



# Together Against Sizewell C

SIZEWELL C PLANNING APPLICATION INQUIRY (IP no. 20026424)

## **DEADLINE 8: ORAL REPRESENTATIONS & COMMENTS REGARDING ISH 11 FLOODING, WATER & COASTAL PROCESSES**

24 September 2021

TASC are disappointed to note that, once again, the MMO and Natural England are absent from this ISH which we understand is due to lack of resources. TASC are concerned that this has resulted in a less robust scrutiny of the issues in hand.

### **2. Water Supply**

**The Water Supply Strategy and the availability of both potable and non-potable water to meet the full demands of the Project with particular regard to the early years of construction.**

TASC member Emma Bateman makes the following statement:

#### **Potable Water**

1. It has long been known that the water scarcity in East Anglia is a major concern and that the situation is only getting worse. It should not have been a surprise to the Applicant that the water supply was going to prove to be a major issue, particularly as the Environment Agency already stepped in when Northumbrian Water Limited (NWL) were set to supply 2ML/day to the Applicant from the Blythe in 2019, and the Environment Agency pointed out that NWL did not have enough water in the Blythe to supply Sizewell C.
2. It has always been probable that further reductions in water availability would occur, especially as the Waveney is one of the rivers whose status has deteriorated under the River Basin Management Plan and the overarching Water Frame Directive (WFD).
3. A recent report from the Climate Change Committee outlines that progress to date has not been adequate:  
*“Alarming, this new evidence shows that the gap between the level of risk we face and the level of adaptation underway has widened. Adaptation action has failed to keep pace with the worsening reality of climate risk”.*<sup>1</sup>
4. This is from the Essex and Suffolk water resource management plan 2019:  
*“In Suffolk the River Waveney is most affected by climate change as summer river flows may reduce over time and there is no reservoir to store water and take advantage of higher winter flows”.*
5. This is from the National Infrastructure Commission:

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<sup>1</sup>Independent-Assessment-of-UK-Climate-Risk-Advice-to-Govt-for-CCRA3-CCC.pdf

*“ the perception that we have unlimited water on tap is dangerously misleading. Demand for water is rising, but available water is diminishing.”<sup>2</sup>*

...

*“climate change could decrease available water by 15 per cent.”<sup>3</sup>*

6. These reports and many similar are in the public domain.
7. The letter dated 24th August to the planning inspectorate from NWL sets out the fact that even if Sizewell C were to be supplied via the pipeline from the Northern Central Water Resource Zone, this would be likely to result in depleting the available water to the extent that there will be no capacity left for any future development in the area within the Water Resource Zone.  
This is very disconcerting as it would in effect inhibit development in areas like Lowestoft that are already suffering from socio-economic deprivation.
8. The populations of Suffolk and Essex are forecast to grow substantially in the near future. This is from the Essex and Suffolk Water Resource Management Plan 2019:  
*“We predict a 34% increase in population in Essex over the 40 year planning horizon and a 29% increase in Suffolk.”...*  
*“We expect an average of 7,338 new homes will be occupied each year in Essex and 1,211 new homes each year in Suffolk.”<sup>4</sup>*
9. Despite the aspirations of the water companies, water consumption is not decreasing in line with expectations. According to the National Infrastructure Commission:  
*“There are few signs of consumer demand falling. Today, we consume 141 litres per person per day – just nine litres less than in 2000.”<sup>5</sup>*
10. NWL is faced with having to supply growing numbers of customers without being able to achieve the planned targets for curbing of household water usage.
11. With regards to the water used for the Domestic and Welfare purposes for the Sizewell C construction workforce, an allowance has been estimated of 75 l/person/day. This is a 25% reduction in the allowance recommended by the document “British Code of Practice: Flows and Loads – Sizing Criteria.”<sup>6</sup>  
We are curious as to how and why allowance for workers been calculated at 25% less than is usual, as it seems odd that the Applicant is ignoring the code of practice advice.
12. In terms of accommodation, the Applicant has claimed a usage for water of 85l/per day. Again, this is considerably lower than the recommended allowance of 125 l/pp. We wonder how the Applicant aims to save 40 litres per day per person, especially given the dirty working conditions that construction workers often encounter as part and parcel of the job.
13. A water resource zone is designated as an area in which the interconnections within the zone mean that all customers therein are equally exposed to the risk of water restrictions

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<sup>2</sup><https://nic.org.uk/insights/metering-will-save-us-water-sooner/>

<sup>3</sup>Escaping the jaws of death: ensuring enough water in 2050 - GOV.UK (www.gov.uk)

<sup>4</sup>Water Resources Management Plan (nwg.co.uk)

<sup>5</sup><https://nic.org.uk/insights/the-importance-of-a-resilient-water-supply/>

<sup>6</sup>EN010012-007011-Sizewell C Project - 8.4 Planning Statement - Appendix 8.4K - Site Water Supply Strategy - Revision 2.0.pdf (planninginspectorate.gov.uk) para 2.2.3.2

in a drought situation. It is inconceivable that the supply to Sizewell C would be cut if water was scarce, so in reality the integrity of the water resource zone would be compromised as the drought burden would not be equally shared.

14. We note that the Applicant does not appear to regard the 28km through which the proposed northern central pipeline will run as local. In answer to ExQ2 FR.2.2, the Applicant suggests that the water strategy 'does not utilize local water sources, and thus it would not detract water supplies locally.'
15. The Applicant regards workers commuting from the areas as local but when it comes to having a detrimental impact on their water supply, those northern central customers are suddenly no longer regarded as local.
16. It seems somewhat dismissive to downplay the concerns of NWL by suggesting that the possible critical risk to customers resulting from the water strategy will be felt elsewhere so it is not something for the Applicant to be concerned about.
17. There have been a variety of instances throughout the planning process where the accuracy and adequacy of the Applicant's measurements and monitoring have been questioned. A good example of this was outlined by Matt Williams from Suffolk County Council during **Issue Specific Hearing 11 on Flooding, Water and Coastal Processes - Session 27** . This pertained to drainage, but similar criticism has been raised over monitoring of air pollution, traffic plans etc.
18. Given that the reliability and precision of the Applicant's figures has been found wanting and that the figures supplied for water use have significantly increased, we find the accuracy of the Applicant's forecasts is questionable. We would propose that a strict, independently verified monitoring regime is imposed in order to monitor demand and supply. We would be interested to know how closely the water use will be measured by the water company, and whether the supply to the Applicant would be metered from the outset.
19. The Applicant has said that a peak figure of 2.9 ml /day of fresh water would be required during a planned outage of one reactor. If there was an occasion on which both reactors were required to be shut down simultaneously then the water requirement would increase significantly to 4 or even 5 ml/day. We would like to know whether the Applicant has a contingency in place in order to cope with the increased demand, and what might the impact of that extra demand be.
20. We understand that the Applicant cannot specify the source of the water that is going to be tankered in for the first few months/years whilst the desalination plant is constructed. We would like to know if there is a possibility that it would be taken from the Blythe or the Northern Central Water Resource Zone, given that these areas are already prone to be water stressed.
21. TASC recognises that there is a dispute over obligations under the section 41 and 55 of the Water Industry Act 1991, and that NWL suggests that the Applicant should seek to obtain a self- sufficient water supply, because if NWL were forced to supply the water, it would present a critical risk to their ability to serve the needs of existing customers in the absence of additional infrastructure. NWL has a duty to adequately maintain its drinking water protected areas to prevent deterioration in the water quality, and to prevent the level of purification treatment required from rising.

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<sup>7</sup>National Infrastructure Planning ([planninginspectorate.gov.uk](http://planninginspectorate.gov.uk))

22. We are concerned that NWL will be forced to supply the water for Sizewell C and we would like the Examining Authority to confirm whether or not NWL is legally obligated to do so under the Water Industry Act or whether the requirement to maintain and enhance the status of the Northern Central Water bodies under the Water Framework Directive supersedes the obligations of the Water Industry Act.
23. The Applicant has implied that they could use a section 19 exemption of the Water Framework Directive if required to secure a water supply even though this could and probably would lead to environmental degradation. Section 19 allows development that would result in the water quality being degraded if the reasons for the development are of overriding public interest.
24. We have concerns that the threadbare water strategy will slide through with the plans done in haste with no time to respond in full. The gaps will be plastered over with the section 19 exemption.
25. We note for example that the Applicant has determined that the pipeline from Barsham would produce no likely significant cumulative effects. However, NWL have not yet carried out an impact assessment, so the environmental impact is unknown. According to NWL:
 

*“NWL Response Document ASI89 was produced on behalf of SZC Co although NWL was not involved with its preparation. The document assesses the potential cumulative effects of Sizewell C Co’s preferred pipeline and concluded that no likely significant cumulative effects were identified. The proposed pipeline is still at an outline stage and so NWL has not yet carried out its own impact assessments. However, once the proposed pipeline has progressed to a full feasibility study, it will be subject to NWL’s full environmental assessment procedures”.*<sup>8</sup>
26. We note that the Environment Agency has not yet assessed all of the water impacts for the existing plans, let alone adding the impact of the desalination plant.
27. *“It’s also important to highlight through the environmental permitting regime. We will also need to complete an in combination assessment to ensure WFD compliance. This will include consideration of impacts associated with operational and construction related permits, such as the water discharge activity and combustion activity permits, we will only be able to complete this when we have determined these permits.”*<sup>9</sup>
28. The introduction of a completely new water supply strategy in the form of a desalination plant that has rapidly extended from providing a temporary supply for the first 3 or 4 years to a solution for the whole construction period and probably beyond has left interested parties with little time to gather the required research to respond comprehensively.
29. This scramble to secure a water supply had been carried out in a manner that is opposite in every way to the guidance set out in planning inspectorate advice note 18 on the Water Framework Directive which states:
30. *“The WFD screening stage and any subsequent WFD assessment should commence early in the pre-application process... In particular, Applicants should consider early*

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<sup>8</sup>EN010012-004722-DL2 - Northumbrian Water Limited (Trading as Essex & Suffolk Water) - Responses to the ExA’s Written Questions (ExQ1).pdf (planninginspectorate.gov.uk)

<sup>9</sup>EN010012-007281-TEXT\_SizewellC\_ISH11\_Session4\_14092021.pdf (planninginspectorate.gov.uk)

*discussions to inform their evidence gathering process.*”<sup>10</sup>

31. Unfortunately, the latest iteration of the water strategy has been formulated so recently that the Marine Management Organisation and Natural England did not appear to have the wherewithal to respond to the consultation on the desalination plant, and there has been very little assessment of the impact. It seems prudent to expect that the Applicant will use the derogations under article 4.7 of the WFD to secure the permission for the desalination plant, and so we would like to reiterate the assertion in the advice note that a derogation under article 4.7

*..”is only available subject to stringent conditions .. and any reliance on Article 4.7 should be very much a last resort.”*<sup>11</sup>

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From hearing the contributions from the Applicant and Northumbrian Water (NWL), TASC have drawn the following conclusions:-

- (i) There will not be any water supply from NWL for the period of construction, resulting in the Applicant’s proposed temporary desalination plant being required for the entire duration of construction- a matter that was not sufficiently identified in the consultation.  
**The environmental impact/carbon footprint of the desalination plant has not been assessed.**
- (ii) The source of the tanker supply of water has not been identified, so its environmental impact/carbon footprint has not been assessed.  
**No evidence has been supplied by the Applicant of its availability.**
- (iii) The Applicant needs to demonstrate how the potable water supply will be maintained:  
**(1) when the desalination plant needs to be relocated from the main platform during construction and (2) when the temporary SSSI crossing needs to be removed towards the end of the construction period.**
- (iv) As TASC have previously predicted, it is quite likely that NWL will not be able to supply potable water to meet SZC’s operational requirements for its lifetime (perhaps, also for the post operation/decommissioning phase).
- (v) If NWL can supply SZC with potable water and must construct new infrastructure to enable this, the Applicant will need to meet the costs:  
**what is the implication of this on the Applicant’s SZC budget (and the SZC project’s carbon footprint)?**
- (vi) If NWL are unable to supply the Applicant due to lack of available water or because it would be detrimental to their other customers, it seems likely this could result in a legal dispute between the Applicant and NWL.
- (vii) It seems inevitable that by the end of the examination period, IPs and the ExA will have no confidence that a potable water supply will definitely be available for the SZC project’s operational period.

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<sup>10</sup>Advice Note Eighteen: The Water Framework Directive | National Infrastructure Planning (planninginspectorate.gov.uk)

<sup>11</sup>Advice Note Eighteen: The Water Framework Directive | National Infrastructure Planning (planninginspectorate.gov.uk)

- (viii) In view of our comments in (vii) above, TASC have a major concern that, if the DCO was approved without a finalised water strategy, construction could start, and potable water never be available to meet operational requirements, thereby giving the Applicant the opportunity to apply for a permanent desalination plant by default. TASC note that, at HPC, the Applicant gained approval on certain grounds and then tried to renege on some of these e.g. with material increases in HGVs and number of workers, as well as seeking to remove the acoustic fish deterrent. Such history should not be allowed to be repeated at SZC with a permanent desalination plant.
- (ix) Should a proposal be made for a permanent desalination plant, TASC consider that this would result in such a fundamental change to the SZC project that it would require a new application as a different project-a permanent desalination plant would require a thorough Environmental Impact Assessment.
- (x) The fact that the SZC project is in an area described by the Environment Agency as 'seriously water stressed', calls into question the sustainability of the entire project and shows that the Applicant is proposing a project which has requirements far beyond the resources available in the location.
- (xi) The Applicant appears willing to say whatever they think is required at the time even if it contradicts other statements, they have previously made e.g. at ISH11, Mr Rhodes said, at the end of the first session, "It's important not to exaggerate the environmental implications of desalination". However, in January 2021, EdF published document 6.14, an Environmental Statement Addendum. At Appendix 2.2.D to that document, at Table 1.2 on page 11, the Applicant states, in reference to *"Desalination: Installing modular desalination plant on the main development site and abstracting seawater for treatment"*:  
*"This option has been discounted in favour of alternative options, due to concerns with power consumption, sustainability, cost, and wastewater discharge. The desalination process is typically energy intensive, and the discharge of brine water as a result of desalination may not be suitable for discharge through the combined drainage outfall."*
- (xii) Finally, the fact that the Examination has identified yet another area where, at the eleventh hour in the DCO process, there is much uncertainty over a major issue such as the supply of potable water, calls into question the Applicant's competency to organise and complete a project of the scale and complexity as SZC.

TASC member Emma Bateman makes the following statement on non-potable water:

### **Non Potable Water**

- a) The amount of water that the Applicant has stated is required has risen throughout recent months, doubling the initial estimate from 2ml per day to up to 4 ml per day. This large variation in the estimated amount does not inspire confidence in the figures claimed by the Applicant, and we are concerned that many figures for various aspects of the water supply strategy are aspirational rather than based on solid calculations, with claims that considerable quantities can be provided by recycled water.

32. We see that in the water supply strategy, the peak demand of 4Ml/day is described as representing a 'credible' upper limit rather than a 'maximum' upper limit.<sup>12</sup> This would imply that, if the plans for recycling and reusing of water do not come to fruition, it is possible that the amount of water required may be in excess of 4ml per day.
33. It is unclear what the margin of error is for the percentages of recycled water being claimed or how the figures are arrived at. It would seem that some, though not all, are based on calculations from Hinkley. There are examples where it is claimed that up to 100% recycling of the water can be achieved, but then the figures themselves for water use are based on 100% percent recycling actually being achieved. However, there is a difference between achieving up to 100% and consistently achieving 100%
34. This is an example from the latest water supply strategy;
 

*“The typical mix water requires approximately 175 litres per cubic metre of concrete, and the wash water is typically 50 litres per cubic metre. For the main concrete batching works, learnings from Hinkley Point C (HPC) power station have demonstrated up to 100% recycling of the concrete wash water for use within the concrete mix, resulting in a 175l/m3 overall demand.”*<sup>13</sup>
35. The Applicant has aspirations to use foul water from Sizewell B and elsewhere for processes like dust suppression. It is possible that this foul water contains chemicals or nutrients, so we were dismayed to discover that the Applicant appears not to have assessed the impact that the recycled water could have on the environment.
36. It is clear that the ways in which we use water will have to change quite drastically over the coming years if we are to achieve the targets set out in the Water Framework Directive. This may well include innovations that reduce the amount of water going into the waste system. The Applicant requires a consistent supply over the next 70+ years and there is no guarantee that this will be available through water treatment and sewage systems currently in operation.
37. There has been very little said about the economic cost of the water supply strategy other than that whatever the solution, the Applicant will be expected to finance the necessary infrastructure. According to the National Infrastructure Commission, the most expensive options for securing a water supply are those which involve major capital expenditure such as the construction of desalination facilities or effluent re-use facilities. The costs will ultimately be paid by the consumers, so it would be useful to know how cost effective the use of recycled and treated water would be.

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With members having seen the scale of the spoil heaps at HPC, first-hand, TASC remain concerned that the Applicant may have under-estimated the amount of non-potable water that will be required to dampen down the SZC spoil heaps. This is particularly so, as much of the

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<sup>12</sup>EN010012-007011-Sizewell C Project - 8.4 Planning Statement - Appendix 8.4K - Site Water Supply Strategy - Revision 2.0.pdf (planninginspectorate.gov.uk) page 34

<sup>13</sup> EN010012-007011-Sizewell C Project - 8.4 Planning Statement - Appendix 8.4K - Site Water Supply Strategy - Revision 2.0.pdf (planninginspectorate.gov.uk) para 2.2.2.1

soil on the development sites will contain a reasonably high level of silt and very fine sand that will be mobile in the slightest of winds.

### **3. Main Development Site Flood Risk Assessment (MDS FRA)**

#### **Outstanding issues with respect to the Applicant's assessment, in particular:**

**(a) Coastal flood risk; and**

**(b) Any other areas of outstanding concern for the MDS FRA.**

Chris Wilson's oral submission for TASC is included in the following:-

'TASC's overriding concerns are that the unpredictability of the impacts of climate change, over the full lifetime of the site, mean that no assessment can adequately provide reassurance, or any sort of guarantee that the Sizewell C site can be kept free from the risks of flooding, and therefore free from the risks of endangering human life or the wider environment in which the site is located. Professor Blowers referred to this matter in ISH9, [REP7-169] with particular mention of the dire warnings included in the IPCC's recent AR6 report, so we do not plan to go over this ground again.

'TASC are however concerned about reference to some FRAs only going as far ahead as 2140. In August 2020, TASC received a written response from the ONR [see extract at Annex A below] in respect of a query TASC had raised concerning the likely lifetime of the SZC dry fuel store, particularly in relation to the Nuclear Decommissioning Authority's Technical Note 11261814 Rev1 which says DFS canisters containing spent EPR fuel assemblies at maximum burn-up levels would need 140 years to cool sufficiently to be considered safe to place into a repository. As no formal application had been made for the SZC DFS, the ONR response referred to the HPC situation and the length of time spent fuel was expected to remain on site there. The ONR stated that with a programme of mixing fuel assemblies at different burn-up levels, the cooling period could be shortened, and their expectation was that a period of cooling for 55-60 years post end of operation would be needed. So for Sizewell C, if, and it's a big 'if' based on the length of time the Olkiluoto and Flamanville EPR reactors have been under construction, we assume an operational start date of 2035, 60 years of operation takes us to 2095, a further 60 years for cooling takes us to 2155, the ONR say it would take up to 10 years to transfer the fuel off site so that is 2165 before the all the spent fuel can be removed from the site. As the Applicant has omitted any detailed assessment of the decommissioning process it is reasonable to assume that it takes 30 years to fully decommission, so we arrive at the end of the 22<sup>nd</sup> century before the site would be considered safe enough to abandon to nature. And it needs to be remembered that this timeline assumes: (1) that there is a GDF in which to store the spent fuel and this is by no means a certainty, and (2) the fuel can be cooled at an averaged faster rate than the NDA originally assessed, and there must be some doubt about this, given there is currently no experience of the behaviour of the high burn-up spent fuel from EPR reactors anywhere in the world.

The afore-mentioned timeline is at odds with the Applicant's comments in REP5-120 Appendix J paragraphs 2.3.13-14 page 1218 where it is stated that, in respect of the FRA for the SSSI Crossing, the Crossing will remain safe up to 2140 and thereafter, activities will be related to non-nuclear decommissioning requirements and that occupation of the site will be



non-essential. This statement from the Applicant is worrying for 2 reasons: (1) because it contradicts the ONR's advice to TASC regarding the timeline for dealing with the spent fuel, and (2) because of the risk that marine flooding poses to this part of the MDS occupied by the SSSI Crossing. TASC do not have expertise in coastal geomorphology but endorse the concerns expressed by others such as Nick Scarr and Bill Parker that refer to shortfalls in the Applicant's modelling that under-assess the possibility of the sea breaching the sea defences to the north of the site due to such reasons as: more extreme storm surges occurring as a result of the impacts of climate change, arriving from a prevailing north-east direction with greater force and wave heights due to the saddle between the Dunwich/Sizewell Banks; the potential loss of the protective features of the Dunwich/Sizewell Banks and inshore sandbars; not modelling storms of sufficient force. TASC note that the Applicant has attempted to address these apparent short-comings in their D7 submissions, and we welcome seeing responses from knowledgeable IPs on these matters at D8.

The recent cliff falls at Thorpeness, a short distance south from the Sizewell site, have, once again, highlighted the vulnerability of the Suffolk coast and how easy it is to under-estimate the power of the sea and over-estimate our ability to hold back the sea. The potentially catastrophic consequences of over-estimating the effectiveness of SZC's flood protection measures mean, in TASC's opinion, that a precautionary approach needs to be taken and a recommendation that SZC be refused permission, should be made to the SoS.

Pictures: Cliff falls and failed sea defences at Thorpeness August 2021





There is currently a suggestion of new bespoke sea defences at Thorpeness [see brochure at Annex B] and TASC are concerned that piecemeal sea defences such as the SZC SCDF and HCDF combined with such plans at Thorpeness need to be considered for their cumulative impact on the already vulnerable Suffolk coastline.

**4. Associated Development Site Flood Risk Assessments Outstanding issues relating to the following:**

**(a) Sizewell Link Road FRA; and**

**(b) Other Associated Development Sites.**

**5. Outline Drainage Strategy [REP2-033]**

**Outstanding issues relating to the Outline Drainage Strategy with particular reference to:**

**(a) Main Development Site, including Water Management Zones**

**(b) Drainage strategies for Associated Development Sites**

**6. Water Monitoring and Response Strategy [AS-236]**

**Outstanding issues relating to the Water Monitoring and Response Strategy.**

**7. Water Framework Directive Compliance Assessment Outstanding concerns with respect to the Water Framework Directive Compliance Assessment.**

## 8. Coastal Processes Update

**Coastal processes update to include the following: Modelling for SCDF through decommissioning to 2140; modelling relating to the detailed design of the adapted HCDF; the SCDF design; the provision of additional modelling, plans, sections, and information sought by IPs; the Minsmere Sluice Operation Technical Note; the monitoring, triggers, mitigation, and controls incorporated within the latest revisions of the draft DCO requirements, the DML and the CPMMP.**

TASC remain concerned that:-

- b) The Applicant is still proposing to use materials for the SCDF that do not mirror those that naturally occur in the location. TASC feel sure these materials can only interfere with natural processes and could have unforeseen impacts on other parts of the coast.
- c) Modelling to 2140 is far too short a time period: as mentioned earlier under agenda item 3, it should cover the expected timescale that requires adequate cooling of the spent fuel and complete decommissioning at least to 2200. TASC believe it is worth referring to APP-311 where at para 20.4.72 the Applicant states, *“However, there is no current computational modelling platform able to accurately integrate the numerous environmental processes that drive shoreline change, and there is no published evidence that shoreline change models can be reliably applied over the multidecadal timescale that is required.”* By virtue of their own admission about the difficulty of modelling coastal changes, the veracity of the Applicant’s modelling needs to be considered with a great deal of scepticism.
- d) An underestimate of possible storm surges could result in the loss of the SCDF and the undermining of the HCDF, thereby having major safety implications for the licenced nuclear site. In this connection, TASC believe that we are still waiting for details of the ground improvements required for the HCDF. TASC note that the Applicant seems to use the ‘Beast from the East’ as a worst case storm scenario even though it was known for how cold it was, rather than the intensity of the storm conditions. TASC consider that the Applicant’s reference to the ‘The Beast from the East’ storm is not sufficiently robust as a benchmark test of future resilience of the SZC sea defences. TASC find it extremely unsettling that the Applicant is proposing that some sea defence modelling will not be available until deadline 10 and, due to the Applicant’s previous reluctance to model for extreme storms and only up to 2140, TASC consider this is at best negligent or at worst deliberate to avoid proper scrutiny. The vulnerability of the HCDF is highlighted in APP-311 which states at para 20.4.70, *“Expert Geomorphological Assessment shows that, in the absence of any additional mitigation, the shoreline is likely to retreat to, and interact with, the HCDF within the operational life of the Sizewell C station. Therefore, a future shoreline baseline is considered here and in section 20.14 of this chapter. Appendix 20A of this volume, section 7 provides more detail on the future shoreline baseline, as well as monitoring, mitigation and potential post mitigation impacts.”*
- e) In TASC’s view, the need to monitor a longer stretch of coast than is presently propose is created by the combined effect with the proposed sea defences at Thorpeness.
- f) The Applicant has not considered Alternative designs for the HCDF which result in less encroachment on the Heritage Coast.

- g) The cliff falls at Thorpeness demonstrate how the sea will eventually work its way behind sea defences and this is an example as to why TASC remain concerned that the SZC defences will create erosion to the north and south of their extremities. This will create an unnatural raised protrusion on an otherwise flat coast, creating further adverse impacts to the attributes of the AONB.
- h) The Applicant's frequent relocation of sea defence features in its proposals totally undermines any confidence that IPs can have in the design and adequacies of those defences. Moving the HCDF 5 metres- why now and not before?

TASC would like to endorse the concerns expressed by Paul Collins about the impact when Sizewell B finally ceases operation in so far as the risk that this may cause the loss of the salient that has built-up around the SZA and SZB cooling water outlets, followed by a return to the natural embayment of the coast in front of the Sizewell nuclear sites, thereby increasing the risk of coastal erosion. The Applicant's failure to assess the likely impacts that will be caused when SZB ceases operations is a major concern, particularly when the HCSD is so vulnerable to the loss of the SCDF.

## ANNEX A

Extract from letter from the Office for Nuclear Regulation August 2020:-

“ONR ref HPGE202006066 TASC Review of the Minutes of the ONR/Stop Hinkley Meeting in Bridgewater January 2020 Authors: Chris & Jen Wilson Date: 17 June 2020 Document prepared following Stop Hinkley's (SH) review document of 15th June 2020”

Extract:

TASC's question to the ONR: “4.44 Reference ST's comments that a dry fuel store would be designed to hold fuel for about 120 years- for HPC and the proposed SZC, they will both comprise twin reactors each generating 3600 'high burnup' Spent Fuel assemblies over the sixty year operating lifetime of the plant stored in fuel ponds and then dry containers. The Nuclear Decommissioning Authority discloses, when discussing the non-extant, non-designed, Geological Disposal Facility for spent fuel that, “based on a canister containing four Sizewell C fuel assemblies, each with the maximum high burn-up of 65 GWd/tU and adopting the canister spacing used in existing concept designs, it would require of order of 140 years for the activity, and hence heat output, of the EPR fuel to decay sufficiently to meet this temperature criterion.” All of Sizewell C's Spent Fuel, and, if HPC's DFS is approved and built, HPC's is to remain onsite until it meets this temperature criterion. Our questions are: - a) based on the ONR's awareness of the situation, is the NDA statement suggesting that the dry canisters cannot be placed into a GDF until 140 years have passed? b) if the answer to

a) is yes, then the DFS would be needed for 200 years i.e. 60 years of operation followed by the cooling period c) if the answer to a) is no, then how many years is it expected until a dry spent fuel canister would be safe to move off site?

**ONR response:** “Noting that we do not have information available yet on Sizewell C, the response is given for Hinkley Point C based on our current understanding. The 140 year cooling period in the Nuclear Decommissioning Authority report (NDA Technical Note no. 11261814 Rev1) is conservative and does not take into account a number of aspects which have been used within the spent fuel management strategy for Hinkley Point C (HPC). For example:

- Not all fuel within HPC will have a burn-up of 65 GWd/tU. This is the maximum peak burn-up dependent upon reactor core physics and is a bounding value for a spent fuel assembly. The average spent fuel assembly burn-up for HPC will be lower and therefore has lower heat output.
- The thermal output of the disposal canister is calculated based upon a ‘mixing strategy’ where the average temperature of a canister is calculated. This is a mix of both high and low burn-up spent fuel assemblies, and a mix of spent fuel assemblies with longer and shorter cooling periods, within a single disposal canister.
- Analysis shows that a storage period of 55-60 years post end of generation is required in order to meet the assumed GDF disposal thermal limits for all spent fuel assemblies generated during operation through adoption of this fuel management strategy.

As an example, for HPC (using indicative timescales and dates):

- The assumed availability date for the GDF ~2130 for fuel from new reactors.
- Assumed start of generation of HPC: 2025
- Assumed end of generation of HPC: 2085
- The date from which fuel will be sufficiently cool to start to transfer to the GDF (from 55-60 after end of generation): 2140-2145
- The date by which all fuel will be transferred to the GDF: ~2150-2155 (assumed to take just over 9 years)
- The dry fuel store will not be needed until ~10 years start of operation of HPC: ~2035
- The dry fuel store will then be needed for 50 years remaining operation of HPC, 55-60 years for the fuel to cool and 10 years to allow transfer of fuel to the GDF, which is 115-120 years. Removal of all fuel from site and end of use of the dry fuel store is therefore: ~2150-2155.
- The initial design life for the dry fuel store is 120 years (noting the design is conceived to allow for refurbishment or replacement) which would take it to: ~ 2155 In summary, the number of years before the fuel can be taken off site to the GDF is approximately 55-60 years from end of generation, which is because of the temperature criterion associated with the GDF canister. Fuel could potentially be moved from site safely earlier (but not currently to the GDF), although this is not planned.”

## ANNEX B

### Leaflet for new sea defences at Thorpeness:-

The village of Thorpeness has been a much-loved home and holiday destination to many since the land was developed by Glencairn Stuart Ogilvie in 1910. We have it all: the beach, the sandlings, the meare, the wildlife, fantastical buildings and a fairy-tale feel.

**UNDER THREAT**  
For all its beauty and charm, our village is under threat from ongoing erosion and flooding. In the last year there has been devastating erosion on the beach and more persistent flooding within the village.

**LOCAL ACTION**  
A group of local residents and parish councillors have formed a Community Interest Company (CIC) to work with Thorpeness house owners, East Suffolk Council and other local organisations to raise money for and put in place a comprehensive long term coastal and flooding defence scheme.

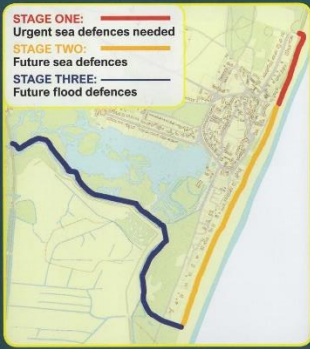
The plan needs to be agreed by the village and enough funds raised to put it in place but whatever is agreed must include plans to:

- Protect our village heritage and character
- Improve destination spots, pathways, cycleways and overall accessibility throughout the village and maintain beach access
- Enhance Thorpeness for future generations to enjoy

**COASTAL EROSION**  
In the last 6 months we have lost 10m of cliff at the north end of the village. The land, houses and natural habitats are all threatened.

**PROTECTING OUR VILLAGE**


**STAGE ONE: Urgent sea defences needed**  
**STAGE TWO: Future sea defences**  
**STAGE THREE: Future flood defences**




The map shows 3 areas of threat. The red line indicates a threat of erosion, the orange and blue lines, flooding.

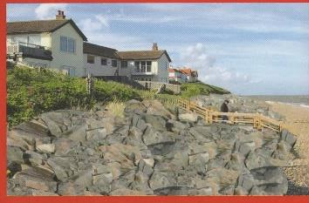
The good news is that there is a solution. A rock armour defence spanning the north end will protect the beach, the land and the houses, and give us the opportunity to improve access and facilities for the enjoyment of all.

**FEBRUARY**





**APRIL**





**FLOODING**  
Shingle and sand dunes have been built up by the sea but as sea levels rise The Meare will become more prone to flooding. Without protection, the freshwater marshes between Thorpeness and Aldeburgh will be flooded by seawater, destroying the fragile habitat. Land and houses in the area will be threatened. We need to **act now** to protect Thorpeness.





**PLEDGE A FUTURE FOR THORPENESS**

**Be a Pebble Pledger:**

- Donate £1 a pebble or contribute multiple pebbles to re-build our beach


North End Avenue children have raised funds for 127 pebbles (£127). What can you raise?



**Be a Boulder Pledger:**

- We will need hundreds and hundreds of boulders to protect our cliffs. Each boulder in the defences costs £500. Fund one or why not fund one every year?

Mr & Mrs Ansbro from Yorkshire have pledged a boulder a year for 20 years. Why don't you do the same?



**Be a Keystone Contributor**

- Can you pledge more? For unique opportunities to leave a lasting legacy get in touch. [info@afutureforthorpeness.co.uk](mailto:info@afutureforthorpeness.co.uk)

**CONTACT US NOW:**  
[info@afutureforthorpeness.co.uk](mailto:info@afutureforthorpeness.co.uk)  
[www.afutureforthorpeness.co.uk](http://www.afutureforthorpeness.co.uk)  
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**FUNDRAISING**

It will take a village, but together we can do it.

The first phase will cost in the region of £2.5m which we will need to raise in the next 2 years. To fund the future schemes we will need a rolling fundraising campaign.

**MATCHFUNDING OPPORTUNITIES**  
**Council & Corporate**  
Whilst the council can't pay for the plan, we are working closely with them to identify wider financial support in the form of grants and corporate funding.


**Land Development**  
We have been offered a number of sites from local landowners with the intention of putting profits from developments into the defence and improvement scheme.



**WITH YOUR HELP, LOOK AT HOW WE CAN MAKE THE INITIAL £2.5M IN TWO YEARS:**

50,000 pebbles =	£50,000
1,000 boulders =	£500,000
30 Keystone Contributors donating £25,000 =	£750,000
Matchfunding top up =	£1.2m

**A FUTURE FOR THORPENESS**



**THORPENESS**

**Help preserve our beautiful village**