

Briefing

Hinkley Point C and dredging in the Bristol Channel

WHAT WE ARE DOING AND WHY

What we are building at Hinkley Point

EDF Energy is currently building a new nuclear power station at Hinkley Point in Somerset. When completed in 2025, Hinkley Point C will provide enough low carbon electricity to provide reliable, low carbon electricity to homes in Wales and across the UK for over 60 years. In total, it will provide 7% of the UK's electricity demand, or enough power for 6 million homes.

It is a major undertaking, involving a supply chain that includes Welsh companies (including a contract with Express Reinforcements in Neath to supply 230,000 tonnes of steel), with around 150 Welsh residents working on the construction site every day, of a total of 2500 construction workers, and 25,000 employment opportunities throughout the construction period.

Why we need to dredge

As part of the construction of Hinkley Point C, we will be dredging sediment from the seabed off the Hinkley Point C site ahead of the drilling of six vertical shafts for the cooling water system. The cooling water system is a significant piece of infrastructure, which involves tunnelling more than 3km out into the Bristol Channel.

In order to do this, it is necessary to dredge the immediate area where we will be installing the vertical shafts. This process will take in the region of 3-6 months, and we will begin to dredge the area in summer 2018.

EDF Energy is one of many companies - over many decades - dredging and depositing sediment in the Bristol Channel for industrial or construction purposes.

The sediment we and others are dredging in the Bristol Channel is typical of the sediment found anywhere in the Bristol Channel, and as such it is no different to the sediment already at the Cardiff Grounds. It is not classed as radioactive under UK law and poses no threat to human health or the environment.

WHY CARDIFF GROUNDS

Why we are moving the dredged sediment to Cardiff Grounds, why not somewhere else?

While there are other licensed disposal sites in the Channel, the Cardiff Grounds is the only site large enough to handle the amount of the type of sediment we will dredge, and as the sediment was confirmed to pose no environmental or health risks there is no need to relocate it elsewhere.

Cardiff Grounds has been a licensed disposal site since the 1980s, and takes on average 1,500,000m³ of sediment each year. It is important to emphasise that EDF Energy is not the only company licensed to use the

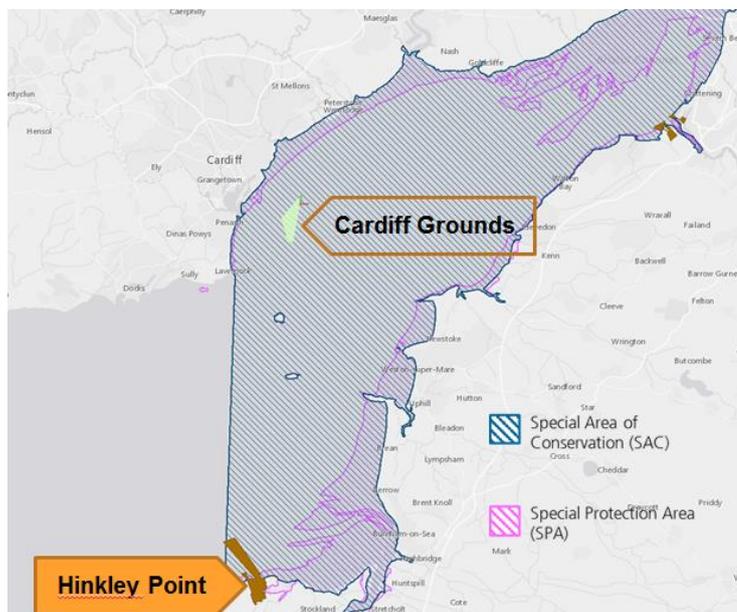
Cardiff Grounds - the site will have received several million cubic meters of dredged sediment from other parts of the Bristol Channel over several decades.

Why not relocate the sediment further out to sea or elsewhere?

The area we are dredging is within a recognised Special Area of Conservation (SAC)

Any sediment removed from this area, must be put back into this area in order to maintain the natural balance of sediment in the SAC.

Within this SAC, the Cardiff Grounds are the largest and only suitable grounds to deposit sediment from EDF Energy and other companies conducting dredging in the Channel.



TESTING THE SEDIMENT

Concerns have been raised that the sediment is radioactive waste/material – is it?

No. The sediment is typical of sediment found elsewhere in the Bristol Channel, and under UK law it is not radioactive.

Radioactivity occurs naturally, including in foods we eat, and can be artificial / produced by human activities. Any sediment in UK coastal waters will contain naturally occurring levels of radiation, and in areas of industrial activity there may be extremely low levels of artificial radiation present.

In the case of the Bristol Channel, the very low levels of radioactivity identified in the sediment are predominantly naturally occurring (over 80%), with a small amount of artificial radioactivity, which will have originated from legacy discharges from hospitals, medical isotope manufacturing facilities (including those formerly based in Cardiff) and nuclear facilities. Whether the radioactivity is naturally occurring or artificial this has no impact on how it interacts with the human environment.

Of the low levels of radioactivity that CEFAS did find in the sediment, what would be the human or environmental health impacts?

Taking the naturally occurring and artificial radioactivity together, the levels are so low they pose no danger to human health or the environment.

In order to assess the human impact of the extremely low levels of radioactivity identified in the sediment, a highly conservative, internationally recognised (International Atomic Energy Agency) assessment methodology was used.

The methodology conservatively assumes a member of the public spends around four hours per day every day on the shore near the Cardiff Grounds and consumes 50 kg of fish and 15 kg of crustacean and molluscs every year, all sourced from near the Cardiff Grounds. Exposure to the radioactivity in the sediment is also considered from inhaling any sediment that may accumulate on the shore.

Even assuming a person does all of the above, the majority (over 90%) of the radiological dose they would receive would be from naturally occurring radiation, the remainder from artificial radiation sources. Where radiation dose is a measure of health effect.

Taking account of the natural and artificial radioactivity together, the dose received would be equivalent to:

- Eating 20 bananas each year (bananas contain potassium-40, a naturally occurring radionuclide)
- 10,000 times less than an airline pilot's annual dose
- 750 times less than the average dose received by a resident of Pembrokeshire (due to Radon)

This is an infinitesimally small level of exposure to radiation, far below the threshold requiring a more detailed assessment or even close to approaching a radiation dose that could impact human health or the environment.

What was the process we went through to test the levels of radioactivity in the sediment?

Year	Activity	Result
2009	CEFAS obtained sediment samples at depths up to 4.8m as part of the HPC Planning Application.	Levels of radioactivity in the sediment are found to be so low they equate to 'not radioactive' in law In addition, no artificial radioactivity was observed below 2 m
2013	Natural Resources Wales commissioned an independent analysis by CEFAS to determine the radioactive characteristics of the sediment to assess the licence application. 17 sediment samples were taken in 2013	Levels of radioactivity in the sediment are found to be so low they equate to 'not radioactive' in law
2017	EDF Energy commissioned CEFAS to undertake a analysis as required, and approved, by NRW to support the Licence. 12 sediment samples were taken in May 2017.	Levels of radioactivity in the sediment are found to be so low they equate to 'not radioactive' in law

Who carried out the tests?

The tests were carried out by CEFAS, an executive agency of the UK Government. CEFAS has some of the most advanced radiation testing equipment in the world and also provides services to Natural Resources Wales and the Welsh Government, as well as the Marine Management Organisation for the English government. Further details about CEFAS' capabilities in radioanalytical testing is available at:

<https://www.cefas.co.uk/media/52931/radioanalytical-services-181116.pdf>

CEFAS' Schedule of Accreditation is available at: https://www.ukas.com/wp-content/uploads/schedule_uploads/00002/1875Testing%20Single.pdf

It has been claimed the tests were not thorough - did CEFAS test the sediment for every possible source of radiation?

Yes. Despite claims to the contrary, there is no question about the integrity of the testing carried out by CEFAS, which carries out work to the highest international standards.

The analysis techniques used detect the presence of alpha, beta and gamma emitting radionuclides, rather than just testing for a few select radionuclides. Simply put, if a radionuclide is present it will be detected by the testing equipment.

It has been claimed that you did not test the sediment at depth – is this correct?

The sediment has been tested at depth. In 2009 CEFAS obtained sediment samples at depths up to 4.8 m to support the HPC Planning Application. No artificial radioactivity was observed below 2 m. This is likely because any sediment at a depth of greater than 2 m depth will have accumulated hundreds if not thousands of years ago, prior to the start of industrial activity in the area. As a consequence repeated testing to greater depth is not required.

As the surface sediment samples contain both the naturally occurring radionuclides and a small portion of artificial radionuclides these therefore provide a conservative estimate of the radioactivity in the sediment for the purpose of assessing its suitability for the disposal at the Cardiff Grounds.

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