



No.121 January 2020

1. **New Year – New Challenges**
2. **UK Climate Policy**
3. **Sizewell & Hinkley Finances**
4. **Sea Level Rise and New Nuclear**
5. **Wylfa Prospects**



# 1. New Year – New Challenges

Environment campaigners will have breathed a sigh of relief when Boris Johnson committed his new government to meeting the net zero by 2050 climate change target. (1) But is enough attention being devoted to delivering the target in an equitable manner. And if the emissions cuts are not delivered in a fair way is the Government in danger of provoking a populist backlash?

Richard Kerley<sup>1</sup>, writing in *The Times* warns that the Scottish government transport agency's generous electric car financing scheme will be attractive to well-heeled electric car buyers, but could grate a little for those struggling to heat their homes in a cold January. Interest-free loans of up to £35,000 to cover the cost of purchasing a new pure electric or plug-in hybrid vehicle are available. A grant from the Office for Low Emission Vehicles will also take up to £3,500 off the purchase price. Should you have off-road parking, the Energy Saving Trust will provide a grant of £500 for installing a home charger; if you live in Scotland the Scottish government will top this up by £300. The interest-free loan represents a saving of about £8,500. There are also various points where you can charge the car at no cost. Some councils waive parking charges for EVs, others are discussing this. Scotland has major problems of fuel poverty, so Kerley asks whether we should be giving the already privileged £12,000 up front and the equivalent of about £1,500 in subsequent years.

Kerley concludes that if we are to make a successful transition to a zero-carbon economy, we know that financial incentives help, but we are going to have to find ways to address this "equality paradox". (2)

Of course, these equity issues don't just apply to electric vehicles -they apply right across the climate change debate and beyond. Simon Roberts of the Centre for Sustainable Energy in Bristol says because of the scale of change that is going to be needed to meet carbon objectives we are going to need more or less everyone in society to change the way they use energy, and ultimately the public is going to have to pay for the changes through bills and taxes. (3) If we haven't got meaningful public consent for all of the change, then we are not going to be able to achieve it. People need to understand what is going to be happening, feeling comfortable with that and possibly even being involved in a process which came to conclusions about what needed to happen. People will want to know, in particular, that changes are being implemented in a fair way. If it's not fair it won't happen, and we could end up with a backlash similar to the 'gilets jaunes' in France, which began as a movement against tax increases on petrol and diesel. Interestingly the *Guardian* says (in an echo of Lisa Nandy's campaign on forgotten towns) the gilets jaunes are mostly drawn from 'peripheral towns, cities and rural areas across France'. (4)

---

<sup>1</sup> Professor of management at Queen Margaret University in Edinburgh and director of the Centre for Scottish Public Policy at Newbattle Abbey College. Some might remember that as a Labour Councillor he promoted the idea of a Combined Heat and Power District Heating Scheme for Edinburgh in the 1980s See <http://www.no2nuclearpower.org.uk/articles/se61-EdinburghHeatPlan.pdf>



The Centre for Sustainable Energy believes that obtaining ‘informed consent’ needs to be done at a local level. It has found that if you bring a group of people together in a locality and ask them ‘how they are going to make a contribution to the changes that need to happen’ they come up with sensible answers. The conversations need to start outside of any specific proposals. Start by asking people what they value about the place they live in. We need to think about how we can ensure that people on low incomes can also achieve the benefits which the energy transformation is going to offer and protect them from some of the disadvantages that might emerge. For example, under the current arrangements we will all have to help fund the reinforcement required to our local area network for the wealthy Tesla car owner. As we transform the system there will be new ways of generating unfairness. But at the same time we don’t want to stifle innovation.

### Labour Leadership Elections

With the failure of the Labour Party’s plans for a green industrial revolution to sufficiently impress, discussion of these issues is beginning to spark a new debate. Rebecca Long Bailey, for instance, wants action on climate change to “*spark the growth of new industries as well as guarantee that the renewable technologies of the future, from electric vehicles to solar energy, are available to every home in Britain.*” (5) She says “*Labour’s Green New Deal is the most ambitious agenda for tackling climate change of any major political party [but] throughout the election it was tragically undersold.*” (6) Unfortunately, we can’t afford to wait around for 5 years for Labour to try again.

Another Labour Leadership contender Lisa Nandy –although well known for her pro-nuclear views (7) – talks about empowering people to make change themselves. She highlights Preston council, which has used local assets to grow the economy; Nottingham, which set up its own energy company to help the poorest, and switching to clean energy. “*Quietly and unsung, we disrupted the power of the big six energy companies. It is this on-the-ground activism that will pave the way back to government.*” (8)

Clive Lewis, who is now out of the leadership race, has been promoting the idea of progressive alliances, the case for proportional representation, and why he’s been working with Green MP Caroline Lucas to develop a radical Green New Deal. (9)

We don’t know much yet about the climate policies which will be implemented by the new Tory Government. The government originally said it would produce a white paper in the Spring, outlining how it plans to meet the 2050 net zero decarbonisation target, but this now seems to have been delayed until the Autumn. (10) This will be a key moment when we will learn what sort of pathway Boris Johnson’s Government is planning to follow. In 2015 as London Mayor, Boris Johnson attacked the high cost of Hinkley Point C describing it as “*a disgrace*” – just one month after David Cameron announced the deal. He said the pledge to underwrite the deal with £2bn of taxpayers’ money was an “*extraordinary amount of money to spend*”. (11) Johnson has now launched a review of departmental spending to ensure that “*every penny*” is justified as he seeks to tilt UK government investment towards deprived regions outside London. (12) Of course, this could go either way. *The Times* reported that No.10 policy advisor Dominic



Cummings supports Professor Richard Jones' calls for a massive programme of government investment in the technologies of the future (including Small Modular Reactors) in northern England and Wales. (13)

Robert Colvile, director of the right-wing Centre for Policy Studies says *"the environment is at the heart of the [Tory] party's economic vision, and of the revolution in government being pushed by Dominic Cummings. The challenge for Johnson is to persuade the voters that getting to net zero can be done in a way that enhances rather than reduces growth — and, above all, keeps down the cost of living. That will involve hard thinking about decarbonisation, electrification, carbon taxes and all manner of other issues. (If you thought smart meters were a hard sell, just imagine trying to replace every gas boiler in the country.)"* (14)

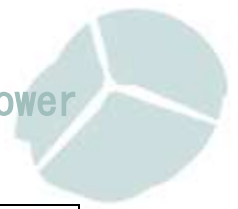
But Colvile and Cummings probably have a completely different vision of a zero-carbon future than Long Bailey and Nandy. Colvile says the millions of climate marchers were *"largely unaware that the organisers' demands essentially consisted of switching off the modern economy — not just leaving fossil fuels in the ground but banning any solutions involving markets or innovation, ranging from nuclear power to GM crops and smart agriculture to carbon trading and offsetting."* Colvile praises Johnson for being *"a nuclear fusion geek"*. He talks about Carbon capture on Teesside, making hydrogen in Lancaster (using electricity from Heysham nuclear station), and manufacturing electric vehicles in Sunderland, the West Midlands and possibly Wales —the Tories' new industrial heartlands. *"Taking control of the climate narrative away from the 'doomsters and gloomsters' will be one of the government's toughest tasks. But it needs to be done for the long-term health not just of Conservatism and capitalism, but of the planet itself."*

On the positive side, reducing net carbon emissions to zero by 2050 is a Tory manifesto pledge. the Queen's Speech included the promised ramp-up in the offshore wind target from 30 to 40 gigawatts by 2030. What was perhaps less expected was the idea that the Government would also *"enable new floating turbines."* Hopefully this means something like an 'innovation pot' within the Contract for Difference to enable the technology to undergo its journey towards commercialization and to see commercial-scale projects brought forward. (15)



## Contrasting visions of net zero

	<b>Hard Path to Net Zero</b>	<b>Soft Path</b>	<b>Further reading</b>
Low (er) Carbon Electricity	Go ahead for more nuclear power stations including SMRs. Nuclear Funded by Regulated Asset Base paid by consumers. Electricity prices likely to increase.	Big increase in community energy projects; solar PV (and batteries) installed on many social houses with new incentives for home owners; Onshore wind projects unblocked. As solar and wind are much cheaper than nuclear costs tend to fall.	Does Nuclear Power Slow or Speed Climate Change? Amory Lovins, Forbes 18 <sup>th</sup> Nov 2019. <a href="https://tinyurl.com/wwq5vwo">https://tinyurl.com/wwq5vwo</a>
Offshore Wind	40GW by 2030	52GW by 2030	Energy consultant Chris Goodall, says 40GW of offshore wind means we should have enough electricity to meet our low-carbon requirements.  Wired 9 <sup>th</sup> Jan 2020 <a href="https://tinyurl.com/wtxslp7">https://tinyurl.com/wtxslp7</a>
Energy Efficiency	Few incentives for refurbishing houses; failure to tackle fuel poverty.	Most of the UK's 27 million homes upgraded to highest energy efficiency standards by 2030 eliminating fuel poverty, avoiding 17,000 deaths each winter.	Nationalising Britain's energy networks could be one way to end consumer rip-off – here's why.  The Conversation 19 <sup>th</sup> Nov 2019 <a href="https://tinyurl.com/ugrnrxj">https://tinyurl.com/ugrnrxj</a>
Heating	Heat pumps work best in well insulated houses, gas grid is	Massive increase in district heating incl. in conjunction with geothermal and	Hydrogen boilers may be only choice for homes by 2025 Times 4 <sup>th</sup> Jan 2020 <a href="https://tinyurl.com/t6xcb4g">https://tinyurl.com/t6xcb4g</a>



	<p>converted (mainly) to 'blue' hydrogen made by methane steam reforming; or green hydrogen made by electrolysis at SMRs; cost of heating tends to rise.</p> <p>Little help with cost of installation of hydrogen-ready boilers.</p>	<p>GSHP; ASHP in conjunction with heat batteries for individual houses; solar thermal revitalised; biomass heating promoted in rural areas. Cost of heating tending to fall.</p>	<p>An exciting carbon-free future depends on . . . hydrogen boilers, Times 4<sup>th</sup> Jan 2020  <a href="https://tinyurl.com/szpw9ge">https://tinyurl.com/szpw9ge</a></p>
Balancing Renewables	<p>Constraint payments to renewable operators</p>	<p>Big increase in energy storage, demand-side management and time-of-use tariffs. Hydrogen produced by electrolysis. Green hydrogen used to generate electricity when required.</p>	<p>Turbines spread amid £127m bill, Times 29<sup>th</sup> Dec 2019  <a href="https://tinyurl.com/untgyrg">https://tinyurl.com/untgyrg</a></p> <p>IRENA Briefing on Demand-Side Flexibility  <a href="https://tinyurl.com/so8w4we">https://tinyurl.com/so8w4we</a></p>
Transport & Electric Vehicles	<p>35m EVs on UK roads by 2050; increase in electricity demand; no solution to congestion or air-quality problems or the health crisis due to sedentary lifestyles.</p> <p>HS2 &amp; 3, but little support for local rail.</p>	<p>Revitalised public transport; massive increase in cycling and pedestrian infrastructure. Steep decline in car ownership; increase in car clubs and use of autonomous vehicles. Most EVs charged in solar car ports/</p>	<p>See nuClear News No.119  <a href="https://tinyurl.com/rl38qz7">https://tinyurl.com/rl38qz7</a></p> <p>Oxford City Council completes one of the UK's largest solar car ports. Solar Power Portal 23<sup>rd</sup> Dec 2019  <a href="https://tinyurl.com/ugmpml6">https://tinyurl.com/ugmpml6</a></p>



- 
1. BBC 13<sup>th</sup> December 2019 <https://www.bbc.co.uk/news/election-2019-50777071>
  2. Times 2<sup>nd</sup> Jan 2020 <https://www.thetimes.co.uk/article/electric-car-perks-are-only-helping-the-already-well-off-rtmx2ksq6>
  3. Simon Roberts lecture for Transforming Energy Systems Course, <https://www.futurelearn.com/courses/transforming-energy-systems>
  4. Guardian 3<sup>rd</sup> Dec 2018 <https://www.theguardian.com/world/2018/dec/03/who-are-the-gilets-jaunes-and-what-do-they-want>
  5. Guardian 29<sup>th</sup> Dec 2019 <https://www.theguardian.com/commentisfree/2019/dec/29/rebecca-long-bailey-labour-party-britain>
  6. Tribune 6<sup>th</sup> Jan 2020 <https://tribunemag.co.uk/2020/01/rebecca-long-bailey-labour-leadership-socialism>
  7. Labour List 4<sup>th</sup> March 2016 <https://labourlist.org/2016/03/nandy-britain-needs-to-build-more-nuclear-power-stations/>
  8. Guardian 3<sup>rd</sup> Jan 2020 <https://www.theguardian.com/commentisfree/2020/jan/03/labour-power-activism-leader>
  9. Guardian 12<sup>th</sup> Jan 2020 <https://www.theguardian.com/politics/2020/jan/12/labour-cant-change-society-on-its-own-clive-lewis>
  10. Independent 8<sup>th</sup> Jan 2020 <https://www.independent.co.uk/news/uk/politics/net-zero-carbon-emissions-strategy-ministers-climate-change-emergency-a9274151.html>
  11. Independent 20<sup>th</sup> Nov 2015 <https://www.independent.co.uk/news/uk/politics/boris-johnson-attacks-disgraceful-spending-on-hinkley-just-a-month-after-david-cameron-hailed-the-a6742281.html>
  12. FT 7<sup>th</sup> Jan 2020 <https://www.ft.com/content/62e4a0e0-3156-11ea-9703-eea0cae3f0de>
  13. Times 19<sup>th</sup> Dec 2019 <https://www.thetimes.co.uk/article/reinvigorate-north-with-nuclear-power-stations-says-dominic-cummings-bl3f5hrxx>
  14. Times 5<sup>th</sup> Jan 2020 <https://www.thetimes.co.uk/article/green-politics-with-a-big-splash-of-blue-p9rstl5zw>
  15. GTM 20<sup>th</sup> Dec 2019 <https://www.greentechmedia.com/articles/read/floating-wind-by-royal-appointment-uk-edges-closer-to-dedicated-tenders>



## 2. UK Climate Policy

New urgency needs to be injected into the development and implementation of policy on climate change and the UK has so far “fallen short” on its commitments, according to the Committee on Climate Change (CCC). It has been nearly seven months since the Net Zero target became law, yet new policies are yet to appear.

Ambitious policies from all departments are needed to ensure homes, businesses, industry, transport and land are helping to deliver Net Zero. Every day of inaction makes the challenge of cutting emissions harder and costlier. Technological innovation is only part of the answer. We must not wait for future technologies to solve the problems we can already tackle with known solutions.

The CCC has written to Boris Johnson welcoming his commitment to chair a cross-Cabinet Committee on climate change, and saying 2020 needs to be the year of renewed policy implementation. The letter calls for the Treasury’s Net Zero funding review to identify ways fully and fairly to pay for the transition, putting Net Zero at the heart of the UK’s economic strategy. The Cabinet Committee should lead the Government’s strategy to reduce emissions, demanding priority actions including:

1. Buildings. An ambitious and properly funded strategy for entirely removing fossil fuels from the UK’s building stock, with action beginning immediately and standards that set a clear path for the longer-term.
2. Transport. Rapid progress in the implementation of your manifesto commitment to consult on an earlier phase-out of petrol and diesel cars, ideally by 2030.
3. Electricity. Delivering on your manifesto commitment for 40GW of offshore wind by 2030 – and ensuring that any market reforms are complementary to the Net Zero goal.
4. Industry. Developing an ongoing mechanism to pay for emissions reductions from industry and an approach to delivering hydrogen and CCS infrastructure, alongside your promised capital support.
5. Land use and agriculture. Introducing a world-leading package through the Agriculture and Environment Bills to cut emissions from agriculture and to pay for the 30,000 hectares (75,000 acres) of annual tree planting promised in the Tory manifesto.

The CCC will offer specific policy recommendations on this in January.

- 
1. Committee on Climate Change 18th Dec 2019 <https://www.theccc.org.uk/publication/letter-ccc-writes-to-the-new-prime-minister/> and *Guardian 18th Dec 2019* <https://www.theguardian.com/environment/2019/dec/18/boris-johnson-urged-to-take-world-lead-on-climate-action>





### 3. Sizewell & Hinkley Finances

The proposed Sizewell C nuclear power station risks being cancelled unless EDF Energy can secure adequate funding commitments. The Company claims it can significantly reduce the cost of Sizewell by transferring workers and equipment from Hinkley. But any delay to funding that results in a hiatus between the projects would erode such savings and jeopardise the project. Former Sizewell project development director Jim Crawford admitted at a December meeting with Suffolk residents that if funding proposals ended up *“outside an acceptable price range for the government, then the project probably won’t go ahead — it’s as simple as that”*. (1)

EDF’s favoured funding model – the Regulated Asset Base (RAB) – involves consumers paying for the project while it is still under construction. This would cut borrowing costs but also put consumers on the hook for cost overruns. The government ran a consultation last year on adopting the model but is yet to give its verdict. Officials at the Department for Business Energy and Industrial Strategy say nothing has been agreed yet in terms of its response to the RAB consultation, and the Government is still reviewing its next steps. What with Brexit and the General Election the machinery of government appears to have slowed down.

#### Alternatives to RAB

A number of respondents to the government’s RAB consultation say the government should take another, more controversial route: stepping in to build new nuclear itself, then quickly selling completed plants to the private sector. The independent Nuclear Economics Consulting Group has called for a new nuclear Crown Corporation, a state-backed investment vehicle, to step in to build nuclear projects. (2)

*“This new entity would act as an owner or funder of new [nuclear power] projects from inception to commercial operation, with project risks and benefits during development and construction remaining with [HM government],”* write authors Edward Kee, Ruediger Koenig, Paul Murphy and Xavier Rollat.

Edward Kee, the CEO of Nuclear Economics Consulting Group, shared the group’s reservations about the RAB model.

*“We have doubts that developing and implementing a nuclear power RAB framework would happen fast enough. It is also unclear that the RAB approach would deliver the needed nuclear power investment, even when put into place,”* said Kee. (3)

The International Project Finance Association, whose members include the World Bank, the U.S. Treasury and many major investors, agreed that the U.K. government should consider funding nuclear projects.

*“An alternative structure would be for government to procure construction on the balance sheet (so that the government would own the project and pay for construction as the costs are incurred),”*



*and then look to sell the project to the private sector once operational,”* the IPFA suggested in its response. (4)

Energy Systems Catapult, a not-for-profit innovation centre established by the government itself, also backs using the national balance sheet to build new nuclear at the lowest cost: *“An alternative model which could be considered is for Government to procure a fleet of nuclear power stations from developers with funding from the Government balance sheet.”*(5)

EDF says it needs a positive response on the RAB funding model this year. (6)

## **Hinkley – a financial quagmire**

We now know that EDF declined the offer of credit guarantees for Hinkley Point C leaving it with few, if any, credible options for financing construction of its first UKEPR, let alone a second at Sizewell. This begs the question: how is the EDF consortium expecting to finance construction of Hinkley?

It has long been clear that the record of nuclear projects being built to time and cost is so poor that no bank will lend money for one unless the risk falls on someone else, by, for instance, a government providing sovereign credit guarantees, according to Steve Thomas, Emeritus Professor of Energy Policy at Greenwich University.

In 2013 it was expected that Hinkley Point C would receive Government Loan Guarantees, but because this was part of a state-aid package it had to be referred to the European Commission. In October 2014, the European Commission announced its decision that the deal could proceed. However, a second tranche of credit guarantees could only be issued after satisfactory evidence was provided that Flamanville 3 had completed its trial operation period before 2020.

The National Audit Office (NAO) Review of June 2017 made clear that EDF does not expect to take up the offer of the initial £2bn tranche of credit guarantees. The second tranche was stated to be up to £13.1bn. The NAO concluded that the Government deal for HPC has *“locked consumers into a risky and expensive project with uncertain strategic and economic benefit.”*

In September 2019, EDF published a further update on costs and time schedule. This stated that the estimated cost had increased to £21.5-22.5bn.

Commercial operation at Flamanville is not now expected until around the end of 2023.

By 2015, as noted by NAO, the outlook for EDF and its ability to finance its investments had changed significantly for the worse compared to only two years previously. The cost of life extending its 58 operating reactors in France was much higher than expected and it was expected to cost at least €4bn per year till at least 2030. The financial collapse of Areva in 2015 had left EDF with the unwelcome requirement by the French government to take over its unprofitable reactor division. The problems at the two EPRs under construction in Finland (Olkiluoto) and France (Flamanville) continued to get worse and it had become clear for the first time that the only other EPR orders, the two reactors in China (Taishan) were also suffering



significant delays. The emergence of quality control (QC) problems including falsification of QC documentation going back 50 years at Areva's key forge facility, Creusot Loire and the quality issues with the reactor vessel installed at Flamanville and the vessels made for HPC left the reputation of Areva NP in tatters.

By 2016, it was clear there was a significant risk that Flamanville wouldn't be in commercial service by the end of 2020. This left EDF with a serious problem of how to raise the capital it needed to build Hinkley Point C. So, it embarked on a programme to raise up to €14bn of capital to help fund investment. But sale of non-core assets had probably raised less than half of the target amount.

By the end of 2018 EDF claimed to have spent €7.5bn (£6.25bn) on HPC but with borrowing costs of only €108m (£90m) suggesting virtually all expenditure to date had been paid for by equity. The expected remaining cost at the end of 2018 using the most recent cost estimate is £15.3-17bn and if the project is to be completed by end 2026 as EDF now claims, this implies an average annual spend of £2.2-2.4bn of which two thirds (£1.45-1.6bn) would come from EDF, significantly more than their total net profit (€1177m or £980m) for 2018.

The poor state of EDF's finances is clearly illustrated by their advocacy of the RAB model for Sizewell C. In many respects, this would be an ideal model for EDF. EDF would supply the reactor through its Framatome subsidiary, it would build the plant through its engineering division as for HPC and it would operate and maintain the plant. All of the contracts would be likely to be essentially on cost-plus terms with none of the risk of cost and time overruns that is associated with owning the plant. This would make the deal essentially a blank cheque signed by British electricity consumers. If it was required to fix the cost of construction, operation and maintenance, this would be a huge risk to EDF and one it would be unlikely to take. The experience of Areva offering a fixed price contract for the Olkiluoto plant and having to pay nearly €6bn to compensate for cost overruns ought to be fresh in its mind given that this was the major factor in the financial collapse of Areva.

As well as finding £1.45-1.6bn per year until 2026 to finance the construction of Hinkley Point C, EDF has to find money to upgrade its 58 French reactors, as well as for funding decommissioning and waste management amongst other things. It seems that EDF has a limited number of options for funding the remaining cost of constructing HPC. It is possible that EDF might try going back to the UK Government for new credit guarantees, But given all that has gone wrong with the project and the fact that the price of the clearest large scale alternative, offshore wind, is only about 40 per cent of the HPC cost, convincing the UK public that new credit guarantees would be a sensible risk to take with public money would be a hard sell.

EDF's poor financial performance has necessitated the launch of a massive rescue attempt by the French Government - Opération Hercule - which would split the company into two with the nuclear part, EDF Bleu, going back into full public ownership. This will require huge and potentially unpopular amounts of French public money. Perhaps EDF's best hope of completing HPC is if this package included provisions to assist with the finance of the rest of HPC.



It seems that completing Hinkley will need an open-ended commitment by both the British and French Government's. The sensible course is to abandon the plant now before more public money is wasted. It is clear now that EDF is unsustainable because it cannot finance life-extension, clean-up liabilities and HPC. The EDF consortium has already spent about £6.5bn on HPC but with £18bn or more to spend, writing this off is a much better option than completing a loss-making plant. The EPR technology has failed and EDF should abandon it. The French public will have to pump tens of €bn into EDF to keep it afloat and the additional burden of financing Hinkley would impose would be unwelcome. The only logical decision is to abandon Hinkley and all the successor projects now. (7)

Dr Dave Toke says EDF has a big incentive to pre-commit the UK Government to an early start for Sizewell C (which may in practice be no more than some light work in advance of serious construction) because of three possibilities. Firstly, bad news continues to come about the longer and longer delays with building EPR reactors in France and Finland. Secondly, bad news could soon be coming concerning more delays with Hinkley C itself. And finally, EDF is in big financial trouble. The quicker they can get a decision from the UK Government the less chance the Government will be put off by continuing bad news. (8)

Toke says EDF can only complete HPC by issuing its own bonds, and thus accumulating debt that rests on its balance sheets. Such mounting debt reduces the possibility for issuing dividends to shareholders and thus depresses share prices. In its state-aid investigation, the European Commission reported that EDF had estimated the target internal rate of return to be 9.75-10.25 per cent. In September 2019 EDF estimated that additional costs had reduced this rate of return to 7.6-7.8 per cent. Yet the borrowing costs of financing the project on its balance sheet are, according to accountancy conventions, more like 15 per cent. Hence EDF faces a big loss, in accountancy terms, even if the project is finished on time. (9)

- 
1. Times 13th Jan 2020 <https://www.thetimes.co.uk/edition/business/edf-seeks-funding-to-save-sizewell-c-nuclear-plant-x5g5sflg> and Construction News 13th Jan 2020 <https://www.constructionnews.co.uk/civils/sizewell-c-risks-cancellation-as-government-mulls-new-funding-model-13-01-2020/>
  2. GTM 15th Jan 2020 <https://www.greentechmedia.com/articles/read/momentum-builds-for-uk-government-to-fund-new-nuclear-itself>
  3. NECG 14th Oct 2019 <https://nuclear-economics.com/30-uk-rab-model/>
  4. IPFA 16th Oct 2019 <https://www.ipfa.org/documents/ipfa-response-to-the-beis-consultation-on-the-rab-model-for-new-nuclear-projects/>
  5. Energy Systems Catapult 30th Oct 2019 <https://es.catapult.org.uk/news/regulated-asset-base-rab-model-for-nuclear/>
  6. Times 13th Jan 2020 <https://www.thetimes.co.uk/edition/business/edf-seeks-funding-to-save-sizewell-c-nuclear-plant-x5g5sflg> and Construction News 13th Jan 2020 <https://www.constructionnews.co.uk/civils/sizewell-c-risks-cancellation-as-government-mulls-new-funding-model-13-01-2020/>



7. Financing the Hinkley Point C project, by Steve Thomas, Emeritus Professor of Energy Policy  
<https://teags.org/core/wp-content/uploads/2020/01/HPC-finance-final.pdf>
8. Dave Toke's Blog 13<sup>th</sup> Jan 2020 <https://realfeed-intariffs.blogspot.com/2020/01/why-edfs-argument-that-they-cut-costs.html>
9. Dave Toke's Blog 22<sup>nd</sup> Dec 2019 <http://realfeed-intariffs.blogspot.com/2019/12/the-secret-massive-losses-edf-is.html>



## 4. Sea Level Rise and New Nuclear

Surging sea levels due to climate change could mean new power station Sizewell C is cut off by the water within decades, a top scientist has warned. Sue Roaf, emeritus professor of architectural engineering at Heriot Watt University, said it was madness to build a new power station near flood risk sites. She warned the proposals on the Suffolk coast risked lives and could transform parts of the area into a "toxic wasteland".

*"It's ridiculous the government is even considering another power station on the coast," Prof Roaf said. "You can downplay the future risk, but even by conservative estimates sea levels will have risen by a metre by 2100, potentially making Sizewell a nuclear island during storm surges."*

EDF Energy, which operates Sizewell B and is expected to submit final plans for Sizewell C in the coming months, said its assessments of flood risk already took into account extreme high tides and sea-level rises. US-based Climate Central recently produced a map showing swathes of Suffolk's coast and estuaries below the annual flood level by 2050, based on predictions that sea levels will rise 10cm a decade. Sizewell itself is shown above the flood level - but almost surrounded by flooded sites. The Environment Agency's map already shows much of the land around Sizewell to be at medium or high risk of flooding.

Government analysis of nuclear sites, obtained by the Guardian, found Sizewell had been deemed at high risk of flooding in 2010. Prof Roaf said Suffolk already faced "*chronic environmental risk*" in protecting Sizewell A and B, as well as their spent fuel, from the sea - and claimed adding Sizewell C would increase the risks.

Nick Scarr, who lives in Aldeburgh and owns an international engineering consultancy, has also written reports highlighting concerns about how spent fuel from Sizewell will be dealt with amid rising sea levels. Mr Scarr said Suffolk was set to become a "nuclear waste storage facility for at least 200 years" and communities deserved to know more about how it would be safeguarded. He said current proposals failed to consider the risk of extreme sea events, which according to the International Panel on Climate Change, were likely to happen every year by 2050. Mr Scarr said it was "extraordinary" the government was seemingly oblivious to these warnings and progressing with new nuclear sites on the coast. Together Against Sizewell C (TASC) raised similar concerns at the Nuclear Free Local Authorities seminar in Colchester last year. TASC's Pete Wilkinson said as Sizewell was predicted to be an island within a century, or sooner, any new nuclear plant at the site was "irresponsible". Paul Dorfman of UCL's Energy Institute warned during a debate on nuclear power that sites such as Sizewell may need considerable investment to protect against rising sea levels or "even abandonment in the long term". (1)

- Campaigners opposing a new nuclear power station are seeking a judicial review over a "premature" decision to allow woodland to be felled. EDF Energy was told in September it could chop down Coronation Wood to prepare for building Sizewell C.



Together Against Sizewell C (Tasc) said the area was vital for wildlife. East Suffolk Council said it would respond to the campaigners' challenge in due course. (2)

- Catherine Rowett MEP, Green Party MEP for the East of England will be launching a report on 20<sup>th</sup> January called 'Energising the East'. Which sets out a pathway towards that net zero energy systems for the East of England. It develops a model for a renewable-based distributed energy system, with minimal waste, in a circular economy. It is a vision to democratise energy and drive the potential of the region.

- 
1. East Anglian Daily Times 10<sup>th</sup> Jan 2020 <https://www.eadt.co.uk/business/professor-sue-roaf-warns-sizewell-c-faces-danger-due-to-climate-change-1-6458142>
  2. BBC 30th Dec 2019 <https://www.bbc.co.uk/news/uk-england-suffolk-50940974>



## 5. Wylfa Prospects

A settled government in London could strengthen the prospects of a new nuclear power plant on Anglesey, the island's economic chief has suggested. Cllr Carwyn Jones said Boris Johnson's solid majority could mean that the 'paused' Hitachi project might be salvaged. The massive nuclear power station project was shelved in January last year after the Japanese tech giant failed to reach a funding deal with the UK government under Theresa May. But Cllr Jones said the new Johnson government, which has ambitious green energy targets, may be keen to revive the Wylfa project.

The island's new Tory MP, Virginia Crosbie, described nuclear as a way to "*decarbonise our economy*", and said she would "*champion the development*" of Wylfa Newydd. "*The loss of so many well paid and highly skilled jobs on the Island over the last decade adds urgency to the need to create the jobs and training opportunities that Wylfa will bring,*" she said. (1)

Work on planning a third bridge across the Menai Strait is continuing despite the fact that the business case has been weakened by the suspension of plans for Wylfa Newydd. (2)

- 
1. North Wales Chronicle 31st Dec 2019 <https://www.northwaleschronicle.co.uk/news/18130020.claim-prospect-angleseys-wylfa-newydd-strengthened-conservative-government/>
  2. Daily Post 29<sup>th</sup> Dec 2019 <https://www.dailypost.co.uk/news/north-wales-news/planners-give-update-third-menai-17474188>