

Nuclear energy and the Welsh economy

February 2024



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Economy, Trade and Rural Affairs Committee
Welsh Parliament
Cardiff Bay
CF99 1SN

Tel: **0300 200 6565**

Email: **SeneddEconomy@senedd.wales**

Twitter: **[@SeneddEconomy](https://twitter.com/SeneddEconomy)**

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About the Committee

The Committee was established on 23 June 2021. Its remit can be found at:
www.senedd.wales/SeneddEconomy

Current Committee membership:



**Committee Chair:
Paul Davies MS**
Welsh Conservatives



Hefin David MS
Welsh Labour



Luke Fletcher MS
Plaid Cymru



Vikki Howells MS
Welsh Labour



Samuel Kurtz MS
Welsh Conservatives



Buffy Williams MS
Welsh Labour

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Chair's foreword

There is huge potential for the nuclear industry in Wales. Nuclear development could provide an enormous economic stimulus in Wales and would certainly help establish strong trading relationships across the world. The Economy, Trade and Rural Affairs Committee has undertaken this inquiry to consider how Wales could be a future nuclear powerhouse and learn more about the opportunities that there are for the sector, as well as the barriers there are to its growth.

Stakeholders have indicated that Wylfa is a strong contender for future nuclear development to help the UK achieve its energy security and net zero goals and Trawsfynydd has also been recognised as a site with great potential.

The Committee heard that hopes have been dashed in the past, and so managing expectations was stressed to Committee Members. Certainty is the key to building confidence: to secure the necessary investment in skills, build strong and resilient supply chains, secure high-quality jobs, and provide direction for the Welsh nuclear energy industry in the future.

This report provides a snapshot of the sector and its ambitions for Wales and sets out a series of recommendations to support the UK Government and the Welsh Government to realise Wales' nuclear development potential.

A successful and modern nuclear industry here in Wales would provide thousands of high-quality jobs and could unlock billions of pounds worth of investment. The Committee was keen to learn more about how those socio-economic benefits can be unlocked to support the Welsh economy.



Paul Davies MS

Chair

Conclusions

Conclusion 1. The very strong message from this inquiry was that while relationships between partners are constructive, a decision by the UK Government on the future of nuclear development in the UK, and in particular the future of the sites at Wylfa and Trawsfynydd, is urgently needed. A positive decision for Welsh nuclear sites will create the conditions for business confidence, directing government funding and focus, building resilient supply chains and upskilling the workforce. Since we have taken written and oral evidence, the UK Government published: ‘Civil Nuclear: Roadmap to 2050’, which has been broadly welcomed by the sector. It is noted that neither the Wylfa nor Trawsfynydd sites are mentioned in the Roadmap, so uncertainty of the future prospects of Welsh sites remains..... 18

Conclusion 2. New nuclear offers huge economic opportunities for the Welsh economy, but the lack of clarity is hindering efforts to build up the necessary skills base with scale and pace, and risks the loss of an existing skilled workforce that can be directed toward careers in nuclear energy. A clear and phased programme of work is needed to drive the necessary skills development, as well as to identify the opportunities for a Welsh workforce to benefit from involvement in both SMR and large scale nuclear projects. 28

Recommendations

Recommendation 1. Given the urgent need for certainty in Wales about future nuclear development, the Committee would welcome the UK Government setting out when it will confirm the designated sites for future nuclear projects, the kinds of technology to be deployed, and the timeframes for implementation. 18

Recommendation 2. The Welsh Government should set out how it will work with the UK Government and its partners in Wales on local workforce planning for new nuclear projects in north Wales, to support local businesses and the Welsh supply chain. 23

Recommendation 3. The Welsh Government should set out how it will work with local authority partners and others to specifically address the housing needs and pressures associated with a new nuclear development, and keep the Committee updated once more is known about the UK Government’s strategy and plans..... 26

Recommendation 4. The Welsh Government should set out its plans to work with partners in north Wales to manage local expectations and support community support and engagement with future nuclear energy development plans..... 29

Recommendation 5. The Welsh Government should update the Committee on its involvement in the UK Government’s Nuclear Skills Taskforce and what actions it is taking to recognise and address potential barriers to scaling up skills for the nuclear sector. 29

Recommendation 6. When there is an announcement from the UK Government on the future strategic direction and programme for new nuclear, the Welsh Government should set out how it will work with the education and skills sector, Chief Regional Officers, Joint Corporate Committees and partners across the whole of Wales to drive the necessary pace of change to deliver maximum socio-economic benefits..... 29

1. Background

Nuclear energy policy is largely reserved to the UK Government, which in April 2022 published the British Energy Security Strategy, stating that new nuclear power was critical to meeting net zero carbon emissions and ensuring UK energy self-sufficiency. Proposals for Small Modular Reactors (SMRs) producing less than 350MW will come under the Welsh Government's planning policy and applications.

- 1.** Wales has two historic nuclear sites, at Wylfa and Trawsfynydd, which are identified as potential sites for future nuclear energy projects. Critical to the development of these sites are decisions yet to be taken by the UK Government, which has renewed its ambitions for up to 24GW of nuclear power capacity by 2050. The UK Government has committed to bringing at least one largescale nuclear project to the point of Final Investment Decision (FID) by the end of this Parliament and two further projects to FID in the next Parliament. It is highly likely that Sizewell C (in East Suffolk) will be the one largescale nuclear project brought to FID in this Parliament as it is the most developed project.
- 2.** The terms of reference for this one-day inquiry were to consider the potential economic impact of new nuclear developments in north Wales, how to maximise local employment and benefits to local or Wales-based supply chains of new nuclear projects, and the challenges posed by skills shortages and how to overcome them. By its nature the inquiry did not examine the pros and cons of nuclear energy itself, but recognised its place in an overall energy security strategy and net zero targets.
- 3.** The British Energy Security Strategy states that the UK Government "will enter negotiations with the most credible projects to enable a potential government award of support as soon as possible, including (but not limited to) Wylfa". The Strategy also says that the UK Government will "accelerate work on

advanced nuclear technologies, including both small modular reactors and advanced modular reactors”.¹

4. New nuclear developments could be the traditional largescale reactors or the new technology of Small Modular Reactors (SMRs). SMRs are still in development phase and there is no operational SMR in the UK, but the UK Government has awarded £210 million to Rolls-Royce SMR Ltd to develop its technology. The company’s evidence to our inquiry stated that:

“Rolls-Royce SMR is the quickest and most affordable way to get new nuclear on the grid and is the UK’s first domestic nuclear technology in more than 20 years. Each of our 470MW SMRs will produce enough stable, affordable and emission-free energy to power a million homes for 60 years.”²

5. Alongside the British Energy Security Strategy, a UK Government arms-length body was created - Great British Nuclear (GBN) – tasked with “helping projects through every stage of the development process” to support the UK Government’s ambition for up to 24GW of nuclear power. In March 2023, GBN was officially launched, with Gwen Parry-Jones as interim CEO and Simon Bowen, former Industry Adviser to the Department for Business, Energy and Industrial Strategy (BEIS), appointed as interim Chair. In July 2023, GBN launched its selection process for SMRs which concluded this autumn. GBN has said that successful technologies will be supported to enable a FID by 2029.

6. Evidence from Cwmni Eginio, the company set up by Welsh Government in 2021 to deliver a site development plan for Trawsfynydd, set out the potential benefits to Wales of nuclear energy developments for the north Wales regional economy.³

7. They highlight that a study by Oxford Economics, commissioned by the Nuclear Industry Association (NIA), shows that the UK’s existing civil nuclear industry contributed £700 million to the Welsh economy in 2021, directly employing 800 people, and supporting a total of 10,700 jobs across Wales.⁴ More recently, the NIA’s annual Jobs Map report published in September 2023, shows that 825 people work in the sector across Wales, a 3% increase on the previous year’s total. The NIA has also stated that new projects in north Wales would boost

¹ <https://www.gov.uk/government/publications/british-energy-security-strategy>

² <https://business.senedd.wales/documents/s140902/Additional%20evidence%20paper%20-%20Rolls%20Royce%20SMR.pdf>

³ Written evidence

⁴ <https://www.niauk.org/delivering-value/>

jobs and skills, bringing tens of thousands of additional jobs to Wales if they were realised.⁵

8. As set out by Prospect⁶, the nuclear sector will play a vital role in meeting future energy needs alongside scaling up renewables and other technologies, and provides highly skilled, well paid jobs. The NIA’s written evidence states that two large-scale reactors at Wylfa could provide long-term jobs for between 800 and 900 people, and that each nuclear sector employee contributes an average of £102,300 in gross value added contribution to GDP, almost twice as high as the national average⁷. Bechtel’s evidence said that “in providing job opportunities where they are most needed, the industry is proven to help reverse regional inequality”.⁸

9. The NIA says new nuclear projects would have a transformative impact on the north Wales economy, and that the UK Government should be prepared to take equity stakes of at least 20% in projects at Wylfa and Trawsfynydd to lower the cost of financing and to provide investor confidence.⁹ In oral evidence, Tom Greatrex noted that in addition to decreasing capital costs, “it also sends a very strong message, when Government policies are about trying to ensure localisation as far as possible in the supply chain and in skills provision”.¹⁰

10. Since we took written and oral evidence in this inquiry, the UK Government published: ‘Civil Nuclear: Roadmap to 2050’¹¹. While the document does not mention Wylfa or Trawsfynydd, it does commit to “explore a further large-scale reactor project beyond [Sizewell C]” and to “deploy SMRs in the UK”. The UK Government also reconfirms its commitment to “deploying up to 24GW by 2050 and to achieve this aim, will aim to secure investment decisions to deliver 3-7GW every five years from 2030 to 2044”.

⁵ <https://www.niauk.org/nuclear-sector-could-bring-tens-of-thousands-of-jobs-to-wales-if-projects-happen/>

⁶ Written evidence

⁷ https://www.niauk.org/wp-content/uploads/2023/01/Delivering-Value_Economic-Impact-Civil-Nuclear.pdf

⁸ Written evidence

⁹ Written evidence

¹⁰ Paragraphs 67-68, Economy, Trade and Rural Affairs Committee, 26 October 2023

¹¹ Department for Energy Security and Net Zero, ‘Civil Nuclear: Roadmap to 2050’. (January 2024)

2. Getting to 24GW - Will it be Wylfa?

11. To reach the UK Government's stated ambition of 24 gigawatts of nuclear power by 2050, witnesses thought a mixture of large-scale nuclear reactors and small modular reactors (SMRs) would be necessary. Jane Lancaster of Prospect pointed out that, once online, Hinkley Point C and Sizewell C would not be able to deliver enough capacity on their own, given that other reactors will be coming offline in the coming decade, and a large number of SMRs would be needed to deliver that level of capacity.¹²

12. The Committee asked witnesses for their assessment of the likelihood of another large scale nuclear development after Sizewell C, and of Wylfa as a lead contender to be given the go-ahead. The unanimous view was that Wylfa is a strong, well characterised site - Simon Bowen said it was seen by many as the best in Europe.¹³ Tom Greatrex of the NIA said:

"If you were to speak to anybody involved in nuclear, it's a site that is very highly regarded because of its geography, geology, community support—a range of different factors that make it a very strong site for new-build development."¹⁴

13. As has also been pointed out in other recent parliamentary reports, including the **Welsh Affairs Committee report 'Nuclear Energy in Wales' of April 2023** and the more recent report by the **All Party Parliamentary Group on Nuclear Energy**, the critical issue now is for the UK Government to reach a decision on moving ahead with a further large-scale nuclear project, and to provide clarity on long-term plans for deploying nuclear energy. Simon Bowen of GBN said:

"... it's quite difficult to see how that [target of up to 24 GW] can be delivered without another one or two large-scale gigawatt. Now, that does in itself provide some challenges, (1) because Hinkley is a big and expensive project and Sizewell will be the same, and, because of the determination of the Office for National Statistics, it sits on the Government balance sheet, so any future investment in gigawatt needs to be very carefully thought through.

¹² Paragraph 16, Economy, Trade and Rural Affairs Committee, 26 October 2023

¹³ Paragraph 85, Economy, Trade and Rural Affairs Committee, 26 October 2023

¹⁴ Paragraph 14, Economy, Trade and Rural Affairs Committee, 26 October 2023

“The Government has gone for SMRs at the moment because [...] they should be lower cost, they should be cheaper to finance and quicker to build. So, the current policy is that we will build Hinkley and Sizewell, but there is no determination on whether we will go for future gigawatt. There are, however, noises from both within the civil service and from within Government that it does make sense to go forward with it. When that decision will be made, I think that’s quite difficult to predict.”¹⁵

14. Simon Bowen also pointed out the potential of Wylfa for a large fleet of SMRs to reach the scale of capacity needed.¹⁶

15. Following the failure of previous attempts by Horizon Power to develop new nuclear at the ‘Wylfa B’ or ‘Wylfa Newydd’ site, the land is still owned by Hitachi. Members therefore explored the implications of Hitachi’s ongoing ownership of the site for its future under the UK Government’s energy security strategy. Simon Bowen of GBN noted the need to agree a price and for there to be a commercial negotiation on that. It is far from clear who would buy the site – whether that would be the UK Government or another private company, but Simon Bowen said that he did not see Hitachi’s ownership as a block:

“... Sall the indications are at the moment that Hitachi don’t want to do future gigawatt developments in the UK, it’s an asset that they are prepared to consider selling, and we would absolutely be interested in putting that into the mix, simply because of the number of sites that we need to get after the 24 GW target.”¹⁷

¹⁵ Paragraph 84, Economy, Trade and Rural Affairs Committee, 26 October 2023

¹⁶ Paragraph 101, Economy, Trade and Rural Affairs Committee, 26 October 2023

¹⁷ Paragraph 111, Economy, Trade and Rural Affairs Committee, 26 October 2023

3. The future of Trawsfynydd

16. Although not suitable for a large-scale nuclear development for reasons of geography and water supply, Trawsfynydd is recognised as a site with a strong nuclear heritage and great potential. It is not currently on the list of sites identified in the National Planning Statement (NPS) as it only focuses on large-scale developments and not SMR technology. Tom Greatrex of the NIA said that was the first thing that needed to change:

“... as an industry association, we’re very clear that we think that Trawsfynydd is a very strong site that should be, if not right at the very start, in the first tranche of potential sites for SMR, because of the support for it, and also it’s a site that’s suitable for SMR, but which wouldn’t be suitable for large scale. And if you’re going to get to 24 GW, you need a mix of both large and small.”¹⁸

17. Simon Bowen of GBN set out what he saw as the place for SMRs in the context of energy security requiring deployment of more than one fleet:

“... to deliver energy security, you’ve got to deploy at scale and pace, and so ...you can’t just do one SMR, you’ve got to put the infrastructure in place and then build multiple SMRs, preferably on the same site, to give you the scale that you need.”

18. Because of the uncertainty around SMRs, GBN is recommending the UK Government manages the risks around energy security and operational resilience by building two fleets of two different designs. This means developing two sites, however Simon Bowen of GBN was not positive about Trawsfynydd being a front runner in siting selection:

“The reality about Traws is that Traws is a smaller site and therefore would not be the most competitive—is the best way to put it—if you look at it from a scale and pace perspective, because it’s not in the policy statement. Now, that does not for one minute discount Traws as being a very attractive nuclear site for other potential developments, such as AMR—you know, the advanced modular reactors—or, potentially, test reactors. There’s no question that it has its place in that, but would it be

¹⁸ Paragraph 20, Economy, Trade and Rural Affairs Committee, 26 October 2023

*at the front of the queue for the current SMR selection process?
I think that's unlikely.*¹⁹

19. This view from GBN is at odds with the goal of Welsh Government and Cwmni Egino for Trawsfynydd to be the site of the first SMR in the UK.

20. The view of Professor Adrian Bull of the University of Manchester's Dalton Nuclear Institute, as an advocate of deploying nuclear energy in the UK, was that Trawsfynydd should have an important place in a nuclear programme. He described it as "probably the best characterised and the best developed site for a potential SMR in the UK", and said it did not run the risk of 'getting in the way' of potential gigawatt development elsewhere. Noting the work already done by Cwmni Egino, he said that not selecting it would be "a missed opportunity", particularly considering the economic benefits for Wales.

21. Professor Simon Middleburgh of Bangor University's Nuclear Futures Institute also defined Trawsfynydd as a "very special site" offering unique opportunities:

*"It's the UK's only inland nuclear licensed site for civil power, and therefore it's an opportunity. If we are looking at not only building new nuclear but exporting it, eventually, to other countries, a lot of those countries are looking at inland sites. And if we can prove that it's safe technology, and we can build it economically at Trawsfynydd, then it gives us a golden opportunity to go and sell these reactors around the world as well."*²⁰

22. Simon Bowen said GBN would continue to work closely with Cwmni Egino "to work out what is the best use for Traws and when might that happen, as we develop our view on which site should be developed first".²¹ Alan Raymant of Cwmni Egino set out the work being done to assess and address issues relating to the site, such as the necessary grid connection²², and he confirmed the close working relationship and constructive partnership working with GBN to explore the AMR option. Simon Bowen said that how the relationship develops in the future will be dependent on the UK Government's decision on future strategy.²³

¹⁹ Paragraph 91, Economy, Trade and Rural Affairs Committee, 26 October 2023

²⁰ Paragraph 255, Economy, Trade and Rural Affairs Committee, 26 October 2023

²¹ Paragraph 91, Economy, Trade and Rural Affairs Committee, 26 October 2023

²² Paragraph 113, Economy, Trade and Rural Affairs Committee, 26 October 2023

²³ Paragraph 107, Economy, Trade and Rural Affairs Committee, 26 October 2023

4. Supply chain issues

23. Members explored potential pressures on supply chains and how those might affect future nuclear energy developments. Simon Bowen of GBN classified it as a ‘significant risk’, with a substantial amount of work needed to ensure strong and resilient supply chains to deliver new nuclear. He emphasised the need for a spatial plan for the future nuclear programme to provide investment certainty:

“That then allows us to give certainty to the supply chain to say, ‘There are 24 GW of power that are going to be built in either SMRs or gigawatts—time for you to invest, because there’s a huge opportunity.”²⁴

24. GBN’s role was defined as then influencing the businesses and projects in the nuclear programme, and to look at the supply chain holistically, avoiding duplication in buying from different vendors and building capacity:

“With the programme certainty, though, I absolutely believe, with the work of the catapults, and people like the Nuclear Advanced Manufacturing Research Centre, there is enough work and enough capability in the UK to develop it, but there is a long way to go for us to deliver a programme and to develop the UK capability that’s capable of doing that.”²⁵

25. The economic benefit of nuclear energy projects to local economies is significant and not in question – for Hinkley Point it is measured in hundreds of millions of pounds and thousands of jobs²⁶ - but the extent of local workforce involvement in the future nuclear programme will be balanced over its lifetime. Simon Bowen of GBN explained:

“Particularly for the first-of-a-kind projects, there’s a real dilemma about value for money and lowest cost and pace versus really bringing the supply chain up quickly. So, you can see in, maybe the second or third reactor that you build, particularly in the SMR space, that you’d start to demand more and more local—whatever you mean by ‘local’, but UK and local—content.

²⁴ Paragraph 120, Economy, Trade and Rural Affairs Committee, 26 October 2023

²⁵ Paragraph 121, Economy, Trade and Rural Affairs Committee, 26 October 2023

²⁶ Paragraph 128, Economy, Trade and Rural Affairs Committee, 26 October 2023

“... for the first reactor, what you’re trying to do is demonstrate that they work and demonstrate you can build them predictably in terms of cost and time...it is likely that you’d have more content from outside the local area, but in the second and the third—and that’s the whole premise of building fleets of these smaller reactors—then it would become more and more locally dominant.”²⁷

26. The need for clarity and to ‘define the pipeline’²⁸ came up again with regard to developing strong supply chains. Tom Greatrex of the NIA said:

“... you’ve got to know what the projects are, because until you do, it’s very hard for supply-chain companies to justify investment in skills and training and also in facilities, et cetera, to be able to service that, until they know what the requirement’s going to be. As yet, although we’ve got a high-level target, we don’t have the road map that’s been promised by the UK Government, which would hopefully set that out in a bit more detail for the industry to invest in.”²⁹

27. Cwmni Egino’s approach to ensuring a broad and lasting legacy of local benefit over the lifetime of a project is taking a bottom-up approach to a local needs analysis - identifying what communities would value. This looks beyond the construction phase, which lasts a specified period, to the operational phase, involving work in areas such as servicing and maintenance, but also to generate business opportunities on the back of a ‘bedrock of economic activity’.³⁰

28. The risks from competition and pressure on global supply chains to support nuclear development were also considered. The global acceleration of countries moving to nuclear in recent years, partly as a response to the energy security and decarbonisation agenda, makes it even more important to have clarity on the UK’s nuclear programme. Being closer to the front of the queue for project development will help mitigate supply chain pressures.³¹ Tom Greatrex said:

“... the confidence that comes from having clarity of programme is key to investment, and that drives then the skills, the

²⁷ Paragraphs 126-127, Economy, Trade and Rural Affairs Committee, 26 October 2023

²⁸ Written evidence

²⁹ Paragraph 27, Economy, Trade and Rural Affairs Committee, 26 October 2023

³⁰ Paragraph 129, Economy, Trade and Rural Affairs Committee, 26 October 2023

³¹ Paragraph 72, Economy, Trade and Rural Affairs Committee, 26 October 2023

*opportunities, the jobs that can come from that and everything that follows.*³²

29. A piecemeal approach to decisions on which projects to progress will be problematic – it is important that there is a clear long-term plan with a roadmap for implementing different elements of the programme. Professor Adrian Bull of the University of Manchester warned of the dangers:

“We’ve seen examples where companies didn’t skill up for nuclear, for Hinkley Point C, because there was only one project—Sizewell C wasn’t guaranteed, still isn’t guaranteed—so companies had that uncertainty about, ‘Do we invest to try and win contracts on Hinkley when there may not be any more coming down the track?’, whether or not it’s a reactor like Hinkley or of a different design.

“And we’re in that position at the moment, with companies who are in challenging times having to make investment decisions. Are they going to invest significant amounts of money in either training people or getting accreditations to be able to work in the nuclear field if there isn’t a clear programme and a drumbeat of nuclear projects, not necessarily with guarantees for them but which they can be bidding for, coming down the track?”

30. The NIA wants to see the UK Government take at least a minority equity stake in future nuclear projects to maximise local employment and local supply chains, as it says “Equity stakeholders have the most influence on the shape of the supply chain, and that is the best guarantee”.³³ It also called for UK content to be “a key competitive determining factor” in selecting SMR technology: “The value that vendors bring to the UK and Welsh industry should be considered and vendors should be required to maximise UK content where possible.”

31. Prospect’s evidence also raised concern about support for the wider nuclear supply chain. It stressed the need to protect UK sovereign capability in nuclear fuel manufacture, and pointed to uncertainty over the future nuclear programme as contributing to challenges with that operation.³⁴

³² Paragraph 74, Economy, Trade and Rural Affairs Committee, 26 October 2023

³³ Written evidence

³⁴ Written evidence

Conclusion 1. The very strong message from this inquiry was that while relationships between partners are constructive, a decision by the UK Government on the future of nuclear development in the UK, and in particular the future of the sites at Wylfa and Trawsfynydd, is urgently needed. A positive decision for Welsh nuclear sites will create the conditions for business confidence, directing government funding and focus, building resilient supply chains and upskilling the workforce. Since we have taken written and oral evidence, the UK Government published: 'Civil Nuclear: Roadmap to 2050', which has been broadly welcomed by the sector. It is noted that neither the Wylfa nor Trawsfynydd sites are mentioned in the Roadmap, so uncertainty of the future prospects of Welsh sites remains.

Recommendation 1. Given the urgent need for certainty in Wales about future nuclear development, the Committee would welcome the UK Government setting out when it will confirm the designated sites for future nuclear projects, the kinds of technology to be deployed, and the timeframes for implementation.

5. Skills for future nuclear

32. The fact that supply chains and skills for nuclear are inexplicably linked was emphasised by GBN, whose role will also be to “phase the programmes to roll skills and supply-chain capability from one project to another”.³⁵ Skills shortages were highlighted by several witnesses as a concern and a barrier to delivering nuclear ambitions.

33. Jane Lancaster of Prospect pointed to an ageing workforce in the sector, a need to focus on engineering and apprenticeships, and to encourage people to enter or stay in the sector and to “have confidence that there is longevity in those workplaces”.³⁶

34. Simon Bowen of GBN sits on the UK Government’s Nuclear Skills Taskforce and described the increase in skills needed for both civil nuclear and defence nuclear as ‘breathtaking’:

“... the numbers that we’re talking about requiring for the sector—and by ‘the sector’ I mean defence and civil—are breathtaking. And, over the next 15 years, numbers vary from an extra 150,000 to 250,000, maybe up to 40,000 new engineers in the next five years. So, the numbers are enormous.”³⁷

35. Around 80% of the skills needed are not ‘nuclear specific’, so there is competition between infrastructure programmes. Although Helen Higgs of the Nuclear Skills Strategy Group (NSSG) stressed that nuclear infrastructure projects offered a stability and longevity of employment prospects, and that competition between employment sectors could be mitigated by planning ahead.³⁸

36. Evidence from Bechtel supported this:

“The incubation of a new nuclear development offers the time to plan for nuclear skills at the local level, this can include working with technical colleges to invest in apprenticeships and in cross-skilling professionals from declining sectors. It is imperative that Wales builds a strong workforce to meet new nuclear demands, the renaissance of nuclear power is a

³⁵ Paragraph 124, Economy, Trade and Rural Affairs Committee, 26 October 2023

³⁶ Paragraph 45, Economy, Trade and Rural Affairs Committee, 26 October 2023

³⁷ Paragraph 137, Economy, Trade and Rural Affairs Committee, 26 October 2023

³⁸ Paragraph 48, Economy, Trade and Rural Affairs Committee, 26 October 2023

generational opportunity to drive innovation, boost productivity and reduce costs on future deployments of the technology.”³⁹

37. Prospect said that the UK Government needs a comprehensive skills strategy⁴⁰ to mitigate the risks of skills shortages affecting the sector and jeopardising the government’s nuclear ambitions. It said public sector pay constraints were leading to a ‘red light’ situation for recruitment into key roles in the sector and needed to be tackled in government, and that decommissioning plans and funding delays were also risks. Skilled workers tend to move from one project to the next, and so “vital skills and expertise will be lost if the Hinkley Point C workforce cannot move on to Sizewell C”. This leads to concern about a possible knock-on effect for later projects in Wales.

38. Simon Bowen said the taskforce’s report, yet to be published, would offer opportunities for Welsh universities to take on more graduates to build capacity. He said formalised collaboration would be vital to develop ‘hubs’ of capability and excellence in engineering skills.⁴¹

39. Alan Raymant of Cwmni Egino said the Horizon experience in north Wales had shown that gearing up local colleges to taken on apprentices ‘can be done’, noting many of these were now working at Hinkley Point, but that certainty was vital to scale up skills programmes.

40. Helen Higgs of the NSSG highlighted the important existing legacy of the skills infrastructure in the north-west of Wales from previous developments, and the potential to build on that for the future.⁴² The NSSG will be releasing a programme in early 2024 called Destination Nuclear to attract a wider population, including young people, into nuclear. A wide range of opportunities are offered by nuclear projects, and there is a need to help map the career pathways open to people coming in at different points on the ladder.⁴³

41. An early commitment on the certainty of future projects is needed to scale up skills programmes. Simon Bowen said that the phasing of the programmes would also be important to ensure the capacity is there to develop SMRS and gigawatt scale alongside other UK infrastructure projects.⁴⁴

³⁹ Written evidence

⁴⁰ Written evidence

⁴¹ Paragraphs 139-140, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁴² Paragraph 22, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁴³ Paragraphs 41-44, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁴⁴ Paragraph 151, Economy, Trade and Rural Affairs Committee, 26 October 2023

42. Professor Adrian Bull also stressed the importance of the work of the nuclear skills taskforce to address the challenge of delivering the skills needed for both civil nuclear and defence nuclear:

“... those are both vital missions for the UK as a whole. We need to understand that connection and make sure that both sides of that coin have the necessary skills to deliver without delaying one programme for the other.”⁴⁵

43. Alan Raymant said that trying to develop both Wylfa and Trawsfynydd in north Wales at the same time would probably not be feasible in the context of current skills shortages.

44. The Committee explored how the skills shortages might affect the development of SMRs, given that different skills might be needed for the two types of nuclear project. Simon Bowen noted the big advantage that a higher percentage of SMR development can happen offsite:

“There’s a big opportunity for Wales, for example: why wouldn’t Wales have one of the SMR factories, where you do either the manufacturing or the assembly? So, the big advantage of that, of course, is, regionally, you don’t have a concentration of skills that you’ve got to have in one area; you can spread it across the country, so it’s more deliverable.”⁴⁶

45. Professor Simon Middleburgh echoed that point about the potential economic advantages of SMR technology:

“if you’ve got that drumbeat of these modular reactors being built like cars one after the other, with those factories being the centre point, those jobs aren’t going to go anywhere. As long as you’re building the reactor, those jobs will stay as well. It’s important that that is considered as part of it, and it’s a real benefit for the SMR technology.”⁴⁷

46. Rolls Royce SMR said that each SMR will create 400-500 jobs while in operation, and it would expect the majority of workers to be local to the area. It has shortlisted three sites as potential locations for its first factory, one of which is

⁴⁵ Paragraph 298, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁴⁶ Paragraph 150, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁴⁷ Paragraph 311, Economy, Trade and Rural Affairs Committee, 26 October 2023

Deeside in north-east Wales, and says to maximise local employment and supply chains, it is aiming for up to 80% UK content for its UK fleet.⁴⁸

47. Professor Middleburgh set out the work already being done to build the capacity needed in Wales, and what was now needed:

“we’re plugging that high-level, high-education bit, but we also need to start working with the local colleges, and we need to start developing those undergraduate programmes. So, Bangor University have started a general engineering degree; we need to start putting people on it and really supporting the growth of that with local people, and making sure that people go into STEM, stay in STEM, and stay in the local region as well, with good jobs going forward.”⁴⁹

48. He said it was critical that UK Research and Innovation (UKRI),⁵⁰ the UK’s biggest funder of research and innovation, was aligned with plans for new nuclear, noting the withdrawal of funding for doctoral training at a time when the UK Government was saying it was committed to up-skilling. This point was echoed by Professor Adrian Bull.

49. Professor Bull also stressed from his experience with Horizon the importance of developers being clear the skills they were *not* looking for from local suppliers, to give those local companies confidence about what was open to them, and where to focus their efforts better:

“So, I’d encourage—when we get to that point, hopefully—the developers of new programmes to be as open and transparent about things they’re not looking for from local supply chains because they have it from elsewhere. And equally, that reinforces the confidence that local companies and skills providers will have for the things that they can be bidding for.”⁵¹

50. Witnesses were also asked about the impact of the apprenticeship levy, which operates differently in Wales, on skills development. There seemed to be a lack of knowledge of that being a factor in planning skills for nuclear UK-wide,

⁴⁸ Written evidence

⁴⁹ Paragraph 262, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁵⁰ UKRI is a non-departmental public body sponsored by the UK Department for Science, Innovation and Technology

⁵¹ Paragraph 281, Economy, Trade and Rural Affairs Committee, 26 October 2023

something that Members felt needed to be addressed to tackle barriers to building the sector skills needed in Wales.

Recommendation 2. The Welsh Government should set out how it will work with the UK Government and its partners in Wales on local workforce planning for new nuclear projects in north Wales, to support local businesses and the Welsh supply chain.

6. Local impacts and community support

51. Nuclear energy developments draw in a mix of workers, and the percentage of local workforce will vary over the lifetime of the project. It will include younger workers who may be expecting to stay in the area for a sustained period of time, and a more transient workforce, including experienced older workers moving from one nuclear project to another.⁵²

52. The further into the nuclear phase, the lower the percentage of local workers, but Helen Higgs of the NSSG said the key to maintaining a higher percentage of local population was starting the planning for training well ahead of a project curve:

“I’m talking three to four years, I’m not talking too much more than that, providing...there is a signal to allow the developer in particular to support the supply chain. The supply chain, otherwise, takes all the risk, and it’s their bottom line.”⁵³

53. Tom Greatrex of the NIA also stressed the importance of supporting the supply chain investing in the workforce:

“So, if they are going to take on the cost of more apprentices or more training, they need help, either through some kind of early contract involvement or through some levy cascade or whatever it might be. But they need some help to take that risk.”⁵⁴

54. Helen Higgs also stressed the importance of building early experience to optimise local workforces, planning for collaboration with existing gigawatt projects so that workers can move between projects to gain experience “because it’s the lack of experience that means that you will reduce the local content”.⁵⁵

55. The Isle of Anglesey County Council’s support for a future project at Wylfa is “based on confirmation that the development is sustainable and that it should not be at the expense of the island’s communities”.⁵⁶ Concerns have been expressed about the impact of accommodating a transient workforce and the

⁵² Paragraphs 36-37, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁵³ Paragraph 33, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁵⁴ Paragraph 33, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁵⁵ Paragraph 34, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁵⁶ Written evidence

increased pressure on local housing, as well as the potential impact on tourism as a key economic driver in north Wales.⁵⁷

56. Council Leader Llinos Medi said it was important to continue to attract tourists to the area, and highlighted the increased difficulties on Anglesey with the ‘vast’ change in housing demand over the past 2-3 years, and the need to provide housing for young people. She said it would be necessary to ‘start again’ when considering these issues and putting mitigations in place, based on local knowledge, and to have honest conversations with local communities about the negative impacts that would come alongside the positive impacts on skills and jobs.⁵⁸ The Council Leader said it had been able to retain key staff involved in discussions during the Horizon phase, whose knowledge and expertise can be deployed very quickly.

57. Professor Adrian Bull re-affirmed the need for certainty to plan properly for housing, given the lack of affordable housing in north Wales and Anglesey. He said housing stock for a construction workforce could then be converted into permanent affordable housing for local residents, avoiding displacing local population and adding to housing stock for the future:

“if there isn’t that lead time and that ability to plan with certainty, then you will find that there is that conflict between having to accommodate a construction workforce, and the local people, not unreasonably, wanting to be able to buy and live in affordable, good-quality housing in their community.”⁵⁹

58. The Committee asked about concerns that, as the previous Development Consent Order for a project at Wylfa was rejected, if the same thing could happen with a future project. Llinos Medi acknowledged it was a concern, and was why mature discussions between stakeholders continue to be very important, to identify issues sooner rather than later and find ways to mitigate or amend plans to secure consent. The legal planning process and policies must be adhered to and respected, but it was noted that with the Horizon project the developer had respected local views, and it had been possible to adapt and amend to accommodate them.⁶⁰

⁵⁷ <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/projects/EN010007/EN010007-003948-Recommendation%20Report%20-%20English.pdf>

⁵⁸ Paragraphs 193-195, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁵⁹ Paragraph 276, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁶⁰ Paragraph 200, Economy, Trade and Rural Affairs Committee, 26 October 2023

Recommendation 3. The Welsh Government should set out how it will work with local authority partners and others to specifically address the housing needs and pressures associated with a new nuclear development, and keep the Committee updated once more is known about the UK Government's strategy and plans.

7. Managing expectations

59. The importance of managing expectations, and recognising the impact of previous decisions on nuclear energy in north Wales, cannot be understated. Llinos Medi described the failure of Horizon as “disastrous” for young people, businesses and the local community. Alwen Williams of Ambition North Wales, said the uncertainty had created an “unstable situation” in terms of investment earmarked in the growth plan for north Wales. Absolute clarity and certainty about the type of future nuclear development and the timescales is vital to rebuild trust and confidence and re-mobilise key stakeholders including educational institutions. Renewed efforts to raise awareness of nuclear career opportunities will need to be handled with care: Llinos Medi stressed “we can’t let our young people down again”.⁶¹

60. The impact of these ‘false starts’ was emphasised by Professor Adrian Bull, with his background of trying to encourage people into the nuclear industry:

“We need to find a way to make it clear that it is different this time. Whether that’s because we’ve got national, UK and Welsh Government commitment and backing, whether we’ve got, hopefully, that programme and that clarity of what’s coming down the track, as well as individual projects—. But I think if we overlook that hurdle of the history of the last 10, 15 years, then we’ll be running the risk of being over-optimistic, complacent.”⁶²

61. Llinos Medi highlighted the importance of nuclear projects in retaining Welsh speakers on the island, with young people being a crucial foundation for prosperous communities, and the project at Wylfa seen as an opportunity to encourage them to stay and contribute to the community.

62. The current lack of certainty is affecting the ability to plan and develop skills, leading to concerns about the loss of skilled individuals to other regions. Llinos Medi stressed a new project at Wylfa could reverse the trend of working-age people moving away from Anglesey and encourage young people to stay on the island. Alwen Williams also emphasised the wider economic potential for the region, with Trawsfynydd as a key element contributing to the overall prosperity of north Wales. Llinos Medi said:

⁶¹ Paragraph 216, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁶² Paragraph 302, Economy, Trade and Rural Affairs Committee, 26 October 2023

*“There are opportunities here to see prosperity across north Wales. Trawsfynydd is a key part of that as well, and it’s possible for us to see a significant economic change in north Wales, giving young people opportunities to stay here and raise their families here, and create the next generation of workers in both places as well”.*⁶³

63. Llinos Medi also spoke of the ‘proximity principle’ – one of the five principles adopted by the council as necessary for support in principle and for the social licence to proceed with a nuclear development on Anglesey. The negative impacts of a new project at Wylfa would be felt locally, and so the positive impacts should also be felt locally with maximum benefit to the local economy, and the regional benefits spreading outwards from there.⁶⁴

64. Professor Middleburgh said there was a need to “overcommunicate” the nuclear strategy with the local population so that they fully understand the opportunities involved and can feed-in to the strategy.⁶⁵

65. Frustration was expressed about the lack of a decision on the Wylfa site and a desire for leadership and guidance, particularly in terms of the policy on gigawatt scale. The establishment of GBN is seen as a positive step, but there is still a need for clarity “as a matter of urgency”.⁶⁶ Llinos Medi said:

*“... we’re still looking, particularly as regards the policy on gigawatt scale, for leadership and guidance on that. So, I would say that the conversations are ongoing, but I feel very frustrated, because it is a shame that a decision wasn’t made back in 2019 as we would now be at the height of development and providing that energy security we all want to see.”*⁶⁷

Conclusion 2. New nuclear offers huge economic opportunities for the Welsh economy, but the lack of clarity is hindering efforts to build up the necessary skills base with scale and pace, and risks the loss of an existing skilled workforce that can be directed toward careers in nuclear energy. A clear and phased programme of work is needed to drive the necessary skills development, as well as to identify the opportunities for a Welsh workforce to benefit from involvement in both SMR and large scale nuclear projects.

⁶³ Paragraph 209, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁶⁴ Paragraph 230-233, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁶⁵ Paragraph 274, Economy, Trade and Rural Affairs Committee, 26 October 2023

⁶⁶ Written evidence

⁶⁷ Paragraph 179, Economy, Trade and Rural Affairs Committee, 26 October 2023

Recommendation 4. The Welsh Government should set out its plans to work with partners in north Wales to manage local expectations and support community support and engagement with future nuclear energy development plans.

Recommendation 5. The Welsh Government should update the Committee on its involvement in the UK Government's Nuclear Skills Taskforce and what actions it is taking to recognise and address potential barriers to scaling up skills for the nuclear sector.

Recommendation 6. When there is an announcement from the UK Government on the future strategic direction and programme for new nuclear, the Welsh Government should set out how it will work with the education and skills sector, Chief Regional Officers, Joint Corporate Committees and partners across the whole of Wales to drive the necessary pace of change to deliver maximum socio-economic benefits.

Annex 1: List of oral evidence sessions

The following witnesses provided oral evidence to the committee. A transcript of all oral evidence sessions can be viewed on the Committee's website.⁶⁸

Date	Name and Organisation
26 October 2023	<p>Tom Greatrex, Chief Executive Nuclear Industry Association</p> <p>Helen Higgs, New Nuclear Build Head of Construction Capability, Nuclear Skills Strategy Group</p> <p>Jane Lancaster, Assistant Secretary, Prospect</p>
26 October 2023	<p>Alan Raymant, Chief Executive, Cwmni Eginio</p> <p>Simon Bowen, Chair, GB Nuclear</p>
26 October 2023	<p>Llinos Medi, Leader, Isle of Anglesey County Council</p> <p>Alwen Williams, Portfolio Director, Ambition North Wales</p>
26 October 2023	<p>Professor Adrian Bull, BNFL Chair in Nuclear Energy and Society, University of Manchester</p> <p>Professor Simon Middleburgh, Nuclear Futures Institute, Bangor University</p>

⁶⁸ Economy, Trade, and Rural Affairs Committee 26/10/2023 - Welsh Parliament (senedd.wales)

Annex 2: List of written evidence

The following people and organisations provided written evidence to the Committee.

Title	Date
Evidence paper – Nuclear Industry Association	26 October 2023
Evidence paper – Prospect	26 October 2023
Additional evidence paper – Bechtel Nuclear Power Co. Ltd	26 October 2023
Additional evidence paper – Rolls Royce SMR	26 October 2023
Evidence paper – Cwmni Eginio	26 October 2023
Evidence paper – Isle of Anglesey County Council	26 October 2023