Deadline 2 Representation to PINS on Sizewell C

Bill Parker
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Author Credentials

I have 15 years of hand on experience of leading work on the management of Suffolk coast and estuaries.
I was the Head of Coastal Partnership East (CPE), the coastal management team for North Norfolk District, Great Yarmouth Borough and East Suffolk Councils. I retired having set up CPE in July 2019 after EDF's Pre-DCO stage 3 consultation but before stage 4. CPE was created to enable the three Coast Protection Authorities to have access to the breadth of skills needed for coastal management and to respond to local communities and businesses in managing the rapidly eroding 173km of Norfolk and Suffolk coastline.
I was the Lead Officer for the Local Government Association Coastal Special Interest Group for 6 years chairing the collective work of local authority officers from around the country.
I was awarded the British Empire Medal for services to Coastal Management in 2019.

1. Summary

The Planning Inspectorate has an onerous responsibility in advising the SoS on the quality and suitability of this application. I wish to highlight fundamental concerns on the evidence and conclusions of EDF on the management of the coast at Sizewell and on the wider engagement with the community.

Government policy can be summarised as "*directing development [of infrastructure] away from areas vulnerable to coastal change;"* and *"*Applicants (EDF) *should demonstrate that future adaptation/flood mitigation would be achievable at the site …during the life of the station and the interim spent fuel store"*

Defra's own analysis of the Sizewell site identifies it as being at flood risk and climate change will exacerbate the situation.

Outlined in my document is an examination of some of the key weaknesses in the case proposed by EDF that should alarm the Planning Inspectorate and provide them with the evidence to reject this application.

I contend that EDF have taken a decision to locate the EPR where in the short term it may be easier to get approval from ExA but in the long-term increases the vulnerability to sea flooding and coastal erosion. This compromises EDF's stated coastal Mitigation Objectives.

There are many areas of concern in the DCO documentation with regard to the stability of the coast and hence its implications for Sizewell C. These are explored in more detail but the most important of these is the understanding of the role and future of the Sizewell-Dunwich banks.

The shape of the Suffolk coast has always been significantly influenced by the presence of ephemeral and shifting unconsolidated sand banks. These can attenuate the energy in the waves and refract them and therefore reduces their destructive energy and produce an more stable shoreline. By the selective use of a specific time frame Sizewell beach appears relatively stable. However, the protective banks are moving and their future protective function is in doubt. EDF / Cefas down play their role. A report by Professors Jackson and Cooper referenced casts doubt on the assertions made by EDF and Cefas on the resilience of the coastline. A more detailed assessment please refer to the Deadline 2 submission by independent engineer Nick Scarr.

The area of assessment in-front of the proposed Sizewell C site extends only over a 3km stretch of coastline and focussed solely on the Sizewell C site. Scientific opinion is overwhelming that for coastal structures have an impact in excess of 10's km from sea defences. The detailed monitoring and mitigation of an area between Lowestoft and Felixstowe would seem to be more considered.

The analysis undertaken by EDF / Cefas of coastal processes and geomorphology has taken a simplistic approach. Contemporary analysis recognises system linkages and resulting feedbacks that can lead to emergent behaviours of the coastline. There is little confidence in the assumption of a simple relationship approach for processes operating between the coast and off shore.

The use of expert group analysis is in line with recommended practice when timescales are too long and processes too complex for confidence in existing modelling techniques. However, the EGA is not an independent group and Cefas may have shaped the assumptions made which are questioned including:

- The use of 'reasonably foreseeable' conditions which explicitly excludes extreme events. It is statistically probable that a high-magnitude but low frequency event will occur during this and the full life time.

- Minimisation of the impact of sea level rise using assumptions that are based on extrapolations of historic trends. There is no evidence of a coherent trend rate regionally for this.

- Inshore wave climate is un-changed on the assumption that the off shore bank morphology doesn't change. This is an untenable assumption given the known bank observations with the cyclical and decadal timescale changes.

- No shoreline accretion and sinuosity similar to present. The assumption that the intervention on the shoreline of defences etc. will not have a potential impact on accretion and the shape of the shoreline is unexplained and should be challenged.

- Sandbank mobility and shoreline response. The assumption that the sandbanks (esp. Sizewell-Dunwich bank) will remain stable is contrary to evidence presented in the DCO.

Geohazard Tsunami, this is little referenced in DCO. EDF recognise urgent work is required to establish even the baseline risk and EDF claim an assessment will be made for the Nuclear Site Licence application. This will not report till mid-2022 and isn't open to public scrutiny. A separate more detailed paper will be submitted to the ExA.

Beach landing facility, jetties and Minsmere sluice. The proposals still seem subject to significant change and there is no analysis how this should be managed in the long term and its implications for water levels in Minsmere and the marshes.

The evidence presented by EDF to-date and the quality of the information on the coast defences has been lamentable, especially as they were available at the beginning of Hinkley Point C DCO

EDF illustrations in its consultation documentation often fail to be geo-referenced to an appropriate standard. Providing accurate information is essential for people to understand the implications of any design.

The proposed SSSI crossing is a poor design for the location and the hydrology and environmental impacts have been poorly assessed. The bridge solution which would have less impact on the water levels and flows, reduced impact on species connectivity

The intake and discharge proposals are likely to contravene Habitat Regulations and the lack of an Acoustic Fish Deterrent is in contravention of the requirement to adopt the Best

Available Technology for nuclear installations.

There are no details on potable and non-potable water supply together with a poor understanding of ground and surface water relationship despite being a Scoping Report Opinion requirement.

We know that future generations will have to deal with the consequences of a changing climate and we need to rapidly decarbonise. The significant quantities of Co2 caused by the construction phase is during the most important period of Co2 reduction for the UK to meets its binding net zero targets. All claims EDF make about low carbon emissions must therefore be treated with extreme scepticism.

The catastrophic impact on the landscape is out of all proportion to the benefits gained. There will not be real tangible 'net gain' benefits from this proposed development.

Unacceptable loss of access at Sizewell beach for many years will impact locals and visitors alike.

The introduction and increase of shipping with revised freight strategy proposals will create significant new source of pollution. This proposal needs a full independent environmental assessment.

A contaminated residual core will remain and impact the coastline in perpetuity, this has not been taken into account in the long-term mitigation assessments.

To protect any location from coastal erosion and flooding requires a long-term investment plan. The DCO needs to ensure that a plan and allowance for these costs should be identified for the value for money analysis as required by government.

It is not clear as to what in the long term will be left for the communities of East Suffolk. There appears to be to those who live here untold costs and little benefit from this proposal.

The draft Coastal Monitoring and Mitigation Plan lacks meaning as the detail on the coast defence measures are still not available. The ExA is asked to ensure that the issue of monitoring across a wide spectrum of issues is examined in detail and that meaningful controls are recommended.

The consultation and engagement process undertaken by EDF over the past decade has had major short comings and not met either the letter nor the spirit in which public dialogue should be undertaken.

The most recent consultation was announced only a few days after the deadline for the DCO written Relevant Representations. EDF significant disrespect for the process.

The poor quality of the consultation material was often confusing or misleading.

The questions posed in the consultations were often inappropriate and therefore, the consultation was spurious.

EDF staff and their partners were disdainful of the legitimate questions being raised in their consultation process. I and others have been given the similar and deliberate

misinformation. This highlights the lack of openness and honesty by the applicant and its partner organisations.

Many of the background documents for the DCO process were not available except via formal Freedom of Information requests.

From the community perspective, the entire engagement and consultation process by EDF for Sizewell C for has been very frustrating, secretive, misleading and uninformative. I endorse the comments of David Robb in questioning the integrity of the applicant.

We all have a responsibility to future generations who will be living in a much more uncertain world. They will have to deal with our legacy. We absolutely must not bequeath to future generations avoidable problems that they may not have the resources nor the expertise to resolve.

This application should be rejected by PINS as being unsuitable for this location

Credits:
I am grateful to both the diligent work and support from the following for their research and analysis from which I have been drawn extensively from and incorporated into this response. The papers they have authored are being submitted separately to the DCO as standalone and independent documents.

Nick Scarr (independent engineer) and his paper: Sizewell C – Coastal morphology, climate change and the effectiveness of EDF's Flood Risk and Shoreline Change assessments. May 2021,

Professor Derek Jackson and Professor Andrew Cooper and their paper: Synthesis of TR311June 2021

2. Introduction:

2.1. The ultimate decision to approve or not approve the EDF application for the Sizewell C development is for the Secretary of State (SoS) for BEIS. The Planning Inspectorate has an onerous responsibility in advising the SoS on the quality and suitability of this application.

2.2. There will be many issues highlighted regarding this proposed development especially concerning impacts on; logistics (road / rail / sea), communities, ecology, environment which I too have significant concerns over. In this response however I specifically wish to highlight fundamental concerns on the evidence and conclusions of EDF on the management of the coast at Sizewell and on the wider engagement with the community through the consultation process.

2.3. The existence of the nuclear power stations of Sizewell A (currently being decommissioned) and Sizewell B (currently operational) makes the suggestion of a third station unsurprising at a superficial level. However even Defra's 2011[1] initial analysis of the site identifies it as being at flood risk that was before the latest developments in the understanding of the science of climate change. Documentation published by UKCIP on climate change predicts that sea level could rise to approx. 1.9 meters above 1990 (H++) levels by 2100 and the recognition that predictions of sea level rise to 2200 (the approximate life span of the site) is likely to be significantly in excess of this especially with the current and predicted loss of glacier and land ice. If you also factor in iso-static rebound, the sinking of the land in East Anglia (approx. 1.4mm per annum) as a consequence of retreat of ice from the northern half of Britain after the last ice-age this will exacerbate this risk further.

2.4. The coastline at Sizewell has been relatively stable over the past century however evidence contained within the DCO documentation highlights it is untenable to assume that this will continue into future. The Suffolk coastline has been eroding since the last ice-age and will continue to do so. The 170-year time frame of this proposal and together with the permanent legacy of the site on the Suffolk coast means that the Sizewell site is at risk of coastal erosion, flooding and permanent inundation. Climate change will have many consequences and it is as good ancestors, we should avoid making decisions with identifiable known consequences today that future generations many be ill equipped to deal with.

2.5. To propose building a new nuclear power station that will be at flood risk on an eroding coastline must be considered reckless. The consequences of building such a structure on this coastline is to put future generations of at risk of significant cost to protect and defend the power station from the sea and of catastrophic events such as the risk of pollution and contamination from the release into the sea / atmosphere of uncontrolled radiation from the spent nuclear fuel store.

[1] Unpublished but partially obtained by FOI - Guardian, 8 March 2012, Rob Edwards, 'Most nuclear sites at risk of flooding and coastal erosion, says government study.' https://www.robedwards.com/2012/03/most-nuclear-sites-at-risk-of-floodingand-coastal-erosion-says-government-study.html

2.6. The decisions regarding the management of the coast must be taken with a long term perspective. When considering the merits of coast defence schemes in general, the critical question is always 'in 20 or 50 year's time was this decision the right one'? In the case of Sizewell C this time frame must to extended to 160+ years, an onerous responsibility for the Examining Authority.

2.7. Outlined below is an examination of some of the key weaknesses in the case proposed by EDF that should alarm the Planning Inspectorate and provide them with the evidence to reject this application. The Examining Authority has a responsibility to future generations to ensure that this proposal is either robust or rejected. The issue is not whether nuclear power is a solution to the decarbonisation of the UK to meet its Climate Change obligations but is the proposal from EDF at Sizewell the right solution in the right location and therefore if not it should be rejected.

3. Compliance with Government policy

3.1. The Examining Authority (ExA) will be working within the guidelines of Government Policy which will include EN-1 (Energy) and EN-6 (Nuclear) and the more recent Energy white paper proposals. Whilst the EN-1 and EN-6 are technically out of date they do provide useful guidelines as follows:

3.2. EN-1 Department of Energy and Climate Change Overarching National Policy Statement for Energy (EN-1). Particular reference should be drawn to section 5.5 Coastal change.
"The Policy states in section 5.5.1[2]

3.2.1. prevent new development from being put at risk from coastal change by (i) avoiding inappropriate development in areas that are vulnerable to coastal change or any development that adds to the impacts of physical changes to the coast, and

3.2.2. *(ii) directing development away from areas vulnerable to coastal change;"*

3.3. This paper will demonstrate that there is significant doubt as to the coastal stability of this location and therefore it must be considered highly vulnerable to coastal change and

3.4. *"ensure that plans are in place to secure the long term sustainability of coastal areas.*"

3.5. To-date (pre Deadline 2 in the DCO process) the applicant has not demonstrated long term sustainability for the coastal area. The references to soft coast defences are as yet unclear and as noted below, as yet unproven as a methodology to maintain a long-term sustainability to the coastal areas.

3.6. Further comment will be reserved for when EDF present their proposals.

3.7. In the National Policy Statement for Nuclear Power Generation EN-6[3] it states

[2] Overarching National Policy Statement for Energy (EN-1) July 2011 Page 79
[3] National Policy Statement for Nuclear Power Generation (EN-6) – Volume I of II July 2011

3.7.1. Nuclear power stations need access to cooling water.... Without appropriate mitigation measures the potential effects of climate change could mean these sites become at greater risk of flooding ... Coastal erosion and increased likelihood of storm surge and rising sea levels;[4]

3.7.2. Further in sections on Flood Risk Mitigation

3.6.15 ….. Applicants should demonstrate that future adaptation/flood mitigation would be achievable at the site, after any power station is built, to allow for any future credible predictions that might arise during the life of the station and the interim spent fuel stores[5]

3.7.3. And on coastal change Mitigation

Take account of the effects of climate change over the lifetime of the project (including any decommissioning period), the IPC should be satisfied that the application will include measures where necessary to mitigate the effects of, and on, coastal change.[6]

3.8. Applicants are asked to provide evidence that sites are safe and secure. It is very clear that this is of concern to government. A cursory examination of the Flood Risk Maps contained within EDF's own documentation highlights the vulnerability of the site. See EN010012-001709-SZC_Bk5_5.2_MDS_Flood_Risk_Assessment_Fig11_20.pdf (planninginspectorate.gov.uk) and this is only to 2130, there would still be need to defend for another 60 years. EDF have failed to adequately demonstrate this in their proposals.

3.9. It is noted that the applicant must mitigate risk over the life of the power station and also the life of the interim fuel store. According to Office for Nuclear Regulation and Environment Agency[7] the need for appropriate flood and sea defences '*is generally understood to be 160 years'* based on the premise of an operational period of 60 years. Should this be extended then it would be at least 100 years after the site closes that secure sea / flood defences would be required.

3.10. Therefore, the recognised vulnerability (even by the applicant) of the Sizewell site to both coastal flooding and as explained later erosion means it is unsuitable for this development and should be rejected.

3.11. Energy white paper 2020

The recent Government white paper states:

Point 3: NUCLEAR[8]

` We will aim to bring at least one largescale nuclear project to the point of Final Investment Decision (FID) by the end of this Parliament, subject to clear value for money and all relevant approvals.'

[4] EN-6 – Volume I of II page 14
[5] EN-6 – Volume I of II page 22
[6] EN-6 – Volume I of II page 25
[7] Principles for Flood and Coastal Erosion Risk Management Joint Advice Note July 2017 – Version 1
[8] ENERGY WHITE PAPER Powering our Net Zero Future December 2020 | CP 337 Page 48

3.11.1. It also re-states from the 2018 Nuclear Sector Deal an expected reduction of 30% in the cost of nuclear new build projects by 2030[9]

3.11.2. Value for money and reduced nuclear build costs are an important caveats. Whilst it may not the ExA role to asses 'value for money' it is essential that the ExA examines all the risks and hence costs of this proposal and ensures that all mitigation proposed by the applicant is fully explored evaluated and taken into consideration.

3.11.3. The White Paper does not specify that Sizewell is the preferred site of the Government and the ExA is under an obligation to look at each location on its own merits. It should not be the ExA role to agree the Sizewell site just because it is the only one under current active DCO consideration to meet a government objective.

4. Sizewell as the proposed site for a nuclear new build

4.1. In November 2009, the Government identified ten nuclear sites which could accommodate future reactors This included Sizewell as a potential site and is unsurprising at first sight as there is a) an existing nuclear skilled workforce in the area, b) access to transmission lines and c) a potential site. However, with further and more detailed assessment it is clear that the site is severely compromised, in an environmentally an extremely sensitive site and at risk of flooding and coastal erosion. DEFRA produced an unpublished government analysis (now partly obtained under FOI) in 2011 which shows that Sizewell is considered a high flood risk up to and including 2080 with no forecast beyond.[10] David Crichton[11] stated that "Experts suggested that the main worry was that inundation would cause nuclear waste to leak….with sea level rise……this will make decommissioning expensive and difficult, not to mention the recovery and movement of nuclear waste to higher ground." Therefore, this site should be abandoned.

4.2. Nuclear projects have a history of cost over-runs and are notoriously difficult to budget for. EDF, in order to manage costs and to meet the obligations of the Nuclear Sector Deal with the Government (2018)[12] has decided to replicate (as far as possible) the development design of the EPR stations at Hinkley Point C in Somerset onto the Suffolk coast. However, the two sites are very different. The Sizewell site is very constrained in size, (Hinkley Point C being 40% bigger) and it is severely compromised by being sandwiched between the sea to the east and the SSSI of Sizewell marshes to the west. This creates a fundamental problem with this proposal when utilising an existing pre-set footprint for the development.

[9] Nuclear Sector Deal June 2018 Nuclear Sector Deal - GOV.UK (www.gov.uk)

[10] Guardian, 8 March 2012, Rob Edwards, 'Most nuclear sites at risk of flooding and coastal erosion, says government study.' https://www.robedwards.com/2012/03/most-nuclear-sites-at-risk-of-floodingand-coastal-erosion-says-government-study.html

[11] a flood specialist and an honorary professor at the Hazard Research Centre in University College London

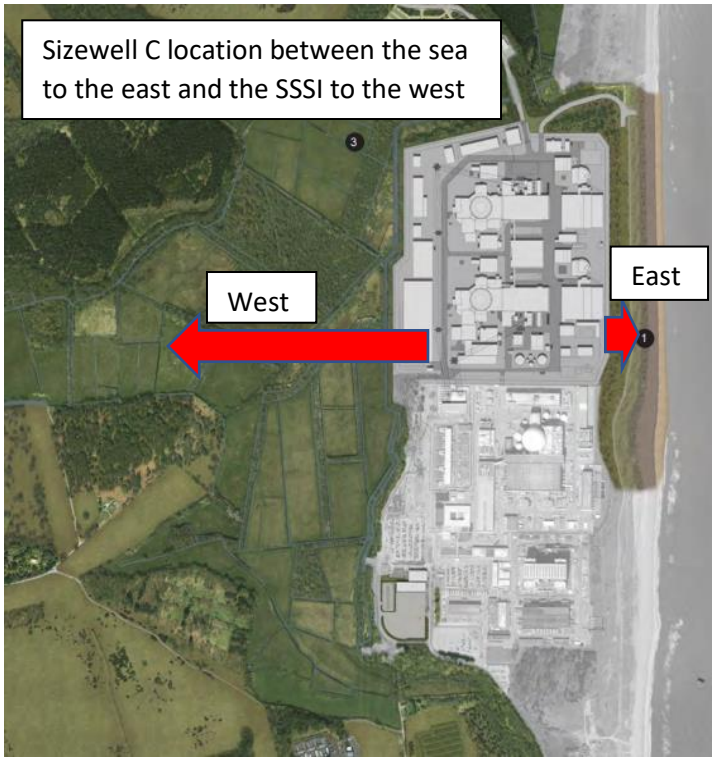
[12] Nuclear Industry Council Proposals to Government for a Sector Deal published in December 2018 ,

4.3. EDF recognises the importance of avoiding the exposure of the hard coastal defence to direct wave energy for as long as possible as they highlight this in their coastal Mitigation Objectives[13]. The consequences for the coast to the north and south of exposed hard sea defences exposed to direct wave action and ongoing liabilities for Sizewell C itself are unspecified but undoubtedly significant.

4.4. The only way to reduce this risk (as per the identified mitigating actions) is to move the entire proposed development landward on the east / west axis. However, this would destroy even more SSSI land than the 12 hectares already earmarked.

4.5. I contend that EDF have taken a decision to reduce the SSSI land take as much as possible as this may be less unacceptable in the short term and therefore potentially easier to get approval from ExA. However, this is at the risk of long-term compromise of the site and increased vulnerability to sea flooding and coastal erosion. This also compromises their stated coastal Mitigation Objectives. EDF admit that the Hard Defences are likely to be exposed between 2053 and 2070 and this will require mitigation. The requirement for intervention as soon as 20 years after the start of operation and then be required (if possible and affordable) for an additional 140 years can only be a consequence of a failure to design an appropriate new nuclear station for the site

4.6. Plan of Sizewell C location



[13] APP-616 https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/EN010012/EN010012-002234-SZC_Bk8_8.12_Mitigation_Route_Map.pdf Mitigation

4.7. The proposal is at an inappropriate scale for such a fragile coastline and environmentally sensitive location. It must be concluded therefore that **either the site is too small or the design is too big** for the Sizewell location. Neither conclusion supports the development of Sizewell C as currently proposed.

5. **The vulnerability of the coast**.

5.1. The Suffolk coast has been eroding for the last 10,000 years since the land bridge to Europe was broken and will continue to do so in future. The rate of erosion is driven by the opposing forces of the resilience of the land against the energy from the sea through wave action generated by storms, prevailing winds, tidal surges and on rare but significant occasions tsunamis. Relatively recent significant human intervention on the coast is now influencing its evolvement and there are now consequences where this occurs. An historical examination of how the Suffolk coastline has changed since 1880's is summarised by Burningham and French[14]. The conclusion is that:

"a complex interaction between met-ocean forcing, inherited geological and geomorphological controls, and evolving anthropogenic intervention that drives changing foci of erosion and deposition."

5.2. This examination of (relatively) recent coastal change i.e within the last 150 - 200 years is during a period of relatively benign changes in sea levels. Projecting future shorelines is made significantly more complex and less predictable with rapid predicted sea level rise combined with the isostatic sinking of the land as part of the rebound process from the last ice-age.

5.3. The following are areas of concern with regard to the vulnerability of the coast and its implications for Sizewell C:

- Coralline Crag
- Sizewell-Dunwich banks
- Spatial scale of the assessment
- System behaviour
- Expert Geomorphological Analysis
- Geo Hazards
- Beach landing facility, jetties and Minsmere sluice

5.4. Coralline Crag

5.4.1. The coastline has little resilience to energy from the sea as it is largely formed of unconsolidated shingle and sands. The exception is a Coralline Crag outcrop rooted Thorpeness and projecting north east under the North Sea and offers some protection to Sizewell A and B. Whilst this is identified in various EDF documentation (e.g. BEEMS[15] TR508) its known location offers little known

[14] Understanding coastal change using shoreline trend analysis supported by cluster-based segmentation Helene Burningham, Jon French Journal of Geomorphology Volume 282, 1 April 2017, Pages 131-149

[15] British Energy Estuarine & Marine Studies Reports

protection from north easterly storms for the Sizewell C site.

5.4.2. Sizewell A and B stations are located on a Crag outcrop whilst the proposed Sizewell C site is located on a former river bed on peaty material. Sizewell C site therefore has no natural protection from erosion and requires a built defence which will impact on natural coastal processes with long term consequences which are inadequately unexplained or mitigated for by EDF in their documentation.

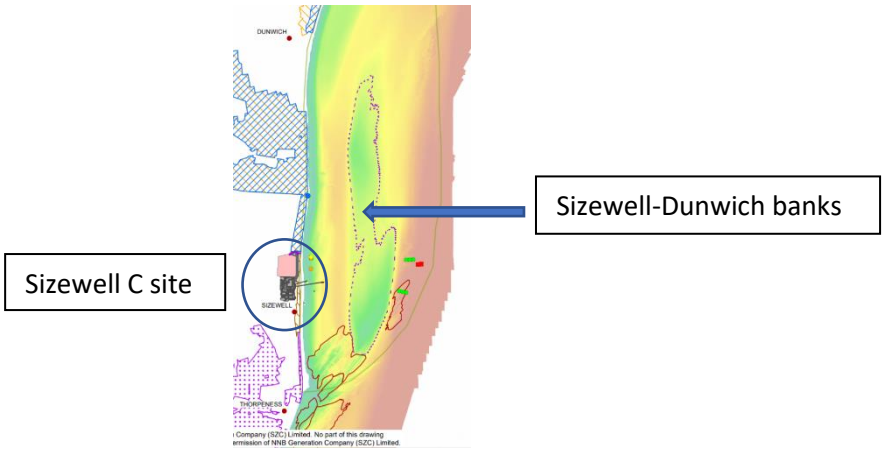
5.4.3. Whilst it is acknowledged that the Crag offers some resilience, there has been no risk analysis (that I have found) into its vulnerability to increasing ocean acidification, warming or damage from more frequent and potentially violent storms. This appears to be a gap in the analysis.

5.5. Sizewell-Dunwich banks

5.5.1. The shape of the Suffolk coast has always been significantly influenced by the presence of ephemeral and shifting unconsolidated sand banks. These can cause shoaling and reduction in water depth which attenuates (reduces) the energy in the waves and refracts (alters the angle of attack on the shoreline) and therefore reduces it destructive energy on the shoreline.

5.5.2. The Sizewell beach shoreline has been relatively stable over the past 160 years. This has been the corner stone in the rational of the proposal to build another station in this location. However, if the base line for review is changed from 1836 to 1736[16] it can be noted that this area suffered significant erosion for 300+ meters and therefore it can be concluded that it is not stable at all. The selective use of the timeframe used to examine the evidence can alter the perception of a stable or unstable coastline.

5.5.3. The relatively stable section (in the recent past) of coastline unlike others along the Suffolk coast is clearly identified in its DCO documentation as being maintained by the presence of the Dunwich - Sizewell offshore bank which "*provides stability for the Sizewell Coastal system*"[17]. The banks attenuate wave height and also cause wave refraction to greatly reduce the erosive storm energy. These banks are identified by EDF



[16] Pye and Bott and BEEMS TR058

[17]

5.5.4. In the 2012 EU flood risk stress test for Sizewell B the only receptor identified for wave energy relief were the Sizewell-Dunwich banks. Sizewell B is south of Sizewell C and this too would be protected by the banks.

5.5.5. Evidence from Hydrographic Office bathymetric surveys in 1984 and 2017 identifies that the northern end of the Dunwich – Sizewell bank (made up of unconsolidated material) is shown to be migrating westwards and the saddle between the two banks can be seen to be flattening (ie increasing depth of water) and having a reduce impact on wave attenuation (i.e. a reduction in its effectiveness at reducing wave energy)

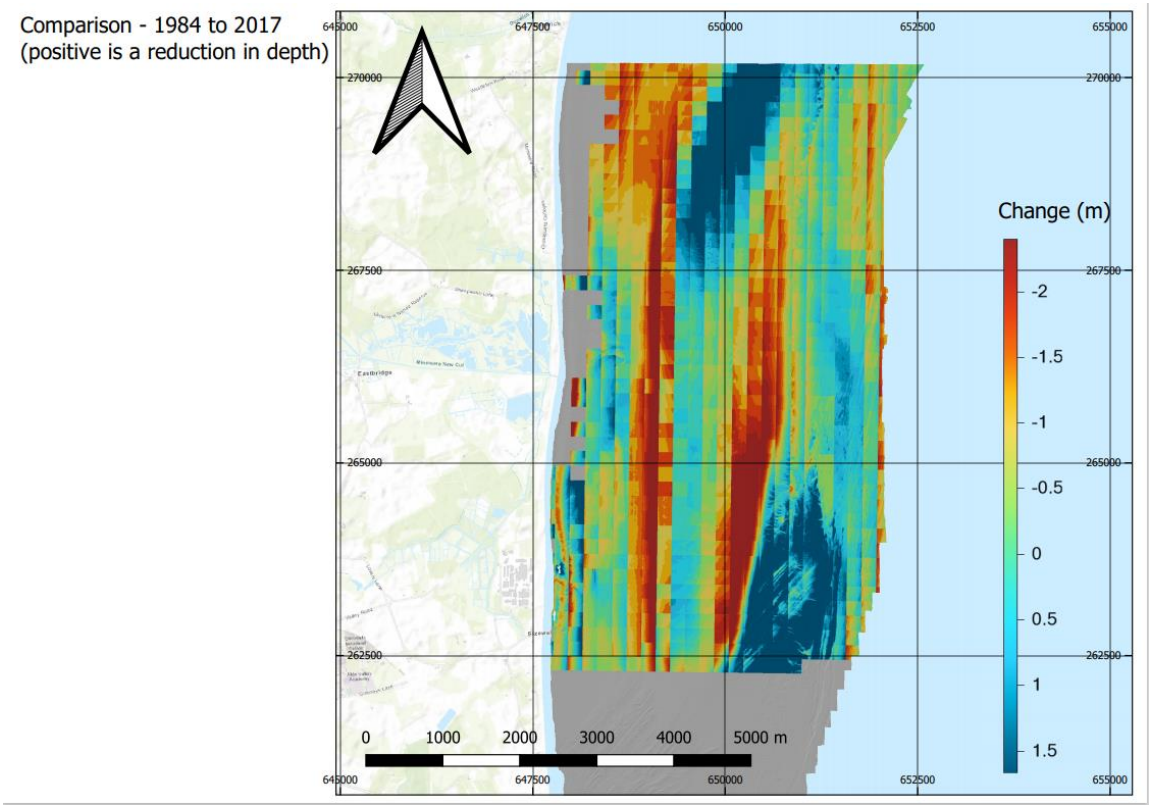


Illustration 1: Heat map comparison in depth of water above the Dunwich and Sizewell Banks. Note the red spectrum is reducing water depth and the blue increasing water depth.

5.5.6. The movement and evolution of these sandbanks over time is not well understood especially over a decadal or 100-year timescale. Their inaccessibility and difficulties in surveying mean that the understanding of these control features is limited. However, the episodic spikes of erosion seen recently at Thorpeness (2 miles to the south of Sizewell) and Pakefield (14 miles north) has been attributed to changes in other near shore sand banks.

5.5.7. BEEMS documentation states *" studies…have shown that even moderate storms….have caused significant flooding…and…dune erosion between Sizewell B and Minsmere sluice…The main reason for this long shore variation in storm susceptibility appears to be the morphology of the Sizewell-Dunwich Bank [which] is therefore of* ***critical importance*** *with regard to the risk of erosion and flooding between the proposed Sizewell C site and Minsmere*

sluice".[18]

5.5.8. EDF / Cefas also state in one of the supporting documents TR108 on what it describes as *four potential geoscenarios* which included *no 4. Bank Depletion (or lowered bank).* The accompanying text in BEEMS TR309 states "…*if the lowering and reduction of the in Dunwich Banks northern extent continued, the extent of shoreline exposed to higher wave energy from the northeast sector would be expected to expand south accordingly"*

5.5.9. This therefore is evidence that EDF clearly understand that the Sizewell-Dunwich Banks have a fundamental role in protecting the coastline from erosion and that changes in location and reduction in height (increased water depth) would make the coastline more vulnerable to erosion. Since the banks are already known to be changing (see section 6.8 above) this then calls into question the long-term stability of the coastline.

5.5.10. It is worth recalling that the EN-1 policy 5.5.1(see section 4.2 above) on the siting of new infrastructure: *"(i) avoiding inappropriate development in areas that are vulnerable to coastal change or any development that adds to the impacts of physical changes to the coast"*[19]*.* It must therefore be concluded that this site fails on this requirement and should not be developed.

5.5.11. Whilst EDF recognise the importance of the banks and have attempted to model their loss yet they importance of the banks is later inexplicably dismissed from being a critical control factor
"Reductions in Dunwich Bank are not considered to be a worst-case scenario for Sizewell C as they would eventually lead to cliff erosion and increased sediment supply, minimising the chance or degree of exposure of the HCDF (or the amount of mitigation required to prevent this)." [20].

5.5.12. The consequence of this change in analysis by EDF / Cefas is to try to reduce the importance of the Sizewell- Dunwich bank. One could speculate as to why EDF / Cefas have taken this approach and the only conclusion is that the diminishing of the role of the Sizewell-Dunwich bank supports the application despite it being contrary to the evidence of the science.

5.5.13. EDF further attempts to explain how climate change sea level rise will actually benefit the Sizewell shoreline and Dunwich bank with the erosion of Benacre cliffs (to the north):
"likely to remain unprotected" and therefore *"cliff exposure will rise with rising sea levels".*, and "*over a long period of time it could counter shoreline retreat*."[21]
The presumption is a maintenance sediment supply which will slow rates of shoreline retreat and potentially increase accretion rates.

[18]

[19] Overarching National Policy Statement for Energy (EN-1) July 2011 Page 79

[20] DCO: Geomorphology Appendix 20A, op cit., Page 52 of 167

[21] BEEMS TR311 2.4.3.1. DCO: Geomorphology Appendix 20A, op cit., Page 52 of 167

5.5.14. The effect of sea level rise on Easton-Benacre cliff erosion will according to the argument put forward by EDF not only protect the Sizewell shoreline but "*will result in slow growth of the Sizewell – Dunwich Bank… that keeps pace with sea level rise will deliver similar patterns of inshore waves and shoreline change to those presently experienced.*"[22]

5.5.15. This is at best a rash assumption and is predicated on the coastal processes being a closed loop (ie sediment is not lost to the local coastal system overall) and that sediment is deposited on the banks. The loss of onshore sediment equating to the accumulation rates on offshore banks is regarded by independent academics as unlikely[23]. Climate change will increase sea levels at an increasingly rapid rate, following 'hockey stick curve'[24] path (as seen in previous historic rapid increases in sea levels) so this assumption is at best flawed and potentially have catastrophic consequences and greatly accelerate a changing coastline.

5.5.16. There is a key statement that predicates all the analysis and conclusions and that states:

5.3.17 An additional series of lowered sand bar scenarios were analysed in the wave transformation model by the lowering of the sand bank by 5m with assumption the sediment is lost from the system entirely. This was to test the effect of the sand bank on nearshore wave conditions. The derived nearshore wave conditions for the baseline (with sand bar) and lowered sand bar scenarios were compared showing that the baseline scenario predicted higher nearshore waves than the lowered bar scenario. Therefore, the baseline scenario was taken forward for wave overtopping assessment for the Sizewell C FRA, as it is more conservative.

5.5.17. Cefas / EDF are asserting in this statement that the worst-case scenario (ie most conservative) is when the near shore sand banks remain as is and that a reduced or loss of sand banks will reduce wave height and therefore have less energy. This statement is counter intuitive and lacks intellectual integrity. The banks play a significant role in protecting Sizewell with wave refraction and energy dissipation. The absence or reduced impact of these banks from natural change and sea level rise will mitigate existing wave refraction that currently helps protect the coast from the impact of south easterly storms by causing higher energy waves to strike the coast less obliquely. This will increase water levels and heighten risk of erosion and flooding.

5.5.18. The assertions made by EDF and Cefas on the vulnerability of the coastline to erosion is at best unsafe and should be examined in detail by independent experts. For a more detailed assessment please refer to the Deadline 2 submission by independent engineer Nick Scarr.

[22] Risk and Shoreline Change assessments. 27 BEEMS TR311 2.4.3.1. DCO: Geomorphology Appendix 20A, op cit., Page 135

[23] Carr 1979

[24] Hansen, J.E., and M. Sato, 2012: Paleoclimate implications for human-made climate change. In *Climate Change: Inferences from Paleoclimate and Regional Aspects*. A. Berger, F. Mesinger, and D. Šijački, Eds. Springer, pp. 21-48, doi:10.1007/978-3-7091-0973-1_2.

5.6. Spatial Scale of Assessment

5.6.1. The area of study in-front of the proposed Sizewell C site extends over a 3km stretch of coastline. This is excessively restrictive and focussed solely on the Sizewell C site. Scientific opinion is overwhelming that for coastal structures have an impact in excess of 10's km from sea defences[25].

5.6.2. The impact of the Beach Landing Facility and jetties will start to have an immediate impact on coastal processes although this may be initially small. However, when the Hard Coastal Defence Feature (HCDF) is exposed to direct wave action the impact will be much more marked. In addition, the Northern Mound will have a bounding effect on the evolution of the beach and the roll back of the coastline, since it won't erode and change shape due to the presence of significant sea defences. These features if built must then be considered permanent and will have an impact on the development of the coast.

5.6.3. There is plenty of local evidence that the coastline is dynamic and evolving in particular over long periods of time. The growth of Orfordness shingle cuspate spit is a good example of that was created through long-shore drift. Therefore, any interruption to the natural sediment flow on the coast will have long term and lasting effects. Burlingham and French state: *"Despite the need to seek direct associations between met-ocean forcing, including the effects of climate change, and coastal change, it is clear that much of the behaviour observed over decadal time scales is a product of a geological and geomorphological legacy that is often substantially shaped by humans."*[26]

5.6.4. The very limited focus by EDF on Sizewell is unjustified and both the projected analysis of impacts and the monitoring and mitigating actions need to be looked at across a much wider area. Burningham and French noted that over the past century 89% of Suffolk's inter-tidal beaches had narrowed and steepened and this may be an indicator of significant forthcoming system changes. The narrow focus may be designed to absolve EDF of any unforeseen impacts on communities such as Pakefield, Southwold, Thorpeness or Aldeburgh.

5.6.5. In addition, this stance isn't tenable since there is a reliance in the submission of sediment from Benacre cliffs (8 miles to the north) to maintain the beaches and off shore banks as sea levels rise. The detailed monitoring and mitigation of an area between Lowestoft and Felixstowe would seem to be the minimum to be considered.

5.7. Coastal system behaviour.

5.7.1. The analysis undertaken by EDF / Cefas of coastal processes and geomorphology has taken a simplistic approach. Contemporary analysis recognises system linkages and resulting feedbacks that can lead to emergent behaviours of the coastline. Non technically, the coastal systems are complex

[25] Sabatier et al. (2009) Connecting large scale coastal behaviour with coastal management of the Rhone

[26] Understanding coastal change using shoreline trend analysis supported by cluster-based segmentation Helene Burningham, Jon French Journal of Geomorphology Volume 282, 1 April 2017, Pages 131-149

and it is likely that there can be unforeseen consequences that will impact on coastal erosion and flood risk. Initial analysis of the EDF / Cefas approach has been to simplify the processes and more complex inter-relationships are not considered. There is no confidence that there is a simple relationship between processes operating in and between the coast and off shore and the response seen on coast. Autogenic (self-generating) events can arise from feedback systems which can cause sudden changes to occur in a system without any identifiable cause. Big changes can cause other smaller changes and vice-versa. The use of the Amazon rather than the usual Euro-top models in the analysis could also come into question.

5.8. Expert Geomorphological Assessment (EGA)[27]

5.8.1. The use of expert analysis is in line with recommended practice when timescales are too long and processes too complex for confidence in existing modelling techniques. However, EGA is only an opinion and its value is limited by the expertise of the panel and the parameters they are given to work with.

5.8.2. It is noted that the EGA is not an independent group. Membership includes four employees of Cefas working closely with the applicant and only three external experts. Presumably Cefas therefore shaped the assumptions made.

5.8.3. Table of assumptions

Table 26: Summary of the EGA consensus regarding factors affecting the modification of the Stage 1 linear extrapolation and the EGA future shoreline projection (Stage 2).

No.	Agreed Principles
1	To adopt a future projection based on "reasonably foreseeable" conditions.
2	Sea level rise in the year 2070 would be 0.52 m relative to 1990 levels (UKCP18, see Section 2.4.1 and Palmer *et al*, 2018).
3	Extrapolation of the observed 1991-2018 SLR trend accounts for 68% of the UKCP18 SLR prediction at 2070, which implies that the observed shoreline response already includes a significant element of shoreline response due to SLR. Accordingly, an additional sea level rise of 0.17 m (the UKCP18 prediction) is considered in determining the shoreline response at 2070.
4	The offshore wave climate remains unchanged (UKCP18 indicates small reductions in mean and annual maximum significant wave height)
5	The inshore wave climate remains unchanged.
6	Minsmere Outfall remains physically in place until the sluice is no longer a functional element of Minsmere Levels drainage (due to SLR).
7	No shoreline accretion, and shoreline sinuosity remains similar to that at present.
8	No change in the 'Hold the Line' status for Blyth river jetties, as per the SMP across all three epochs.

5.8.4. These were reviewed by Prof. Jackson and Cooper who identified valid criticisms of these assumptions as follows:

a) Use of 'reasonable foreseeable' conditions
The explicit exclusion of extreme events looking forward 50 years (to 2070) is bizarre. It is statistically probable that a high-magnitude but low frequency event will occur during this period of time. If projected to the full

[27] *BEEMS Technical Report TR311* Reference Number: EN010012 Volume 2 Main Development Site Chapter 20 Coastal Geomorphology and Hydrodynamics Appendix 20A Coastal geomorphology and Hydrodynamics: Synthesis for Environmental Impact Assessment

life time of the site (currently predicted to 2190) it is even more ludicrous. It is critical that these types of events are taken into account when mitigating risk effecting major infrastructure.

b) Minimisation of the impact of sea level rise
The assumption that 68% of expected sea level rise upto 2070 is accounted for by the extrapolation of historic trends assumes that there is evidence of a coherent rate of change regionally. Evidence from Burlingham and French (2018) does not draw that conclusion. Therefore, the predicted sea level rise rates are open to challenge. Again, this ignores the full site life time consideration of this issues.

c) Inshore wave climate is un-changed.
This appears to be on the assumption that the off shore bank morphology doesn't change. This is an untenable assumption given the known bank observations with the cyclical and decadal timescale changes. Evidence cited in TR403 on work by Pye and Blott attribute changes in coastal behaviour to changes in wave climate.

d) No shoreline accretion and sinuosity similar to present
The assumption that the intervention on the shoreline of the Beach Landing Facility and the Hard Coastal Defence will not have a potential impact on accretion and the shape of the shoreline is unexplained and should be challenged.

e) Sandbank mobility and shoreline response
The assumption that the sandbanks (esp Sizewell-Dunwich bank) will remain stable is contrary to both the evidence presented in the DCO. Therefore, the presumption that the impact of erosion on the coastline will remain constant is at odds with evidence presented by other academics and also contrary to logic.

5.9. Geohazard - Tsunami

5.9.1. There is very little reference in the DCO submission to the geohazard of a tsunami. EDF in their supporting document for the Environmental Statement note: *"coastal geo-hazards [inc tsunamis] is an area where urgent work is required to establish even the baseline risk."* [28]. There is no evidence that this work has been acted upon.

5.9.2. EDF state in the Relevant Representations Report (P198) published in May 2021 state *"The assessment of tsunami risk is taken very seriously by SZC Co. and the ONR and a complete assessment has been made for Sizewell C as part of the Nuclear Site Licence application."*

5.9.3. The Nuclear Site Licence process will not report until mid-2022 and is not open to public scrutiny. Therefore, the preparation and mitigating actions through the lifetime of the site to the end of spent nuclear fuel being stored onsite (probably 2190) and the consequences for wider planning issues are

[28] 6.12 Reports referenced in the Environmental Statement P25

opaque. This is unacceptable particularly with the consequences on the adjoining coastline and the building of confidence in overall nuclear safety.

5.9.4. Whilst the risk is small recent research has identified that the frequency and severity of tsunamis will be exacerbated by climate change and the past may not be a good predictor of the future. Prof H Kunreuther[29] states '*Despite the historical inevitability of the earthquake and tsunami, the earlier events happened so long ago that there was a tendency to ignore them'*

5.9.5. It is clear that academic researchers regard another tsunami as a credible risk in the Arctic. Dr Jon Hill has written: *"there is a 5% probability of a major submarine slide, and possible tsunami, occurring in the next 200 years*."[30]

5.9.6. A separate more detailed paper will be submitted to the ExA providing evidence that the approach of EDF on this important issue is not acceptable.

5.10. Beach landing facility, jetties and Minsmere sluice

The proposals for the BLF and the jetties have been subject to significant change even since the 5th public consultation. I am unsure if the proposal currently presented is the final solution or if there are to be further iterations. Whatever the final proposal is there needs to be detailed impact assessments made and examination of the potential consequences on coastal processes. Experience from the building of Sizewell B indicates that this cannot be brushed off as inconsequential. In addition, the role of the Minsmere sluice is little discussed, however it is vital to maintain the coastline to the north of Sizewell C. Sea level rise will impact on the effectiveness and function of the sluice. There is no analysis how this should be managed in the long term and its implications for water levels in Minsmere and the marshes.

5.11. There has been extensive scientific research and analysis into the coastal processes and geomorphology of the coastline practicalities and consequences of the building of Sizewell C. These have been based on a series of BEEMS[31] or TR reports. A useful analogy may be that these elements could be considered all pieces of a very complex jigsaw puzzle. Whilst many of these pieces may be robust, I contend that they have been assembled in order to reflect the aspirations of the applicant EDF and that some parts are either missing or mis-interpreted to present a favourable picture. A more honest assessment of the evidence would lead to a very different conclusion.

5.12. The conclusions drawn by EDF / Cefas on the stability of the coast and the significant inconsistencies in the evidence put forward highlight that this is not a suitable location for the building of Sizewell C.

[29] **Howard Kunreuther** is the James G. Dinan Professor Emeritus of Decision Sciences and Public Policy, and Co-Director of the Wharton Risk Management and Decision Processes Center at the Wharton School, University of Pennsylvania.

[30] Will climate change in the Arctic increase the landslide-tsunami risk to the UK? - Research Database, The University of York

[31] British

6. The sea defence and mitigating actions

6.1. Hard defence

6.1.1. In the evidence presented by EDF to-date (before Deadline 2) the quality of the information with regard to the design and location of the coast defence has been lamentable. The reticence to place them in the public domain can only be for one of two reasons:

a) EDF doesn't have a detailed design which can only be described as inconceivable for a £20+bn project,

b) The consequences of placing the design in the public domain would generate scrutiny and rigorous independent assessment which may highlight issues that EDF would rather avoid at this stage

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6.1.2. In the statements made by EDF 'expert' John Rhodes he stated at the preliminary hearings (Day 2 session 2) if referring to the sea defences: *'we don't think it's necessary to assess the application, because it will inform the plan to be approved subsequently.'*.
This is a departure from the EDF approach at Hinkley Point C where all the detailed designs for the coast defences were submitted with the DCO documentation. The Examining Authority are strongly urged to ensure that EDF present detailed proposals for public scrutiny at the earliest opportunity.

6.1.3. Mr Rhodes also stated:
The composition of the hard coastal defence in terms of material and position of the toe… is detailed in the January submission. And we have illustrative material including cross sections, which compare it with the similar parameter approach that was taken in the DCO application. So we say that's more than sufficient to understand it and to assess its implications…'
EDF have provided illustrations in its consultation documentation which fail to be either geo-referenced or to an appropriate and acceptable engineering design standard. The failure to provide accurate geo-referenced information is deliberate and avoids providing accurate information for people to understand the implications of the design. This is unacceptable.

6.1.4. Further evidence of this was at the third Consultation stage Cefas identified on the beach at Sizewell the location of the front toe of the hard sea defences. (see red marker)

This was reproduced at the Suffolk Coastal District Council briefing for Parishes.

Note how close to the beach the toe was predicted to be.

6.1.5. However, in the February 2021 document the following image was included[32]

Figure 6: Sea frontage along the proposed Sizewell C

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6.1.6. This image implies that the front edge of the hard defence is some distance from the edge of the beach. This image is designed to build confidence that the location of the rock slope is some distance from the beach and there is a wide area between the defence and the shoreline. This is clearly inaccurate and particularly with the planned increase in Hard Coast Defence height from 10.4 to 14.2m AOD which will need a bigger land take footprint. Perhaps a more accurate image would be as follows:

Figure 6: Sea frontage along the proposed Sizewell C

6.1.7. The ambiguous and evasive statements made by EDF / Cefas question what the real implications are for this part of the coastline and how acceptable it will be to local people.

6.2. Soft defence

6.2.1. At the DCO Prelimary Meeting on 19th May 2021 (day 2 session 2 30:23). John Rhodes EDF 'expert' stated in response to the requests for information on the hard and soft defences

… our position is that the January submission is complete, in both respects in respect of design and in respective assessment….. Following DCO consented of consent is granted. So the detailed design is reserved that we think is appropriate. details of the hard coastal defence and the soft coastal defence within parameters we say more than sufficient to understand them more than sufficient to assess their implication.

6.2.2. I contest the above statement and suggest that EDF / Cefas / Royal Haskoning DHV are avoiding public scrutiny. EDF states that the hard sea defence is not (initially at least) in the marine environment, it must be considered as part of the DCO planning process and the avoidance of detailed scrutiny is not acceptable.

6.2.3. It is also not acceptable for Mr Rhodes to state "…. *, so we say its operation is fully protected. In that way, people can be confident that we can proceed until that detail is approved".* This avoids the scrutiny of the impact on areas adjacent to the site. The lack of local trust in the proposals reflects EDF 's lamentable record of public engagement. (see below)

7. Flooding and other water related issues:

7.1. The proposed SSSI crossing is inappropriate for the location and the hydrology and environmental impacts have been poorly assessed. No clarity has been given as to why a bridge solution which would have less impact on the water levels and flows, reduced impact on species connectivity and presented at an earlier consultation stage has been abandoned. This is a retrograde and unjustified step and increases the overall impact.

7.2. The intake and discharge proposals are likely to contravene Habitat Regulations a response has been sent to the Environment Agency consultation on this matter. In addition, the lack of an Acoustic Fish Deterrent dropped at an earlier public consultation round means that EDF are in contravention of the requirement to adopt the Best Available Technology (BAT) for nuclear installations. If this power station must operate on an open loop cooling system, then an AFD must be included.

7.3. There are currently no specific details on the access to potable and non-potable water supply. There appears a poor understanding of ground and surface water relationship despite being a Scoping Report Opinion requirement. Bland re-assurances from EDF are not acceptable at this stage of the DCO.

8. Claims regarding green energy and carbon reduction

8.1. We know that future generations will have to deal with the consequences of a changing climate and there needs to be a rapidly decarbonise over the next decade. But Sizewell C is not the solution. EDF have declined to publish the true lifetime carbon cost of this proposal but admit that it will take at least 6 years to 'payback' the carbon generated by its construction. But where does raw material procurement, decommissioning and protection of nuclear waste for hundreds of years, feature in their calculation? As is typical for EDF, the detail is not available for open scrutiny. All claims EDF make about low carbon emissions and green energy must therefore be treated with extreme scepticism.

8.2. The additional Co2 caused by the construction phase (say 2023 to 2035+) is during the most important period of Co2 reduction for the UK to meets its binding net zero targets.

8.3. This year the UK will be hosting COP 26 it would be inconceivable to be sanctioning such a huge unnecessary emission in co2 ahead of the key target date of 2030. In addition, this is the first COP to focus on biodiversity, so the wilful destruction of such protected environmental sites is beyond comprehension. The claims made by EDF of benefits in tackling climate change and environmental net gain must be regarded as selective and regarded as inaccurate, unless they can be independently verified and substantiated.

9. Environmental Impact

9.1. Many will respond and present articulate arguments on this topic. I wish to highlight the following:

9.1.1. The catastrophic impact on the landscape. The numerous illustrations shown in the EDF documentation will take many decades to reach any form of maturity. The impact in the meantime will be out of all proportion to the benefits gained. There will not be real tangible 'net gain' benefits from this proposed development.

9.1.2. Environmental Impact Assessment is severely compromised and requires to be undertaken by an independent body to establish the full extent of the damage proposed.

9.1.3. Unacceptable loss of beach access. The loss of access to Sizewell beach for many years will impact locals and visitors alike. The location of the coast defences (still undeclared) will even in the long run cause permanent negative impact. The issue of coastal access must be carefully considered by the ExA.

9.1.4. The introduction of shipping with the new freight 'by sea' proposals will create significant new source of pollution. Shipping is notorious for pollution both in the air (from exhaust fumes) and from spillages of fuel and other chemicals into the sea. This proposal needs a full independent and rigorous environmental and pollution assessment.

10. Long term risks and consequences

10.1. I have deep concerns that the long-term impacts of these proposals are being ignored. It is difficult to visualise what 2190 will look like. That is the same as someone in the 1850's trying to predict the situation today. What we do know is the issues of the management of spent fuel and nuclear waste have not been resolved even after 60 years of investment and the concept of a Deep Geological Facility has made no progress to-date. Therefore, it is prudent to be precautionary about the location of spent fuel storage as to not create intractable problems for future generations by locating it in a vulnerable location. EDF / Cefas have a responsibility to follow precautionary principle and to ensure appropriate and robust mitigation.

10.2. A contaminated residual core will remain and impact the coastline in perpetuity, I do not understand where this has not been taken into account in the long-term mitigation and vulnerability to flooding assessments.

10.3. To maintain and protect any location from coastal erosion and flooding requires a long-term investment plan. It should not be assumed that there is no cost in maintaining redundant sites especially if they become islands. The DCO needs to ensure that a plan and allowance for these costs should be identified for the value for money analysis as required by government.

10.4. There is little analysis of potential in-combination risks these have been ignored

10.5. It is not clear as to what in the long term will be left for the communities of East Suffolk. There appears to be to those who live here untold costs and little benefit from this proposal.

11. **Issue monitoring and mitigation**

11.1. The draft Coastal Monitoring and Mitigation Plan has been produced however it lacks meaning as the detail on the coast defence measures are still not available.

11.2. Information from Hinkley Point C development raises questions on whether there are sufficient robust, responsive and independent monitoring processes in place to make a meaningful difference if activities breach thresholds or limits identified by the PINS process. The ExA is asked to ensure that the issue of monitoring across a wide spectrum of issues is examined in detail and that meaningful controls are put in place to ensure the applicant does not break agreements should works commence.

12. Engagement and Consultations

The consultation and engagement process undertaken by EDF over the past decade has had major short comings and fails to meet the criteria set out in the Governments Consultation process set out in 2016[33] and endorsed by the Chartered Institute of Public Relations (CIPR). EDF have failed to meet neither the letter nor the spirit in which public dialogue should be undertaken. For example:

12.1. The most recent (fifth) consultation was announced only a few days after the deadline for the DCO written Relevant Representations. This showed not that EDF were listening but had significant **disrespect** for the process as clearly, they were aware of the need to consult further before the DCO process had started.

12.2. The **poor quality** of the consultation material was often confusing or misleading. A clear example of this was at the 3rd consultation a diagram of the beach frontage[34] that was giving the impression that there was a significant amount of beach and foreshore between the sea and defence. At the time I as Head of Coastal Management for Suffolk Coastal District Council (now East Suffolk Council) I directly challenged Jim Crawford (EDF Project Development Director at the time) who refused to admit that it was inaccurate but could not identify its location. This diagram appeared again subsequently.

12.3. The questions posed in the consultations were often **inappropriate**. For instance, in the 5th consultation consultees were asked about different options of jetty. These were technical questions about what type of jetty was appropriate that could not be answered by non-specialists and the design submitted to the DCO bore no resemblance to what had been consulted upon. Therefore, the consultation was spurious.

[33] Consultation principles 2016 (publishing.service.gov.uk)

[34] Pre DCO Consultation Summary Document Fig 3.4: Illustrative cross-section of sea defences

12.4. EDF staff and their partners were **disdainful** of the legitimate questions being raised in their consultation process. When querying issues on coast defence at Wickham Market (25/7/2019), I was asked to speak directly to a Cefas staff member, who clearly knew nothing about the of sea defences or their impact on the coastline and when I questioned his understanding a number of aggressive EDF staff engaged with me. I left none the wiser on my query and significantly disturbed by what had just happened. In an Leiston drop-in (5/1/2019) the lights were suddenly turned off and we were asked to leave immediately as apparently it was the end of the session, no warning had been given.

12.5. I attended the Consultation Bus which on 7th August 2020 was at Deben Pool Woodbridge, were I met by Simon Hazelgrove and colleague from Spring Consultancy. Simon was explicit that he was not representing EDF but PINS albeit funded by EDF as out-reach during the pandemic. I noticed that his colleague left the bus as while he was explaining this. I later when I checked I found out that he was representing EDF and not PINS. I also understand that others had been given the same **misinformation**. This highlights the lack of openness and honesty by the applicant and its partner organisations.

12.6. Many of the background documents for the DCO process were **not available** for the DCO submission. This was particularly true of the BEEMS documents with regard to the coastal processes. When asking Cefas directly for the documents these were not forth coming and could only be accessed via formal Freedom of Information requests. Others were deemed to be commercially confidential and also requiring FOI requests.

12.7. The volume of data and information produced is extensive however it provides little clarity including in the DCO application has not clear ranging from; the relatively trivial (e.g. the mixed used of measurements on diagrams without clarity as to which is which), to the extensive range of missing documents to the deliberate obstruction of circulation of information to interested parties.

12.8. From the community perspective, the entire engagement and consultation process by EDF for Sizewell C for has been very frustrating, secretive, misleading and uninformative. Whilst there have been many drop-ins etc, it has felt to be largely a tick box exercise and not one of meaningful dialogue. There has been little in the way of any feedback and in summary this was not a good case study in effective public engagement.

12.9. I endorse the comments of David Robb at the Open Hearings in questioning the integrity of the applicant. We are all urged to follow the science. Yet I have a significant concern that the advisors to EDF have at best been selective or may even have misinterpreted the scientific evidence to ensure they meet the requirements of their client.

13. Conclusion

13.1. We all have a responsibility to future generations who will be living in a much more uncertain world. They will have to deal with our legacy. It is critical to examine very carefully the applicant's claims that this vulnerable coast can be retained as a safe location for nuclear waste storage for the next century and beyond. We absolutely must not bequeath to future generations avoidable problems that they may not have the resources nor the expertise to resolve. This application should be rejected by PINS as being unsuitable for this location

I endorse the Written Representations of,

- Theberton and Eastbridge Action Group on Sizewell (Stop Sizewell C)
- Suffolk Coast Action for Resilience
- Mr. Nick Scarr
- Ms. Frances Crowe
- Royal Society for the Protection of Birds
- Suffolk Wildlife Trust
- Suffolk Coastal Friends of the Earth
- Alde and Ore Association

Under Rule 14(3) of The Infrastructure Planning (Examination Procedure) Rules 2010, I may wish to call expert witnesses in support of this representation or subsequent written representations