

## **UK Project Management Round Up**



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### **INTRODUCTION**

Many readers will associate the United Kingdom with grey and dreary weather and so might be surprised to learn that the weather has been quite intemperate recently. We have basked in temperatures in excess of 40°C plus (104°F), the warmest since records began. We are not certain this is a manifestation of global warming but it certainly feels like it.

Climate change makes me wonder what we can do to prevent any further damage to our planet and in turn that makes me ponder the energy we use. In these troubled times, events in Ukraine have brought home the fragility of Western energy supply and this has impacted on the Project World so I will be looking at issues in

- Nuclear, large and small;
- Alternative energy including tidal and wind;
- Related issues including construction problems from supply chain issues to legislative matters.

While Christmas may be the season to be joy, the English high summer is better known as the “Silly Season” – when captains of industry and Members of Parliament can be expected to be absent on their vacations. Thus there is little news of “value” according to the Fleet Street editors. So we get some strange stories emerging. A couple of these are highlighted towards the end of this report

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## NUCLEAR NEWS

### ➤ Hinkley B

Watchers of UK's "Old Nuclear" shed a tear at the start of August as the last reactor at the Hinkley site was powered down. Operator EDF Energy shut down the plant earlier than planned after cracking was detected in the graphite bricks that surround the fuel rods in the reactor core.

#### Hinkley B Vital Statistics

- **Reactor type:** 2 Advanced Gas-cooled Reactors
- **Total supply to the national grid:** 965 MW
- **Coolant:** Carbon dioxide gas (CO<sub>2</sub>)
- **Start of construction:** 1967
- **Start of generation:** 1976
- **People:** Approximately 535 full time EDF employees, plus over 220 full time contract partners.

EDF Energy has permanently switched off the second reactor at Hinkley Point B near Bridgwater, Somerset, 46 years after it first sent power to the national grid.

The nuclear fuel will soon start being removed from the reactors, which will take several years. After the fuel is removed, both reactors will be handed over to the Nuclear Decommissioning Authority.

Mike Davies, station director of Hinkley Point B, said: *"This is a day of mixed emotions for all of us. We are justifiably proud of everything this station and its workforce have given to Somerset, and indeed the country, over decades of operations."* EDF claim that Hinkley B has contributed to saving 105.5m tonnes of CO<sub>2</sub> emissions while generating low carbon electricity for 81 million homes since it went on stream in 1976.

### ➤ Hinkley C

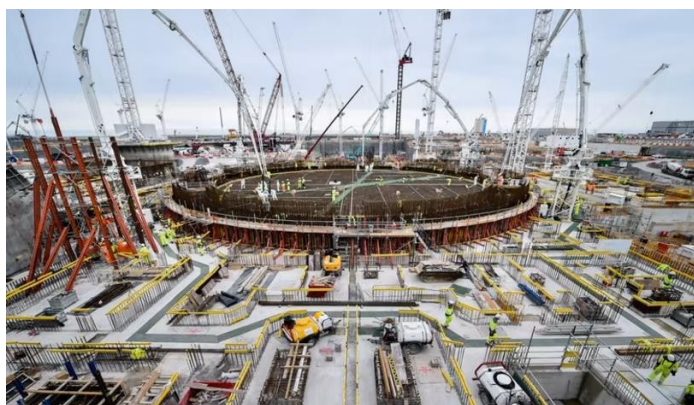


Image: Ben Birchall/PA

Those who watch late night TV were treated to a splendid insight into mega projects when the BBC aired another set of programmes on the Hinkley C construction. The sheer scale of the project is astounding. Most press releases feature a forest of construction cranes surrounding the nuclear island, where the reactor will sit, but this month a less visible element has been installed as two floating cranes arrived to

lowered the first of four 5000 tonne water inlet units for the new power station. Nicknamed Gulliver, it is 354ft (108m) in length and can lift 4,000 tonnes and has been joined by Rambiz. The units are double the height of a double decker bus and require to be orientated with just 40mm tolerance.

Impressive though the engineering undoubtedly is, the project is beset with problems. Capable of powering six million homes, operational completion was originally scheduled for Christmas 2017. Construction eventually started in 2016, and the first power scheduled for 2025. This has slipped to mid-2027 and pandemic induced delays mean a further delay of 15 months is now possible. Delays inevitably cost and it



Single water inlet unit Image: EDF

comes as no surprise to learn that EDF now estimate a total cost of about £25 billion (compared to the original forecast of £18 billion) – at 2015 prices. Press reports also point to flawed design and estimating. **Nigel McCann**, Hinkley delivery director, stated *“It’s clear our original cost estimate was flawed.”* Continuing detailed design studies, themselves costing £500 million according to press reports, show that the plant will need 20-30% more building materials than originally planned, adding another £500 million to the bill. **Stuart Crooks**, managing director of Hinkley C, attributes £1 billion of the costs and at least a year of delay to Covid disruption but admits the final £500 million is where *“we’ve not performed as well as we would have expected”*.

### ➤ **Sizewell C**

All this is not good news for the latest new nuclear plant to gain approval. Admissions of shortcomings in the planning process are unlikely to win friends and influence people while continued slippage erodes the business case, undermining the case for government investment of £1.7 billion with a new funding model that makes consumers financially responsible for overruns. Despite these difficulties, EDF, the French owners and developers, have achieved a measure of planning success.

The independent planning inspectorate had recommended that the plant be rejected unless its developers addressed concerns about water supplies and the effect that construction would have on local habitats. However, the Government overruled the Inspectorate on the grounds that the “very substantial and urgent need” to build the plant outweighed the environmental “harms”.

EDF has not updated its £20 billion estimate in 2020 but industry sources are quoted as saying building material rises will apply as “quantities aren’t going to get any less”. Sizewell should benefit from Hinkley’s detailed design work and on productivity, Nigel Cann, Hinkley Delivery Director says “we’d like to think they’d do better because

they've learnt from us". At Hinkley, EDF is responsible for cost overruns along with its partner CGN, the Chinese state nuclear group that has a one-third stake.

The Government is basing its decisions on Sizewell C output which is expected to generate enough low-carbon electricity to supply six million homes. UK Electrical supply is already holding up construction of homes (see later report below). Having spent £100 million to its development and must decide whether to press ahead with investing up to £1.7 billion of taxpayers' cash for a 20 per cent stake alongside EDF. According to reports in *The Times*, EDF is expected to retain a 20 per cent stake in a deal that would push out CGN, the Chinese state-backed nuclear group. Decisions on this and further funding are expected to result in China's CGN losing its minority holding amid security concerns

It should be noted that Sizewell is home to two other reactors, the new reactor is to be built in close proximity to these and so the overall risks to the environment should be both limited and manageable. Plans for any large-scale construction face massive opposition from environmentalists and in the case of Sizewell, a major nature reserve is within sight of the original plants. We can expect another massive payout for lawyers when the inevitable legal challenges start.

### ➤ **Nuclear Finances**

Mega project finance is a tricky topic and recent developments in the financing of UK reactors is attracting attention as EDF seek further protection from delay. The extensive cost overruns, currently running at about £8 billion, are financed by the developers, currently EDF and its Chinese partner, CGN.

According to press reports, EDF is seeking to amend the controversial subsidy contract for its £26 billion Hinkley Point C nuclear plant to avoid penalties should the plant not come on stream until 2030. EDF is claiming force majeure citing staffing problems caused by COVID.

The current contract locks the Great British Public (GBP) into paying a fixed, inflation-linked price for the electricity Hinkley will generate for 35 years. The deal gives four years' leeway, until 2029, before delays start eating into the duration of the contract, and eight years before the contract can be cancelled. As you may imagine, GBP is not happy with further extensions, particularly as prices rocket.

Against this background, the news that the French Government is nationalising EDF is something of a shock to the GBP, or at least those who follow project financing. EDF has been struggling financially for some time. Its nuclear build project in Finland has struggled financially (See Dr Jouko Vaskimo's reports in earlier editions of this journal) and equipment problems in several reactor vessels in its French plants have caused serious problems.

Laying out her government's legislative programme before the French national assembly, Élisabeth Borne, the in-coming French Prime Minister announced that the State would take a 100 % stake in the group, which is currently building two new reactors at Hinkley Point in Somerset and is scheduled to build more at Sizewell in Suffolk. It's current holding is 83.88%.

The implications for the British reactors are far from clear but press speculation suggests that full nationalisation will help EDF to find financing for the six new reactors that President Macron has pledged to build at an estimated cost of €46 billion. France gets 70.6 % of its electricity from its 56 reactors.

### ➤ **Small Modular Reactors**

Regular readers may recall my reports about proposals from Rolls Royce to construct a series of Small Modular Reactors in response to Government calls to build up to 15 plants over the next 25 years, part of its ambition to secure energy supplies and hit its net-zero target by 2050. Rolls-Royce set up its SMR business in 2021 following £200 million of investment from private firms and a £210 million government grant.

Rolls-Royce SMR has now announced a short list of six sites for a factory that will build its proposed small nuclear reactors. The sites, at Richmond, North Yorkshire, Sunderland, Deeside in Wales, Ferrybridge in West Yorkshire, Stallingborough in Lincolnshire, and Carlisle in Cumbria.

Initial plans aimed to produce working reactors by the 2030s, but the company says it can do so earlier if the government commits to the technology. The factory is expected to be about 23,000 square metres, equivalent to three football pitches, and much smaller than conventional nuclear plants.

## **ALTERNATIVE ENERGY**

### ➤ **Shell Hydrogen Plant**

First up relates to Shell, better known for oil and gas, who have taken a major investment decision on the 200 megawatt electrolyser in the port of Rotterdam. They expect the plant to start operating in 2025.



Shell said the capacity of the plant will be equivalent to roughly two thirds of all electrolyser capacity in operation globally today. Electricity to power the plant will

come from the Hollandse Kust (Noord) offshore wind farm that Shell is jointly building about ten nautical miles off the coast of the Netherlands. The output is expected to help decarbonise operations at Shell’s Energy and Chemicals park in Rotterdam, replacing some of the “grey” hydrogen used in the production of fuels at the Pernis refinery. Grey hydrogen is made from natural gas through a process that generates carbon emissions but green hydrogen is generated by electrolysis.

While there are still a number of issues to overcome in order to scale up production, **Anna Mascolo**, executive vice-president for emerging energy solutions at Shell, said: “Renewable hydrogen will play a pivotal role in the energy system of the future and this project is an important step in helping hydrogen fulfil that potential.”

➤ **Further UK Expansion for Renewables**

The UK Government announced agreements to support the construction of 11 gigawatts of new renewable power generation, reducing carbon footprint and costs to consumers. These new plans could enable the generation of enough energy to supply 12 million homes.

According to *The Times*, the biggest contract awards were for five new offshore wind farms that are due online from 2026 and have contracted to sell power to consumers at £37.35 per megawatt-hour — a fraction of the cost of generating electricity in gas-fired power stations at present. The previous record low for offshore wind of £39.65 set in 2019. Orsted, Vattenfall and ScottishPower were among the successful developers.



Offshore tidal turbine. Image: Orbital Marine Power

Ten new Scottish onshore wind farms were awarded contracts at a price of £42.47 per megawatt-hour, and to dozens of solar farms at a price of £45.99 per megawatt-hour. Contracts include floating offshore wind farms and tidal stream.

All this is good news but comes at a cost. These new off-shore sources will need hundreds of miles of onshore cabling, at an estimated cost of £54 billion, according to the National Grid. Up to now, offshore wind farm developers have built individual connections to shore, an approach that has attracted opposition from local communities and created bottlenecks in the electricity grid, resulting in wind farms being paid to switch off.

According to press releases, the National Grid's proposed "holistic network design" is the first time there has been a co-ordinated plan for connecting offshore wind farms and ensuring that the power gets from where it is generated to where it is needed. The plans cover the connection of 23 gigawatts of new wind farms, requiring £32 billion of new offshore infrastructure. Work continues on plans to connect up further new projects. The plans also cover onshore grid upgrades worth £22 billion to accommodate the full 50 gigawatts target capacity.

### ➤ **Construction Woes**

The construction industry is beset with problems, some the result of crowding on our very small island, and others due to regulations. Actually, most of the regulations spring from overcrowding but all result in delaying construction work, particularly in the house building sector.

Linking to the renewable energy stories above, we are confronted with supply difficulties as in some cities, such as London, where the power grid simply can't provide the capacity so large developments in some of the boroughs have to be put on hold.

### ➤ **Construction Megaproject**

As noted earlier, we are in what is colloquially known as the "Silly Season" when Members of Parliament (MPs) make provocative comments in their various committees, or even better are spoken about by the GBP.

The GBP were consulted, or at least more than 20,000 were asked about their views of the restoration of the Palace of Westminster (AKA Houses of Parliament). Back of the envelope estimates reckon this programme is likely to cost upward of £22 billion and take 76 years, give or take (mostly take, knowing politicians). Some whizzo ideas emerged, including solar panels and wind turbines on the roof to harness all the hot air.

MPs can't decide on whether to do the work while the houses sit or to move out and let the craftsmen get on with the work, hence, they asked GDP what they thought. And GBP thought they "were very comfortable with the principle of parliament vacating the palace", particularly if it saved time and money. Would you want to stay in your house while it is virtually rebuilt from the ground up?

## CLOSING REMARKS



Sea Eagle. Image Mike Crutch/Forestry England/PA

Times are tough all round, especially if you are a white tailed Eagle. Last year, a bid to introduce 60 of these magnificent creatures, likened to “flying barn doors”, to Norfolk failed after objections from landowners. With a wingspan of up to 2.5m, the majestic white-tailed eagle were reintroduced to Britain from Norway and is the country’s largest bird of prey. Unsurprisingly, their main diet is fish but they also have a taste, according to hill

farmers and opponents, for small dogs, calves and lambs. Indeed, two Scottish Nationalist Party (SNP) Members of Parliament claim livestock losses on their crofts are due to White Tailed Eagles and are calling for a cull.

Opinion is divided on the level of protection offered to these birds. Land owners and farmers worry about losses on marginal farms, some supporting SNP MP Angus MacNeil who stated that *“A livestock law introduced last November says the owners of dogs that attack livestock can be fined £40,000 or sent to prison, but if you’re a conservationist protecting sea eagles who do the same, you’ll get a big desk in Edinburgh and a promotion.”*

What, you might ask, is this to do with project management? Well, it is a classic case faced by many Project Managers – dealing with diametrically opposing views of stakeholders. The difference here is the lack of either a formal project sponsor and an effective Project Manager. An emotionally charged situation and not an easy one to manage.

In UK we are finding more and more reintroduction projects. Sea Eagles have been released in highland Scotland, the Outer Isles and further south on the Isle of Wight. Elsewhere, beaver are about to become a protected species and wild boar are breeding prolifically. So we are likely to find more conflict over such programmes.



## About the Author



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**Miles Shepherd** is an executive editorial advisor and international correspondent for PM World Journal in the United Kingdom. He is also managing director for MS Projects Ltd, a consulting company supporting various UK and overseas Government agencies, nuclear industry organisations and other businesses. Miles has over 30 years' experience on a variety of projects in UK, Eastern Europe and Russia. His PM experience includes defence, major IT projects, decommissioning of nuclear reactors, nuclear security, rail and business projects for the UK Government and EU. His consulting work has taken him to Japan, Taiwan, USA and Russia. Past Chair and Fellow of the Association for Project Management (APM), Miles is also past president and chair and a Fellow of the International Project Management Association (IPMA). He was, for seven years, a Director for PMI's Global Accreditation Centre and is immediate past Chair of the ISO committee developing new international standards for Project Management and for Program/Portfolio Management. He is currently Chairman of the British Standards Institute project management committee. He was involved in setting up APM's team developing guidelines for project management oversight and governance. Miles is based in Salisbury, England and can be contacted at [miles.shepherd@msp-ltd.co.uk](mailto:miles.shepherd@msp-ltd.co.uk).