



## Hinkley Point C - A brief history - 7<sup>th</sup> March 2022

Hinkley C is being built next to the now closed Hinkley A and B nuclear power stations which had commenced commercial operation in 1965 and 1976 respectively. Both power station leaked over 30 different radionuclides into the Severn estuary. They had permits for some of the discharges but most came from unplanned accidents and leaks. Many of the radionuclides and/or their decay products have long half-lives (where radiation has fallen by 50%) ranging from about 30 years to over 24,000 years. These particles do not go away or become “safe” and once it has happened, they are best left settled in the mud and silt of the estuary.

See: <https://www.save-the-severn.com/rad-hinkley-background.asp>

However, there has already been much dredging and dumping which disturbed all these tiny but deadly particles and resuspended them in the sea water. There they get distributed along all the beaches and often left on the beach close to the high-tide level. The wind can blow these around, as well as other particles being blown ashore in sea-spray. They are very fine – mostly under a one-millionth of a metre (one micron) in diameter. The discharge filters at the Hinkley A&B cooling water outfalls had a 5-micron mesh and allows smaller particles to pass directly into the sea.

There was also cracking and leakage of a fuel pond, which had to be emptied and excavated. The other ponds accumulated sludge and could only be gradually emptied within the annual discharge limits, so radioactive and chemical discharges to the Severn estuary continued till about 2013.

In the mid-1980s, Margaret Thatcher, a supporter of nuclear power, backed plans to build Hinkley Point C (HPC) in Somerset. A year-long public inquiry in 1989 resulted in permission to go ahead. The Chernobyl disaster and the failure to privatise nuclear generation resulted in it being dropped and no progress was made for over 15 years.

EDF claimed that the first European Pressurised Reactor (EPR) at Flamanville was “on time and on budget”. Prime Ministers, Tony Blair and Gordon Brown, supported EDF after being persuaded that the EDF’s ‘miraculous’ new EPR design would solve Britain’s energy problems. EDF wanted to build and operate two reactors at each of the existing nuclear sites at Hinkley Point in Somerset and Sizewell in Suffolk. EDF claimed that the first HPC reactor could be operational by the end of 2017. “New nuclear is becoming a reality,” said Prime Minister Gordon Brown. However he lost at the next election in

In November 2009, the Health and Safety Executive (HSE) said there was much more detailed work to be done before the EPR design could be approved for use. “We have identified a significant number of issues with the safety features”. In June 2010, Public consultation started on the detailed plans to build Hinkley C .

The Environment Agency's general study in 2010 of cooling systems for new nuclear power stations said on-land systems should be used where the waters are sensitive. Though Bridgwater Bay is very sensitive for fisheries and ecology, the EA officers failed to defend the general position, presumably because of political interference in favour of EDF.

In Europe, EPRs are currently under construction in France and the UK: Flamanville 3, currently expected to start up in 2023 with commercial operation in 2024; and two units at Hinkley Point C, currently slated for commercial operation in 2026 (unit 1) and 2027 (unit 2).

In March 2011, Japanese engineers were battling to avoid a nuclear meltdown at the Fukushima nuclear power plant. In response, Germany and Switzerland put the brakes on their nuclear power programmes. Investment bank analysts agreed that the Fukushima disaster could “lead to a setback for the world’s nuclear renaissance”. Gas may then become the “fuel of no choice”.

In July 2011, EDF announced it now had the go ahead for some preparatory work for HPC from West Somerset District Council. Later that year EDF announced that it would not award the main civils contract for HPC until early 2013. EDF will not give a date on when electricity will be generating from Hinkley C until after the firm has made its final investment decision in 2012.

Construction of the Olkiluoto nuclear EPR power station in Finland started in 2005 with a planned electricity generation start date of 2013. It has is faced various subsequent delays and general supply to the electricity grid is now not expected before mid-2022.

In November 2012, Energy firm EDF was granted a licence from the Office for Nuclear Regulation (ONR) for HPC. The timescale for the first concrete pour take is mid-2015, two years later than planned. EDF again deferred making its final investment decision regarding HPC until 2013. In February 2013 energy firm Centrica pulled out of the HPC project. This was partly due to the UK Government not concluding a long-term electricity price agreement. EDF had hoped to reach commercial close with its investors at the end of Feb 2013, but this depended on agreeing a “strike price” - a fixed long term electricity price - with the government.

Choosing seawater-cooling was dubious. The Environment Agency's general study in 2010 of cooling systems for new nuclear power stations said on-land systems should be used where the waters are sensitive. Though Bridgwater Bay is very sensitive for fisheries and ecology, the EA officers failed to defend the general position, presumably because of political interference in favour of EDF.

EDF also decided on dumping the sediments in the Estuary. Re-use on land of nuclide-polluted sediments might have presented difficulties, so it seemed easier to claim nuclide pollution is not significant. The numbers turned out marginal (6-7 microseiverts ( $\mu\text{Sv}$ ) was hardly different from the guideline 10  $\mu\text{Sv}$  exclusion of sea-dumping) but EDF had hired the 'experts' CEFAS-commercial. NRW and Welsh Govt used CEFAS-regulatory as their advisors, who don't in practice disagree with CEFAS-commercial. In 2013 there seems to have been no separation; in 2019 the Welsh Govt Hinkley report recommended against reliance on CEFAS.

In 2013 CEFAS advised that there was no alternative re-use or dumping on land; also persuaded the conservation agencies of a new principle - keep the sediments within the Severn sedimentary system - which they then equated with the Severn "Special Area of Conservation". In fact, Bridgwater Bay lies downstream of the Severn Estuary defined by the line of the Holm Islands to Brean Down and is semi-detached from it (Cardiff University modelling for the Severn Barrage). CEFAS has no expertise on uses on land of dredgings, sediments and bedrock, but that did not stop them telling NRW there are none and NRW repeating this without question. They do have expertise in the international OSPAR / London Convention which is strongly against sea-dumping - it allows dumping of maintenance dredgings but not solid sediments and bedrock from capital works. CEFAS tended to ignore this no-marine-dumping ban and when in 2017-18 the Cardiff licence came up for review, they cited OSPAR 2001 instead of the more explicit IMO/OSPAR 2014 guidance.

June 2014 - Significant new Chinese investment in the Hinkley Point new nuclear plant moved a step closer to reality. The UK and China governments signed an agreement that allows companies from the Far East country to own and operate a nuclear power station here.

By early 2015, EDF was still “months” away from a decision to press ahead with the £16bn construction of HPC. A final investment decision on the HPC nuclear scheme would be possible “in the next few months”. In September 2015, EDF stated Investment decisions we be done “as soon as possible”

October 2015 - David Cameron signed a very expensive contract with France and China that would mean British electricity consumers would pay a set amount for 35 years after Hinkley Point C started generating. He said the agreement by energy firm EDF and China General Nuclear Corporation (CGN) signals the green light for the Somerset mega-scheme, but EDF failed to confirm a positive investment decision.

May 2016 - EDF Energy CEO Vincent de Rivaz returned to the Energy and Climate Change Committee on Tuesday (24 May) to explain why there is still no decision on investment for the project. "...There was an expectation that we would have taken the final decision on Hinkley Point C by now, but EDF cannot proceed with construction until the overall financial plan to secure the company's investment is in place".

August 2016 - Theresa May finally approved EDF to start building in 2016. Several years of groundwork had already been allowed to start before planning and financial arrangements were finalised. This was after a close decision in a controversial debate in France as to whether EDF could afford to go ahead and build Hinkley Point C. Under Boris Johnson, this nuclear power station is way off completion and will not start to power the national electricity grid until 2027. See this informative 2017 Guardian discussion article: <https://www.theguardian.com/news/2017/dec/21/hinkley-point-c-dreadful-deal-behind-worlds-most-expensive-power-plant>

The Cardiff dumping licence of 2014 was assessed by the Welsh Govt MCU who handed it over to the NRW to issue. The MCU agreed with a CEFAS statement that EIA was not necessary. The only record is of the MCU telling Cardiff Council this; no record of the MCU going through the required procedure-checklist exists. NRW just accepted 'no EIA is needed', repeating it through the 2018 controversy (Welsh Govt declared 'gone through all necessary procedures, more than fulfilled all international rules').

Only in GeigerBay's High Court challenge in Sept 2018 was it established that EIA was and is required under the Marine Works EIA Regs. 2007 and 2017. There was pressure from the Senedd Petitions Committee for further deep sediment samples, which NRW fended off, claiming surface mud sampling was enough (contrary to the OSPAR spec.).

EDF applied in 2019 for NRW advice on sampling/testing of sediments to support a new dumping application. This included sufficient deep samples to comply with OSPAR. CwC supplied info to persuade NRW that the CR-39 method should be used to test the mud for alpha-radiation from nuclear microparticles; NRW agreed to put this to CEFAS-commercial. These refused, perhaps CEFAS-advisory refused likewise (NRW caved in without explanation).

Also in 2019 EDF applied to omit the AFD. The EA opposed this and put in evidence at the 2021 planning inquiry over the killing of greater numbers of fish. Logically they should have opposed the 2013 licence for seawater intake. The Secretary of State (George Eustice) decision on the June 2021 Inquiry is still awaited.

EDF applied in Dec. 2020 to MMO and in Jan. 2021 to NRW for licences for further dumping, this time with an EIA, neither application with any details of the sites (Portishead; Cardiff Grounds). EDF did not reply to NRW asking for further information - it was likely that they would have a rough ride in Wales and so had just pursued the English MMO application.

MMO did not take the Severn conservation objectives seriously and ignored the 2018 designation of the Severn SAC as a Marine Protection Area in which no-harm and no-dumping should be principles (as on the Welsh side of the MPA). NRW and England's EA were consulted by MMO but colluded with ignoring the MPA and assessments that the condition of designated fish species had worsened (to "unfavourable").

**This safety problem should also halt further reactor construction at Hinkley C**

Find out more at: <https://www.save-the-severn.com>