

Wylfa in North Wales.

In October 2010, sites at Braystones, Kirksanton and Dungeness (also previously suggested) were ruled out by Chris Huhne, the Secretary of State for Energy and Climate Change in the Conservative-Lib Dem Coalition, reducing the number of sites to eight.

Meanwhile, in 2007 the French largely state-owned company *Electricité de France* (EDF) had announced its intention to construct, up to 4 new European Pressurised Reactors (EPRs) in the UK, designed by another French mainly state owned company, AREVA - 2 each at Hinkley Point and at Sizewell. In 2009 EDF bought out British Energy which owned virtually all then operating nuclear power stations in the UK. It also set up a company, NNB EngCo to build nuclear power stations at Hinkley Point, Sizewell and Heysham - however in 2012 NNB abandoned plans to build at Heysham.

Also in 2009 a new company, Horizon, 50% owned each by E.ON UK and the German company RWE npower announced its intention to install about 6,000 MWe of new nuclear capacities adjacent to the existing Wylfa and Oldbury nuclear power stations. Horizon initially proposed building either Areva 1,650 MWe EPR reactors or Westinghouse 1,100 MWe AP1000 reactors.

Finally, in October 2009, a third company, NuGen, owned 25% by Scottish and Southern Energy and 37½ % each by French company GDF Suez and Spanish company Iberdrola secured an option to purchase land next to Sellafield from the Nuclear Decommissioning Authority to build a new nuclear power station. It named its project Moorside.

At this stage the Fukushima Disaster intervened in March 2011.

After this, many of the companies involved in the projects sold their stakes.

Thus in September 2011 Scottish and Southern Energy pulled out of NuGen, the owner of the Moorside project, leaving GDF Suez and Iberdrola with a 50% stake; then, in December 2013, Iberdrola sold its 50% stake to Toshiba for £85m and, the following month, GDF sold 20% of its 50% stake to Toshiba for £17bm.

In October 2012, E.On and RWE sold their stakes in Horizon to Hitachi for £696 million, announcing that they were no longer interested in building at Wylfa and Oldbury

However, there was some progress at Hinkley C. The site for the new nuclear power station was cleared in early 2012, and in December that year the EPR design was approved for use in the UK by the Environment Agency, having

passed its Generic Design Assessment (GDA) - (which had taken 7 years)



← Hinkley C – artist's impression

In March 2013 the UK Government approved this project and that December, EDF and the UK Government made an agreement under which the Government agreed that EDF could sell the electricity produced by Hinkley C at a strike price of £92.5/MWh, index-linked to inflation, which was currently about double the then cost of electricity in the UK. The European Commission found by 16 votes to 14 in October 2014 that this agreement did not infringing its state aid regulations.

However this decision by the European Commission that the agreement prompted legal challenges from a formidable range of parties including the Austrian and Luxembourg governments, Greenpeace Germany, nine German and Austrian utilities and bodies of scientists. These cases do not seem to have yet been heard.

And the British company Centrica, which had taken a 20% option in the Hinkley C project, cancelled this in January 2013, and EDF was reported as looking to sell a 49% stake in the project.

The apparent saviour turned out to be a Chinese State Company, the China General Nuclear Corporation (CGN) which in October 2015 signed a “strategic investment agreement” for the joint development of three UK nuclear generating stations – Hinkley C, Sizewell C and Bradwell B, with CGN investing £6 billion in the building of Hinkley C. (This was one-third of the £18 billion then estimated for the project. However in July 2017 EDF increased this estimate to £19.6 billion.)

But there were thick strings attached – the money would not be paid till building started, CGN would invest 15% in the building of EPRs at Sizewell B and CGN was to be allowed to build its own design, an HPR1000 reactor, at Bradwell, taking a 66.5% share of the costs in its development stage.

The HPR1000 design was submitted for its GDA in January 2017.

In spite of all this, construction of Hinkley C has not yet started, though some groundwork have been done, such as the construction of a jetty for docking of materials for construction. The crucial pressure vessel for at least one of the reactors had been forged, but in December 2016 it was reported that this had been cut up and subjected to checks to determine the extent of the risks caused

by excess carbon, after “anomalies” that might weaken the vessel were found in other nuclear pressure vessels forged at the same forge as the Hinkley one. These included the pressure vessel already incorporated in the French Flamanville reactor in construction.

Hinkley C was originally planned to open in 2017; it is now planned to open in 2025, but even this seems increasingly unlikely. In this Hinkley C is not alone. No EPR reactors are yet in operation anywhere in the world. Four are in construction and all are well behind schedule. Flamanville began building in 2007, predicted to open in 2012. It is now predicted to open in 2018.

Another began being built in Finland in 2005 with an estimated operation date of 2009, but this has now also been put back to 2018

Two are being built in China. They are both about 3½ years behind schedule, with predicted opening dates in the second half of 2017 and first half of 2018 respectively.

For its part the Moorside project seems dead in the water. Though the Westinghouse AP1000 design at last completed its generic design assessment in March 2017, the same month Westinghouse filed for bankruptcy after suffering immense losses, mainly over the attempt to construct four AP1000 reactors in the US; and Hitachi announced it would build no more reactors outside Japan. The following month, Hitachi’s partner in Moorside, GDF (now named Engie) withdrew from the project leaving Toshiba, itself threatened with bankruptcy, responsible for the whole Moorside project. And like the EPR design, no reactor of AP1000 design has yet been successfully built anywhere in the world; only 8 have started construction, the 4 in China are all more than three years behind schedule, construction of two of those in the US was abandoned in July 2017 and construction of the remaining two in the US was stalled after Westinghouse filed for bankruptcy in March 2017.

As far as the Horizon project is concerned Hitachi plans to initially build 2-3 reactors of its own design “Advanced Boiling Water Reactors” (ABWR) at Wylfa. The design completed its GDA in March this year. However, here also there are serious concerns over financing. Hitachi was recently itself reported as close to bankruptcy and has said it wants other partners to buy into the project before starting building. In July it was reported that a subsidiary of Korea Electric Power Corporation was in talks about investing in the project with the UK and Japanese governments doing likewise, but no outcome from these talks has yet been announced.

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# KICK NUCLEAR & NUCLEAR TRAINS

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## REGULAR FRIDAY SOLIDARITY VIGILS

**Every Friday** (since August 2012): leafletting outside the Japanese Embassy, 101-104 Piccadilly (Green Park tube) from 10am-12.30pm; and then outside Tokyo Electric Power Co. offices, 14-18 Holborn (Chancery Lane tube) from 1-1.30pm. Held in solidarity with the anti-nuclear movement in Japan. Organised by: *Kick Nuclear* and *Japanese Against Nuclear UK* (JAN UK)

## NEXT NTAG STALL & LEAFLETTING

**Saturday November 4<sup>th</sup>**, outside Bromley South station, 2.30-4.30pm. (Note change of times.) Nuclear waste trains from Dungeness go through Bromley South regularly. Jointly with Bromley & Beckenham CND. Help welcome.

## NEXT JOINT KN/NTAG PLANNING MEETINGS

**Tuesday November 7<sup>th</sup>**, 7pm, At CND Office. (Address at top.)

## UK'S NUCLEAR NEWBUILD – A HISTORY

In January 2008, the then Labour Government gave the go-ahead for a new generation of nuclear power stations. Two consortia (EDF-Centrica and RWE-E.ON) had announced outline plans to build a total of 12.5GW of new nuclear capacity in the UK, slightly more than the total capacity of British Energy's then currently operating plants.

In November 2009, the Government identified ten sites for these new generation reactors: Bradwell in Essex; Braystones, Kirksanton & Sellafield in Cumbria; Hartlepool in County Durham; Heysham in Lancashire; Hinkley Point in Somerset; Oldbury in Gloucestershire; Sizewell in Suffolk and...