



Together Against Sizewell C

TOGETHER AGAINST SIZEWELL C (TASC) WRITTEN REPRESENTATION

SIZEWELL C PLANNING APPLICATION INQUIRY (IP no. 20026424)

POTABLE WATER SUPPLY FOR SIZEWELL C

Summary: This report was written by **Emma Bateman** for TASC and reviews the threats created by the additional demand for potable water which will accompany the Sizewell C development should it be given planning permission and the risks to the availability of such a critical resource in a recognised water-scarce area.

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1. The National Infrastructure Commission has assessed that within the next few years we are going to run short of fresh potable water in the UK as a whole and in East Anglia, the most arid region of the UK, in particular.
2. Like all water companies, Essex and Suffolk Water (ES Water) are obliged to draw up a periodic Water Resource Management Plan (WRMP) outlining their resources and infrastructure plans. The Essex and Suffolk Water Resource Management Plan, published in August 2019, acknowledges that there is little scope for more water abstraction from this area:
3. *“Our Essex and Suffolk supply areas are located within some of the driest areas of the country and as such face particular challenges including growing demand, uncertainty from climate change and a general lack of new intrinsic water resources.¹”*
4. ES Water also acknowledged that in order to maintain the environmental standards set out in legislation, they may be required to actually reduce the amount of water they were allowed to abstract:
5. *“Operating in the driest part of the country, with increasing demands on current supplies of fresh water and the potential for sustainability reductions being applied to our abstraction licences, we recognise that “new” water for potable supplies will be difficult to come by.²”*
6. EDF has stated that it requires a supply of 2ML/day order to enable the operation of Sizewell C. Together Against Sizewell C (TASC), alongside many other respondents, have been asking for details about the availability, source and supply of such a large volume of potable water since the early stages of the consultation process in 2012. To date, EDF have been vague and evasive when asked about the source of the water supply.
7. It transpired in 2018, that a deal EDF had hoped to strike with ES Water to secure the supply from the Blyth water resource zone (the zone Sizewell is situated within), would

¹[ESW PR19 WRMP Report -Revised Draft - V1.docx \(nwg.co.uk\)](#) page 5

²[ESW PR19 WRMP Report -Revised Draft - V1.docx \(nwg.co.uk\)](#) page 43

not be feasible. Despite the acknowledgement that there is little scope for further abstraction in this region, ES Water had been confident that they would have enough surplus water to supply EDF with. This is made evident in the Water Management Plan where ES Water state:

8. ***“Distribution Input forecast includes the potential demand of ~2Ml/d from the proposed development... Suffolk Blyth WRZ baseline supply demand balance with proposed development. This shows that a supply surplus is still maintained across the full 40 year statutory planning period³.”***
9. In September 2018 ES Water published the Draft Water Resources Management Plan (DWMP) Statement of Response which contained feedback from consultees on the DWMP.
10. EDF was one of the consultees and their response clearly states how much water would be required by Sizewell C as well as the proposed new Bradwell B nuclear power station in Essex that EDF/CGN also plan to build. They wished to have both projects specifically included in the WRMP in order to be able to include the water source in the stage 3 consultation:
11. ***“EDF/CGN is proposing to construct and operate new nuclear power stations to be known as Bradwell B in the Essex WRZ and Sizewell C in the Suffolk Blyth WRZ within the 2020 – 2060 planning period. The developments will each require an estimated 2Ml/d supply of water. EDF/CGN request that the demand for Bradwell B and Sizewell C power stations be specifically identified within the WRMP. The inclusion will provide greater accuracy and assist at future stage when EDF/CGN undertakes further public consultation prior to submission of Development Consent Order applications to National Infrastructure Planning.⁴”***
12. The Environment Agency (EA) disagreed with ES Water because the abstraction needed for Sizewell C would breach environmental standards set by the Water Framework Directive (WFD). This is from ES Water's Response to EDF's feedback in the Draft WRMP:
13. ***“EDF and ESW met on 14 May 2018 and again on 15 June 2018 with the Environment Agency to discuss Sizewell C water supply and demand. The EA has highlighted that including the 2 Ml/d of additional demand from Sizewell C in our final plan, distribution input forecast would mean that there would be a sustained increase in overall abstraction. As the aquifers from which we abstract in the Blyth WRZ are not meeting the Water Framework Directive “good” status, we then would not be able to demonstrate compliance with the Water Framework Directive “No deterioration” test.***
14. ***“The EA has asked that we illustrate, through an additional supply demand balance scenario graph, the effect of the additional Sizewell C demand but with the supply line (known as Water Available for Use or WAFU) being based on recent actual abstraction (i.e. the maximum annual abstraction between 2005 and 2015). We have completed this work which shows (Section 11.3.2) that capping abstraction licence annual licensed quantities at recent actual levels causes a supply deficit and the need for a new supply scheme. Our view continues to be that there remains significant uncertainty regarding***

³[ESW PR19 WRMP Report -Revised Draft - V1.docx \(nwg.co.uk\)](#) page 311

⁴[esw_draft_wrmp_consultation_statement_of_response.pdf \(nwg.co.uk\)](#) page 8

the start date and as such it would be wrong to include it in our final plan now. Our view is supported by the National Infrastructure Commission's (NIC) recommendation to Government that there should only be one more nuclear power station constructed in the country.

15. ***“Once there is greater certainty regarding the Sizewell C construction start date, we will consider this as a material change to our WRMP and will then include the new demand in our final plan Distribution Input forecast. As the EA has said that for the purposes of the WFD ‘no deterioration’ test we would have to cap our abstraction licences at recent actual volumes, we would not comply with the no deterioration test. Consequently, we would have to develop a new supply and or demand scheme albeit that the cost of this will have to be funded by EDF. We have communicated our position to EDF.⁵”***
16. The fact that ES Water failed to assess that they would be in breach of the regulations if they abstracted more water does not inspire confidence in their ability to manage the supply.
17. Despite being informed in 2018 that the water supply from the Blyth water resource zone would be inadequate, it is not until January 2021 in the Environmental Statement Addendum that EDF admit the water supply would come from the Northern/central Water Resource Zone via a new pipeline.⁶
18. It is made clear in the 'Sustainability Statement' that in accordance with NPS EN-1, EDF have an obligation to ensure the water supply is sourced sustainably.
19. ***3.9.6 NPS EN-1 requires the development to provide suitable pollution control, in relation to activities that discharge to the water environment. An abstraction licensing regime must be in place when water is taken from the water environment. The requirements of the WFD must also be met.⁷***
20. EDF makes no comment as to the environmental impact of the new pipeline, suggesting it is the responsibility of ES Water, but ES Water has been reluctant to publicise their dealings with EDF. In the final Water Management Plan, ES Water stated that:
21. ***“EDF Energy is also promoting a new nuclear power station at Sizewell in Suffolk known as Sizewell C. It is currently forecasting construction will commence in 2022 with a maximum additional demand of 2 Ml/d. We do not believe that there is a sufficient level of certainty regarding the proposed construction start date and so this potential demand has not been included in the baseline Distribution Input forecast..... The scenario testing shows that there would be a supply deficit and so a new supply would be required. Our view is that there is still significant uncertainty regarding the Sizewell C construction start date and as such it would be wrong to include it in our final plan now.⁸”***
22. The disparity between the claims of EDF that the water supply is arranged and secured, and ES Water, who appear less certain that the project will go ahead, adds to the concern that the water supply to EDF will encroach on the water supply for the public. Essex and Suffolk water have stated that there is little contingency for further abstraction in Suffolk and yet they are committing to 2 ml day for Sizewell C with very little notice to their

⁵[esw draft wrmp consultation statement of response.pdf \(nwg.co.uk\)](#) page 9

⁶[EN010012-002919-SZC Bk6 6.14 ESAdd V1 Ch2 Main Development Site.pdf \(planninginspectorate.gov.uk\)](#)

⁷[EN010012-002235-SZC Bk8 8.13 Sustainability Statement.pdf \(planninginspectorate.gov.uk\)](#) 3.9.6

⁸[ESW PR19 WRMP Report -Revised Draft - V1.docx \(nwg.co.uk\)](#) page 18

consumers that this is what is happening despite the fact that Sizewell is outside of the affected water resource zone. A water resource zone describes an area within which the abstraction and distribution of supply to meet demand is largely self-contained, and ES Water state that:

23. ***“Within a WRZ, all parts of the supply system and demand centres (where water is needed) should be connected so that all customers in the WRZ should experience the same risk of supply failure and the same level of service for demand restrictions.”***⁹
24. As the supply for Sizewell C includes water for essential operations such as replenishing the primary cooling circuits and cooling ponds, it is reasonable to suspect that in the event of scarce supply, priority would be given to Sizewell C.
25. It is imperative that it is made clear to the public, especially customers of ES Water, where the responsibility lies for ensuring the water regulations are adhered to, and what will happen in the event of inadequate water supplies. This is a very real scenario, particularly as there may be reductions in the availability of water from the northern/central WRZ, as is acknowledged by EDF in their appraisal of possible supply sources where they list “Uncertainty around potential impacts of future licence reductions¹⁰” as a limitation to this supply strategy.
26. There is uncertainty around how the infrastructure for the water transfer scheme will be funded, with EDF claiming that they are still working on these details. ES Water have stated that EDF will have to fund any such scheme, but it has not been made clear whether consumers will be required to pay the upfront costs, or how this will be paid for. Because ES Water have been reluctant to include the supply for Sizewell C in their plans, it would appear that they have not accounted for the supply in the 2018 drought plans. Given that a guaranteed supply would be required for Sizewell C regardless of environmental conditions, it is imperative that the drought plans are updated and tested with the inclusion of the Sizewell C water requirements, and that these plans are tested against the climate change and water availability forecasts for the duration of the life of the power station and cooling ponds, which will need the water supply even after the power station has ceased operation.
27. The ES Water plans are only required to calculate and forecast the supply for the next 40 years, until 2060. Given that it is very possible that the reactors would not be completed and commissioned before 2035, this leaves over half the lifetime of the power station with no adequate plans for a guaranteed water supply.
28. The uncertainty over the impact of climate change was acknowledged by ES Water after 2016 proved to be a much drier year than was anticipated as ES Water say in their report:
29. ***“The experiences since 2016 within the Essex WRZ has clearly demonstrated that this WRZ is not as resilient to extreme events as previously assumed due to unpredictable outage events.”***
30. That the forecasts and calculations of the water company proved inaccurate over a time frame of a couple of years does not bode well for the predictions around the stability of supply that will be required for the next 70 years or so.

⁹ [ESW PR19 WRMP Report -Revised Draft - V1.docx \(nwg.co.uk\)](#)

¹⁰ Planning Statement Appendix 8.4K Site Water Supply Strategy page 7

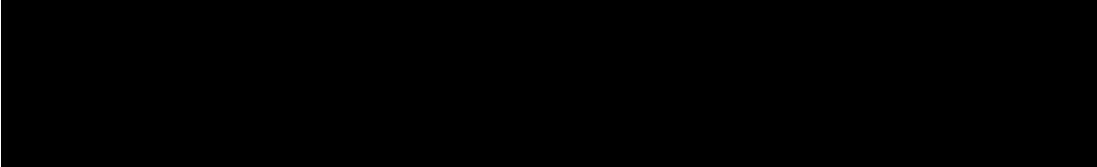
31. As stated earlier, EDF have requested of ES Water that 2ML/day be made available for Sizewell C. This is reiterated in EDF's Sustainability statement¹¹ :
32. ***“3.9.27 During the operation of Sizewell C, the average demand for water would increase from average construction demand to approximately 2 million litres per day.”***
33. However, in the 'Site Water Supply Strategy' published in May 2020, the figure for the amount of water needed for the operation of the reactor has been revised down to 0.5 ML/day. There is no explanation given for this drastic reduction, or calculations of how EDF, after 8 years or so of claiming to need 2ml/day, now require only a quarter of that amount.
34. ***“... The demand during operation is expected to be significantly lower than that during construction, at approximately 0.5ML/d.¹²”***
35. In the Environmental Statement addendum appendices published in January 2021 it is stated that:
36. ***“..the supply required will be 1.5ml/day rising to 3.5 ML/day during some parts of construction¹³.”***
37. There is no mention of the supply being reduced to 0.5ML/day during operation, and this figure of 3.5ML/day contradicts the figures in the sustainability statement which says:
38. ***“3.9.24 Water use during the construction programme would vary depending on the works being carried out. Whilst the average demand is expected to be 1.2 million litres per day, the peak demand for water may be up to 2.5 million litres per day¹⁴.”***
39. Such discrepancies in EDF figures have been fairly frequent throughout the Sizewell C consultation.
40. The supply of 3.5 ML/day is considerably more than the average 2 ML/day, and this would be required for almost 2 years. With this level of abstraction for a sustained period, it would be as well to know what guarantees there would be around maintaining and monitoring the environmental impact and what the consequences for consumers would be in the event that this effects their water supply.
41. EDF has mentioned reducing water use through recycling and the use of water efficient fixtures and fittings 'wherever possible and practical'. However, these are aspirations, and there are very few firm calculations around how much water saving and reuse will be achieved through these intentions or what would happen in the event of these reductions not being achievable.
42. EDF have claimed that they have been working closely with the environment agency and ES Water for some time. This is not borne out by the last minute changes to the supply strategy, or by the fact that, even at stage 4 of the consultation, the Environment Agency

¹¹ [EN010012-002235-SZC Bk8 8.13 Sustainability Statement.pdf \(planninginspectorate.gov.uk\)](#)

¹² [SZC PROJECT - DCO GUIDANCE DOCUMENT \(planninginspectorate.gov.uk\)](#) 1.2.2.

¹³ [EN010012-003013-SZC Bk6 6.14 ESAdd V3 Ch2 Appx2.2.A D DoD.pdf \(planninginspectorate.gov.uk\)](#) Table 1.1

¹⁴ [EN010012-002235-SZC Bk8 8.13 Sustainability Statement.pdf \(planninginspectorate.gov.uk\)](#) 3.9.24



submitted a comment on the need for EDF to consider worst-case and cumulative impacts to comply with the water framework directive. If the companies were working closely together, this public comment would have been unnecessary.

43. The Code of Construction Practice conduct states that:

“Adequate water supply will be made available for dust/particulate matter suppression and house-keeping¹⁵” but it is unclear where this water will be sourced from - there is a lack of detail around the water sources that are recycled, grey water, non-potable water, or from other private licences. EDF hope to use non-potable water, but if there is none available it will presumably have to come from fresh water supplies. The dust will be at its worst in dry conditions, which would be expected to coincide with the periods of least rainfall, so it would be useful if EDF could be clearer about whether they are including contingencies for extra water use within their calculations. Using terms such as 'if necessary' or 'where practicable' begs the question of who makes the decisions about when these 'necessary' conditions are met.

44. NPS EN-1 stipulates the need to consider cumulative effects of the plans. It is unclear to what extent EDF have considered the long term effects of the water abstraction for Sizewell C and, given that they hope to build another power station at Bradwell for which the water would also be sourced from ES Water, what the cumulative effects of that abstraction would have on the regions water supply and security.

45. TASC hopes that the Examining Authority gives careful consideration as to whether EDF have demonstrated their plans are sufficiently robust and detailed to guarantee an uninterrupted water supply for the lifetime of the power station and beyond, with clear demarcation between EDF's responsibilities and those of the water company, and which will not impact on the water supply for the residents and other users within the region.