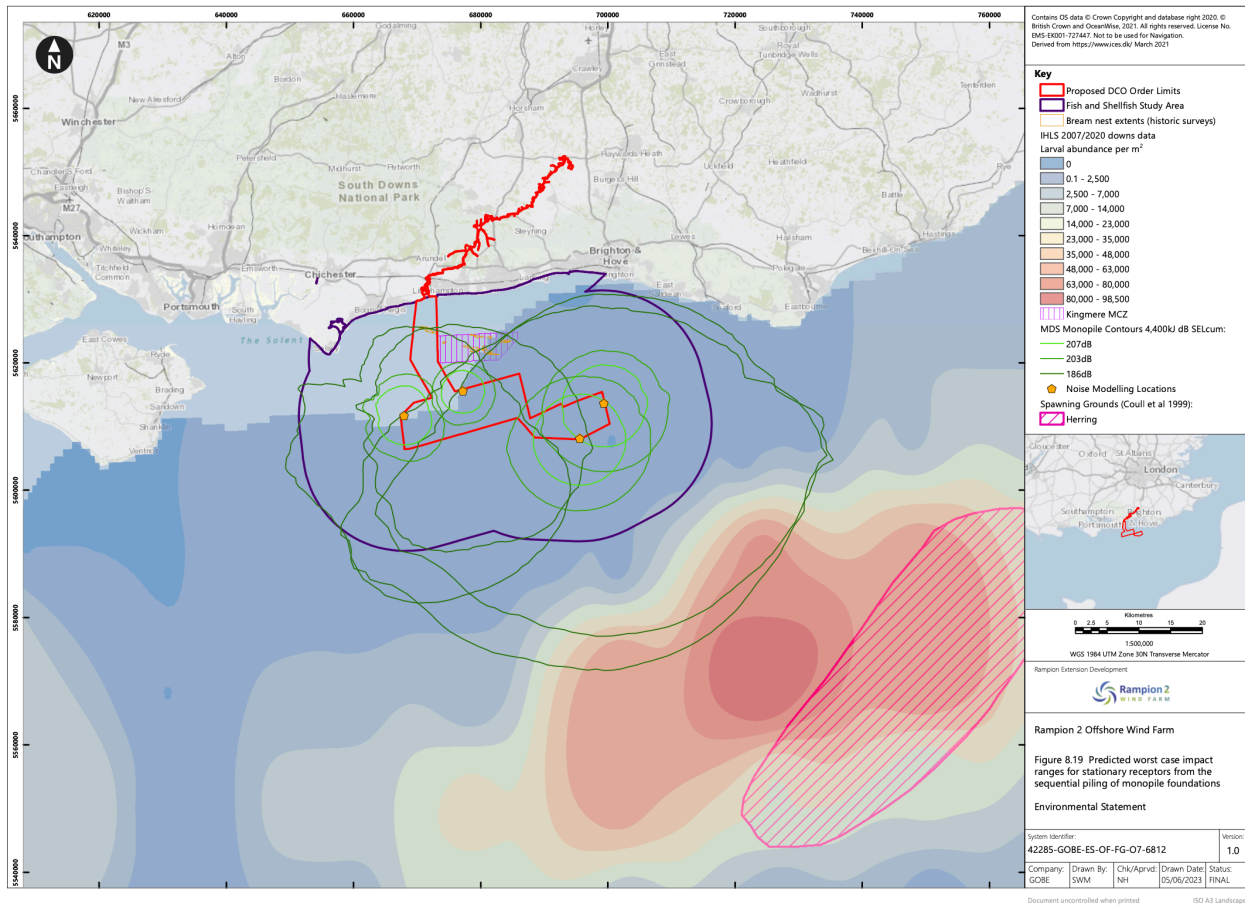


Figure 8.19 Predicted worst case impact ranges for stationary receptors from the sequential piling of monopile foundations ⁹

The Sound Exposure levels cumulative or otherwise, are likely to be much higher than these.

“The installation of driven piles in the marine environment without mitigation is likely to produce noise levels capable of causing injury and disturbance to marine mammals.”

“Such effects, although incidental to consented activities, have the potential to conflict with the legislative provisions of The Conservation of Habitats and Species Regulations 2010 (the ‘Habitats Regulations’, HR), which applies to English and Welsh waters inside 12 nautical miles (nm), and the Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (the ‘Offshore Marine Regulations’, OMR, as amended 2009 and 2010), which apply on the United Kingdom Continental Shelf.” ¹⁰

The Conservation of Offshore Marine Habitats and Species Regulations 2017

“UK Regulations make it an offence to kill, injure or disturb marine European Protected Species (EPS) in UK waters, which includes all cetaceans. Compliance with JNCC’s mitigation guidelines is considered best practice and will, in most cases, reduce the risk of deliberate injury to marine mammals to negligible levels.”

Although not statutory consultees on this occasion, the JNCC have responsibility with the offshore environment, after 12nm, rather than inshore waters, between 8-12nm, in which Rampion 2 ‘Offshore’ Windfarm would be situated. However, as sea life would frequently cross

⁹ Page 26, EN010117-000341-6.3.8 Rampion 2 ES Volume 3 Chapter 8 Fish and Shellfish - Figures.pdf
¹⁰ <https://data.jncc.gov.uk/data/31662b6a-19ed-4918-9fab-8fbcff752046/JNCC-CNCB-Piling-protocol-August2010-Web.pdf>

From: JNCC Offshore Industries Advice <OIA@jncc.gov.uk>

Date: On Wednesday, 21 February 2024 at 13:32

Subject: 'Contact us' JNCC Rampion 2 windfarm project

CC: Feedback <Feedback@jncc.gov.uk>, JNCC Offshore Industries Advice <OIA@jncc.gov.uk>

Good Afternoon Carlo,

Thank you for contacting JNCC regarding the Rampion 2 windfarm project
As the Rampion 2 windfarm project is located inshore (within 12nm from shore) and therefore within the territorial limits, this falls outside of JNCC's offshore remit and Natural England would be the relevant Statutory Nature Conservation body.

Kind regards,

Jon Connon

Offshore Industries Advice Officer

Marine Management Team

JNCC, Inverdee House, Baxter Street, Aberdeen, AB11 9QA

between these distances, and the sound effects not contained within the 12nm limit, then the JNCC's recommendations on this subject should be referred to.

Seeing that sea creatures within the 12nm mile limit would also be affected by sound and particle wave motion effects, surely guidance should also be referred to from the JNCC as appropriate?

"JNCC has also developed [marine mammal mitigation guidelines](#) covering key activities, adherence to which is considered to minimise the risk of committing an injury offence.

When considering potential impacts to marine mammals, a key consideration is whether there might be any impacts from noisy activities, for example piling, explosive use or geophysical surveys. A noise risk assessment is undertaken, which considers how loud the noise could be, at what distance from the activity could marine mammals be injured or disturbed, what could be done to reduce the level of noise and animal exposure and whether impacts could have an effect at the population level.

Typically, noise propagation modelling is undertaken to estimate distances at which hearing damage may occur. Depending on the results, mitigation may be required to ensure no marine mammals are in the vicinity before the activity begins. Regulators review these assessments and consult with country nature conservation bodies (CNCBs) including JNCC before deciding whether to consent the project.

*Consideration should also be given to supporting habitats and processes important to marine mammals including those that relate to the seabed, water column and prey, particularly in protected areas. For example, activities that directly impact the seabed, such as dredging/burial, sweeping and deposits, **could potentially affect a preferred prey species such as sandeel, making them unavailable to marine mammals as a food source**".*

Underwater noise

Why is underwater noise a problem?

Underwater noise from human activities can affect marine species from fish to invertebrates and to marine mammals in a variety of ways, from masking sounds used to communicate and find food, to physical injury and even death.

JNCC

“Marine mammals use sound for a number of biologically important behaviours, including foraging, avoiding predators, breeding, socialising, parental care and travelling. Man-made underwater noise has the potential to hamper or prevent marine mammals from undertaking these key behaviours. For example:

- an animal could stop hunting for food;
- noise could prevent an animal from hearing other important sounds, such as the approach of a predator or communications from mates or their young;
- noise may force animals away from important areas such as key foraging grounds (i.e. cause displacement).
- In addition, some loud sounds may cause physical injury, such as hearing loss or tissue damage, and in some cases may cause death.

Effects may be temporary and be of little consequence to an individual animal or conversely, they could directly impact an individual’s ability to survive or breed, particularly if an animal is subjected to repeated exposures to noise. If many individuals are affected, this could result in population-level impacts (i.e. a reduction in population size).”

The Conservation of Habitats and Species Regulations 2017

“The term European Protected Species (EPS) originates from the Habitats Directive and refers to species listed in Annex IV. For these species, member states are required to implement measures to prevent their capture, killing or disturbance throughout their natural range.

Similar legislation exists for Scottish and Northern Irish inshore waters. EPS whose natural range includes UK waters consist of cetaceans (whales, dolphins and porpoises), marine turtles and Atlantic sturgeon. In UK waters, the latter two are at the limit of their natural range and only occur in low numbers around the UK. UK Regulations make it an offence to kill, injure or disturb marine EPS.

JNCC, Natural England and Natural Resources Wales (formerly the Countryside Council for Wales) provided guidance regarding the protection of cetacean EPS from injury and disturbance. This guidance* provides a useful resource for marine users, regulators, advisers and enforcement authorities when considering whether an offence of deliberate disturbance or injury/killing a cetacean EPS is likely to or has occurred as a result of an activity.”

“Projects that include piling over a prolonged period could constitute disturbance under UK Regulations” (JNCC et al. 2010)

JNCC Guidelines

- *“In areas outside (but also within) the SACs, operations/projects with the potential to result in injury or disturbance can only go ahead if mitigation measures can be employed in order to reduce the risk to individual animals. To reduce the risk of hearing damage in the immediate area around the noise sources, measures such as a ‘soft start’, marine mammal observers enforcing mitigation zones and acoustic deterrent devices are routinely employed. It is more challenging to reduce the risk of disturbance at larger ranges and therefore an activity can only go ahead with a licence under the EPS regulations.*

Licences should only be issued when there are no satisfactory alternatives (alternative methods that would not cause disturbance) and if the activity does not have an effect on a species’ FCS. All projects that could result in disturbance according to the EPS regulations will need to undertake an assessment of the impacts on the species’ FCS from the project alone and in combination with others. If an impact cannot be ruled out, then the project cannot not be licensed as planned. For those licences that are issued, it is incumbent on competent authorities to monitor the effect of these on the population(s) of the species to ensure that there is no detriment to FCS from cumulative effects of the licences.”

Background to the advice on noise management within harbour porpoise SACs in England, Wales and Northern Ireland JNCC Report No. 653

- *“Population consequences models such as DEPONs (Disturbance Effects on the Harbour Porpoise Population in the North Sea) and iPCoD (interim Population Consequences of Disturbance model) can be very useful in helping understand the mechanisms and magnitude of effects of disturbance and to compare different disturbance scenarios and may help, together with other available evidence, inform wider scale population level assessments. For example, work commissioned by NE and JNCC used iPCOD and estimated that the risk to the North Sea harbour porpoise population from English offshore windfarms is low, but outcomes are heavily dependent on a range of assumptions and estimated parameters with considerable associated uncertainty. The use of these models in the context of assessing effects on harbour porpoise SAC site integrity, namely when addressing the CO on avoiding significant disturbance was considered not appropriate. One issue is that the number of animals affected (even if it could be robustly determined) would need to be assessed against a “site population”. However, the variability in numbers within the site at any one time varies given the wide ranging and mobile nature of the species and so there is no such thing as ‘site population’. In addition, as EC Guidance*1 states: ‘The expression ‘integrity of the site’ shows that the focus is here on the specific site. Thus, it is not allowed to destroy a site or part of it on the basis that the conservation status of the habitat types and species it hosts will anyway remain favourable within the European territory of the Member State.’ In this case we are not faced with destruction of a site but with temporary habitat loss, nonetheless the principle is the same - model predictions on the potential effects on the Favourable Conservation Status (FCS) of the species in UK waters, whilst useful context under Environmental Impact Assessment (EIA)/ European Protected Species (EPS) assessments in particular, do not provide the robust evidence that would allow us to conclude no ‘significant disturbance’ of the species within the site. The key here is to devise an approach to assess whether the site is contributing in the ‘best possible way to achieving FCS’. b) Temporary habitat loss The second approach considers that assessments, and consequently management, could be couched in terms of loss of habitat to harbour porpoise within the site. This seemed a more logical approach given that sites are designated for the “habitats of the species”; **EC Guidance on article 6.4. considers that that significant disturbance of a species in a Natura 2000 site could***

be: 1. Any event which contributes to the long-term decline of the population of the species on the site can be regarded as a significant disturbance 2. Any event contributing to the reduction or to the risk of reduction of the range of the species or reduction of the size of the habitat within the site can be regarded as a significant disturbance.”¹¹

- “A habitat-based approach is also part of impulsive noise management in Germany, in addition to the dual legal threshold value for impulsive noise sound level (190dB SPL/160dB SEL at 750m). To limit disturbance, the sound level thresholds were coupled with additional spatial thresholds to ensure there were enough areas unaffected by noise from pile driving available for harbour porpoises. No more than ten per cent of the area of the Economic Exclusive Zone (EEZ) in the German North Sea can fall within the disturbance radiuses. Additionally, within MPAs with porpoise as qualifying feature, no more than 1% of the site is to be located within the disturbance radius during May – August (defined as breeding season)². 3. **Effective Deterrence Range (EDR)** Questions have been raised by stakeholders regarding the use of fixed Effective Deterrent radii in the guidance; this has subsequently led to amendments of the guidance to consider additional EDRs based on available scientific evidence for pin piles, conductor piling, piling using noise abatement and high-resolution geophysical surveys. These EDRs are considered the initial starting point for consideration in any environmental assessments. Case-by-case EDRs may be considered, providing there is robust peer-reviewed evidence on which to do so. Field studies looking at porpoise abundance and behaviour around these activities are needed to validate the EDRs. In German waters, a fixed distance is also advised; the disturbance range is defined as a radius of 8 km around the centre of an offshore wind farm. This distance is deemed equivalent to a sound exposure level of approximately 140 dB re 1µPa²s. The current SNCB advice for England and Northern Ireland favours the use of fixed EDRs based on empirical evidence as opposed to disturbance ranges estimated from noise modelling. The latter carries considerable uncertainty, in particular: there are no agreed quantitative thresholds for disturbance as there are for auditory injury; depending on the choice of numerical models to estimate sound source and propagation one can end up with several orders of magnitude different predictions for disturbance ranges; **received sound levels are not the single most influencing factor in triggering disturbance; other characteristics of sound and how they propagate with distance will influence how an animal perceives the noise; behavioural context, individual animal motivation and previous exposure will also all play a role in determining response.**”

Noise abatement techniques and alternative foundations for wind farms

- “Techniques to abate noise at source and alternative foundations have been raised by stakeholders as a potential management measure to reduce disturbance in the sites. The SNCB approach has been criticised for not incentivising the use of noise mitigation through limits (as per German approach). However, the German sound thresholds (e.g. 160db SEL at 750m) were imposed to address the risk of injury and not disturbance. In the UK this is dealt with via a suite of mitigation measures, such as the use of marine mammal observers and acoustic deterrent devices focussed on minimising the risk of animals occurring in the potential auditory injury zone. In relation to disturbance, there has been no requirement for noise abatement since the **previous rounds of wind farm installation were of a considerably smaller scale than current ones** and there were no sites designated for harbour porpoise. With the increase in scale of current and future offshore wind installation rounds overlapping

¹¹ <https://data.jncc.gov.uk/data/2e60a9a0-4366-4971-9327-2bc409e09784/JNCC-Report-653-FINAL-WEB.pdf>

with a site designated to protect harbour porpoise habitats it has become likely that without alternative methods of installation not all projects can go ahead as planned if these are to meet the SNCBs' area-time thresholds. There is therefore an incentive to implement noise abatement measures/ alternative foundations. These should be considered alongside other options, such as scheduling of piling operations.

- *“In 2013, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) developed a concept for the protection of harbour porpoise in the North Sea. The aim is to protect the habitats of the animals from impact noise by avoiding cumulative effects. The input of sound into the marine environment as well as the effective range can be greatly reduced by the use of technical noise abatement systems. Binding noise protection values apply to impulsive noise emissions from pile driving at a distance of 750 m from the source (binding in BSH approval notices since 2008).*

Noise protection values for ramming. The noise protection value for impact sound in BSH approval notices, which has been binding since 2008, is defined as a dual criterion. At a distance of 750 metres from the pile-driving point, the following limits may not be exceeded:

unweighted broadband single event level (SEL) von 160 dB re 1µPa²s

peak level (L_p,pk) of 190 dB re 1µPa”

[Current peak level of 13.5m diameter pile 240 dB re 1µPa]

- *“Frequency-dependent reduction of the sound emission
Technical noise abatement systems, used individually or in combination, may reduce the sound exposure level (SEL) by more than 20 dB. The reduction in noise emission from pile driving depends on the frequency range. Reduction in higher frequency ranges (kHz range) is particularly important for the protection of harbour porpoise.
Noise reduction is achieved by using various techniques. These include the Big Bubble Curtain, the IHC Noise Mitigation Screen or the Hydro-Sound-Damper.”¹²*
- *“Due to the vicinity of the edge of the site to Kingmere MCZ, mitigation may still be necessary to reduce the underwater noise to 141 dB SEL within the closest proximity array area to the MCZ. Note the attenuations suggested are only intended as indicative targets to be determined with detailed future investigation based on site specific conditions and parameters. The following generic performances of mitigation options being explored are offered as a guide (although other emergent technology and suppliers may also be considered, prior to any commitment to which if any mitigation would be applied):”*
 - IHC Pulse hammer (4-6 dB reduction) • MENCK MNRU hammer (9-11 dB reduction)
 - Double bubble curtain (potential 15 dB reduction) • Double bubble curtain and MENCK MNRU hammer (potential 25 dB reduction)¹³

Not enough mitigation or combination of available to reduce levels to MMO recommendations. Noise modelling should also take into consideration worse case scenario, should mitigation not be efficient enough.

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13 <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000297-6.4.8.3%20Rampion%20%20ES%20Volume%204%20Appendix%208.3%20Underwater%20noise%20study%20for%20sea%20bream%20disturbance.pdf>

Application of guidance in UK waters The guidance is advice from JNCC, NE and DAERA and therefore it applies to UK offshore areas, English and Northern Irish waters (within 12nm).

- 3.1.3 “The ES concludes that No Significant effects will arise from the construction, operation and maintenance, and decommissioning of the Proposed Development, as a consequence of the embedded environmental measures provided in the Commitments Register (Document Reference 7.22). Therefore, with these measures in place a statutory nuisance will not arise as a result of the Proposed Development.”¹⁴

Audible and masked sounds from operation across the water

The cumulative sound effect of up to 90 325m high turbines creating a sonic array system, including low frequencies and infrasound. The array of turbines will create more noise the faster they turn. The coupling effect of these will create a wide affected area of constant noise when they operate. If sited farther out, it would be of less significant effect to users of the sea and people living on the coast as the wind and effects of wave motion would absorb much of it. However, whilst absolute numbers for operating noise are not generally available, the principles of sound propagation are such that if the wind is going towards land, and the noise levels are of a high enough amplitude, then the sea will act as a great carrier wave (hard surface) and benefit that transmission. The idea is similar as to how analogue radio frequencies propagated over long distances, use a longer frequency to ‘piggy back’ the shorter wavelength farther. The higher frequencies above the waves will be attenuated more so than the lower frequencies, but the **infrasound carried this way broadcast over time could literally depress the well being of coastal communities, being so close to the source of that low frequency generation and even severely diminish the enjoyment of the area.**

Sound propagates very efficiently over water, it is both reflected by the sea and refracted by wind shear (wind speed increases with height above sea level). The sound waves would benefit from the masking and carrier wave effect of the sea and tides to send constant low frequency signals across the water towards our communities and visitors, adding to even more Net Loss.

Please consider the affected communities above and below the waterline including potential effects on divers as the infrasound continues underwater.

The Damage Noise at certain frequencies and amplitudes can cause to a diver in the water

Loud noise (above 55 dB) can cause non life threatening issues such as:

- loss of focus
- diminished cognitive abilities
- increased stress levels

Loud noise (above 85 dB) can cause:

- tinnitus
- hearing damage
- hearing loss

¹⁴ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010117/EN010117-000133-5.3%20Rampion%20%20Statutory%20Nuisance%20Statement.pdf>

- increased blood pressure levels
- cardiovascular issues

Loud noise (above 150 dB) can cause:

- eardrum rupture
- pulmonary contusions
- embolisms
- Infrasound or low frequency noise (below 20 hertz) can cause
- blurred vision
- erratic breathing
- joint issues
- nausea
- visual impairment
- inner organ damage
- 7 hertz infrasound (the frequency of the brain and the internal organs) can affect the human central nervous system and cause
- general confusion
- anxiety and panic
- bowel spasms
- nausea and vomiting
- organ rupture
- death (in cases of prolonged exposure)
- Sounds that could kill you on the spot
- sounds above 185 dB
- infrasound especially at 7 Hz

When the volcano on Krakatoa erupted in 1883, the energy created was registered by a survey vessel 40km away from source. The noise level, recorded at 185 dB, burst the eardrums of half the crew onboard the vessel.

The potential negative effects from noise are so severe and varied it might be perceived as an experiment in human behaviour through subduing a stretch of the coastal community by the constant emissions of negatively charged high pressure sound generation for the life of the proposed project.

The opinion is that the noise levels have been underplayed as current levels experienced at similar size sites are recording much higher levels, 240 decibels ½ mile away from the source. This would mean that excessive sound pressure levels would radiate omnidirectionally across the whole of the Sussex Bay, everywhere, with minimum dissipation, in a matter of seconds.

The ES references do not take into account that the 325mtr supported monopile is much larger than previously used, and the mitigation measures such as use of 'double bubble' screens,

reduce some of the compression, maybe by about 20db (when they work).

Gaps in data / more evidence needed

Excessively high spl levels according to current data especially considering how close and big they are.

No underwater sound maps outlining piling propagation data over distance including decay rates

No cumulative mapping of turbines with sound frequencies generated and propagation levels during operation and how these can affect certain aquatic life, not just the protected ones.

Modelling on:

- sound propagation over water as an array, frequencies and amplitudes generated and its potential effect on shore (human) receptors.
- infrasonic issues with fish and inaudible frequencies potentially affecting divers long term.
- ultrasonic issues especially with mammals such as bats.

National Library of Medicine publishing Airborne sound propagation over sea during offshore wind farm piling

Abstract

“Offshore piling for wind farm construction has attracted a lot of attention in recent years due to the extremely high noise emission levels associated with such operations. While underwater noise levels were shown to be harmful for the marine biology, the propagation of airborne piling noise over sea has not been studied in detail before. In this study, detailed numerical calculations have been performed with the Green's Function Parabolic Equation (GFPE) method to estimate noise levels up to a distance of 10 km. Measured noise emission levels during piling of pinpiles for a jacket-foundation wind turbine were assessed and used together with combinations of the sea surface state and idealized vertical sound speed profiles (downwind sound propagation). Effective impedances were found and used to represent non-flat sea surfaces at low-wind sea states 2, 3, and 4. Calculations show that scattering by a rough sea surface, which decreases sound pressure levels, exceeds refractive effects, which increase sound pressure levels under downwind conditions. **This suggests that the presence of wind, even when blowing downwind to potential receivers, is beneficial to increase the attenuation of piling sound over the sea. A fully flat sea surface therefore represents a worst-case scenario.**”

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Turbines would need to be sited much further from the shore (or somewhere with greater wind density, a connection to the National Grid without going through a National park) to have less of an impact, namely respecting the OESA guidelines and a minimum distance to be 20-25 miles offshore, not inshore. Most of our aquatic environment lives inshore in reefs etc.

Local environmentalists and divers have revealed seahorse habitats all along the Sussex coast, from near Beachy Head, to Brighton and also Littlehampton harbour.

15 National Library of Medicine publishing: Airborne sound propagation over sea during offshore wind farm piling, T Van Renterghem, D Botteldooren, L Dekoninck, PMID: 25234870 DOI: 10.1121/1.4861244 Accessed 21/02/24

Proposed piling mitigation such as a 'soft start' doesn't remove all creatures from affected areas. They will not be able to get away in time or find safe refuge from the sonic blasting. We have reports of the compression generated underwater during the construction of Rampion 1, which ensured the relevant divers had to leave their own survey areas many miles away from the noise source quickly due to the intense pressure created during piling.

If Rampion 2 gets permission, we expect to lose a lot of our aquatic diversity through destructive construction measures. There is no proposal for any Net Gain for the environment or biodiversity.

We would like to see the ExA:

Require the applicant to present another, more detailed risk assessment and addendum to the ES adding current noise level data for construction and operation and provide specific mitigation measures rather than ambiguity and reassurances.

1. Specify, completely assess and monitor future safe operating noise levels and to ensure strict adherence to levels such as stated in the Marine Management Organisation's recommendations, namely a maximum of 135dB(A) re 1 μ Pa (inc mitigation) during construction.

For the applicant to evidence capacity to achieve MMO levels.

Reference EN010117-000477-20231106_Rampion_2_MMO_Relevant_Representation (002)_Redacted. Section 4. Page 44.

2. Not take the applicants claims regarding max decibel numbers as offered in the Environmental Statement, (taken from a much smaller piling conducted in 2007), but consider them against current real world data for size turbine/monopile.

Have the applicant evidence reliable mitigation measures to ensure safe levels are achievable prior to the granting of any permissions. Consider higher levels than MMO guidelines to be unsafe for divers.

The sonic blast for a 13.5m monopile (240 dB(A) re 1 μ Pa) will cause unprecedented noise levels over the water and under it and due to a greater extended noise period be potentially much more dangerous to all forms of life. Excessive noise levels would mean that it would not really be safe for divers until after piling has ceased. By way of mitigating construction noise 'most divers wear a hood' (recommended by the applicant's representative on this subject at the Planning Inspectorate hearing). A hood won't be much use if your ears burst. High levels of sound can carry for miles. From a noise pollution perspective an improved solution might be to look at floating technology, so close inshore is this proposal with such a potential to cause severe disturbance.

A pile of 13.5m pile and method of siting could cause much damage to the underwater life and environment and would be a huge detriment to our biodiversity during construction.

3. There should be a project cut off point if noise levels are deemed to be too high to allow construction of this nature so close inshore and so near to sensitive marine receptors, protected species and conservation areas. To refuse consent if suitable methods of mitigation cannot be obtained. Consider the figure of 135dB(A) re 20 μ Pa as the threshold of pain in humans. Evidence shows excessive levels and/or certain frequencies can affect life detrimentally in many ways, in the sea this noise effect can easily carry for tens of miles.

4. Concern that noise levels purported during construction/piling are heavily underplayed.

Measured noise levels (with mitigation) now coming out of other similar size offshore wind farm construction is at levels reaching up to 240dB(A) re 1 µPa during piling.

To model more accurate data on noise levels above and below the waterline, propagation (extrapolation including baseline of 240dB(A) re 1 µPa pile strike), individual turbine and cumulative array (frequency and amplitude) modelling to include wave and wind shear with relation to on shore noise receptors.

5. OWF of this size should ideally be sited much farther out, more than 25 miles from land and ideally the same minimum safe distance away from any Marine Conservation Zones and protected spawning grounds.

An alternative could be Dogger Bank, farther out and of greater wind density than the Sussex Bay, (as agreed by the applicant's representative in the relevant Hearing).

6. This Application does not meet basic standards for sustainability – ecological, social, and economic

- socially it is not beneficial nor any form of net gain to use an already economically depressed community to become host of an industrial power plant
- the mental health degradation of an obstructed horizon of electrical turbines creating a high decibel, low frequency sonic array. The permanent reminder of their presence through red flashing light disturbance at night.
- **degradation of the local area, historic environment, the views from the South Downs National Park**

7. Concern for aquatic life and health during construction. Most aquatic life would be affected, displaced, some will not relocate, many are habitat based. It is a myth that any aquatic life can just leave the affected area, larger mammals of course but not for example the seahorse, which are living at various places along the Sussex Bay. The areas affected by construction noise can run into many miles in size.

Taken from Natural England and JNCC advice on key sensitivities of habitats and Marine Protected Areas in English Waters to offshore wind farm cabling within Proposed Round 4 leasing areas September 2019

“Kingmere MCZ. This MCZ is designated for Black bream (Spondyliosoma cantharus), infralittoral rock and thin mixed sediment, and subtidal chalk. All features have a recover conservation objective. Cabling impacts to this MCZ should be avoided on the basis of impacts to nesting black bream and their breeding habitat which is rock covered in a thin layer of sediment. Impacts to the rock habitat are not able to recover morphologically. The breeding season is currently understood to be April 1st to June/July; during which time there is high sensitivity to smothering and siltation rate changes. Consideration should also be given to avoiding noise impacts out with the MCZ during nesting periods for black bream. It is considered that there is little space in the MCZ to micro-route around these sensitive habitats given existing aggregates licence areas within the sites and the need to also avoid impacts on sensitive chalk habitat.”

Rampion 2 ES Marine Archaeology Chapter 16

Paragraph 5.9.25 “When considering the impact of a proposed development on the significance of a designated heritage asset, the Secretary of State should give great weight to the asset’s conservation. The more important the asset, the greater the weight should be. This is irrespective of whether any potential harm amounts to substantial harm, total loss, or less than substantial harm to its significance.”

The Sussex Bay is a nationally significant heritage asset and its natural conservation should be of the highest importance.

Rampion 2 statutory nuisance statement

1. 3.1 “Noise and vibration 3.1.1 The potential impacts and mitigation for this nuisance have been informed by the noise and vibration impact assessment which is presented in Chapter 21: Noise and vibration, Volume 2 of the ES (Document Reference 6.2.21). 3.1.2 The ES considers the impacts that could lead to potential Significant noise effects arising from: noise emissions from the construction and operation of temporary construction compounds; noise emissions from construction of landfall Transition Joint Bay and trenchless crossings; noise emissions from onshore substation and the existing National Grid Bolney substation extension during construction and operation; and noise emissions from trenched onshore cable routing. 3.1.3 The ES concludes that No Significant effects will arise from the construction, operation and maintenance, and decommissioning of the Proposed Development, as a consequence of the embedded environmental measures provided in the Commitments Register (Document Reference 7.22). Therefore, with these measures in place a statutory nuisance will not arise as a result of the Proposed”

Understanding greater impacts from noise, would the levels from all phases of operation be interpreted as a statutory nuisance?

The lack of due diligence on behalf of the applicant regarding sound and its pollutive potential could yield disastrous results, such as extinction of endangered species, loss of fisheries, ecological collapse, and the loss of the coastal culture that sustains this region.

The area at risk is extremely important by way of archaeological diversity, nationally significant receptors have been identified and are at risk from cabling, trenching, boulder relocation etc.

In respect to the Rule 6 Letter Advice by the ExA to us as Interested Parties,

- *“in making a decision, the relevant Secretary of State “must decide the application in accordance with any relevant NPS” (s104(3)), subject to certain provisos. Essentially, the provisos are that the application must not breach legal or treaty obligations, and that any adverse impact of the Proposed Development would not outweigh its benefits.”*

The European Convention on Landscapes to which the UK is a signatory is important and relevant to the first point the ExA makes.

The ECL emphasizes the protection, management, and planning of landscapes. It specifically recognizes the values and importance of landscapes for cultural, ecological, and recreational purposes.

This ECL relates to the Examination consideration of both the offshore and onshore elements of Rampion 2.

It overlaps many preliminary principal issues identified for this Examination - and is highly relevant to ecological and environment matters discussed today.

We see that as important in the Rampion 2 case-specific Examination also, where relevant UK policy and law essentially **reinforces and interprets the ECL** , namely:

- The Marine Policy Statement (2021);
- The new Levelling up and Regeneration Act (2023), under the strengthened Landscape provisions for protection of national parks; Littlehampton is a deprived community, it relies on tourism for its businesses as a seaside resort town. This construction would likely negatively impact tourism. This projected outcome does not pass the metrics for Sustainable Development)
- Of course the Offshore Energy SEA (OESEA) strategic environment advice effectively interpreting and applying the ECL, as can be seen in OESEA-4 (2022);
- These of course converge on the objectives of sustainable development, where there is a presumption for sustainable development in the UK planning system (not just development) defined as achieving net positive gains across the 3 objectives: environment, social and economic

The Marine Policy Statement, the Regeneration and Levelling up Fund and the OESEA-4 all reinforce and interpret the ECL

Thank you for your time and consideration in this vitally important matter

Chapter 8: Other Significant Local Impacts and Considerations

Pages: 231 - 237

Chapter 8: Other significant local impacts and considerations

8.0 Chapter Summary

8-1 This chapter considers other issues raised in the Principal Areas of Disagreement Statements of statutory consultees and relevant representations more generally that we feel need to be considered and given weight. It highlights three issues, namely:

- the consideration of alternatives
- traffic and transport impacts
- impacts on coastal processes
- additional pressure on designated Nature Reserves and conservation areas

8-2 After cross-referencing the PADS with the PCS Team’s assessment of the situation we conclude that:

i) Considerations of alternatives as the South Downs National Park Authority indicated in its PAD Statement SDA-01 in Table 9.1 below, is by far the most significant aspect overall. It correctly indicates “It is therefore the case that this ‘test’ of the National Policy Statement EN-1 paragraph 5.9.10 has not been met.”

Due to its singular importance, it is subject of a separate PCS written representation to the ExA on the Consideration of Alternatives as in NPS-1 Section 4.4. Alternatives.

ii) In terms of the assessment of within-project alternatives:

- The PCS Team’s concerns are that the Oakendene sub-station was subject to a proper alternatives assessment and indications in Relevant Representations are that it is sub-optimal and was not properly consulted locally.

- West Sussex County Council in its PAD Statement (WSCC-2) states there is a lack of evidence on heritage impacts in the transmission route selection alternatives assessment, i.e., “Evidence that the preference for Option 1d has given sufficient weighting to heritage assets as part of the decision-making process”.

iii) The issues as identified in PAD Statements are relevant as to the avoidance of statutory ecological designations such as Climping Site of Special Scientific Interest (SSSI) and of course the South Downs National Park itself as a designated landscape with high status.

iv) It is clear, that disruption due to construction related impacts extending over a number of years are significant, as the character of the area is transformed and biodiversity is impacted (net loss) as, for example, the Impact of the proposed easement corridor for the cable on proposals for delivering Natural Capital improvements and the ‘Weald to Waves’ wildlife corridor, as indicated in a Relevant Representation. ¹

8.1 Policy Context

8-3 Chapter 2 addressed relevant policy requirements for the EN-1 Section 4.4 Alternatives and the EIA Regulations (2017, updated). The other concerns are covered by NPS-1 generic impacts and other relevant national to local policy.

¹ [Rampion 2 Offshore Wind Farm project overview \(planninginspectorate.gov.uk\)](#) Relevant Representation by the Baird Farming Partnership. And [Home | Weald To Waves](#)

8-4 We feel provisions in the Levelling up and Regeneration Act (2023) are of particular importance.

Comment and Critique of the Application (ES)

Principal Areas of Disagreement (PADS)

Table 8.1 Principal Areas of Disagreement (PAD) Statements			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
ADC	Alternatives	<p>Insufficient evidence of reasonable alternative locations (taking account environmental effects has been given for the temporary construction compound at Climping. Main reasons for the selection of this location next to a residential area and tourist assets have not been given. During the initial route option process and for the additional land included within the DCO limits at the landfall at Climping during route modification, it is not evident that Climping Site of Special Scientific Interest (SSSI) or the strategic housing allocation were considered as part of the route selection process. Instead, Chapter 3 'Alternatives' of the ES states that one of the key reasons justifying the preferred route was that 'statutory ecological designations are largely avoided along the onshore cable route, and none were identified within the onshore cable corridor at this stage'.</p>	<p>DC requires further information on the options appraisal to demonstrate consideration of environmental, social and economic effects have been taken into account in the selection process for the onshore corridor route at landfall and location of Climping Compound</p>
		WSCC Under Assessment of Alternatives	
WSCC-1	Evidence of a robust and transparent site selection process for elements of above ground project infrastructure.	<p>WSCC raises concerns that the site selection process has not been sufficiently demonstrated through the application documentation for the above ground infrastructure and the areas of continuous construction presence.</p>	<p>Provide further evidence (constraints mapping and RAG assessment) that the onshore substation and construction compound locations have been robustly assessed</p>
WSCC-2	Assessment of Alternatives Concern about LACR-01d of the cable route being taken forward as	<p>WSCC has a significant concern about option LACR-01d taken forward by the Applicant. The archaeological sensitivity of this section of the route is exceptionally high</p>	<p>Evidence that the preference for Option 1d has given sufficient weighting to heritage assets as part of the decision-making process.</p>

Table 8.1 Principal Areas of Disagreement (PAD) Statements			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
	part of the Project.		
	SDNPA under Alternatives		
SDA-01	General: Cost and Scope of delivering proposals outside National Park	The consideration of alternatives for the scheme has not sufficiently demonstrated that meeting the need for offshore renewable energy could not be met through a scheme that did not intersect the South Downs National Park (SDNP). It is therefore the case that this 'test' of the National Policy Statement EN-1 paragraph 5.9.10 has not been met.	Further assessment and demonstration of alternatives outside of the National Park needs to be considered and, if sufficiently evidenced direct incursion in to the SDNP was inevitable, a robust package of mitigation and compensation offered and secured through S106 Agreement Under Likelihood of Resolution: Unlikely – this issue was raised in our very earliest pre-application meetings and remains inadequately addressed.
	WSCC Under Traffic and Transport		
WSCC-34	Insufficient justification and supporting information for proposed temporary and permanent access arrangements	Concern about the number of temporary accesses particularly onto rural roads and the A283. In various instances, there are two or more accesses in close vicinity (e.g. A01 and A02, and A40 and A41). There is limited information for the accesses themselves. Whilst some design information can be secured through the DCO process and provided as each phase of works progresses, certainty would be required that the accesses indicated are feasible.	The Applicant should seek to reduce the number of accesses or justify the need and purpose for those accesses shown. Provide sufficient information to support and demonstrate the proposed access arrangements are feasible and can be delivered. Agree the extent of information that is required to support the detailed access designs.
WScC-35	Mitigation included within the Outline Construction Traffic Management Plan (OCTMP) (APP-228)	Locations are identified as requiring access via single track roads. No mitigation or management measures are detailed. For example, it is unclear how access would be managed on Michelgrove Lane (a single-track road) where an open cut trench highway crossing is proposed. The existing wording covering the extent of highway condition surveys within the OCTMP is unclear.	Additional measures would need to be included in the OCTMP to cover these matter
	HDC under their heading Transport		
HDC-72	Insufficient justification and supporting information for proposed temporary	i) WSCC previously questioned need for number temporary accesses particularly onto rural roads and the A283. In various instances, two or more accesses in close vicinity (e.g. A01 and A02, and A40 and A41). ii) Further, limited information for accesses themselves. Whilst some design information can be secured through the DCO process and provided as each phase of works progresses, certainty would be required that the accesses indicated are feasible. For example, concerns the indicated required visibility splays at certain accesses cannot be achieved. In other situations, notably on declassified rural roads, potentially excessive splays are indicated. Speed surveys will be required to inform the	Applicant should seek to reduce number of accesses or justify the need and purpose for those accesses shown. Provide sufficient information to support and demonstrate the proposed access arrangements are feasible and can be delivered. Agree extent of information required to support detailed access designs

Table 8.1 Principal Areas of Disagreement (PAD) Statements			
Number	Principal Issue / Concern	Explanation / concern to be reported in full in WR and LIR	Remedy Measures / What needs to change to overcome disagreement
		access designs at some locations. iii) Road Safety Audits also required for some accesses. Scope for these should be agreed.	
HDC-28	Mitigation included within the Outline Construction Traffic Management Plan (OTCMP)	Locations are identified as requiring access via single track roads. No mitigation or management measures are detailed. iv) Unclear how access would be managed on Michelgrove Lane (a single-track road) where an open cut trench highway crossing is proposed. v) Existing wording covering the extent of highway condition surveys within the OTCMP is unclear.	Additional measures would need to be included in the OTCMP to cover these matters
MMO	Under coastal process ES Chapter 4 and Appendix 6.3	Multiple clarifications and updates are required to ensure correct understanding from the MMO. Please see comments in Section 4.2 of our relevant representative.	The comments should be reviewed and updated, or further justification provided. MMO is hopeful that the Applicant will update the information required for this to be resolved during Examination.
NE	Under Coastal Processes	Sea defences at Climping have failed in recent storms, causing further coastal erosion and flooding. It is imperative that landfall HDD burial depths and cable protection options are adequately interrogated to future proof the asset integrity and minimise the need for future cable protection in the coastal zone.	We advise further consideration needs to be given to this within the assessment. It is possible this could progress with further information/ assessment.

8-6 We concur with the above PADs statements and feel they need to be given weight, as they relate to the three concerns we highlight.

8.2 PCS Team Comment and observations:

Consideration of alternatives

8-7 We are pleased that the consideration of within-project alternatives for the onshore transmission route was mentioned as a Preliminary Principal Issue for this Examination and received attention in the Topic Specific Hearings in Brighton in February 2024. However, we continue to note our concern that the application of the relevant EN-1 Section 4.4 on Alternatives in this Examination has not been mentioned.

8-8 That is also noted by South Downs National Park Authority as a “test of the application of policy”. PCS will make a separate Written Representation on that issue.

8-9 We very much support the Cowfold Written Representation in respect to alternative for the transmission route and substation in particular with the aim also of completely avoiding physical interruption of areas of natural beauty and conservation status and especially South Downs National Park. We feel that is especially important considering the Levelling-up act European Convention on Landscapes as discussed in Chapter 2.

Local communities disruption and traffic and transport impacts

8-10 Again, we very much appreciated discussion during the first hearings in Brighton in Feb

2024 particularly the following which is worth noting:

Andrew Griffith MP for Arundel and Southdowns representing 88,000 residents impacted specifically by the onshore cable route. The main part of the cable route of 40k runs through his constituency From Lyminster to the Bolney sub-station and also now the new sub-station at Cowfold. He notes in his opinion **the wrong project in the wrong place**.

- A project of this magnitude will be of a major impact on communities and wildlife habitats within the unique landscape of the South Downs National Park. Particularly in the construction phase but local disruptions caused by the construction and maintenance will continue to have economic, social, and environmental impacts on rural communities for years to come.
- It is clear, a critical issue is that the project falls far short of standards that should reasonably be expected, and Parish Council concerns have not been considered. Alternative routes that could have had greater support have been dismissed for what appears to be a quicker and less expensive option.
- Noting that the Hearing was taking place in Brighton, the actual impact would in fact be felt within a large area of the South Downs, making the understanding of the project less relevant.
- The consideration of the alternatives is deemed to be a clear policy requirement in the Nationally Important Infrastructure Projects that disrupt designated landscapes, their functions and national protection objectives. He refers to the South Downs National Park and relevant NPS policy.
- The project would have larger support and less environmental and human impact were the project team use the existing cable route for Rampion 1. At no point in the consultation process has a satisfactory explanation been provided to explain the lack of discussion on this point or why it should not be an alternative option to the disruptive DCO plans suggested.
- Throughout the consultation there have been clear failures in communication, and it is worth noting that the project has got so far without considering some of the deficiencies in the consultation and representation. Mr Griffith clearly reiterates what many are feeling that the consultation has not engaged with residents, landowners, and businesses. Part of an informed consultation and informed consent must be based on offering the correct information.
- The disruption to local communities by the suggested project has already put considerable blight on communities and put a deal of pressure on landowners and Parish Councils attaching additional costs for employing professionals to enable them to make their own responses and feedback.
- There has still not been any information available regarding the impact Rampion 2 will have on Traffic Congestion and Road Blockages particularly the A24 and the A272. It would merit an opportunity for the Panel to see the roads themselves to get a better real-life experience of what this could mean to local communities and the disruption over a significant period of time. It must also be noted that Storrington and Cowfold fall within the air quality management areas and the former with vehicle weight restrictions in place. The route therefore having a very significant impact indeed.
- Construction traffic will increase congestion on rural roads, especially as they are not designed to handle heavy construction vehicles.

- Road blockages can hinder local residents' access to essential services and increase travel times.
- The establishment of construction sites and work camps near rural communities can lead to changes in the local landscape, increased noise levels, and disturbances to wildlife habitats.
- Additionally, these temporary facilities may strain local infrastructure and services.
- Reduced Access that leads to the fragmentation of landscapes and restricted access to certain areas for local residents, farmers, and recreational users. This can affect traditional land uses such as farming and outdoor recreation.
- The lack of mitigation to harm environments. It is truly difficult for anyone who has less technical experience or understanding to register the full account of impacts on ecology and the environment given the information provided. What is clear is that vast swathes of precious green land will be carved up and scarred. The grassland and chalk soil disrupted, and the surface disturbed for many many years. Even now there is clear evidence of where the first cable route runs and the soil has simply not recovered to its natural biome. Roads and verges also are still showing damage from the first cable route.
- Loss of amenities should also be considered. Much of which has been available to those who enjoy open green spaces and natural walks alongside natural habitats. The Southdowns National Park Authority have made clear their objections to the plans and this should be given great weight in consideration of the plans and be a stark warning of what the onshore cable route planned will inflict on this precious National Park landscape plus the inadequate mitigation and compensation offered.

8-11 We again support the Cowfold Local Impact Statement, as it clearly sets out these effects on our local communities, including also the concerns raised in PAD Statements.

Impacts on coastal processes

8-12 We support what CPRE Sussex indicates in its written Representation:

- “We are concerned that the proposal to land cabling at Climping Foreshore has been prepared without due regard to the implications of increasing coastal erosion and flooding in this area nor with due regard to the SSSI between Climping Foreshore and the mouth of the river at Littlehampton. Substantial erosion and flooding are commonplace and needs to be accounted for as this may worsen under climate change.
- CPRE Sussex are supportive of the comments of the Sussex Wildlife Trust in respect of Rampion 2 and believe a number of public bodies hold not dissimilar views to our own on various aspects of these proposals.”²

² CPRE Sussex indicated Evidence for comments includes: - Climate Change Committee (2020) The Sixth Carbon Budget - The UK’s path to Net Zero - Climate Change Committee (2020) Policies for the Sixth Carbon Budget and Net Zero - The ES to the proposal itself and various drawings within the proposal - Correspondence with the company (no reply received) and others - The Gunning Principles (set out in 1985 by Mr Stephen Sedley QC) - Concern on coastal erosion and flooding expressed in letters and reports involving the Climate Change Committee and other bodies such as the National Infrastructure Commission.

Additional pressure on designated Nature Reserves and conservation areas

8-13 This is a concern for many residents. We wish this to be considered and given weight when the ExA considers the appropriateness of the onshore cable route.

The affected sites include:

- Clymping (or Climping) Beach is an SSSI, and West beach is a Local Nature Reserve.
- WSCC has designated Littlehampton Golf Course and Atherington Beach as Sites of Nature Conservation Importance.
- The vegetative shingle which is an Internationally Rare Habitat stretches intermittently from East of Littlehampton (e.g. Shoreham) over Littlehampton Beach West Beach Climping Beach and Atherington Beach to Selsey Bill. Machinery is needed on the ground obviously. Disturbance of any kind can be destructive to vegetative shingle beaches.
- Where the Cable run crosses the 259 road, ADC when looking at River Defences 2013 states that area can influence badgers, bats, reptiles, etc.
- In addition, there are other areas potentially affected as referenced in the PAD Statements in Chapter 6, including a RAMSAR site.

This written representation offers due diligence on the selected claims the Applicant has made in statutory consultations and in the Application about the performance, benefits and impacts of the proposed Rampion 2 windfarm development that we believe lack evidence and credibility.

Some significant claims are concerning in several important respects, one of which is the demonstrable “chilling effect”, in a planning context, that we have observed on suppressing the appetite for engagement in the Applicant-led pre-application consultations among many people, as well as to influence whether people registered as interested parties for the Examination to contribute in a meaningful way.

While that chilling effect served to put off many people from objecting who otherwise might have objected, it also shaped the nature of comment and feedback on the proposed design, as well as actual awareness of the likely scale and significance the adverse impacts Rampion 2 would have on residents and communities, the character of the area and nature.

The concerns are both in terms of where we believe the Applicant has significantly inflated or exaggerated the benefits in terms of the performance of the infrastructure and role in the power system given its variable output, and at the same time, understated the adverse impact.

The understatement of adverse impacts is reflected in a number of the Principal Areas of Disagreement (PAD) statements of statutory consultees. There is a Local Impact Report (LIR) mechanism to address adverse impacts. The exaggeration of performance in terms of power and energy and carbon reduction, where most of the benefits derive, is a more problematic issue.

Benefits are largely “assumed” and ride on the fact we all want more renewable and low emission generation. Moreover, the Applicant's claims as regard to national benefit have gone without scrutiny and accepted at face value unchallenged. What the developer claimed is not challenged, and its narrative was free to shape what people's impressions of the Rampion project are today.

Due Diligence is routine on a £-3-4 billion infrastructure investment. It typically covers all aspects of the benefits and risks for investors. The same principle applies to local communities who would essentially be required to host the Rampion 2 project, if consented, and ultimately pay for the development costs through local electricity bills and taxes, including the investor's commercial rate of return, the cost of investor incentives and public risk guarantees and the CfD subsidy.

We otherwise feel the representation helps inform the key judgment the ExA will make on whether the “adverse impacts of Rampion 2 outweigh its national benefits”.



**Local Community Due Diligence
On the Applicant Claims about the Performance,
Benefits and Adverse Impacts of Rampion 2**

**Written Representation to the Rampion 2 Examination Authority (ExA)
On the Development Consent Order (DCO) Application**

**Submitted by Protect Coastal Sussex (PCS) in affiliation with community groups and civil
society organisations on the Sussex Coast and project affected inland areas**

**PCS: IP Registration Number: 20044835
Submission Date: 28 Feb 2024**

Submitted By:

The Secretary
Protect Coastal Sussex
Member of the Rampion 2 Community Project Liaison Group

On behalf of PCS Co-Chairs

Chris Lee, Aldwick
Melanie Jones, Middleton on Sea
Lawrence Haas, Littlehampton
Meera Smethurst, Cowfold

Preface

This Representation offers due diligence and perspective to help the Examination Authority (ExA) and Interested Parties (IPs) consider the Rampion 2 Application.

Due Diligence is routine on a £-3-4 billion infrastructure investment. It typically covers all aspects of the benefits and risks for investors. The same principle applies to local communities who would essentially be required to host the Rampion 2 project, if consented, and ultimately pay for the development costs through local electricity bills and taxes, including the investor's commercial rate of return, the cost of investor incentives and public risk guarantees and the CfD subsidy.¹

We view this as important and relevant in the Rampion 2 case, especially considering how Rampion 2 proceeded through a pre-Application process that was so challenging for everyone, not the least including Covid-19 restrictions on meetings and social interactions.

The purpose and relevance of this written representation is thus threefold.

1. To highlight what many see as the Applicant's claims about performance, benefits and adverse impacts of Rampion 2 infrastructure that we believe lack credibility, and thus mislead and misinform stakeholders;
2. To highlight how that contributed to what we witnessed as a "chilling effect" in the planning context. That is where residents, groups and organisations ended up less informed about the actual project being assured that it is a simple extension to an existing installation. As one consequence many were disinclined to object, or to even participate in the DCO process; and
3. To otherwise help inform the key judgment the ExA will make on whether the "adverse impacts of Rampion 2 outweigh its national benefits".

This is one of three Written Representations that Protect Coastal Sussex (PCS) offers the ExA and all stakeholders to help in the complex task of weighing and balancing the benefit-risk tradeoffs of the Rampion 2 Application.

We sincerely hope the Examination Authority can take into account the facts and perspective offered herein to inform its recommendations to the Secretary of State.

¹ Contract for Differences (CfD) subsidy that replaced the Renewable Obligation Subsidy for commercial offshore wind developers in 2017. The upward limit of the CfD was raised by the UK Government by 66% in Sept 2023.

Summary

This written representation offers a due diligence on claims the Applicant has made in statutory consultations and in the Application about the performance, benefits and impacts of the proposed Rampion 2 windfarm development that we believe lack evidence and credibility.

Some significant claims are concerning in several important respects, one of which is the demonstrable “chilling effect”, in a planning context, that we have observe on the appetite for engagement in the Applicant-led pre-application consultations, as well as to influence whether people registered as interested parties for the Examination to contribute in a meaningful way.

While that chilling effect served to put off many people from objecting who otherwise might have objected, it also shaped the nature of comment and feedback on the proposed design, as well as actual awareness of the likely scale and significance the adverse impacts Rampion 2 would have on residents and communities, the character of the area and nature.

The concerns are both in terms of where we believe the Applicant has significantly inflated or exaggerated the benefits in terms of the performance of the infrastructure and role in the power system given its variable output, and at the same time, understated the adverse impact.

The understatement of adverse impacts is reflected in a number of the Principal Areas of Disagreement (PAD) statements of statutory consultees. There is a Local Impact Report (LIR) mechanism to address adverse impacts. The exaggeration of performance in terms of power and energy and carbon reduction, where most of the benefits derive, is a more problematic issue.

Benefits are largely “assumed” and ride on the fact we all want more renewable and low emission generation. Moreover, the Applicants claims as regard to national benefit have gone without scrutiny and accepted at face value unchallenged.² What the developer claimed is not challenged, and its narrative was free to shape what people’s impressions of the Rampion project are today.

On the inflation of benefits of Rampion 2:

Up to the time of the Application, the applicant was indicating the power benefits were that Rampion 2 would supply the power requirements of Sussex, across all sectors. This claim was made in project community liaison group (PLG) meetings consisting of town and parish council representatives and undoubtedly also in the remote online briefings to Councils and other statutory consultees.

When in reality, at times there would be no output or very low power at all, while at other times there would be full capacity supply.

² There was no opportunity to really challenge or refute the claims made about the likely national benefits in the pre-application consultations being Applicant-led, where authorities at all levels remained silent for various reasons including the need for impartiality. Questions raised in that regard were ignored by the Applicant. Reality also is very few people in the statutory consultant groups or the ExA have technical expertise or experience to enable them to scrutinize the benefit claim areas such as power system benefits, or impacts on power system price or actual effects in respect to reliable and secure power supply and the inherent intermittency of Rampion output.

When the Application was filed the benefit claim changed in the Applicant's Press Release to "*Rampion and Rampion 2 combined will be able to power the equivalent of all of the homes in Sussex twice over*". Which would also be nice, if true; but of course at times no or little output is available, whereas at time more power.³ We present information on that aspect in the main part of this Representation and in the Annexes.

There were also claims about that number of households supplied, cited in the promotion literature and on the Applicant's website that are based on national figures for average annual household electricity use, not figures where West Sussex annual household demand is 33% higher than the national average. Thus the million households served would be 30% lower. Due diligence would also question whether the Applicant has taken into account the increase in electricity needed per household due to mandated electrification space heating (electric heat pumps) and the charging of electric vehicles (EVs). Either nationally or in West Sussex.

A far more significant aspect is the Applicant claims Rampion 2 will reduce UK carbon emissions by around 1.8 million tonnes/yr implying over its economic life. Rampion 2 will operate 2030-2050 or so, then be decommissioned or replaced after a 20-25 years of economic life. Though in fact, using standard methodologies the carbon benefit from Rampion 2 would only be for 5 years, 2030 to - 2035, if consented.

That is because the UK power sector is to be fully decarbonised by 2035 (NPS). There will only be low emission generation supplying the national grid from 2035 on. That will include renewables and NetZero read gas-fired power stations with full carbon capture⁴(and hydrogen ready) and nuclear such as small modular SMRs in the mix).

Rampion 2 will not displace carbon after 2035. In those terms, Rampion 2 will only compete with other low emission generation sources on a price and power system impact basis – i.e. what may be needed to keep the lights on, the grid system from collapsing and at what cost to society and the environment. It is not a nuanced point. Rampion 2 will simply be part of a complementary low-emission generation mix.

As to the claims about CO2 reduction over its life, due diligence would suggest that, as Rampion 2 only offers 5 years of carbon emission reduction benefit (2030 to 2035), the calculation of all the imbedded CO2 in Rampion 2 in the mining, processing, smelting, manufacture, construction, operation and maintenance would be helpful. That would help understand if greater or less CO2 emissions is imbedded than the 5 years savings (10 million tonnes at the assumed 2 million tonnes CO2 a year to 2035 (i.e., considering the quantum of rare earth and critical minerals mined and steel and concrete involved in turbines and the offshore and onshore works).

That is important again in due diligence on the Applicant's claim that Rampion 2 is essential to save nature and ecosystems by reducing carbon emissions, as in its promotional literature. There is a trade-off against the disruption and harm to ecosystems that construction and operation entails, where all adverse ecological impacts, marine and terrestrial, certainly cannot be mitigated as accepted in the NPS and PAD Statements.

³ Load duration curves show 15% of the time equivalent on average to 1 day a week there is no power from Rampion 1. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% its installed capacity. Rampion 2 located in the same wind regime will perform similarly though slightly better due to its larger size.

⁴ Also called an abated gas-fired power station. Abated meaning no carbon emissions for gas turbines as a point source similar to the NetZero 750 MW Teesside power station just consented in Feb 2024. Hydrogen ready gas turbines as may be wanted and we are readily accommodated as gas-turbines are multi-fuel.

PCS argues in our companion Local Impact Assessment (LIA) with evidence that Rampion 2 in fact will leave fragile inshore marine ecosystems on the South Coast that are already under multiple pressures even less resilient and susceptible to long term climate change.

The evidence as seen in load duration curves and capacity factors of Rampion 1 since commissioning in 2017 which show that the Sussex Bay inshore is a lower wind regime relatively, and that wind turbines here are less efficient in power output with longer periods of little or no output.

What that means as regards to Energy Security and energy self reliance, is Rampion 2 would need more back up to keep the lights on to avoid grid collapse. Thus for the foreseeable future and well beyond 2035 this will lead to relatively more imported energy to back Rampion 2 than for turbines in a more favourable wind regime: whether that back up is through more price-volatile liquefied natural gas (LNG) imports from Qatar or the USA, or more imports via undersea cables from the continent.

In either case, that has adverse energy security and energy self-reliance effects leaving the UK more reliant on the behaviour of other states and volatile European and international energy markets. It increases the opportunity cost of consenting Rampion 2 that cascades down to place upward pressure on local household energy bills.

Again the concern is the chilling effect in a planning context, to the extent those claims made in all the Applicant's marketing material and the local media repetition of the Applicant's messaging had on suppressing feedback and essential and informed critique of the Rampion 2 proposal.

On Understating of Adverse Impacts

Detailed concerns about the scale and significance likely social, environmental and economic impacts and the efficacy of the mitigation measure will be addressed in the statutory LIRs and in community written representations such as the PCS LIA. We appreciate that the ExA is very much attuned to those concerns as seen in the first hearings in Brighton in Feb 2024.

There are also some big narrative-setting claims relating to adverse impacts that lack credibility, which again speak to the chilling effect in the planning context. These included what we see is misrepresentation of the scale of the potential impacts on residents and local communities, and how the Applicant responded to consultation comments that serve to limit awareness and the prevalence of objections.

To illustrate the Applicant was to offer a "worst case" scenario for statutory consultation using what is called the Rochdale Envelope as set out in the Planning Act (2008) and NPS.

The Preliminary Environment Impact Report (PEIR, 2021) offered two 'worst-case' scenarios for stakeholders to consider: either 75 large turbines each 325m high or 116 turbines each 210m high. The Applicant announced its commercial preference after consultation was to have up to 90 turbines up to 325m tall - 20% over the worst-case of 75 larger turbines consulted on. Yet that was promoted by the Applicant and in media as reduction from 119 turbines to 90 turbines.

We believe that the jump from 75 to 90 turbines at 325m is well outside the flexibility allowed for use of the Rochdale Envelope, which is NPS and Planning Act relevant. This fact was also picked up in the Planning Inspectorate (PINs) Section 51 Advice Note to Applicant issued at the same time the Rampion 2 was accepted for Examination in early Sept 2023 as seen on the PINs website.⁵

⁵ PCS details those concerns in the companion representation on the local impact assessment in chapter 1.

Much was also made by the Applicant of the reduction in sea area to be covered by Rampion 2, claiming that was a response to consultations.

In the case of Rampion 2, these areas have come out at 315km sq, 270Km sq and 160 m sq respectively. Is a normal narrowing process to be expected and has little or nothing to do with listening to consultations. In fact, the existing Rampion 1 wind farm followed the same process where the “scoping “area of 167km sq, was reduced to 122 km sq (PEIR) and then to 72km sq at the DCO stage. That same is true for all windfarms.

We do appreciate that the Applicant accommodated some of Natural England's (NE) concerns about providing a gap between the existing arrays and Rampion 2 due to the considerable size differences and other shipping and recreational boating access reasons. And the slight reduction in the westward expansion of the Rampion 2 arrays along the Sussex Bay past Bognor Regis.

However, the application was not dramatically reduced in scale, or almost halved, as claimed in the Applicant’s marketing campaign and repeated in local media.

On conforming to policy, law and guidelines

A further overall concern raised constantly by residents and statutory consultees was the fact that the Applicant argued repeatedly in statutory consultations and continued in its Environment Statement (ES) that the UK Offshore Energy SEA visual buffers did not apply to Rampion 2.

PCS also addressed that in the companion LIA submission where we show it is abundantly clear that the European Convention on Landscapes (ECL), the OESEA visual buffer advice, the Marine Policy Statement (MPS, 2021) and the new Levelling-up and Regeneration Act (2023) all come to play in the consideration of Rampion 2. They reinforce the connection between landscapes and seascapes as indivisible and being afforded equal protection.

Which the Applicant categorically and emphatically does not recognise.

Specifically, in terms of interpretation of any breach of legal commitments in the Rampion 2 case, the Government’s own Offshore Energy SEA programme in its latest OESEA-4 (2022) states that its very objective is, *“To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/ landscape including designated and non-designated areas.”*

It was frustrating to many residents expressing serious concerns in this regard that the Applicant dismissed these outright with slogans such as, “beauty is in the eye of the beholder”. That was throughout the pre-application consultations. We believe it served to reduce scrutiny and objections and was repeated in print and social media.

Summary due Diligence Conclusions

This due diligence is from the perspective of community organisations that have proactively and in good faith engaged in the Rampion 2 DCO process from early 2021. It is what we witnessed and experienced and have taken the time to put on paper on various occasions.

Overall we feel the chilling effect in a planning context had a material impact on reducing meaningful feedback during the application consultation and it limited actual and effective stakeholder participation in the Examination itself to a measurable degree from speaking to others in or Community and Councillors – essentially why bother, if its is just a simple extension to the existing installation as claimed.

It is also important to recognise that many residents remain unaware of the scale of the proposed development or the likely significance of the impacts, or the project development costs (£ 3-4 billion) or the environmental and economic opportunity costs both in terms of the national economy, which we believe are considerable and quantifiable, or the cascading effects that will have including upward pressure on household electricity bills for a long time.

There is also total confusion, misinformation and we sense obfuscation over the legal status of the proposed Rampion design in respect to the European Convention on Landscapes (ECL) and the application of the government's own strategic environmental advice on locating such large turbines that impact designated landscapes.

We hope the Examination Authority and Interested Parties can take these factors into account alongside other considerations.

Table 1 that follows identifies the issues and evidence we offer with evidence in the Main Representation in support of this due diligence.

Table 1: Due Diligence topics addressed with evidence in the main Representation and Annexes

PART 1: THE CONTEXT, CHILLING EFFECT AND CONSEQUENCES OF MISDIRECTION

PART 2: THE INFLATION OF THE BENEFITS OF RAMPION 2

- 1) Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex across all sectors.
- 2) Rampion and Rampion 2 combined will be able to power the equivalent of all of the homes in Sussex twice over.
- 3) Rampion 2 will power a million households.
- 4) The south coast of England is a high wind area for energy generation.
- 5) Rampion 2 will drive down the cost of energy.
- 6) Rampion 2 is even more critical than before and to save 2million tonnes CO2 /yr.

PART 3: THE UNDERSTATEMENT OF RAMPION 2 ADVERSE IMPACTS

- 1) Rampion 2 was reduced almost half in size and area as a result of consultations.
- 2) Rampion 2 respects the Rochdale envelope in consulting on the worst case.
- 3) There is no evidence (anywhere) that windfarms impact tourism.
- 4) Beauty is in the eye of the beholder.

PART 4: THE UNDERSTATEMENT OF RAMPION 2 ADVERSE IMPACTS

- 1) The UK Government's OSEEA Strategic Environmental advice on visual buffers for locating offshore wind turbines does not apply to Rampion 2.
- 2) Rampion 2 design complies with all relevant Government policy and standards.

Main Representation

Many people in our communities believe that Rampion 2 turbines are simply in the wrong location for infrastructure of this scale and nature.

Community organisations constructively engaging with this DCO process in good faith stated so in many consultation responses as did others in relevant representations to the Examining Authority (ExA) at the pre-Examination stage.

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This main part of the Written Representation with evidence is in 4 Parts:

- Part 1. The context, chilling effect and consequences of misdirection
- Part 2. The inflation of the benefits of Rampion 2
- Part 3. The understatement of the adverse impacts of Rampion 2
- Part 4. The assertions that relevant policy and guidelines do not apply to Rampion 2
- Part 5. Due Diligence conclusions

Annex 2 indicates how we feel relevant NPS policy may be interpreted . Other Annexes offer evidence for our observations and views on the Applicants claims and assertions the we believe lack credibility and serve to mislead the public and stakeholders.

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PART 1: THE CONTEXT, CHILLING EFFECT AND CONSEQUENCES OF MISDIRECTION

Among the concerns about the Rampion 2 Application overstating benefits while understating adverse impacts, unchallenged, is the “chilling effect” in a planning context.

This includes the effect on many residents and organisations as regard to influencing their appetite to constructively engage in the DCO process as it was envisaged in legislation and in the Planning Inspectorate (PINs) Advice Notes, where many decided to simply walk away and let it happen. ^[1]

“Effective pre-application consultation will lead to applications which are better developed and better understood by the public, and in which the important issues have been articulated and considered as far as possible in advance of submission of the application to the Secretary of State”. (MHCLG, 2015)

Chilling Effect as a Planning Concern

The chilling effect is a valid concern in the planning process if it is demonstrated, as is seen in other DCO windfarm applications and legal challenges such as the judicial review (JR) of the East Anglia ONE North and East Anglia TWO offshore wind farms in 2022. ^[2]

Our experience as community organisations on the ground was that effect was present and not only severed to limit public understanding of the Rampion 2 proposal and the likely scale and significance of its local impacts, but also in limiting essential local engagement within the DCO process.

That extends to limiting interested party engagement in the Examination for fear of “**reputation risk**”, especially among environmental organisations as can be documented separately.

What we witnessed was that residents, groups and organisation due to the nature of the Applicant-led consultations and of course the fact the main statutory consultation were conducted virtually and digitally when social interactions were limited, many if not most people ended up less informed about the actual project.

They were assured by the Applicants direct marketing and repeated in local media that Rampion 2 was a simple extension to the existing installation. As a result many people were disinclined to object, or even participate in the DCO process in the constructive ways they might otherwise have considered and contributed.

- To our knowledge there was no due diligence by authorities on the Applicant's assumption about the project benefits during the pre-application and the formal consultation windows, apart from the PINs role in the Scoping Opinion in terms of what considerations were scoped in or scoped out.
- There was clear conflation of general support for renewable energy with assumed public support for the Rampion 2 scheme by the Applicant, as we elaborate in the companion PCS WR Local Impact Assessment (LIA) in the Appendix on public surveys.
- In conversations locally in our communities, many people also felt it was either a case of too much information to take in and process, or it prompted thinking that to simplify matters - if Rampion 2 reduces our electricity bills as the developer claims, plus it is so beneficial for the environment and does no harm otherwise, as we are told – then why object to the proposal or even bother to engage in this DCO process.
- Hence, we argue that explicit due diligence on the significant claims made by the Applicant unchallenged that lack evidence and credibility, and that we believe unduly shaped views is important and NPS policy relevant.

- It is also in the interest of fairness.

Thus we argue those more significant factors need to be identified so they can be taken into account when making key Examination calculations on whether the adverse impacts of the Rampion 2 proposal would outweigh the benefits, as required in case-specific DCO Examinations.

Here we also set aside the fundamental concern that Rampion 2 is likely in breach of the European Convention on Landscapes and aligned UK policy and law, as we see interpreted correctly by OESEA-4 where its strategic environmental advice on visual buffers that advise turbines the size and scale the Rampion 2 Applicant proposes need to be 25 miles (40km) from designated landscapes and sensitive visual receptors.

^[1] The chilling effect in the context of the UK's Development Consent Order (DCO) planning process for offshore wind developments refers to the dampening effect on community engagement and participation caused by perceived or actual difficulties in the planning and approval process. When communities feel that their input is not being valued or that the process is too complex and burdensome, or feel developers are not transparent or acting in good faith they may become less willing to actively engage in the planning process. This can lead to a lack of trust between developers and communities, as well as decreased willingness to cooperate and negotiate and participate. That perhaps applies more to the offshore component and coastal communities. For affected inland communities it may relate to compulsory acquisition of land or rights. Chilling effect also applies to potential investors.

^[2] Chilling effect in the planning process was entertained but not upheld due to insufficient evidence in the High Court Judicial Review of the East Anglia ONE North and East Anglia TWO offshore wind farms in 2022. We believe the Rampion 2 case offers sufficient evidence, but only ask the ExA to take that into account with appropriate weight.

<https://www.landmarkchambers.co.uk/wp-content/uploads/2022/12/3177.pdf>

PART 2: THE INFLATION OF THE BENEFITS OF RAMPION 2

We highlight selected issues concerning from the perspective of community organisations.

- 1) Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex across all sectors.
- 2) Rampion and Rampion 2 combined will be able to power the equivalent of all of the homes in Sussex twice over
- 3) Rampion 2 will power a million households
- 4) The south coast of England is a high wind area for energy generation
- 5) Rampion 2 will drive down the cost of energy.
- 6) Rampion 2 is even more critical than before and to save 2million tones CO2 /yr

Annex 1 which is a PCS Press release offers supporting technical material and figures.

1. Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex – across all sectors.

This claim was made during pre-application consultations to Project Liaison Group (PLG) meetings comprised of Parish and Town council representative, and presumably also to all statutory consultees including Councils in video presentations on-line 2022-2023.⁶

Applicant's assumptions and claims were:

- The Applicants representatives claimed they "were not quoting the figure", but nevertheless stated clearly that early information was that Rampion 1 and 2 combined will generate sufficient electricity to power the entire needs of the whole of Sussex.
- As it was stated as, "So that is domestic, transport, industry, business, commerce, offices and so on, hospitals - all the electricity needs for the whole of Sussex, East Sussex, West Sussex, Brighton and Hove combine".
- "Plus offsetting nearly 2 million tonnes of co2 annually, plus promoting all those jobs and apprenticeships locally."
- And "Rampion 2 will supply million or more homes on top of what Rampion 1 already provides. "

Our observations and views are:

- Clearly if that were the full picture as some openly accept - who would object? Unfortunately we see it was disingenuous to trail to Parish and Town Councillors in an obvious attempt to get them on side.
- The inherent variability output of wind turbines would preclude that ever happening as seen in the generation of Rampion 1 since its commissioning in 2017 and in the load duration curve (annex 1).
- To illustrate we start with the monthly offshore windpower output for all UK offshore windfarms combined from The Crown Estates website (about 13.7 GW installed capacity in 2022). The variability of this output is seen in figures 1 and 2 below. Crown Estates also shows the output of every offshore wind farm update every 30 minutes or so.

⁶ As recorded on audio.

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

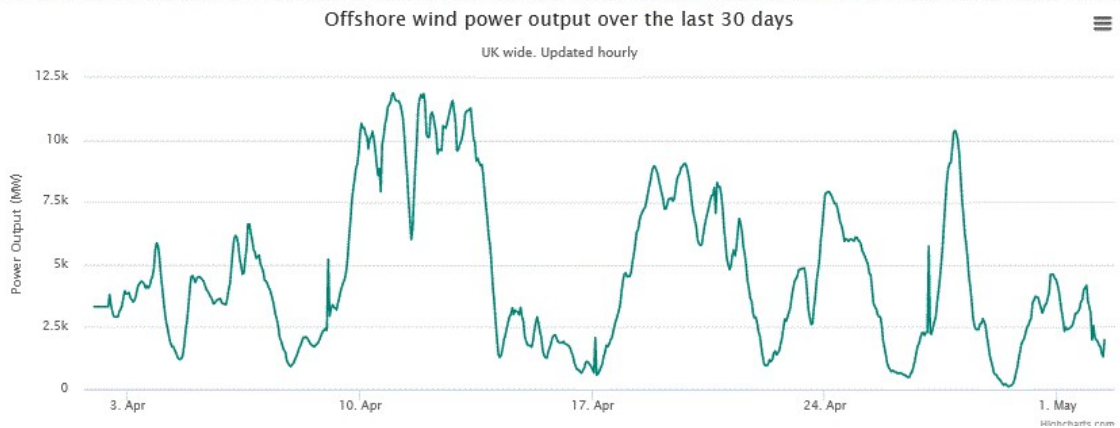


Figure 1: April 2023 Offshore Wind

- Figure 2 below from The Crown Estate website shows actual offshore wind output across the UK for 30 days to 7 Sept 2023. The low and variable combined output from all offshore wind turbines, in this period, can be compared to total nominal installed capacity of UK offshore wind, presently around 13,700 MW.⁷

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

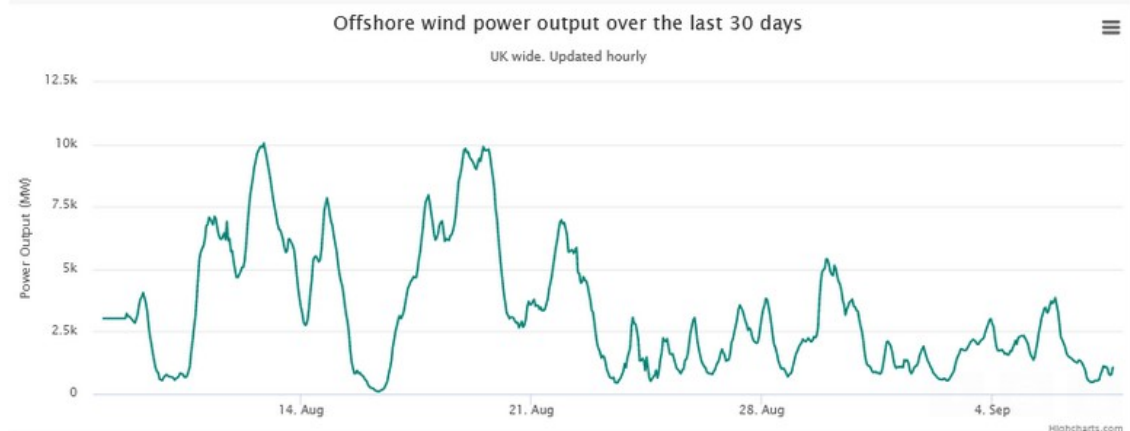


Figure 2: Past 30 days of total UK offshore wind output (combined) to 7 Sept 2023 (source: The Crown Estates website on rolling 30-day output)

⁷ Left scale in Figure 1 thus mostly under 1,000 MW - 2,500 MW output available since 22 Aug 2023.

- Annex 1 shows additional months in 2022. Clearly Rampion 1 and 2 output will vary considerably daily, seasonally and year-to-year.
- More specifically, the load duration curve for Rampion 1 in Annex 1 indicates clearly that since it was commissioned in 2017 Rampion 1:
 - Produced no output at all for 15% of the time.
 - 60 % of the time power output was 40% or less of installed capacity; or conversely, Rampion produced above 40% of installed capacity 40% of the time.
 - Rampion 2 located in the same wind regime will perform in a similar pattern though slightly better due to its larger size.
- What does this actually mean?
 - It means that 15% of the time, equivalent on average to 1 day a week, there is no power output. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% its installed capacity.
 - That is on average. The actual period of no output or very low output from windfarms on the lasts for several days at a time, as we have all seen in recent years (verifiable by a combination of load curves and the Crown Estates Website reporting of offshore wind output and data sets for generation updated).
- As to the claim about supplying all of Sussex power, we assume that means the equivalent to all of Sussex power needs on an average annual basis without accounting for variability, as may be estimated in 2030.
 - That is when Rampion, if consented, would start producing power. Will it cover all Sussex power needs in 2035 or in 2050?
 - And does it account for the increase in power demand expected to at least double on the National Grid sometime between 2035 and 2050 due to the electrification of the transport and heating sectors, even accounting for efficiency improvements and demand-side measures.
 - A simple spreadsheet model in Annex 2 would suggest not.
- As for Apprentices jobs creation, the Applicant' s existing Rampion 1 company announced recently that since Rampion 1 was commissioned it has taken on 13 apprentices, which is small relative to multi- billion pound investments.

Due Diligence and Evidence Suggests:

- The ability of Rampion 1 and 2 to provide for all the power needs of Sussex, as implied, is both exaggerated and misleading based on averages.
- That claim does not account for the essential variability of wind output which is lower and less steady on the south coast than elsewhere (load duration curve in Annex 1) .
- It does not hold up over time over the 20-25 years of the estimated life of Rampion 2 by any stretch of imagination (in our view) and it appears not to account for mandated electrification.
- Rampion 1 and 2 would simply form part of the low-emission supply mix for Sussex and certainly from 2035 when all supply on the Nation Grid is from low emission generation must be reliable and represent value for money.

2. Rampion and Rampion 2 combined will be able to power the equivalent of all of the homes in Sussex twice over

That pre-application benefit claim changed in the Applicant's Press Release when Rampion 2 was accepted for Examination from implying Rampion 1 and 2 combined would provide all the power needs of Sussex, to enough generation to power all households in Sussex – twice over.

Applicant's assumptions new claims:

- Rampion 1 and 2 combined would provide, "the equivalent of enough to power all households in Sussex – twice over".
- Rampion 2 alone power "the equivalent of over one million homes", and
- Rampion 2 would reduce carbon emissions by around 1.8 million tonnes annually.

Our observations and views on the first part are:

- Again, the Applicant's claim remains wholly misleading without acknowledging the intermittency and variability of power output of Rampion 1 and 2 combine, which is case and setting specific.
- There is no mention again the actual power output from Rampion 2, or from Rampion 1 and 2 combined would vary from little to no output at all for days at time, or long periods low output, as noted above in our observations in Claim 1.
- Thus the combined output from Rampion 1 and 2 would range from enough power for no household, 15% of the time, to running at full capacity to likely more than twice the residential needs – on an average annual basis initially in 2030.⁸
- Most of the time it will be far less. Then it is necessary to factor in population growth and consequent demand growth through 2035 and 2050 as noted, which means the claims about meeting twice the household needs quickly fall away.
- The simple spreadsheet in annex 2 confirms this is the likely scenario.

Due Diligence Evidence Suggests:

- The ability of Rampion 1 and 2 to provide for all the power needs of households in Sussex – twice over, as implied, is exaggerated and misleading based on averages.
- Again it does not account for the essential variability of wind output which is lower and less steady on the south coast than elsewhere.
- It does not hold up over time over the 20-25 years of the estimated life of Rampion 2 and it appears not to account for mandated electrification.

3. Rampion 2 will supply a million households

⁸ Initially at times there would be surplus generation to which the grid would necessarily accommodate and there would be constraint payments to reduce outputs. How many years that would at least require transmission load flow analysis.

This is the standard problem of averages, in this case using national average statistics for household electricity demand (kwh/yr) on the one hand, where some regions of the UK have lower household energy use on average; then on the other hand stating to stakeholders in Sussex that what Rampion 1 and Rampion 2 will do for you where use is much higher.

Applicant’s assumptions and claims are:

- As in all the Applicants promotional materials and on its website. “Rampion 2 could create clean, green electricity to power the equivalent of over 1 million UK homes each year!”
- “The average annual domestic household electricity consumption in the UK was 3,618 kWh in 2018 (Source: UK Government, BEIS, Dec 2019).
- With a maximum planned capacity of 1200 MW of electricity, Rampion 2 could meet the electricity needs of 1m+ homes equivalent each year. This estimate is based on UK Government data and a methodology that is standard used for offshore wind farms.”

Our observations and views are:

- The Applicant cannot play it both ways. The Applicant speaks to benefits to Sussex residents and communities in its household number claims.
- As in Annex 3 and in the table below household electricity use in 2020 the South East was 4327 kwh/yr per household on average. That is roughly 20% below the figure the Applicant applied to make that 1 million home claim.
- By 2030 equivalent when Rampion 2 starts producing power, it would be closer to an equivalent of 700,000 households also assuming an increase of 20% increase in average annual household use in the South East due to some market penetration of EVs and heat pumps. By 2035 that may drop further as indicated.
- By 2050 when Rampion 1 will be decommissioned and Rampion 2 will be at or near the end of its life for the sake of numbers it would drop below 500,000.

These are summarised in the table below.

	Millions of Households (on an average annual basis ignoring variable supply from Rampion 1+2 from 0 to 100 capacity)	
In 2020		
National Average	3618	1,000,000
South East	4327	836,145
By 2030 - South East Assuming 20 % Increase over 2020	5192.4	696,788
By 2035 - South East Assuming 20 % Increase 2030 With Penetration of EV charging and Heat pumps	6230.88	580,656
By 2050 - South East Assuming doubling from 2020	8654	418,073

Due diligence suggests:

- The Applicants claims that imply Rampion 2 would sufficient power for a million homes are averages and inflated and somewhat misleading again ignoring it depends on the weather, season and varies year to year
- Whether that number matters or not it adds to the chilling effect as is described in Part 1 of this representation.

4. The south coast of England is a high wind area for electricity generation

The claim that Rampion 2 is a high wind area is Rampion 2 is important in many respects note the least are the economic and environmental opportunity costs.

Applicant's assumptions and claims are:

- The south east is a high wind area.
- The Applicants in media and press releases claim the proof is that Rampion 1 is breaking and surpassing all targets and records for output. For example, "Rampion blows wind power target out of the water."⁹
- "As we go into our seventh year of operation, we are proud to have beaten our target, and to offer a new, one-year Operations Engineer Internship position, which is currently advertised to start in August this year."

Our observations and views are:

- The published wind energy density maps for all UK coastal areas and offshore and the load duration curves for operation of Rampion 1 since 2017 and other windfarms in more favourable wind regimes are clear.
- The wind regime here has significantly less power density than wind regimes over other UK waters (watts / per square meter), despite the rhetoric. That leads to higher opportunity costs that inflate average system costs and work their way into higher power bills, which is not in the local, regional or societal interest.
- And the fact remains weather patterns vary significantly year-to-year as recently pronounced by the Royal Academy of Science.
- We see that in Annex 1, looking at the relative performance of turbines on the south coast as compared to moving the same turbines offshore to the North Sea (also Figure 3, below). That is a graph of load duration curves for offshore windfarms showing the percent of time (on the horizontal axis) turbines produce at different power outputs (and capacity factor or load factor, on the vertical axis) as a percent of installed capacity.
- That graphical data tells us:
 - 15% of the time the existing Rampion windfarm turbines produce no output at all.
 - That compares with 7% of the time the Hornsea One windfarm in the North Sea produces no output. Rampion thus has no output twice as often.

⁹ <https://www.rampionoffshore.com/news/media-releases/rampion-blows-wind-power-target-out-of-the-water/> and <https://www.theargus.co.uk/news/24082321.sussex-rampion-wind-farm-exceeds-2023-energy-targets/>

- 60% of the time Rampion 1 output is 40% or less of its installed capacity; or conversely, Rampion only produces above 40% of installed capacity 40% of the time.
- In contrast, the Hornsea One windfarm spends 55% of time generating above 40% of its installed capacity (compared to 40% for Rampion).
- Hornsea One produces above the UK average capacity factor 65% of the time.
- The point being that Rampion 2 turbines would have the same relative lower performance noted above (being adjacent to Rampion 1 in the same wind regime) as compared to investing the same £3-4 billion to install those turbines in the North Sea area, or even at less cost extending an existing license where there are economies of scale.

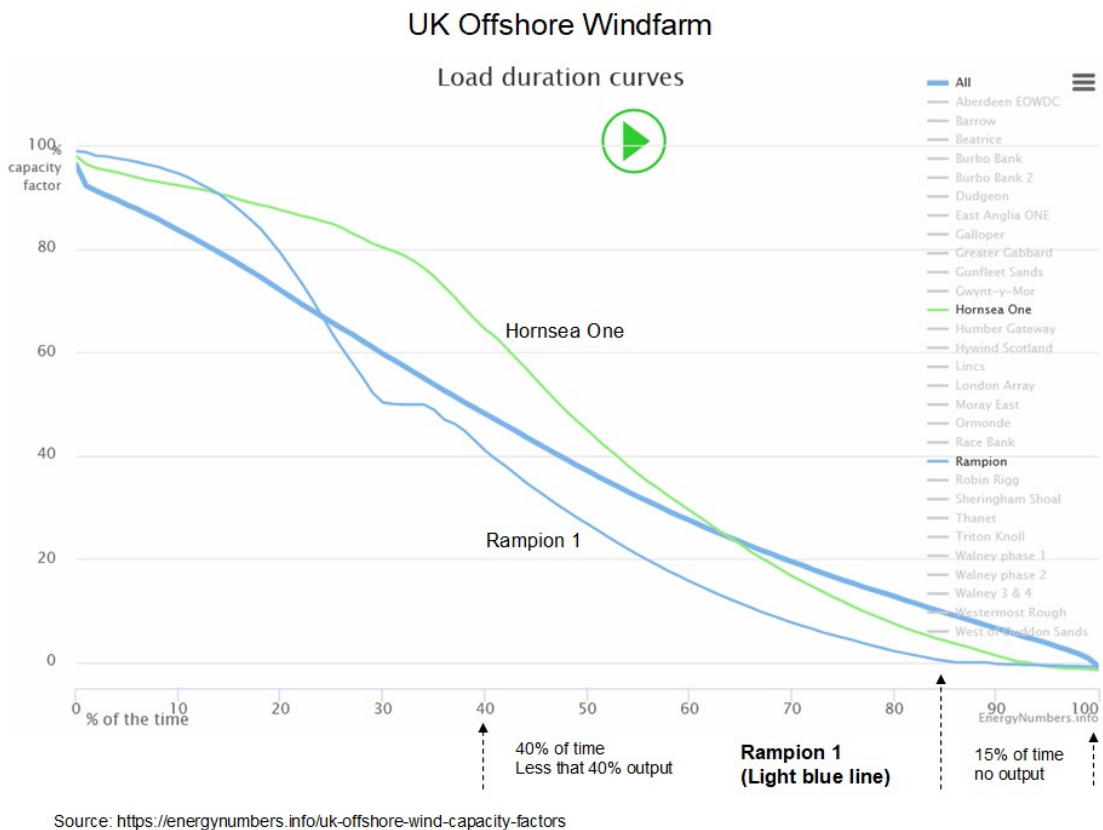


Figure 3: Comparison of Loads Duration Curves (capacity factor versus % of time) for Rampion 1 on the South Coast (light blue line), Hornsea One in the North Sea (green line) and, the average for all UK Offshore windfarms (thicker blue line).

Due Diligence suggests:

- From a national economic, energy and climate policy perspective the south coast of England IS NOT the best location to site a utility-scale windfarm at this stage in the UK's energy transition.
- Rampion 2 would supply less power to the national grid than equivalent windfarm investments in truly offshore locations and have more significant opportunity costs in terms of requiring comparatively and significantly more import of LNG and reliance on the Continent for costly power import – if available.

5. Rampion 2 will drive down the cost of energy

The claim is Rampion 2 will help drive down the cost of energy, implying household electricity bills may soon reduce has been made constantly in the pre-application stage consultations and echoed in local media after the Applicant's press releases.

Applicant's assumptions and claims are:

- " while we are not feeling that at the moment, but in the long-term wind energy is absolutely the cheapest form of power and is pushing down and the cost of energy in the UK"

Our observations and views are:

- In nominal terms wind may be cheaper but for the foreseeable future average system costs will increase and cascade to higher household energy bills, at least until utility scale energy storage systems are available.
- That is acknowledged in national policy statements. Rampion 1 will likely be decommissioned before utility scale hydrogen storage systems are available and possibly Rampion 2 which would be decommissioned around 2050 or shortly thereafter.
- In the near term higher opportunity costs inflate average system costs. This is seen in the load duration curves also in annex 1, where less efficient generation leads to greater.

Due Diligence suggests:

- Implying residents and communities in Sussex will see lower electricity bills any time soon if Rampion 2 is consented contributes to the chilling effect as noted in Section 1 of this representation.
- Ironically, the UK has among the highest electricity bills in Europe, despite having the largest share of wind and solar of any major economy in the world, now approaching 50 percent on an average annual basis, ignoring the variability and intermittency.

6. Rampion 2 is even more critical than before and offers 2 million tonnes carbon reduction annually

This claim was made by the applicant in PLG meetings in 2023 after the Ukrainian invasion and impacts on global energy markets including the price spike in LNG imports, power imports and effect that had on power system costs translated to household energy bills.

Applicant's assumptions and claims are:

- Rampion 2 will help insulate the UK from and reduce costly LNG imports
- Rampion 2 will offset 2 million tonnes of Co2 reduction over its 20-25 year economic life

Our observations and views are:

- It is even more critical for UK society prioritise investments in the most efficient offshore wind farms in the best wind regimes and cited in Annex 1, as that reduced the need for expensive LNG and expensive power imports

- Rampion 2 being less efficient means greater opportunity cost and does not reduce imports to the same extent
- As to the claims about CO2 reduction of Rampion 2 for its 20-25 year economic life, due diligence suggests that is only 5 years to when the entire power system is decarbonised.
- It means the carbon reduction benefit is 1.8 yr million tonnes (closer to 10 million tonnes) not for 20 to 25 years (or 40 to 45 million tonnes).
- The calculation of all the imbedded co2 in Rampion 2 in mining, processing, smelting, manufacture, construction, operation and maintenance would be helpful to understand if it is greater COR emissions than 5 years savings assumed at 1.8 million tonnes Co2 a year (i.e., the rare earths and critical minerals and steel and concrete)

Due Diligence suggests:

- After 2035 when the UK power system is decarbonised only low emission supply will be allowed. Like all other low emission generation Rampion 2 will not displace carbon after 2035.
- In those terms, Rampion 2 will only compete with other low emission generation sources on a price and power system impact basis – i.e. what may be needed to keep the lights on, the grid system from collapsing and at what cost to society and the environment.
- As we noted in the summary it is not a nuanced point. Rampion 2 will simply be part of a complementary low-emission generation mix until it is decommissioned around 2050.
- Until technically and economically feasible energy storage is available at the utility-scale. All evidence is Rampion 2 is not a priority in those terms. The £3+ billion that Rampion 2 would cost UK society may be better spent on offshore wind farms in better wind regimes that are more efficient and thus far more beneficial for UK society and value for money, all things considered.

PART 3: THE UNDERSTATEMENT OF RAMPION 2 ADVERSE IMPACTS

Here we inform noted in the following assessment of:

- 1) Rampion 2 has reduced its size and area as a result of consultations
- 2) Rampion 2 respects the Rochdale envelope consulting on the worst case
- 3) There is no evidence (anywhere) windfarms impact tourism
- 4) Beauty is in the eye of the beholder.

Additionally table 5 is informed by the PCS Local impact Assessment (LIA) submitted in parallel as a Written Representation.

1. Rampion 2 has reduced its size and area as a result of consultations

Emission reductions may take into consideration: (1) life cycle or “cradle to grave” emissions, or (2) only CO2 emissions reductions during the multi-year operation stage.

Applicant’s assumptions and claims re:

- In the acceptance press release “we have carried out a huge programme of engagement and consultation over the past three years, and have subsequently made changes”.
- And In October 2022, *“the Rampion 2 Project Team reduced the extent of the offshore wind turbine array proposals by nearly half and decreased the maximum number of turbines down from 116 to 90.”*
- The Applicant claimed that was in response to feedback from stakeholders.

Our observations and views are:

- RWE’s Preliminary Environment Impact Report (PEIR, 2021) offered two ‘worst-case’ scenarios for stakeholders to consider: either 75 large turbines each 325m high, or 116 turbines each 210m high as in Figure 4 below.
- RWE announced its commercial preference now is to install up to 90 turbines up to 325m tall - 20% over the worse-case of 75 consulted on!
- That was claimed and presented by the Applicant as a “reduction from 116 to 90 turbines” and claims that Rampion 2 was “scaled back” almost 50 percent.
- It makes no reference to either the turbine size or the magnitude and significance of impact.
- Much was also made by the Applicant announcing in 2023 a reduction in area to be covered by Rampion 2 turbines as compared to original assumptions, which mainly affects the sea area east of the existing Rampion installation and a slice on the western extension. Those reductions were actually advised by Natural England and in any event the sea area in an application is arrays less than the scoping area.
- In the case of Rampion 2, these areas have come out at 315km sq, 270Km sq and 160 m sq respectively. This was entirely to be expected and has little or nothing to do with listening to objections. In fact, the existing Rampion 1 wind farm followed the same process where the “scoping “area of 167km sq, was reduced to 122 km sq (PEIR) and then to 72km sq at the DCO stage.

Figure 4: Worst case Scenarios using smaller and larger WTG Types

Assessment assumption	Smaller WTG Type	Larger WTG Type
Total capacity	1,200MW	1,200MW
Maximum number of WTG	116	75
Rotor diameter	172m	295m
Minimum air gap above Highest Astronomical Tide (HAT)	22m	22m
Maximum blade tip height above Lowest Astronomical Tide (LAT)	210m	325m
Maximum Chord (blade width)	5.4m	11m
Maximum RPM	10.5 RPM	6.5 RPM
Minimum to Maximum Blade pitch	-4 to 90 degrees	-4 to 90 degrees
Minimum turbine spacing	860m	1,720m

Due Diligence Suggests:

- Reduction in project size by almost a half lacked credibility and in our view was deliberately misleading which added to the chilling effect.
- It was reported widely in local media in 2023.

2. Rampion 2 respects the Rochdale envelope consulting on the worst case

The Rochdale Envelope is to be used to assess the worst-case impacts of UK offshore wind farms as set out in the Planning Act and PINs Advice Note 9. The applicant needs to use it considering various factors such as environmental, economic, and social impacts to determine the potential negative outcomes of wind farm projects. The term "envelope" refers to the boundaries within which these impacts are evaluated.

Applicant's assumptions and claims include:

- The Rampion 2 consultation and Environment Statement complied with the Rochdale stipulations in the NPS

Our observations and views are:

- RWE announced its commercial preference is to install up to 90 turbines up to 325m tall - 20% over the worst-case of 75. The concern is illustrated with Figure 5.
- The PINS Section 51 Advice was that the Applicant needed to remedy a number of significant shortcomings in the Application before calling for the Registration of Interested Parties.¹⁰

¹⁰ In the PINs S51 Advice to the Applicant, "The Inspectorate notes it is reference in Schedule 1 Part 1 for Work No.1, and in Part 3 Requirement 2 that the authorised development must not exceed 90 wind turbine

- This was categorically rejected by the Applicant in pre-Examination correspondence in Sept 2023 noted on the PINs Rampion 2 Project website.

Rochdale Envelope: PINs Advice Note 9 and Planning Act (2008, updated)

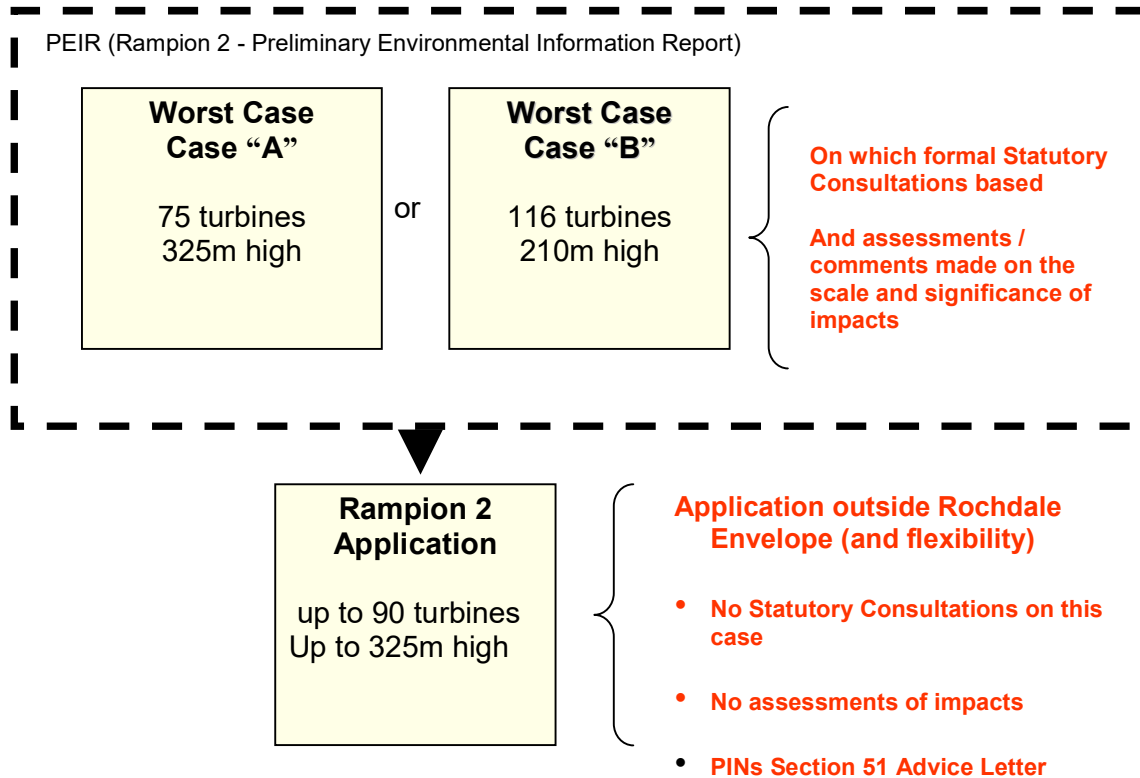


Figure 5: Rochdale Envelope (inside and outside boundaries)

Evidence Suggests:

- This challenges the notion that the Applicant consulted with the case of up to 90 large WTGs provided in the Application which appears outside the Rochdale Envelope worst cases
- This certainly added to confusion and to the chilling effect.

3. There is no evidence (anywhere) windfarms impact tourism.

This is highly concerning and challenged in PAD Statements by all local authorities on the impact on the tourism economy.

Applicant’s ES assumptions and claims include:

generators (WTGs) and in Requirement 2(a), that they must not exceed a height of 325m. The Inspectorate notes, however, that no assessment of the effect of 90 WTGs appears to have taken place and evidenced in Chapter 15 of the Environmental Statement (seascape, landscape and visual impact assessment), where it appears that only 65 WTGs have been assessed. The Inspectorate considers that the DCO needs reviewing to ensure that the total quantum of turbines sought has been fully appraised and assessed in the ES taken as a whole...”,

- "... there is no evidence that suggests any relationship between the construction (operation or decommissioning) of offshore wind farms and a reduction in tourism activity, visitor spending or tourism-related employment."
- The Applicant then states the tourism statistics for the Rampion 1 scheme validates its hypothesis that Rampion 2 (like all windfarms) would have no impact on tourism volume and value. It also offers the Dudgeon Offshore Wind Farm 32 km (20 miles) off the coast of Norfolk in the North Sea as further validation of its ES claims.

Our observations and views are:

- This clearly lacks and credibility given the finding of the OESEA the UK's own Offshore Energy SEA programme, with its stated objective of alignment with the articles and commitment under the European Convention on Landscapes, update its visual buffer advice in 2020 basing that on a comprehensive review of domestic and international experience with visual buffers at policy, spatial planning and project levels?
- Councils in their PAD Statements and RRs have flagged the absence of commitments from the Rampion 2 Applicant to support the area tourism sector when it is disrupted during construction (4-5 years) and then for 20-25 years of operation from 2030.
- The Secretary of State (SOS) Decision Letter when explaining why consent was refused on the Navitus Bay Application implied the likely loss to the area tourism economy may be somewhere between the Applicant's claim and the estimate from processing the detailed visitor survey information conducted by Visit England.
- It noted the Examination found that the Applicant erred in some assessments by lessening negative impacts on tourism-related jobs, and that there would be "significant residual harm to tourism" in some local areas.

Due Diligence Evidence:

- The Applicant's claims in this regard are not credible.

4. Beauty is in the eye of the beholder.

This messaging was prominent in the Applicants pre-application consultation and marketing, recognising also that consultation on the offshore component was mostly virtual, online and in pamphlets.

Applicant's assumptions and claims include:

- The assertion in the ES: "there is no evidence that suggests any relationship between the construction (operation or decommissioning) of offshore wind farms and a reduction in tourism activity, visitor spending or tourism-related employment."
- And "beauty is in the eye of the beholder".

Our observations and views are:

- The messaging was that any resident opposed to Rampion 2 is either a Nimby, is not properly informed or worse, is a climate change denier.

- That was prominent in media coverage and social media.

Due Diligence Suggests:

- That contributed significantly to the chilling effects for those fearing they would be called Nimbys or climate change deniers by neighbours and on social media if they officially objected to or commented on Rampion 2.
- It contributed to fears of “reputational” risk of environmental groups who would otherwise have engaged with the DCO process more meaningfully.

PART 4: THE ASSERTIONS THAT RELEVANT POLICY AND GUIDELINES DO NOT APPLY TO RAMPION 2

We highlight selected issues that were concerning from the perspective of community organisations.

To inform noted in the following assessment of:

- 1) The UK Government's OESEA Strategic Environmental advice on visual buffers for locating offshore wind turbines does not apply to Rampion 2.
- 2) Rampion 2 design complies with all relevant Government policy and standards.

1. On whether UK strategic advice applies to Rampion 2

This claim that it did not apply was made repeatedly during pre-application consultations to the public, in PLG Group meetings with Parish and Town Council representatives and in the Environment Statement (ES) in responses to Statutory Consultees.

The Applicant's assumptions and claims include:

- The OESEA advice is only, "a high level 'buffer' study ... it is a strategic tool and is not guidance or a roadmap for placing of wind farms...".

as (ES, Volume 2, Chapter 15: Seascape, landscape, and visual impact assessment. Pages 52, 53 and further on) and documented in formal statutory consultation input including that of PCS.

Our observations and views are:

- It is important to consider the alignment of the UK's Offshore Energy SEA (OESEA) with the European Convention on Landscapes (ECL) and its reinforcing nature as well as aligned UK policy and law including the Marine Policy Statement (2021) and the Levelling up and Regeneration Act (2023).
- Specifically, in the Rampion 2 case the rolling OESEA programme's strategic environmental advice to provide visual buffers between large offshore turbines and impacted designated landscapes is material as that advice which is in keeping with the above and we believe legally cannot be dismissed lightly.
- OESEA-4 states the UK objectives and indicators for seascape / landscape protection include the, "Objective: To accord with, and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/landscape including designated and non-designated areas." Our in-bold text underlining for emphasis.
- The OESEA visual buffers updated in 2020 and adopted in OESEA-4 (2022) are based on a comprehensive review of domestic and international experience with visual

buffers for offshore windfarms, including project-level assessments and laws associated with the application of the ECL in European jurisdictions.

- The proposed design for the offshore component of Rampion 2 (up to 90 WTGs up to 325m tall in arrays starting 6 nautical miles from shore, so visibly fixed in the legally defined and ecologically sensitive inshore seabed (i.e., not offshore that starts 12 nautical miles from shore) - is at the extreme end of the visual impact spectrum due to its scale, expanse or spread along the coast and proximity to people and designated landscapes.
- Our view is it cannot be disputed that Rampion 2 is literally “off the charts” in regard to the UK Government’s ECL commitments and its own strategic environmental advice (OESEA) that derives from the ECL interpretation and experience as clearly stated in the OESEA-4 objectives.

Due Diligence Suggests:

- The Applicant’s assertions in this lack credibility.

2. Rampion 2 design complies with all relevant Government policy and standards.

Clearly the design, construction and operation of infrastructure such as Rampion 2 with sea and land elements are complex and require attention to many policies and standards from national to local levels.

While this will be an ongoing consideration the Rampion 2 were consented the PAD Statements alone indicate the nature of the challenge. Our overall consideration at the moment in this regard is whether the Rampion 2 proposal is compliant with the ECL and the aligned UK national policy, law and strategic advice.

PART 5: DUE DILIGENCE CONCLUSIONS

Due Diligence is routine on a £-3-4 billion infrastructure investment such as Rampion 2.

It typically covers all aspects of the benefits and risks for developers and potential investors. The same principle should apply to local communities who would essentially be required to host this Rampion 2 project, if consented, and ultimately pay or contributed to all the development costs through local electricity bills and taxes, including the investor’s commercial rate of return, the cost of investor incentives and public risk guarantees and the CfD subsidy.¹¹

We view this as important and relevant in the Rampion 2 case, especially considering how Rampion 2 proceeded through a pre-Application process that was so challenging for everyone, not the least including Covid-19 restrictions on meetings and social interactions.

¹¹ Contract for Differences (CfD) subsidy that replaced the Renewable Obligation Subsidy for commercial offshore wind developers in 2017. The upward limit of the CfD was raised by the UK Government by 66% in Sept 2023.

Together with the PCS WR1 Local Impact Assessment (LIA) and the PCS WR3 consideration of Alternative, we take the view that Rampion 2 has serious questions about whether it is in breach of laws and commitments, serious economic and environmental opportunity costs, and that viable alternative would do more for the UK's national climate, energy supply, energy security, sustainable development, environment and industrial policy objective than Rampion 2, while offering better value for money and less upward pressure on electricity prices.

List of Annexes

Annex #	Title
1	Various referenced statistics, graphs and data in a PCS Press Release Note
2	Simple spreadsheet model of projected Sussex electricity demand and Rampion 1 and 2 Power Output
3	Average domestic electricity consumption per household in Great Britain in 2020, by region (in kilowatt-hours)

Annex 1: Various referenced statistics, graphs and data in a PCS Press Release Note

PCS Background Note:

On the Rampion 2 Windfarm Proposal Update by RWE, Oct 2022

15 Nov 2023 Update Version

RWE, the German-based multinational energy company behind the £3+ billion proposal to develop the 1,200 MW Rampion 2 windfarm off the Sussex coast last week released news about their plans to progress this controversial infrastructure project.

We encourage all residents and local communities on the South Coast to become aware of the social, environmental and economic impacts of the proposed Rampion 2 windfarm. Visit the Protect Coastal Sussex (PCS) website for more information <https://protectcoastalsussex.org/> as well as the Middleton-on-Sea Coastal Alliance (MOSCA) website at <https://www.mosca.click/> and <https://www.protectcoastalengland.org/>

These website resources all help to balance information on the benefits and impacts that the Rampion 2 proponent offers and include what is omitted.

PCS also encourages residents who have the time, the energy and the interest in the decision on whether, or not, to transform our natural south coast into an industrial power park to offer anecdotal or technical inputs to support the preparation and endorsement of a community-led Local Impact Report (LIR) on the proposed Rampion 2 Windfarm.

This work is now in process. It will be circulated in draft before submitted for Examination in the Development Consent Order (DCO) process, expected the summer of 2023.

Overall we feel a Local Impact Report prepared by directly affected communities, one that is widely supported and endorsed, will better inform decisions. It will help communities and authorities to weigh all the benefits and costs; and more generally to consider reasonable alternatives that significantly outperform Rampion 2.

In this regard, we welcome RWE's 1,400 MW Sophia windfarm now under construction on Dogger Bank, as well as the two additional windfarm licences it recently secured there. Those turbines will be in better wind regimes far offshore and thus have far greater power output (and benefit) for the same £3 billion investment as Rampion 2. Critically, they fully respect the Government's strategic environmental advice to locate large turbines (above 225m tall) at least 40 km (25 miles) from designated sites like National Parks.

The advice and guidelines were put in place to provide visual buffers that avoid well recognised, unnecessary harms to coastal communities and prevent multiple harms to the more sensitive and

productive inshore marine ecosystems that will undermine the achievement of sustainable development of inshore coasts.

It otherwise helps to avoid risks that degrade “natural capital” that makes our treasured wildlife even more susceptible and vulnerable to longer-term climate change.¹²

As noted in the National Policy Planning Framework:

“The purpose of the planning system is to contribute to the achievement of sustainable development ...” (Para 7, The National Policy Planning Framework (NPPF) supported by the Planning Act (2008).

In effect, it is a legal presumption not only to development, but to ensure sustainable development.

Achieving sustainable development is recognised in UK Law and policies from local to national levels and in international conventions as pursuing three overarching objectives (environment, social and economic objectives) that are “interdependent and need to be pursued and balanced in mutually supportive ways”. (NPPF)

RWE’s Recent Announcement on Rampion 2

RWE’s plans now include another round of public consultation on the ‘onshore element’ of its Rampion 2 proposal, focusing on the cable route.¹³ This new targeted consultation is due to opposition concerning adverse impacts within the Southdown National Park (SDN) and potential interruptions to planned biodiversity corridors. The new cable route that RWE is proposing is from a shore landing on Clymping beach west of Littlehampton to connect to a National Grid substation near Bolney in the Mid-Sussex District of West Sussex.

However, the newly proposed route still runs through the Southdown National Park. The rerouting does not *reduce* the impacts on the SDNP. It will cause a permanent scar and impact on wildlife and potentially interrupt planned and future biodiversity corridors.

At the same time, RWE has announced they have ‘fixed’ the offshore component of Rampion 2 for the **Development Consent Order** application (**DCO**) that it plans to make sometime around March 2023. If that application is accepted, it will trigger the Examination Stage of the **DCO** process leading to a subsequent decision by the Secretary of State for Business, Energy and Industrial Strategy (BEIS) sometime in 2024-2025, on whether to Consent or Refuse Consent to proceed with the Rampion 2 scheme.

¹² Natural Capital: in general is the collection of natural resources of a region, land area or a coast together with its ecosystem services viewed broadly, including its overall economic value (for example, from the value derived from pollination services provided by migrating birds and insects lost to windfarm turbines, to the visual impacts of transforming the natural seascape that affects the visitor and coastal tourism economy and jobs to intrinsic values of natural seascapes the are part of our culture, heritage and promote well-being).

¹³ <https://rampion2.com/consultation-2022/>

While consultations on the onshore cable route are being restarted, numerous concerns about the social, ecological and economic impacts of RWE's plan for the offshore aspect remain, as well as concerns over the relative merits of the propose £3+ billion investment in Rampion 2 as a UK climate action – given the many reasonable alternatives already in the planning pipeline to meet the announced Offshore Wind targets for 2030-2050.

RWE's Preliminary Environment Impact Report (PEIR, 2021) reviewed by Statutory Consultees, including Natural England, the Government's main environmental advisor, and upon which the virtual local community and public consultations about the impacts were based, offered two 'worse-case' scenarios for us to consider: **either 75 large turbines each 325m high, or 116 turbines each 210m high.**

RWE has announced its commercial preference now is to install up to 90 turbines up to 325m tall - 20% over the worse-case of 75 consulted on! Yet this change was actually presented by RWE in local media as claim of a "*reduction from 116 to 90 turbines*" and claims that Rampion 2 was "scaled back" almost 50 percent. It makes no reference to either the turbine size or the magnitude and significance of impact.

Much was also made by RWE in its recent announcements of a reduction in area to be covered by Rampion 2 turbines as compared to original assumptions, which mainly affects the sea area east of the existing Rampion installation and a slice on the western extension. Those reductions were actually advised by Natural England and in any event the sea area in an application is always less than the scoping area.

RWE says its Development Consent Order (DCO) application will propose up to 90 large turbines (up to 325m) in north-south arrays in two sections split by a small separation corridor off East Worthing. The eastern section of Rampion 2 would be concentrated behind (south of) the existing Rampion 1 turbines. The western section would spread the tall turbines across the seascape from West Worthing, past Littlehampton and past Bognor Regis, with the closest turbines in north-south array strings starting 8 miles from shore.¹⁴

Initial comment on RWE's recent announcements

In reality, the 1,200 MW Rampion 2 is not a simple 'extension' or expansion of the existing far smaller 400 MW Rampion 1 installation as presented by the developer in public consultations. Rampion 1 has 116 smaller wind turbines 140m tall occupying a far smaller area with a limited field of view, or crowding of the natural seascape and horizon.

Rampion 2 is an entirely new project, one that is far larger in scale and expense as well as the range and significance of impacts. We feel that a Community-led Local Impact Report (LIR) is even more essential to better inform the future Rampion 2 Examination process, given what we have seen

¹⁴ See: <https://rampion2.com/consultation-2022/what-we-have-now-fixed/>

unfold to date with the developer-led pre-application consultations, as well as documented concerns with information control in the virtual-only consultations (with on-line digital and zoom formats).

Equally important, we feel that South Coast residents and Councillors must be better briefed and informed about the comparison of Rampion 2 with reasonable alternatives already in the UK's offshore windfarm programme plans and low-emission alternatives. Given the full picture, many may conclude that a wiser alternative investment of the £3+ billion is far better to advance the achievement of the UK's urgent energy and climate policy objectives.¹⁵

The argument that all windfarms are the same and must be pursued at any costs is simply not valid. The relative cost and benefits must be objectively compared. Specifically:

The same industrial-scale wind turbines now proposed for Rampion 2 moved to far better wind regimes offshore on Dogger Bank in the North Sea, costing the same £3bn upfront, would generate up to 60% more energy for UK society – and by some recent wind industry data, actually double the energy output; hence double the benefit that Rampion 2 may offer as a climate action. Similarly, clean energy low-emission alternatives are available that provide value for money in the energy transition.

Choosing NOT to build Rampion 2 and thus avoiding the unnecessary compromise to sustainable development of the Sussex Coast would be a far better ecological, financial and sustainability choice for the country, while doing more to reduce carbon emissions sooner.

Conclusions we draw, and why?

Renewable sources now provide over 43-44% of electricity used in the UK (mainly solar and wind, since 2020)ⁱ. That comes as a surprise to many people.

So we ask the simple question:

"With that amount of renewable supply already, how did we end up in such a mess? - with the combination of over reliance on energy imports, prospects of rolling power cuts and blackouts for years, and devastating energy tariffs; perhaps the highest in the world rendering swathes of the UK economy non-completive, shedding jobs and bringing worry and sleepless nights to countless households and families up and down the country?"

One central problem is the widespread lack of understanding among decision-makers, the public and media that *we get lots of power from our main renewable energy sources sometimes (wind and solar), but little or no power at other times – and what that actually means to our lives and livelihoods today and in the future.*

¹⁵ RWE indicates its Rampion 2 proposal in the Sussex Bay inshore would cost £2.87 billion to install 1,200 MW (preliminary cost). RWE websites indicate the 1,400 MW Sofia Windfarm now under construction on Dogger Bank 195 km from the UK's North East coast would cost about the same £3 billion. Sofia has a higher capacity for the same expenditure, and most significantly it will have a higher load factor due to far better wind regimes on Dogger Bank compared to the narrow South Coast inshore. <https://sofiawindfarm.com/>

Simply as the wind drops we get less or even no power from offshore windfarms. At night we get no solar generation either from large grid-scale solar installations in fields, or on house roofs. Plus at UK latitudes we receive far less solar in winter months due to short daylight hours (8 hours daylight in January versus over 16 hours of daylight in July) and far lower solar intensity in winter, by a factor of 7 almost as compared to the summer months.¹⁶

Thus electricity from renewable sources is not “dispatchable” energy, meaning it cannot be turned on when needed. We cannot adjust renewable supply to the National Grid according to demand as it is unpredictable even days in advance. How much we get and when is weather-dependent, season-dependent, and time-dependent and varies year-to-year.¹⁷

This does not mean renewables are not fundamentally essential to the UK’s transition to clean energy. It means we must be practical and smart how we bridge the transition to all low-carbon sources. In particular, despite aspirations, we cannot effectively store variable eco-energy. We are not there yet. Much of that technology is still being developed and is not ready to be scaled-up due to a variety of factors (indicated in the Report in the footnote).¹⁸

What does this mean for the consideration of Rampion 2 and its relative merits versus other reasonable offshore wind alternatives and priorities?

Figure 3 on the next page, “Monthly offshore windpower output”, illustrates the variability reality showing the combined output the National Grid received from all UK offshore windfarms for a 30-day period this Sept-Oct, 2022. That data was available on the Crown Estate website (<https://www.thecrownestate.co.uk/en-gb/what-we-do/asset-map/#tab-2>) which also shows the real-time output for each offshore windfarm operating and the total combined output, as well as the rolling 30-day combine output charts.

Note also: Crown Estate is responsible for international competitive bidding of the UK’s seabed rights and in waters for windfarm development. These are rights (now over a half century) are awarded to the highest international bidders, which at this stage are largely European state-backed, or state supported conglomerates. Some people argue this highest international bidder approach helps to guarantee that UK customers will face higher electricity prices for a very long time.

¹⁶ <https://www.viridiansolar.co.uk/resources-1-2-seasonal-variation-solar-energy.html>

¹⁷ Solar and wind by policy mandate are to be the dominant sources for power supply for the UK by 2035.

¹⁸ An assessment of timeframes for utility-scale energy storage and the main challenges was offered in the UK Government-funded publication by the World Bank, “**BRINGING VARIABLE RENEWABLE ENERGY UP TO SCALE: Options for Grid Integration Using Natural Gas and Energy Storage**.” ESMAP, Technical Report 006/ 15. While the Report was issued in 2015, it remains valid and highly informative. This was also before concerns over the world’s security and supply of rare earth minerals such as cobalt and lithium came to the forefront.

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

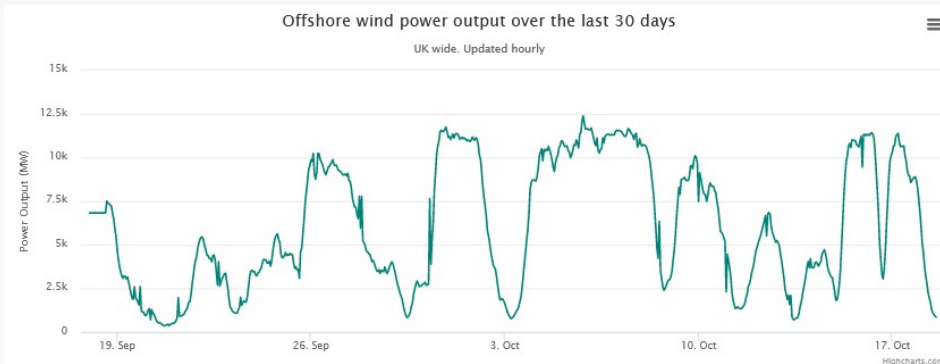


Figure 1: Combine output from all UK Offshore windfarms for a 30-day period in Sept-Oct 2022. Source: Crown Estate Website

The rolling 30-day charts for August-September and January-February show the extent of periods of calm, when offshore wind output drops off. At that time, the UK must rely on imports, or other low-emission electricity sources to power the National Grid; otherwise demand is not met. The grid becomes unstable and load shedding (blackouts) ensue.

Figure 2 below is the rolling 30-day output from offshore windfarms in August 2022 (from Crown Estate’s website, as seen 1 Sept 2022). We see low output for sustained periods that month, averaging perhaps 20% -25% of wind installed capacity 11 GW for days at a time.

Monthly offshore wind power output

View the combined power output of offshore windfarms over the past 30 days.

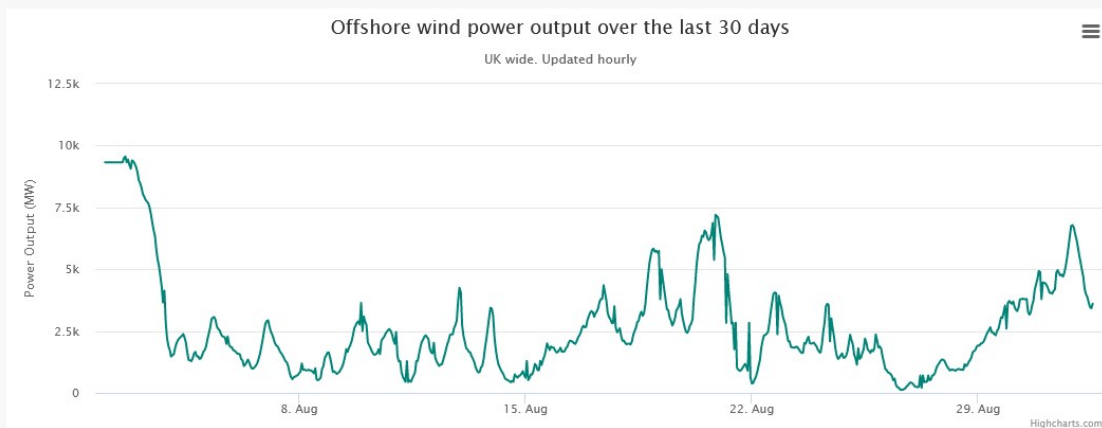


Figure 2: Combined output (MW 000's) from all UK Offshore windfarms August 2022. Source: Crown Estate website

Whether we will see the same pattern of low winds this coming winter in 2023 is unpredictable. Just as we don't know what comes next with natural gas supply to the EU. The UK is in a regional gas market, in addition to competing for LNG imports on the high seas from fracking in the US and Qatar mainly.

Thus until technically and economically feasible energy storage is available at the utility-scale, **UK society must sensibly prioritise its investments in the most efficient offshore wind farms in the best wind regimes. Data indicates Rampion 2 is not one of those.**

Otherwise, we must avoid moral posturing to pressure investing in offshore windfarms that do not offer the most benefit and value for money in order to make some people happy.

We must accept there is no limitless pot of money available to the UK as a society to invest in offshore windfarms. All offshore windfarm proposals and Renewable Energy systems have to compete for investment and what we as a society can afford.

To Note Also: Labelling residents and politicians such as area MP's who have raised legitimate questions about investing £3+ billion in Rampion 2 as NIMBY- helps no one. It unnecessarily distracts and divides communities. Equally, claiming that "activists" are only worried about aesthetics, to then deploy dismissive slogans like, "beauty is in the eye of the beholder", which the Rampion 2 developer has done repeatedly in pre-application virtual consultations on video and in promotion materials, is not helpful behaviour or deserved.

A final illustration of concern over the relative performance of Rampion 2, as compared to moving the same turbines offshore to the North Sea is seen in the data in Figure 3. It is a semi-technical graph of load duration curves for offshore windfarms showing the percent of time (horizontal axis) they produce at different power outputs (capacity factor or load factor, on the vertical axis) as a percent of installed capacity.

That graphical data tells us:

- 15% of the time the existing Rampion windfarm turbines produce no output at all.¹⁹
- That compares with 7% of the time the Hornsea One windfarm in the North Sea produces no output. Rampion thus has no output twice as often.
- 60% of the time Rampion 1 output is 40% or less of its installed capacity; or conversely, Rampion only produces above 40% of installed capacity 40% of the time.
- In contrast, the Hornsea One windfarm spends 55% of time generating above 40% of its installed capacity (compared to 40% for Rampion).
- Hornsea One produces above the UK average capacity factor 65% of the time.

¹⁹ 15% of the time is equivalent on average to 1 day a week with no power. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% its installed capacity. Figures 1 and 2 with the rolling 30-day output this year, show that periods of low output actually vary up to several days at a time.

The point being that Rampion 2 turbines would have the same relative lower performance noted above (being adjacent to Rampion 1 in the same wind regime) as compared to investing the same £3+ billion to install those turbines in the North Sea area.

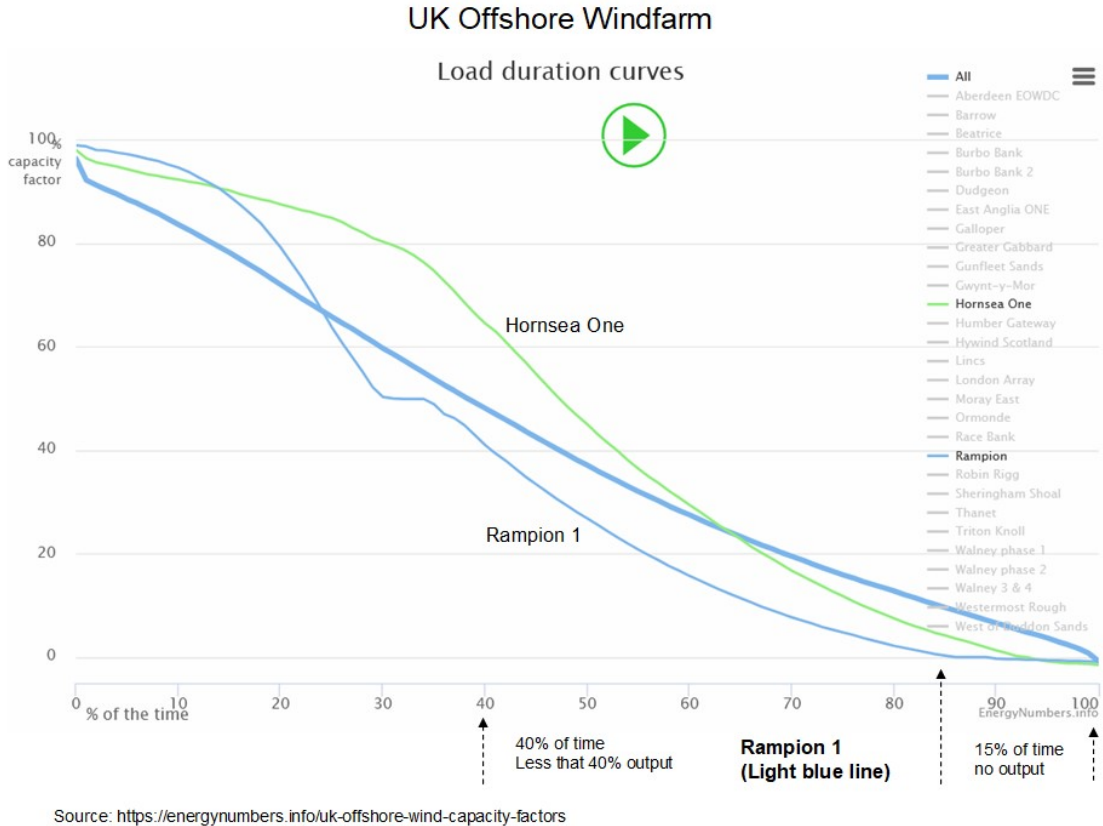


Figure 3: Comparison of Loads Duration Curves (capacity factor versus % of time) for Rampion 1 on the South Coast (light blue line), Hornsea One in the North Sea (green line) and, the average for all UK Offshore windfarms (thicker blue line).

At the time of drafting this Background Note (09:00, 14 Nov 2022) Rampion was producing under 3% of its installed capacity (see Figure 4, from the Crown Estate’s website).

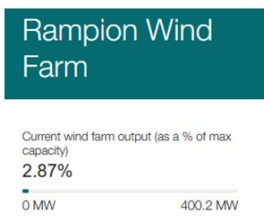


Figure 4: Rampion Output 09:00 14 Nov 2022

Other data to be presented in Representations at the Rampion 2 Examination next year show that on an annual basis Rampion 1 was far less efficient in powering homes on the National Grid than an equivalent windfarm operating in the North Sea with higher and steadier winds at 69% efficiency.²⁰

Moreover, there are reasonable alternatives for clean energy and low

²⁰ As noted load factors vary seasonally and year-to-year depending on the weather. Rampion 1 has generated in the 34-46% range depending on the year.

emission generation in the south of England to support the UK's energy transition. And there is no national target for inshore windfarms on the narrow Sussex coast.

It is important to look carefully at RWE's recent claim that it is **"even more critical to proceed with Rampion 2"**.

PCS argues instead: **it is even more critical for UK society now to invest in the most efficient offshore wind farms: not Rampion 2**

– i.e. invest the £3+ billion that Rampion 2 would cost upfront to advance more productive windfarms in stronger wind regimes further offshore already in the existing UK "project" pipeline to meet national offshore wind targets by 2030 and beyond.

Those who have the expertise should fact check claims about the actual performance, benefits and harms of Rampion 2, and with respect to reasonable alternatives. These reasonable alternatives include offshore windfarms that respect the Government's own strategic environment advice, as well as the clean energy, low-emission generation alternatives available to feed the National Grid in the south of England.

Advancing those offshore windfarms and low-emission generation technologies that clearly outperform Rampion 2 as proposed would thus:

1. Provide more electricity and offer better value for money.
2. Do more to reduce upward pressure on the nation's electricity bills in this extreme cost-of-living crisis so devastating to families, jobs and the economy, where energy prices drive inflation.
3. Do more to reduce imported gas, especially LNG from gas fracking (off shored) to the USA and LNG terminals in Qatar, all subject to highly volatile international pricing and market demand.
4. Do more to reduce UK carbon emissions, and
5. Help to reach the UK Net Zero ambition sooner.

Again, we very much welcome RWE's promotion of three efficient windfarm developments on Dogger Bank that are truly offshore, and fully respect the UK Government's strategic environmental advice on turbine locations of that impressively large size.

Those safeguards are embodied in the Government's rolling Offshore Strategic Environment Assessment (OES EA) programme – meaning to only place turbines over 225m more than 25 miles from sensitive locations, such as National Parks to avoid multiple harms that compromise the achievement of sustainable development of our valued coasts.

We cannot see how to justify a large industrial-scale power park transforming the natural Sussex seascape in the face of people who live, work and visit, all seeking to enjoy our natural seascape heritage with its many intrinsic values and the promotion of well-being. Its construction and operation would cause havoc to the seabed and marine life, as well as insects and birds in highly productive sensitive inshore ecosystems already under pressure, making them even more vulnerable to long-term climate change.

We all recognise and appreciate that some people want to see more wind turbines on the Sussex coast - whatever the cost, for whatever their reasons. For some it may be not being told or realizing the scope and extent of the impacts, or being satisfied with overstated benefits accepted without challenge or scrutiny, or simply not being aware of the risk to sustainable development and the opportunities to do more to address climate change that are forgone if the £3+ billion Rampion 2 investment were to proceed.

PCS along with other community organisations thus encourage everyone to look closer at the facts and claims in the round, with an open mind; and proactively support efforts to ensure that decisions about the future of our South Coast, and how we best tackle climate change are fully informed and the wisest choices.

Our view is that when presented with all the facts, it will be much easier for south coast residents, the wider public and the Examination Panel to see that the combined harms of Rampion 2 far outweigh the benefits claimed by the developer.

Hammering on that Rampion 2 is essential to meet the UK's targets for installed capacity for offshore wind by 2030, at any cost, while compromising the underlying aims and very reasons for those targets, is neither helpful nor wise; while at the same time shouting Nimby to cancel Residents who raise concerns. That on top of other factors, such as the fact Rampion 2 uniquely undermines the achievement of sustainable development in the inshore waters of the south coast. It does not respect strategic environmental advice on locations for large wind turbines offered by the UK Government as common-sense safeguards to avoid and minimise unnecessary harm to coastal communities and marine ecosystems.

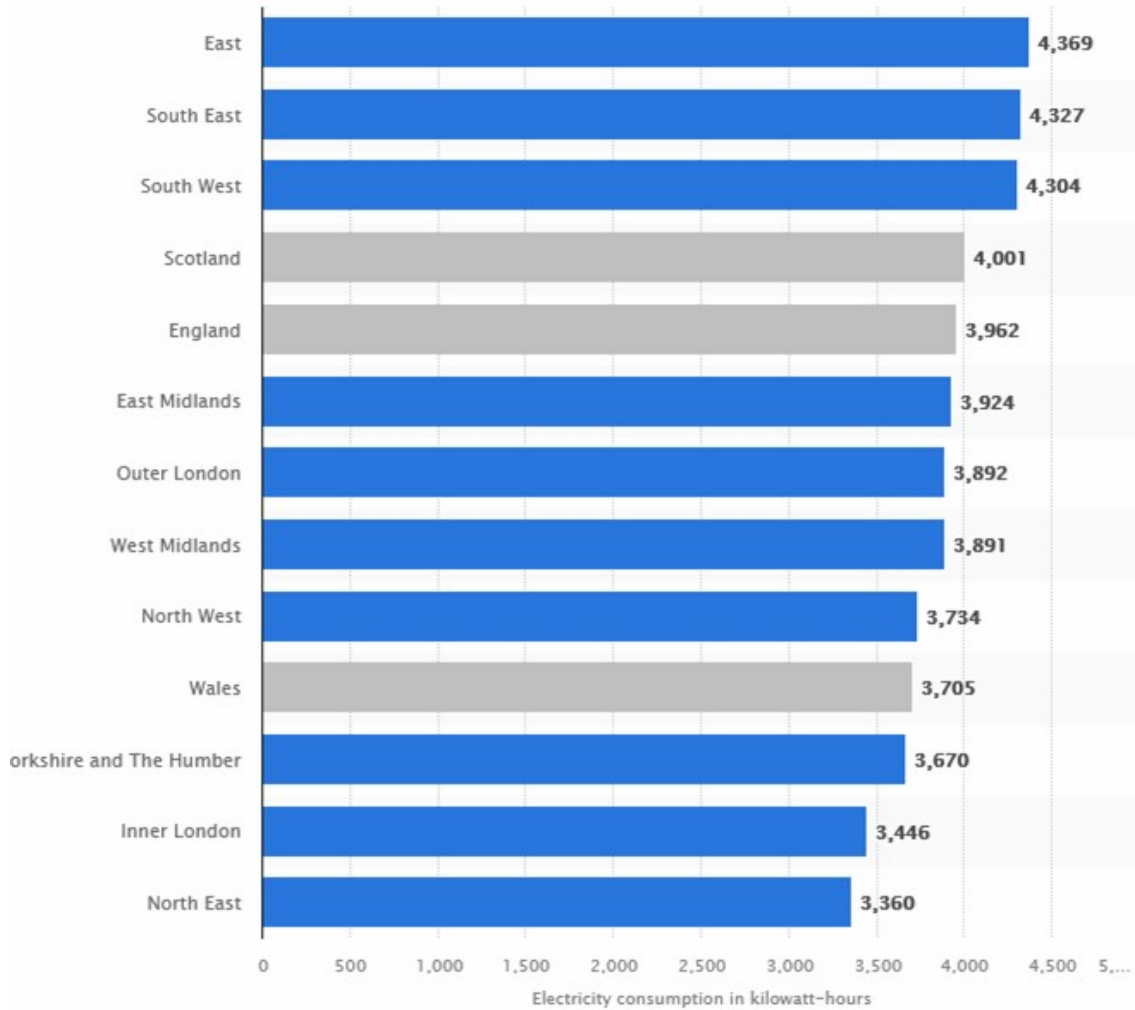
There are no UK targets for offshore windfarms on the narrow south coast of England to feed the National Grid. Reasonable alternatives are available and need to be pursued.

Annex 2:
Simple spreadsheet model of projected Sussex electricity demand and
Rampion 1 and 2 Power Output

Being updated
To be supplied to the ExA if requested

Annex 3:

Average domestic electricity consumption per household in Great Britain in 2020, by region (in kilowatt-hours)



Source: <https://www.statista.com/statistics/517845/average-electricity-consumption-uk/>

RWE Rampion 2 Website: The average annual domestic household electricity consumption in the UK was 3,618 kWh in 2018 (Source: UK Government, BEIS, Dec 20192). With a maximum planned capacity of 1200 MW of electricity, Rampion 2 could meet the electricity needs of 1m+ homes equivalent each year. This estimate is based on UK Government data and a methodology that is standard used for offshore wind farms.

ⁱ Wind energy generation accounted for 24% of total electricity generation (including renewables and non-renewables) in 2020; with offshore wind accounting for 13% and onshore wind accounting for 11%. All renewable account for lose to 44% of generation today, though it varies year-to-year.
<https://www.ons.gov.uk/economy/environmentalaccounts/articles/windenergyintheuk/june2021#wind-electricity-generation-in-the-uk>

This Representation (WR) we attach offers information and perspectives to help the Examination Authority (ExA) and Interested Parties (IPs) address the National Policy Statement (NPS) requirement for the consideration of alternatives in the Rampion 2 windfarm Examination. That as we understand is a case-case specific requirement because the Rampion 2 infrastructure intrudes on designated landscapes, including the South Downs National Park and areas of Natural Beauty, and it interferes with statutory functions of those designations. NPS (2011) EN-1: paragraph 5.9.10 under “Development proposed within nationally designated landscapes”, Section 4.4 “Alternatives” and paragraph 3.5.6 on national energy priorities all apply. We have benchmarked Rampion 2 for National Benefits (using Rampion 2 as a baseline) against the consideration of three viable alternatives for clean, low-emission generation systems that are consistent with the NPS stipulations and now designated as “critical national priorities” in the NPS (Nov, 2023) that was updated to account for recent years international and national developments. Each of these alternatives are essential and urgent in the drive to decarbonise power supply to the National Grid by 2035. The purpose of this written representation is threefold: 1) To help respond to the NPS case-specific policy requirement to consider alternatives in the Rampion 2 Examination – in a meaningful way; 2) to help to transparently break down and benchmark the national benefits and disbenefits of Rampion 2 aiming to inform key judgments the ExA will make on whether “adverse impacts of Rampion 2 outweigh its national benefits”, and; 3) To highlight realistic opportunities for a better way forward, should Rampion 2 be refused consent on legal or other grounds, given the importance of decarbonisation of UK power supply in an affordable, realistic and common sense manner in little over a decade. The benchmarking and rating analysis provided in the attached WR suggests that all three alternatives offer a better way forward than Rampion 2, in respect to national benefits overall. They offer more in the local, national and wider public interest at this pivotal time and better value for money with less opportunity cost over the 20-25 years of economic life of Rampion 2 from about 2030 when it starts to operate to around 2050 when it is due for decommissioning. This also recognises that from 2035 all power supply to the National Grid must be low emission, meaning that all generation alternatives from that time compete mainly on their ability to provide reliable and affordable power supply, as well as dependable power to supply the increasing demand on the National Grid under mandated electrification of the transport and heating sectors (charging EVs and electric heat pumps). The method and assumptions used for the benchmarking, the 12 national policy indicators used to break down National Benefits, and the detailed criteria and scoring are elaborated in this Written Representation. For the assumptions applied, extending a recently awarded offshore wind farm licence on Dogger Bank would, for example, lead to 1.3 times the national benefit than granting consent to the Rampion 2 extension. Extending an existing gas-fired power station in the south, or a replacement on the same site (or at a new site) incorporating a carbon capture system would to male it NetZero compliant (also with multi-fuel capability to run on green hydrogen in future) -offers 1.7 times the national benefit as Rampion 2. And small modular reactors (SMRs) that are factory built and rapidly installed on site either at decommissioned nuclear power sites, or other decommissioned power station sites where all the transmission connections are in place, could lead to twice the national benefit as Rampion 2. These alternatives do not have the same high economic and environmental opportunity costs, footprint and risk as Rampion 2. The high economic opportunity cost of Rampion 2 could easily be quantified via power system value modelling performed by competent power authorities who have the requisite information, models and expertise. That could inform the Examination and Secretary of States final decision on Rampion 2. We believe that effort is warranted on a £3-4 billion investment commitment. It would help ensure a “least regret” outcome in the national to local interest and the environment.



Consideration of Alternatives in the Rampion 2 Windfarm Examination:

**A case-specific policy requirement under NPS (2011) EN-1: Section 4.4 Alternatives;
paragraph 5.9.10 under “Development proposed within nationally designated
landscapes”, and; in paragraph 3.5.6 on national energy priorities.**

Written Representation to the Rampion 2 Examination Authority (ExA) On the Development Consent Order (DCO) Application

**Submitted by Protect Coastal Sussex (PCS) in affiliation with community groups and civil
society organisations on the Sussex Coast and project affected inland areas**

**PCS: IP Registration Number: 20044835
Submission Date: 28 Feb 2024**

Submitted By:

The Secretary
Protect Coastal Sussex
Member of the Rampion 2 Community Project Liaison Group

On behalf of PCS Co-Chairs

Chris Lee, Aldwick
Melanie Jones, Middleton on Sea
Lawrence Haas, Littlehampton
Meera Smethurst, Cowfold

Preface

This Representation offers information and perspectives to help the Examination Authority (ExA) and Interested Parties (IPs) address the National Policy Statement (NPS) requirement for the consideration of alternatives in the Rampion 2 windfarm Examination.

That is a case-case specific requirement because the Rampion 2 infrastructure intrudes on designated landscapes, including the South Downs National Park and areas of Natural Beauty, and it interferes with statutory functions of those designations.

Here we argue for consideration of three viable alternatives for clean, low-emission generation systems that are consistent with the NPS energy policy and otherwise are essential in the drive to decarbonise power supply to the National Grid by 2035.

The purpose of this written representation is threefold.

1. To help respond to the NPS case-specific policy requirement to consider alternatives in the Rampion 2 Examination – in a meaningful way;
2. To help to transparently break down and benchmark the national benefits and disbenefits of Rampion 2 aiming to inform key judgments the ExA will make on whether “adverse impacts of Rampion 2 outweigh its national benefits”; and
3. To highlight realistic opportunities for a better way forward, should Rampion 2 be refused consent on legal or other grounds, given the importance of decarbonisation of UK power supply in an affordable, realistic and common sense manner in little over a decade.

This is one of three Written Representations that Protect Coastal Sussex (PCS) is offering to the Examination Authority (ExA) and all stakeholders to help weigh and balance the benefit-risk tradeoffs of the Rampion 2 project.

We sincerely hope the Examination Authority (ExA) can give weight to facts, information and evidence offered herein in its deliberations. And also that the ExA is open to proactively call for relevant written or oral expert testimony on Alternatives and for important system value modelling analysis prepared by competent power sector authorities that will add considerable value.

Summary

When weighing up what's more important, our health and physical and mental well-being and nature, or more wind turbines on display in the Sussex Bay inshore, the response many residents and local community organisations is simple. But of course the question is far more complex.

For those who have engaged in the DCO process for Rampion 2, challenging as it was over a 3-year period since early 2021 and during Covid-19 lockdowns, and especially considering the inshore location proposed for up to 90 wind turbine generators (WTGs) up to 325 meters tall, as well as the physical and visual disruption of designated landscapes, our understanding of evidence is that:

- 1). Rampion 2 would likely breach UK international commitments on landscape /seascape protection and in aligned UK national advice, policy and law;
- 2). Consenting Rampion 2 means we accept comparatively inefficient infrastructure (or rather an inefficient location for WTGs in terms of wind energy density and output);
- 3). That has serious opportunity costs, including the requirement to import relatively more expensive and price volatile liquefied natural gas (LNG), which has high carbon emissions in processing and transport, together with more import of costly power from undersea cables from the Continent. That is limited help for UK energy-self reliance; and
- 4). At the same time, there are practical and viable alternatives for low emission generation to feed the National Grid, which can do more for less money than Rampion 2, among which alternatives the UK Government calls “game changers”.

The consideration of alternatives in the Rampion 2 Examination is a case-specific policy requirement in the NPS (2011), EN-1 Section 4.4 (Alternatives) that is carried forward to the NPS (Nov, 2023), which can be taken into account by the Secretary of State in the Rampion 2 decision.

Our analysis and conclusions offered in this Written Representation are the three alternatives we looked at by applying NPS Section 4.4 Alternatives criteria offer equal, or more benefit to UK society across most, if not all metrics of national benefit stated in the NPS, including energy security, energy self-reliance and climate change objectives and low emission power.

Nor would consenting Rampion 2 be in the interest of the equitable sharing of benefits and costs in UK society. That is due to uniquely disproportionate effects it would have on coastal and inland communities required to “host” the infrastructure, and thereafter accept the industrial transformation of the character of the area. It impinges on areas of natural beauty, designated landscapes and conservation areas, including the South Downs National Park, that are a high status protected endowment for current and future generations to enjoy and derive intrinsic benefit.

Protect Coastal Sussex (PCS) submitted a written representation on what we see as the adverse local impacts of Rampion 2 in the form of a community-led Local Impact Assessment or (LIA).

In that LIA, we also set out how we believe the Rampion 2 design challenges the interpretation of the European Convention on Landscapes (ECL). We understand the ECL is already interpreted by the UK Government's own Offshore Energy SEA (OESEA) as the strategic environmental advice for visual buffers it offers, which we understand apply to Rampion 2. The commercial Applicant has argued quite vigorously otherwise.

In this respect, the OESEA-4 clearly states that the UK's objectives and indicators for seascape / landscape protection include:

- *“Objective: To accord with and contribute to the delivery of the aims and articles of the European Landscape Convention and minimise significant adverse impact on seascape/landscape including designated and non-designated areas”.*

This companion PCS written representation focuses on three alternatives for low emission generation that are fundamentally important to decarbonise UK power supply by 2035 as stated in the NPS. Otherwise, we believe it reasonable to take a close look at alternatives when considering whether to grant consent for a £3-4 billion infrastructure investment, one that has such significant economic and environmental opportunity costs as Rampion 2.

Moreover as the analysis of the former Business, Energy and Industrial Strategy (BEIS) group noted:

“Clearly there are choices within the future electricity system pathway over which technologies to build, when to build them, and how to operate them.”

Source: Electricity Networks Strategic Framework: Enabling a secure, net zero energy system, Department of Business, Energy and Industrial Strategy, August 2022

We thus offer a simple benchmarking and ranking exercise as a way to help break down and compare national benefits and disbenefits of Rampion 2. That is in summary form here and in more detail in the main representation.

As noted in relevant representations that were previously submitted in Nov 2023, we also believe it is important for the ExA to proactively invite expert testimony on the consideration of alternatives in this Examination, as is provided in Planning Act Guidance on calling expert witnesses.¹

Moreover, given the UK is at a crossroads, and feeling its way forward given that changes in policy recently, and with £3-4 billion at stake, we feel this is a timely opportunity for PINs and DESNZ together with the relevant power authorities (e.g. Ofgem) to undertake power system modelling analysis expeditiously to support the ExA in this task and inform this Examination.

We identified three alternatives to consider on the basis of conformance to NPS requirements (as in Annex 2 of this Representation). Additionally the NPS guidance we assumed is:

- i. NPS 2011, para 3.5.6, *“New nuclear power therefore forms one of the three key elements of the Government’s strategy for moving towards a decarbonised, diverse electricity sector by 2050: (i) renewables; (ii) fossil fuels with carbon capture and storage (CCS); and (iii) new nuclear”.*

¹ Here we note the PA (2008) Procedure Rules allow, “the Examining Authority to call expert witnesses to give evidence on specific points at hearings. They may also consider requests from the applicant and other interested parties to call expert witnesses in support of representations they make about the application.” Reference: Planning Act 2008: Guidance for the examination of applications for development consent” DCLG, 2015. Thus we remain hopeful the ExA may reconsider any decision not to invite, pursue or allow relevant expert witnesses in the Examination .

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/418015/examinations_guidance- final_for_publication.pdf

- ii. NPS (Nov, 2023) which designates each of the three alternatives that we consider to be Critical National Priorities (CNP), namely: in addition to offshore wind, carbon abated gas-fired power stations that are NetZero ready, and new nuclear, where we emphasize small modular reactors (SMR) for obvious reasons explained in the main representation.

The Section 4.4 requirements state that the alternatives must be a realistic opportunity for the UK, and otherwise offer equal or greater national benefits as Rampion 2 over its economic life (roughly 2030 to 2050), and especially to support the ambition of decarbonisation of power supply to the National Grid by 2035 which among all the technology specific targets we see is most important and meaningful to focus on.

Consideration of Alternatives

These alternatives also conform to what Ofgem calls “least regret” choices, as they are wholly consistent with technology specific NPS. They include:

Alternative 1

Rather than extending the Rampion 1 installation, extend a recent licence award for an offshore windfarm in the North Sea area.

Specifically, facilitate incremental investment in an equivalent number of wind turbines (as proposed for Rampion 2) in southern Dogger Bank area where the Rampion 2 developer RWE has recently acquired two licences under the Crown Estate’s fourth offshore wind bid round in Jan 2023. RWE only confirmed in Sept 2023 that it would proceed, when the UK increased the Contract for Differences (CfD subsidy) for offshore wind developers by up to 66%.

That reasonably re-directs £3-4nb of foreign capital investment to an area of higher wind power density, where the same Rampion 2 turbines would be more efficient; generating higher and more constant output. That affords the opportunity to take advantage of economies of scale with shared facilities like offshore substations, power evacuation cables and National Grid transmission connection to reduce costs. That reduces opportunity cost in the system (less costly LNG import) and can free up UK borrowing capacity for other strategic infrastructure. That also offers greater scope for 2-way power exchange with the continent and access to an offshore ring grid.

Those new North Sea projects are due to be completed around 2030 (about the same as Rampion 2). They are still in very preliminary stages of project preparation and design. It is a situation where good-faith negotiations can take place between the relevant parties (i.e., Crown Estates and RWE) with outcomes that are mutually beneficial for RWE and UK society.

Alternative 2:

Retrofit existing and new high efficiency combined cycle gas-fired turbines (CCGT) with carbon capture (CC) on the south coast near load centres in a sensible phased manner.

Putting carbon capture (CC) on existing and new gas-fired power stations to make them net-Zero ready as they will have no carbon emissions. New combustion turbines alongside existing turbines in power stations to extend their capacity, or a new gas power station fitted with carbon capture on the same site or new site can also be multi-fuel (i.e., and hydrogen ready).

This makes them NetZero as point source emitters for the 2035 decarbonisation drive. Locating that dependable and flexible abated gas generation capacity in the south of England minimises costs where grid connection and gas supply infrastructure are available. That reduces pressure on the need for infrastructure for north south power transfers. CO2 storage would initially be handled by barge transport to one of three offshore carbon storage “clusters” the UK is to have ready by 2030, and thereafter flexibly phasing in CCUS (carbon capture, use and storage) as appropriate.

The approach is based the Net Zero Teesside Power (NZN Power)) 850 MW abated gas-fired project consented by the Secretary of State in February 2024. It is all existing and proven technology. The final investment decision will be taken by the owners in Sept 2023. The project is expected to be online in the 2026-2028 timeframe. ²

The south has many efficient combined cycle gas turbine (CCGT) power stations where it is likely additional CCGT capacity can be added to existing power stations with carbon abatement, or building a new power station on the same site with carbon capture That will provide essential firm power to help meet mandated load growth and back-up variable RE generation. It will take time pressure off the costly north-south transmission expansion, and improve system flexibility for load balancing to reduce risks of societal disruption from costly power shortages and blackouts across the south. The point is all UK gas-fired power stations must have carbon capture by 2035.

Alternative 3:

Deployment of factory built, flexible Small Modular Reactors (SMRs) that use enriched uranium or thorium to raise steam to drive steam turbines. SMRs have a small footprint. They are to be co-located appropriately at decommissioned large nuclear sites, existing or under construction large nuclear power stations, or decommissioned coal or gas power stations.

While the new UK entity Great British Nuclear (GBN) opted for a competition between UK and international national supplies and expects to announce winning bids by April 2023, Rolls-Royce has a 470 MW modular, factory-built commercial power SMR that up-scales its military reactors that it has been manufacturing and maintaining for over 60 years.

In February 2024 Rolls Royce announced it aims to have its civilian SMR operational by 2029 in Eastern Europe based on memorandum of understanding with a number of Governments, after previously announcing it has provisional orders and financing.

² https://www.bp.com/en_gb/united-kingdom/home/news/press-releases/net-zero-teesside-power-and-northern-endurance-partnership-award.html

The UK Government' Great British Nuclear (GBN) was established in 2023 with the following mandate: ³

- Great British Nuclear to drive rapid expansion of nuclear power at an unprecedented scale and pace
- government kickstarts competition for game-changing small modular reactor (SMR) technology, which could result in billions of pounds of public and private sector investment in SMR projects
- plans will boost energy security, create cheaper power and grow the economy - creating better-paid jobs and opportunity right across the country

Comparison of National Benefits and Disbenefits

Table 1 at the end of this Summary is a check list and simple benchmarking and ranking exercise as a way to help break down and compare national benefits and disbenefits of Rampion 2 and weigh those against the three alternatives.

Table 1 shows the raw aggregate score for **12 NPS Policy-Relevant National Benefit Indicators** where the score shown is simply the sum of the scores for each criteria under each indicator. There are a different number of criteria under each indicator (criteria are scored 1 to 4) .

This is elaborated and explained in the main representation in Section 4 Conclusions. In Table 6 on Section 4 all the detailed criteria and the scores are shown.

In the absence of systems value modelling (the we argue should be undertaken to inform the Examinations) this is a fall-back technique that uses Rampion 2 as a baseline to rank order the four options, thus qualitatively benchmarking Rampion 2 against the three alternatives.⁴

Obviously there are limitations and complexities. These indicators aim to help make the determination of essential NPS policy interpretations less subjective, more transparent and clear. In applying this technique people or groups may wish to chose different indicators and criteria and apply weights them. We simply assume the same weight on each Indicator and criteria.

It informs the Section 4.4, EN-1 policy requirement as well as how national benefits may be weighed in the Examination "on adverse impacts of Rampion 2 outweighing its benefits".

Summary Conclusions:

Considering Alternatives under NPS EN-1 Section 4.4 is helpful to break down and benchmark the national benefits of Rampion 2 to inform Examination decisions about Rampion 2, for the three purposes set out in the Preface of this Representation.

Rampion 2 has national benefits.

Our simple benchmarking and rating analysis results shown in Table 1 indicates that all three alternatives offer a better way forward than Rampion 2, in respect to national benefits overall. It suggests they are in the local, national and wider public interest as compared to a £3-4 billion capital

³ <https://www.gov.uk/government/news/british-nuclear-revival-to-move-towards-energy-independence>

⁴ This weighting, rating and ranking technique is recommended in the World Commission on Dams for the consideration of Alternatives as a Strategic Priority which the UK government co-funded (WCD, 2000).

investment in Rampion 2. The alternatives do not have the same high economic and environmental opportunity costs and risk as Rampion 2.

Extending an existing offshore wind licence on Dogger Bank would for example lead to 1.3 times the national benefit than granting consent to a £3-4 billion Rampion 2. That would be at less cost. The economic opportunity cost of Rampion 2 could be quantified via power system value modelling. For these assumptions as set out in the main submission in Part 4 Alternative 3, and SMRs could lead to twice the national benefit.

The method and assumptions used for the benchmarking, the 12 national policy indicators used to break down National Benefits, and the detailed criteria and scoring is elaborated in Part 4 of the main representation. That includes the detail matrix presented as Table 6 of Part 4.

In summary

Rampion 2 and three NPS Section 4.4 Alternatives	Benchmarking Indicator score (high being better)	Relative to Rampion 2
<p style="text-align: center;"><u>Rampion 2 – the Baseline</u></p> <p>Extending the installation of turbines in the Sussex Bay with up to 90 WTGs up to 325m tall and transmission through designated landscapes</p>	115	1.0
<p style="text-align: center;"><u>Alternative 1:</u></p> <p>Extending an existing Dogger Bank windfarm licence with equivalent capacity (up to 90 WTGs up to 325m tall) where they are more efficient, economies of scale and potentially link to an offshore ring grid to minimise on-shore transmission and better facilitate connection to EU grids.</p>	156	1.4
<p style="text-align: center;"><u>Alternative 2:</u></p> <p>Retrofitting an existing natural gas-fired power station with carbon capture (CCGT/CC) and adding a Rampion 2 equivalent new capacity at that site (or replacement power starting with CC, or a new power station with carbon capture in the south with multi-fuel capability to switch hydrogen when ready.</p>	201	1.7
<p style="text-align: center;"><u>Alternative 3:</u></p> <p>A Small Modular Reactor (SMR) (located in decommissioned large nuclear site (or existing / under construction site) or decommissioned coal-fired or gas-fired power station sites)</p>	236	2.1
<p>For assumptions noted and policy relevant criteria indicated in Part 4 and Table 6 in Part 4</p>		

It also raises a simple question: at least to 2035, when decarbonisation of the power sector is hopefully achieved and until energy storage systems are viable, affordable and deployed at scale some decades later: which is more environmental friendly and helpful for National Energy Security and UK energy-self reliance: (a) if the UK sources natural gas domestically from the North Sea fields, or (b) imports liquefied natural gas (LNG) transported over great distance from Qatar or the USA in the form of price vulnerable LNG.

That choice of (a) or (b) has real carbon emission implications, and whether those emissions appear in the UK's national carbon accounts or not.

An optimal "least regret" strategy can be highlighted when Alternatives are brought into Rampion 2 Examination. That may be for the UK to move in parallel with all three alternative as complementary additions to the UK generation mix to achieve decarbonisation of the power sector by 2035 – rather than committing to an upfront £3-4 bn Rampion 2 capital investment at this time - is suggested by this analysis.⁵

⁵ Ofgem 2021 strategic review of power system endorses a “least regrets” strategy.

Table 1: Benchmarking National Benefits of Rampion 2 against realistic Alternatives

		Baseline	Three NPS EN-1 Section 4.4 Alternatives		
	Criteria and National Benefit / Disbenefit Indicators	Rampion 2 (Sussex Bay inshore & transmission via a SDNP route)	Wind Turbines extending Dogger Bank Licence	Abated Gas Turbines with carbon capture (CCGT/CC) In South UK	Small Modular Reactors (SMR) (in decommissioned Large nuclear sites or decommissioned coal or gas sites)
	Date Ready to deliver power	~2030	Possible Before 2030	Possible Before 2030	Possible Before 2030 Policy Dependent
	Average annual plant factor	37-40%	60-65%	100% on demand	95% always on expected
		Both weather dependent			
	Estimate build time (years)	4-5 yrs	4-5 yrs	1-4 yrs for CCGT/CC	2-3 yrs is claimed
	Economic Life	20-25 yrs		Longer than Rampion 2	60+ yrs Expected
	Capital Cost (per project)	£3-4 bn	Depends on infrastructure sharing	Location specific CCGT has low capital costs	£2-2.5 bn claims
	12 NPS Policy-Relevant Indicators				
1	Likely contribution to decarbonisation of the UK Power Sector by 2035:	5	9	13	16
2	Likely contribution to UK Energy Security and Energy Self-reliance:	10	13	14	22
3	Effects on National Grid operation, quality and reliability of power supply:	9	15	28	34
4	Affordability Effects (National to Local):	8	11	20	24
5	Project Financability, Investability and Market Risk:	16	16	16	17
6	Job Creation Opportunity and Benefits (Local to National):	7	7	16	22
7	UK Industry Strategy, UK export and UK developing country assistance: Opportunity and Benefits	4	4	12	16
8	Adverse Environmental Footprint and Impacts:	24	28	26	27
9	Environmental Externalities:	12	12	9	10
10	Avoidance of compromising the achievement of sustainable development in coastal and inland areas	8	19	20	20
11	Distribution and Equity Effects (national to local)	4	9	8	8
12	Lowering Opportunity Costs: Economic, social and environment opportunities forgone	8	13	19	20
	Total Count (Un weighted)	115	156	201	236

Main Representation

Many people in our communities believe that Rampion 2 turbines are simply in the wrong place for infrastructure of this scale and nature. Stakeholders including elected MPs and community organisations constructively engaging with this DCO process in good faith stated so during the commercial developer’s statutory pre-application consultations.

This view is: locating the same wind turbine generators (WTGs) as proposed for the Sussex Bay inshore (up to 90 WTGs up to 325m) in higher and steadier wind regimes would be massively in the local and national interest.

Concerns extend to the adverse impacts of the whole development with the transmission route interrupting protected designated landscapes and local communities disproportionately.

As one of our area Members of Parliament stated clearly during statutory consultations in 2021: ⁶

“... This stretch of the West Sussex coastline is an inappropriate location for such a large wind farm. The English Channel is too narrow to enable the turbines to be positioned far enough out to sea to be acceptable. This proposal does not, therefore, comply with the Government’s recommendations for offshore wind farms of this size.”

Moving the turbines to a location where they are efficient is not only value for money, that step along with rapidly deploying complementary low-emission generation is essential to provide dependable, affordable and reliable power supply and decarbonise by 2035. ⁷

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This Written Representation is in 4 Parts:

- Part 1. The NPS requirement to consider alternatives in the Rampion 2 Examination
- Part 2. Three reasonable and practical alternatives to Rampion 2
- Part 3. Comparison of alternatives and Rampion 2: in respect of national benefits/disbenefits
- Part 4. Conclusions

We include Annexes with additional information and evidence to support our views. Annex 2 is a NPS Tracking Note on relevant NPS (EN-1, 2011) requirements on assessing Alternatives.

Annex 2 indicates how we feel relevant NPS policy may be interpreted on this issue, on a case-specific basis. Other Annexes offer policy background information and context for the three alternatives considered and elaborate on the opportunities they offer UK society.

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⁶ Statement by the Rt Hon Nick Gibb MP for Bognor Regis & Littlehampton at the 24 August 2021 public community led public consultation in Littlehampton that included, “... I support the Government’s aim for the UK to be a world leader in renewable energy and the Government’s ambitious programme to tackle climate change, but this stretch of the West Sussex coastline is an inappropriate location for such a large wind farm.”

⁷ There was no mention of alternatives to Rampion 2 that we proposed in the Applicant’s Report on Consultations submitted with the Application in August 2023.

PART 1: THE NPS REQUIREMENT TO CONSIDER ALTERNATIVES

The case-specific policy requirement to consider alternatives in Rampion 2 Examination is triggered because Rampion 2 would interfere with the South Downs National Park (SDNP) and other designated landscapes.⁸

Specifically, under the NPS (2011) in the section on:

“Developments Proposed within Designated Landscapes”:

- EN-1 (2011) paragraph 5.9.10, states that government, “... may grant development consent in these areas in exceptional circumstances. The development should be demonstrated to be in the public interest **and** consideration of such applications **should include assessment** of:
 - the cost of, and scope for, developing all or part of the development elsewhere outside the designated area, **or meeting the need for it in some other way**, taking account of the policy on Alternatives set out in Section 4.4;” Our underlining.
- The South Downs National Park (SDNP) Authority objected to Rampion 2 on multiple grounds. In its Principal Areas of Disagreement (PAD) Statement, Nov 2023, the SDNP Authority states, “... It is therefore the case that this ‘test’ of the National Policy Statement EN-1 paragraph 5.9.10 has not been met.”
- The revised NPS (Nov, 2023) maintain the same requirement to consider alternatives in Examination of DCO applications that encroach National Parks, and states further that the views of the Boards responsible for National Parks, (i.e., the views of the SDNP Authority on Rampion 2 in this case) “... should be given substantial weight by the Secretary of State in deciding on applications for development consent in these areas”.

NPS (2011) EN-1, in Part 4.4 Section on Alternatives state:

- Para (4.4.3) “The consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner” and “only alternatives that can meet the objectives of the proposed development need to be considered.”
- “The Secretary of State should be guided in considering alternative proposals by whether there is a realistic prospect of the alternative delivering the same infrastructure capacity (including energy security, climate change, and other environmental benefits) in the same timescale as the proposed development”.
- Otherwise, we noted that the consideration of alternatives in the Rampion 2 Examination applies and complies with all stipulations in NPS (2011) under Part 4.4 Alternatives and similarly NPS (2023, proposed) namely policy conditions in EN-1 paras 4.2.21 through 4.2.29.
- For example, alternatives can be demonstrated as having been proposed in the statutory pre-Application consultations.⁹

In sum, there is a clear policy requirement for the Rampion 2 Examination to consider alternatives for low-emission bulk power supply and it is in the public interest to do so.¹⁰

⁸ Setting aside concerns that Rampion 2 is likely in breach of the European Convention on Landscapes and aligned UK policy and law, as we believe is interpreted by OESEA-4,

⁹ Where there was no mention of that in the Applicant’s Consultation Report filed along with the Application 10 August 2023. NPS (2011) EN-1 para 4.4.3 concludes, “Therefore where an alternative is first put forward by a third party after an application has been made, the IPC may place the onus on the person proposing the alternative to provide the evidence for its suitability as such and the IPC should not necessarily expect the applicant to have assessed it.”

¹⁰ The importance and relevance of this issue was reinforced by the High Court Decisions on NSIPs (Energy) in January 2023 to dismiss a DCO decision where alternatives were not properly taken into account.

PART 2: THREE REASONABLE AND PRACTICAL ALTERNATIVES

We highlight three alternatives that conform to NPS that offer equivalent, or greater national benefit over the expected economic life of Rampion 2, without being unlawful, or as we argue without having the same ecological, physical and social footprints as Rampion 2.

These are realistic alternatives that accord with NPS, which in addition re location of WTGs of the scale of Rampion 2, include small modular reactors (SMR) driving steam turbines, and the abatement of emissions from new and existing conventional gas-fired power stations (high efficiency combined cycle gas turbines (CCGT), which would be NetZero ready as well as hydrogen ready).

Presently about 32 gas-fired power stations (CCGT) form the bulk of the UK's flexible generation capacity and assets today. In conjunction with the phased, but urgent retrofit with carbon capture and storage, they are realistic alternatives along with extending the capacity of these power stations with additional turbines or new carbon abated gas power station.¹¹ The former may be preferred as it highly cost effective (subject to confirmation by routine power system value modelling analysis where this would all be routinely quantified).

And as the NPS indicate, eventually abated natural gas-fired power stations can be fed by green hydrogen in those same turbines (once hydrogen electrolysis technology and hydrogen storage is sorted); and to the extent that other utility-scale energy storage systems become viable and affordable as part of the UK power supply mix.

In this Representation we do not look at solar, either as a single "project" to install many small rooftop solar panels, or multiple utility-scale solar plants on land, nor at other potential renewable energy sources such as tidal, wave, ocean thermal and biomass combustion.

That is for one or more of three reasons relating to the NPS EN-1 Section 4.4 criteria, including: (i) there are not of the same quantum of electricity as Rampion 2 or the alternations that we do consider for bulk power supply, or sufficiently similar, (ii) the commercial development status is not ready, or (iii) the timeframe for deployment is well beyond 2035, such as tidal power.

National efforts are underway to advance other renewable and low-emission generation technologies along the research, development, demonstration and deployment path that will play an important role in the UK's future electricity generation mix.¹²

Additionally consideration may be give to the interconnect with France where a Judicial Review in January 2023 overturned a decision to refuse consent on the Aquind Ltd proposal to lay cables through Portsmouth, Hampshire, to Normandy.¹³

We elaborate on the three alternatives (each technology now designated as a critical national priority) as input to the NPS Section 4.4 requirement for the consideration of Alternatives in the Rampion 2 Examination, as follows.

¹¹ Nor have we looked at utility-scale storage for similar reasons as there are also unresolved supply chain issues and security of supply and environmental issues associated with for example the mining the rare earths and critical minerals needed for those options such a utility scale lithium battery "farms".

¹² There are also opportunities on the electricity end-use or demand-side to respond to intermittent renewable energy supply and improve end-use efficiency thus reducing the need and cost of electricity supply.

¹³ <https://www.bbc.co.uk/news/uk-politics-64388577>

□ **ALTERNATIVE 1**

Instead of extending the existing Rampion 2 installation which poses significant challenges and opportunity costs, granting an extension to an existing developer's license in southern North Sea area, which has more efficient and favourable wind regimes.

Specifically, one approach would be to facilitate investment in wind turbines in the North Sea where the same Rampion 2 developer (RWE) has recently acquired two licences under the Crown Estate's seabed leasing Round 4 that concluded in January 2023: Dogger Bank South (West) and Dogger Bank South (East) each to install turbines up to 1.5 GW for a total of 3 GW.

As noted in the Summary, RWE only confirmed in Sept 2023 that it would proceed with these two projects, when the UK Government increased the Contract for Differences payments and subsidy (the CfD subsidy) for offshore wind developers by up to 66%.

That would reasonably re-direct £3-4bn of foreign investment to an area of higher wind power density, where the same Rampion 2 turbines would be more efficient, generating higher and more constant output and be lawful. It would enjoy public support and be massively in the public interest – in our view and simple analysis.

▪ **Illustrative Features:**

- Locates Rampion 2 turbines in higher wind regimes in the shallow offshore designated Renewable Energy Zone (REZ) on the southern North Sea, so the WTGs more efficient and there is better value for money;
- For potentially the same £3-4 billion development cost - possibly lower through economies of scale;
- Obviously this requires political will and constructive collaboration to achieve a negotiated outcome between Crown Estates, DESNZ and RWE and other relevant interests such as PINs.
- In theory this may be can be linked to smaller Rampion 2 (within-Project Alternative where some turbines where feasible to integrate in the existing Rampion and the balance of WTGs installed in the new RWE concession areas on Dogger Bank and utilisation of the existing Rampion 1 transmission corridor or ROW.¹⁴

▪ **Comparative advantages over consenting a £3-4 bn spend on Rampion 2**

- Higher efficiency, higher capacity factor, steadier and greater power output (see tables that follow in Part 3).
- Greater scope for emission reductions to 2035, after which time the UK power system will be decarbonised (after 2035 Rampion 2 and all new windfarms would compete with other low-emission generation on other attributes, until hydrogen storage is viable and scalable).

¹⁴ Would have to overcome bottlenecks in the existing ROW where there may be bottlenecks in housing areas using horizontal drilling that RWE representatives were adamant about as not being feasible when that alternative was raised verbally in formal consultations at the pre-application stage at the Littlehampton Yacht club.

- Lower opportunity costs compared to Rampion 2 including in economic and environment terms: e.g.
 - Reduction in costly price-volatile imported LNG such as currently from Qatar and the USA each with threats to Energy Security.
 - Reduction in costly power imports via undersea power cables from the Continent, where the UK pays a heavy premium for imported power.
 - EU states trade power to cover UK supply imbalance at far lower rates.
- This Alternative eliminates the high risk of undermining sustainable development on the south coast of England and disproportionate impacts on coastal and inland communities that Rampion 2 poses.
- It respects the European Convention on Landscapes (ECL) and UK commitments as interpreted by OESEA visual buffers to conform to the ECL and aligned UK policy (OESEA-4 strategic advice).
- Would have greater community and public acceptance across the UK, especially if the alternative is linked to reduce UK power cable landings and transmission to connect to National Grid substations.
- Other Potential Synergies:
 - Ties into the proposed offshore ring grid infrastructure opportunity in the North Sea to facilitate greater two-way power trading between the UK as inter-linked Continental power systems beneficial to UK interests.
 - Potentially, exploits scope to reduce capital cost linking to RWE's Dogger Bank schemes with sharing facilities and incrementally increasing capacity (via economies of scale) plus reduced transmission.
 - Capital savings may more than offset incremental costs of the north-south transmission to move power to the southern power loads.

Figure 1 below shows a preferred location alternative in the North Sea which is the Offshore Wind Leasing Round 4 Agreements for concluded in January 2023, where RWE has secured two licences and is yet to start the design work. The aspects can be confirmed in discussion with all the parties, recognising the Rampion 2 applicant would be reluctant initially. Part of a win-win negotiated outcome may be that the Applicant recovers development cost of the Rampion 2 Application to date as incentive.

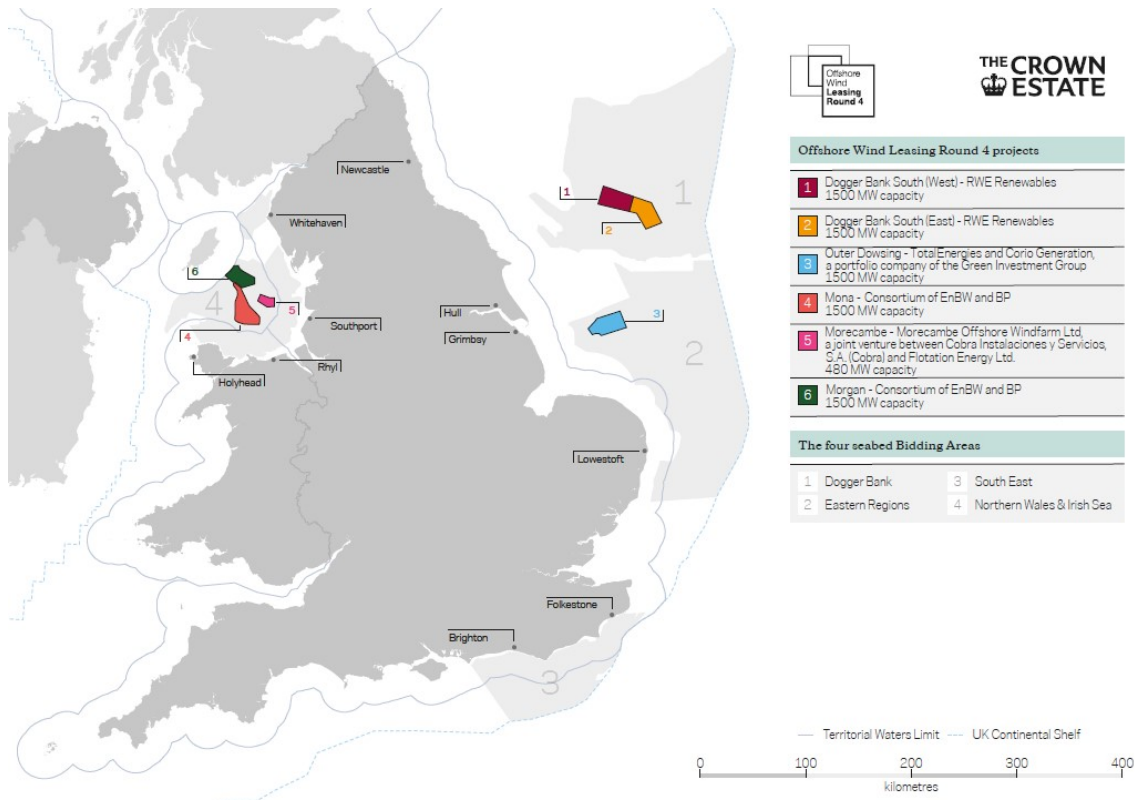


Figure 1: The Offshore Wind Leasing Round 4 Agreements for Lease signing concluded in January 2023, (Source: The Crown Estates)

The alternative of moving Rampion 2 turbines to the North Sea was recommended to the Rampion 2 developer RWE during its formal pre-application consultations in a Community-Led Public meeting in Littlehampton Town Council Millennium Chamber 24 August 2021, as a Resolution 3 endorsed by the participants:

*Resolution 3: Participants feel the Rampion 2 EIA should assess moving turbines 25 miles offshore as a “reasonable alternative”. A non-project alternative assessed in the EIA should be the extension of a wind farm application in Dogger Bank.*¹⁵

The meeting report was also submitted as a formal consultation response agreed with stakeholders.

The recommendation was submitted as a formal consultation response which is relevant to NPS EN-1, Section 4.4 provisions.

¹⁵ The full resolution is available in the Report submitted to RWE as a formal consultation input. As mentioned it is not indicated in the Applicant’s Consultation Report submitted with the Application in August 2023.

□ Alternative 2:

Retrofit existing and new high efficiency combined cycle gas-fired turbines (CCGT) with carbon capture (CC) systems at gas-fired power stations on the south coast near load centres to make them NetZero immediately in a sensible phased manner.

Putting carbon capture (CC) on existing and new gas-fired power stations to immediately make them NetZero and have no carbon emissions. This includes either adding new combustion turbines alongside existing gas turbines to extend the existing power station capacity, or new gas power stations fitted with carbon capture that also can be multi-fuel (i.e., hydrogen ready) – either where and exist power station is replaced or at a new site. This makes them NetZero for the 2035 decarbonisation drive.

Locating that dependable and flexible abated gas-fired generation capacity in the south of England minimises costs at sites where grid connection and gas supply infrastructure are already available. It reduces pressure on the need for transmission infrastructure for north south power transfers and gives more time.

CO₂ storage would initially be handled by barge transport to one of three offshore carbon storage facilities “clusters” the UK is to have ready by 2030, and thereafter flexibly phasing in CCUS (carbon capture use and storage). Then eventually reverting to hydrogen or leaving the option to do so as a “least regrets” choice.

▪ Illustrative Features

- By far the lowest capital costs among Rampion 2 and other alternatives.
- Conventional high efficiency combined cycle gas turbines that today provide the majority of UK flexible and dependable power supply, can be retrofitted with CC and with additional capacity with combustion turbines at power stations in the south.
- The carbon capture unit (CC) based on Amine-based post-combustion capture (PCC) is commercially-available technology used in the petroleum sector since 1996 and in the coal-fired power industry since 2014.
- This alternative is deployable before 2030 and can be based on the NetZero Teesside Power station consented in Feb 2024 due be on line by 2027-28, awaiting financial closure this September.
- Provides Net Zero increment for essential dispatchable generation to both support the build out of variable renewables as well as growing load imbalances and demand growth from mandated electrification.
- That is an energy penalty as CC will draw up to 10% of the plant output so turbines need to be that amount larger, to the incremental cost is small

relative to the build cost and opportunity cost of Rampion 2

- Comparative advantages over consenting a £3+ bn spend on Rampion 2
 - No requirement for parallel investment in a back up generation systems with associate transmission.
 - Essential flexibility for power system operation to prevent outages, interruptions and grid collapse as the share of variable renewable capacity is grown on the National Grid to levels no country has seen before based on wind and solar (intermittency, variability and grid instability) . Cannot be compared to hydropower storage.
 - High load factor of any gas-fired power station and scalable
 - Potential capital cost advantage (depends on use in the system either for flexible backup or dependable power or both (it offers both)
 - Eliminates undermining sustainable development of the south coast
 - Reduces reliance on imported RE / wind technology and support expansion of solar and windpower (as a flexible backup)
 - Local Community and public acceptance
- Other Potential Synergies
 - The Crown Estate initiative for storage on south coast and the system and mapping Flexible staging of the CCT and CCUS elements.
 - Supports Increased amount of variable renewable installed capacity the power system can take.
 - Preferably utilising domestic natural gas supplied from the North Sea that has far lower supply-chain Co2 emissions (3 to 10 times) than imported LNG.
 - Use of hydrogen-ready turbines can be fitted into new and existing gas-fired power plants.
 - Co-located with other industries and advances in carbon capture utilisation and storage (CCUS) on the south coast as a catalyst.
 - Genuine industrial strategy and export of systems CCGT / CC power stations where much of the developing world is reliant on coal and natural gas-fired power stations
 - Potential synergies in co-locating gas turbines with CC plant and SMRs in Industrial Power parks.

This is illustrated by the power component of the NetZero Teesside Power (NZT). Net Zero Teesside itself is a collection of industrial, power and hydrogen businesses which aim to decarbonise their operations through the deployment of carbon capture utilization and storage (CCUS) and noted on its website.

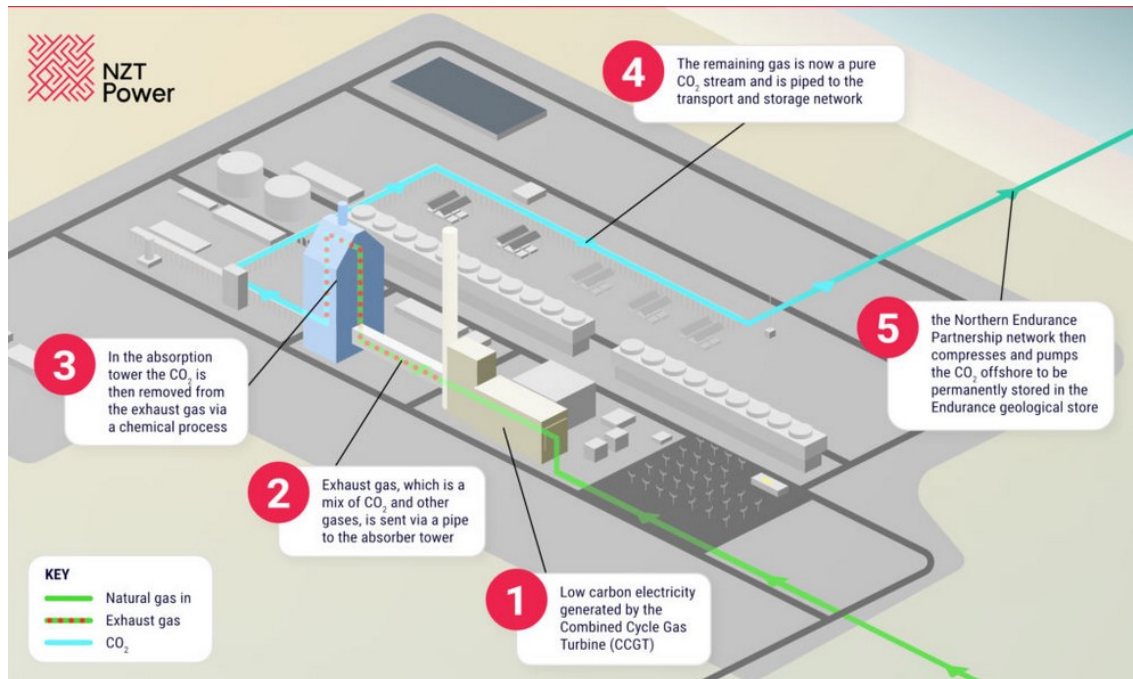


Figure 2:¹⁶ The Net Zero Teesside Project Consented in Feb 2024



Figure 3: Alternative view of The Net Zero Teesside Project

The Secretary of State for Energy Security and Net Zero (DESNZ) granted a development consent order (DCO) for the Net Zero Teesside (NZN) Power scheme on 16 Feb 2024.¹⁷ Financial closure is anticipated in Sept 2024. Policy Relevance NPS-1 3.3.17 *“However, new unabated natural gas generating capacity will also be needed as it currently plays a critical role in keeping the electricity system secure and stable. It will continue to be needed during the transition to net zero while we develop and deploy the low carbon alternatives that can replicate its role in the electricity system.”*

¹⁶ <https://www.netzeroteesside.co.uk/project/> and

<https://infrastructure.planninginspectorate.gov.uk/projects/north-east/the-net-zero-teesside-project/>

¹⁷ <https://infrastructure.planninginspectorate.gov.uk/projects/north-east/the-net-zero-teesside-project/>

□ **Alternative 3:**

Deployment of factory built, flexible Small Modular Reactors (SMRs) that raise steam to drive steam turbines. SMRs have a small footprint and are to be co-located appropriately at decommissioned large nuclear sites, existing or under construction large nuclear power, or decommissioned coal or gas power stations.

While the new UK entity Great British Nuclear (GBN) opted for a competition between UK and potential international national suppliers and GBN expects to announce the winning bids by April 2023 for a next stage design, Rolls-Royce has a 470 MW modular, factory-built commercial power SMR that up-scales its military power reactors which it has been manufacturing and maintaining for over 60 years.

In February 2024 Rolls Royce announced it aims to have its civilian SMR operational by 2029 in Eastern Europe reportedly based on Memorandum of Understanding with a number of Governments, after previously announcing it has provisional orders and financing.

This focuses the re-emergent UK nuclear industry on rapid deployment of home-grown Small Nuclear Reactors with a small footprint and 95% capacity factor. Up to 7 existing large nuclear plants are expected to be decommissioned by 2030. That offers multiple synergies and value for money. The UK has a target of 25 GW of new nuclear capacity by 2050.

▪ **Illustrative Features**

- Proven technology in military applications for a half century scaled up for civilian commercial power adapted and scaled up to deliver fully integrated, factory built uranium fuelled power stations.
- Modular, factory assembled components that are transported to and installed on site.
- Uses existing transmission connections when co-located on decommissioned or already operating and licensed nuclear sites, or decommissioned coal or gas-fired power stations.
- Reportable deployable well before 2030 (Rolls Royce (RR) claims) and multiple other suppliers contend (Canada expecting first SMRs by 2027 and site work has stated, RR is aims to have first units in Eastern Europe operating by 2029 .
- One tenth the footprint of conventional large nuclear power stations.
- Key feature is low cost, factory and a 2-3 year manufacture and installation schedule, according to proponents.
- Safe country fuel sources (E.g. uranium from Canada)

▪ **Comparative advantages over consenting a £3-4 bn spend on Rampion 2**

- Capacity factor in the range of 95% thus producing more energy reliably than Rampion 2 (as a always on, base load)
 - No requirement for parallel investment in back up generation
 - Eliminates risk of undermining sustainable development of the south coast that Rampion 2 presents.
 - UK home grow technology options with high local content
- Other Potential Synergies
 - Potentially avoids foreign ownership and operation of the entire UK nuclear fleet and sending profits offshore and foreign control. (Energy self reliance)
 - Growing UK and European public support for nuclear and synergy with the Continental (EU) policy classifying nuclear as a green energy source in 2022 to access funding ESG and conventional funding.
 - Co-locate on large nuclear sites that are decommissioned, existing or proposed reducing public acceptance challenges on specific sites and approval time.
 - Plans underway to include SMR in Wales at decommissioned sites.
 - Potential to fundamentally create a domestic industry with high skilled jobs and technology advancement and help UK nuclear industry get back on its feet
 - Genuine industrial strategy and export of systems as demonstrated in global interest including Eastern Europe to place orders.
 - Potential to build on maintains UK technology reputation and leadership in small nuclear development and offers technology that genuinely helps other countries on their low-emission journeys impacting the global climate.

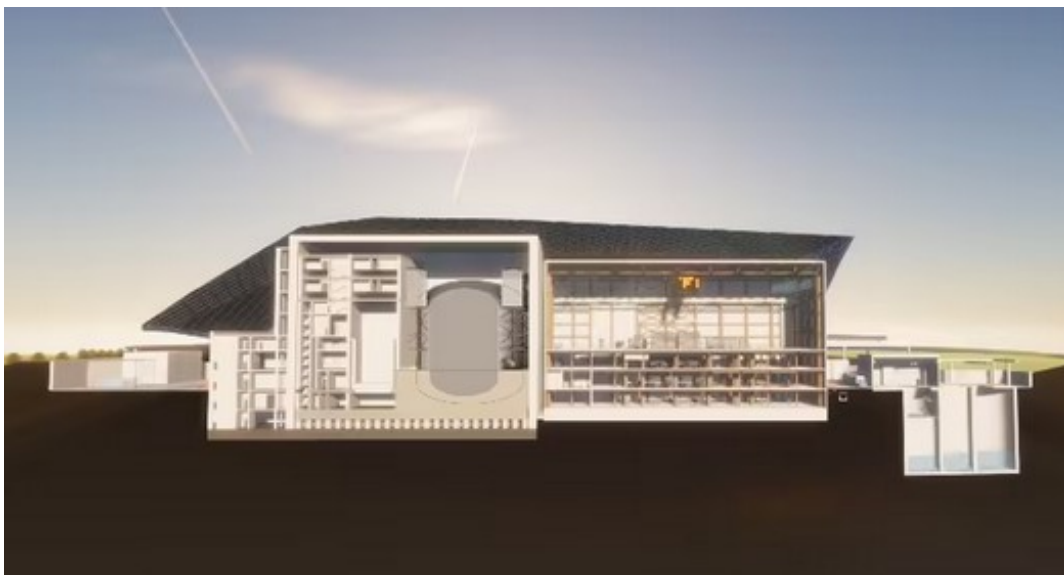


Figure 4: 470 MW Small Modular Reactor (SMR) Source: Rolls Royce¹⁸

¹⁸ <https://www.rolls-royce.com/innovation/small-modular-reactors.aspx#section-why-rolls-royce-smr>

General government support via the UK Government's Great British Nuclear (GBN) established in 2023 that sets the trend: ¹⁹

- Great British Nuclear to drive rapid expansion of nuclear power at an unprecedented scale and pace
- government kickstarts competition for game-changing small modular reactor (SMR) technology, which could result in billions of pounds of public and private sector investment in SMR projects
- plans will boost energy security, create cheaper power and grow the economy - creating better-paid jobs and opportunity right across the country

GBN is to announce its bid award for final development and deployment of SMRs in the UK in April 2024. ²⁰ France is aiming to have its whole large nuclear replaced by 2035 by SMRs

In February 2024 the Chairman of UK based Rolls Royce announced it aims to build its first SMRs in Europe as export projects by 2029, well ahead of the pace in the UK. ²¹

A fundamental question with SMRs as to other Alternatives is whether the UK Government is to seek any ownership or stake in the ownership of nationally strategic energy infrastructure in future, given that today most of the UK's energy infrastructure and generation assets are foreign owned and operated, mainly by European State owned companies or European State backed multi-energy consortium under the providence and regulation of the EU Commission.

¹⁹ <https://www.gov.uk/government/news/british-nuclear-revival-to-move-towards-energy-independence>

²⁰ <https://www.gov.uk/government/news/six-companies-through-to-next-stage-of-nuclear-technology-competition> Rival bidders to RR the UK has invited include EDF (100% ownership of UK large nuclear assets and 100% French state owned), GE-Hitachi, Holtec Britain, NuScale, and Westinghouse.

²¹ <https://www.telegraph.co.uk/business/2024/02/22/rolls-royce-boosted-post-pandemic-jump-demand-jet-engines/>

Part 3: COMPARISON OF ALTERNATIVES WITH RAMPION 2 IN RESPECT TO NATIONAL BENEFITS AND DISBENEFITES

At the end of this section we offer a spreadsheet table (Table 5) that expands and illustrates the breakdown of national benefits and disbenefits that we see as policy relevant to the NPS. We offer a scoring and ranking exercise that benchmarks Rampion 2 against these Alternatives.

To inform the spreadsheet (in Part 4 Tables 5 and 6) we first offer this comparison of:

- 1) Co2 emission reduction
- 2) Energy generation and power output
- 3) Capital investment
- 4) Contribution to Power System flexibility and operation
- 5) Energy Security and Import Dependency
- 6) boosting UK Business and its Industrial Strategy
- 7) the achievement of Sustainable Development

Additionally Part 4 tables 5 and 6 are informed by the PCS Local impact Assessment (LIA) that is submitted in parallel as a Written Representation.

1. On Co2 emission reduction

Emission reductions may take into consideration: (1) life cycle or “cradle to grave” emissions, or (2) only CO2 emissions during the multi-year operation stage.

Ideally the metric is life cycle emissions. But it is a complex calculation that requires looking at the technology supply chain (i.e., from mineral mining and transport, to smelting, to manufacturing, construction and installation, then through multi-year operation and maintenance (O&M), and finally decommissioning work.

It also requires looking at the supply chain emissions for the energy resource, where that applies (e.g. for pipeline natural gas versus imported liquefied natural gas (LNG), and reactor fuel for SMRs such as enriched uranium or uranium or thorium fuel).

Rampion 2 has no direct energy resource cost but the trade-off is turbines in the location are comparatively inefficient (Annex 7) intermittent, variable and weather dependent. Rampion 2 thus requires more investment in complementary dependable back-up either via power imports from the Continent or abated gas-fired generation and adds to emissions for LNG imports (emission in the supply chain) and requirement for investment in other system infrastructure to provide ancillary power services such as indicated in Annex 6 – adding to the opportunity cost of Rampion 2.

Observations are:

- Life Cycle emissions apart from operation of Rampion 2 WTGs on the south coast and similar WTGs on southern Dogger Bank and we assume are roughly similar.
- Operating the same WTGs on Dogger Bank where they generate more and steadier output (as seen in load duration curves, Annex 7), means incrementally less backup generation, reducing imported LNG requirements, hence resulting in less point-source emissions from backup gas-fired generation and LNG supply chain emissions.
- Far less life-cycle emissions would be expected for the small modular nuclear (SMR) given its high capacity factor (more than double that for wind alternatives) and lower requirement for materials and infrastructure, and not requiring backup.
- For similar reasons, far less life-cycle emissions result from operating the CCGT / CCS as a fully integrated “NetZero ready” alternative, compared to Rampion 2, though there would be LNG versus pipeline gas supply chain emissions to trade-off.

These are summaries in Table 2 below.

Alternatives for Low emission generation	Relative Life Cycle Emission Reduction (Excluding Operation)	Relative Emission Reduction in Operation
Rampion 2 Extension ¹ (up to 90 WTG up to 325m) inshore visibly starting 13 km (6 NM) from the coast	Base line	Baseline: RWE indicates Co2 offset with the present UK generation mix of 1.8 million tonnes co2 per year. However from 2035 when the UK power system is fully decarbonised Rampion 2 competes with other low emission alternatives mainly on other factors. It does induce more LNG imports post 2035 for back up.
Extension to existing South Dogger Bank License Award ² (up to 90 WTG up to 325m) Well offshore over 100 km from the coast	Similar to Rampion 2 baseline for mining, manufacturing and a little less in construction de to economies of scale as an extension	Greater than Rampion 2 offsetting more gas-fired plant emissions at least 25% and possibly double with LNG supply chain emissions LNG is imported. ²
Small Modular Reactor (SMR), Based on Rolls Royce model ³	Far Less than Rampion 2 baseline	Similar to Rampion 2 from when commissioned to 2035. Low emission but also offsets more imported LNG and LNG supply chain emissions pre and post 2035
Abated gas-fired generation Net Zero Ready and Hydrogen ready) Net Zero Teesside Power (NZE Power) Equivalence as a CCGT / CC Power Station	Far Less than Rampion 2 baseline	Similar to Rampion 2 Net Zero as a power station when commissioned, but also has ongoing LNG or North Sea gas supply chain emissions
Notes: 2. Based on using ratios of life capacity factors hence energy generation / yr assuming the same installed capacity of 1,200 MW of WTGs		

Table 2: Relative Carbon Emissions of Rampion 2 - Life-Cycle and Operation

Assuming that abated gas-fired generation that is dispatchable would back up Rampion 2 over most of its economic life (~2030 to 2050),²² moving turbines to the North Sea and SMRs offers UK society a better carbon emission reduction outcome.

Between Rampion 2 and abated gas-fired generation there are questions about relative amount of carbon embedded in the supply chains for each technology (mining through construction and commissioning) and whether the natural gas supply (in each case) is domestic or imported LNG (as back up dependable supply for Rampion 2 and for operation of the abated gas-fired power station beyond a RE backup role for supply-demand balancing).

The other important consideration is that once the power sector is decarbonised in 2035 Rampion 2 and the Alternatives would only compete against other low emission generation sources in terms of cost, performance, system fit, system reliability, opportunity cost and energy security and self reliance. Thus the carbon reduction benefit of any alternative is only till then 2025, in the Rampion 2 case 2030 to 2035, for 5 years.

2. On energy generation and power output

Table 3 below indicates the average annual generation and variability of electricity supply from Rampion 2 and the three alternatives. This is illustrative. The same WTGs on Dogger Bank offer the highest average annual generation, while the others at the assumed scale are roughly similar. The differences being (1) the observed variability in wind resources (seen in the load duration curve in Annex 7), and (2) the CCGT option with or without abatement can be scalable to and power and energy output and depends how it is used in the system.

²² As suggested in EN-1 (2021) page 25 para 3.3.5 on delivering affordable decarbonisation.

Alternatives for Low emission generation	Average Energy Generation Potential			Variability & Reliability of Power Output	
	Installed capacity MW	Life Capacity Factor %	Average Generation GWH/yr	Load duration (Annex 7)	General
Rampion 2 - Extension ¹ (up to 90 WTG up to 325m)	1,200	38.0	3,995	15% of time no output; 50% of time less than 60% output	Varies daily, seasonally and year -to-year
South Dogger Bank New Licence Extension ² (up to 90 WTG up to 325m)	1,200	47.6	4,972	7% of time no output; 50% of time less than 60% of full capacity output	Varies daily, seasonally and year -to-year. At a higher capacity (more efficient than Rampion 2)
Small Modular Reactor (SMR) based on the Royals Royce model ³	470	95%	3,911	Always on	subject to O&M
Net Zero Teesside Power (NZT Power) Equivalence as a CCGT / CC Power Station. ⁴	860	95%	3,828	On demand to continuous operation	Scalable
<p>Notes:</p> <p>1. Life capacity factors are used as capacity factors (or load factors) vary year-to-year. https://energynumbers.info/uk-offshore-wind-capacity-factors. Rampion 2 would be expected to perform in the 37-40% being far larger than Rampion 1, but in the same win regime.</p> <p>2. Capacity factor is assumed based on Honsea One, as in the source above</p> <p>3. Capacity factors for SMR are based on USA small reactor experience. The same 95% is assumed for the CCGT/CCUS simply for comparison as there will be some schedule maintenance. That is maximum generation.</p> <p>4. The CCGT/CC is scalable and can be any size and can be phased e.g. Install and operate CCGT now and add the CC capacity later plus can make turbines hydrogen ready.</p>					

Table 3: Average Annual Generation Capacity Comparison

3. On capital investment

Rampion 2 requires a capital outlay of £3-4 bn that REW will arrange (as equity and debt finance typically in a 20:80 ratio with international lenders such a venture capital, ESG and conventional funds providing loans or 80% debt financing).

There will be an additional capital outlays on offshore wind as mentioned, as the UK society must invest in the backup or parallel dispatchable power system to turn on when the wind drops, whether that is carbon abated gas-fired generation or costly power imports, or energy storage systems when they are eventually available.²³

²³ There is no endless pot of money for infrastructure investment either from UK government or UK financial institutions sources and or foreign sources; and there are obvious limits to increasing tariffs that must repay investors at commercial rates of return and even higher compensation rates (windfall profits) as we have seen lately with the Renewable Energy Contribution and CfD subsidy contracts discussed in media. (cite)

Observations are:

- Installing the same capacity of WTGs on Dogger Bank as Rampion 2 would deliver more energy and power at a higher capacity factor for the roughly same capital outlay.
- In addition, there may be savings or reductions in capital requirements for the Dogger Bank license extension due economies of scale involved with co-locating infrastructure (i.e. combining the 1,200 MW with either of RWE's the new 1,500 MW licences, plus addition cost reduction synergy in connecting to the offshore ring grid that is anticipated to be available by 2030).
- The potential would need to be investigated.
- Evidence is the 1,400 MW Sonia windfarm now under construction by RWE at the similar cost as proposed for the 1,200 MW of Rampion (about £3 bn in 2019 money).
- It is stated that the 270MW SMR can be built in a factory and installed on site in a 2-3 year period in the order of £2bn, once regulatory approval is secured and a UK Government order is confirmed.²⁴ This of course needs to be verified in invited testimony at an Examination Hearing.
- Similarly for the CCGT / CCUS alternative the natural gas turbine CCGT is known conventional technology with low capital cost and is deployed around the UK and the world. The capital cost of the CCUS would have to be verified in testimony and may also be available in submissions to the Net Zero Teesside Power (NZN Power) Examination completed in 2022.
- It is not as bad as it sounds, as in the short- to medium- term the UK has ample high efficiency gas-fired power stations that run without CO₂ abatement now. Retrofit with CC in a flexible approach. NPS EN-1 states abated gas-fired power station generations is needed to move on an affordable path to NetZero as a flexible power supply option.²⁵

Evidence in this analysis thus suggest UK society would likely be better off pursuing Alternatives, in terms of capital outlay and freeing up money for higher quality investments.

4. On contribution to Power System flexibility and operation

The three reasonable alternatives have considerable advantages. That is important and relevant if the policy and practical aim is to increase dependable power supply in the south of England (power on demand) and prioritize investment in the most efficient use of wind energy resources.

²⁴ Cite source UK energy. Get a statement from RR.

²⁵ Separately it may be argued and verified with Ofgem testimony, there would benefit from a closer look a supply chain investment requirements and emissions of pipeline gas from the North Sea versus imported LNG. It is NPS policy relevant for the consideration of Alternatives.

Apart from load balancing and preventing blackout and in the worst case Grid collapse these include a range of what are called ancillary power system services that are needed to ensure grid stability (such as spinning reserve and reactive power generation, for system power factor correction). CCGT with or without Co2 abatement offers these services whereas wind generators typically do not at all or not very well. Thus additional equipment such as utility-scale expensive capacitor banks are then required.

As recommended by World Bank (ESMAP, 2016) system value analysis (to quantify the value associated with any proposed capacity addition for low carbon energy, including flexibility to meet power sector needs and wider energy and climate policy) is crucially important once past a 30% share of variable RE on the power system, which the UK is well past.

As noted, the value of system modelling analysis was undertaken for the Net Zero Teesside Project now awaiting a DCO decision in 2023 and serves as a good model. It could also be part of the “no-project” analysis, as in the EIA Regulations 2017 for Rampion 2.

5. On Energy Security and Import Dependency:

This Representation argues that investing in comparatively low efficiency wind farms on the inshore of the south coast, like Rampion 2 (with lower capacity factors), requires incrementally more imported LNG (or pipeline gas) to back it up, and similarly incrementally increases dependency on undersea power imports.

While power interconnections are hugely desirable and important for 2-way power exchange now and especially in future as offshore wind and solar (strategically sequenced) is built out, over-reliance also has security of supply and dependency risks.

The inherent geopolitical risk of over dependence on imported gas was clearly demonstrated to the world in 2022. The aftershocks are ongoing and long-term. The risk does extent to physical risk to infrastructure in the water.

In terms of interconnection with EU States, for example, it still leaves the UK dependent on the variable power demand-supply situation in France. Plus it cumulatively adds to UK political vulnerability and security of energy supply threats, as recently witnessed when France threatening to cut Jersey power supply via undersea cable amid demands on fishing in UK waters.

The recent UK High Court decision in January 2023 to overturn the former BEIS Secretary of State decision in 2021 to reject the £1.35bn AQUIND interconnect or proposal for an additional high voltage transmission link between the UK and France we suggest is relevant in two respects. Firstly, if the connector is built it will afford additional power system operation flexibility in the south assuming France can send power on demand. Secondly, it is important because the basis for the High Court Decisions as reported was the failure to consider alternatives adequately in the DCO process.

The other dependence noted previously the ongoing and deepening UK dependence on imported RE technology, where value added is with international suppliers.

For wind power that is mainly Continental interests, where the UK now effectively off-shores jobs, profits and innovation along with the opportunity to create a domestic Green energy industrial capacity.

Finally the geopolitical risk to Energy Security plains strategic infrastructure in offshore waters when they can be attacked by hostile states as noted in Annex 4.

6. On boosting UK Business and its Industrial Strategy

In terms of overall UK business confidence, reducing uncertainty, improving the productivity and competitiveness the benefits of ensuring, secure affordable and reliable power are profound. That spills over to trade and investment hence UK prosperity.

As Ofgem (2021) states the UK must take a holistic view to business, energy and industrial strategy. There is an urgent need for a credible industrial strategy to help the country back on its feet and one obvious place to start would be its hugely promising but fledgling small modular nuclear reactor (SMR) operation, which offers huge export potential.

SMR technology is exportable and has the potential to genuinely impact the global climate. Similarly carbon capture (CC) know how and technology for power generation applications is important. Whether the big winner in respect to value added in terms of leadership, innovation and UK industrial stage rests with modular nuclear is yet to be seen. A lot depends on policy and what the Rolls Royce Chairman on the steps of Parliament recently describes essentially as “regulatory capture and delay” where the first Rolls-Royce mini nuclear reactor will now be built in Europe instead of Britain aiming for 2029. ²⁶

And the issue again is RE technology (wind) is mainly supplied by continental interests which again essentially means the UK is off-shoring the high value RE jobs and profits and opportunities to the highest international bidders, as Table 4 illustrates.

Local content for Rampion 2 from construction through operation and decommissioning is not readily exportable, or even a basis for a home-grown green energy industry renaissance. It is mainly relegated to some civil engineering and local construction aspects and support services marketing and public relations. Most countries in the world have their own local construction capacities. The EU has also challenged UK attempts to set minimum local content standards for RE projects in the WTO and in international courts.²⁷ So the present situation of dependency on imported RE technology will not reduce any time soon.

To many it makes the Press Releases on the announcement of the Crown Estate’s Offshore Wind Leasing Round 4 bid ring somewhat hollow to many energy policy observers, “*Britain's position as the European leader in offshore wind shows no signs of letting up.*”

²⁶ <https://www.telegraph.co.uk/business/2024/02/22/rolls-royce-boosted-post-pandemic-jump-demand-jet-engines/>

²⁷ <https://www.telegraph.co.uk/business/2022/01/28/brussels-sets-sights-british-wind-power/> and <https://www.windpowermonthly.com/article/1751177/eu-takes-uk-offshore-wind-local-content-fight-wto>

Propose windfarm Development	Home Country of Developer / Ownership	Expected source of wind turbines and high value components	UK Ownership Stake
Dogger Bank South (West) RWE Renewables 1500 MW	Germany	EU / Continent	Nil ?
Dogger Bank South (East) RWE Renewables 1500 MW	Germany	EU / Continent	Nil ?
Outer Dowsing – Total Energies and Corio Generation, 1500 MW capacity	France / Denmark	EU / Continent	Nil ?
Mona - Consortium of EnBW and BP 1500 MW capacity	German (EnBW)	EU / Continent	Nil ?
Morecambe Offshore Windfarm Ltd a joint venture between Cobra Instalaciones y Servicios, S.A. (Cobra) and Flotation Energy Ltd. 480 MW	Spanish Multinational	EU / Continent	Nil ?
Morgan Consortium EnBW and BP 1500 MW	German (EnBW)	EU / Continent	Nil ?

Table 4: Selected Projects Offshore Wind Leasing Round 4 - Ownership and Technology

7. On the achievement of Sustainable Development

The achievement of sustainable development is an overarching objective of the planning system. I.e.: *“The government’s wider objectives for energy infrastructure include contributing to sustainable development and ensuring that our energy infrastructure is safe. Sustainable development is relevant not just in terms of addressing climate change, but because the way energy infrastructure is deployed affects the well-being of society and the economy, for both current and future generations. (NPS, EN-1 page 21 2.5.1)*

In our collective view, the proposed Rampion 2 windfarm development would clearly compromise the achievement of sustainable development on the Sussex coast of England, affecting present and future generations of residents and visitors alike. The proposal specifically does not respect strategic environment advice and safeguards put in place to protect coastal communities and the environment, as embodied in the rolling Offshore Energy Strategic Environment Assessment programme (OEESEA) to reinforce commitments under the European Convention on Landscapes.

All three low-emission alternatives indicated in this Representation avoid risk of undermining the achievement of sustainable development to the extent Rampion 2 does with its large footprint.

That is simply incontestable. Pursuing those alternatives otherwise avoid the risk of degrade “natural capital” that makes our treasured wildlife and ecosystem functions and services even more susceptible and vulnerable to longer-term climate change and flies in the face of local environment stewardship.²⁸

²⁸ Natural Capital: in general being the collection of natural resources of a region, land area or a coast together with its ecosystem services viewed broadly, including its overall economic value (for example, from the value

PART 4: CONCLUSIONS

Evidence shows that each alternative would likely do more for the UK's national climate, energy supply, energy security, sustainable development, environment and industrial policy objectives than Rampion 2, while offering better value for money and less upward pressure on electricity prices.

NATIONAL POLICY (NPS) - RELEVANT INDICATORS

In the absence of systems value modelling this is a fall-back technique that uses Rampion 2 as a baseline to rank order the four options to thus qualitatively benchmark Rampion 2 against the three alternatives.²⁹ To do this we identified 12 indicators that helped break down the national benefits.

These indicators and the scoring of each, aim to make the determination of essential NPS policy interpretations on Rampion 2 less subjective, more transparent and clear.

The steps were:

- i. 12 NPS relevant indicators were identified to breakdown national benefits in a reasonable and understandable way;
- ii. Under each indicator a set of underlying criteria relevant to the indicator are identified;
- iii. Alternatives are scored for each criteria on a scale of 1 to 4. using Rampion 2 as a baseline;
- iv. The scores for criteria under each indicator are then summed to give an raw unweighted score for each of the 12 indicators;
- v. All the indicators scores are then summed to give one simple aggregate raw score for Rampion 2 and each of the alternative;
- vi. The higher the raw score for the four options (Rampion 2 as the baseline) the better for the assumptions implied in the scoring of criteria, all things considered.

In this scoring system if Rampion 2 is seen as the best of the four, it gets a "4" score – i.e., the highest for that criteria or metric. Conversely, if it is seen as the worst in relative terms it is given a "1". If an alternative has the same national benefit (or national disbenefit) for a particular criteria it gets the same score and Rampion 2.

Obviously there are limitations and complexities. Different groups may wish to apply different criteria and indicators to break down the National benefits and may also want to apply weights to the various criteria and indicators. We simply assume the same weight for each criteria and indicator to give unweighted raw scores.

Rampion 2 has national benefits. Our simple benchmarking and rating analysis results in Table 5 indicates that all three alternatives offer a better way forward than Rampion 2, in respect to national benefits overall, and suggests they are in the local, national and wider public interest as compared to a £3-4 billion investment in Rampion 2.

Table 6 elaborates the criteria and scoring applied in detail.

derived from pollination services provided by migrating birds and insects lost to windfarm turbines, to the visual impacts of transforming the natural seascape that affects the visitor and coastal tourism economy and jobs to intrinsic values of natural seascapes the are part of our culture, heritage and promote well-being).

²⁹ This weighting, rating and ranking technique is recommended in the World Commission on Dams for the consideration of Alternatives as a Strategic Priority which the UK government co-funded (WCD, 2000).

Table 5: Relative Ranking and Scoring of National Benefits of Alternatives (Rampion 2 Baseline)

Rampion 2 and three NPS Section 4.4 Alternatives	Benchmarking Indicator score (high being better)	Relative to Rampion 2
<p style="text-align: center;"><u>Rampion 2 – the Baseline</u></p> <p>Extending the installation of turbines in the Sussex Bay with up to 90 WTGs up to 325m tall and transmission through designated landscapes</p>	115	1.0
<p style="text-align: center;"><u>Alternative 1:</u></p> <p>Extending an existing Dogger Bank windfarm licence with equivalent capacity (up to 90 WTGs up to 325m tall) where they are more efficient, economies of scale and potentially link to an offshore ring grid to minimise on-shore transmission and better facilitate connection to EU grids.</p>	156	1.4
<p style="text-align: center;"><u>Alternative 2:</u></p> <p>Retrofitting an existing natural gas-fired power station with carbon capture (CCGT/CC) and adding a Rampion 2 equivalent new capacity at that site (or replacement power starting with CC, or a new power station with carbon capture in the south with multi-fuel capability to switch hydrogen when ready.</p>	201	1.7
<p style="text-align: center;"><u>Alternative 3:</u></p> <p style="text-align: center;">A Small Modular Reactor (SMR) (located in decommissioned large nuclear site (or existing / under construction site) or decommissioned coal-fired or gas-fired power station sites)</p>	236	2.1
For assumptions noted and policy relevant criteria indicated in Part 4 and Table 6 in Part 4		

As Table 5 shows, for the assumptions applied, extending a recently awarded offshore wind farm licence on Dogger Bank would, for example, lead to 1.3 times the national benefit than granting consent to the Rampion 2 extension.

Extending an existing gas-fired power station in the south, or a replacement on the same site (or at a new site) incorporating a carbon capture system (also with multi-fuel capability to run on green hydrogen in future) - offers 1.7 times the national benefit as Rampion 2. And small modular reactors (SMRs) that are factory built and rapidly installed on site could lead to twice the national benefit as Rampion 2.

It also raises a simple question, at least to 2035, when decarbonisation of the power sector is hopefully achieved and until utility energy storage systems are viable, affordable and deployed at scale some decades later: which is more environmental friendly and helpful for National Energy Security and UK energy-self reliance: (a) if the UK sources natural gas domestically from the North Sea fields, or (b) imports liquefied natural gas (LNG) transported over great distance from Qatar or the USA in the form of price vulnerable LNG.

That choice of (a) or (b) has real carbon emission implications, and whether those emissions appear in the UK's national carbon accounts or not.

And here we recognise what the NPS say about a realistic timeframe for phasing out natural gas in the power sector; when by 2035 all gas-fired power stations in the UK must have full carbon-capture, and be available to back-up intermittent renewables when called upon. High efficiency gas-turbines can be multi-fuel and switched to burn hydrogen, once hydrogen storage is available at scale, however hydrogen that hydrogen is produced (e.g., as green hydrogen).

An optimal "least regret" strategy that can be highlighted as Alternatives are brought into Rampion 2 Examination (as the NPS policy requirement), as is suggested in this alternative analysis and benchmarking³⁰, is it's best in national benefit terms for the UK to move in parallel with all three as complementary additions to the UK generation mix rather than committing the upfront £3-4 bn Rampion 2 capital investment at this time, also give Rampion 2's comparatively high opportunity cost and risk.³¹

These three alternatives are all designated as critical national priorities in NPS (Nov, 2023).

But again we do highly recommend the ExA calls for a full power system value modelling analysis to inform the Rampion 2 Examination, as was made available to inform the Examination of the Teesside NetZero Project and the Secretary of State decision to consent that Application in February 2024.

³⁰ Ofgem 2021 strategic review of power system endorses a "least regrets" strategy.

³¹ Ofgem 2021 strategic review of power system endorses a "least regrets" strategy.

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
Parameters and National Benefit / Disbenefit Indicators	Baseline	Bulk Power Supply Alternatives (EN-1 Section 4.4)		
	Rampion 2 (Sussex Bay inshore & transmission via a SDNP route)	Wind Turbines extending an existing Dogger Bank Licence	Abated Gas Turbines (CCGT/CC) In South UK	Small Modular Reactors (SMR) in decommissioned power sites
Selected Parameters				
Date Ready to deliver power	~2030	Possible Before 2030	Possible Before 2030	Possible Before 2030 Policy Dependent
Average annual plant factor	37-40%	60-65%	100% on demand	95% always on expected
Estimate build time (years)	4-5 yrs	4-5 yrs	1-4 yrs for CCGT/CC	2-3 yrs is claimed
Economic Life	20-25 yrs		Longer than Rampion 2	60+ yrs Expected
Capital Cost (per project)	£3-4 bn	Depends on extent of cost sharing with new project	Location specific CCGT has low capital costs	£2-2.5 bn claims
NATIONAL POLICY (NPS) - RELEVANT INDICATORS				
1 Likely Contribution to decarbonisation of the UK Power Sector by 2035 and to 2050	4	8	14	16
- <u>Carbon Emissions Reduction</u> : reduction in CO2 emissions in absolute terms.	1	2	3	4
- <u>Relative Emission Reduction</u> : reduction in CO2 emissions per project alternative (as source emissions).	1	2	4	4
- <u>Contribution to 2035 Ambition</u> : contribution to the aim of	1	2	3	4

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
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decarbonising the UK power sector by 2035.				
- <u>Contribution Post 2035</u> : investment contributes to the overall target of net zero by 2050.	1	2	4	4
2. Likely contribution to UK Energy Security and Energy Self-reliance	10	13	14	22
- <u>Reduction Energy Import Dependence</u> : Assess the reduction in reliance on imported LNG and electricity via undersea interconnection during periods of low wind.	1	2	1	4
- <u>Reduction in Technology Import Dependence</u> : Measure the degree of reliance on proprietary technology from foreign sources.	1	1	3	4
- <u>Interconnection Benefits with the Continent</u> : Assess the decrease in dependence on imported electricity through interconnections with European grids.	2	4	2	2
- <u>Energy Resource Availability and Quality</u> : Evaluate the variability of energy resources, considering the intermittency of wind.	2	3	2	3
- <u>Reduction in Foreign State Leverage over UK Policy</u> : extent to which other states leverage control of UK policy via technology or energy supply dependence.	2	2	2	4
- <u>Risk and Strategic vulnerability to attack by hostile States</u> : risk of physical attack on infrastructure by hostile states, considering geopolitical risks to 2050 economic life of Ramp2.	2	1	3	4

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
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	Rampion 2 (Sussex Bay inshore & transmission via a SDNP route)	Wind Turbines extending an existing Dogger Bank Licence	Abated Gas Turbines (CCGT/CC) In South UK	Small Modular Reactors (SMR) in decommissioned power sites
3 Effects on the National Grid operation, quality and reliability of power supply and preventing interruptions	9	15	28	34
- <u>Energy resource variability and predictability</u> : degree of variability and predictability impacting on operations and power infrastructure	1	2	3	4
- <u>Project capacity factor</u> : (or load factor) as an indicator of infrastructure and location efficiency, all things considered.	1	2	3	4
- <u>Grid integration complexity challenges</u> : ability to integrate with the National Grid and provide consistent quality supply to customers 2030-2050.	1	2	4	4
- <u>Flexibility to help balance supply-demand and minimise power supply interruptions</u> : Especially as the amount and proportions of variable RE supply in the generation mix increases, the dispatch ability to match fluctuating demand and back up variable supply sources and balance generation supply with grid demand that varies hourly, seasonally and yearly.	1	1	4	2
- <u>Contribution to meet growing power demand with dependable power</u> : Especially as the amount and proportions of variable RE supply in the generation mix increase and grid demand is expected to double that today sometime between 2035-2050 due to mandated electrification of heating and transport.	1	2	2	4
- <u>Impacts on grid stability and reliability impacting consumers and the economy</u> . Frequency regulation, reactive power support, voltage control, load following, reserve capacity	1	1	4	4

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
Parameters and National Benefit / Disbenefit Indicators	Baseline	Bulk Power Supply Alternatives (EN-1 Section 4.4)		
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- <u>Meeting mandated increases in demand</u> : Especially suitability to provide transport and home and commercial heating required to match cold weather and routine economic activity patterns (e.g. charging EVs for going to work and day-to-day business activities)	1	2	2	4
- <u>Pressures on average power system costs</u> : Degree of upward pressure on average power system costs to additional infrastructure i.e. back up and ancillary services and grid balancing to match supply and demand.	1	2	3	4
- <u>Project Longevity</u> : lifespan and durability of infrastructure.	1	1	3	4
4. Affordability Effects (National to Local):	8	11	20	24
- <u>Capital Intensity</u> : Offshore wind projects and SMRs require substantial upfront investment for construction, licensing, and regulatory compliance.	1	2	4	3
- <u>Value for Money</u> : the cost-effectiveness of project related to efficiency and tradeoffs of benefits and adverse impacts.	1	2	4	3
- <u>Degree of Government Subsidy</u> : level of direct and indirect subsidies, risk guarantees required to incentivise commercial developers and private investment (domestic and foreign)	1	1	4	4
- <u>Affordability of additional power infrastructure</u> : The need for additional power system infrastructure for ancillary services, load balancing etc.	1	1	4	3
- <u>Vulnerability to international price shocks</u> : The impact of international factors on construction and operation costs.	1	1	1	4

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- <u>Consumer electricity Costs</u> : impact pm energy bills at national and local levels and competitiveness	1	2	2	3
- Balance of payments effects – of Importing LNG and need for electricity impacts on the UK's national balance of payments, affecting the current account and the overall trade balance (exchange rate effects). Do to the relative efficiency of the infrastructure.	2	2	1	4
5. Project Financeability, Investability and Market Risk:	16	16	16	17
- <u>Project Financeability</u> : Financing large-scale projects can be challenging due to high capital costs the requirements to organise many investors to spread the risk and/or long construction timelines. While financial closure had not been reached money is on the table. Regulatory stability is the issuer	4	4	4	4
- <u>Cost and Investability</u> : Relative cost and ability to attract traditional forms of capital as well as green energy financing (ESR). Largely due to smaller capital outlays.	2	2	3	3
- <u>Regulatory stability</u> : To the extent it impacts stability and predictability of regulatory policies, including subsidies, grid connection agreements, and planning permissions, financeability and market attractiveness. NPS (March, 2023), NPS (Nov, 2023) and 66% increase in the CfD subsidy for offshore wind in Sept 2023 are examples of volatility.	2	2	2	2
- <u>Technological readiness</u> : Established offshore wind technology	4	4	3	3

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
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and supply chains can reduce technology-related risks, though ongoing innovation may influence project economics and competitiveness.				
- <u>Fuel supply and waste management Issues:</u> Access to nuclear fuel and long-term waste disposal solutions are. Uncertainty surrounding fuel availability, uranium prices, and waste storage can pose market risks. Whether domestic natural gas from the North Seas is available till when or reliance on LNG imports will be forced is a factor.	3	3	1	1
- <u>Export Market for the UK for Companies involved directly or indirectly in the project:</u> Largely on the degree of meaningful project participation and where the technology is UK home grown and sourced or proprietary technology of another and cant be exported by UK interests unless licensed to do so.	1	1	3	4
6. Job Creation Opportunity and Benefits (Local to National):	7	7	16	22
- <u>Likely Direct Employment Opportunity on projects:</u> the number of jobs created in construction, operation, and maintenance.	1	1	2	3
- <u>Likely Indirect Employment opportunity:</u> job creation in related industries such as manufacturing and services locally, regionally and nationally feeding the project supply chain.	1	1	3	4
- <u>Skills Development Contribution:</u> development of a skilled workforce in renewable energy technologies.	1	1	2	4
- <u>Proportion of high skilled to low skilled jobs:</u> meaningful	1	1	3	4

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
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creation of high-value, well-compensated jobs.				
- <u>Likely Sustainable Local Jobs</u> : Likely scope for long-term sustainable local job creation and opportunities due to the project	1	1	1	1
- <u>Likely Sustainable Regional jobs</u> : Likely scope for long-term sustainable local job creation and opportunities due to the project	1	1	2	2
- <u>Likely Sustainable National Jobs</u> : Likely scope for long-term sustainable local job creation and opportunities due to the project	1	1	3	4
7. UK Industry Strategy, UK export and UK developing country assistance: Opportunity and Benefits	4	4	12	16
- <u>UK Industry strategy boost</u> : potential to support a UK domestic technology base, sustainable manufacturing industry and supply chain opportunity.	1	1	2	4
- <u>Degree of foreign control of technology</u> : Extent to which technology is controlled by foreign entities and UK government can influence.	1	1	3	4
- <u>Export opportunity for UK companies</u> : Extent to which the technology creates export opportunities and further job growth for UK companies and interest to benefit jobs the economy and government revenue.	1	1	3	4
- <u>UK Developing Country Assistance opportunity</u> ; for the UK to incorporate the project or aspects of the project / technology	1	1	4	4

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
Parameters and National Benefit / Disbenefit Indicators	Baseline	Bulk Power Supply Alternatives (EN-1 Section 4.4)		
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to assist developing countries on their low emission journeys and such partnerships for Global NetZero				
8. Adverse Environmental Footprint and Impacts:	24	28	26	27
- <u>Visual and Aesthetic Impact</u> : Consideration of the relative visual landscape changes.	1	3	3	3
- <u>Size of the Ecological Footprint</u> : Assessment of marine and land-based environmental impacts.	1	2	3	4
- <u>Extent of wildlife and ecosystem impacts that can not be mitigated</u> . And the nature of these impacts undermining achievement of sustainable development	1	2	4	4
- <u>Waste Management</u> : challenges in managing waste responsibly and disposal of materials and infrastructure post-decommissioning.	3	3	2	1
9. Environmental Externalities:	12	12	9	10
- <u>Absence of potential Technology Supply Chain Environmental Damage in Developing Countries</u> : Environmental harm in third countries along the supply chain of technologies that involving resource extraction for materials or components (i.e. rare earths and critical minerals)).	2	2	3	3
- <u>Absence of potential Energy resource extraction environmental effects in Developing or Third Countries</u> : Environmental harm for technologies involving energy	4	4	2	2

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
Parameters and National Benefit / Disbenefit Indicators	Baseline	Bulk Power Supply Alternatives (EN-1 Section 4.4)		
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resource extraction to operate (i.e. LNG, pipeline natural gas or uranium).				
- <u>Absence of CO2 Emissions in Technology Supply and Delivery Chain</u> : Accounting for carbon emissions during resource extraction (mining), smelting and processing raw material processing, manufacturing, and construction. (e.g.) rare earths, cement and steel)	2	2	3	3
- <u>Absence of CO2 emissions in energy / fuel supply chain for project operation and maintenance</u> : Accounting for carbon emissions in a LNG or uranium imports and operation stage including maintenance activities).	4	4	1	2
10 Avoidance of compromising the achievement of sustainable development	8	19	20	20
- Environment Dimension	1	2	3	3
- Social Dimension	1	2	3	3
- Economic Dimension	1	3	3	3
11. Distribution and Equity Effects (national to local)				
- <u>Fair and Equitable Distribution of Benefits and costs</u> : Extent economic benefits and adverse impacts equitably shared national-to-local and within host communities.	4	9	8	8
- <u>Local benefit relative to investment</u> : Community benefits relative to the investment costs that are ultimately recovered through taxes and energy bills (national to local).	1	3	3	3

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
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- <u>Local Impact Tradeoffs</u> : Tradeoffs and drawbacks experienced by local communities.	1	1	1	1
- <u>Public Perception and Opposition</u> : Extent the public are aware of the likely range and scope of impacts and accepting of impacts local communities.	1	2	2	2
12. Opportunity Costs: Economic, social and environment opportunities forgone (for improvement)	8	13	19	20
- <u>For greater reduction in costly LNG imports</u> : cost of additional LNG to backstop periods of low RE output in order to fuel abated gas-fired generation	1	2	1	4
- <u>For greater reduction in costly power imports</u> : via cross-channel undersea interconnections to backstop low RE output periods via imports from France and other interconnections with the continent, accepting that a two-way flow on interconnections is mutually-beneficial but the UK needs to maximise exports of surplus, not imports with efficient investment.	1	2	4	3
- <u>For a reduction in investment in additional National Grid infrastructure</u> : relating to the forgone opportunity to reduce requirement for additional ancillary services to grid stability and associated investment costs.	1	2	4	3
- <u>To reduce adverse National balance payments</u> : Either related to paying for import of technology from commercial entities or	2	2	2	4

Table 6: Benchmarking National Benefits / Disbenefits of Rampion 2 against realistic Alternatives (with criteria and scores)				
Parameters and National Benefit / Disbenefit Indicators	Baseline	Bulk Power Supply Alternatives (EN-1 Section 4.4)		
	Rampion 2 (Sussex Bay inshore & transmission via a SDNP route)	Wind Turbines extending an existing Dogger Bank Licence	Abated Gas Turbines (CCGT/CC) In South UK	Small Modular Reactors (SMR) in decommissioned power sites
for LNG and electricity imports:				
- <u>Environmental opportunity costs</u> : Impacts on the value of ecosystem services and tradeoffs versus project benefits.	1	2	4	3
- <u>Social and socio-economic opportunity costs</u> : National health, physical and mental well-being benefits forgone for many via additional costs for all UK citizens (and reduced opportunity) due to degradation/ loss of coastal assets with intrinsic value. As one consequence many travel out of the UK to seek the same benefits; or have lower benefit visiting and the south coast	2	3	4	3
Total Count (Unweighted)	115	156	201	236
The higher the score 1 to 4 the more benefit.				
This is relative to Rampion 2 as an assumed baseline				

List of Annexes

Annex#	Title	Relevance
1	Selected Acronyms and Definitions	Selected terminology that some members community organisations asked about
2	Tracking of Relevant case specific NPS Policy Requirements for the consideration of Alternatives in the Rampion 2 Examination	To help indicate the interpretation of the relevant policy provision in Section 4.4. Alternatives in the Rampion 2 case.
3	The Scope for inviting Expert testimony in the Rampion 2 Examination on Section 4.4 Alternatives	Other national policy considerations embodied in UK policy and laws and as seen by international organisations the UK is party to.
4	Relevant Amendments to the Critical National (Energy) Priorities	This is how we interpret and apply NPS EN-1 Section 4.4 in the WR.
5	Wider Policy Context for Interpretation of NPS on Alternatives	Provides background for the consideration of alternatives and how that is relevant
6	Policy Outlook: Economic Life of Rampion 2 (2030-2050)	As above
7	Offshore wind farm efficiency: is Rampion 2 inefficient infrastructure	Important is as evidence of the relative efficiency of turbines in the Sussex Bay inshore versus the Dogger Bank offshore.
8	Ancillary services where efficiency of the windfarm output matters to reduce system costs	Part of the opportunity costs of Rampion 2 and how and why it puts upward pressure on average system costs and hence household electricity bills. The issue is Rampion 2 will require more ancillary services than other Alternative hence higher opportunity costs.
9	Offshore Wind Development Pipeline	While there are may policy targets this shows the room in the offshore project pipeline. However we also feel that the target to decarbonise the power sector by 2035 is the overriding target. Rampion 2 would be ready for decommissioning in 2050. Installed capacity targets for offshore wind have less meaning and value if they do not account for location or efficiency.
10	List of Gas-fired power stations in the UK	To indicate what the more than 30 gas-fired power stations are around the UK what Alternative 2 may be feasible
11	Retired, operating and proposed nuclear sites collocation opportunity for SMRs	Similar to the above for SMRs (Alternative 3)
12	Small Modular reactors: the example of Rolls Royce 470 MW units	Details of Alternative 3 as provided by an SMR Proponent where we believe expert testimony would help the ExA satisfy the Section 4.4 requirements.
13	Gas-fired turbine (CCGT) extension or new plant with carbon capture, use and storage (CCUS)	Similar to the above or Alternative 2

Annex 1:

Selected Acronyms and Definitions

Selected Acronyms

BEIS	Business, Energy and Industrial Strategy
DESNZ	Department of Energy Security and Net Zero
SoS	Secretary Of State
Ofgem	Office of Gas and Electricity Markets
ESO	National Grid Electricity System Operator
TSO	Transmission System Operator
UKAEA	The UK Atomic Energy Authority (UKAEA)
GBN	Great British Nuclear
NDA	The Nuclear Decommissioning Authority
PINs	Planning Inspectorate
CE	The Crown Estates
CCSA	The Carbon Capture and Storage Association (CCSA)
WEA	The Wind Energy Association (WEA)
RWE	The Applicant
CCGT	Combined cycle gas turbine
SMR	Small Modular Reactor
WTG	Wind turbine generator
NZT	The Net-Zero Teesside (NZT)
CC	Carbon Capture
CCS	Carbon Capture and Storage

Selected Definitions

Opportunity Cost	Opportunity cost refers to the potential benefits that are forgone when one alternative is chosen over another. In this context it refers to the economic and environment cost associated with choosing Rampion 2 over an Alternative such as additional LNG or power imports or savings on upfront capital costs
Variable renewable energy generation	Electricity generated from renewable sources supplied to the grid. In this case wind which exhibit fluctuations in output due to natural variability in weather conditions on an hourly, daily, seasonal basis and year-to-year.
Intermittent generation	Electricity generation that occurs sporadically or irregularly in this case offshore wind, which are subject to changes in weather patterns and location specific factors.
Dispatchable power	Electricity generation that can be controlled and dispatched according to demand, allowing grid operators to adjust output levels as needed. In this context it mainly means gas-fired turbines with carbon capture fitted. In the longer term it includes utility-scale energy storage.
Dependable Power	Electricity generation that can be relied upon to provide a consistent and predictable supply of energy, in this case mainly meaning SMRs but include natural gas with carbon capture used for peaking and backing up variable offshore wind when the wind drops
Power system reliability:	The ability of a power system to deliver electricity to UK consumers consistently and without interruptions, while meeting certain performance standards for voltage and frequency.
Ancillary services in a power system	Additional services provided by power system operators to maintain the stability, reliability, and efficiency of the grid. These services may include frequency regulation, voltage control, and reserves for managing sudden changes in supply or demand.: See Annex
Abated Gas-fired Power Stations	Gas-fired power stations that are fitted with carbon capture system so that they have no carbon emissions or little. All UK gas-fired power stations will have to be fitted with carbon capture by 2035
Grid Collapse	A catastrophic failure of the electrical grid resulting in widespread blackouts and loss of power to large areas or regions. Grid collapses can be caused by various factors such as equipment failures, extreme weather events, operator errors or insufficient dependable and dispatchable power to balance demand and supply. At present the most risk is in coldest weather in high pressure which are typically low wind periods, cost and electricity demand is highest.
Unserviced energy cost	The economic and social cost associated with energy that is not delivered to consumers due to transmission or distribution losses, equipment failures, or other factors that prevent electricity from reaching its intended destination and use.
Carbon Capture on gas-fired power stations	The process of capturing carbon dioxide emissions produced by gas-fired power stations and storing them in the UK's offshore carbon storage depots initially in the North Sea to be read by 2030. In this context, initially transport from the southern power stations to storage would be by barge. Reference the Net Zero Teesside Power (N2T Power) project consented in Feb 2024 to be the UK's first fully integrated gas-fired power and carbon capture project with an 860 MW combined cycle gas turbine which, in that case will use a dedicated CO2 pipeline to offshore storage depot.

Annex 2:
Tracking of Relevant case-specific NPS Policy Requirements on the consideration of Alternatives in the Rampion 2 Examination

Highlighted National Policy Statement Paragraphs on Alternatives EN-1 Overarching (NPS 2011)		
EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
3.5.6	New nuclear power therefore forms one of the three key elements of the Government’s strategy for moving towards a decarbonised, diverse electricity sector by 2050: (i) renewables; (ii) fossil fuels with carbon capture and storage (CCS); and (iii) new nuclear.	Directional guidance on which Alternatives to consider in the Section 4.4 as realistic and NPS policy-relevant alternatives to Rampion 2 for bulk low-emission supply.
5.9.10	<p>... Nevertheless, the IPC may grant development consent in these areas in exceptional circumstances. The development should be demonstrated an assessment of:</p> <ul style="list-style-type: none"> - the need for the development, including in terms of national considerations, and the impact of consenting or not consenting it upon the local economy. - the cost of, and scope for, developing elsewhere outside the designated area or meeting the need for it in some other way, taking account of the policy on alternatives set out in Section 4.4; and - any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated. 	<p>The NPS policy pertinent to the consideration of alternatives for low emission generation in the Rampion 2 Examination.</p> <p>This analysis will better inform judgments on the national benefits of Rampion 2 in Policy 1.1.2 (adverse impacts outweigh benefits)</p>
4.4.1	<p>Under 4.4 Alternatives</p> <p>.... From a policy perspective this NPS does not contain any general requirement to consider alternatives or to establish whether the proposed project represents the best option.</p>	4.4.2 applies and overrides this to create the requirement in the Examination
4.4.2	<p>However:</p> <p>.... in some circumstances, the relevant energy NPSs may impose a policy requirement to consider alternatives (as this NPS does in Sections 5.3, 5.7 and 5.9).</p>	This is met by paragraph 5.9.10 under Development proposed within nationally designated landscapes
4.4.3	<p>Where there is a policy or legal requirement to consider alternatives the applicant should describe the alternatives considered in compliance with these requirements</p> <ul style="list-style-type: none"> - the consideration of alternatives in order to comply with policy requirements should be carried out in a proportionate manner; - the IPC should not reject an application for development on one site simply because fewer adverse impacts would result from developing similar infrastructure on another suitable site, 	<p>Considering alternatives is proportional in a £3-4 billion infrastructure proposal, as well as the context and the three overriding policy considerations noted in the Chapter 2 Summary related to NPS EN-1 paragraphs 1.1.2, 1.2.4 and 1.2.7.</p> <p>It would not be simply due to fewer adverse impacts. It is due to multiple factors <u>including</u> far fewer adverse impacts.</p>

Highlighted National Policy Statement Paragraphs on Alternatives EN-1 Overarching (NPS 2011)		
EN-1 Policy #	Text of Policy (truncated when reasonable due to length)	Our view on Interpretation / Application in the Rampion 2 Examination
	<p><i>- alternatives not among the main alternatives studied by the applicant (as reflected in the ES) should only be considered to the extent that the IPC thinks they are both important and relevant to its decision;</i></p> <p><i>- it is intended that potential alternatives to a proposed development should, wherever possible, be identified before an application is made to the IPC in respect of it (so as to allow appropriate consultation and the development of a suitable evidence base in relation to any alternatives which are particularly relevant). Therefore where an alternative is first put forward by a third party after an application has been made, the IPC may place the onus on the person proposing the alternative to provide the evidence for its suitability as such and the IPC should not necessarily expect the applicant to have assessed it.</i></p>	<p>The alternatives are important and relevant as they are all critical national priorities. The alternatives are important are relevant to the actual decision-making on Rampion 2 in a number of respects including (1) genuine alternatives to Rampion 2 in the public interest (2) to benchmark and better inform judgement on the overriding considerations noted in the summary of this chapter related to NPS EN-1 paragraphs 1.1.2, 1.2.4 and 1.2.7., and (3) the convergence of the above considerations that add substantial weight to the decision on whether to consent Rampion 2.</p> <p>We argue both important and relevant to the decision and directly inform the consideration of national benefits.</p> <p>Section 4.4 Alternatives were raised with the Applicant in written statutory consultation responses and verbally in consultation meetings. The Applicant's Consultation Report is silent on the matters of these Alternatives being raise.</p> <p>PCS and IPs have proposed in Relevant Representations in the fall of 2023 how this consideration of alternatives can be conducted efficiently engaging with competent power authorities.</p> <p>Here we note the PA (2008) Procedure Rules allow that, " the Examining Authority to call expert witnesses to give evidence on specific points at hearings. They may also consider requests from the applicant and other interested parties to call expert witnesses in support of representations they make about the application."</p> <p>Thus we remain hopeful the ExA may reconsider its decision not to invite, pursue or allow relevant expert witnesses.</p>

Annex 3:

The Scope for inviting Expert testimony in the Rampion 2 Examination on Section 4.4 Alternatives

As Noted:

PA (2008) Procedure Rules allow that, " the Examining Authority to call expert witnesses to give evidence on specific points at hearings. They may also consider requests from the applicant and other interested parties to call expert witnesses in support of representations they make about the application."

Reference: Planning Act 2008: Guidance for the examination of applications for development consent" (DCLG, 2015 .

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/418015/examinations_guidance- final_for_publication.pdf

Thus in this Representation we again ask, would it not be in the public interest if the ExA to encourage and invites expert testimony on Alternatives from relevant public, private or academic organisations with expertise and resources, such as:

- Great British Nuclear responsible for the planned roll out of home grown Small Modular Reactors (SMRs) on the timeframe and feasibility by 2030 or earlier, as well as industrial strategy benefits, relative to investing £3-4 bn today on Rampion 2, to genuinely position the UK help not only itself but other countries along their low-emission journey.
- Rolls-Royce, and the UK Nuclear Industry Association on plans to co-locate SMRs on existing and proposed large nuclear sites (feasible due to small footprints one tenth that of large nuclear) and the Nuclear Decommissioning Authority (NDA) on plans to coordinate decommissioning of larger nuclear with conversion to one or more Small Modular Reactors (SMRs) including possibly gas-fired turbines at the two planned new large nuclear generation sites both to be EDF built, owned and operated experiencing delays (Hinkley Point C in Somerset set open June 2027, though with media concerns it may delay to 2035 and EDF talks with on funding Sizewell C, in Suffolk.
- Net Zero Teesside Power (NZE Power)³² on advancing combined cycle gas turbine (CCGT) with carbon capture and storage (CCS) before 2030 including feasibility of abating existing on the south coast (e.g., with post combustion capture, shipping of captured Co2 for on-use or storage way established under the UK Government's Carbon Capture, Usage and Storage (CCUS) cluster sequencing process. Others may include the Carbon Capture and Storage Association (CCSA).
- Ofgem and National Grid on the congruence of these reasonable alternatives to Rampion 2 in the context of re-prioritised energy policy in 2023, and on enhancing flexibility to operate power grid such as with load balancing and impact on reliability and transmission investment. In particular, it would be helpful to engage those with

³² Facilitated by the oil and gas industry's CEO-led Oil and Gas Climate Initiative. <https://www.ogci.com/> and <https://www.netzeroteesside.co.uk/project/>

expertise to prepare system value modelling analysis with / without Rampion 2 comparing selected reasonable alternatives illustrated in this Representation.

- Crown Estates (CE) in respect to the North Sea option of adding turbines (proposed for Rampion 2) where RWE has just acquired two additional licences on the southern Dogger Bank to develop 3GW of turbines. Project preparation essentially has yet to start. It would be an extension to those licences instead of the existing Rampion installation.
- Here we also note the Rampion 2 was tendered in the 2017 windfarm bid where extension could be no larger than the existing windfarm (in this case 400MW), post-bid increased to 1200 MW - which suggests there is flexibility in the seabed licensing system. Additionally the existing DCO for Rampion 1 that was signed in 2014 states additional adjacent turbines could only be 15% taller than the Rampion 1 turbines (140m).

The Crown Estates also plays a key role in the development and licensing of carbon storage such as in south coast geological formations offshore, that would be critical to support CCGT/CCUS deployment in the south of England, and open up the possibility and early timing of adding CCUS to existing gas turbine power facilities.

The system value analysis (to quantify the value associated with any proposed infrastructure additions to the generation mix such as Rampion 2, including assessment of flexibility to meet power sector needs and wider energy and climate policy) was undertaken for the Net Zero Teesside Project now awaiting a DCO decision in 2023.

The system value analysis could also be routinely incorporated as an integral and highly important part of the “no-project” analysis, as in the EIA Regulations 2017.

If the Rampion 2 ExA elects not to encourage, facilitate or invite such testimony during the Examination, we urge the ExA to consider a recommendation along those lines that the (now former) Department for Business, Energy and Industrial Strategy (BEIS) may take up during the Rampion 2 Examination period. The ExA may also consider formal recommendations along these lines in their report to the Department of Net Zero then take into account in the latter DCO decision stage.

We do accept that advancing reasonable alternatives to Rampion 2 while essential, requires good-faith collaboration.

Again to reflect Ofgem’s call for a more holistic approach to business, energy and industrial strategy, we believe that entails looking at reasonable alternatives and ways to move beyond the relentless focus on building out RE generation even, when the infrastructure is sub-optimal and adds to unwarranted dependency on imported RE technology and imported LNG with higher emissions in the supply chain.

We see this Rampion 2 DCO as being uniquely pivotal and timely as an opportunity to highlight a corrective reasonable alternative pathway for the UK, one that in the words of the former BEIS in its 2021 NPS Review - is “fit for purpose”.

Annex 4:

Relevant Amendments to the Critical National (Energy) Priorities

These are

Recommended Amendments to the Government's proposed Critical National Energy Priority (CNP)

Consultation Audiences: *“The government wants to hear from members of the public, industry, non-governmental organisations and any other organisation or public body.”*

<https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-revisions-to-national-policy-statements>

Summary Note

Evidence suggests that limiting the UK's critical national energy priority (or CNP) to offshore wind alone is counterproductive and requires amendment. Any CNP must also ensure that in parallel, complementary low-emission generation and other essential system components are in place to back-up the intrinsically intermittent offshore wind. That is essential to deliver secure, reliable and affordable electricity supply, as well as foster the achievement of sustainable development in affected coastal and inland areas all around these islands – not undermine it.

This CNP approach actually increases UK dependency on imported energy and imported RE technology - at least for decades. For the foreseeable future the lion's share of the UK's offshore wind technology will be supplied by European commercial consortiums where the high-value green jobs, renewable subsidy and profits flow. It does little to advance home-grown green energy technology and industry capacity to provide self-reliance, or access export markets or advance UK global leadership to help other countries on their low emission journeys.

- As formulated the CNP spectacularly fails to take account of policy and regulatory failures over past decades that have placed “too many energy eggs” in one basket and has made UK electricity unaffordable for many households and small businesses today.
- Ironically, the UK is now saddled with the highest electricity bills in Europe, despite having the largest share of wind and solar of any major economy in the world, now approaching 50 percent on an average annual basis, ignoring the variability and intermittency.
- Military threats to all energy infrastructure fixed offshore, including wind installations, have not receded after 2022-2023 events and given geopolitical realignments now underway. In terms of promoting National Security CNP claims may be seen as wishful thinking, even reckless.
- It may also be argued this single technology focus is London-centric as directly harmful impacts are “out of sight, out of mind”. It assumes that all offshore wind projects have the same benefit-risk tradeoffs, thus can be imposed on coastal and inland communities simply by restricting time and local voice in the consenting processes, regardless of location and “residual impacts”.
- **Most concerning** is this CNP formulation ignores key recommendations of national and international bodies who have deeply considered the UK's energy priorities and ways to effectively deliver decarbonisation of the power sector by 2035, and eventually NetZero, notably:
 - The Parliamentary Committee on Climate Change in their recent report of March 2023 calling for an “*equal focus to low-carbon flexible solutions as to the delivery of its existing renewable and nuclear commitments*”;

- Ofgem and ESO statements on priorities to maintain reliable and affordable electricity supply as the share of variable RE is grown while the national grid comes under pressure from electrification mandates for transport and heating, at least doubling demand by 2035-2050;
- The World Bank Energy Sector Management Assistance Programme (ESMAP) and IEA, both advising on ways to responsibly integrate variable RE into electric power grids;
- The CBI urging Government to prioritise new nuclear power and scale-up carbon capture technology for flexible generation to power a competitive economy and reach NetZero; and
- The European Commission in 2022 which urgently classified natural gas and nuclear as green energy sources essential for the multi-decade transition (to unblock ESG financing).

It may be reasonably argued that this CNP reflects the same “wilfully blind” thinking and narrative that landed the UK in the present-day mess: lots of variable RE generation (sometimes, and more to come) yet among the highest electricity bills in the world; leaving these islands more vulnerable to volatile international markets and supply chains for both imported RE technology and raw energy (i.e. LNG imports and gas pipelines and power interconnects with the continent).

A more balanced and responsible way forward is to amend this CNP, namely by:

- i. Including clean, low-emission generation systems under the CNP umbrella to complement weather-dependent variable wind and electrification mandates, specifically flexible generation from abated gas-fired power (adding carbon capture to existing power stations to make them NetZero) and deploying small modular reactors (SMRs) in locations where existing large nuclear plant are decommissioned, as already provided in technology-specific NPS, but with no real sense urgency or priority;
- ii. Focusing offshore wind development in the designated Renewable Energy Zone (REZ) wisely identified as such in the UK Energy Act (i.e. from 12 to 200 nautical miles seaward);
- iii. Giving legal status to the Government’s own existing Offshore Energy Strategic Environmental Assessment (OESEA) advice on ensuring visual buffers for large wind turbines (distance from significant receptors, or from shore) to ensure consistency, fairness to coastal communities and thereby reduce controversy;
- iv. Ensuring system value analysis / modelling of all NSIP offshore windfarm proposals are routinely undertaken by relevant authorities (such as Ofgem or ESO) to inform each DCO application and to optimally time and sequence low-emission generation additions with the essential transmission and ancillary services; and
- v. Rank and prioritise locations to systematically license investment in offshore wind by appropriate criteria such as efficiency, energy performance, system fit and value for money.

Further it will massively help to introduce a **fast track category of offshore wind developments** that satisfy simple location and policy criteria, as suggested herein.

These proposed amendments are common sense and reflect considered advice of the bodies noted above. They are prudent and measured given the Government’s ambition is to collapse the consenting process for offshore wind from the present average of 4 years to 1 year, in effect by removing safeguards, close scrutiny and local voice - contrary to the wisdom of the Localism Act.

Annex 5:

Wider Policy Context for Interpretation of NPS on Alternatives

BEIS, 2022 a; UK ENERGY IN BRIEF,

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1130451/UK_Energy_in_Brief_2022.pdf

CCC, 2023a Delivering a reliable decarbonised power system, Climate Change Committee March 2023, <https://www.theccc.org.uk/>

The UK is at a critical crossroads re-calibrating its national energy policy, strategic infrastructure planning priorities and regulation after international events in 2022 changed the world; and revealed massive UK energy risk exposures including for offshore infrastructure.

Despite attaining the highest renewable energy (RE) share of any major OECD economy, now near 45-50% of total UK electricity generation (on an average annual basis ignoring the RE intermittence), the UK now has one of the highest electricity tariffs in the world. Moreover, the national grid risks being overwhelmed as demand will at least double by Ofgem estimates between 2035 and 2050.

The near- to medium-term outlook to 2035 is for ever higher dependence on target-driven imported RE technology, as well as LNG from abroad and other imported energy via cross-channel pipelines and cables. Current trajectory guarantees vulnerability with mostly offshore energy supply and infrastructure, while off-shoring high value jobs, profits and industrial opportunity to economic competitors - impoverishing UK households and small businesses in the process.

Critical thinking is needed on a sensible transition to a low-carbon economy and to meet mandated increases in power demand with the electrification of the transport and heating sectors, in ways that respect the overarching planning objective of sustainable development and strategic environmental advice in that regard. A system value approach is fundamentally important to examine and optimally sequence power sector investments at the right time, in the right place and to do so affordably - rather than relying on simple, symbolic targets to drive important strategic decisions.

It also recognises the dynamic and ongoing recalibration of the suite of National (Energy) Policy Statements that are the foundation for reaching decisions on NSIPs like Rampion 2 and viable alternatives.

Plus it reflects a common sense wider debate, not only in the UK but across the western world now on how rapidly the energy transition can take place and the urgency to better sequence generation investments to avoid severe economic disruption and social consequences now a reality (IMF, 2022 a).

As noted by the Government Office for Gas and Electricity Markets recently, "**there are choices within the future electricity system pathway**", which the DCO Examination and decision stages can take into account (Ofgem, 2021a).

The 2023 parliamentary Climate Change Committee report (CCC, 2023a) highlighted related concerns including:

- *“... Government has not yet provided a coherent strategy to achieve its goal (decarbonisation of the power system by 2035, subject to reliability) nor provided essential details on how it will encourage the necessary investment and infrastructure to be deployed over the next 12 years”,*
- *“This will open the path to major new investment in renewable generation and infrastructure. It can also support essential flexible low-carbon technologies – these must remain a critical priority for Government alongside the delivery of renewables and nuclear,”*
- *“a number of processes – including planning, consenting and connections – must be urgently reformed to deploy infrastructure at sufficient speed to deliver the required range of system components by 2035.*
- *“The Government must give equal focus to low-carbon flexible solutions as to the full delivery of its existing renewables and nuclear commitments.”*

In this respect the call by the Parliamentary Committee on Climate Change for low-carbon flexible solutions as a critical priority alongside Renewables also aligns with **the European Commission’s reclassification of nuclear power and natural gas as “green energy” sources in 2022.**

That unlocked European and international financing to enable nuclear and gas-fired generation (preferably abated) to form part of a more flexible, low-emission less ideological sustainable energy transition, not seemingly blind to the inherent variability of RE resources otherwise forming an important part of the generation mix.

Annex 6:

Policy Outlook: Economic Life of Rampion 2 (2030-2050)

From an energy security perspective in practical terms, the UK will continue to grow its dependency on imported RE technology and imported energy resources in the near- to medium-term, despite the rhetoric and claims in Government press releases that the UK is now “leading the world in the renewable energy revolution: i.e.

- Wind turbines and associated high-value proprietary RE technology are largely from European suppliers.
- solar technology is mainly imported from China, produced in energy intensive processes with a significant fossil fuel mix impacting on global emissions (with some solar array and balance of systems assembled in the UK);
- imported north sea gas from Norway under pressure to expand natural gas production and also to make that same gas available to the Continent to replace Russian gas imports;
- Imported LNG mainly from Qatar and the USA, or in essence “off shoring” the UK’s natural gas fracking to the USA, and
- Imported power from interconnection with EU power grids (yes a positive also facilitating 2-way exchange) but also increasing import dependence.

The various ways to expand low-emission energy technology systems both for grid-connected and distributed uses are noted in the initiatives in the National (Energy) Policy Statements NPS that guide DCO Examinations for energy NSIP. Former BEIS staff updated these in 2021 and conducted an open consultation in order to “... identify whether the revised NPS presented were “fit for purpose” and “whether they provide a suitable framework to support decision making for nationally significant energy infrastructure)”.³³

Reality check on key challenges to 2035:

Setting the international context in 2022 the IMF indicated that in addition to the uncertain pace of technological development and deployment of different energy technologies, four issues in particular stand out in energy policy across the globe, namely:

1. ***“The return of energy security as a prime requirement for countries***
2. ***Lack of consensus on how fast the transition should and can take place, in part because of its potential economic disruptions***
3. ***A sharpening divide between advanced and developing countries on priorities in the transition***
4. ***Obstacles to expanding mining and building supply chains for the minerals needed for the net-zero objectives.”***

³³<https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-review-of-energy-national-policy-statements>

Annex 7:

Offshore wind farm efficiency: is Rampion 2 inefficient infrastructure

One immediate challenge of course is to both appreciate and deal with the RE resource variability issue, as wind and solar resources will form a large share of renewable supply, and to thus optimally sequence complementary NSIP investments.

The intrinsic variability of UK wind resources is illustrated by the rolling 30-day graphs on the Crown Estates website of total offshore wind output, as in Figure ES-X for Jan-Feb 2023 and ES-Y Y for Aug 2022 recognizing it varies daily, seasonally and year-to-year.³⁴

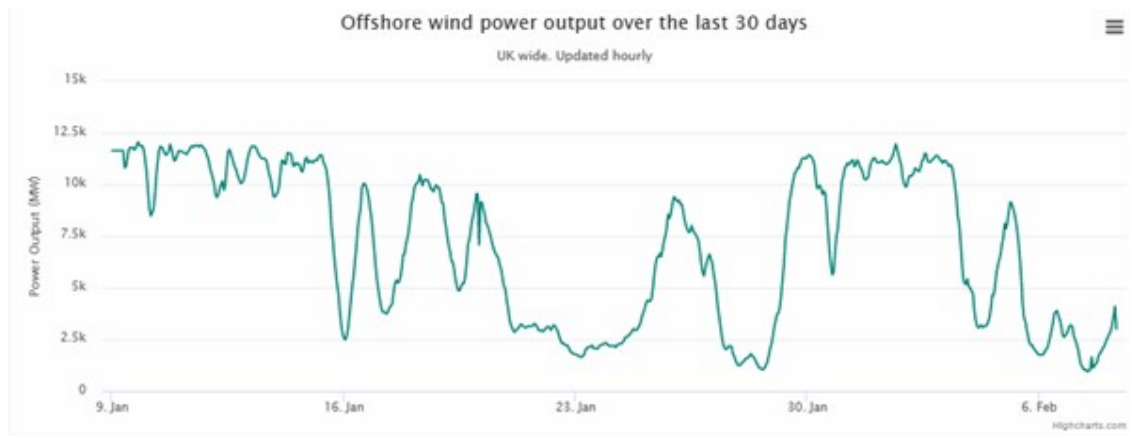


Figure ES-#: Total UK offshore wind rolling Output 30-day Jan-Feb 2023 (Crown Estate website 08 Feb 2023)

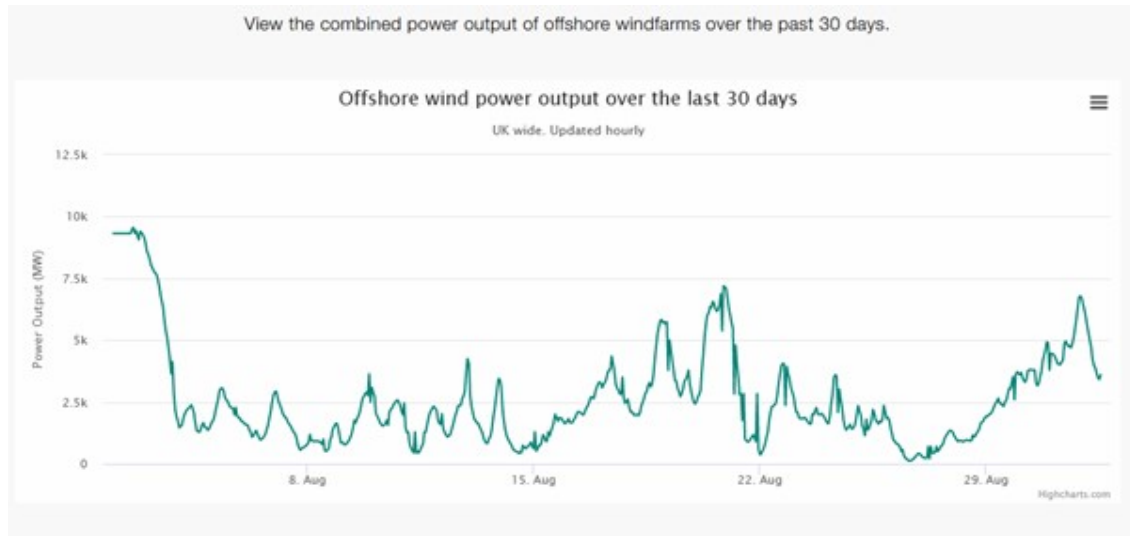


Figure ES-#: Total UK offshore wind rolling Output 30-day August 2022

³⁴ At night we get no solar generation either from large grid-scale solar installations in fields, or on house roofs. At UK latitudes we receive far less solar in winter months due to short daylight hours (8 hours daylight in January versus over 16 hours of daylight in July) and far lower solar intensity in winter, by a factor of almost 7.

Inherently all wind farms are an intermittent source of energy, however some are more intermittent than others. When the wind blows at a reasonably high speed then they will generate their full output. At lower wind speeds the output will be low. When the output is low there is no wind-generated electricity to feed into the National Grid.

Locating wind turbines in areas of high wind power density make them more efficient and value for money, all things considered.

An illustration of concern over the relative performance of Rampion 2, as compared to moving the same turbines offshore to the North Sea is seen in the data in Figure . It is a semi-technical graph of load duration curves for offshore windfarms showing the percent of time (horizontal axis) they produce at different power outputs (capacity factor or load factor, on the vertical axis) as a percent of installed capacity.

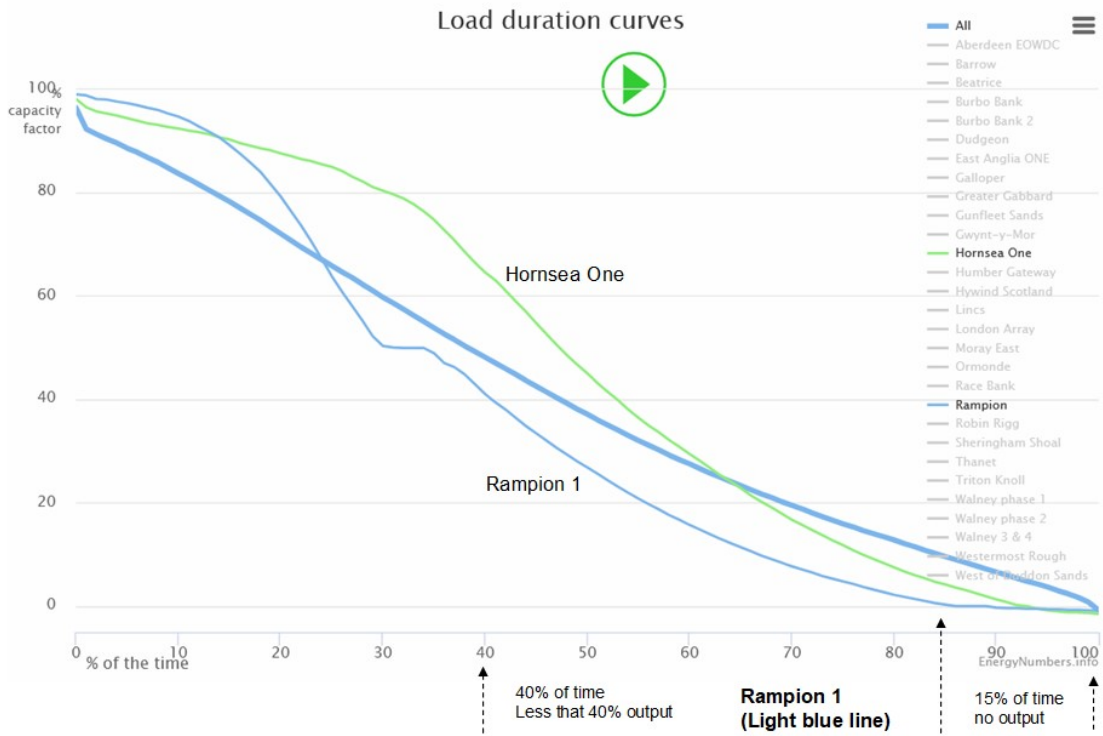
That graphical data tells us:

- 15% of the time the existing Rampion windfarm turbines produce no output at all.³⁵
- That compares with 7% of the time the Hornsea One windfarm in the North Sea produces no output. Rampion thus has no output twice as often.
- 60 % of the time Rampion 1 output is 40% or less of its installed capacity; or conversely, Rampion only produces above 40% of installed capacity 40% of the time.
- In contrast, the Hornsea One windfarm spends 55% of time generating above 40% of its installed capacity (compared to 40% for Rampion).
- Honsel One produces above the UK average capacity factor 65% of the time.

The point being that Rampion 2 turbines would have the same relative lower performance noted above (being adjacent to Rampion 1 in the same wind regime) as compared to investing the same £3-4 billion to install those turbines in the North Sea area.

³⁵ 15% of the time is equivalent on average to 1 day a week with no power. 40% is equivalent to nearly 5 months (4.86 months) that Rampion 1 output is less than 40% its installed capacity. Figures 1 and 2 with the rolling 30-day output this year, show that periods of low output actually vary up to several days at a time.

UK Offshore Windfarm



Source: <https://energynumbers.info/uk-offshore-wind-capacity-factors>

Figure 3: Comparison of Loads Duration Curves (capacity factor versus % of time) for Rampion 1 on the South Coast (light blue line), Hornsea One in the North Sea (green line) and, the average for all UK Offshore windfarms (thicker blue line).

Annex 8:

Ancillary services where efficiency of the windfarm output matters to reduce system costs

Ancillary services are a range of support functions and capabilities within a power system where infrastructure may necessary to ensure reliable operation, particularly in systems with a significant presence of intermittent and variable renewable generation like wind and solar as planned in the UK. These services help to maintain grid stability, balance supply and demand, and manage variability and uncertainty inherent in renewable energy sources.

Additional infrastructure investment is required. The functions include:

Frequency Regulation: Fluctuations in electricity demand and supply can affect the frequency of the power system. Frequency regulation services involve investment in adjusting generation or load in real-time to maintain grid frequency within acceptable limits.

Voltage Control: Variations in renewable energy output can impact voltage levels in the grid. Voltage control services and related investments involve regulating voltage at various points in the system to ensure it remains within acceptable ranges for the safe and efficient operation of equipment.

Reactive Power Support: Reactive power is necessary for maintaining voltage levels and ensuring efficient transmission of electricity. Renewable generation may not inherently provide sufficient reactive power support, so ancillary services are needed to supply or absorb reactive power as needed to maintain system stability.

Ramp Rate Control: Intermittent renewable sources like wind and solar have rapid changes in generation output. Ramp rate control services and investments manage these rapid changes and smooth the transition between different levels of generation to avoid grid instability.

Black Start Capability: In the event of a system-wide blackout, black start services involve the ability to restart and re-energize the grid from a completely de-energized state. Abated gas generation and energy storage resources can provide this critical service.

Load Following: Renewable generation can vary throughout the day based on weather conditions, leading to mismatches between supply and demand. Load following services involve adjusting generation or dispatching flexible resources such as abated gas generation to match changes in demand in real-time. In the longer term well beyond 2035 other storage systems may be affordable and scalable.

Reserve Capacity: Reserve services ensure that additional generation capacity is available on short notice to respond to unexpected changes in demand or generation, helping to maintain grid reliability and prevent disruptions.

Grid Balancing Services: These services encompass a range of actions to balance supply and demand on the grid, including energy storage, demand response, and flexible generation resources that can respond quickly to fluctuations in renewable generation.

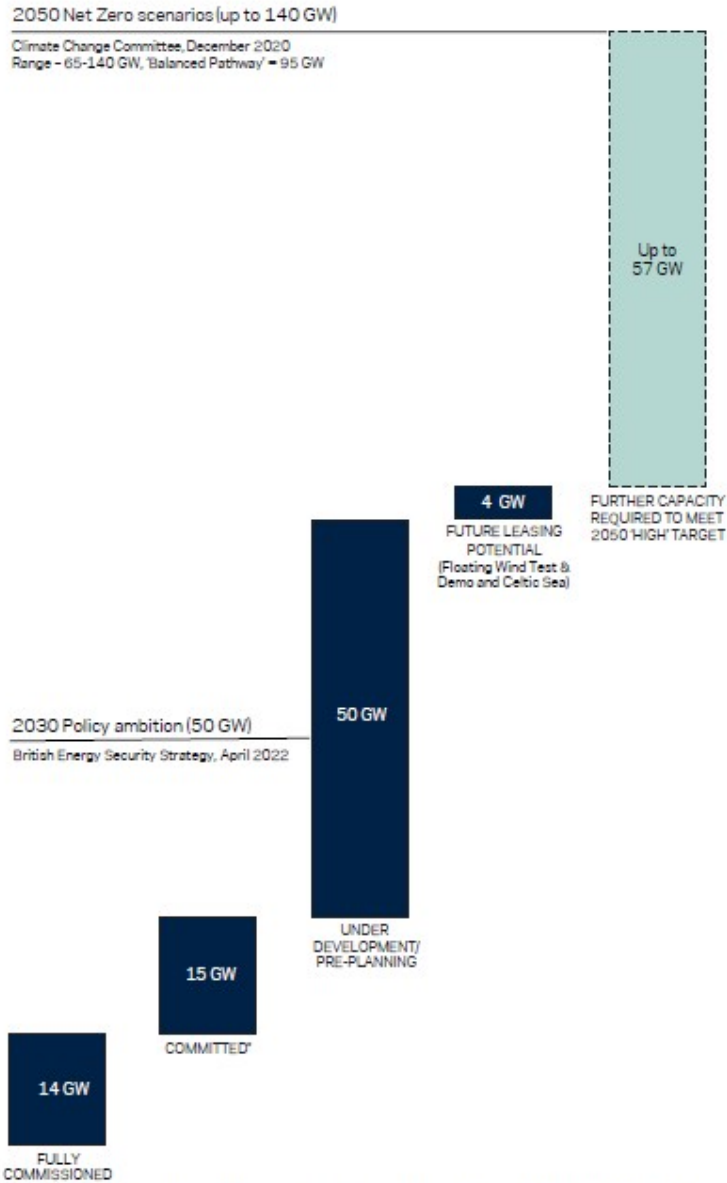
The issue is Rampion 2 will require more Ancillary services than the other Alternative hence have higher opportunity costs.

Annex 9:

Offshore Wind Development Pipeline

UK Offshore Wind Development Pipeline

January 2023 Portfolio waterfall - all UK (gigawatts rounded)



* Projects under construction or that have government support on offer e.g. Contract for Difference OR taken FID

<https://www.thecrownstate.co.uk/media/4213/overview-of-uk-offshore-wind-portfolio.pdf>

Annex 10:

Gas-fired power stations in the UK

There are about 32 active gas fired combined cycle power plants the United Kingdom, which have a total generating capacity of 28.0 GW.^[1]

Name	Location	Owner	Date Commissioned	Total capacity (GW)
Baglan Bay	Wales		2002	0.52
Ballylumford C	Northern Ireland	AES	2003	0.62
Carrington	North West	ESB	2016	0.91
Connahs Quay	Wales	Uniper	1996	1.38
Coolkeeragh	Northern Ireland	ESB	2004	0.41
Corby	East Midlands	ESB	1994	0.41
Coryton	East England	Intergen	2002	0.8
Cottam				
Development				
Centre	East Midlands	Uniper	1998	0.45
Damhead Creek	South East	Vitol	2000	0.81
Didcot B	South East	RWE npower	1998	1.45
Enfield	London	Uniper	1999	0.41
Grain CHP	South East	Uniper	2011	1.52
Great Yarmouth	East England	RWE npower	2001	0.42
Keadby	Yorkshire and Humber	SSE plc	1994	0.74
Langage	South West	EPUKi	2010	0.91
Little Barford	East England	RWE npower	1995	0.72
Marchwood	South East	Marchwood Power	2009	0.9
Medway	South East	SSE plc	1995	0.76
Pembroke B	Wales	RWE npower	2012	2.2
Peterhead	Scotland	SSE plc	2000	1.18
Rocksavage	North West	Intergen	1998	0.81
Rye House	East England	Vitol	1993	0.72
		Energy Capital		
Saltend	Yorkshire and Humber	Partners Seabank	2000	1.2
Seabank	South West	Power	2000	1.23
Shoreham	South East	Vitol	2000	0.42
South Humber				
Bank	Yorkshire and Humber	EPUKi	1997	1.37
Spalding	East Midlands	Intergen	2004	0.95
Staythorpe C	East Midlands	RWE npower	2010	1.77
West Burton B	Yorkshire and Humber	Vitol	2004	1.25
	East Midlands	EDF Energy	2013	1.33

30.24

Annex 11:

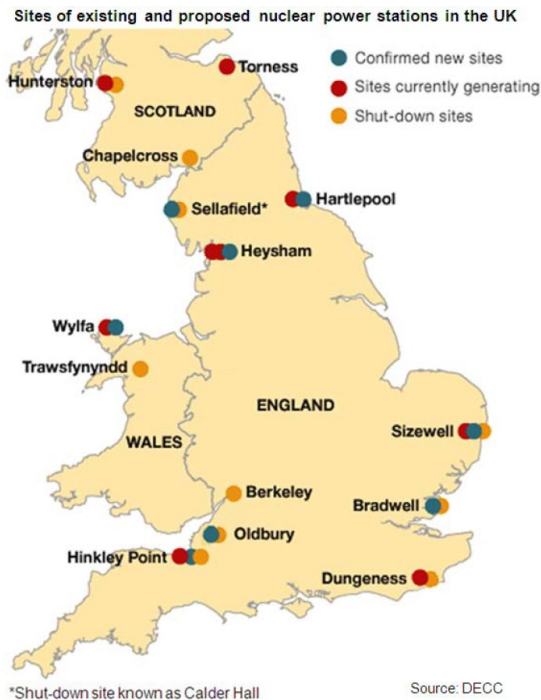
Retired, operating and proposed nuclear sites collocation opportunity for SMRs

As noted on Government's BEIS website: ³⁶

"(The UK) will see a significant acceleration of nuclear, with an ambition of up to 24GW by 2050 to come from this safe, clean, and reliable source of power. This would represent up to around 25% of our projected electricity demand. Subject to technology readiness from industry, Small Modular Reactors will form a key part of the nuclear project pipeline.

A new government body, Great British Nuclear, will be set up immediately to bring forward new projects, backed by substantial funding, and we will launch the £120 million Future Nuclear Enabling Fund this month. We will work to progress a series of projects as soon as possible this decade, including Wylfa site in Anglesey. This could mean delivering up to 8 reactors, equivalent to one reactor a year instead of one a decade, accelerating nuclear in Britain." 6 April 2022

The UK's current nuclear fleet is now down to five power stations that currently supply about 16pc of Britain's power annually. All but one plan is expected to close before 2030. Another three sites are being defuelled as they are closed down, the latest being Hinkley Point B in Somerset, which closed in 2022.



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<https://www.gov.uk/government/news/nuclear-energy-what-you-need-to-know> 6 April 2022

Recently retired Large Nuclear Plant in the UK

The three recently retired nuclear plant which are all Advanced Gas-cooled Reactors (ARGs) that have been operating for 40 or more years include:

1. Hinkely Point B
2. Dungeness B
3. Hunterston B,

A key aspect in relation to locating SMR as reasonable alternatives as BEIS sites is “In terms of future use for these sites, after the final defueling phase and then decommissioning they will be freed up land for future uses.”

Currently operating nuclear plant in 2022:

1. Sizewell B
2. Hartlepool station, on the River Tees
3. Heysham 1 station, near Lancaster (2GW)
4. Heysham 2
5. Torness

There are currently 5 remaining generating stations all operated by EDF Energy. Sizewell B, the UK’s only Pressurised Water Reactor (PWR) is expected to continue generation past 2028 though EDF is said to be looking at plans to extend the life of Sizewell B by 20 years to 2055.³⁷ AGR stations at Torness, Heysham 1, Heysham 2 and Hartlepool will end generation between 2022 and 2028.³⁸ EDF is reportedly reviewing current plans to close Hartlepool and Heysham 1 in March 2024 “with an ambition to generate longer if possible”³⁹

Extending large nuclear plants will not help the UK in the immediate crisis, but could secure supplies in the longer term.

Proposed new large nuclear:

- EDF is building Hinkley Point C in Somerset, set open June 2027, though concerns are it may be facing an 11 year delay to 2035⁴⁰
- EDF was in talks with the Government on co-funding funding Sizewell C, in Suffolk.

³⁷ [EDF exploring keeping UK nuclear power plants open for longer to boost energy supplies \(telegraph.co.uk\)](https://www.telegraph.co.uk/news/energy/2022/05/12/edf-exploring-keeping-uk-nuclear-power-plants-open-for-longer-to-boost-energy-supplies/)

³⁸ The closures will unfold just as demand for clean electricity rises due to a boom in electric cars, while stable sources of power are needed to balance out intermittent renewables. Extending large nuclear plants will not help the UK in the immediate crisis, but could secure supplies in the longer term.

³⁹ [EDF exploring keeping UK nuclear power plants open for longer to boost energy supplies \(telegraph.co.uk\)](https://www.telegraph.co.uk/news/energy/2022/05/12/edf-exploring-keeping-uk-nuclear-power-plants-open-for-longer-to-boost-energy-supplies/)

⁴⁰ [Hinkley Point nuclear plant faces risk of 11-year delay \(msn.com\)](https://www.msn.com/en-gb/news/energy/hinkley-point-nuclear-plant-faces-risk-of-11-year-delay)

Annex 12:

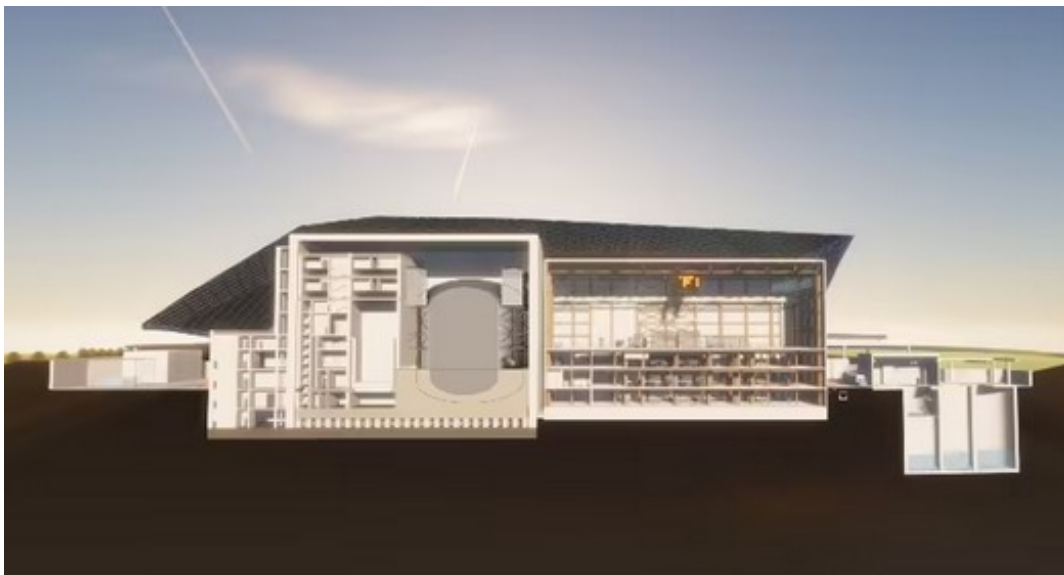
Small Modular reactors: the example of Rolls Royce 470 MW units

At present Rolls-Royce is the only UK Company with over 60 years experience with small nuclear power for military applications. It now has a civilian power model. In 2022 Rolls-Royce shortlisted six potential sites for its first dedicated small modular reactor (SMR) factory. It is expecting to receive UK regulatory approval for its SMR by mid-2024 with a view to powering up by 2029.⁴¹

Relevant points that Rolls-Royce SMR in its promotional material on the website extracted as follows for reference, evidence and illustration purposes:

Extracts from <https://www.rolls-royce.com/innovation/small-modular-reactors.aspx#section-overview>

“Our SMR value proposition has 4 key elements for SMR success – we are bringing to market a low cost, deliverable, global and scalable and investable solution:



Low cost

- always on' clean energy
- low-cost clean energy solution, using proven and commercially available technology to deliver a fully integrated, factory built nuclear power plant.
- focus on modularisation, and maximising the amount of work conducted under factory conditions.

Deliverable

⁴¹ <https://www.newcivilengineer.com/latest/rolls-royce-shortlists-six-sites-for-modular-nuclear-reactor-factory-05-07-2022/>

- uses the breadth of the UK supply chain, able to contribute more than 80% of each SMR by value – focusing on standardised, commercially available and off-the-shelf components.
- moves away from the high cost and high-risk complex construction programme principles into predictable factory-built commodities.
- Approximately 90% of manufacturing and assembly activities are carried out in factory conditions, helping to maintain an extremely high-quality product - reducing on-site disruption and supporting international roll out.

Global & scalable

- Making a meaningful impact across multiple countries, meeting unprecedented demand for clean energy.
- direct response to that enormous global challenge and our ambitions are set to match that global market as we look to build a world class global product.
- factory-built model is entirely scalable. As demand increases, we invest in further factories using the same design and management systems used for all our SMRs.
- Memorandums of Understanding are already in place with Estonia, Turkey and the Czech Republic.
- The Rolls-Royce SMR programme is forecast to create 40,000 regional UK jobs by 2050 and generate £52bn in economic benefit.

The compact footprint increases site flexibility and maximises potential plant locations, including replacement for existing coal or gas-fired plants.

Investable

- Designed to attract traditional forms of capital through a low-risk factory-based solution.
- By design, our SMR is focused on attracting all forms of private capital to support the build out of global SMR demand.
- With a proven factory built commoditised approach, our SMR will offer investors and lenders a degree of confidence that will enable future customers to access a range of capital options to finance their SMR purchase.
- A Rolls-Royce SMR power station will have the capacity to generate 470MW of low carbon energy, equivalent to more than 150 onshore wind turbines.
- It will provide consistent base load generation for at least 60 years, helping to support the roll-out of renewable generation.
- The compact footprint increases site flexibility and maximises potential plant locations, including replacement for existing coal or gas-fired plants.

- In addition to stable base load power, Rolls-Royce SMRs will be able to provide energy for the net zero manufacture of green hydrogen and synthetic fuels to support the decarbonisation of transport.

It will occupy approximately one tenth of the size of a conventional nuclear generation site, helping to reduce local environmental impacts. Rolls-Royce SMR will be factory built, enabling completed modules to be transported by truck, train or barge, reducing vehicle movements and completion risk and increasing build time certainty.

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As far as sites for UK SME rollout:

Wylfa in Anglesey and Oldbury in South Gloucestershire have also been named as candidates to host either large-scale plants, smaller modular nuclear reactors, or possibly both. To date as MoU enables the Nuclear Decommissioning Authority (NDA) to share information and expertise around the characteristics of its land at Trawsfynydd, to align the decommissioning plans and site activities with the new nuclear project, and to support Cwmni Eginio with stakeholder engagement and developing socio-economic plans.⁴²

The newly created (in 2022) Great British Nuclear (GBN) as well as BEIS and NDA is to identify other appropriate sites. We would agree that with appropriate expert advice serious consideration (if not already done and subject to Great British Nuclear (GBN) as well as BEIS and NDA be given to:

- Wylfa in Anglesey and Oldbury in South Gloucestershire already named
- The existing Sizewell B site
- Hinkley Point C in Somerset (11 year delay gas turbines as construction power?)

Rolls Royce Reveals 440 MW Commercial Reactor Design | Neutron Bytes: November 9, 2019

<https://neutronbytes.com/2019/11/09/rolls-royce-reveals-440-mw-commercial-reactor-design/>

[\(61\) Rolls Royce Nuclear "Small" Modular Reactors are coming! - YouTube](#)

UK Government kick-starts approval process for Rolls Royce’s small nuclear reactors

Published, March 2022

<https://www.edie.net/uk-government-kick-starts-approval-process-for-rolls-royces-small-nuclear-reactors/>

Rolls-Royce hopes for UK SMR online by 2029 : New Nuclear - World Nuclear News: April 2022

⁴² <https://www.gov.uk/government/news/agreement-to-progress-development-of-new-uk-small-modular-reactors>

<https://www.world-nuclear-news.org/Articles/Rolls-Royce-hopes-for-UK-SMR-online-by-2029>

The chairman of Rolls-Royce SMR, Paul Stein, has told the *Reuters* news agency he hopes to get regulatory approval for its small modular reactor (SMR) design by mid-2024, with grid power able to be produced by 2029.

Rolls-Royce expecting UK approval for mini nuclear reactor by mid-2024 – EURACTIV.com:

April 2022

<https://www.euractiv.com/section/energy/news/rolls-royce-expecting-uk-approval-for-mini-nuclear-reactor-by-mid-2024/>

UK launches funding to encourage nuclear new build: Nuclear Policies : World Nuclear News: May 2022 <https://www.world-nuclear-news.org/Articles/UK-launches-funding-to-encourage-nuclear-new-build>

Annex 8:

Annex 13:

Gas-fired turbine (CCGT) extension or new plant with carbon capture, use and storage (CCUS)

Crown Estates notes:

<https://www.thecrownestate.co.uk/en-gb/what-we-do/on-the-seabed/energy/carbon-capture-usage-and-storage/>

“With carbon capture widely recognised as integral to the UK meeting its climate change target of net zero emissions by 2050, the UK Government has recently expanded on its ambition with a renewed target to capture and store 20 to 30 million tonnes of CO₂ emissions per year by 2030, and over 50 million tonnes by 2035.

Three aspects circumscribe the consideration:

Firstly, the EU re-classification in early 2022 of natural gas as “green energy” mends increased competitiveness for EU sourced natural gas from pipelines (e.g., Norwegian North sea gas and Algerian supply to southern Europe) and LNG on international markets for which the EU are building LNG import facilities.

Secondly, as the National Grid points out and to paraphrase, as the UK continues the journey towards a decarbonised energy future, gas-fired power stations alongside other balancing mechanisms will be increasingly expected to meet the variability associated with renewables.

“This change in requirement creates operational uncertainty that we need to quantify, to understand the risk it poses. As electricity generation becomes more weather dependent, we anticipate that gas-fired generation demand will become more variable within-day, and day-to-day. National Grid”

<https://www.nationalgrid.com/gas-transmission/insight-and-innovation/gas-future-operability-planning-gfop/future-gas-fired-generation>

Thirdly:

“Most natural gas-fired generation technologies can provide flexibility. Natural gas can be utilized for a number of centralized or distributed flexible generation technologies in a wide variety of capacity ranges that can contribute to VRE integration. Natural gas-fuelled assets can run in different operating modes, from peak to base-load, in stand-alone or standby applications, or even combined with VRE systems in hybrid power plants.” P36. WB

<https://www.iea.org/reports/the-role-of-ccus-in-low-carbon-power-systems/how-carbon-capture-technologies-support-the-power-transition>

<https://www.ge.com/gas-power/future-of-energy/carbon-capture-storage>

Context:

Crown Estates:

<https://www.thecrownestate.co.uk/en-gb/what-we-do/on-the-seabed/energy/carbon-capture-usage-and-storage/>

“With carbon capture widely recognised as integral to the UK meeting its climate change target of net zero emissions by 2050, the UK Government has recently expanded on its ambition with a renewed target to capture and store 20 to 30 million tonnes of CO₂ emissions per year by 2030, and over 50 million tonnes by 2035.

Carbon Capture and storage component.

<https://www.ogci.com/about-us/> The Oil and Gas Climate Initiative is a CEO-led organization bringing together 12 of the largest oil and gas companies worldwide to lead the industry’s response to climate change. It aims to accelerate action towards a net zero emissions future consistent with the Paris Agreement. OGCI members are Aramco, BP, Chevron, CNPC, Eni, Equinor, ExxonMobil, Occidental, Petrobras, Repsol, Shell and TotalEnergies.

OGCI members set up OGCI Climate Investments to create a US\$1 billion-plus fund that invests in companies, technologies and projects that accelerate decarbonisation within energy, industry, built environments and transportation.

The system value analysis (to quantify the value associated with any proposed infrastructure addition to the generation mix for low carbon energy, including flexibility to meet power sector needs and wider energy and climate policy) was undertaken for the Net Zero Teesside Project now awaiting a DCO decision in 2023. That features a gas-fired 850 MW gas-fired power station with carbon capture, utilisation and storage (CCUS) to be operational by 2029. It could also be part of the “no-project” analysis as in the EIA Regulations 2017.

Pins Description - About this project

A full chain carbon capture, utilisation and storage (‘CCUS’) project, comprising a CO₂ gathering network, including CO₂ pipeline connections from industrial facilities on Teesside to transport the captured CO₂ (including the connections under the tidal River Tees); a combined cycle gas turbine (‘CCGT’) electricity generating station with an abated capacity circa 850 MW output (gross), cooling water, gas and electricity grid connections and CO₂ capture; a CO₂ gathering/booster station to receive the captured CO₂ from the gathering network and CCGT generating station; and the onshore section of a CO₂ transport pipeline for the onward transport of the captured CO₂ to a suitable offshore geological storage site in the North .

Net Zero Teesside Power’s proposed combined cycle gas turbine electricity generating station will have an electrical output of up to 860 megawatts (MW) of low carbon electricity,

enough to power up to 1.3m homes per year. From the power plant alone, the proposed carbon transportation and storage infrastructure will capture and store up to two million tonnes of CO₂ a year.^{1,2}

The integrated facility consists of a H-class gas turbine combined cycle gas turbine (CCGT) with amine-based post-combustion capture designed for rapid start-up, whilst capturing over 95% of emissions. CO₂ is dried and compressed to safely enter the transportation and storage system. Low-carbon power will be exported to the nearby National Grid Tod Point facility.⁴³

References

BEIS, 2022 a; UK ENERGY IN BRIEF,

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1130451/UK_Energy_in_Brief_2022.pdf

CCC, 2023a Delivering a reliable decarbonised power system, Climate Change Committee March 2023, <https://www.theccc.org.uk/>

⁴³ <https://gccassociation.org/cement-and-concrete-innovation/carbon-capture-and-utilisation/amine-based-post-combustion-capture/> Amine-based post-combustion capture (PCC) is a well-proven and commercially-available technology, having been used in the petroleum sector since 1996 and in the coal-fired power industry since 2014. In the cement industry, it was successfully used to capture carbon dioxide (CO₂) during a small-scale trial at Norcem's Brevik plant in Norway, a project that is now being scaled up to capture up to 400,000 tonnes per year of CO₂. The technology uses an amine solvent to scrub CO₂ from the flue gas. The flue gas is initially fed into an absorption column, where the solvent selectively removes the CO₂. The CO₂-rich solvent is then fed into a desorber column, where it is heated to release the CO₂, which is captured before being sent for geological storage or onward use. This regeneration process is highly energy intensive, however, posing an economic and environmental challenge. The regenerated solvent is cooled and returned to the absorption column. Commercially-available amine solvents can be grouped into first and second generations. First-generation solvents include mixtures of water and monoethanolamine (MEA), diethanolamine (DEA), triethanol amine (TEA) or potash. Of these, MEA is most widely used for CO₂ absorption, due to its high selectivity, quick reaction and low cost. However, it is also sensitive to impurities and requires desulfurization and denitrification of the flue gas to work effectively. Second-generation solvents include improved blends of sterically-hindered alkoamines and amino acids that require lower regeneration temperatures and are more resistant to degradation. However, they cost more than and do not perform as well as MEA. Despite the challenges, amine-based PCC is the most advanced carbon capture technology available to the cement industry with several suppliers on the market. Its planned commercial-scale deployment at Brevik – where waste heat from the cement manufacturing process will be used to optimise the process – is set to provide valuable operating experience to the industry, easing its future adoption by other cement plants.