Further Reading (all these reports can be found at www.stophinkley.org)

Hinkley Point C AFD Delivery Group Report. This report shows that the installation of the Acoustic Fish Deterrent (AFD) is feasible on a technical level and presents the simplest solution for the installation of the AFD without the need for a disruptive saltmarsh or a second public inquiry. https://afddeliverygroup.com/

SH Briefing: **EDF's Appeal against the Environment Agency's Deemed Refusal to allow a permit variation relating to the installation of an Acoustic Fish Deterrent at Hinkley Point C.** https://www.no2nuclearpower.org.uk/wp/wp-content/uploads/2021/01/AFD_Briefingv2.pdf

Trials and tribulations of fish recovery and return: https://www.witpress.com/Secure/elibrary/papers/9781845648497/9781845648497010FU1.pdf

Briefing Note: Cooling Water – Why all the Fuss? By Michael Cominetti, Environmental Advisor/Consultant-Retired. Worked Hinkley Point A, MoD Boscombe Down, South West Water. http://stophinkley.org/wp/wp-content/uploads/2023/07/Cominetti-CoolingWater.pdf

Stop Hinkley's Letter to the Secretary of State, Department for Environment, Food and Rural Affairs, October 2021. http://stophinkley.org/wp/wp-content/uploads/2023/07/LETTERSectStateOct2022.pdf

- **Please support us in our campaign to call EDF to account. They must not evade their responsibilities in protecting our environment, which is already under stress from past industrial abuse. This exploitation must be stopped before it is too late. stophinkley.org**
- **Write to your politicians, national or local:** https://www.writetothem.com/ A useful website that enables you to contact your MP, local representatives and members of House of Lords.
- **EDF's Application to make Material Changes to the DCO, including removal of the AFD, will have to be heard by and adjudicated on by the Planning Inspectorate (PINS):** As soon as PINS announces dates to start this process, there will be an opportunity for you to have your voice heard on this matter. You will be able to lodge an objection to what EDF wants to do in writing and PINS has to accept it as part of the process. Please watch the Stop Hinkley website for updates on this process. stophinkley.org

www.stophinkley.org

STOP HINKLEY PATRONS

Julie Christie, Caroline Lucas, Jonathon Porritt, Molly Scott Cato, Dale Vince and John Williams

Why an Acoustic Fish Deterrent is necessary at Hinkley Point C

As Hinkley Point C (HPC) nuclear power plant is being built in Somerset by Électricité de France (EDF), hundreds of thousands of fish living in the Severn estuary, including protected Atlantic Salmon and Eels, are under threat from the plants two 3 km cooling water intake tunnels to its two reactors.

The HPC pressurised water reactors will need vast amounts of cooling water (132 cubic metres per second). The intakes indiscriminately suck in huge numbers of living creatures, ranging from marine mammals, crustaceans, fish, eels, eggs and larvae, most of which won't survive the journey through 3km of pipe work at high pressure to the condenser and return journey back to the estuary.

EDF, in its 2013 Development Consent Order (DCO) for HPC, applied for and was granted planning permission subject to a number of environmental conditions. This included the installation of an Acoustic Fish Deterrent (AFD). This device generates sound waves underwater to deter sound-sensitive fish away from the four huge water intakes heads (see picture of only one). However, EDF now wants to remove the AFD from its plans, even though the Severn estuary supports up to 110 fish species, with fish nurseries serving the whole of the Bristol Channel, Celtic Sea and beyond.

In September 2022, after a lengthy Public Enquiry, the Secretary of State for the Environment ruled that EDF must install the AFD system. EDF is now arguing the AFD would be too costly and risky to maintain as the area is tidal and visibility is poor. Conditions in the estuary have not changed since the original application was agreed. EDF is now using the excuse of danger to divers during AFD maintenance as the main reason for not using an AFD. This is misleading as the technology has moved on and the AFD maintenance work can now be done by robotics, that have been tried and tested in the offshore gas and oil industries for many years. https://afddeliverygroup.com/

EDF is also using the excuse of delays and cost overruns, of its own making, to remove the AFD. The Department for Energy Security and Net Zero (DESNZ) wants HPC to be built as quickly as possible. If they allow EDF to remove the AFD from the DCO they will be sacrificing billions of fish over the 60 year lifetime of HPC by removing the requirement for an AFD from the DCO.

Doing away with this piece of environmental protection would threaten the biodiverse ecosystem of the UK's largest estuary and designated Special Area of Conservation. It would also set a precedent for future projects like the Sizewell C nuclear power station in Suffolk.

Even with EDF's own return system, fish with swim bladders will be sucked in, dragged along the tunnels, damaged by the changing water pressure and die.

Others will suffer direct impact to their delicate fins as well as injury as they hit the final mesh at force, before being scooped with a rotating bucket across to an outflow recovery system.

There are two of these 3 km long tunnels and two of the water intake heads will be fitted to each of them, sucking in 67 cubic metres of water and marine life per second.

EDF admit that over 90% of some species will not survive this journey. Most of the eggs and larvae will pass through the mesh filter system and be destroyed by the high temperatures and chemicals in the condenser, thus also killing future generations. We are concerned that EDF now plans to ask for an IROPI (Imperative Reasons of Overriding Public Interest) to determine it should not have to install the AFD as it argues it would further delay the completion of HPC.

EDF has conducted its own Consultation, with a view to making a Material Change Application. The company wants to develop salt marshes and wetlands nearby in mitigation to attract more fish and to open weirs upstream where fish can spawn. However, none of these plans have been researched in detail or agreed with the relevant authorities. There are valid objections to the planned Pawlett Hams scheme, an area which is already mitigation for a landfill site and cannot be double counted as mitigation.

Dr David Lambert, Managing Director of Fish Guidance Systems (FGS), a manufacturer of AFDs, said: "This in no way compensates for the enormous loss to the environment and ecosystem. 'Like for like' replacement is not achievable or scientifically possible. The proposed measures will not replace the lost fish.

Given the January 2024 announcement that Hinkley Point C won't now be up and running until at least 2031, they (EDF) have plenty of time to explore options which would prevent unnecessary fish deaths and to look at developments in technology, which will absolutely refute all of their arguments (against an AFD)".

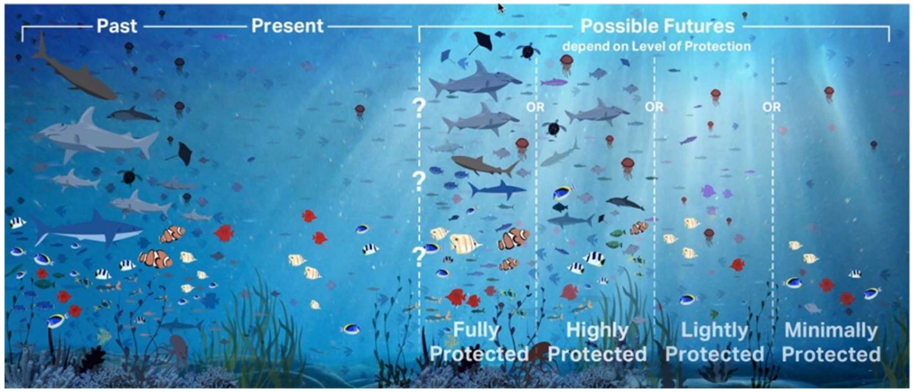
FGS has also refuted claims by EDF that the AFD would create a noise nuisance to local people "louder than a jumbo jet". Dr Lambert said it will not impact any residents along the shore of the Severn Estuary, as the system is under water. "FGS's fish deterrent systems use low frequency signals that reduce sound levels very quickly around an intake. When you are above water you can only hear it from a few metres, or tens of metres away if it is a larger system. As we all know, Hinkley's intakes are located three kilometres offshore, so you will most definitely not hear the systems from anywhere along the banks of the Severn Estuary."

Do we really want to sacrifice the unique life of our Severn Estuary and its nine great rivers Ely, Taff, Rhymney, Ebbw, Usk, Wye, Severn, Avon and Parrett?

- Katherine Attwater of Stop Hinkley says: "EDF are up to their usual tricks of appearing to comply with Environmental Laws to get planning permission. They then renege on their commitments when the project is so far down the line they feel they can twist the arm of Government. This doesn't bode well for proposed plans at Sizewell and Bradwell or for the UK fishing industry".

- Dr Andy Turnpenny, Fisheries Scientist, said: "The Severn Estuary is a Special Area of Conservation, important for its role as a fish nursery and migratory corridor. There is uncertainty over the exact impact Hinkley Point C will have on the fish assemblage that supports the complexity of bird species and commercial fish stocks. The Hinkley Point C cooling system will be 3 to 4 kilometres offshore and the number of fish it will draw in will take away the ability of the stocks to withstand normal environmental pressures and natural setbacks. With climate change, we will see significant changes to fish stocks over the 60-year life span of the station and the assessments made by Centre for Environment, Fisheries and Aquaculture Science (Cefas; the government's marine and freshwater science experts) therefore, carry a high degree of uncertainty. The acoustic fish deterrent is a keystone in the design to minimise harm to fish".

- Natasha Bradshaw, an independent researcher in coastal governance with extensive knowledge of the Severn Estuary, says: "I have lost sleep over the danger to the fish and the risk of devastating the ecosystem of the Severn Estuary. There is little proof that fish will survive the journey through 3km of tunnels or what impact returning them (dead or alive) into the estuary will have on the ecosystem. The decision made about the fish deterrent for the cooling water system for Hinkley Point C will last decades and set a precedent for other new nuclear and industrial projects across the UK".



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