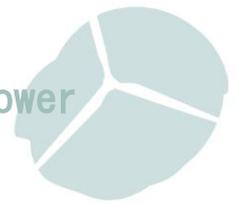


No.114 January/February 2019

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1. Geological Disposal – the search for a site begins again

In December, the Government kicked off a new search for a community to host a geological disposal facility for the UK's most hazardous nuclear waste by publishing two documents:

1. Implementing geological disposal – working with communities: updated framework for the long term management of higher activity radioactive waste.

This sets out the UK Government's framework for managing higher activity radioactive waste through geological disposal, including how the delivery body, Radioactive Waste Management Ltd (RWM), will work in partnership with communities to identify a suitable location to host a geological disposal facility. RWM can draw on more than 30 years of experience and expertise in geological disposal. It collaborates with scientists around the world sharing knowledge, expertise and the latest scientific developments. This document replaces the 2014 White Paper, Implementing Geological Disposal, in England.

BEIS 19th December 2018 <https://www.gov.uk/government/publications/implementing-geological-disposal-working-with-communities-long-term-management-of-higher-activity-radioactive-waste>

2. Summary of Responses to the consultation working with communities: implementing geological disposal.

BEIS December 2018

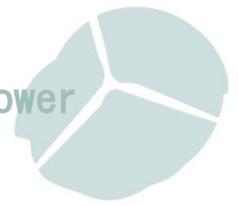
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766661/Summary_of_responses_to_the_consultation_working_with_communities_-_Implementing_geological_disposal-rev.pdf

Copeland is once again thought to be among the possible contenders.

The process to find a location for the GDF will be led by RWM Ltd, a subsidiary of the Nuclear Decommissioning Authority (NDA), who will work with local authorities and other community representatives to find a suitable location. The Government has stressed that that the development will only be in a "willing community" and that local communities across the UK will have a "critically important role".

NuLeAF, the Local Government Association's (LGA) Special Interest Group on nuclear decommissioning and waste management, has welcomed the launch of the process. NuLeAF's chair, Councillor Brendan Sweeney, said:

"We welcome the launch of the GDF siting process as we need a long-term solution to the management of our legacy radioactive wastes. As the previous siting process showed, finding a suitable and willing host for a GDF will not be easy. It will require close and effective engagement with councils and communities, underpinned by a joined-up package of jobs, investment and funding for the community and local authority. NuLeAF will continue to support and advise any



local authority that wishes to enter the process and to work with RWM and Government to maximise the chances of success.”

A Copeland Council spokesperson said: “The council supports the Government’s approach to the safe disposal of higher radioactive wastes through the provision of a Geological Disposal Facility (GDF) and, as host community for the vast majority of the wastes that would be disposed of in the GDF, we will continue to press the Government to progress the process, recognising the risk to the environment and local communities that the current interim storage of this waste and the continued delay in bringing forward a site for a GDF, presents. At this stage, the council has no preference or position with regard to the location of the GDF locally or nationally but recognise that the Copeland community is affected regardless of the final choice of site for a GDF. The council takes the view that the current planning assumption date for the provision of the GDF of 2040 is unrealistic and will seek from Government a more realistic timescale and information on what the plans are for long-term storage of these waste materials.” (1)

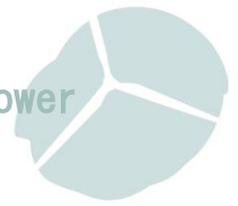
RWM will now begin the search for a willing host community and a suitable site to construct a Geological Disposal Facility (GDF). (2)

In contrast the Nuclear Free Local Authorities has outlined its concern over whether a deep underground waste repository is the only acceptable option for the management of high and intermediate level radioactive waste and plans to lock in local authorities, or other suitable communities, into a process that will be easy to join but very difficult to leave. Not allowing County Councils a final say in hosting such a repository is of real concern in what is supposed to be a process to garner widespread local support. (3)

Cumbria Trust

Cumbria Trust (CT) is a group which is not opposed to deep geological disposal, but believes the geology in Cumbria is not suitable. It wants to see a national (UK) geological survey to be conducted by the UK government in the national interest so as to establish the areas which are most geologically suitable and safe for a deep repository to be constructed/located. In other words to put geology and safety first instead of so called “voluntarism”. Some of the issues identified by Cumbria Trust in the “*Summary of Responses to the Consultation Working With Communities: Implementing Geological Disposal*” include:

- 1) The Government’s/ BEIS’s tendency to conduct consultations with no indication that it takes on board comments/opinions that disagree with its preconceived position.
- 2) The Government’s/BEIS’s not so subtle plan to delay any meaningful vote to allow it to carry out all the surveying work it wishes, however damaging, without interference.
- 3) Call for Right of Withdrawal / Test of Public Support cannot be made by Cumbria CC as long as Copeland BC remains on board.
- 4) Once a positive test of Public Support (and that itself is a dodgy subject) has been carried out there is no further Right of Withdrawal.
- 5) The test of Public Support will be restricted to what BEIS considers to be the Potential Host Community. This could be a very small select group of people and no regard will be given to



neighbours or people on transport routes (other than from GDF to the nearest main road or port).

6) The makeup of the Community Partnership will be interesting. Firstly which organisations/individuals will be on it? Secondly it is noted that whilst a representative for the National Parks can be on it they will have less influence than those from the principal relevant local authorities. Thirdly the timescales involved will mean changes within the locality and also the personnel involved. Fourthly The envisaged role of RWM Ltd is worrying. Besides being the contractor it is the main source of advice or the conduit for third party advice from a few selected sources.

7) Population living in a deprived area dominated by the nuclear industry. The potential of bribes will be more attractive in such an area.

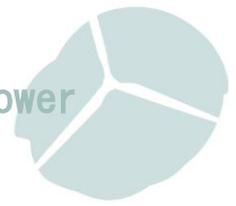
CT says it now seems clear that Michael Fallon MP, when he was the Minister with responsibility for Energy in 2013, was right when he said that steps were being taken to prevent Cumbria CC blocking any new attempt to put a GDF in W Cumbria. All relevant principal local authorities on the Community Partnership must agree before the Right of Withdrawal can be invoked or the Test of Public Support can take place. For example, in an area with two tiers of local government and where both relevant principal local authorities are on the Community Partnership then they must both agree to invoke the Right of Withdrawal and to carry out the Test of Public Support. (4)

The Times reports that the government has removed the right of county councils to veto plans for a geological disposal facility. The £19 billion “geological disposal facility” will have an underground area of up to 20 square kilometres, with radioactive waste stored in vaults at depths of between 200m and 1km. Copeland borough council in Cumbria — the home of Sellafield, where most of Britain’s nuclear waste is stored — had wanted to be considered for the dump because it would create thousands of highly paid jobs and require local investment. But in 2013 Cumbria county council vetoed the idea. But the Government now plans to prevent any one council in areas with two tiers of local government from pulling out of discussions on hosting the dump. Both councils can choose to withdraw but “no single principal local authority will be able to unilaterally invoke the right”. Cumbria county council may also be forced to join a “community partnership” set up to consider hosting the dump. The plan says councils must be part of one to have a say.

The government has offered communities up to £1 million a year for about five years to take part in discussions about hosting the dump, rising to £2.5 million a year for up to 15 years while test boreholes are drilled. Construction is not expected to start until after 2040. There will be a “test of public support”, which could be a referendum, before a final decision is made. However, only a small proportion of the local population may get a vote as “only residents in the area that will be directly impacted by the development should have a final say”. (5)

Geological Screening

Cumbria Trust welcomed the 2014 decision to conduct a national geological screening exercise – something which they had been pressing for. At the time it was one of the few positive signs in the 2014 White Paper that the former Department of Energy and Climate Change (DECC) had



learned lessons from the failure of the earlier Managing Radioactive Waste Safely(MRWS) process and was beginning to listen to opinions other than its own.

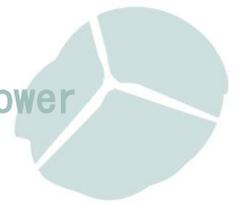
The West Cumbria MRWS Partnership had conducted a geological screening exercise, limited to West Cumbria. A draft screening report was finalised in July 2010 by the British Geological Survey (BGS). However, CT says, it reached a conclusion which was a long way from DECC's desired outcome, in that it effectively ruled out those parts of the borough of Allerdale which were outside of the National Park. The logical consequence of this, assuming that Allerdale wouldn't support a GDF within the Lake District, would be for Allerdale to withdraw from the process, leaving only Copeland.

Rather than accept and publish this report as planned, according to CT, a decision was taken behind closed doors to ask the BGS to amend the screening report to produce a version which suited DECC's plan. Three months later, in October 2010, a new version of the screening report was published, and this time an area of northern Allerdale close to Silloth, large enough for a GDF, was no longer excluded. The draft report was suppressed and all requests to see it were refused. Fortunately, someone within the BGS decided that they could not go along with this behaviour, and leaked the draft report, which is how the manipulation was discovered. (6)

This is why CT welcomed the 2014 decision to produce a national geological screening report. However, unlike in 2010, the BGS was not allowed to produce its report on its own. BGS was asked to provide the mapping.

CT says one of the clearest lessons from the Nirex process was that complex geology makes it difficult or sometimes impossible to model groundwater flow, even over modest distances. After spending hundreds of millions of pounds, Nirex's Director of Science, John Holmes, concluded that they needed between ten and a hundred times more data to have any chance of producing an adequate model of the flow between two boreholes, just 200m apart. This was one of the factors which led Chris McDonald, the Lead Inspector of the Nirex Inquiry, to advise that the search should move away from Cumbria to an area of simpler geology. And yet in producing the screening report, these expensive lessons from past failures have been ignored. CT says while major faults are mapped, and acknowledged, the significance of simple geology in site characterisation is not well communicated.

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1. In Cumbria 19th Dec 2018 <https://www.in-cumbria.com/news/17309381.government-kicks-off-new-search-for-community-to-host-a-geological-disposal-facility-for-the-uks-most-hazardous-nuclear-waste/>
 2. NDA 19th Dec 2018 <https://www.gov.uk/government/news/government-launches-new-policy-to-deal-with-radioactive-waste>
 3. NFLA 11th April 2018 <http://www.nuclearpolicy.info/news/nfla-model-response-uk-welsh-government-policy-deep-underground-radioactive-waste-repository/>
 4. Cumbria Trust 8th Jan 2019 <https://cumbriatrust.wordpress.com/2019/01/08/a-letter-from-rod-donington-smith-ct-to-adam-vaughan-the-guardian-energy-correspondent/>
 5. Times 5th Jan 2019 <https://www.thetimes.co.uk/article/radioactive-waste-could-be-buried-under-lake-district-rqxp9p9jw>
 6. Cumbria Trust 11th Jan 2019 <https://cumbriatrust.wordpress.com/2019/01/11/cumbria-trust-challenges-the-national-geological-screening-exercise/>



2. Wylfa: Hitachi Press Pause

Hitachi plans to put its Wylfa nuclear power project on hold, according to the Nikkei Asian Review, because negotiations with the British government over funding have hit an impasse. The Japanese industrial conglomerate's board is expected to officially decide in the middle of January to suspend all work on the plant, including design and preparations for construction. Hitachi will freeze the roughly 300 billion yen (£2.14 billion) in assets held by its British nuclear business and write down their value, likely booking a loss of 200 billion yen to 300 billion yen for the fiscal year ending in March.

The company is leaving the door open to a return saying the project is "*not being abandoned*." Negotiations with London are apparently set to continue, but reworking the project to the extent Hitachi requires will be no easy task. As things stand now, it appears likely that the company will ultimately be forced to bow out. (1)

Dr Doug Parr, Chief Scientist for Greenpeace UK, said -

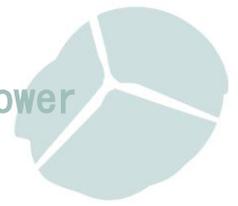
"The government's energy policy is in tatters, but this is the opposite of a disaster. We could have locked ourselves into reliance on an obsolete, unaffordable technology, but we've been given the chance to think again and make a better decision. Our urgent, immediate dilemma - how to maintain security of supply whilst cutting carbon - can be solved by making offshore wind, at half the cost of nuclear, the backbone of the new power system. The failure of the old technology is the opportunity the new technologies need, and Britain's world-leading offshore wind industry's time has come."

Shares of Hitachi rose by as much as 6 - 9% on the Tokyo stock exchange after the report. (2)

Hitachi had been hoping for agreement with the UK and Japanese governments for a state subsidy for the proposed Advanced Boiling Water Reactor (ABWR), but much depends on whether this scheme will be enough to attract additional investment. Nikkei says Hitachi has had trouble finding corporate investors in Japan, with major utilities such as Tokyo Electric Power Co. Holdings and Chubu Electric Power proving reluctant to participate. The conglomerate asked London late last year for additional financing, but negotiations have made no headway. Hitachi had hoped that the combination of a guaranteed power price, loan guarantees and equity on offer from the UK government would attract missing risk capital from either the government of Japan or third-party investors, but so far that hasn't happened.

Hitachi Chairman Hiroaki Nakanishi warned that while Hitachi hoped to commit to the project by the end of its financial year on Mar. 31, it can only do so with firm financial undertakings from other prospective stakeholders. These could include government-controlled financial institutions such as the Japan Bank for International Cooperation and Nippon Export and Investment Insurance, known as Nexi, or any number of utilities and banks that have been leaned on to provide equity or debt for the project. If they can't be enticed to commit, the entire deal could fall apart.

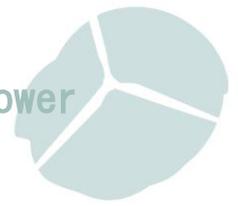
The stakes couldn't be higher for Japan's nuclear industry. With the likely collapse of the Mitsubishi Heavy Industries project to supply four reactors to Turkey, Wylfa is Japan's last



remaining hope for reactor exports. And following the recent collapse of a separate Toshiba-lead new-build project at Moorside, Wylfa is the only UK new-build project under development with no involvement from China General Nuclear (CGN), a firm that faces considerable political opposition both domestically and in Washington.

Japan is expected to effectively withdraw its plans to build a nuclear power plant in Turkey by asking Ankara to inject a significantly larger amount of funds amid ballooning safety costs — a demand Turkey is likely to reject. If both plans fail – Turkey and Wylfa -the growth drive strategy of the administration of Prime Minister Shinzo Abe will collapse. Hitachi Chairman Hiroaki Nakanishi told reporters in December that he informed the British government that the plan was “at a limit” due to a surge in project costs. Both the Turkish and British projects have been pitched directly by Prime Minister Abe, but those once promising plans now appear to be falling apart. (3)

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1. Nikkei Asian Review 11th Jan 2019 <https://asia.nikkei.com/Business/Business-Deals/Hitachi-to-suspend-all-work-on-UK-nuclear-plant>
 2. Reuters 11th Jan 2019 <https://uk.reuters.com/article/uk-hitachi-nuclear/hitachi-to-freeze-uk-nuclear-power-project-post-2-billion-special-loss-nikkei-idUKKCN1P505Y?rpc=401&>
 3. Mainichi 3rd Jan 2019 <http://mainichi.jp/english/articles/20190104/p2a/00m/0bu/011000c>



3. Calls for Independent Review of Energy Policy

Nick Butler writing in the FT says Hitachi's withdrawal would mark the collapse of the energy policy adopted in 2013 by the UK's coalition government. Facing what were believed to be ever-rising energy prices and the need to reduce carbon emissions, the policy plumped for new nuclear, promising that 35 gigawatts of new capacity would be on stream by the mid-2030s - more than replacing the first generation of nuclear plants, which would by then have reached the end of their useful lives. Because the price of gas seemed doomed to keep rising, new nuclear would come to look highly competitive over time as well as reducing dependence on imports.

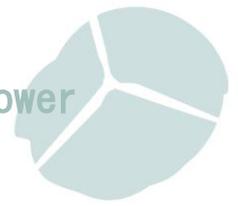
Since then much has changed, and the assumptions which underpinned the old policy now look laughably wrong. The costs of all forms of energy (apart from nuclear) have fallen dramatically and there is no shortage of supply. Electricity demand is down thanks to efficiency gains and new technology. The contract for the first new nuclear station being built at Hinkley Point in Somerset, which enjoys a guaranteed index-linked price for 35 years from the moment the plant is commissioned, looks exorbitant. The demise of Wylfa means we need a comprehensive review of energy policy, says Butler. Since the UK government is too busy preparing for Brexit to focus seriously on any other issue, the review should be conducted independently. Advances in energy technology offer more possibilities each year. But, like Wylfa, those options will never be taken up unless the old outdated policy is scrapped and a more realistic approach put in place. (1)

Quite what an 'independent' review of energy policy peopled by the usual suspects would achieve is difficult to imagine. For it to be 'independent' it needs to have a membership that is a broad based representation of the expert voices on energy policy and anyone who has anything useful to say on energy policy is biased in one way or another. A proper review could take 3 or 4 years and we just don't have the luxury of that amount of time. Better just scrap the nuclear policy remove the ban on new onshore wind, reinstate subsidies for solar panels and rebuild energy efficiency budgets to get us moving in the right direction.

Keep going and fleece electricity consumers

Unfortunately the Government seems determined to fleece electricity consumers to pay the nuclear industry's exorbitant costs. *The Times* says the Government will be forced to lure investors with a financing method that would pile costs on to consumers, even before a plant has been built. Ministers are expected to accelerate plans to introduce regulated asset base (RAB) financing, which is popular in the water and infrastructure sectors, for new nuclear reactors. (See nuClear News No.113 for more on RAB)

EDF is keen to use RAB financing for Sizewell C in Suffolk. The funding method, which allows investors to earn a set return, has been used for a huge new sewer beneath London and Terminal 5 at Heathrow. However, the pre-funding formula passes some of the risk of cost overruns on to consumers, and their bills rise even before a project has been completed. (2)



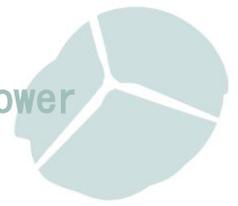
Under the RAB, a project's builder begins charging households for future electricity as soon as construction starts, with a regulator — in this case, most likely Ofgem — controlling the amount. Supporters say it encourages investment because of the immediate return. Many pension funds are believed to be interested in backing Sizewell on that basis. *"The RAB holds the promise that the financing elements of building new nuclear can be dealt with,"* says Tom Greatrex of the Nuclear Industry Association. *"I don't think anyone is expecting any future development using the same model as Hinkley."* The RAB arrangement is controversial, not least as bill-payers start paying for the station long before its energy can boil a kettle. Although widely used in infrastructure, the model proposed for the nuclear industry would require new laws. Ministers are expected to announce soon whether they think the RAB model is viable, with a consultation or white paper expected soon. (3)

Dave Toke, reader in Energy Policy at Aberdeen University says there have been a lot of highly misleading statements made about so-called 'Regulated Asset Base' (RAB) financing of nuclear power projects. These hide the fact that this is a cover for the Government risking very large sums of money to be lent to nuclear power developers. Under the schemes used by the water industry developers are allowed to charge consumers in advance for the capital building projects. But the Government does not lend lots of money to these privatised companies. They raise this on private markets. But in the case of nuclear power plants the bulk of the money needed to build them will be borrowed from the Government. So if the nuclear plant has very big delays and cost overruns (as has happened to ALL nuclear power plant built in the West this century), the Government loses shedloads of money. The Treasury is likely to insist that this gets paid for by adding the (large) sums to electricity consumer bills. RAB has been used to try to finance nuclear power plant in the USA, in the states of Georgia and South Carolina recently. The result was disaster and the developing company, Westinghouse, went bust. But this was 'normal' RAB where the developer takes the risk of cost overruns. But in the proposed UK nuclear version it will be the electricity consumer who goes bust when the almost inevitable cost-overruns set in! The nuclear RAB is really a cover for a nuclear bailout. So let's call it a 'nuke bailout RAB'. (4)

China takes the reins

If the Wylfa project joins Moorside in mothballs the Government's nuclear ambitions would be dependent on France's EDF and the Chinese company CGN. Together they are building the £20bn Hinkley Point power station in Somerset, and CGN has ambitions to build its own reactors on the Essex coast at Bradwell.

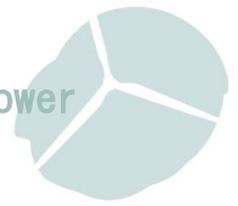
The Times says state-controlled CGN could swoop on Anglesey if Hitachi puts the project up for sale. Kepco of South Korea would also be interested. The project's collapse follows years of negotiations between Tokyo and London. Last summer Britain agreed to split the equity equally with the Japanese government and Hitachi. Ministers were keen to avoid a repeat of the deal struck with EDF, which guarantees at least £92.50 per megawatt hour (index linked) for Hinkley Point's electricity for 35 years. The Horizon deal would have guaranteed about £75 per megawatt hour, falling to the £50s for future reactors on the site. However, the Japanese government balked at the risk, and tried to pass the equity on to Japanese utility companies. That triggered nervousness at Hitachi, a conglomerate with interests from train manufacturing to power grids. Nuclear power makes up just 4% of its business. Shares in Hitachi surged almost



9% after speculation about Horizon being halted, despite the company having spent more than £2bn on the plans. (5)

The Times has also reported that American officials are concerned about attempts by CGN to buy Moorside. The Americans are worried about the site's proximity — 20 miles — to Barrow-in-Furness, where Britain's nuclear submarines are built by BAE Systems. CGN is keen to use Britain as a showcase for its nuclear reactor technology in the hope that it can export it around the world. Its UK head, Rob Davies, signalled continued interest in Moorside last week, saying: "[It is] a very smart site, it's a nice site." He added: "We want to build a fleet in the UK." Rolls-Royce is among rivals to China's CGN eyeing the site to a small-modular reactor. (6)

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1. FT 13th Jan 2019 <https://www.ft.com/content/7b33e9fa-1648-11e9-9e64-d150b3105d21>
 2. Times 13th Jan 2019 <https://www.thetimes.co.uk/article/fce4e714-169e-11e9-9e09-701e9f424b2e>
 3. Times 16th Dec 2018 <https://www.thetimes.co.uk/edition/business/britains-nuclear-option-runs-out-of-power-bk26l0kkw>
 4. Dave Toke's Blog 14th Dec 2019 <https://realfeed-intariffs.blogspot.com/2019/01/government-spreads-big-lie-about-rab.html>
 5. Times 13th Jan 2019 <https://www.thetimes.co.uk/article/fce4e714-169e-11e9-9e09-701e9f424b2e>
 6. Times 16th Dec 2018 <https://www.thetimes.co.uk/edition/business/us-warning-on-chinese-nuke-plans-in-cumbria-8dxhk50x9> and NW Evening Mail, 7th Dec 2018 <https://www.nwemail.co.uk/news/17282744.chinese-developer-fuels-moorside-speculation/>



4. Bradwell B and the Huawei affair

The UK will soon have to decide whether to follow the American line on China when it comes to taking decisions about the proposed development of Bradwell B. The plant is intended to be a joint project between the Chinese nuclear company CGN and France's EDF, with CGN set to own 66.5% of the venture and use its HPR 1000 nuclear reactor. CGN is, on its own estimation, the world's third largest nuclear power company but its operations have so far been concentrated in China and Bradwell would be a flagship project for its international ambitions.

The HPR Hualong design is going through the assessment process required by the UK nuclear regulator, but there is no reason to suppose it will fail on technical grounds. For the moment, CGN's plans to build Bradwell B are going ahead but warning signs are appearing. The company was not encouraged to take up the option of developing the planned nuclear project at Moorside in Cumbria that was abandoned by Toshiba in November.

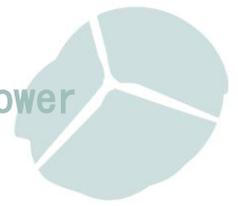
The Huawei affair has revived the unresolved question of whether the non-Chinese world can trust Chinese companies as the country becomes an industrial superpower. The US has cited Huawei's alleged breaches of Iranian sanctions to request the extradition of Meng Wanzhou, the company's chief financial officer, from Canada, but it is clear that the real concern is about the ability of Huawei's advanced technology to gather information. The US, Australia and New Zealand have already banned Huawei from future G5 mobile projects. (1)

The Times says the arrest of Meng Wanzhou, the chief financial officer of telecoms giant Huawei, has changed everything. She faces charges of fraud and breaching US sanctions on Iran. However, the tone on Chinese investment in Britain has now changed and recalls the words of Theresa May's former adviser Nick Timothy in 2015, when he said the government was "*selling our national security to China*". A deep-seated suspicion of Huawei at GCHQ has finally surfaced as open hostility, while, coincidentally, BT is removing Huawei technology from its 4G mobile network.

"Yet all this looks remarkably like shutting the stable door after the horse has bolted. If there was a time to reject Chinese investment, it was 20 years ago. Now, with ministers reliant on Chinese cash to fund a significant slice of our future power needs, do they dare bite the hand that feeds? Plus, in a post-Brexit world, a trade deal with China is meant to top the priority list. For all the braggadocio, I suspect there will be much soothing talk between London and Beijing in the months ahead. Does the government really think it can put the Chinese dragon back in the bottle? And can it afford to?" (2)

The UK's Office for Nuclear Regulation (ONR) has requested a long series of safety improvements to the proposed design of the Chinese HPR1000 ('Hualong') reactor. Previous experience suggests this could presage a big increase in costs for the plant which is likely to cost a lot more than similar plant built in China. The HPR100 design is based on one being built in China by CGN -Fangchenggang 3.

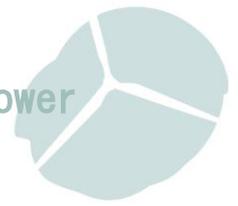
Dr Dave Toke says ONR has criticised CGN/EDF for the 'slow' development of the safety case and said that their 'response revealed a number of potential shortfalls related to the status of the safety case planning and arrangements (including organisational)'. Most tellingly, the ONR



has given the developers a large number of ‘follow-up’ points to which they need to adequately respond before they can be given the go ahead after the later stages in the ‘generic design assessment’ (GDA) process run by the ONR. Although the ONR has stressed that there is nothing fundamentally wrong with the developer’s proposals, the evidence is that the sheer extent of ‘follow up’ point materials must severely question any financial estimates of the plant’s costs that have been based on the plant being built in China. (3)

After the collapse of the Moorside Project, CGN said it is ready to ramp-up its plans for a new plant at Bradwell and to bring forward significantly the date at which it expects the first UK HPR1000 to enter commercial operation. We are confident we can close that gap by bringing Bradwell into operation much sooner. “Rescheduling the project, bringing forward COD [commercial operation date], bringing forward FID [final investment decision] and focusing on a target COD of circa 2030.”

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1. FT 7th Jan 2019 <https://www.ft.com/content/8a1d7432-0e8b-11e9-a3aa-118c761d2745>
 2. Times 9th Dec 2019 <https://www.thetimes.co.uk/article/6cfdbf12-fafc-11e8-9a07-72e9e902362>
 3. Dave Toke’s Blog 16th Dec 2018 <https://realfeed-intariffs.blogspot.com/2018/12/office-for-nuclear-reactor-demands.html>
 4. World Nuclear News 6th Dec 2018 <http://www.world-nuclear-news.org/Articles/CGN-ready-to-ramp-up-UK-ambitions>



5. Bradwell A and the Magnox Farce

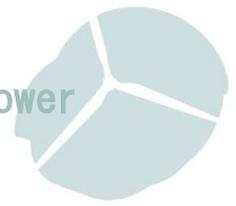
One of the UK's oldest nuclear power plants has been declared 'safe'. The Bradwell A Magnox station has now entered its 'care and maintenance' (C&M) phase – the first in the country to do so. Both of the station's reactor buildings have been defuelled, decommissioned and covered in weatherproof cladding to create 'safestores'. All of the nuclear waste has been packaged and placed into storage on site for the next 70 years. It is a major milestone in the clearance of the 60-year-old site, which stopped operating in 2002. (1) It means that the great grandchildren of babies born in Colchester Hospital this year will have to learn the skills necessary to carry out the final decommissioning and dismantling of the plant around 2090.

Removing the spent fuel from the Magnox reactors took three years to 2005. Altogether it took 16 years to prepare the station for its Care and Maintenance phase. While it was operating Bradwell provided around 450 jobs (2), but at its peak during decommissioning there were as many as 980 people working on site. (3)

Many of the other Magnox reactors will take much longer than 16 years to prepare for the care and maintenance phase. The reason for this is not entirely clear. Taxpayers would be entitled to ask, for instance, why it is necessary to employ 160 people for 22 years longer at Trawsfynydd than they would have been employed at Bradwell.

	Ceased Generation	Expected to enter C&M	Time spent preparing for C&M	No. Jobs at April 2017	Jobs Jan 2018
Berkeley	1989	2023	34 years	137	138
Bradwell	2002	2018	16 years	117	79
Chapelcross	2004	2025	21 years	218	216
Dungeness A	2006	2025	19 years	161	156
Hinkley Point A	1999	2027	28 years	162	165
Hunterston A	1990	2024	34 years	150	146
Oldbury	2012	2027	15 years	159	161
Sizewell A	2006	2027	21 years	201	202
Trawsfynydd	1991	2029	38 years	167	159
Wylfa	2015	2026	11 years	397	393

We can see from the table above that Bradwell was placed into Care and Maintenance relatively quickly after generation ceased. Berkeley, Hunterston A and Trawsfynydd have taken more than twice as long. Only Wylfa is expected to be quicker.

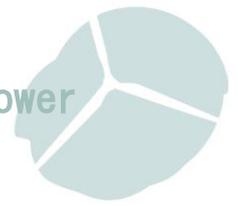


The Nuclear Decommissioning Authority (NDA) says Bradwell has been a pathfinder site, delivering hazard reduction safer and sooner, making many first-of-a-kind innovations and developing innovative approaches to decommissioning. For example, the equipment and techniques developed to retrieve, condition and package ILW are now being used to progress decommissioning and hazard reduction work at other Magnox sites. (4)

Entry to the Bradwell reactors and associated buildings will only be required once every year initially and then every five years for routine inspection and maintenance. It continues to receive ILW packages from Dungeness A Site in Kent and Sizewell A Site in Suffolk. These will be stored in the site's interim storage facility along with Bradwell's waste packages. (5)

- Meanwhile the former bosses of the NDA are embroiled in a bitter legal fight over a two-year probe into the botched handling of the Magnox contract that cost taxpayers more than £120m. Stephen Henwood and John Clarke, respectively the former chairman and chief executive of the NDA are trying to block the publication of criticisms contained in a report by Steve Holliday, the former chief executive of National Grid, who has undertaken an independent inquiry into the award of the Magnox nuclear decommissioning contract, and its subsequent termination, in March 2017. Mr Holliday is understood to have completed his report several months ago, but lawyers acting for Henwood and Clarke are understood to have raised objections to the process followed by Mr Holliday. (6) *The Times* said the inquiry has descended into a farce. (7)

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1. Essex Live 3rd Dec 2018 <https://www.essexlive.news/news/essex-news/bradwell-nuclear-power-plant-reaches-2285503>
 2. Essex Family History (accessed) 2nd Jan 2019 <http://essex-family-history.co.uk/bradwellpower.htm>
 3. Essex Gazette 29th March 2017 https://www.gazette-news.co.uk/news/15186783.Powered_down_End_of_era_as_Bradwell_Power_Station_decommissioned/
 4. NDA 29th November 2018 <https://www.gov.uk/government/news/uk-first-for-the-nuclear-industry>
 5. World Nuclear News 30th Nov 2018 <http://www.world-nuclear-news.org/Articles/UK-s-Bradwell-site-enters-care-and-maintenance>
 6. Sky News 5th Jan 2019 <https://news.sky.com/story/former-nuclear-chiefs-spark-legal-row-over-magnox-fiasco-11599532>
 7. Times 6th Jan 2019 <https://www.thetimes.co.uk/edition/business/nuclear-clean-up-inquiry-led-by-steve-holliday-in-meltdown-wgjkv2khp>



6. Sizewell C: EDF Press Play

The third stage public consultation for Sizewell C began on 4th January 2019. It will run for 12 weeks until 29th March 2019 and will include 14 exhibitions across East Suffolk.

EDF says the proposals have been shaped through feedback received from two previous stages of public consultation, on-going engagement with stakeholders, and substantial technical assessments and environmental studies. They say consultation has played an important role in informing and developing the plans. But judging by some of the reactions of the local community EDF is either deluding itself or being deliberately misleading.

Where's the Environmental Impact Assessment? Little change since 2nd Consultation

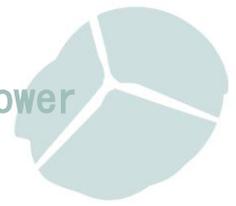
Together Against Sizewell C's (TASC's) initial opinion of the consultation documents is that they are 'vague to the point of being misleading.' Pete Wilkinson, the group's chairman, said:

"This is the last chance before the Development Consent Order for people of east Suffolk to submit their views about how the proposed EDF development will affect their lives. The glossy consultation brochure states baldly that, 'An Environmental Impact Assessment (EIA) process is on-going and is being used to identify any likely significant effects arising as a result of Sizewell C'. This renders the document premature and deliberately vague to the point of being misleading. How can people therefore judge whether they feel the impacts are acceptable or not when the developer itself does not know to what degree and in which areas the environment will be degraded?"

TASC's opinion is that very little of significance has changed since the 2nd consultation. The "Road-Led" vs "Rail-Led" strategies appear to be no more than a red herring to distract from the overriding fact that Sizewell C will have a devastating and unacceptable impact on the Suffolk coastal community. This is a rural area lacking in the type of infrastructure needed to construct such a massive industrial complex. It is this lack of major roads and railway lines that has made this area a mecca for walkers, cyclists, bird watchers and those that just enjoy the peace and tranquillity of a beautiful landscape. There is no doubt that the monstrous folly of Sizewell C will put all this, and the vibrant and sustainable tourist industry that has developed around it, at risk. (2)

Campaigners Furious – EDF not listening

Campaigners from the Theberton and Eastbridge Action Group on Sizewell (TEAGS), (which says it's not anti-nuclear but wants to protect the unique environment and highlight how our community would be significantly affected by the building of two more nuclear reactors at Sizewell), have been left furious over the latest plans and say EDF Energy is still not listening to residents' concerns. The construction of Sizewell C is expected to cause widespread disruption with concern over hundreds of trucks using unsuitable roads, the impact on the local economy and worries over the effect on RSPB Minsmere. A main concern is the use of land near



Eastbridge for a campus for 2,400 workers which campaigners say are “substantially unchanged” from early designs. (3)

TEAGS has made a video about the impact of Sizewell on the Suffolk Coast which is worth a watch here: <https://www.facebook.com/teags.org/videos/194650268134653/>

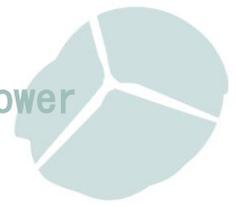
And another one urging people to tell EDF not to wreck East Suffolk
<https://www.youtube.com/watch?reload=9&v=4ryXQD5qUgE>

See also <https://actions.sumofus.org/a/edf-don-t-wreck-east-suffolk/>

The RSPB is urging supporters to respond to the consultation. Wildlife experts are worried that development could have a “*major adverse environmental impact*” on one of the country’s most important bird habitats. (4)

- EDF says it wants to transfer the Hinkley Point C supply chain to Sizewell to reduce construction costs by 20%. (5)
- An opinion piece by *East Anglian Daily Times* journalist, Paul Geater, says “I’m as keen as the next person to move to carbon-free energy generation – but we’re doing that just a few miles to the east with massive offshore windfarms generating power or about to be built. “What about when the wind doesn’t blow?” The critics cry. Yes, that is something that has to be considered – but nuclear isn’t the answer. You can’t switch a nuclear power plant on and off to fill in power gaps. You need to invest in more battery plants like the Electric Mountains in Wales. Also, electric items – from lightbulbs to expensive machinery – are becoming more efficient. We’re not using as much electricity as we did in the past. Last year we used the same amount of power as we did in 1994 – and about 12% less than during the peak years at the start of the century.” (6)

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1. EDF Energy (accessed) 2nd Jan 2019 <https://www.edfenergy.com/energy/nuclear-new-build-projects/sizewell-c/proposals/stage-3>
 2. TASC 9th Jan 2019 <http://tasizewellc.org.uk/index.php/news/242-sizewell-opposition-group-condemns-consultation-as-deliberately-vague>
 3. East Anglian Daily Times 7th Jan 2019 <https://www.eadt.co.uk/news/edf-energy-sizewell-plan-slated-by-theberton-middleton-eastbridge-activists-1-5840910> TEAGS 4th Jan 2019 <https://teags.org/stage3reaction/>
 4. East Anglian Daily Times 2nd Jan 2019 <https://www.eadt.co.uk/news/last-chance-to-comment-on-sizewell-c-plans-1-5837262>
 5. Building 10th December 2018 <https://www.building.co.uk/news/edf-looks-to-cut-costs-by-taking-hinkley-contractors-to-sizewell-new-build/5096967.article>
 6. East Anglian Daily Times 10th Jan 2019 <https://www.eadt.co.uk/ea-life/sizewell-c-a-power-station-too-far-1-5842697>



7. Moorside Reassurances

Copeland's Tory MP Trudy Harrison has set up the Moorside Strategic Partnership to keep the possibility of building a new nuclear plant on the site adjacent to Sellafield on the political agenda. Mrs Harrison, and three other Cumbrian MPs and council leaders, pledged to lobby the Government over Moorside and to encourage another nuclear developer to take it on after Toshiba pulled out. (1)

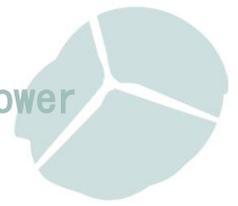
The Mayor of Copeland, Mike Starkie said: "*We have had ... reassurances today from BEIS (Department for Business, Energy & Industrial Strategy) that they still do see Moorside as viable and as part of the future for new builds. As I've stated on many occasions it's the perfect site for large scale nuclear reactors and we believe that there is still interest from developers from around the world in developing this project.*" (2)

Tony Lywood, Labour's prospective parliamentary candidate for Copeland, is calling on Theresa May's authority to underwrite the floundering new build vision and has set up a parliamentary petition, which will require a Government response if it reaches 10,000 signatures, demanding the Government financially supports the Moorside project. (3)

Paul Howarth, chair of the Centre of Nuclear Excellence (CoNE) – which promotes Cumbria's nuclear expertise to Government bodies and industry across the UK and overseas – says Moorside is a “no-brainer” and is convinced the new nuclear development will go-ahead. (4)

The former chief executive of the Nuclear Decommissioning Authority, John Clarke, accused the Government of being short-sighted for not investing in Moorside. He said expecting private sector companies to take on billions of pounds-worth of risk to pursue nuclear new-build projects as “barking” - the Government needs to rethink its obsession with letting the market decide and take more control of the country's energy infrastructure. There is anger in Cumbria about plans the Government was making to take a £5bn stake in Wylfa while government spokespeople dismissed the NuGen saga as a “commercial matter”. (5)

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1. Carlisle News and Star 15th Jan 2019 <https://www.newsandstar.co.uk/news/17358124.moorside-meeting-as-cumbria-leaders-press-government-for-nuclear-new-build-in-county/>
 2. ITV 13th Jan 2019 <https://www.itv.com/news/border/update/2019-01-13/new-support-for-moorside-nuclear-plant/>
 3. Carlisle News and Star 17th Dec 2018 <https://www.newsandstar.co.uk/news/17302939.petition-launched-urging-government-to-back-moorside-project/>
 4. In Cumbria 19th Dec 2018 <https://www.in-cumbria.com/news/17308610.centre-of-nuclear-excellence-chief-confident-of-moorside-development/>
 5. North West Evening Mail 4th Jan 2019 <https://www.nwemail.co.uk/news/17334996.government-short-sighted-over-moorside-former-nuclear-boss/>



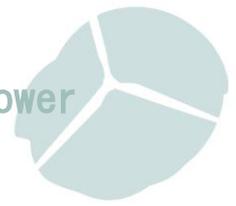
8. Hinkley Point C: Construction Begins

EDF Energy announced on 11 December 2018 the completion of the first part of the concrete pouring for the base slab for unit 1 of Hinkley Point C (HPC). Four more pours of concrete will be required before the so-called “raft” that supports the reactor building will be complete. Work is expected to be concluded in 2019. According to the International Atomic Energy Agency (IAEA) definition, the official “*construction start*” is “*the date when first major placing of concrete for the base mat of the reactor building is made*”.

The World Nuclear Industry Status Report (WNISR) bases its nuclear construction statistics also on this definition. A senior representative of EDF Energy’s partner China General Nuclear Corporation (CGN), that contributes a third to the HPC investment, on 14 December 2018, told WNISR that they consider construction started on 4 December 2018 with the First Concrete Day (FCD) of the nuclear island raft foundation. WNISR will also use this date as the HPC construction start.

In earlier correspondence with WNISR, as reported in WNISR2018, EDF-Energy has stated that this does not mean for EDF that the reactor is ‘under-construction’, but rather, “*in the HPC project, [construction start] is termed ‘J0’ and is scheduled to be reached in June 2019.*” This is despite the fact that billions have already been spent with more than 3,200 people working on the project. It remains unclear, why EDF Energy is deviating in the case of HPC from the internationally applied IAEA definition for construction start. Of course, the closer the “*construction start*” to grid connection, the shorter the communicated “*construction time*”, a crucial indicator for the industry’s performance. However, delaying the announcement of the construction start cannot cover up the fact that HPC has been plagued by serious delays from the beginning of its implementation. (1)

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1. World Nuclear Industry Status Report 29th Dec 2018
<https://www.nwemail.co.uk/news/17282744.chinese-developer-fuels-moorside-speculation/>



9. Hunterston B: Time to Press Stop

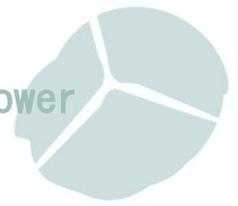
Pressure is mounting to keep two nuclear power reactors at Hunterston in North Ayrshire closed after EDF Energy, said it had found more cracks and has postponed plans to restart the reactors yet again. There are now an estimated 370 major cracks in the graphite core of reactor 3 and 200 cracks in the core of reactor 4. Reactor 3 has been closed down since 9 March 2018, and reactor 4 since 2 October. (1)

EDF Energy said 370 cracks “takes the core over the operational limit of 350 contained in the existing safety case for that period of operation”. (2)

EDF is now hoping that Reactor 4 will restart at the end of March 2019 and Reactor 3 the end of April. (3)

On 9th January the Nuclear-Free Local Authorities (NFLA) held a briefing for MSPs in the Scottish Parliament. Experts called for the reactors to stay closed rather than risking a nuclear accident, and for new jobs to be created in Ayrshire. Nuclear policy consultant, Dr Ian Fairlie, argued that the increasing number of cracks in the ageing reactors spelled their end. “*There is only one thing you can do and that is close them, as they cannot be repaired*”. (4)

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1. Ferret 9th Jan 2019 <https://theferret.scot/cracks-hunterston-reactors/>
 2. EDF Graphite Briefing December 2018
https://www.edfenergy.com/sites/default/files/hunterston_december_update_final.pdf
 3. EDF Energy 18th Dec 2018
https://www.edfenergy.com/sites/default/files/ssg_letter_18_dec_2018.pdf
 4. NFLA 10th Jan 2019 <http://www.nuclearpolicy.info/presentations/hunterston-b-safety-concerns-briefing-for-msps/>



10. Energy Efficiency and Electricity Demand

The amount of electricity generated in the UK last year fell to its lowest level in a quarter century. At the same time, output from renewable sources rose to another record high, generating an estimated 33% of the UK total in 2018.

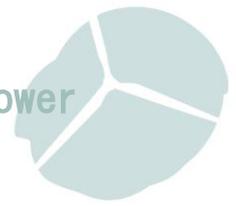
Lower per-capita electricity generation and cleaner supplies have contributed roughly equal shares to the reduction in power sector CO₂ emissions since demand peaked in 2005. This has helped to cut UK greenhouse gas emissions overall, even as the economy grows and population rises.

The reduction in the UK's per-capita electricity generation has saved 103 terawatt hours (TWh) since 2005, slightly more than the 95TWh increase in renewable output over the same period. The UK trend since 2005 breaks with the economic orthodoxy that a growing economy must be fuelled by rising electricity use. Instead, the economy has continued to grow even as electricity generation has levelled off and then started to decline, as the chart below shows. The reasons for this decoupling are not fully understood. Product energy efficiency regulations, energy-efficient lighting, environmentally conscious consumers and economic restructuring, including offshoring of energy-intensive industries will all have played a part. For example, low-energy lightbulbs can cut electricity use by up to 90% while newer "white goods" such as fridges, freezers and washing machines can use up to 75% less electricity each year than the oldest models. There is significant untapped potential to continue cutting electricity use by replacing old appliances at the end of their lives with the latest models, according to the Committee on Climate Change (CCC).

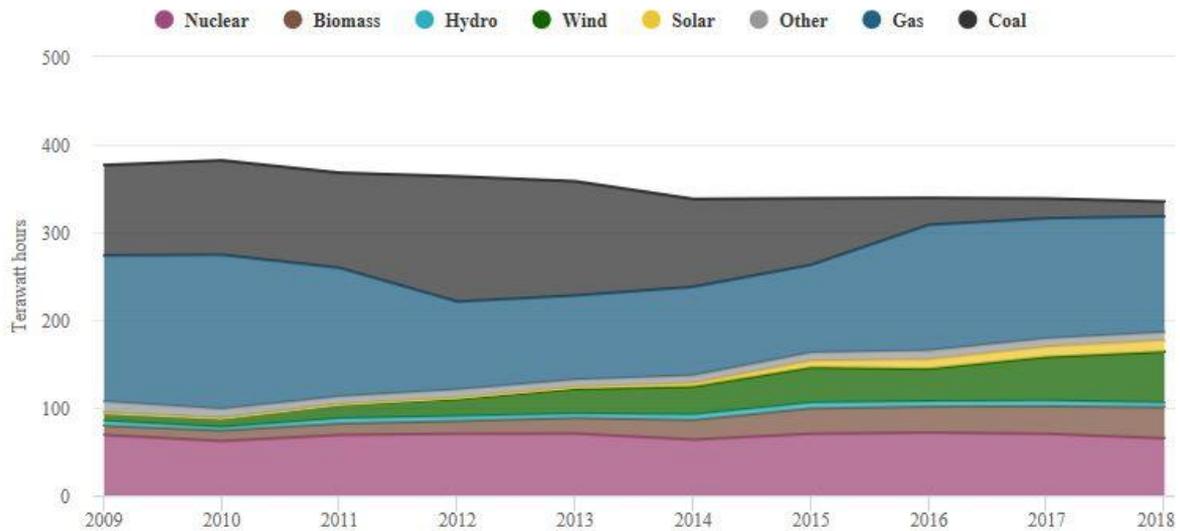
While continued reductions in UK electricity demand are likely in the short term, the CCC and others expect UK electricity demand to increase in the medium term, if climate goals are to be met. This is because continued improvements in energy efficiency would be more than offset by increased demand from electric vehicles (EVs) and electric heat pumps. For example, the CCC's central scenario to 2030 anticipates electricity demand of 365TWh, up around 8% on 2018 levels (335TWh of electricity was generated in the UK in 2018). This allows for 2m heat pumps and 20TWh for EVs. Demand from road transport could eventually reach more than double this level, if the whole UK fleet switches to EVs. [But see nuClear News no.113 A new report from Redburn, a UK research and investment company, suggests the growing energy efficiency of Electric Vehicles (EVs) means that there may be a very limited increase in demand as a result of the electrification of transport.]

Generation in 2018 was some 63TWh (16%) lower than in 2005, a reduction equivalent to 2.5 times the output of the new nuclear plant being built at Hinkley Point C. This is despite the UK population increasing by 10% from 60 million to 66 million people. Overall, the amount of electricity generated per person in the UK has fallen by 24% since 2005.

Wind generation was up 16% to 58TWh in 2018 nearly 3.5 times as much as the 17TWh from coal. The capacity of offshore windfarms nearly doubled over the course of 2018, with more set to open this year. Solar generation increased by 11%, reaching 13TWh in 2018. (1)



Annual UK electricity generation 2009-2018



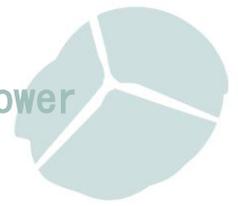
Renewable UK says 8 new offshore windfarms were officially opened in 2018 with more than 2GW of capacity – nearly double the previous annual record of 1,154 MW in 2012. And this near-doubling of record capacity was achieved with just 18 per cent more turbines than were installed in 2012. A total of 367 turbines were installed this year compared to 309 turbines in 2012 – an “impressive growth” in turbine power.

The new projects opened this year included the world’s largest operational offshore windfarm, Walney Extension (659MW), Rampion (400MW) and Race Bank (573MW), as well as the world’s second floating offshore windfarm at Kincardine in Scottish waters. (2)

Renewables are on course to overtake fossil fuels for the first time as the UK's primary electricity source as early as 2020, according to the latest market forecast from EnAppSys. If current trends continue, the market analyst predicts growing renewable power sources such as wind and solar will generate 121.3TWh of electricity over the calendar year of 2020, pushing ahead of declining coal and gas-fired power sources with a forecasted 105.6TWh of generation. In 2018, coal and gas fired power stations produced a combined 130.9TWh, a 6.7 per cent fall from the previous year's 140.3TWh. Meanwhile, renewable sources delivered 95.9TWh last year, rising 15.2 per cent from 2017 - a strong performance bolstered by the UK's increasing offshore wind capacity. (3)

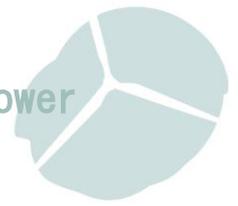
Another analysis from the University of Birmingham and Imperial College shows that Britain has shifted 30% of its electricity away from fossil fuels in just nine years. Nine years ago, Britain generated nearly 75% of its electricity using natural gas and coal. In 2018, this dropped to under 45% - a remarkable transition away from fossil fuels in under a decade. As energy efficiency improved, demand fell, and the UK generated less electricity than at any point since 1994. In fact annual renewable generation increased by 27TWh over the three years since 2015. This is particularly impressive considering the Hinkley Point C nuclear plant will produce a similar annual amount of electricity but will take three times as long to build (from contract signing).

Could Britain repeat its success since 2010 and reduce its coal and natural gas generation by a further 30 percentage points? The analysis says it's definitely possible, but the next decade will



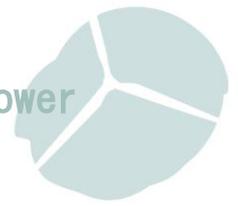
be more challenging for two main reasons: the demand for electricity is expected to rise rather than fall, and incorporating ever greater levels of variable renewable generation will need additional flexibility. To achieve this, new renewable generation - new solar panels, new turbines, new hydro, tidal, marine and biomass generation - will have to replace an estimated 100TWh per year (about four Hinkley Point Cs) from fossil fuels. That would require a build programme that was broadly 50 per cent greater than the previous nine years. Given the continued development of offshore wind in particular, this seems challenging but achievable. Solar and wind prices keep falling, which will help. (4)

- The Greater Manchester Combined Authority (GMCA) has pledged to ensure that all new buildings erected in the city region will be ‘net-zero’ carbon by 2028 – a move the local authority has said is “key” to achieving its overarching pledge to become a carbon-neutral city region by 2038. (5)
- A Dutch approach to transforming old homes through a dramatic green makeover has arrived in the UK and cut tenants’ energy bills in half. Nottingham has become the first city council to pioneer the “Energiesprong” (energy leap) initiative, which has radically upgraded the energy efficiency of thousands of homes in the Netherlands. More than 150 social housing homes in Nottingham will receive new wall cladding, windows and solar panels after the local authority won £5m from the EU’s European Regional Development Fund. Some tenants in homes already refurbished in a pilot scheme have seen monthly energy bills drop from about £120 to £60-£70. The Dutch approach is to refurbish the entire house and bring it up to the high standards that will be needed in decades’ time if carbon dioxide targets are to be met. Houses should become almost net zero carbon with homes capable of meeting all of their energy demand from on-site generation. Costs are relatively high, at £85,000 per property initially but are expected to fall to £62,000 by the end of the programme. Emily Braham of Energiesprong UK said scale would help costs fall as the supply chain adapted. Pilot Energiesprong projects are also planned in Maldon, Essex, and in the Exeter area. (6)
- The world’s first energy self-sufficient housing complex now runs solely on renewable energy. The self-sufficient housing complex, powered by solar energy and stored hydrogen, is located in Vårgårda, Sweden. Residents of the complex will be 100% disconnected from the electrical power grid. The project is a breakthrough in sustainable building and clean energy. When the complex is fully finished and operational, a total of 172 flats in six housing blocks will be able to operate exclusively on renewable energy. (7)
- Scotland is set to welcome its first large-scale water source heat pump scheme, that will take heat from the river Clyde to provide heat and hot water for a nearby district heating network. Delivered by Vital Energi, two 2.5MW water source heat pumps will be used to provide heat for the up to 1,200 houses and businesses and public buildings as part of the £250m Queen’s Quay Development project in Clydebank. The heat generated at a nearby energy centre will be pumped through 2.5km of district heating pipes to the homes and some public buildings, including West College Scotland, Clydebank Leisure Centre, the Town Hall and Clydebank Library. (8)



- East Lothian-based thermal energy storage specialist Sunamp and energy supplier OVO have secured seven-figure funding to develop a commercially viable smart central heating system. The project brings together OVO's intelligent energy management platform, called VCharge, with Sunamp's super compact "heat batteries" which are said to store four times more heat than hot water tanks of a similar size. The firms have received £1.6 million of grant funding from the UK government's Low Carbon Heating Technology Fund for their collaborative zero carbon home project. Replacing a gas boiler with a smart electric system is a practical and low-cost way to decarbonise heating. By combining VCharge and Sunamp's UniQ heat batteries, power can be drawn down according to the needs of the grid, resulting in running costs comparable to gas heating systems but without carbon emissions. (9)
- Octopus Energy has announced plans to provide customers with real time energy pricing by integrating its Agile Octopus smart time-of-use home energy tariff with home automation web service If This Then That. The company claims it is the first service to integrate a complete package of smart devices, smart meters, and energy provision with If This Then That (IFTTT) technology, which triggers consumers' smart home devices to automatically adjust energy use based on half-hourly price changes offered by the Agile Octopus tariff. Launched as a trial earlier this year, the Agile Octopus tariff enabled participating customers – including EV drivers – to choose the cheapest times of the day to charge their cars or undertake other energy intensive household activities. (10)
- Almost £2 million in new European funding will support the development of a "new wave" of energy projects in the South West. Bristol City Council, in partnership with Devon and Plymouth councils, has secured a €1.9 million (£1.7 million) grant from the European Investment Bank and the European Commission to fund the deployment of new renewable energy, energy efficiency, sustainable transport and heat networks project in the region. Bristol now has around 8MW of solar PV generating capacity installed by the City Council and that figure stands to swell further underneath the new programme. Devon County Council will use its funding to kick start a range of clean energy projects, and it is expected that it will trigger at least £16 million of investment into low carbon initiatives in Devon alone. (11)

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1. Carbon Brief 3rd Jan 2019 <https://www.carbonbrief.org/analysis-uk-electricity-generation-2018-falls-to-lowest-since-1994>
 2. Renewable UK 17th Dec 2018 <https://www.renewableuk.com/news/430793/Record-breaking-amount-of-new-UK-offshore-wind-capacity-installed-in-2018-.htm>
 3. Business Green 16th Jan 2019 <https://www.businessgreen.com/bg/news/3069376/report-renewables-to-overtake-fossil-fuels-in-uk-energy-mix-in-2020>
 4. Business Green 15th Jan 2019 <https://www.businessgreen.com/bg/feature/3069324/britain-has-shifted-30-per-cent-of-its-electricity-away-from-fossil-fuels-in-just-nine-years>
 5. Edie 7th Jan 2019 <https://www.edie.net/news/6/Manchester-commits-to-making-all-new-buildings-net-zero-by-2028/>
 6. Guardian 7th Jan 2019 <https://www.theguardian.com/society/2019/jan/07/dutch-eco-homes-idea-arrives-in-uk-and-cuts-energy-bills-in-half-nottingham-energiesprong> and Solar Portal 8th Jan 2019



https://www.solarpowerportal.co.uk/news/nottingham_city_council_lands_5_million_to_expand_energiesprong_rollout

7. **Hydrogen Fuel News 27th Dec 2018** <http://www.hydrogenfuelnews.com/housing-complex-in-sweden-runs-fully-on-stored-hydrogen-and-solar-power/8536620/>
8. **Edie 4th Jan 2019** <https://www.edie.net/news/8/Scotland-receives-green-light-on-large-scale-water-source-heat-pump-project/>
9. **Scotsman 21st Dec 2018** <https://www.scotsman.com/news/funding-injection-for-smart-central-heating-project-1-4847379>
10. **Business Green 8th Dec 2018** <https://www.businessgreen.com/bg/news/3068279/octopus-energy-unveils-automated-real-time-home-energy-pricing-package>
11. **Solar Power Portal 15th Jan 2019**
https://www.solarpowerportal.co.uk/news/bristol_to_launch_new_wave_of_south_west_clean_energy_projects_with_europea