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Welsh Affairs Committee

Nuclear energy in Wales

Third Report of Session 2022–23

Report, together with written evidence and formal minutes relating to the report

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Welsh Affairs Committee

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There are two historic nuclear sites in Wales, at Wylfa on Ynys Môn and Trawsfynydd in Gwynedd. Hitachi/Horizon Nuclear Power attempted to bring new gigawatt-scale reactors to Wylfa Newydd, land next to the decommissioned Magnox reactors. However, Hitachi withdrew from the development in 2020 after failing to reach a financing agreement with the UK Government. The land is still managed by Horizon Nuclear Power through Hitachi.

In March 2023, the UK Government published 'Powering Up Britain', a series of documents which set out how it will enhance energy security and deliver on net zero. In the documents, the Government recommitted itself to the aims within the British Energy Security Strategy. These aims were to have 24GW of nuclear energy by 2050 and to take one nuclear project to final investment decision in this Parliament and two further projects in the next Parliament.

We heard of the attractiveness of Wylfa as a site for new nuclear, which would be welcomed by many on Ynys Môn; however, we also heard from the local group People Against Wylfa B (PAWB) which oppose new nuclear at Wylfa. We heard arguments for a whole electricity system run on renewable energy alongside using storage technology. However, this technology is not there yet, and therefore, on balance, we consider that nuclear energy has a strong role to play as part of a mix of low carbon energy sources.

While gigawatt-scale reactors are a proven technology, Small Modular Reactors (SMRs) are still in the development stage. We heard of the opportunities that SMRs at Trawsfynydd could also bring to the north Wales area, in particular from Cwmni Egino, the Welsh Government's nuclear development company for Trawsfynydd. However, we consider that if the UK Government is serious about new nuclear energy it needs to pursue new gigawatt-scale reactors alongside SMRs.

While the introduction of the Regulated Asset Base (RAB) model of funding for nuclear energy projects is welcomed, there are still significant financing challenges associated with nuclear infrastructure. In order for a development at Wylfa to progress, important obstacles remain regarding financial commitment and raising the capital needed.

In 2016, our predecessor Committee reported on the importance of the nuclear industry to the north Wales economy in providing highly skilled, well-paid jobs to a rural part of the UK. We reiterate these points and believe that new nuclear developments could be a game-changer for the regional economy. We also heard of the Welsh workers and businesses already contributing to the Hinkley Point C and Sizewell C projects which

demonstrates that at least part of the skills and supply chains required for such projects are available in Wales. However, a new development at Wylfa will require significant scaling up of the current supply chain and skills provision in north Wales.

We question how long the uncertainty about whether or not a new nuclear build will be delivered at Wylfa can continue. If there is to be new nuclear at the site, the issue of ownership of the land needs to be addressed and we believe the UK Government has a role to play to ensure the site is available for future development. Our overarching view is that new nuclear at Wylfa is not certain despite the progress being made, and more concrete commitment is required from the UK Government to deliver a project at Wylfa.

1 Introduction

The work of the Welsh Affairs Committee

1. In 2016, our predecessor Committee carried out an inquiry into the Future of Nuclear Power in Wales.[1] The inquiry examined Hitachi/Horizon Nuclear Power's proposals for new nuclear development at Wylfa Newydd on Ynys Môn as well as the future potential of Small Modular Reactors (SMRs). The Committee's Report stated that "the nuclear industry has made a major contribution to the economy of North Wales, and Wylfa Newydd would make a strong contribution in the future".[2]

2. Following the suspension of the development at Wylfa Newydd in January 2019, our predecessor Committee carried out an inquiry to consider the impact of the suspension.[3] The Report recognised the importance of the nuclear sector to the north Wales economy and recommended that the UK Government should take steps to identify other developers for the site.[4]

3. We held a one-off session on Wylfa Newydd in September 2021; in part to examine reasons for the failure of the Hitachi/Horizon development as well as to explore the prospect of success for a new developer of Wylfa.[5] Declan Burke, the then Director of Nuclear Projects and Development at the Department of Business, Energy and Industrial Strategy, told us that the "one [thing] that has come through loud and clear from your session […] is what a good site Wylfa is for the development of a nuclear power project".[6]

Our inquiry

4. Our inquiry into Nuclear Energy in Wales builds on the previous work done by this, and our predecessor Committees, to explore how likely it is that there will be a successful new nuclear development at Wylfa in light of the UK Government's shift towards nuclear energy.

5. We launched our inquiry on 26 May 2022 and published terms of reference and a call for written evidence. We recieved 38 pieces of written evidence and held five formal evidence sessions, the last of which took place on 22 February 2023. We travelled to the United States in January 2023 to visit the Vogtle Plant at Waynesboro, Georgia, which is under construction by Bechtel and Westinghouse. We would like to thank all the witnesses who gave oral evidence and submitted written evidence; a full list can be found at the back of this Report.

1 Welsh Affairs Committee, 'The Future of Nuclear Power in Wales inquiry' (January - October 2016)
2 Welsh Affairs Committee, Second Report of Session 2016–17, 'The future of nuclear power in Wales', HC 129, para 72
3 Welsh Affairs Committee, 'Wylfa Newydd Nuclear Power Station inquiry' (February - May 2019)
4 Welsh Affairs Committee, Third Report of Session 2017–19, 'The suspension of work at Wylfa Newydd power station', HC 1938 p. 13, 14
5 Welsh Affairs Committee, 'One-off session on Wylfa Newydd', 23 September 2021
6 Oral evidence taken on 23 September 2021, HC (2021–22) 622, Q47

Nuclear energy in Wales

6. There are two historic nuclear sites in Wales, at Wylfa on Ynys Môn and Trawsfynydd in Gwynedd. The construction of two Magnox reactors at Wylfa began in 1963 and the plant began operations in 1971; generation ceased in 2015. At Trawsfynydd, there were also two Magnox reactors operational between 1965 and 1991.

7. In 2008, the UK Government announced its backing for a new generation of nuclear power plants in the UK.[7] Horizon Nuclear Power was formed in 2009 to develop new nuclear power stations in the UK, including at Wylfa Newydd on land next to the Magnox power station. Hitachi purchased Horizon Nuclear Power in 2012, including the land at Wylfa Newydd.[8] Horizon proposed building two Hitachi UK Advanced Boiling Water Reactors (ABWR) at the site.[9] In December 2013, the UK Government and Horizon signed a co-operation agreement to attract external financing for the plant.[10] The agreement established arrangements through the UK Guarantee Scheme to support private investment in this infrastructure project. The following month, Horizon submitted Hitachi's UK ABWR design for Generic Design Assessment (GDA) and received approval in December 2017.[11] In 2018, Hitachi entered negotiations with the UK Government to discuss various options for the financial support.[12] In January 2019, Hitachi announced that it was suspending the Wylfa Newydd development after failing to reach a financing agreement and, in September 2020, withdrew from the project.[13] Horizon Nuclear Power, through Hitachi, continues to manage the site.[14]

7 *'Hutton's nuclear statement'*, The Guardian, 10 January 2008
8 *'Japan's Hitachi buys UK's Horizon nuclear project'*, Reuters, 30 October 2012
9 *'Hitachi completes acquisition of UK's Horizon nuclear project'*, Reuters, 26 November 2012
10 *'Co-operation agreement signed on Infrastructure Guarantee Scheme for Wylfa Newydd nuclear power station'*, Hitachi, 4 December 2013
11 Office for Nuclear Regulation, 'UK Advanced Boiling Water Reactor'
12 *'Wylfa Newydd confirmed as UK's next nuclear new build project'*, Hitachi, 5 June 2018
13 *'Horizon to suspend UK nuclear development plans after Hitachi pull-out'*, Reuters, 17 January 2019; *'Nuclear: Hitachi 'withdraws' from £20bn Wylfa project'*, BBC, 15 September 2020
14 Horizon Nuclear Power

2 Nuclear energy, net zero and energy security

Net zero targets and energy security

8. While nuclear energy has risen up the policy agenda to meet government aims both to address climate change and, since the conflict in Ukraine, to safeguard the UK's energy security, the question of new nuclear at Wylfa has been ongoing for over a decade. The UK Government's Net Zero Strategy, published in October 2021, outlined the aspiration that the power system will be decarbonised by 2035 and that power will be generated from renewable and nuclear sources.[15] However, all existing nuclear power plants are due to have ceased generating by 2030, with the exception of Sizewell B and Hinkley Point C (which is under construction).[16]

9. The British Energy Security Strategy, published in April 2022, described the problem of dependence on energy sources overseas and the exposure of UK consumers to volatility in global energy markets. The Strategy set out the UK Government's ambitions for the role that nuclear energy would play in reaching energy independence, stating in the introduction that the Government would be "investing massively in nuclear power".[17] The Strategy provides for up to 24 gigawatts (GW) of nuclear power to be generated by 2050, to meet up to 25% of the UK's electricity demands.[18] The Strategy also includes the Government's intention to take one nuclear project to Final Investment Decision (FID) in this Parliament and two further projects in the next Parliament; and states that the Government will award support as soon as possible for new projects, including at the Wylfa site.[19]

10. The British Energy Security Strategy also proposed the creation of Great British Nuclear (GBN) as a body to support projects through every stage of the development process.[20] In May 2022, Simon Bowen was appointed as the Industry Adviser to the then Department for Business, Energy and Industrial Strategy (BEIS) but also reported to the then Prime Minister, Rt Hon Boris Johnson MP. Mr Bowen was tasked with determining the scope and structure of GBN which would support the Government's ambition of up to 24GW of nuclear power.[21] Simon Bowen told the House of Commons Science and Technology Committee in January 2023 that he had submitted a report with 25 recommendations in September 2022 to the then Prime Minister Rt Hon Liz Truss MP.[22] We have been told of the significance of the UK Government's launch of GBN and the high expectations from industry of the body. The Nuclear Industry Association stated that GBN "will play a pivotal role in providing the key milestones and indications of progress in achieving [the

15 Department for Energy Security and Net Zero, 'Net Zero Strategy: Build Back Greener', October 2021, p 19
16 Department for Energy Security and Net Zero, 'Energy white paper: Powering our net zero future', December 2020, p 41
17 Department for Energy Security and Net Zero, 'British Energy Security Strategy', April 2022
18 Ibid., p 20
19 Department for Energy Security and Net Zero, 'British Energy Security Strategy', April 2022, p 21
20 Department for Energy Security and Net Zero, 'British Energy Security Strategy', 7 April 2022
21 Department for Business, Energy and Industrial Strategy, 'Fund to secure our energy supply and boost cutting-edge nuclear projects opens for business', 13 May 2022
22 Oral evidence taken before the Science and Technology Committee on 18 January 2023, HC (2022–23), Q384

Government's ambitions]".[23] The Isle of Anglesey County Council described "the crucial enabling role that GBN can play in enhancing confidence and certainty of outcome for nuclear development".[24]

11. In March 2023, the UK Government published a series of documents, 'Powering Up Britain', which set out how it will enhance energy security and deliver on net zero commitments.[25] The new Energy Security Plan states that the Government will "deliver a programme of new nuclear projects beyond Hinkley Point C and Sizewell C" and that it is "building a pipeline of additional projects to create certainty for the sector".[26] In the new Net Zero Growth Plan, the Government recommitted itself to the aim of taking one nuclear project to FID in this Parliament and two in the next Parliament.[27] We welcome the continuing level of ambition for nuclear energy under the new Prime Minister, Rt Hon Rishi Sunak MP.

12. In its written evidence, the Welsh Government told us that its approach to achieving net zero carbon emissions is broadly compatible with, and complementary to, UK Government policies.[28] It also acknowledged the significant role that nuclear energy can play in decarbonisation and is supportive of the deployment of new nuclear projects on existing sites at Wylfa and Trawsfynydd.[29] The Secretary of State for Wales, Rt Hon David T.C. Davies MP, told us that the Welsh Government Minister for Economy, Vaughan Gething MS, was as supportive as he was of seeing at least one of the Welsh sites go forward and that "there [was] not any tension over this".[30]

Differing views on how to achieve net zero and energy security

13. In our call for written evidence, we invited views on the role that nuclear power could, or should, play in achieving net zero carbon and safeguarding UK energy security. Throughout the inquiry we have heard dividing evidence on the necessity and desirability of using nuclear power to meet these twin goals.

14. Broadly, we have heard of the attractiveness of Wylfa as a site for new nuclear and the potential for investment on Ynys Môn, which would be welcomed by the many on the Island, including the Isle of Anglesey County Council. However, we also heard from the local group People Against Wylfa B (PAWB), which opposes new nuclear at Wylfa.

23 Nuclear Industry Association (NUC0020) para 29
24 Isle of Anglesey County Council (NUC0029) para 2.14
25 Department for Energy Security and Net Zero, 'Powering Up Britain', March 2023
26 Department for Energy Security and Net Zero, 'Powering Up Britain: Energy Security Plan', March 2023, p31
27 Department for Energy Security and Net Zero, 'Powering Up Britain: The Net Zero Growth Plan', March 2023, p27
28 Welsh Government (NUC0036) para 9
29 Welsh Government (NUC0036) para 9
30 Q258

Opposition to nuclear energy

15. Several written evidence submissions expressed views opposing the development of new nuclear power stations.[31] We invited representatives of Greenpeace and People Against Wylfa B (PAWB), a group based on Ynys Môn, to give oral evidence in our first session of the inquiry to ensure we fully understood the arguments against new nuclear power.

16. One of the main arguments we heard was that the UK could, and should, pursue an energy system wholly based on renewable sources, which would make nuclear energy unnecessary. Dr Paul Dorfman, Associate Fellow, Science Policy Research Unit at the University of Sussex, stated that it was entirely possible to sustain a reliable electricity system based on renewable energy.[32] Linda Rogers of PAWB told us that including nuclear power in the energy mix was a "political decision".[33] Doug Parr, Policy Director and Chief Scientist at Greenpeace, told us that "the UK needs to go hell for leather for a 100% renewables system".[34] Those who made the argument for a system based wholly on renewable energy, including Greenpeace and the Claverton Energy Group, told us that this would be cheaper than nuclear power.[35]

17. It was also asserted that a system based on renewables could manage the problem of intermittent supply of wind and solar, countering the argument that nuclear power was needed as a 'baseload generator' in a system reliant on renewable sources. A baseload generator is a source which provides a minimum constant level of electricity supply to the grid. Neil Crumpton of PAWB stated in evidence that the need for a baseload generator was a "false prospectus".[36] The Claverton Energy Group said that "it is a myth to claim that nuclear energy is needed to provide baseload power" and that power can "be provided by any suitable mix of generators including variable wind and solar if backup sources e.g. renewable-fuelled generators and storage are provided".[37]

Support for nuclear energy

18. The majority of written and oral evidence stated that nuclear power must be part of the mix to achieve net zero targets and provide domestic energy security. Broadly, we have heard that nuclear energy should complement intermittent renewable sources during the transition to net zero, given that there will be an increased demand for electricity and that technologies such as storage are not currently available, so cannot be relied upon to achieve the Government's targets.

31 Aberystwyth Town Council (NUC0002); Greenpeace (NUC0022); Neil Crumpton of People Against Wylfa B (PAWB) (NUC0031); Claverton Energy Group (NUC0033); Professor Paul Dodds and Dr Meysam Qadrdan (NUC0034); Dylan Morgan of PAWB (NUC0037); Robat Idris of PAWB (NUC0038); Linda Rogers of PAWB (NUC0039); and Dr Paul Dorfman (NUC0045)

32 Dr Paul Dorfman, University of Sussex (NUC0045) para 28

33 Q24

34 Q23

35 Q23 [Dr Doug Parr]; Claverton Energy Group (NUC0033)

36 Neil Crumpton, People Against Wylfa B (NUC0031)

37 Claverton Energy Group (NUC0033)

19. The main argument for nuclear energy made by witnesses was its capacity to provide baseload generation of electricity to complement intermittent renewable sources.[38] The UK Government told us that an energy system capable of producing net zero emissions is likely to comprise predominantly wind and solar power; but to ensure reliability of supply, technologies are also required which provide power "when the wind is not blowing or the sun does not shine".[39] Cwmni Egino, the Welsh Government's nuclear development company, said that "nuclear energy is necessary to meet net zero targets as part of a broad mix of low carbon technologies".[40]

20. In response to the arguments put forward by our first panel of witnesses regarding a 100% renewable energy system and the use of storage technologies, Dr Michael Bluck of Imperial College London told us that studies on this "involve technologies that don't exist" and that the argument "is relying upon hope".[41]

21. **While we have heard dividing evidence on the role that nuclear energy should play in achieving the UK's net zero targets and ensuring domestic energy security, there is a broad consensus between the UK and Welsh Governments, and the majority of our witnesses, in favour of new nuclear energy generation.**

22. **The storage technology required for an entire electricity system run on renewable energy is not there yet. Therefore, on balance, we consider that nuclear energy has a strong role to play, as part of a mix of low carbon sources, in achieving net zero and energy security.**

38 Fiona Reilly, FiRe Energy Limited (NUC0007); Dalton Nuclear Institute, Manchester University (NUC0016); Energy Industries Council (NUC0017); Nuclear Industry Association (NUC0020); Nuclear Futures Institute, Bangor University (NUC0021); North West Nuclear Arc (NUC0028); Nuclear Institute (NUC0040); Q64 [Julia Pyke, Sizewell C]

39 UK Government (NUC0005) para 3

40 Cwmni Egino (NUC0004)

41 Q4 [Dr Michal Bluck]

3 Potential developments in Wales

Wylfa

23. The UK Government told us that it continues to recognise the strength of the Wylfa site, which could host both gigawatt-scale generation and Small Modular Reactors (SMRs).[42] The Minister of State for Energy Security and Net Zero, Rt Hon Graham Stuart MP, told us in February 2023 that Wylfa "remains a really strong candidate for nuclear power".[43] We heard from the Nuclear Industry Association (NIA) that Wylfa is often referred to as the best site in Europe for new nuclear generation.[44] Simon Bowen, interim Chair of Great British Nuclear, told us that "Wylfa is a great site" and that "Wylfa must be pretty close to the front of the queue".[45] Julia Pyke, Sizewell C, said that "if there is going to be another GW nuclear plant Wylfa is an excellent site for it".[46]

24. There are choices to be made about the technology that could be deployed at Wylfa. Julia Pyke argued that, since EDF's European Pressurised Water Reactor is under construction at Hinkley Point C, it would make sense for the same model to be used at additional plants as "fleets are quite often built in sixes".[47] EDF's European Pressurised Water Reactor was adapted to be built in the UK and is also planned for Sizewell C.

25. On the other hand, Bechtel and Westinghouse have proposed building two AP1000 reactors at Wylfa. In January 2023, we visited the Vogtle Plant in Georgia, USA, where Bechtel and Westinghouse have almost completed two AP1000 reactors. This visit provided us with a valuable insight into the scale of the project and its feasibility for Wales. In our oral evidence session in January, we questioned Bechtel and Westinghouse on their plans for Wylfa. Ivan Baldwin, Business Development Director at Bechtel, told us how the proposed project could be completed by 2035; this included two years for a front-end engineering design (FEED) study, four years to go through the development consent order (DCO) process, and six years for construction.[48]

26. Several witnesses told us that, for any future gigawatt-scale project to progress at Wylfa, the UK Government will have to make a clear decision to commit to the process. Professor Bill Lee, Director of Nuclear Futures Institute at Bangor University, told us that "the Government need[s] to make a decision and push forward with Wylfa".[49] However, the Wylfa Newydd land is still owned by Horizon Nuclear Power, the Hitachi-owned company, which withdrew its own development plans in 2020. Bechtel told us that "Hitachi has been actively engaging with the UK Government as to what the next steps for that site could be" and, in their view, there is a role for the Government in gaining access to the Wylfa site.[50]

42 UK Government (NUC0005) para 36
43 Q254
44 Nuclear Industry Association (NUC0020) para 25
45 Q213
46 Q42
47 Q42
48 Q154
49 Q96
50 Q155

27. The Welsh Government told us that "the disappointment on Ynys Môn was palpable" when the Hitachi project "came to nothing".[51] It also said that "it is essential that the UK Government rebuilds trust around new nuclear at Wylfa" and that the "UK Government needs to demonstrate a sustained commitment to investment".[52] The Isle of Anglesey County Council told us that "communities in and around the island have been left uncertain by the outcome of the Wylfa Newydd experience" and that "some community groups have flagged deep disappointment that, given the level of invested time and influence, it was not possible to bring forward development".[53]

28. **The previous attempt to bring a new nuclear project to Wylfa by Hitachi has left scars on the local community. We are concerned that expectations are being raised again on Ynys Môn and question how long the uncertainty can continue about whether or not a new nuclear build will be delivered at Wylfa.**

29. ***Given that the land at Wylfa Newydd is owned by Hitachi, it is unclear what the current state of play is at the site. If there is to be new nuclear at Wylfa, the issue of ownership of the land needs to be addressed. We reiterate a recommendation of our predecessor Committee and call on the UK Government to encourage Hitachi to sell the Wylfa Newydd site or take part in a consortium of developers to allow future development.***

30. ***We have heard from a wide range of industry representatives that Wylfa is one of the best sites for nuclear development and it is difficult to see how the UK Government can deliver its nuclear ambitions without taking forward a project at Wylfa. We consider that Wylfa should be the location of the next gigawatt-scale nuclear generation plant after Sizewell C.***

Trawsfynydd

31. New nuclear developments could be large-scale GW plants or the new nuclear technology of Small Modular Reactors (SMRs), which are a smaller scale than the traditional reactors. While GW-scale reactors are a proven technology, SMRs are still in the development stage and there is no operational SMR in the UK. The UK Government's Ten Point Plan for a Green Industrial Revolution included the Advanced Nuclear Fund (ANF).[54] From the ANF, £210 million was awarded to Rolls-Royce SMR Ltd for the development of its SMR design.[55]

32. In May 2022 it was announced that the Nuclear Decommissioning Authority (NDA) and Cwmni Egino will work together on proposals for the siting of (SMRs) at Trawsfynydd. The NDA owns the Trawsfynydd site. Cwmni Egino was established by the Welsh Government in 2021 to deliver a site development plan for Trawsfynydd which is "focused on socio-economic growth".[56] Cwmni Egino aims for its plan to be one of the two projects that the UK Government approves in the next Parliament and for Trawsfynydd to be first

51 Welsh Government (NUC0036) para 41
52 Welsh Government (NUC0036) para 41
53 Isle of Anglesey County Council (NUC0029) para 2.29
54 Department for Energy Security and Net Zero, 'The ten point plan for a green industrial revolution', 18 November 2020
55 Department for Business, Energy and Industrial Strategy, 'UK backs new small modular technology with £210 million', 9 November 2021
56 Cwmni Egino (NUC0004)

site for an SMR in the UK.[57] Alan Raymant, Chief Executive of Cwmni Egino, told us that they are developing a business case that covers the financing required to take the project through to a final investment decision.[58] He also said that "the most important thing for us is having the project in an overall UK programme sponsored by Government".[59] Part of Cwmni Egino's work is carrying out a technology assessment of all SMR technologies that are expected to be ready to start construction by 2027.[60]

33. We have heard from a number of SMR technology vendors in evidence and through informal discussions during our visit to the US. We took oral evidence from Rolls-Royce SMR Ltd, which has shortlisted four potential sites to host its SMRs, including both Wylfa and Trawsfynydd.[61] Rolls-Royce SMR Ltd was established in 2021 and has received £210 million of UK Government funding to support the development of its SMR design.[62] However, Alastair Evans, Director of Corporate and Government Affairs at Rolls-Royce SMR Ltd, expressed frustration that the company had not been given access to officials to make their plans into a deployable reality. He said:

> We need to get in a room and actually begin negotiating and talking through how we solve these problems together. We can come up with ideas ourselves and try to fix these problems, but if we are doing it in isolation, it is not helpful.[63]

34. The National Policy Statement for Nuclear Power (EN-6) "provides the primary basis for decisions taken by the Infrastructure Planning Commission on applications it receives for nuclear power stations".[64] The current Nuclear National Policy Statement (NPS) lists sites that the UK Government has determined are potentially suitable for the deployment of new nuclear power stations before the end of 2025; this list includes Wylfa but not Trawsfynydd. The UK Government told us that is in the process of writing a new NPS for nuclear power which, it hopes, will include sites which are suitable to host an SMR.[65] In the recently published Energy Security Plan, the UK Government says that it will consult on the proposed approach to siting new nuclear projects later in 2023.[66]

35. **While successfully developing a Small Modular Reactor (SMR) would present a huge opportunity for the UK, the technology is still in development phase. If the UK Government is serious about nuclear energy now it needs to pursue new gigawatt-scale plants alongside its policy on SMRs.**

36. ***The UK Government, and Great British Nuclear, should continue to engage with Cwmni Egino on its ambition for Trawsfynydd to become the first site to host Small Modular Reactors (SMRs) in the UK. We urge the Government to include the Trawsfynydd site in the new Nuclear National Policy Statement as a potential site for SMRs.***

57 Q216
58 Q216
59 Q217
60 Cwmni Egino (NUC0004)
61 'Rolls-Royce SMR prioritises four NDA sites for 15 GW of new nuclear power', Rolls-Royce SMR Ltd, 9 November 2022
62 Department for Business, Energy and Industrial Strategy, 'UK backs new small nuclear technology with £210 million', 9 November 2021
63 Q205
64 Department for Energy and Climate Change, National Policy Statement for Nuclear Power Generation (EN-6), Volume I of II, July 2011, para 1.2.1
65 Q260
66 Department for Energy Security and Net Zero, Powering Up Britain: Energy Security Plan, March 2023, p30

4 Financing new nuclear

Funding models

37. The financing of nuclear infrastructure has been a challenge for governments and industry. We have been told that the finance model used for nuclear projects "is extremely important" and "can be a deal breaker".[67] The Dalton Nuclear Institute described an effective model as "essential" for the success of a project.[68] We have also heard that the limitations of finance models have led to the failure of projects, such as Hitachi's project at Wylfa Newydd.[69]

38. Before 2022, the available model for funding nuclear projects was the Contracts for Difference (CfD) scheme. Broadly speaking, investors are incentivised under the scheme by protection from volatile energy prices, through a contract with the government-owned Low Carbon Contracts Company (LCCC). The LCCC pays the developer the difference between the market price for energy and an agreed 'strike price'; should the market price rise above the strike price, the developer would pay the difference back to the LCCC. The Welsh Government told us that, while the CfD scheme works reasonably well for renewable energy projects, companies have to find the initial funding from their own resources and the cost of capital creates significant risks over the long development and construction periods for large-scale nuclear plants.[70] It also stated that of the three nuclear projects (Hinkley Point, Wylfa and Moorside) that had, in the past, advanced proposals through the CfD scheme, only Hinkley Point C resulted in an agreement.[71]

39. The UK Government recognised the problems of using CfDs for new nuclear infrastructure and in 2021 proposed a new model through the Nuclear Energy (Financing) Bill.[72] The Nuclear Energy (Financing) Act 2022 provides for a new model of financing nuclear power stations in the UK-the Regulated Asset Base (RAB) model. New nuclear power stations financed through this model are to be supported by a charge on electricity suppliers, which is expected to be passed on to consumers.[73] While the RAB model has already been used for large scale infrastructure projects, such as the Thames Tideway Tunnel, it has not been used for nuclear energy infrastructure before. The UK Government told us that the RAB model could be used "to finance large, small and advanced nuclear projects" and that "the most appropriate financing model for a new project will be determined through negotiations between the project developer and Government".[74] It is expected that the development at Sizewell C in Suffolk will be the first nuclear project to use the RAB model.[75]

67 Dr Michael Bluck, Imperial College London (NUC0027)
68 Dalton Nuclear Institute, Manchester University (NUC0016); and Welsh Government (NUC0036) para iii
69 Cavendish Nuclear (NUC0011)
70 Welsh Government (NUC0036) para 23
71 Welsh Government (NUC0036) para 23
72 Department for Business, Energy and Industrial Strategy , 'New finance model to cut cost of new nuclear power stations', 26 October 2021
73 House of Commons Library, 'Nuclear Energy (Financing) Bill 2021–22', 7 January 2022
74 UK Government (NUC0005) para 15
75 Department for Business, Energy and Industry Strategy, 'Kwarteng advances plans for funding new nuclear projects, including Sizewell C', 14 June 2022

40. The UK Government, Sizewell C and the Nuclear Industry Association (NIA) said in evidence to us that using the RAB could reduce the overall cost of a large-scale nuclear project by £30 billion compared with the CfD model.[76] Julia Pyke, Sizewell C, explained to us that under the CfD model, EDF will not receive any income for Hinkley Point C until Hinkley is operational. She illustrated the problem this represented with an analogy that "if you incurred a credit card bill from 2006 solidly and did not start paying it off until 2027, that would build up some very considerable cost".[77] She explained that the RAB model, on the other hand, "brings down the cost of interest by paying a small amount - a running yield - that pays off the interest on the debt as you go through the construction period, so you are not building up a pot of interest to be repaid when it turns on".[78]

41. The UK Government told us that "by allowing investors to share some of the project's construction and operating risks with consumers, the RAB model aims to help reduce the cost of financing new nuclear projects".[79] The NIA told us that RAB would "add a small levy to [consumer's electricity] bills" and that the income from that levy "will allow project developers to finance the project at cheaper rates, which would substantially cut the ultimate cost to consumers".[80] Fiona Reilly, Managing Director of FiRe Energy, supported this view and said that "RAB is significantly better [than CfD] in bringing down the cost of capital […] thereby providing better value for money to consumers".[81]

42. Witnesses stated that the RAB model was more attractive to investors. The Welsh Government said that this model had been "designed to bring more investors to the table".[82] The Nuclear Futures Institute, Bangor University, told us that payments from bills should "de-risk the investment which should make the project more appealing to a wider range of investors".[83] Julia Pyke said that by "bringing down the cost of the money […] you open up the opportunity to bring in investors who could not conceivably take the risk that EDF took in exposing its balance sheet".[84]

43. However, as briefly outlined above, the RAB model does change the risk profile of projects by sharing some of the construction and operating risk with consumers, which was a cause for concern to some witnesses. Dr Michael Bluck told us that whereas the CfD model was designed to insulate taxpayers from any potential liabilities, making it unattractive to investors who have to enter a strike price that is quite ambitious; the RAB model is meant to put to some of that liability back with the taxpayer, to the advantage of investors.[85] Greenpeace said that the RAB model transfers large amounts of risk to the public, including cover for project mismanagement.[86] Linda Rogers, member of People

76 UK Government (NUC0005) para 16; Sizewell C Consortium (NUC0018); Nuclear Industry Association (NUC0020) para 75
77 Q73
78 Q73
79 UK Government (NUC0005) para 16
80 Nuclear Industry Association (NUC0020) para 78
81 Fiona Reilly, Managing Director of FiRe Energy Limited (NUC0007)
82 Welsh Government (NUC0036) para 25
83 Nuclear Futures Institute, Bangor University (NUC0021)
84 Q73
85 Q13
86 Greenpeace (NUC0022)

Against Wylfa B (PAWB) stated that it is "clear" that the public will be liable for the "inevitable cost overruns".[87] She also called it "unacceptable" that public funding, raised by means of the levy, is used to encourage investors.[88]

44. On the other hand, Darryl Murphy, Head of Infrastructure at Aviva Investors, told us that, in his opinion, "the arguments for intergenerational costs disappeared when net zero became real".[89] Just as public consent has been established for paying for infrastructure now to mitigate climate-related problems for future generations, the argument of putting costs on consumers today through the RAB model for future benefit can be very clearly articulated.[90]

Public and private investment

45. New nuclear projects are associated with long lead times and a level of uncertainty about completion, in particular at the initial development stage, and the cost of capital for such projects is therefore high. We have heard how some level of public funding from the UK Government would be viewed positively by the private sector. Dr Michael Bluck said that "public funding, to some degree, is very important [in] providing greater assurance to the private sector".[91] Darryl Murphy, told us that "government involvement will be seen as positive" and that "just the act of having Government alongside as a shareholder around the table is positive in providing that long-term support that goes beyond policy".[92]

46. Simon Bowen told us that, in line with international practice, the UK Government should take a leading role in the development stage of a project.[93] He went on to say that, due to higher levels of uncertainty at the initial stages, private investment would be very expensive and it made sense to bring in government funding at this point, as the Government can borrow at lower interest rates.[94] However, Simon Bowen was clear that at the point of a Final Investment Decision (FID), public funds should be withdrawn from the project and be reinvested at the development stage of the next project in the programme.[95]

47. **The introduction of the Regulated Asset Base (RAB) model is welcomed as a better alternative to the Contracts for Difference (CfD) scheme for nuclear developments. However, financing new nuclear projects is not straightforward and there will still be challenges under the RAB model. For a development to progress at Wylfa, important issues still remain regarding financial commitment.**

48. ***We recognise the high cost of construction of nuclear energy plants and the large upfront investment needed to get a project to final investment decision. We hope that the Regulated Asset Base (RAB) model will help overcome these investment challenges. However, there are valid concerns about the risk to consumers, which needs to be closely***

87 Linda Rogers, People Against Wylfa B (NUC0039)
88 Linda Rogers, People Against Wylfa B (NUC0039)
89 Q84 [Darryl Murphy]
90 Q84 [Darryl Murphy]
91 Dr Michael Bluck, Imperial College London (NUC0027)
92 Q58
93 Q225
94 Q225
95 Q227

monitored in order to be better understood as the RAB model is used for the first time for a nuclear project at Sizewell C. The Government should explain the mechanisms it will use to monitor and report to the House during the construction of Sizewell C.

The UK Taxonomy and Green Financing Framework

49. In June 2021, the Government published its Green Financing Framework which sets out the Government's climate and environmental agenda in terms of sustainable investment.[96] The Framework document says that the "market for Environment, Social and Governance (ESG) investments in the UK has grown dramatically" with "organisations increasingly reporting sustainability information [which] is often framed around [ESG]". The document also says that "HM Treasury intends to align this Framework with the UK's developing classification of environmentally sustainable economic activities (the UK taxonomy)". Nuclear energy is currently excluded from the UK's taxonomy because "many sustainable investors have exclusionary criteria in place around nuclear energy".[97] HM Treasury also established a Green Technical Advisory Group (GTAG) to oversee the delivery of the UK taxonomy.[98] Alongside this the Government created an Energy Working Group (EWG) as part of the GTAG to provide advice on technologies such as hydrogen, carbon capture and how to address nuclear power.[99]

50. We have heard that there is a debate around nuclear energy within financial institutions. Darryl Murphy told us that "other than coal, which many institutions will have a clear policy against, there is no doubt that most technologies will not elicit the same debate as nuclear".[100] However, many witnesses supported the inclusion of nuclear power in the UK's green taxonomy as a low-carbon technology. Dame Sue Ion, previous Government adviser on nuclear power, said that it is "really important that nuclear power is included in the UK taxonomy and given the recognition it deserves as a source of low carbon energy".[101] Dr Michael Bluck agreed.[102]

51. Others made the argument for inclusion on the basis of its likely positive effect on investors. Urenco, a nuclear fuel consortium, stated that in order "to leverage private investment to meet the objectives of the British Energy Security Strategy, it is essential that the UK's own Green Finance Strategy and Taxonomy recognises the whole nuclear supply chain as green".[103] The view that nuclear's inclusion in the green taxonomy will help unlock private investment was voiced by Alastair Evans. He told us that, if nuclear power was included in the green taxonomy, it would be a "supportive, positive, contributing factor [for them] being able to raise capital at a later stage".[104] The Nuclear Industry Association (NIA) said that "if nuclear were to be excluded from the UK taxonomy it would make it incredibly challenging to mobilise the required investment and make [the UK's] path to net zero by 2050 far more uncertain".[105] We heard from Professor Adrian Bull, Associate Director at Dalton Nuclear Institute at Manchester University, that:

96 HM Treasury, 'UK Government Green Financing Framework', 30 June 2021
97 HM Treasury and UK Debt Management Office, UK Government Green Financing Framework, June 2021, p 18
98 HM Treasury, 'New independent group to help tackle greenwashing', 9 June 2021
99 HM Treasury, 'New independent group to help tackle greenwashing', 9 June 2021
100 Q57
101 Dame Sue Ion (NUC0015)
102 Q7
103 Urenco Ltd (NUC0012) para 25
104 Q199
105 Nuclear Industry Association (NUC0020) para 33

> The main thing is that including nuclear within a green taxonomy gives the confidence to investors that they are investing in something that is supported and recognised as being in the national interest as a clean electricity generating technology.[106]

52. Rt Hon Graham Stuart MP told us in February that "we need to change the environment so sustainable investors do recognise that nuclear has a really important part to play in delivering net zero".[107] In the Spring Budget the Chancellor of the Exchequer, Rt Hon Jeremy Hunt MP, announced that nuclear energy would be included in the green taxonomy, subject to consultation, to encourage private investment.[108]

53. **We welcome the UK Government's announcement that nuclear energy will be included in the green taxonomy, subject to consultation. We consider that this will unlock new avenues of private investment for nuclear development and send the signals needed to the financial sector that nuclear energy is an attractive investment.**

106 Q14 [Professor Adrian Bull]
107 Q274
108 HM Treasury, 'Spring Budget 2023', 15 March 2023

5 Potential economic impact of new nuclear developments

Economic benefits

54. Over a quarter of the population on Ynys Môn is over the age of 65 and 46% of the constituency's population over the age of 16 is economically inactive.[109] The Island has been hit hard recently with the closure of the 2 Sisters plant in March 2023 which saw the loss of over 700 jobs.[110] Our predecessor Committee concluded in the 2016 that "without the nuclear power industry, there is little prospect of many high-quality, well-paid jobs in [north Wales] which will negatively impact the local economy".[111]

55. However, we have received evidence on the potential socio-economic benefits of the construction of new nuclear in north Wales. The Welsh Government said that a development at Wylfa has "the potential to be the single largest investment project in Wales and [is] therefore likely to have a significant impact on the economy and communities on Ynys Môn and the wider north Wales region".[112] The Nuclear Futures Institute at Bangor University said that estimates of the impact of Hinkley Point C and Sizewell C, which are comparable to potential plans for Wylfa, show the expected contribution to the regional economy as between £3.2–4 billion.[113] Cwmni Egino said that studies have indicated that SMR deployment at Trawsfynydd could create around £611 million Gross Value Added (GVA) for northwest Wales and £1.3 billion GVA across Wales during the project's operational life and create over 400 long-term jobs.[114] The UK Government said that its own analysis suggests that a typical large-scale nuclear project like Hinkley Point C will support around 10,000 jobs during the peak of construction and around 900 permanent jobs once the plant is operating, for a period of at least 60 years.[115]

56. Some witnesses have said that new nuclear development could contribute to the UK Government's Levelling-Up agenda by providing growth opportunities for local and regional economies.[116] The Isle of Anglesey County Council told us that "any new nuclear project at Wylfa has the potential to transform the economy of Anglesey".[117] The Council suggested that a project could reverse the decline in the population of working-age residents on the Island which has been falling and is forecast to continue to do so.[118] Cwmni Egino also said that new nuclear generation at Trawsfynydd could "address the wider socio-economic challenges such as reversing outward migration, creating sustainable communities and enhancing the Welsh language and culture".[119]

109 House of Commons Library, 'Constituency dashboard', 21 March 2022; House of Commons Library, 'Constituency data: Economic activity, 2021 census', 9 March 2023
110 North Wales Chronicle, '2 Sisters site is Llangefni to close its doors today', 31 March 2023
111 Welsh Affairs Committee, Second Report of Session 2016–17, 'The future of nuclear power in Wales', HC 129, para 72
112 Welsh Government (NUC0036) para 34
113 Nuclear Futures Institute, Bangor University (NUC0021)
114 Cwmni Egino (NUC0004)
115 UK Government (NUC0005) para 42
116 Cwmni Egino (NUC0004); Cavendish Nuclear (NUC0011); North West Nuclear Arc (NUC0028)
117 Isle of Anglesey County Council (NUC0029) para 3.9
118 Isle of Anglesey County Council (NUC0029) para 3.4 - 3.5
119 Cwmni Egino (NUC0004)

57. **New nuclear developments at Wylfa or Trawsfynydd could be a game-changer for the north Wales regional economy. Such projects would play an important role in the UK Government's Levelling-Up agenda by bringing high-skilled, well-paid, long-term job opportunities to a rural area of the UK. It is vital that north Wales has the opportunity to benefit from the developments that arise from the UK-wide strategy to deliver net zero and achieve greater energy security.**

Skills and supply chains

58. Welsh workers and businesses are already contributing to the Hinkley Point C and Sizewell C projects. According to the UK Government, "contracts worth over £250 million have been awarded to Wales-based businesses" as part of the Hinkley Point C supply chain.[120] The Sizewell C Consortium told us that 162 Welsh companies are working on building Hinkley Point C and that it has signed a Memorandum of Understanding with the Welsh Government committing to expanding the Welsh supply chain.[121] The Consortium also said that future development at Sizewell C will reinforce Welsh supply chains and improve the case for nuclear investment in Wales.[122]

59. A new development at Wylfa will require significant scaling up of the supply chain and the skills provision in north Wales. However, we heard of challenges such as a shortage of skilled labour, which poses challenges to new infrastructure projects, including new nuclear plants. Tom Greatrex, Chief Executive of the Nuclear Industry Association (NIA), told us that there are "skills shortages across the economy at the moment" and that there is a wider issue of skills development in needing the people to deliver the renewal of our electricity system.[123] We have also heard that the nuclear workforce is ageing, creating demand for new entrants to replace those skills.[124] The Nuclear Skills Strategy Group (NSSG) said that "demand for engineering and technical roles remain high in multiple sectors in the UK economy, and the demand in [the nuclear] sector is set against an already existing general shortage of people with the suitable skills to fill them".[125]

60. The constraints on the availability of a skilled workforce have a direct practical impact on the delivery of a nuclear programme. Tom Greatrex, NIA, told us there was insufficient capacity to build two new nuclear sites at the same time. Jasbir Sidhu, President of the Nuclear Institute agreed that the available workforce was not sufficient to start construction on two new nuclear sites simultaneously.[126] Simon Bowen, interim Chair of Great British Nuclear, also stated that this would not be possible without development of the skills and supply chain.[127]

61. There is a role for further and higher education institutions to play, as well as the Welsh Government, in providing courses to train young people for a career in nuclear. We explored with providers of skills training whether they could increase their provision of training packages to create a larger workforce with the appropriate qualifications. While

120 UK Government (NUC0005) para 46
121 Sizewell C Consortium (NUC0018)
122 Sizewell C Consortium (NUC0018)
123 Q94
124 Urenco Ltd (NUC0012) para 28; Welsh Government (NUC0036) Urenco Ltd (NUC0012) para 28; Welsh Government (NUC0036) para 40
125 Nuclear Skills Strategy Group (NUC0030)
126 Q136
127 Q238

agreeing this was possible, we were however told that providers were reluctant to invest in skills training programmes in Wales until there are clear signals from the UK Government of new nuclear projects in Wales. When asked why investment was not happening now, Beccy Pleasant, Head of Nuclear Skills at the NSSG, told us that:

> It is because the tech, the location and the timing have not been confirmed. All three of those criteria are needed for anyone to make that investment. Why would you invest in Wales without that certainty of a Welsh project?[128]

62. We heard the same account of this obstacle to investment in skills and training from other witnesses. Welsh Government Ministers told us that "it is difficult to prioritise skills expenditure on a sector that is struggling to clarify future projects with any degree of certainty".[129] Alastair Evans told us that "until there is a clear market signal that nuclear is happening in the UK, nobody is going to invest in skills and the supply chain".[130] Some witnesses expressed a sense of caution after investing in anticipation of Hitachi's proposed development at Wylfa Newydd, which then failed to materialise. Professor Adrian Bull told us that skills bodies "have been there before, as there were plans for nuclear on Anglesey ten-plus years ago which did not come to fruition, so people are wary about being bitten twice".[131]

63. We have heard strong representations from a range of witnesses calling for a long-term plan for skills. Urenco, a nuclear fuel consortium, said that "a new roadmap for nuclear skills is required to help ensure the UK can meet the demand for specialist and generic skills across all parts of the industry".[132] We also heard from the Energy Industries Council that "identifying what skills will be needed for the longer term will provide a roadmap to the industry that shows how government and industry can work together".[133] The Isle of Anglesey County Council spoke of the "need for an early understanding and confirmation of the project requirements […] in order to map this against the local availability in relation to jobs [and] skills".[134] Beccy Pleasant said that "to maximise jobs for local people you need time to train and develop" them.[135] She also went further and stated that "we need a programme up and running right now to make sure that we are not left in the situation where you have to import skills […] because local capabilities are not available".[136]

64. There is also a global dimension to the skills shortage. Rory O'Neill, UK Director of Government Affairs and Public Relations at Westinghouse, told us that "we are in a competitive marketplace today" as there are a "significant number of other countries around Europe and, indeed, around the world that are looking at nuclear now".[137] He went on to say that while Westinghouse was unlikely to ever leave the UK completely, the company needed to "focus [their] priority in the markets where [they] have the clarity and

128 Q148
129 Welsh Government Ministers (NUC0044) para 9.b.
130 Q203
131 Q19
132 Urenco Ltd (NUC0012) para 30
133 Energy Industries Council (NU0017)
134 Isle of Anglesey County Council (NUC0029) para 3.35
135 Q112
136 Q112
137 Q168

that is what [they] will do".[138] This highlights the global challenge of capacity within the markets and the competition that other countries focussing on new nuclear will pose to the UK in terms of demand for materials, supply chains and skilled workers.

65. There was an urgency to the arguments made by witnesses for development of supply chains. We were told by the Energy Industries Institute that "for there to be a viable supply chain existing within nuclear, we need to move at pace to ensure we start scaling up now".[139] The Isle of Anglesey County Council said that the UK Government should continue to invest in supply chain development in order to allow the host community to capitalise on the emergent market opportunity.[140] The Dalton Nuclear Institute, University of Manchester, told us that "a challenge to any new project will be to ensure the maximum local content of work from the supply chain".[141]

66. The UK Government stated that it "continues to work with the sector on how to ensure that the UK supply chain is well positioned to support meeting [its] ambitions and to seize the opportunities of new nuclear".[142] It also said that it will "work collaboratively with the Welsh Government on skills development".[143]

67. ***If the UK Government is going to realise its ambitions for nuclear energy, investment in skills is essential and serious work needs to be done on how the required skills can be developed. We call on the UK and Welsh Governments to work closely together to support the skills sector to invest in training for nuclear jobs in Wales. We recommend that the UK Government collaborates with the sector, and Welsh Government, in the production of a nuclear skills strategy to provide certainty to the sector on the skills required, when and where to allow providers to plan investment in training programmes in Wales.***

68. ***The contribution of businesses based in Wales to current nuclear developments at Hinkley Point C and Sizewell C demonstrates that, at least in part, the skills and supply chains for such projects are available in Wales. There should be investment in scaling up the Welsh nuclear supply chain to ensure that new nuclear projects in Wales employ the maximum local labour so that the local areas feel the benefits. If there is a new nuclear development in Wales, the UK Government should place a requirement on developers for a minimum level of local content during the project.***

138 Q168
139 Energy Industries Council (NUC0017)
140 Isle of Anglesey County Council (NUC0029) para 2.32.c
141 Dalton Nuclear Institute, University of Manchester (NUC0016)
142 UK Government (NUC0005) para 24
143 UK Government (NUC0005) para 29

6 Commitment from the UK Government

Nuclear programme

69. While many witnesses have welcomed the UK Government's ambitions for nuclear energy, we have heard strong representations from the nuclear, finance and skills sectors for further commitment from the Government. The North West Nuclear Arc said that "it is vital that there is a long-term programme for the deployment of nuclear […] so that the industry has greater certainty in the future programme and required investment".[144] We heard from Professor Adrian Bull that he would "love to see […] a clear plan of what [the Government] sees the future looking like, what they are going to do to help get there and what they expect the industry to do".[145]

70. Some of this desire for certainty was seeking a longer-term plan for a nuclear 'fleet' of reactors, rather than a series of one-off decisions on individual developments. Julia Pyke, Sizewell C, told us that a "programme [of nuclear development] is so important" for both investors and technology vendors.[146] We heard from Jasbir Sidhu of the Nuclear Institute, that "if there are projects and a fleet programme on the table, the industry can get together and start developing the skills".[147] The interim Chair of Great British Nuclear, Simon Bowen, told us that "the word 'programme' is very important" and that "it has to be a programme of new nuclear builds".[148]

71. We have been told very strongly that further clarity and certainty from the UK Government is required by all players in the nuclear industry for there to be confidence in the UK Government's ambitions. Beccy Pleasant was clear that "the most important thing is certainty" and "having a project identified and some degree of certainty for it will enable organisations around Trawsfynydd, around Wylfa, to prepare themselves for it".[149] We heard from Rory O'Neill that there is not the "necessary clarity from Government about how we get from where we are today to where we need to be very soon" and that the "UK Government needs to give the market and potential investors the clarity that they will need to make significant investment decisions".[150] This was echoed by Alastair Evans who told us that "anything that gives shareholders clarity is much needed" and that he needs "to be able to go to [the] Board and make the case for investing in the UK".[151] He said that at the moment there is a "fog of uncertainty".[152]

144 North West Nuclear Arc (NUC0028)
145 Q8
146 Q50
147 Q151
148 Q221
149 Q105
150 Q153
151 Q193
152 Q192

72. When we asked the Secretary of State for Wales, Rt Hon David T.C. Davies MP, when Wylfa will get the green light, the Secretary of State said that:

> I do not think the announcement is likely to be, "Here is a green light. We can go." What we might see is this series of amber lights taking us gently towards that green light that we all want so much.[153]

73. **While we welcome what feels like small steps in the right direction towards new nuclear at Wylfa, we do still question how much further down the path we are now to seeing a successful development than we were when Hitachi withdrew from the site. There will remain risks associated with both the UK and Welsh Governments' political commitment to nuclear power and we believe the UK Government needs to make further commitments within this Parliament. Our overarching view is that new nuclear at Wylfa is not certain despite progress being made and more concrete commitment is required to deliver a project at Wylfa.**

74. ***We welcome the UK Government's announcement that it will deliver a programme of new nuclear projects. We recommend that the Government publishes a medium to long-term programme for nuclear energy generation. The programme must set out how it will achieve its ambitions of up to 24GW of nuclear energy by 2050 and must state which technologies (gigawatt-scale or Small Modular Reactor) the Government wants to be built, where and on what timescale. The programme should also include clear statements of the Government's intentions for the Wylfa and Trawsfynydd sites.***

Finding a developer

75. We heard from nuclear technology vendors that the next step to begin work on a new nuclear site would be the identification of a utility and site licence company. In the UK, only a company holding a nuclear site licence can construct or operate a nuclear power station. Currently only two EDF-related companies hold licences (EDF Energy Nuclear Generation Ltd, which operates the Advanced Gas-cooled Reactor plants and Sizewell B; and NNB Generation (HPC) Ltd which is responsible for the construction of Hinkley Point C). A third EDF-related company (NNB Generation (SZC) Ltd) is applying for a nuclear site licence for the Sizewell C project.

76. The Nuclear Futures Institute, Bangor University, said that while "there are a number of nuclear power plant designs that are suitable for deployment […] who will be the customer for such designs is not clear".[154] The customer would usually be a utility company that will operate the site to generate and sell the electricity. At present, however, only EDF-related companies are able to do that. In response to a question on EDF being the only nuclear developer in the UK, Simon Bowen told us:

> that is why we have to set up GBN. We have to develop sovereign capability within the UK to own our own energy security.[155]

He also stated that "we would not be where we are today without [EDF], but with our level of ambition, we simply have to develop the UK capability".[156]

153 Q276
154 Nuclear Futures Institute, Bangor University (NUC0021)
155 Q233
156 Q233

77. Ivan Baldwin of Bechtel told us that to "bring that customer, the EDF equivalent, to this party, needs a real demand signal".[157] He went on to say that the engagement Bechtel had had with the market "has been very positive" and that there were "real serious players that could come and join that team to be that utility site licence company".[158] Alastair Evans, Rolls-Royce SMR Ltd, told us that they are "having to think a little more laterally about that developer space" and they could set up their own development company or "[Great British Nuclear] could act in that role".[159] Simon Bowen, interim Chair of GBN, told us that there is no developer for many new technologies and suggested that the capability to form a development company be created within GBN.[160] He added that he "[did] not see for one minute [GBN] would be an operator or a utility, but we may have to reserve that until we attract other people into the market".[161]

78. We wrote to the Prime Minister ahead of the Spring Budget to convey some of the representations made to us during our inquiry.[162] We expressed concern with the lack of progress on providing clarity on how the Government's ambitions would be met and called on the Government to establish GBN as soon as possible.[163] We welcome the Government's announcements in the Spring Budget to launch GBN. We commend the appointments of Simon Bowen and Gwen Parry-Jones as GBN's interim Chair and Chief Executive respectively and look forward to learning their plans.[164]

79. ***We have heard strong representations from the nuclear sector for greater clarity and commitment from the UK Government on its ambitions. We put these representations to the UK Government ahead of the Spring Budget and welcome the launch of Great British Nuclear, as we called for. However, we are yet to see the detail of how this body will function. We recommend that GBN is given a mandate to plan and deliver a programme for nuclear generating sites in order to provide much needed clarity to the whole industry.***

80. ***One of the significant missing parts of the future of nuclear development is the lack of a utility developer in the UK, other than EDF-related companies. We recommend that the UK Government explains its plans to resolve this problem and whether there is a role for Great British Nuclear to play.***

157 Q162
158 Q163
159 Q188
160 Q227
161 Q227
162 Welsh Affairs Committee, 'Programme for nuclear energy urgently needed to offer clarity for jobs and skills', 3 March 2023
163 Welsh Affairs Committee, 'Comment: Budget and announcements on nuclear energy', 15 March 2023
164 Welsh Affairs Committee, 'Comment: Energy Security Plan: Nuclear energy and floating offshore wind (FLOW)', 30 March 2023

Conclusions and recommendations

Potential developments in Wales

1. While we have heard dividing evidence on the role that nuclear energy should play in achieving the UK's net zero targets and ensuring domestic energy security, there is a broad consensus between the UK and Welsh Governments, and the majority of our witnesses, in favour of new nuclear energy generation. (Paragraph 21)

2. The storage technology required for an entire electricity system run on renewable energy is not there yet. Therefore, on balance, we consider that nuclear energy has a strong role to play, as part of a mix of low carbon sources, in achieving net zero and energy security. (Paragraph 22)

3. The previous attempt to bring a new nuclear project to Wylfa by Hitachi has left scars on the local community. We are concerned that expectations are being raised again on Ynys Môn and question how long the uncertainty can continue about whether or not a new nuclear build will be delivered at Wylfa. (Paragraph 28)

4. *Given that the land at Wylfa Newydd is owned by Hitachi, it is unclear what the current state of play is at the site. If there is to be new nuclear at Wylfa, the issue of ownership of the land needs to be addressed. We reiterate a recommendation of our predecessor Committee and call on the UK Government to encourage Hitachi to sell the Wylfa Newydd site or take part in a consortium of developers to allow future development.* (Paragraph 29)

5. *We have heard from a wide range of industry representatives that Wylfa is one of the best sites for nuclear development and it is difficult to see how the UK Government can deliver its nuclear ambitions without taking forward a project at Wylfa. We consider that Wylfa should be the location of the next gigawatt-scale nuclear generation plant after Sizewell C.* (Paragraph 30)

6. While successfully developing a Small Modular Reactor (SMR) would present a huge opportunity for the UK, the technology is still in development phase. If the UK Government is serious about nuclear energy now it needs to pursue new gigawatt-scale plants alongside its policy on SMRs. (Paragraph 35)

7. *The UK Government, and Great British Nuclear, should continue to engage with Cwmni Egino on its ambition for Trawsfynydd to become the first site to host Small Modular Reactors (SMRs) in the UK. We urge the Government to include the Trawsfynydd site in the new Nuclear National Policy Statement as a potential site for SMRs.* (Paragraph 36)

Financing new neclear

8. The introduction of the Regulated Asset Base (RAB) model is welcomed as a better alternative to the Contracts for Difference (CfD) scheme for nuclear developments. However, financing new nuclear projects is not straightforward and there will still be challenges under the RAB model. For a development to progress at Wylfa, important issues still remain regarding financial commitment. (Paragraph 47)

9. *We recognise the high cost of construction of nuclear energy plants and the large upfront investment needed to get a project to final investment decision. We hope that the Regulated Asset Base (RAB) model will help overcome these investment challenges. However, there are valid concerns about the risk to consumers, which needs to be closely monitored in order to be better understood as the RAB model is used for the first time for a nuclear project at Sizewell C. The Government should explain the mechanisms it will use to monitor and report to the House during the construction of Sizewell C.* (Paragraph 48)

10. We welcome the UK Government's announcement that nuclear energy will be included in the green taxonomy, subject to consultation. We consider that this will unlock new avenues of private investment for nuclear development and send the signals needed to the financial sector that nuclear energy is an attractive investment. (Paragraph 53)

Potential economic impact of new nuclear developments

11. New nuclear developments at Wylfa or Trawsfynydd could be a game-changer for the north Wales regional economy. Such projects would play an important role in the UK Government's Levelling-Up agenda by bringing high-skilled, well-paid, long-term job opportunities to a rural area of the UK. It is vital that north Wales has the opportunity to benefit from the developments that arise from the UK-wide strategy to deliver net zero and achieve greater energy security. (Paragraph 57)

12. *If the UK Government is going to realise its ambitions for nuclear energy, investment in skills is essential and serious work needs to be done on how the required skills can be developed. We call on the UK and Welsh Governments to work closely together to support the skills sector to invest in training for nuclear jobs in Wales. We recommend that the UK Government collaborates with the sector, and Welsh Government, in the production of a nuclear skills strategy to provide certainty to the sector on the skills required, when and where to allow providers to plan investment in training programmes in Wales.* (Paragraph 67)

13. *The contribution of businesses based in Wales to current nuclear developments at Hinkley Point C and Sizewell C demonstrates that, at least in part, the skills and supply chains for such projects are available in Wales. There should be investment in scaling up the Welsh nuclear supply chain to ensure that new nuclear projects in Wales employ the maximum local labour so that the local areas feel the benefits. If there is a new nuclear development in Wales, the UK Government should place a requirement on developers for a minimum level of local content during the project.* (Paragraph 68)

Commitment from the UK Government

14. While we welcome what feels like small steps in the right direction towards new nuclear at Wylfa, we do still question how much further down the path we are now to seeing a successful development than we were when Hitachi withdrew from the site. There will remain risks associated with both the UK and Welsh Governments' political commitment to nuclear power and we believe the UK Government needs

to make further commitments within this Parliament. Our overarching view is that new nuclear at Wylfa is not certain despite progress being made and more concrete commitment is required to deliver a project at Wylfa. (Paragraph 73)

15. *We welcome the UK Government's announcement that it will deliver a programme of new nuclear projects. We recommend that the Government publishes a medium to long-term programme for nuclear energy generation. The programme must set out how it will achieve its ambitions of up to 24GW of nuclear energy by 2050 and must state which technologies (gigawatt-scale or Small Modular Reactor) the Government wants to be built, where and on what timescale. The programme should also include clear statements of the Government's intentions for the Wylfa and Trawsfynydd sites.* (Paragraph 74)

16. *We have heard strong representations from the nuclear sector for greater clarity and commitment from the UK Government on its ambitions. We put these representations to the UK Government ahead of the Spring Budget and welcome the launch of Great British Nuclear, as we called for. However, we are yet to see the detail of how this body will function. We recommend that GBN is given a mandate to plan and deliver a programme for nuclear generating sites in order to provide much needed clarity to the whole industry.* (Paragraph 79)

17. *One of the significant missing parts of the future of nuclear development is the lack of a utility developer in the UK, other than EDF-related companies. We recommend that the UK Government explains its plans to resolve this problem and whether there is a role for Great British Nuclear to play.* (Paragraph 80)

Written evidence: Letter from Rt Hon Stephen Crabb MP, Chair, to the Prime Minister, 3 March 2023

Dear Prime Minister,

I am writing ahead of the UK Budget announcement on 15 March 2023 to draw your attention to the representations made to us during my Committee's inquiry into Nuclear energy in Wales.

I would like to extend my thanks again to the Secretary of State for Wales and the Minister of State for the Department of Energy Security and Net Zero for giving their time to attend our Committee meeting on 22 February.

The Committee launched this inquiry following the publication in April 2022 of the British Energy Security Strategy, which set out the Government's ambitions for 24GW of nuclear energy by 2050 and the creation of Great British Nuclear. Simon Bowen, advisor to the Government on the establishment of Great British Nuclear, told my Committee that "it will be disastrous if we waited another two years" because the "whole of the industry will lose faith" and that "we've got to have the courage to take an inter-generational view […] for low carbon and net zero".

The Strategy named Wylfa, north Wales, as a potential site for a new nuclear project. Since then, we have heard of growing concerns of a loss of momentum in delivery of the Government's Strategy and consequently, further uncertainty over the future of the Wylfa site.

We have heard from a wide range of industry representatives that Wylfa is considered the best site in the UK for new nuclear development. Indeed, it is difficult to see how Government can deliver its nuclear ambitions without taking forward a project at Wylfa.

There is a strong view within the Committee that Wylfa should be the next GW scale site in line after Sizewell C so that north Wales can benefit from the economic impacts of a large-scale infrastructure project, which will bring highly skilled and well-paid long-term job opportunities to a rural area of the UK.

We have heard strong calls from the finance and skills sectors as well as from technology developers for a programme for nuclear which sets out which technology (GW or Small Modular Reactors) the Government wants to be built, where and when. The majority of members of the Committee are of the view that the Great British Nuclear arms-length body should be launched as soon as possible, with a mandate to deliver such a programme, in order to provide much needed clarity to the whole industry.

I am copying this letter to the Chancellor of the Exchequer, the Secretary of State for Energy Security and Net Zero, and the Secretary of State for Wales for their awareness.

Yours sincerely,

Rt Hon Stephen Crabb MP
Chair of the Welsh Affairs Committee

Formal minutes

Wednesday 26 April 2023

Members present

Rt Hon Stephen Crabb, in the Chair

Simon Baynes

Virginia Crosbie

Wayne David

Rob Roberts

Beth Winter

Nuclear Energy in Wales

Draft report (*Nuclear Energy in Wales*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

The Committee divided.

Ayes, 4	Noes, 1
Simon Baynes	Beth Winter
Virginia Crosbie	
Wayne David	
Rob Roberts	

Question accordingly agreed to.

Paragraphs 1 to 80 read and agreed to.

Summary agreed to.

Resolved, That the Report be the Third Report of the Committee to the House.

Written evidence relating to Nuclear Energy in Wales was ordered to be added for printing with the Report.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

Adjournment

Adjourned till Wednesday 10 May at 9.30am.

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the inquiry publications page of the Committee's website.

Wednesday 19 October 2022

Professor Adrian Bull, Associate Director, Dalton Nuclear Institute, University of Manchester; **Dr William Bodel**, Research Associate, Dalton Nuclear Institute, University of Manchester; **Dr Michael Bluck**, Director of the Centre for Nuclear Engineering, Imperial College London — Q1–22

Linda Rogers, Member, PAWB (People Against Wylfa B); **Neil Crumpton**, Member, PAWB (People Against Wylfa B); **Dr Doug Parr**, Policy Director and Chief Scientist, Greenpeace UK — Q23–41

Wednesday 16 November 2022

Julia Pyke, Director of Finance and Economic Regulation, Sizewell C; **Darryl Murphy**, Head of Infrastructure, Aviva Investors; **Tom Greatrex**, Chief Executive, Nuclear Industry Association — Q42–95

Wednesday 14 December 2022

Professor Bill Lee, Director of Nuclear Futures Institute, Bangor University; **Jasbir Sidhu**, President, Nuclear Institute; **Daniel Maney**, Negotiations Officer, Prospect; **Beccy Pleasant**, Head of Nuclear Skills, Nuclear Skills Strategy Group — Q96–151

Wednesday 25 January 2023

Ivan Baldwin, Business Development Director, Bechtel; **Rory O'Neill**, UK Director of Government Affairs and Public Relations, Westinghouse — Q152–178

Mark Salisbury, Head of Regulatory Affairs, Rolls -Royce SMR; **Alastair Evans**, Director of Corporate and Government Affairs, Rolls -Royce SMR — Q179–208

Wednesday 22 February 2023

Alan Raymant, Chief Executive, Cwmni Egino; **Simon Bowen**, Industry Advisor, Great British Nuclear — Q209–244

Rt Hon David TC Davies MP, Secretary of State for Wales, Office of the Secretary of State for Wales; **Rt Hon Graham Stuart MP**, Minister of State, Department for Energy Security and Net Zero; **Kiera Harper**, Deputy Director of Nuclear Power and Industry, Department for Energy Security and Net Zero — Q245–278

Published written evidence

The following written evidence was received and can be viewed on the inquiry publications page of the Committee's website.

NUC numbers are generated by the evidence processing system and so may not be complete.

1 Aberystwyth Town Council (NUC0002)

2 Dr Michael Bluck (Director of the Centre for Nuclear Engineering, Imperial College London) (NUC0027)

3 Cavendish Nuclear (NUC0011)

4 Claverton Energy Group (NUC0033)

5 Virginia Crosbie (MP for Ynys Môn, Member of Parliament) (NUC0019)

6 Neil Crumpton (People Against Wylfa B (PAWB)) (NUC0042)

7 Neil Crumpton (People Against Wylfa B (PAWB)) (NUC0031)

8 Cwmni Egino (NUC0004)

9 Dalton Nuclear Institute, University of Manchester (NUC0016)

10 Dassault Systemes (NUC0003)

11 Dr Jonathan Dean (NUC0024)

12 Department for Business, Energy and Industrial Strategy; and Office of the Secretary of State for Wales (NUC0005)

13 Department for Energy Security and Net Zero (NUC0049)

14 Dr Paul Dorfman (Associate Fellow, Science Policy Research Unit (SPRU), Sussex Energy Group (SEG), University of Sussex) (NUC0045)

15 Energy Industries Council (EIC) (NUC0017)

16 Dr John Ewbank (NUC0001)

17 Greenpeace UK (NUC0022)

18 Nick Grenfell-Marten (NUC0041)

19 Malcolm Grimston (Hon Senior Research Fellow, Imperial Centre for Energy Policy, Imperial College) (NUC0014)

20 Robat Idris (People Against Wylfa B (PAWB)) (NUC0038)

21 Dame Sue Ion (NUC0015)

22 Isle of Anglesey County Council (NUC0029)

23 Julie James MS (Minister for Climate Change, Welsh Government); and Vaughan Gething MS (Minister for Economy, Welsh Government) (NUC0044)

24 Dylan Morgan (People Against Wylfa B (PAWB)) (NUC0037)

25 North West Nuclear Arc (NUC0028)

26 Nuclear Futures Institute, Bangor University (NUC0021)

27 Nuclear Industry Association (NUC0020)

28 Nuclear Institute (NUC0040)

29 Nuclear Skills Strategy Group; Nuclear Waste Services; EDF Energy; AWE; Office for Nuclear Regulation; National Nuclear Laboratory; Trade Unions Congress; NSAN Voice of the Supply Chain; ECITB Nuclear Employer Forum; and Nuclear Decommissioning Authority (NUC0030)

30 Nuvia (NUC0013)

31 Fiona Reilly (Managing Director, FiRe Energy Ltd) (NUC0007)

32 Linda Rogers (People Against Wylfa B (PAWB)) (NUC0039)

33 Sizewell C Consortium (NUC0018)

34 Terrestrial Energy (NUC0023)

35 Rory Trappe (Magnox and Prospect Union Representative (retired)) (NUC0046)

36 UK Energy Research Centre (NUC0034)

37 Urenco Ltd (NUC0012)

38 Welsh Government (NUC0036)

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the publications page of the Committee's website.

Session 2022–23

Number	Title	Reference
1st Report	Grid Capacity in Wales	HC 218
2nd Report	Floating Offshore Wind in Wales	HC 1182
1st Special Report	The Benefits System in Wales: Government response to the Committee's Fourth Report of Session 2021–22, and correspondence from the Welsh Government	HC 402
2nd Special Report	The economic and cultural impacts of trade and environmental policy on family farms in Wales: Government response to the Committee's Fifth Report of Session 2021–22	HC 470
3rd Special Report	Grid capacity in Wales: Government response	HC 1063

Session 2021–22

Number	Title	Reference
1st Report	Railway Infrastructure in Wales	HC 438
2nd Report	Renewable energy in Wales	HC 439
3rd Report	Implications of the UK-Australia FTA for Wales	HC 481
4th Report	The benefits system in Wales	HC 337
5th Report	The economic and cultural impacts of trade and environmental policy on family farms in Wales	HC 607
1st Special Report	Railway infrastructure in Wales: Government response to the Committee's First Report of Session 2021–22	HC 715
2nd Special Report	Renewable energy in Wales	HC 756
3rd Special Report	Implications of the UK/ Australia FTA for Wales: Government response to the Committee's Third Report of Session 2021–22	HC 895

Session 2019–21

Number	Title	Reference
1st Report	Pre-appointment hearing with the Government's preferred candidate for the Chair of S4C	HC 89

Number	Title	Reference
2nd Report	Freeports and Wales	HC 205
3rd Report	The Welsh economy and Covid-19: Interim Report	HC 324
4th Report	Wales and the Shared Prosperity Fund: Priorities for the replacement of EU structural funding	HC 90
5th Report	Brexit and trade: implications for Wales	HC 176
1st Special Report	The Armed Forces and Defence Industry in Wales: Government Response to the Committee's First Report of Session 2019	HC 97
2nd Special Report	City Deals and Growth Deals in Wales: Government Response to the Committee's Second Report of Session 2019	HC 146
3rd Special Report	Freeports and Wales: Government Response to Committee's Second Report of Session 2019–21	HC 667
4th Special Report	Wales and the Shared Prosperity Fund: Priorities for the replacement of EU structural funding: Government response to the Committee's Fourth Report of Session 2019–21	HC 1083
5th Special Report	Brexit and trade: implications for Wales: Government response to the Committee's Fifth Report of Session 2019–21	HC 1223