

3.2.16 “Construction activities will recycle water through the construction process as follows:

- Recycling the slurry returned from the Tunnel Boring Machines (TBMs) during certain marine tunnelling works. This is expected to reduce potable water demand associated with this activity **by 30%**;
- Adopting a similar process for the cut-off wall, to also reduce demand associated with this activity by an expected **60%**; and
- Adopting specific measures to reduce potable water demand associated with the concrete batching process by approximately **20%**.”

Q1 Begs the question as to: why weren't these actions incorporated as an integral 'impact mitigation' on East Anglian water resources and the security of residential supplies - from Day 1?

3.2.19 “During the main civil works, a peak demand of 4Ml per day (4,000 cubic metres per day) is predicted to be required. This demand is largely driven by concrete batching, construction of the cooling water tunnels, placement of structural fill and welfare demands for the construction workforce.”

Q2 What is approximate contribution of each of the four uses identified as 'largely driving demand'?

3.2.23 “...In summary, none of the consultation responses have necessitated any changes to the desalination proposals. However, the **proposed intake pipe has been increased in length from approximately 380m to 485m**, measured from the temporary Hard Coastal Defence Feature (HCDF). The proposed outfall pipe has also been increased in length from approximately 200m to 385m from the same reference point. This is proposed in response to concerns over the localised environmental effects of the proposed plant by accessing deeper water that would improve dispersion of the brine water discharge within the water column whilst also minimising recirculation between the two pipes.”

Q3 Has the relocation of the intake pipe improved the quality of the water being sent to the SWRO plant? If so what reduction has this move had on the scale of water pre-treatment? If no improvement in intake quality has been achieved...why not?

3.2.24 “...The number of tanker deliveries is likely to rise gradually during this period to approximately 40 deliveries per day. The capped HGV limits already established for the Project would remain unchanged.”

Q4 Can the Applicant explain how such a significant increase in HGV movements can be accommodated with such seeming ease within the HGV limits? What percentage contingency did the Applicant build into the HGV Limits and to what degree does that contingency reflect the Applicants obligation to minimise the impacts on the people of East Suffolk?

3.2.25 “Once constructed, the modular desalination plant would initially be capable of producing up to approximately 2,600m³ of potable water per day. In the event that the water transfer main is not complete by the fourth year of construction, additional modules would be added to the plant to create the ability to produce up to approximately 4,000m³ of potable water per day.”

Q5 This assertion seems to imply the scale of the desalination plant would increase by circa 50% (over the initial plant) to deal with demand of 4,000m³? Can the Applicant confirm that the maximum desalination plant production capacity will be capped at no more than 4,000m³ through all phases (construction, operation and decommissioning)?

3.2.26 “The desalination process comprises the following core components:

- Onshore desalination and associated equipment.
- Seawater intake pipe and associated headworks.
- Brine water outfall pipe and associated diffusers.”

Q6 Can the Applicant advise why a secure 'chemical store' and 'pre-treatment processing' component(s) are not included given the potential requirements pertaining to them, depending on input water quality and the requirements of pre-treatment?

3.2.33 “Seawater contains dissolved solids other than salt and other minerals, which are also removed as part of the desalination process. This non-hazardous slurry material would be dried to produce a cake (25% dry solids) which would require off-site disposal.”

Q7 The Applicant refers to “...non-hazardous slurry material would be dried to produce a cake (25% dry solids)”. Can the Applicant advise where residual seawater 'pre-treatment chemical applications' are either recovered/recycled or disposed of?

3.2.42 “The intake screen and pipework will be maintained by periodic cleaning using a compressed air cleaning system. Periodic shock chlorination within the headworks would also be applied to prevent biofouling. Chlorine dosing would be flow controlled and angled inwards to avoid chlorine emissions to the environment. Abstracted water would be dechlorinated prior to the Sea Water Reverse Osmosis membranes.”

Q8 The Applicant refers to “...Abstracted water would be dechlorinated prior to the...” Can the Applicant advise where any residual chlorine from the dechlorination process’ are recovered/recycled or disposed of?

3.2.43 “Localised dredging, in the form of backhoe dredging of similar, is assumed to be necessary in the immediate area surrounding the headwork.”

Q9 Can the Applicant explain how impacts of localised dredging will be prevented from degrading the intake water quality and thereby avoiding additional/excessive pre-treatments? Can the Applicant advise why this requirement is only ‘assumed’?

3.2.52 “The brine water will be balanced and mixed on the construction site as part of the desalination process. It will then be stored in a storage tank adjacent to the desalination plant and pumped through the outfall pipe in a controlled manner on a continuous basis (24-hours per day).”

Q10 Can the Applicant explain fully what they mean by ‘brine water balancing’; the equipment, processes, chemicals, etc. involved?

3.2.53 “Water to be discharged via the outfall pipe would gravitate when tidal conditions allow with pumping to assist across the tidal cycle. It is assumed that the pumps would be located within the desalination plant and would be above-ground and enclosed to provide acoustic attenuation.”

Q11 Can the Applicant explain why they are so heavily reliant on ‘assumption’ in respect to the content of this paragraph? When will assumption be fact? Can the Applicant explain why at ISH 15, I understood the contention of the Applicant to imply all pumps were submerged and therefore ‘inaudible’?

Table 3.1 [Conventional Waste and Material]

“Proposed Change 19 does not alter the baseline. The materials required for the construction of the desalination plant form less than 0.1% of the material requirements set out within the Materials Management Strategy [AS-202], therefore, there is also no change to the material resources assessment. However, the desalination plant is anticipated to generate small amounts of additional non-hazardous waste. Therefore, an updated assessment on the capacity of waste management facilities has been provided within section 3.4 below.”

Q12 It seems rather disingenuous to expect the reader to believe that just because the Desalination Plant has a less than 0.1% materials requirement of an “extraordinarily large and complex project” that it should automatically be disregarded. Moreover it is concerning insofar as the Applicant continues by saying the Desalination Plant is “however...anticipated to generate small (Note quantity and periodicity not explained) amounts of additional non-hazardous waste.” (Note again not detailed), but does nevertheless give rise to an “...updated assessment on the capacity of waste management facilities...”? Perhaps the ExA can ask the Applicant to explain?

Table 3.1 [Terrestrial Ecology and Ornithology]

“It is assumed that connecting pipework between the proposed location of the desalination plant within the temporary construction area and the marine infrastructure would run across the SSSI crossing above the soffit level of the bridge.”

Q13 Given the importance of the SSSI, can the Applicant explain why; firstly they only advise “It is assumed connecting pipework between...would run across the SSSI crossing...” and secondly; what safeguards are there within the pipework design and the proposed SSSI crossing to specifically safeguard against seepage from the pipework be it; accidentally, through poor maintenance, vehicle collision, etc.

Table 3.1 [Geology and land quality]

Q14 As per previous questions, can the Applicant explain what chemicals will be required for SWRO, pre-treatments, etc. and the planned (average daily) stored quantities held on site?

3.4.2 “The operation of the desalination plant is estimated to generate up to 14 tonnes of dewatered sludge cake per day, 20m3 of Clean In Place (CIP) wastewater every 3 months and very limited amounts of other wastes (such as waste membranes and cartridge filters), which will require off-site disposal.”

Q15 Can the Applicant provide details of the proposed Membrane and Cartridge Filters to be used in the Desalination Plant, the procurement decision processes to ensure the optimum performance of these disposable components (for the water quality to be processed), whilst simultaneously ensuring the lowest environmental impact arising from their disposal? Can the Applicant provide their projected total (Desalination Plant Life to 2030 as per REP9-025 Para 1.1.3, rather than the 57 month period quoted at 3.4.3) volume for these disposables and the total land-fill disposal load in tonnes.