

Response by the Severn Rivers Trust to the Consultation on the proposed material change – Hinkley Point C Development Consent Order.

Dear Sir/Madam,

Please accept this note by way of response from the Board and Staff of the Severn Rivers Trust regarding your current consultation on EDF's proposal to remove conditions relating to the installation and operation of the Acoustic Fish Deterrent (AFD) system at Hinkley Point C.

The Trust is greatly concerned about the future operation of Hinkley Point C and its likely impact on fish species within, and that migrate through, the Severn Estuary. We believe that suitable due consideration has not taken place at any time during this process.

The Severn Rivers Trust is an independent, proactive and adaptable charitable organisation; the only organisation that undertakes works across the entire River Severn Catchment in both England and Wales. We are therefore in prime position to be a lead player in the future management and restoration of activities on the river. The Trust's **Vision** is that *The water and wildlife of the River Severn and its tributaries are thriving and people will value and care for their river*. The Trust works towards achieving our Vision by being inclusive with all members of the community to ensure suitable and sustainable land and water management is undertaken alongside the restoration and protection of habitats and wildlife. This **Mission** is led by our **Guiding Principle** of *working at a River Catchment Scale*. The Trust therefore has great interest in what happens to the environment and 110 plus fish species that use the Severn Estuary as part of their life cycle.

The Trust has considered the current proposals associated with Hinkley Point C and any changes to the current consents and permissions. Cancellation of the Acoustic Fish Deterrent puts into question the whole decision to consent the water intakes for the cooling system. It is apparent that Direct Cooling is not a suitable nor best practicable solution to cooling the power station. Work in the United States of America¹ has clearly highlighted that this system is highly damaging to the environment and regulation of the impacts of impingement and entrainment in the USA is far ahead of that in the UK². We don't agree with the assumption³ that because the UK has a different regulatory system, the US judgement is not appropriate to the Severn:

¹ Henderson, 2018 *Ecological Effects of Electricity Generation, Storage and Use* p.49

² Environment Agency, 2019 *Nuclear Power Station Cooling Waters Evidence on 3 Aspects* SC170021 p.70.

³ Environment Agency, 2019 *Nuclear Power Station Cooling Waters Evidence on 3 Aspects* SC170021 p.59-62.

“The UK regulatory paradigm does not provide the same prescriptive, rule-based guidance for operators and so there is flexibility to promote and secure reductions in adverse environmental impact as far as possible on a project-specific basis⁴”.

Given that this site is within the Severn Estuary/Môr Hafren Special Area of Conservation (EU Code UK001303) under the European Union’s Habitats Directive (92/43/EEC) there is a high probability that protected species will be negatively impacted. Were other designs such as dry cooling or a closed environment cooling system considered in 2010 or are they being considered now to reduce the damage on the marine environment by reducing the impact and amount of water intake? If these were disregarded, what reasons were given to undertake a more damaging environmental practice and was a suitable, completely independent, environmental impact assessment undertaken? Why are these other solutions not suitable now given increased knowledge of such systems and the obvious negative impact of direct water cooling?

Under the Habitats Directive, Article 6.2 states that *Member States shall take appropriate steps to avoid, in the special areas of conservation, the deterioration of natural habitats and the habitats of species as well as disturbance of the species for which the areas have been designated, in so far as such disturbance could be significant in relation to the objectives of this Directive.*

The Trust has many concerns about the potential impact of the HPC cooling water intake on the fisheries of the Severn and the degree of uncertainty that has not been expressed. To highlight just one major issue, we understand that the Centre for Environment, Fisheries and Aquaculture Science’s (Cefas) own study suggests that in the region of 30,000 twaite shad (*Alosa fallax*) could be killed through entrapment in the designed intakes at Hinkley Point C. (It should be noted that any fish entrained through this system will likely die due to the physiological design of this species with the swim bladder being closely attached to the brain and any sudden pressure changes causing death). The proposed Fish Return System, with or without the ADF, will do nothing to protect this particular species, nor its’ sister species Allis shad *Alosa alosa*. The Trust is a key partner working on restoring twaite shad (*A. fallax*) in the Unlocking the Severn Project under funding from the European Commission’s LIFE Nature Programme (LIFE15/NAT/UK/000419) and the Heritage Lottery Fund (HLF-15-04573). This project also receives considerable funding through the Environment Agency’s FCRM budgets and directly from the NGO partners, the Severn Rivers Trust and notably, the Canal & River Trust. This £22m project is working to open the River Severn for migratory fish species by 2021. This project will double the available spawning habitat for *A. fallax* in the United Kingdom. This project is of international importance and has received global attention for its innovative approach and potential for game-changing ecological restoration – not just for the Severn and twaite shad but for other species such as sturgeon which used to exist in the Severn. Such a major new impact on the fishery threatens to compromise our ability to evidence the success

⁴ Environment Agency, 2019 *Nuclear Power Station Cooling Waters Evidence on 3 Aspects* SC170021 p.68-69

of this restoration project.

Over the past two years, monitoring of twaite shad on the River Severn suggests that around 10,000 individuals migrate up river beyond Tewkesbury in May and June each year. The annual destruction of more than 30,000 individuals in the estuary, which is also likely to be a gross underestimate, will clearly have a significant impact on this species of community interest (designated under Annex II of the Habitats Directive for the Severn Estuary alongside sea lamprey and river lamprey). Sea Lamprey losses are likely to be undercounted. Post metamorphosis Sea Lamprey are frequently active at night (Andrade et al 2007) so are likely to be underrepresented in HPB's daytime sampling⁵.

Given the amount of money being spent through tax payers and public funds on the Unlocking the Severn project, any future work at Hinkley Point C must take account of the impact on this particular species. What consideration has the development of work at Hinkley Point C made towards the wider protection of species of community interest and the mitigation for the negative impacts that any water intake shall have? Have the designs for direct water cooling of the plant truly considered the impacts on the designation of fish in the estuary and the associated assemblage? How many protected fish are acceptable to be killed by any system at Hinkley Point C in a single year?

The Unlocking the Severn Project will also provide significant benefits to other species that are currently threatened or endangered through man's actions. These include the Atlantic salmon (*Salmo salar*) and European eel (*Anguilla anguilla*). What determination on the impact of these species has been considered? How many individuals of species that have recently and are continuing to see catastrophic declines in our waters is it acceptable to kill? What consideration to the Water Framework Directive (2000/60/EC) designation of all waterbodies (not just the main Severn) has been made as the loss of salmon from the upper reaches of the many important tributaries of the river will be catastrophic? What consideration has been made to the negative impact on recreational salmon angling on rivers such as the Severn, and more notable the Wye, and the commercial detriment to local businesses on these rivers? It is not apparent that such questions have been addressed properly, as would be expected for an infrastructure scheme of this scale and potential impact. We are very concerned about the risk of long term losses through entrainment of juveniles through the power station and the long term damage to the ecosystem which may not recover.

With regards to the intake itself, how can two large pipes with the combined capacity of the River Thames in full flood, be considered low volume intake? The volume of water surrounding these intakes will be enormous. There is no certainty that any species within the water column will be able

⁵ Para 6.4.4 https://consult.environment-agency.gov.uk/psc/ta5-1ud-nnb-generation-company-hpc-limited-2/supporting_documents/Application%20Variation%20Supporting%20Information%20%20Report%20to%20In form%20the%20Habitats%20Regulations%20Assessment.pdf

to escape. What is considered a *low volume intake* and how is Hinkley Point C justified to be named as one?

The Trust remains concerned about the unknown impacts on different species through the FRR (fish return and recovery) system and the risk to the health of the wider catchment – FRR makes it sound as though all fish shall be returned alive to the estuary but as mentioned above with reference to twaite and allis shad, this is extremely unlikely to be the case. This is due to any fish entrained through this system will likely die due to the physiological design of this species with the swim bladder being closely attached to the brain and any sudden pressure changes causing death). The proposed Fish Return System will do nothing to protect this particular species, notified in the SAC designation, nor its sister species Allis shad *Alosa alosa*

Conclusion

Our understanding is that the consent was only provided by the Environment Agency based on three measures: low volume intake, AFD and a fish return system. It is the determination of the Trust that all three of these measures are inadequate to protect fish on intakes of this scale, notably fish of community interest under the European Union's Habitats Directive within the Severn Estuary SAC. The Direct Cooling of Hinkley Point C should therefore be scrapped and an alternative, less environmentally damaging solution should be found. Considerable mitigation for the unquestionable damage that this system shall cause should be implemented, although at this scale it is questionable whether that is possible.

It is therefore our opinion that the cooling system currently being constructed at Hinkley Point C would be likely to contravene the Conservation of Habitats and Species Regulations 2017 (as amended from time to time) as soon as it were to become operational, due to the risk it presents of adverse effect on the integrity of the SAC. It is also the impression of the Severn Rivers Trust that compensatory habitat measures on their own are likely to be inapplicable due to the nature and scale of the issue and that for *Alosa fallax* in particular all possible mitigation is already being undertaken through the Unlocking the Severn project. Wide ranging solutions that include both habitat creation and enhancement within the intertidal and freshwater catchment of the River Severn together with on-site cooling towers or closed/partially closed cooling systems must be considered.

To answer the specific question set by both EA and NNB – whether a variation should be granted to the DCO or WDA permit – our response is that we believe both permits are now unlawful. We, of course, maintain the right to bring a challenge in law as may become appropriate.

Green energy is not truly green if it damages the natural world. Hinkley Point C, in its current form, shall do enormous harm to the species of one of the most important estuaries in the world.

Yours faithfully



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