

# KICK NUCLEAR

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The monthly newsletter of Kick Nuclear and the Nuclear Trains Action Group (NTAG)

Editor: David Polden, Mordechai Vanunu House, 162 Holloway Road N7 8DQ; [davidpolden1@gmail.com](mailto:davidpolden1@gmail.com)

Kick Nuclear: [www.kicknuclear.com](http://www.kicknuclear.com);

NTAG: [www.nonucleartrains.org.uk](http://www.nonucleartrains.org.uk)

We hold **“Remember Fukushima – End Nuclear Power” vigils** in London **on the 2<sup>nd</sup> and last Fridays of each month**, from 11am to 12.30pm outside the Japanese Embassy at 101-104 Piccadilly, followed by from 1 to 1.30pm outside the offices of the Tokyo Electric Power Company at Marlborough Court, 14-18 Holborn. (The vigils due for April 8<sup>th</sup> may be cancelled.)

All anti-nuclear people invited to join us.

## ANOTHER NUCLEAR RENAISSANCE?

On March 21<sup>st</sup>, Boris Johnson told a meeting of representatives of nuclear industry companies EDF Energy, GE Hitachi Nuclear Energy, Rolls Royce, NuScale, Nuclear Power Jacobs and Westinghouse Electric Company that the UK government intends to source 25% of its electricity from nuclear power plants by 2050 to reduce the UK's dependence on Russian fossil fuels.

Is this, one wonders, another example of Boris making grandiose announcements which have little substance behind them. Certainly putting such a long date on achieving such a large percentage means that Boris might well not be around, or at least not in office, to be challenged, if such an “intention” is not realised. In any case it's not clear that even if such an intention is acted on, that it can do anything to reduce UK's dependence on Russian fossil fuels for many years (see below), long after, one hopes, the war on Ukraine has ended

At present the UK gets about 16% of its electricity from nuclear power and this figure is set to reduce rapidly with the UK's remaining 10 obsolescent “Advanced Gas-Cooled Reactors” all due to shut down by 2030 (as 4 others already have been in the last couple of years), leaving only one reactor, at Sizewell B, continuing in operation. Two others are

in construction, at Hinkley Point C in Somerset, and are due to start operating in 2027.

This is the third time such a nuclear renaissance has been promised.

Margaret Thatcher proposed early in her premiership in the 80s to build a nuclear station every year for ten years; but in the event only one was built, a single reactor station at Sizewell B, which went into operation in 1997.

Then, in 2007, the Labour government approved 10 sites in England and Wales for new nuclear power stations. This project was continued by the following Conservative government, but with the number reduced to eight. Today, 15 years later, none have been built at any of these eight sites, though at Hinkley Point one two-reactor one is in construction.

There is one other new nuclear power station currently planned, at Sizewell C. This project is in serious difficulties. The estimated cost of the project for two reactors at the site is currently estimated at £22bn. This has heretofore been underwritten 80% by Electricité de France and 20% by a Chinese state company, China General Nuclear (CGN).

On March 27<sup>th</sup> it was reported that the Government would take a 20% stake in the project (presumably to replace CGN's stake, the UK government having said it wanted CGN off the project, in this pushing at an open door, since CGN had agreed to invest in Sizewell C and Hinkley Point C on the understanding it would be allowed to build its own-design power station at Bradwell B, which it has now been refused.)

More startlingly still, it was reported that EDF would have a 20% stake in the project (i.e. a reduction of  $\frac{3}{4}$  of its previous stake!)

That leaves 60% of the cost of the project (some £13.2bn) unaccounted for. The BBC report says: “Ministers hope the confirmation of two cornerstone investors will encourage infrastructure investors and pension funds to take up the remaining 60%.” However, EDF has been trying to find investors to share the cost of Sizewell for many years without success, apart from CGN, which has now dropped out. And the fact that EDF is reducing its stake so drastically will surely put off other potential investors more than attract them.

Even if Sizewell C does get sufficient investors to go ahead soon, it is likely to take at least 10 years to build, so will come into operation after all the current UK nuclear power stations, bar one, have closed down. Interestingly, in a *Guardian* report on March 22<sup>nd</sup>, it says that “a cross-party of MPs who campaign on nuclear issues has called for annual

[nuclear] capacity to increase to 15GW by 2030 and 30GW by 2050.” The first part of this demand seems impossible of attainment, as only Sizewell B and Hinkley Point C planned to be operating by 2030, with combined capacity of 4.4GW. If, by some miracle, Sizewell C is in operation by then this will add another 3.2GW, making 7.6GW in total.

And there are no current plans for any further nuclear power stations to be built.

## SMRS AND FUSION POWER PLANTS

Perhaps I am doing Boris an injustice (I doubt it!) Perhaps he has in mind that some of the 25% by 2050 is to be made by alternative nuclear sources such as “Small modular nuclear reactors” (SMRs) or nuclear fusion plants.

SMRs are essentially small nuclear reactors. There is nothing particularly new about. For instance they are used to power nuclear submarines.

However, production of a new generation of mini-nuclear reactors is reportedly being planned by a consortium consisting of Rolls-Royce, British Nuclear Fuels Resources and US firm Exelon Generation. The project has gained funding of a little over £450m, half from the government and half from the consortium; this seems a rather small sum when the cost of the SMR reactors planned is estimated at £2bn each.

The plan it is said is to initially produce a number of reactors of 470MW of capacity (so about one-seventh of the capacity of one Sizewell C). It’s difficult to see what advantage building seven such SMRs has over building one large one. It is claimed that they are cheaper and quicker to build. This will have to be seen, in these matters initial estimates are often much too optimistic. In terms of risk of accidents, seven reactors are surely more of a risk than one, though perhaps the accidents will be a bit less deadly. There is no reason to think will be more environmentally friendly over the cycle of mining of uranium ore through storing and guarding the radioactive waste over thousands of years.

Harnessing nuclear fusion is still at the experimental stage with it reported in *The Guardian* on 10<sup>th</sup> February that “Researchers at the Joint European Taurus (Jet), a fusion experiment in Oxfordshire, generated 59 mega-joules of heat, equivalent to 14kg of TNT, more than doubling the previous record of 21.7 mega-joules set in 1997 by the same facility.”

Since the process involves heating gases to 150 million degrees centigrade, the whole process seems highly dangerous.

(If anyone can supply further information about the above processes in terms of safety, economics and effect on the environment, with a view to publication in this newsletter, please do,)

## FINNISH PLANT JOINED TO GRID

That Europe has generally lost interest in nuclear power is illustrated by the fact the Finnish nuclear power station, Olkiluoto 3, when it was at last joined to the grid in March 2022, was the first nuclear power station in Europe to open in 15 years. It is said it will be able to supply 14% of Finland’s electricity demand, opportunely enabling it to reduce its need of energy from Russia. Because of many technical problems encountered, it had taken 15 years to build, as against the three years originally estimated and cost vastly more to do so.

The similar power station being built at Flamanville in France has now been 13 years in construction, as against the four originally estimated and is yet to start operating. It has also cost vastly more to build.

Such experiences must help to explain Europe’s loss of interest generally in nuclear power.

## POEM FOR FUKUSHIMA DAY, 2022

(This poem was read out by the author, Ann Garrett, outside the Japanese Embassy in London on March 11<sup>th</sup>, during a vigil and ceremony marking the 11<sup>th</sup> anniversary of the Fukushima disaster.

Three Mile Island, Windscale, Chernobyl, Fukushima  
These names send a shudder through those that know  
the truth of nuclear leaks, explosions, and tsunamis

How human management mistakes, and the force of nature  
lead to sudden or slow death as contamination  
spreads its fatal flaws over land and sea  
or in the air as it passes round the earth

Now a despotic maniac seizes and occupies Chernobyl  
and then recklessly threatens blowing up ammunitions  
at Ukraine’s Zaporizhzhia nuclear power station

Close down and seal all nuclear plants before it is too late  
as present and future tyrants determine the planet’s fate