



**NUCLEAR SUPPLY CHAIN  
CAPABILITY STUDY: WALES**

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## EXECUTIVE SUMMARY

In May 2024, Gardiner & Theobald LLP in partnership with Siker Consultancy were commissioned by Cwmni Egino to explore emerging opportunities that Welsh businesses may have in relation to current and future demand from the nuclear sector, with a focus on **North Wales**. The study focused on four critical objectives:

- 1) **The 'known' Welsh nuclear landscape:** The study brought together the 'known' UK nuclear supply chain, specifically across active nuclear new build and waste decommissioning projects. This consisted of a comprehensive desk-based review of existing market and sector intelligence from across the nuclear sector. The study also engaged with major projects and programmes to deliver an organisational-based view of the Welsh market share, and estimated current capacity, broken down across Welsh regions.
  - The study focussed on the following overarching categories, providing an in-depth view of capacity and capability across the following supply chain(s):
    - *Manufacturing and Fabrication;*
    - *Construction;*
    - *Professional Services Consultancy (PSC); and*
    - *'Other': Supply - Plant and Equipment / Maintenance / Installation / Security / Training*
- 2) **Industry Collaboration:** The study engaged a wide range of stakeholders from across Welsh industry, gaining insight into current regional opportunities and risks across Welsh supply chains.
- 3) **The 'Scale of Opportunity':** The study looked at the known Welsh nuclear supply chain's capacity against a set of potential demand-based scenarios, with a focus on North Wales. The study also provides a view of the potential impact on capacity of any future large-scale nuclear investment and growth in the region.
- 4) **The 'Potential Welsh Supply Chain':** To better understand Welsh supply chain appetite for future nuclear opportunities, Gardiner & Theobald developed a survey to gain direct feedback. The survey was distributed to **over 3,000 suppliers across Wales** through multiple industry networks, with only a small number (69) of suppliers providing responses to the survey.

## Overview Findings and Themes

This study has identified a number of findings that can inform considerations for the future. The following findings represent the main themes that emerged during the study and are drawn from the primary data gathered and qualitative research across industry and the supply chain:

- The study identified potential future Welsh nuclear sector investment sources across Nuclear new build and Decommissioning. To achieve the UK's growth ambitions for the nuclear sector, major growth is required both at a regional and national level.
- **Scope of Opportunity:** Wales is forecasted to have £9.4 billion of investment if all potential opportunities are realised across the nuclear sector between 2024-2039.
- Data for 345 Welsh organisations has been gathered from intelligence shared across existing

live nuclear projects and industry.

- From the market data gathered, the known nuclear Welsh supply chain will have capacity and capability constraints and won't be able to capitalise fully on future opportunities if growth doesn't take place across Wales to meet future sector demand.
- From the analysis of the market data gathered through this study, North Wales does not currently have the capacity or capability to satisfy the potential future demand of the sector.
- Wales, including North Wales, has a strong 'known' supply chain for support services with appetite for future nuclear opportunities.
- Both Welsh industry and the organisations that took part in this study's survey highlighted the need for project certainty and a clear opportunities pipeline.
- There is a perception across industry and the supply chain that the nuclear sector has high barriers to entry, with an already well-defined incumbent supply chain.
- The study identified skills shortages across the sector. There is an existing shortage of skilled workers within the Welsh nuclear industry and the broader infrastructure sector. This represents an opportunity for targeted upskilling across areas that are at the highest risk of skills shortages and resource constraints (e.g., Steel Fixers).
- Existing major projects and programmes from across the nuclear sector have pledged investment to Wales to grow supply chain capacity though providing contract opportunities for Welsh suppliers.
- This study has formed a baseline view of capacity and capability in the Welsh supply chain. Other studies are ongoing that are looking at this across other sectors, namely offshore wind and manufacturing.
- Further sector and industry-wide collaboration was identified throughout as a critical theme moving forward. To address the challenges that potential large-scale investment would pose for the region, a coordinated approach to identify risks and challenges alongside maximising supply chain capacity and capability is recommended.

The **high-level observations** regarding potential areas for future intervention as identified by this study are:

- 1) Building greater visibility of pipeline opportunities to enable future project and programme supply certainty.
  - i) Improved visibility of opportunities so companies can target their business development efforts; and
  - ii) Project certainty so companies can invest in capability and capacity.
- 2) Additional 'industry engagement' to follow up and build upon the high-level outputs of this study.
- 3) A sector view and regional approach to market engagement across the nuclear industry.
  - i) Targeted market engagement in Wales for **existing nuclear opportunities** across

- waste decommissioning, nuclear new build projects (e.g., Sizewell C and Hinkley Point C) and also local demand in North Wales (Wylfa and Trawsfynydd).
- ii) A coordinated approach to ‘warm-up’ the market on **potential future demand** in the nuclear sector (Wylfa and SMR Growth).
- 4) Facilitate collaboration across Welsh business and industry to enable shared learning, foster growth and realise potential growth opportunities.
  - 5) Establish incentives to attract businesses to invest or locate in Wales / North Wales.
  - 6) Review the reality of pledges made by major UK nuclear projects and programmes.
  - 7) Further detailed research is potentially needed to better understand the specifics of what is required to satisfy future growth requirements.

The key observations highlighted above cannot work independent of each other. The findings and key observations in this study will bolster and support an overarching nuclear supply chain strategy for Wales, and North Wales.

This study has found multiple supply chain research workstreams looking to achieve similar outcomes, such as the *Welsh Manufacturing Action Plan* and *FSB Wales: A Skills-Led Economy*. Through this study’s engagement strategy, Gardiner & Theobald also identified areas for future collaboration across Welsh stakeholders, including umbrella bodies, trade associations and the Welsh Government.

The conclusions stemming from this study align with those from across the skills sector, such as the priorities of the *National Nuclear Strategic Plan for Skills*:

- *Further collaboration across the sector*
- *Investment in the existing workforce*
- *Highlighting new opportunities effectively (pipeline certainty)*

This study has been informed by the findings and feedback gained from a number of key stakeholders engaged during the research, as follows:



Figure 1: Stakeholder Map

## 1. INTRODUCTION

The UK, through its 2050 vision and legal commitment to Net Zero aims to achieve 24 GW of nuclear capacity within 25 years, over three times the current nuclear capacity, increasing nuclear power contribution to over 25% of the UK's electricity needs<sup>1</sup>. Expenditure in advanced nuclear in the UK is expected to exceed £250 billion by 2050, generating significant GVA and high value jobs. The role of nuclear new build will be a critical aspect in the UK's future energy portfolio.

To achieve this vision, large-scale nuclear new build growth is required, alongside the continued development and delivery of Advanced Modular Reactor (AMR) and Small Modular Reactors (SMR) across the UK<sup>11</sup>.

With key decisions to be made by the UK Government over the coming months regarding the selection and siting of small-scale nuclear technologies, it is timely to revisit the current and potential capability and capacity of supply chain companies in Wales to take advantage of the projected growth within the UK new build sector. Gaining a deeper insight into the Welsh nuclear supply chain landscape will help position Wales to capture a proportionate share of tomorrow's nuclear-driven growth.

In May 2024, Gardiner & Theobald LLP (G&T) in partnership with Siker Consultancy were commissioned by Cwmni Egino to explore emerging opportunities that Welsh businesses may have in relation to current and future demand from the nuclear sector, with a focus on **North Wales**<sup>2</sup>.

This report presents the findings of a comprehensive study of the existing Manufacturing and Fabrication, Construction and Consultancy supply chains in Wales, and their current and potential capacity and capability to benefit to the fullest extent possible from nuclear new build in the UK (including sites in Wales).

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<sup>1</sup> [Civil nuclear: roadmap to 2050 - GOV.UK](#)

<sup>2</sup> North Wales is defined as the geographical area consisting of six local authorities - Gwynedd, Ynys Môn, Conwy, Denbighshire, Flintshire, and Wrexham.

## 2. METHODOLOGY AND APPROACH

In order to deliver the aims set in this study, a clear approach and methodology was followed to gather and analyse the data required:



Figure 2 – Methodology

### 3.1 Data Capture

To inform a consolidated view of the existing Welsh market share, capacity and capability, G&T engaged and obtained core supplier data from the following organisations currently active within nuclear new build and waste decommissioning:

- Hinkley Point C
- Nuclear Decommissioning Authority (NDA) – inc. Sellafield PPP and Nuclear Restoration Services/Magnox covering decommissioning sites
- Nuclear Restoration Services (NRS)
- Sizewell C

Programme and project based supplier data was gathered through desk-top research and directly from the organisations highlighted above.

G&T, as part of this study, also sourced supply chain information from the following government bodies, nuclear umbrella bodies, skills providers and trade associations that represent the supply chain organisations across the nuclear sector:

- Industry Wales/Welsh Government
- Nuclear Industry Association
- Wales Nuclear Forum
- AMRC – Fit for Nuclear
- National Skills Academy Nuclear
- Cogent
- Jensen Hughes

Supplier data sourced from industry organisations in the nuclear sector was gathered through existing memberships and directly from each key stakeholder.

Over 4,000 companies based across the UK were analysed as part of this study's data collection. Therefore, the supplier database holds company information from across the whole of the UK. This has enabled market share analysis comparing the UK and the Welsh percentage.

As a result of the data capture and review, G&T have built an integrated database of known Welsh organisations in the nuclear sector that brings together four critical areas for analysis:

- Market Share – Spend Distribution and Organisational Presence
- Capability Analysis – The Known and Potential Supply Chain
- Supply Chain Wide Capacity against current and future forecasted Welsh spend
- Supplier/Organisational Type Breakdown

An extensive exercise was undertaken to review and refine the data provided by third parties. There were over 4,000 organisations' details provided from multiple sources to this project. The source data has been closely analysed with all duplicate company details, suppliers now in liquidation or dissolved status alongside organisations not identifiable or suitable removed from the analysis.<sup>3</sup> This has resulted in a consolidated set of data for 2000+ companies.

This enhanced data served as the foundation for all Power BI<sup>4</sup> visualisations, screenshots of which are included in this report. The intelligence behind the 'known' Welsh supply chain drive the Power BI Heat Map Dashboards developed as part of this study. These have been designed to be interactive, with the ability to manipulate and highlight the following:

- Regional breakdowns with a view of each identified organisation's location.
- Supplier and organisational 'type' breakdown (Large, Medium, Small or Micro).
- Category based analysis (Construction, Manufacturing, PSC or Other categorised organisations).
- Turnover capture to drive regional capacity analysis against known and potential demand in the sector.

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<sup>3</sup> Captured organisations were categorised into four levels:

Category 1: Wales based and direct nuclear presence

Category 2: Wales based and indirect nuclear presence (support services)

Category 3: Associated UK wide organisations directly active in the nuclear sector

Category 4: Non-associated UK organisations indirect in the sector providing local support services in England or Scotland (no direct benefit to Wales – (not included).

<sup>4</sup> Power BI is a collection of software services, apps, and connectors that work together to turn your unrelated sources of data into coherent, visually immersive, and interactive insights.



G&T worked closely with the Welsh Government and **Configur**<sup>5</sup> to provide a baseline of the 'potential' Welsh supply chain capability across Construction, Manufacturing and Consultancy. This has enabled the study to provide a joined-up view of the potential Welsh supply chain capability from **Welsh** suppliers or suppliers with operations in Wales uncovered from across all relevant SIC Codes. This information has informed the findings presented in Section 5 below.

## Data Collection – Assumptions and Limitations

All base data provided from these sources were sent as a list of suppliers only. G&T have added intelligence to this dataset by incorporating additional details such as turnover, location, employee numbers, and SME classification.

There were some limitations to the supplier data collected and built. These are as follows:

- G&T used each identified supplier's registered HQ address and postcode<sup>6</sup> to ascertain their location and whether or not they are classified as being part of the 'known Welsh supply chain'. This information was sourced from companies' latest annual report, as filed with Companies House.
  - The use of business headquarters to classify 'Welsh/non-Welsh suppliers' doesn't capture within the 'Welsh supply chain' those businesses which may not have their main offices in Wales but have a presence and/or are actively working in Wales including, for example, utilising locally based workforce and contractors.
  - Likewise, it is acknowledged that there may be supply chain organisations based in Wales that export and/or conduct their business activities elsewhere (England for example). Therefore, these businesses may be less active within the Welsh economy.
- Estimated spend in Wales/North Wales (e.g. by Hinkley Point C) has been calculated using the known total spend with Welsh suppliers divided by the number of known Welsh/North Wales suppliers. Due to data limitations (i.e. not having access to specific commercially sensitive contract data that would indicate the actual spend with each individual supplier) spend in North Wales may amount to a greater/smaller % of total spend in Wales.
- G&T matched SIC codes sourced from Companies House to categorise all businesses identified.
  - One limitation of this data is businesses may provide additional services that are not clearly identified in existing SIC Code data.
- Turnover assumption: Where G&T cite 'turnover', this means company turnover not turnover directly relating to nuclear (unless the company business is solely nuclear).
- Employee assumption: Where G&T have gathered data on employee numbers, this reflects the number of employees reported in Companies House from each business. This does not reflect the exact number of employees in the supply chain directly active on nuclear programmes, or employees based or working in Wales.
- Capacity calculations: Where G&T assess the known nuclear supply chain's capacity against current and potential demand, this has been modelled on a total turnover of the number of organisations locally, regionally or nationally against estimated sector spend.
  - This doesn't reflect individual organisations' current capacity levels (e.g., organisation A may have 3 contracts across Hinkley Point C worth £10 million, whilst

<sup>5</sup> [Configur | Data Management Platform | Home \(goconfigur.com\)](https://goconfigur.com) Configur are a partner to the Welsh Government.

<sup>6</sup> *Welsh postcodes are as follows: CF, CH, HR, LD, LL, NP, SA, and SY (LL and CH indicate North Wales addresses)*

the organisation B only has a minor contract among many other non-nuclear related orders.) Without access to commercially confidential contractual information, and knowledge of each supplier’s order book, the capacity identified through this study is based on a broad estimation rather than a detailed breakdown.

- Furthermore, whilst the turnover is used as an indication of capacity for the purposes of this study, it can’t be assumed that the identified suppliers work solely in the nuclear sector – i.e. whilst there may be transferability, much of the capacity may be taken up by other sectors.

### 3.2 Stakeholder Engagement

To gain further context regarding the risks and challenges the nuclear sector and wider Welsh industry face today and potentially in the future, alongside strategic opportunities at play, Gardiner & Theobald developed a stakeholder engagement plan to join up this study’s nuclear-based outputs with wider industry insight and feedback. The study used a consistent set of questions and agenda items across all engagements to provide a reliable set of qualitative findings that highlighted the ‘industry view’, (see *Section 4 of this report*) and ‘known nuclear view’ (see *Section 1 of this report*).

G&T held 25 ‘1-2-1’ meetings with 16 stakeholder organisations to gather qualitative and quantitative information to inform this study. G&T indirectly engaged with another 8 stakeholders to gain further input from across the sector and wider Welsh industry. The table below details the organisations engaged and the number of 1-2-1s conducted:

| Organisation                   | No of 1-2-1’s | Organisation                            | No of 1-2-1’s | Organisation – Indirect Engagement                                    |
|--------------------------------|---------------|---|---------------|---|
| Configur                       | 3             | Nuclear Decommissioning Authority       | 2             | MAKE UK   |
| Welsh Nuclear Forum            | 2             | Hinkley Point C                         | 2             | Institute of Directors  |
| Welsh Government               | 2             | Nuclear Restoration Services            | 1             | Aerospace Wales   |
| Nuclear Skills Academy NSAN    | 2             | Sizewell C                              | 1             | Nuclear Industry Association  |
| CECA Wales                     | 2             | Jensen Hughes – Nuclear Specialists     | 1             | Welsh Chambers of Commerce  |
| Federation of Small Businesses | 2             | North Wales Regional Skills Partnership | 1             | CBI   |
| Menter Mon                     | 1             | Cogent                                  | 1             | BECBC   |
| Industry Wales                 | 1             | North Wales Business Council            | 1             | Department for Transport - Wales                                      |
| <i>Direct 1-2-1 Engagement</i> |               |   |               | <i>Indirect Engagement (Emails &amp; Disseminated Correspondence)</i> |

Figure 3: Direct and Indirect Engagement

The engagement approach also provided multiple networks to distribute a survey to assess supply chain appetite and capability in relation to existing and future nuclear opportunities. Survey submissions have been used to supplement and provide further insight to inform the conclusions of this report (see 3.3 below).

A summary of the key themes arising from stakeholder engagement are included under section 7 of this report.

### 3.3 Supply Chain Survey

G&T, working with Cwmni Egino, built a survey brief alongside a market sounding questionnaire to assess Welsh supply chain appetite against future potential opportunities in the nuclear sector (see Appendix A for survey brief and questions).

In order to reach the widest pool of existing and potential suppliers across Wales, the study tapped into multiple industry networks to distribute the survey. The survey was distributed to an estimated **3,000+ organisations** across the following industry networks:

| Industry Network                     | Sector            |
|--------------------------------------|-------------------|
| CECA Wales                           | Civil Engineering |
| Federation of Small Businesses Wales | Multiple          |
| Welsh Nuclear Forum                  | Multiple          |
| Cwmni Egino                          | Multiple          |
| North Wales Business Council         | Multiple          |
| Nuclear Skills Academy               | Multiple          |
| Industry Wales                       | Multiple          |
| MAKE UK                              | Manufacturing     |
| Aerospace Wales                      | Automotive        |
| British Chambers of Commerce         | Multiple          |

Figure 4: Survey Distribution

All networks distributed the survey via weekly newsletters, targeted emails to certain members alongside further dissemination across additional networks. Industry Wales distributed the survey further to cross-sector organisations including Make UK, British Chambers of Commerce and Aerospace Wales.

The survey was sent out on July 24<sup>th</sup>, 2024, and organisations had the opportunity to respond for 3 weeks (14<sup>th</sup> August 2024 close). All of the engaged networks distributing the survey issued reminders to members to complete the survey in this timeframe.

**69 responses** to the survey were submitted. There was a split of organisations based in Wales and organisations not based in Wales, but working in Wales, who responded.

Whilst the survey results provide valuable supplementary information within this study, the relatively low response rate prevents a fully representative assessment of the broader supply chain’s existing and potential involvement in the nuclear sector. A summary of the key findings is included under *Section 4* below.

## STUDY FINDINGS

### SECTION A: EXISTING VALUE OF THE NUCLEAR SECTOR TO WALES

This section summarises the value which currently comes to Wales from existing nuclear activity in the UK. The study has **identified the known Welsh supply chain across** the nuclear sector, currently providing services to Hinkley Point C and waste decommissioning, including all decommissioning sites and Sellafield's Programme & Project Partner's active supply chain(s).

The data used and gathered in this study provides a clearer view of the organisational presence of the Welsh nuclear supply chain as well as market share. It also provides a high-level estimation of the contribution currently made to Wales via Hinkley Point C and NDA supply chain activity in Wales.

### 3. THE 'KNOWN' EXISTING NUCLEAR SUPPLY CHAIN IN WALES

#### 4.1 Organisational presence

The study has captured a database of approximately **3,300** organisations across the UK which are known to be active in the existing nuclear supply chain across nuclear new build and waste decommissioning. This includes **2,000+** organisations identified through publicly available information, with a further **1250** organisations identified through direct engagement<sup>7</sup>. Of these, there are **345** organisations located in Wales. This equates to **10%** of the UK-wide organisational presence.

When looking into the regional breakdown within Wales, of the 345 Welsh organisations, **114** are based in North Wales, accounting for just over **3%** of the total UK organisational count. An estimated 46,000 people are employed across Wales with an estimated 3,500 people employed by North Wales based organisations<sup>8</sup>. As illustrated below, the strongest organisational presence is in the Southeast of Wales, whilst it would appear that there is relatively much less presence of nuclear suppliers in Mid and West Wales.

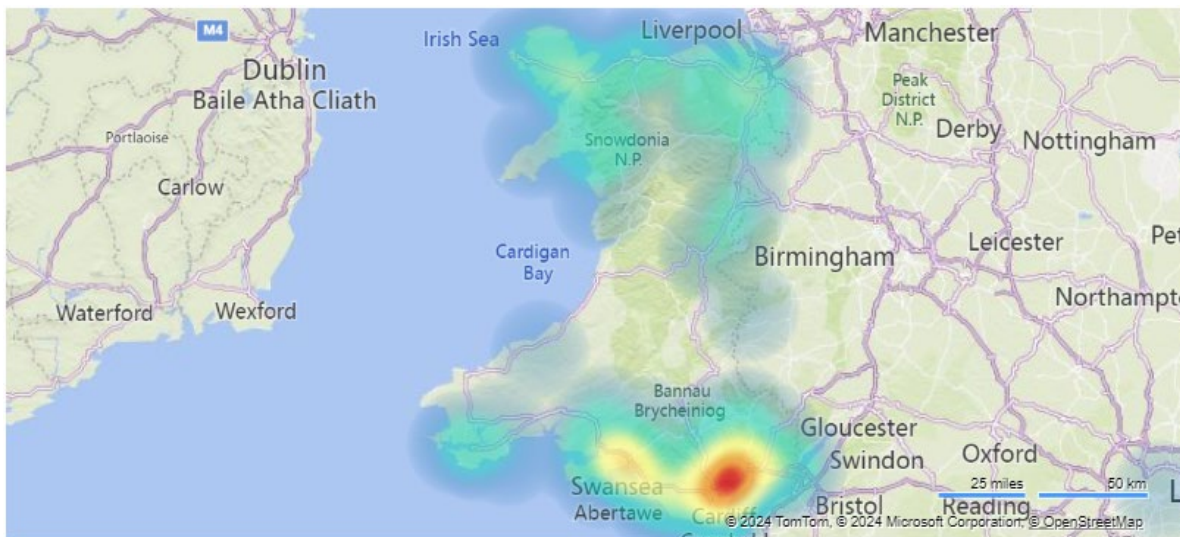


Figure 5 – Heat map indicating the location of nuclear supply chain organisations across Wales)

The colours in the heat map above indicate the following<sup>9</sup>:

- Red** – a high presence of organisations, signifying areas where a significant concentration or clustering of organisations exists.
- Orange** – a moderate to high presence of organisations, reflecting areas with a noticeable but less dense grouping.
- Yellow** – a moderate presence of organisations, highlighting regions where organisations are present but more sparsely distributed.
- Blue/Green** – some presence or minimal presence of organisations.
- No Shade** – no organisational presence.

<sup>7</sup> Supplier data was sourced through direct engagement with new build (HPC & SZC) and waste decommissioning (NDA & NRS) projects.  
<sup>8</sup> The figure quoted equates to the number of people employed by the 'known' nuclear suppliers in Wales/North Wales as estimated within this study. The total people employed in Wales according to the Nuclear Industry Association (NIA) Jobs Map 2024 is 827, which is the number of people employed by NIA members who provided data. <https://www.niauk.org/nia-jobs-map-2024/>  
<sup>9</sup> The heat maps colour(s) are not a direct reference to a specific number or value but rather a dynamic representation of how data is distributed across the visualised space. The distribution and intensity of colours can change depending on the specific filters or criteria applied to the heatmap. For example, adjusting the scope to focus on a different geographic area or type of organisation may alter the appearance of the heatmap, with colours shifting to reflect the new distribution pattern.

### 3.2 Market Share

Whilst Wales makes up an estimated **10%** of the companies that form the known nuclear supply chain across the UK, the current market spend share for Wales across nuclear new build and waste decommissioning is proportionately smaller than its organisational presence within the UK supply chain.

The spend which currently comes to the UK as a whole from existing civil nuclear activity is estimated to be £6 billion per-annum. **£160M per-annum** is the estimated total spend which currently comes to Wales from existing nuclear activity in the UK. This yearly spend is made up of the 345 Welsh organisations providing services to Hinkley Point C, Sizewell C and waste decommissioning including all Decommissioning sites and Sellafield's Programme & Project Partner's active supply chain(s). The total spend which currently comes to North Wales specifically is estimated to be **£63M per-annum**.

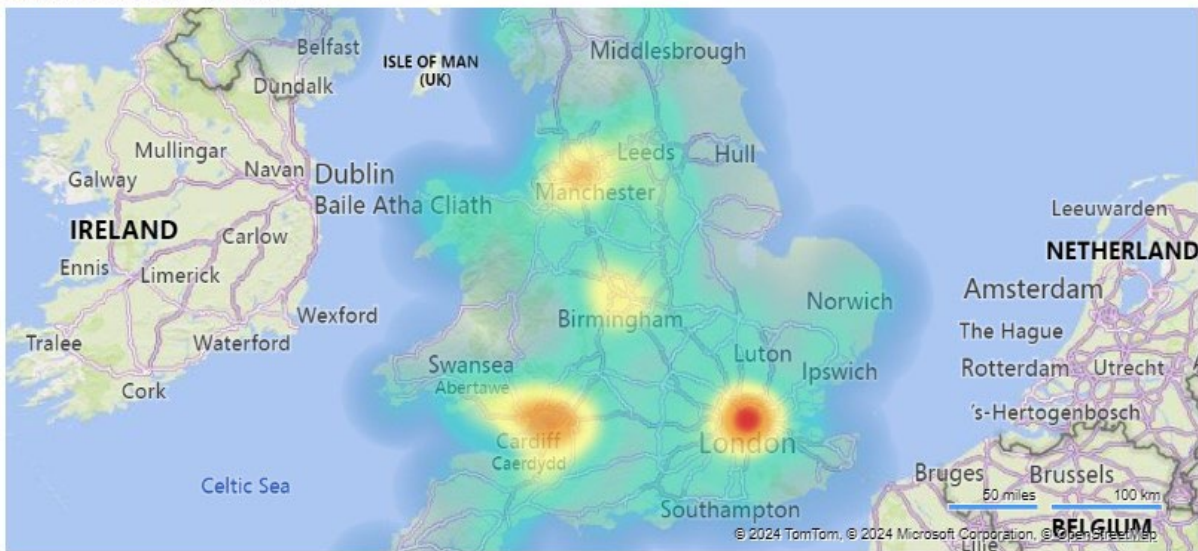
The total Welsh market spend share per-annum equates to an estimated 2.5% of the total UK civil nuclear sector yearly spend. The North Wales market spend share equates to an estimated 1% of the total UK civil nuclear sector yearly spend. Therefore, the number of companies that make up the UK nuclear supply chain in Wales (10%) and North Wales (4%) is proportionally four times as large as the direct yearly spend share.

Companies in Wales therefore receive a proportionally smaller share of spend when compared to the UK as a whole. This study shows that Welsh suppliers are smaller specialist companies, with a higher proportion of SME based suppliers operating at lower tiers of the supply chain (see 'Section B – What can the Welsh supply chain offer' for detailed findings this study has identified from data gathered).

Available data on the UK nuclear supply chain indicates that large-scale nuclear activity has a significant impact on both organisational presence and market share. For example, it would appear that hot spots have been created due to the local/regional demand of Hinkley Point C and Sellafield created by the delivery of nuclear new build and waste decommissioning projects respectively.

London and the Southeast of England, have a relatively high concentration of supply chain organisation and market share. This could largely be attributed to the nature of the UK's economy and the location of many of the major Tier 1 organisation's registered offices and operations.

Organisational Presence



Turnover Total

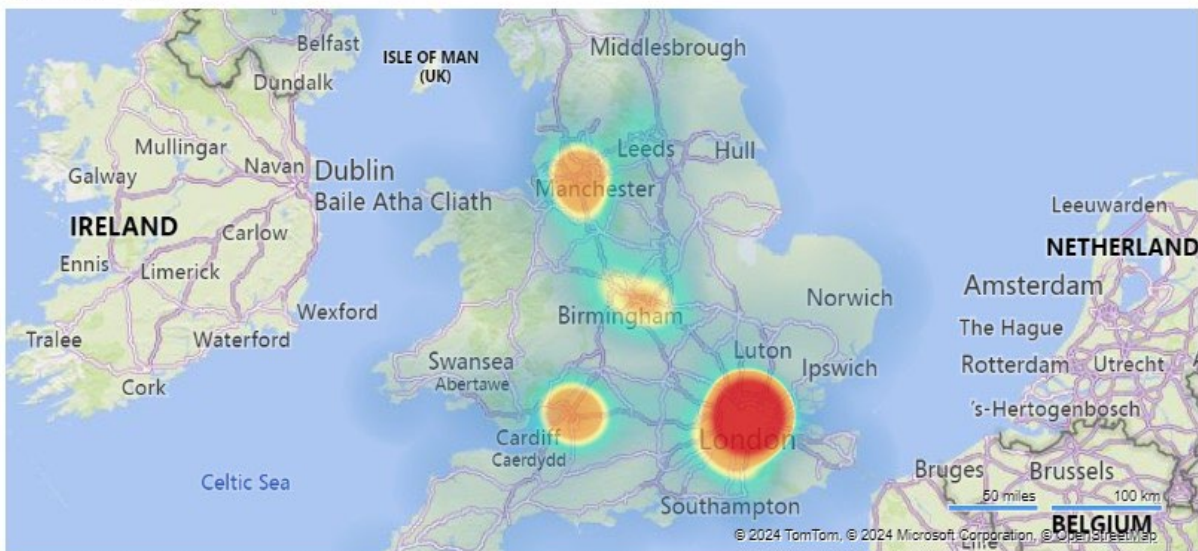


Figure 6 – Organisational and Turnover Heat Map (UK-Wide)

### 3.3 Hinkley Point C

Hinkley Point Cs spend across the UK specifically currently accounts for c.65% of total project value<sup>10</sup>. Over £5.3 billion has been spent by the Hinkley Point C project on local supply chain opportunities across South-West England. Hinkley Point C has created over 23,000 new jobs and estimates that many more thousands of indirect opportunities have been created further down the supply chain. By the end of the construction project, it is estimated that the South-West England region will have had £7.3 billion worth<sup>11</sup> of contract and supply chain opportunities, accounting for a forecasted 20% of the £32.6 billion total cost that Hinkley Point C is likely to come to.

Wales-based suppliers account for an estimated 10-15% of Hinkley Point C’s UK-based nuclear supply chain. In North Wales, the organisational presence is far less, with <1% of Hinkley Point C’s supply

<sup>10</sup> [Hinkley Point C - Socio Economic 2024 Report](#)

<sup>11</sup> [Hinkley’s once in a generation economic impact shows why we have to get on with Sizewell C - Nuclear Industry Association \(niauk.org\)](#)

chain based in North Wales (*postcode LL and CH*). The known Hinkley Point C Wales based supply chain is predominantly SME (88%)

The number of Welsh companies represented as a percentage of the UK is relatively high when compared with the spend percentage. £165 million was spent in Wales up to 2023, accounting for **1.3% of total UK spend** at Hinkley Point C since the inception of the project. The estimated spend figure for North Wales is **<0.5% of total UK spend**. This reflects the fact that Hinkley Point C’s Welsh supply chain is primarily focused in South Wales (<10% of the Hinkley Point C Welsh supply chain are based in North Wales).

Of the North Wales supply chain delivering at Hinkley Point C, 96% are SME based, with 1 large supplier (Jones Bros) based in North Wales. in contrast, there are 17 large suppliers across South Wales delivering at Hinkley Point C.

The total Welsh spend percentage figure is likely to slightly increase due to Hinkley Point C’s initial forecast of £650M of demand to the Welsh supply chain throughout the project lifetime, estimated to be completed by the end of 2031. This accounts for just over 2% of total estimated Hinkley Point C project lifetime spend (£32.6 billion).

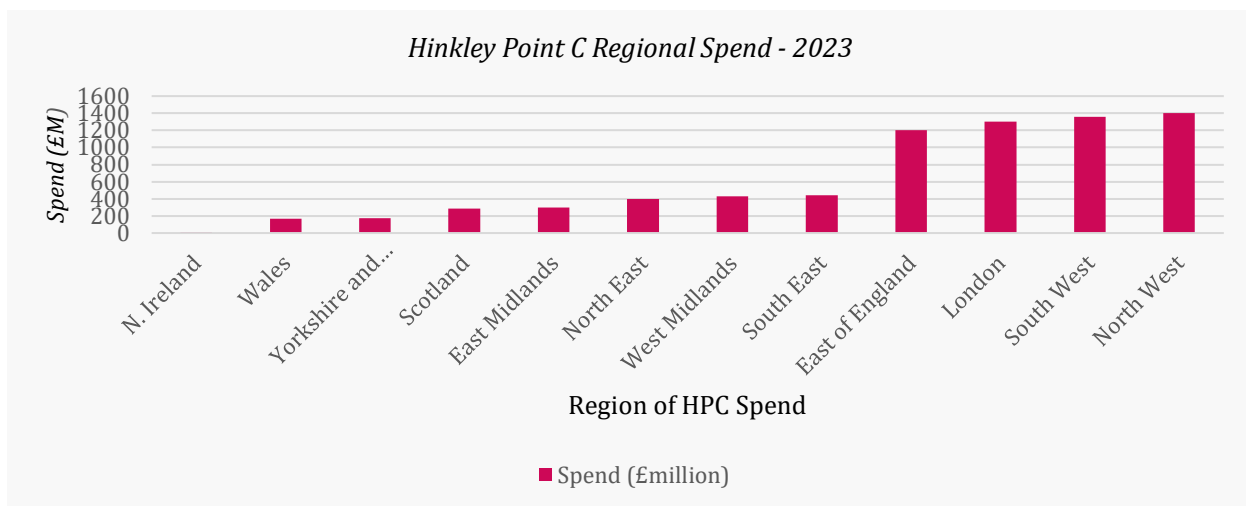


Figure 7 - Hinkley Point C Regional UK Spend<sup>12</sup>

### 3.4 Nuclear Decommissioning Authority (NDA)

The NDA covers all UK-wide waste decommissioning activity, across Sellafield Ltd.’s Programme & Project Partners<sup>13</sup> and the 12 UK decommissioning sites managed under Nuclear Restoration Services (NRS,) formerly Magnox Ltd. This study has engaged directly across the NDA and NRS to gather information about the known active supply chain in Wales.

The number of Welsh companies represented as a percentage of the UK share is higher than the spend share. Wales based organisations account for an estimated 7-8% of decommissioning sites’ UK-based supply chain(s). Of the known Welsh supply chain, over 70% of organisations actively delivering waste decommissioning works are based in North Wales (*postcodes ‘LL’ & ‘CH’*) with the remaining 30% spread out across Central and South Wales (*postcodes ‘CF, SY, NP and SA’*).

<sup>12</sup> [HPC Socio Economic \(edfenergy.com\)](https://www.edfenergy.com)

<sup>13</sup> [NEW PPP Partnership Strategy Brochure June 2023 .pdf \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk)



The NDA's annual total expenditure for 2024 is estimated to be £4 billion<sup>14</sup>, up on expenditure for 2023 (£3.7 billion)<sup>15</sup>. The Welsh market share in terms of spend (2%) is three times less than the percentage of Welsh companies represented (c7%) within the NDA's supply chain. The Welsh market share from a spend perspective accounts for around 2-3% (c£88 million) of the UK total spend.

### 3.5 Sizewell C

Sizewell C's programme cost is intended to replicate Hinkley Point C as far as possible through EDF's delivery model. This offers the opportunity to deliver the project at lower cost through legacy learnings and realised efficiencies. From direct engagement, the forecast from Sizewell C is for Wales based suppliers to receive over **£900 million** in supply chain opportunities, with **4,700** jobs created in Wales over the lifetime of the programme<sup>16</sup>. This accounts for a forecasted spend share of **3%**.<sup>17</sup> Sizewell C have additionally pledged 70% as a baseline for spend committed to the UK supply chain.

Comparing the Welsh spend pledge to Sizewell C's commitment to the local supply chain, the programme have promised over **£4.4 billion** across the East of England, accounting for a forecasted spend share of **12-20%** with **£2 billion** proposed in Suffolk, the local county.

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<sup>14</sup> [NDA Draft Business Plan 2020 to 2023 \(publishing.service.gov.uk\)](#)

<sup>15</sup> [NDA Annual Report 2023](#)

<sup>16</sup> [Supply Chain - Sizewell C](#)

<sup>17</sup> *Caveat: Due to the current uncertainty and commercially sensitive limitations in estimating the total project cost of Sizewell C, this study has highlighted the planned replication of Hinkley Point C as part of EDF Energy's project delivery model to assume costs.*

## STUDY FINDINGS

### SECTION B: WHAT CAN – AND COULD – THE WELSH SUPPLY CHAIN OFFER?

This section of the report will focus on two main areas:

- A breakdown of the known nuclear Welsh supply chain by overarching category.
- The potential Welsh supply chain broken down by overarching category at a high-level to provide a view of capacity.

This study has analysed the existing Manufacturing and Fabrication, Construction and Professional Services supply chains active in the nuclear sector in Wales, alongside 'Other – Support Services' organisation types, and their current capability. The 'other' category in this study accounts for a large percentage of Welsh capability (40%). Focussing on North Wales, this figure rises to 53% of the supply chain categorised as 'other'.

## 4. WELSH NUCLEAR SUPPLY CHAIN: EXISTING AND POTENTIAL CAPACITY

### 5.1 The 'Known' Welsh Nuclear Supply Chain

This study has integrated multiple sources of data from across the sector to provide a capacity assessment of the known Welsh supply chain. Capacity forecasting has been calculated using organisations' turnover across the **known** nuclear Welsh supply chain. This has been placed against spend demand to form a view of financial capacity, matching the approach utilised by the Cabinet Office in assessing financial and capacity strength of the supply chain.<sup>18</sup>

In 2024, across all of Wales, there is an estimated **£4.5 billion** worth of capacity per annum. Looking specifically at North Wales, there is an estimated **£567 million** worth of capacity per annum.

Of the total Welsh capacity in 2024, totalling £4.5 billion per annum, an estimated **£160 million** of this capacity is utilised from current nuclear projects and programmes across nuclear new build and waste decommissioning. Therefore, an estimated **4% of total Welsh capacity from spend is currently accounted for from the 345 organisations identified in this study's data collection of the known Welsh nuclear supply chain**. There is a further 96% of capacity that could potentially be utilised in Wales as a whole.

For North Wales, total capacity for 2024 as stated above is estimated at £567 million, with an estimated **£63 million** of this capacity utilised from current nuclear projects and programme spend across nuclear new build and waste decommissioning. An estimated **11% of North Wales' capacity is therefore already accounted for**, with 89% worth of capacity potentially available across the 114 organisations identified in this study's data collection of the known North Wales nuclear supply chain.

However, this study has highlighted **multiple capacity considerations** including existing cross-sector market presence (organisations are active across multiple sectors with transferable skillsets, such as nuclear, offshore and defence) alongside strong order books for organisations across the built environment.<sup>19</sup> These factors alongside local works and services, especially across the known Welsh nuclear SME supply chain heavily impact actual capacity figures. Therefore, some organisations will have very low levels of utilisation in delivering nuclear works and services against other organisations who may be heavily utilised in the nuclear sector.<sup>20</sup>

This section provides organisational size and category breakdown for the known Welsh nuclear supply chain, indicating what Welsh organisations currently offer in the sector. The heat map below shows the distribution of Welsh organisations in the known nuclear supply chain alongside a further map of the total turnover for these businesses across the region:

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<sup>18</sup> [EFS Guidance Note.pdf \(publishing.service.gov.uk\)](#)

<sup>19</sup> In this study's assessment of capacity, the modelled figures assume the total possible capacity based on organisations' consolidated turnover. In the analysis, the study takes into account the following important considerations: Organisations identified in this study will be active in multiple sectors across infrastructure and the built environment as well as other industries, supporting complex services across the region. Therefore, the impact of potential spend demand taking over 25% of a market's entire capacity would be seen as moderate to high. Organisations are heavily utilised looking 1-3 years ahead due to secured order books fuelling growth. Order books are a key impact measure of supplier capacity.

<sup>20</sup> Study Limitation: Contract by contract information (value / spend) against each identified Welsh organisation was unattainable due to commercial confidentiality across live nuclear projects and programmes.

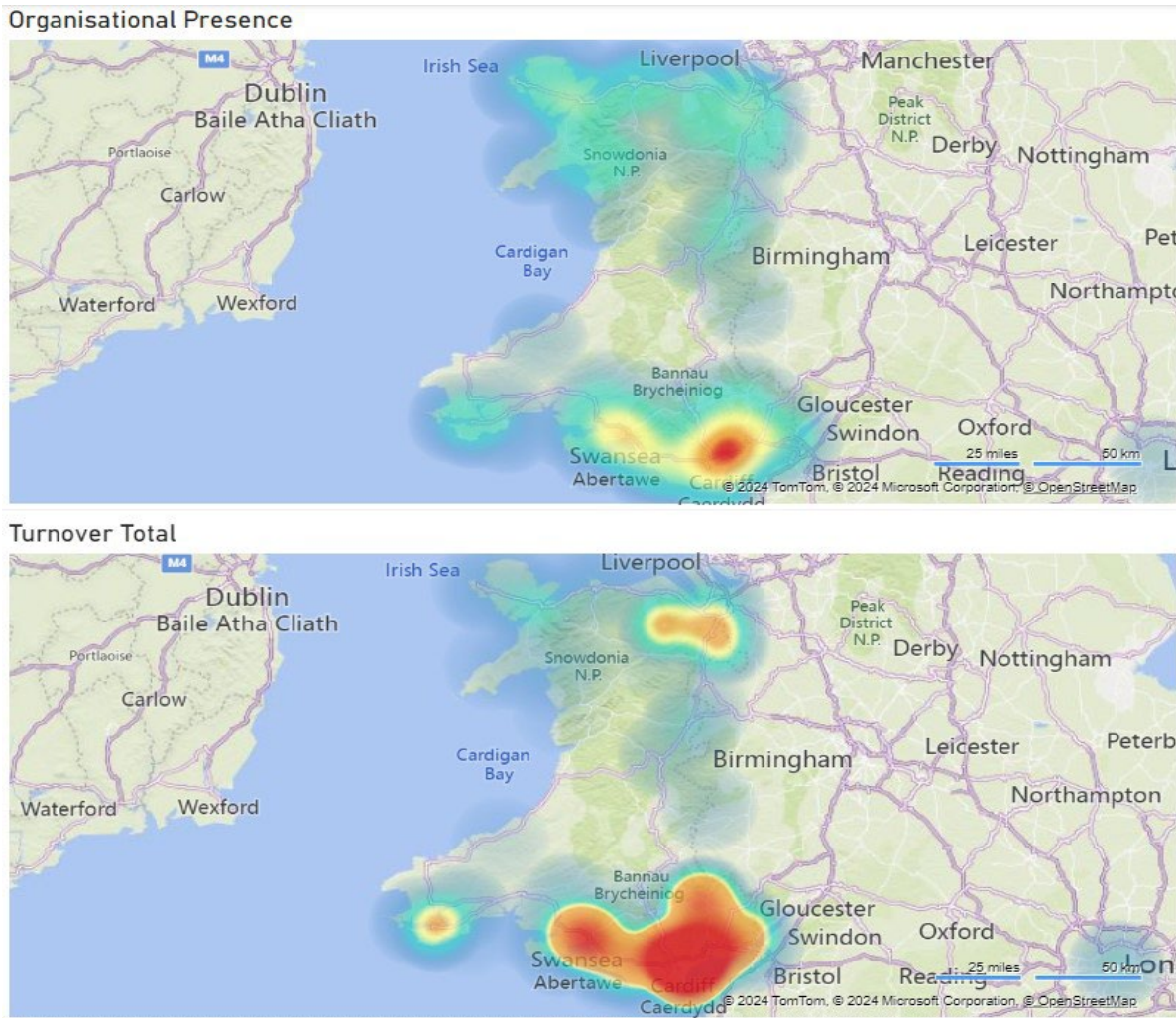


Figure 8 – Organisational Presence and Total Turnover Heat Map

As is indicated above, organisational presence is concentrated in the South and North of Wales, with Central and Western geographies of Wales having little to no share. Total turnover is heavily concentrated in the South and Southeast of Wales, principally in the industry heavy locations across Swansea, Port Talbot, Cardiff and Newport, as well as Northeast Wales.

### 5.1.1 Breakdown by size of organisation

19 'large' Wales-based companies have been identified by this study's known Welsh nuclear supply chain data collection, one of which is based in in North Wales (namely, Jones Bros Civil Engineering). 18 of the 19 organisations (17 of which have worked/are working on Hinkley Point C) were based across Cardiff, Swansea and Newport, accounting for over c£2 billion worth of capacity. The heat map below shows the distribution of large organisations across Wales:

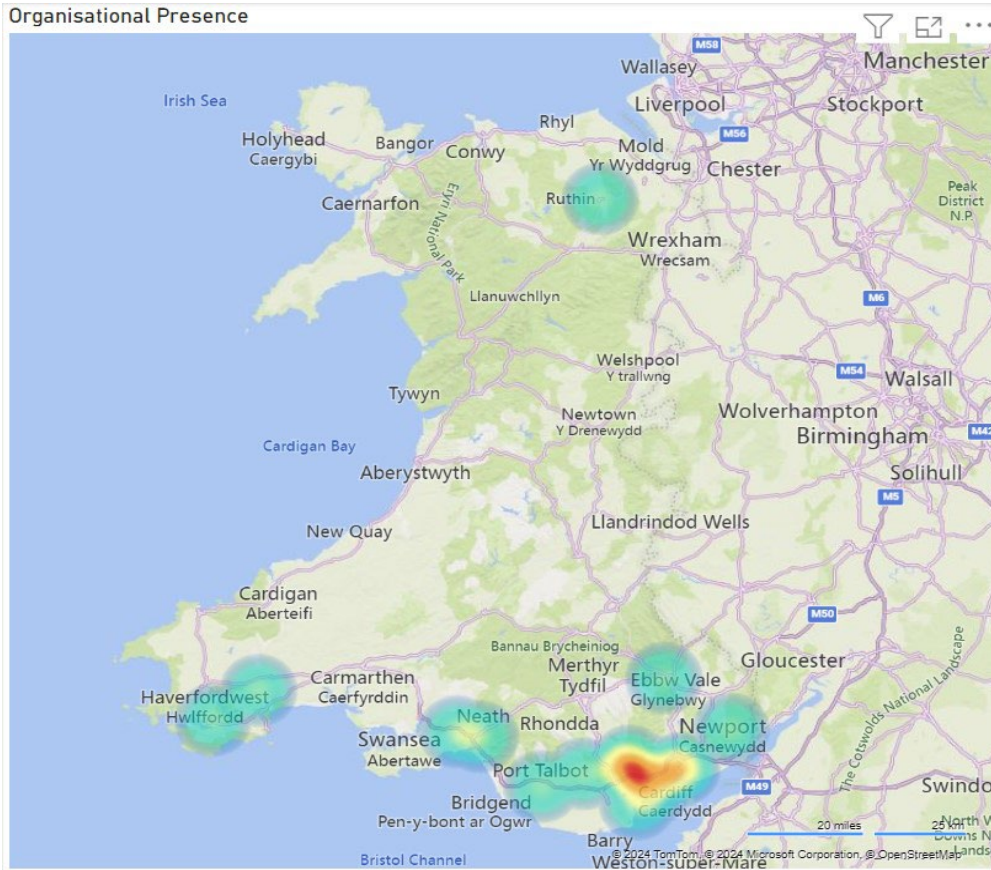


Figure 9: Large Organisations Wales – Known Welsh supply chain

Based on the data gathered, the current capacity across the UK is estimated to be equivalent to **£210+ billion** in terms of turnover. Wales makes up 2% of overall UK capacity, with North Wales estimated to be less than 0.5%. These estimates can be broken down by organisational size as follows:

| Organisation Size:        | UK Whole % | Wales %    | North Wales % | North Wales Supplier Count |
|---------------------------|------------|------------|---------------|----------------------------|
| Large (>250 employees)    | 21%        | 6%         | <1%           | 1                          |
| Medium (50-249 employees) | 26%        | 22%        | 11%           | 11                         |
| Small (10-49 employees)   | 34%        | <b>40%</b> | <b>42%</b>    | 44                         |
| Micro (<10 employees)     | 18%        | <b>32%</b> | <b>43%</b>    | 45                         |

Figure 10: SME Breakdown

The SME breakdown highlights the difference in supplier type when comparing Wales to the UK as a whole. **UK-wide, 53%** of the nuclear supply chain are **small or micro**, this figure increases to **72% in Wales** and then increases to **85% in North Wales**. The Welsh supply chain (in particular North Wales) is made up of a higher percentage of smaller and micro-organisations delivering a wide range of goods and services.

The heatmap below highlights the known locations of micro-organisations across Wales, including a relatively higher concentration in North Wales:

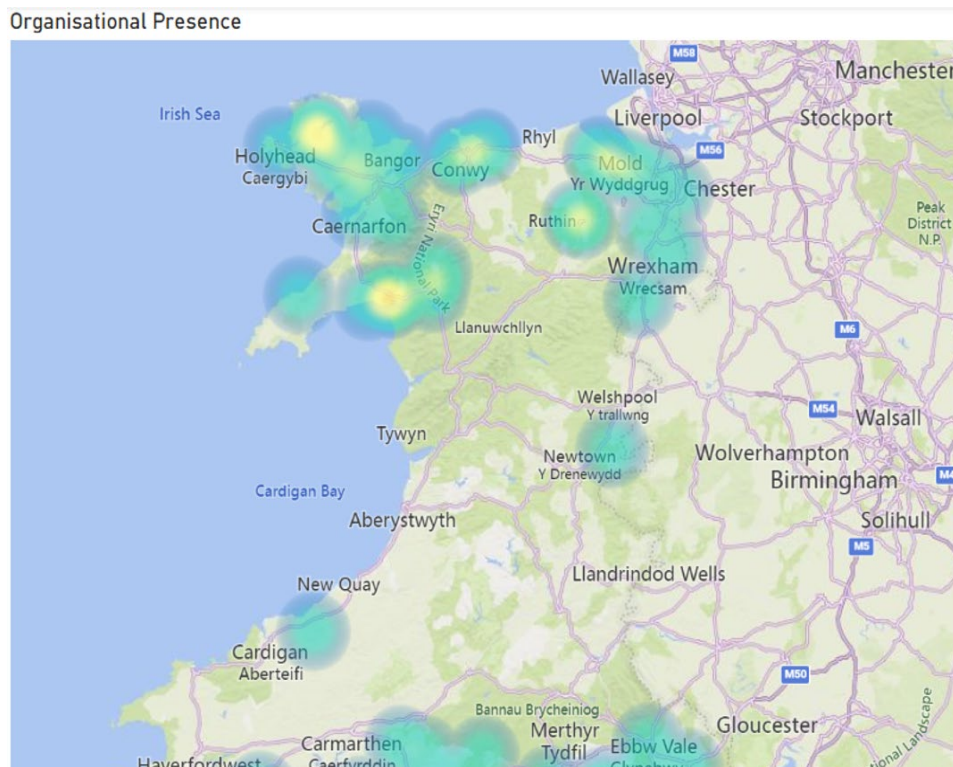


Figure 11: Micro-Organisations Wales – Known Welsh supply chain

### 5.1.2 Category breakdown

As illustrated in the table below, this study has uncovered that a high percentage of organisations in the existing Welsh nuclear supply chain deliver critical support services (i.e. ‘other’) in comparison with traditional construction, manufacturing and fabrication and professional services-based works.

| Category                    | UK % | Capacity (£) | Wales % | Capacity (£) | North Wales % | Capacity (£) |
|-----------------------------|------|--------------|---------|--------------|---------------|--------------|
| Construction                | 21%  | £43 billion  | 17%     | £856 million | 17%           | £211 million |
| Manufacturing & Fabrication | 30%  | £47 billion  | 30%     | £1.8 billion | 17%           | £67 million  |
| Professional Services       | 14%  | £25 billion  | 12%     | £210 million | 11%           | £15 million  |
| Other                       | 36%  | £75 billion  | 40%     | £1.6 billion | 53%           | £273 million |

Figure 12: Category Overview

The most common ‘other’ categories across Wales were as follows:

- ‘Supply’: Plant & Equipment – Leasing of Machinery, Engineering Equipment, Construction Equipment & Non-Specialised Wholesale Trade & Goods;
- Repair and Maintenance;
- Installation – both Electrical and Mechanical;
- Waste Management;
- Training & Education; and
- Security.

In North Wales, **53%** of the known nuclear supply chain has been categorised as ‘other’, compared with 36% across the UK as a whole and 40% for Wales. This indicates that the services delivered by

organisations based in North Wales are delivering a variety of services to support the nuclear sector – beyond those activities more conventionally associated with the nuclear sector.

## 4.2 The ‘Potential’ Welsh Nuclear Supply Chain

G&T have collaborated with Configur and the Welsh Manufacturing Action Plan team<sup>21</sup>, who are working with the Welsh Government, through this study to establish a high-level estimation of the potential capacity within the wider supply chain in Wales.<sup>22</sup> This includes a macro view of the potential figure of Welsh organisations that could support any future nuclear projects across **construction, manufacturing and professional services consultancy**, linked through SIC code analysis. Configur have additionally supported this study’s findings by filtering relevant SIC Code data to the wider SIC Group and Division in order to provide a view of total Welsh capacity across construction, manufacturing and professional service consultancy-based supply chains.

The table below shows the number of organisations identified through SIC Code analysis completed through Configur as potentially having the skills to deliver construction, manufacturing or professional services consultancy-based work. This would form a critical aspect of any nuclear new build or waste decommissioning programme of works<sup>23</sup>:

| Category                          | Total Number of Potential Organisations <sup>24</sup> | Known Welsh Capacity (£) | Estimated Total Capacity (£) |
|-----------------------------------|---|--------------------------|------------------------------|
| Construction                      | 5,676   | £856 million             | £15-17 billion               |
| Manufacturing & Fabrication       | 3,933   | £1.8 billion             | £5-7 billion                 |
| Professional Services Consultancy | 1,317   | £210 million             | £1-3 billion                 |

Figure 13 – Total Estimated Welsh Potential Capacity

<sup>21</sup> <https://www.gov.wales/sites/default/files/publications/2023-06/manufacturing-future-wales-our-journey-wales-4-0.pdf>

<sup>22</sup> Configur have brought together potential Welsh organisations and UK based organisations working in Wales as part of multiple supply chain visibility initiatives being driven by Welsh Government. This includes Configur’s current strategic initiative in the energy and utilities sector highlighting all potential suppliers in the delivery of offshore wind. Offshore was cited from G&T’s engagement as the closest sector/industry to nuclear (decommissioning, construction, manufacturing and PSC).

<sup>23</sup> This exercise has taken standard SIC codes linked to construction, manufacturing and consultancy group/divisions and placed this against the supplier data built in Configur’s platform.

<sup>24</sup> This potential total includes organisations who are active in the Welsh supply chain but do not have their HQ based in Wales as well as Wales based suppliers in the platform.

## STUDY FINDINGS

### SECTION C: THE OPPORTUNITY FOR WALES

Based on a range of different scenarios, this section looks at the ability of the Welsh supply chain (based on capacity) to capitalise on known and potential nuclear sector activity over the next 15 years.

The estimated current annual spend in Wales across the nuclear sector is **£160 million**. It is estimated that over half of current Welsh spend lies across waste decommissioning (c55%), with c45% spend across nuclear new build. From direct engagement and taking into account all of the potential avenues of future growth, from 2034, the forecasted yearly spend across Wales could be £800 million. This could reach up to £1 billion by the early 2040's if planned SMR profiled growth is achieved.

Forecasting the future impact of a potential large-scale development at Wylfa, as a New-Nuclear Build Power Plant, the local impact for North Wales and the scope of opportunity for growth is evident. **By 2035, this study forecasts future spend across North Wales of an estimated £325 million from new nuclear at Wylfa alone.** This is more than double the region's entire estimated spend for the whole of Wales in 2024.

The spend forecasts against existing capacity have been produced taking into account existing programmes, and their localised spend profiles. This has been analysed against both existing and forecast spend amounting to an average estimate of 14-20% of total programme expenditure.

The forecasts that drive this study's demand analysis have been built in line with estimated cost assumptions for nuclear new build and waste decommissioning<sup>25</sup>. All sources compiled provide insight into the cost distribution and timelines for major programmes alongside the procurement, construction, operationality and decommissioning<sup>26</sup>.

<sup>25</sup> <https://world-nuclear.org/information-library/nuclear-fuel-cycle/nuclear-wastes/decommissioning-nuclear-facilities.aspx>

<sup>26</sup> [https://www.oecd-neo.org/icms/pl\\_14756/costs-of-decommissioning-nuclear-power-plants](https://www.oecd-neo.org/icms/pl_14756/costs-of-decommissioning-nuclear-power-plants)



## 5. THE OPPORTUNITY

### 6.1 Assessing Welsh Capacity today & tomorrow

In assessing capacity, both current and forecasted, this study has set out a number of scenarios that predict a range of outcomes; from no change to the known current live projects and their expenditure to potential major new developments, namely Wylfa and SMR growth. This study has put the known Wales and North Wales nuclear supply chain capacity against the following existing and potential scenarios:

- **Scenario 1:** The estimated impact of existing known demand (no change to current nuclear landscape)
- **Scenario 2:** The estimated stand-alone impact of a nuclear new build development in North Wales (Wylfa)
- **Scenario 3:** The estimated impact of Wylfa plus existing known demand
- **Scenario 4:** The estimated impact of Wylfa, existing live projects and forecast SMR demand.

**All forecast assumptions made have been calculated with the following parameters:**

- North Wales as a percentage of the total Welsh spend has been estimated at 40%. This has been calculated from spend intelligence gathered through the NDA (estimated known spend of £56 million against total Welsh estimated spend of £88 million) and an estimated spend calculation for Hinkley Point C and Sizewell C made through organisational market presence (c10%). This amounts to an estimated current known spend of £63 million.
- The NDA's total expenditure costs (decommissioning & clean-up alongside operational costs) have risen on average 6-9% year-on-year since 2021/22. This study has forecast a yearly growth rate of 6% as an average from 2024 onwards as multiple operational reactors reach 'end of life' decommissioning (e.g., *Sizewell B*).
- The spend estimation for a new large-scale development at Wylfa has been calculated based on existing project costs across nuclear new build (Hinkley Point C).
- The potential total cost impact of Wylfa as a nuclear new build (all project phases) in Wales has been estimated to be **15%**. This estimation has been forecasted using known local spend analysis from Hinkley Point C and Sizewell C. Due to the geographical location of Wylfa, the study has assumed North Wales will receive c80% of this forecasted spend, if businesses are available in the regions to meet this demand.
- SMR growth has been modelled in line with Rolls Royce's forecast of 10-15 SMR projects to be in place by 2040 in the UK, costing an estimated £1.8 billion per reactor<sup>27</sup>. Each SMR development is estimated to take three years to build<sup>28</sup>. The study has forecasted Wales to receive 5% of the UK-wide share. This forecast has been built against latest population statistics<sup>29</sup> in Wales (4.6% of the UK population).
  - *This study has assumed a 50/50 split between Wales as a whole and North Wales spend share for SMR specifically; i.e. North Wales would receive 2.5% of the SMR UK-wide market spend share. This assumption has been made due to existing infrastructure and the 'potential sites' that SMR development can take place.*

In this study's assessment of capacity, the modelled figures assume the total possible capacity based on organisations' consolidated turnover. In the analysis, the study takes into account the following **important considerations:**

<sup>27</sup> [Rolls-Royce on track for 2030 delivery of UK SMR: New Nuclear - World Nuclear News \(world-nuclear-news.org\)](#)

<sup>28</sup> [How Long Until Small Modular Reactors Make an Impact on Energy Grids? | Tech Research Article](#)

<sup>29</sup> [Facts about Wales | Wales.com](#)

- Organisations identified in this study will be active in multiple sectors across infrastructure and the built environment as well as other industries, supporting complex services across the region. Therefore, the impact of potential spend demand taking over 25% of a market’s entire capacity would be seen as moderate to high.
- Organisations are heavily utilised looking 1-3 years ahead due to secured order books fuelling growth. Order books and secured contracts for organisations are a key impact measure of current and future supplier capacity.<sup>30</sup>

## 5.2 Scenario 1: The existing nuclear sector – no change

### Wales Capacity - £4.5 billion:

- Current estimated spend makes up **3-4%** of total Welsh capacity.
- Maximum estimated spend forecasted to peak in 2029 will make up **6%** of total the total known nuclear Welsh capacity.

Wales as a whole, including North Wales are well placed to deliver the existing demand, with enough capacity (in terms of supply chain and employment) to continue to organically add the value it currently provides.

If there is no change, then Wales would see its maximum demand in 2029 (£240-245 million), with 52% sector growth between 2024 and 2029. In 2029, it is forecasted that Sizewell C will be investing £75 million per-annum during the construction phase, alongside Hinkley Point C’s £46 million per annum evolving into commissioning and operational phase. Across waste decommissioning, there would be an estimated £122 million of spend. 40% of spend would be concentrated in North Wales, amounting to £97 million per-annum by 2029.

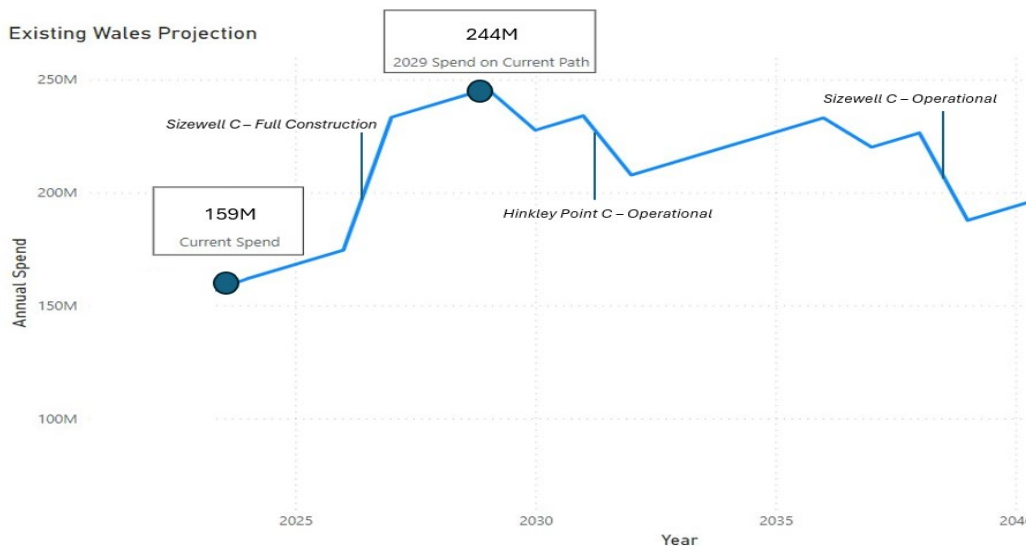


Figure 14: Existing Welsh Demand Projection

<sup>30</sup> AECOM’s ‘Main Contractor Survey’<sup>30</sup>, published in 2021 conducted a survey across construction-based contractors assessing their secured order books. According to the study “order books were almost full for the year ahead and Tier 1 contractors were already at 48% capacity for 2023”<sup>30</sup>. At the time of publishing, 2023 was two years away, with almost half of all work secured for many organisations who took part in the survey.

**North Wales Capacity - £567 million:**

- Current estimated spend makes up **11%** of North Wales’ total capacity.
- Maximum estimated spend (2029) is forecasted to make up **17%** of the total North Wales known market capacity.

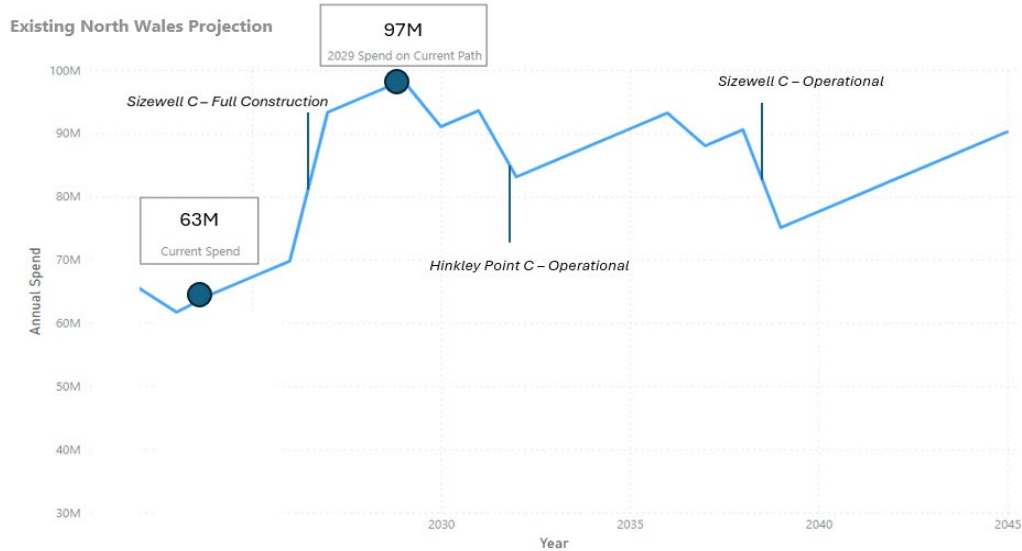


Figure 15: Existing North Wales Demand Projection

If the sector demand remains ‘as is’, there would be opportunity for organic growth across Wales, including the North Wales nuclear supply chain to meet the future additional demand created by SZC. Sector growth across Wales therefore could increase on average by 7% per-annum due to the impact of SZC and organic growth across waste decommissioning (Nuclear Restoration Services).

The main opportunity for growth will be through Sizewell C, with £900M pledged to the Welsh supply chain, resulting in an additional 25% in sector growth between 2024-2040 for Wales<sup>31</sup>.

**5.3 Scenario 2: Impact of Wylfa development only – Nuclear new build**

**Wales Capacity - £4.5 billion:**

- Maximum estimated spend of £406 million between 2034-37 is forecast to make up **9%** of total Welsh capacity

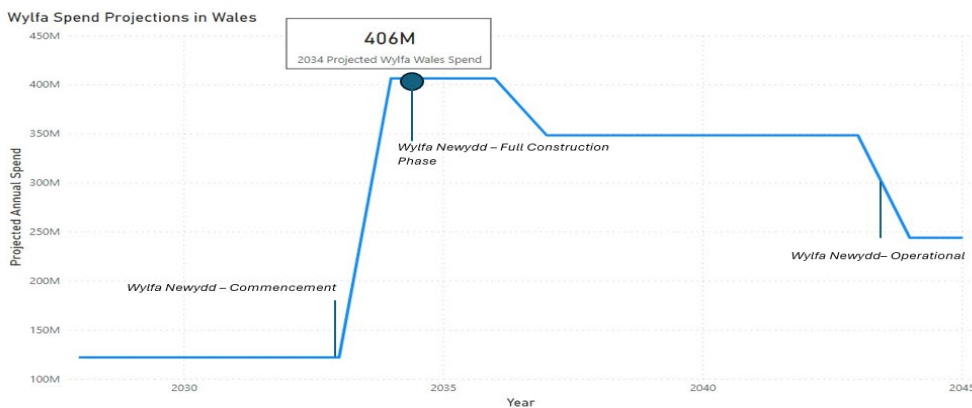


Figure 16: Wylfa Impact - Wales

<sup>31</sup> £900M of a total £3.5 billion amounts to c25% share of sector growth

**North Wales Capacity - £567 million:**

- Maximum estimated spend of £325 million from 2034-2037 is forecast to make up **57%** of the total North Wales known market capacity. This accounts for 80% of total Welsh spend by Wylfa due to its locality. The full construction phase in this scenario has been calculated to commence in 2034, assuming that feasibility works for any future large scale nuclear new build project at Wylfa begins in 2028.

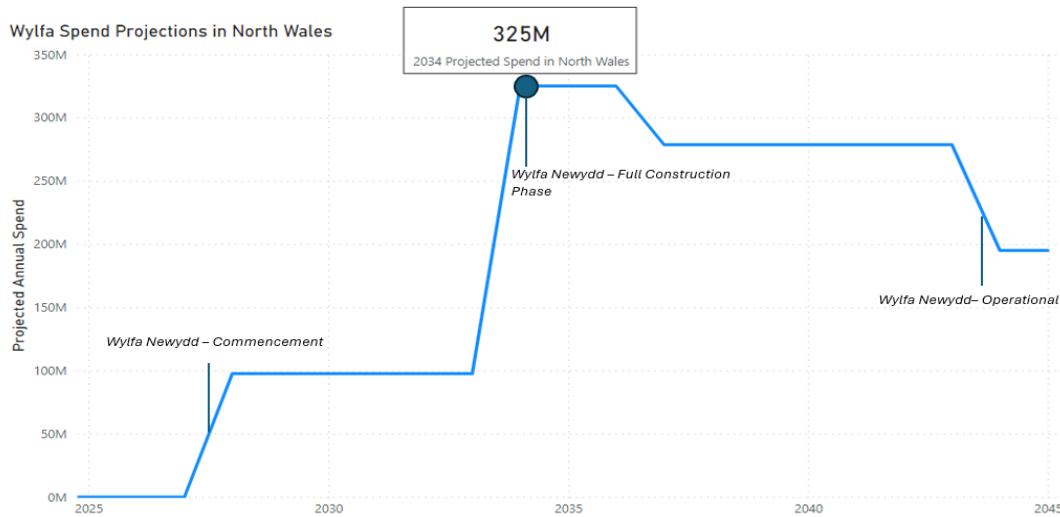


Figure 17: Wylfa Impact – North Wales

The impact of Wylfa alone would see over **£400 million** of investment per annum between 2028-2042 and increased supply chain opportunities across Wales. In North Wales, **57%** of the known nuclear supply chain could be utilised per-annum during the main construction phase of Wylfa (**£325 million** per-annum). In North Wales, estimated resource capacity would be constrained due to the impact of Wylfa, with an additional workforce of over 3,000 required<sup>32</sup>. This would require a 350% growth increase against present day nuclear workforce statistics for North Wales.

Splitting out the major categories of **construction, manufacturing and consultancy** organisations across North Wales, there would be a capacity risk during construction phase of Wylfa. With a maximum yearly spend of £325 million estimated at peak delivery, this would put the three categories combined capacity of £280 million at over 100%.

**5.4 Scenario 3: Impact of Wylfa & Existing Known Demand**

The third model puts together existing demand (Hinkley Point C, Sizewell C and waste decommissioning) alongside the potential demand of Wylfa.

**Wales Capacity - £4.5 billion:**

- Maximum estimated spend of £639 million per-annum is forecast to make up c15% of total Welsh nuclear supply chain capacity. This would result in four times the current spend in 2024.
- The maximum forecast spend, taking place in 2036 would see the height of this increase in demand, with an additional £300 million on average per annum invested into Wales and the Welsh supply chain(s).

<sup>32</sup> This figure has been calculated through Hinkley Point C’s overall 23,000 jobs created during the programme, then divided by assumed market share to provide a high-level calculation of potential resource constraint.

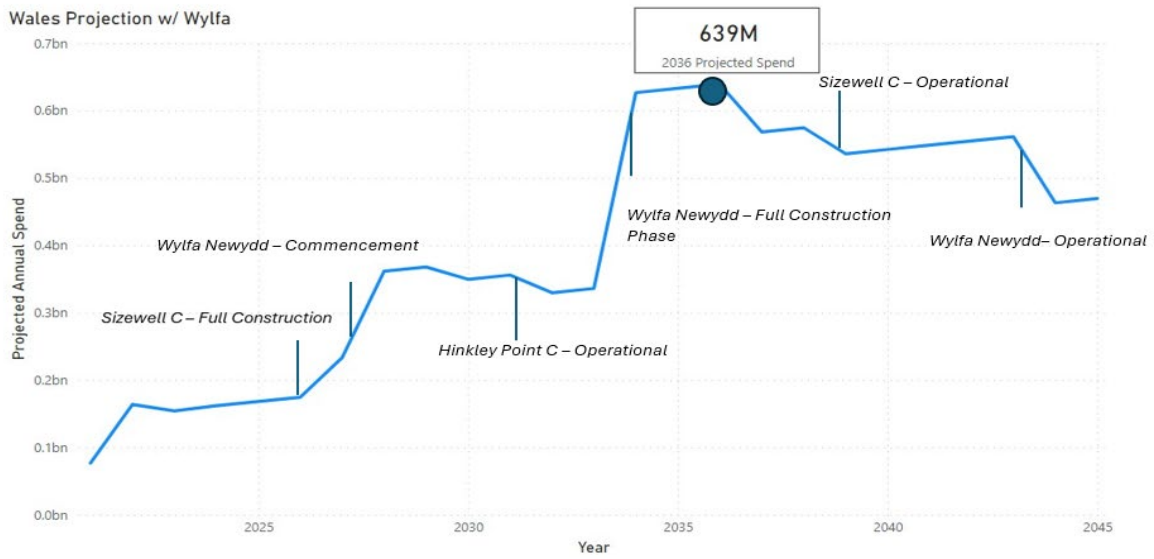


Figure 18: Existing plus Wylfa Impact – Wales

**North Wales Capacity - £567 million:**

- Maximum estimated spend of £418 million per-annum is forecast to make up c75% of total North Wales capacity.

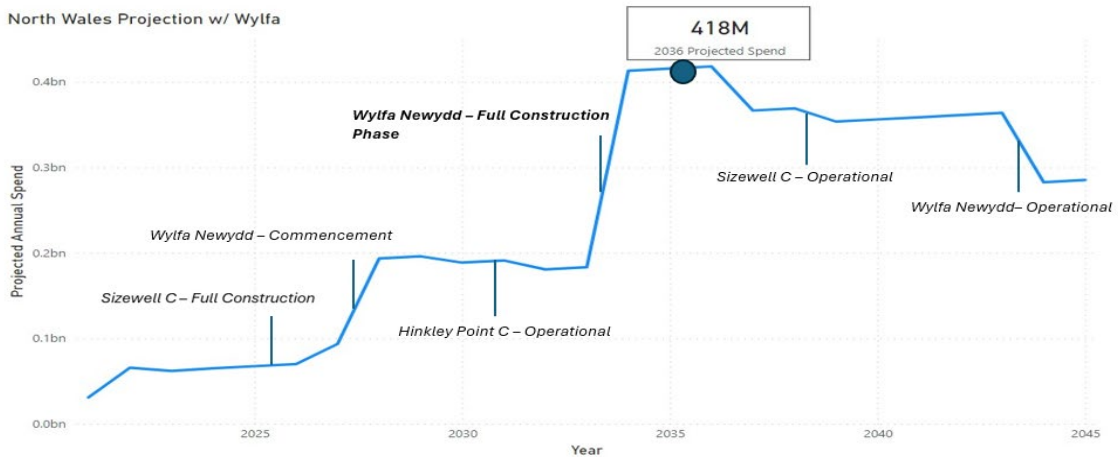


Figure 19: Existing plus Wylfa Impact – North Wales

The demand projected would be centred in North Wales. This is due to Hinkley Point C and Sizewell C works likely to be focussed on the South Wales supply chain through the known nuclear supply chain delivering on both projects at present. waste decommissioning (55% of spend located in North Wales) alongside Wylfa (North Wales would take up likely regional spend) would likely be focussed on balance in North Wales.

## 5.5 Scenario 4: Impact of all Potential Forecasted Activity

This final scenario takes into account the **potential** SMR growth that could also take place alongside existing and potential nuclear new build and waste decommissioning. Through desktop research and engagement across nuclear forums, this study has assumed that 10-15 individual SMRs will be delivered UK-wide. By 2040 in Wales (aligning with the study’s estimate forecasts), 10-15 individual SMR builds would bring an additional £350-400 million per-annum if strategic sites are chosen.

### Wales Capacity - £4.5 billion:

- Maximum estimated spend of c£1 billion per-annum by the early 2040’s could make up c20-25% of total Welsh nuclear supply chain capacity.

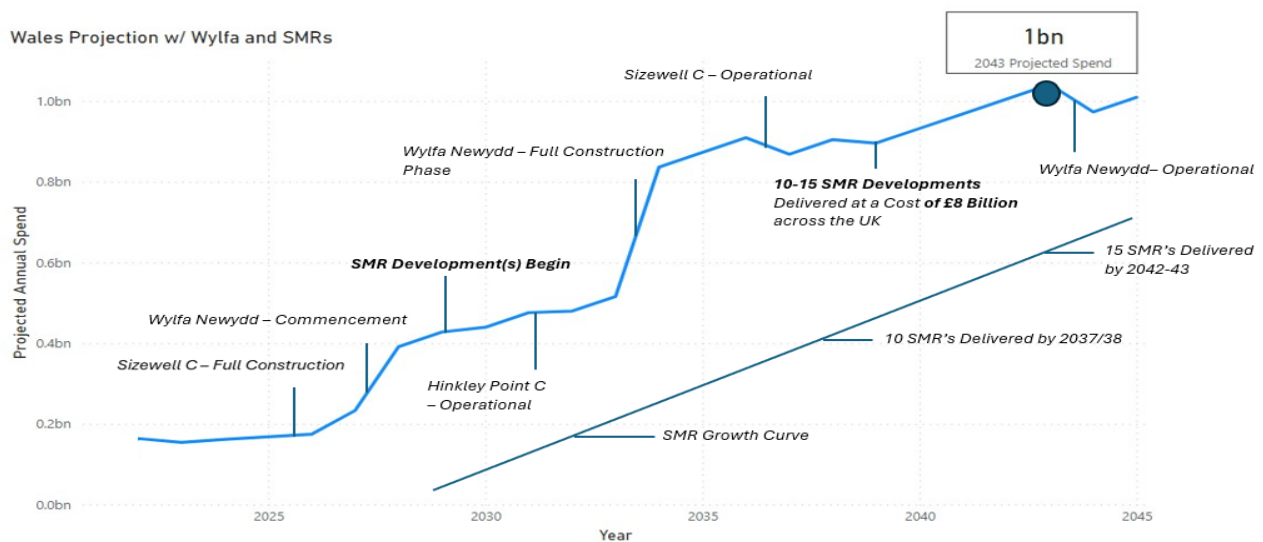


Figure 20: All potential forecasted activity – Wales

The impact of SMR growth on top of all other potential forecast activity for Wales highlights the **scale of opportunity**. By the early 2040s, Wales could see spend-based growth upwards of **600%** on 2024 figures<sup>33</sup>. The level of growth across Wales, and in particular North Wales needs to be strategically managed for long-term economic gain.

Optimising the supply chain and delivery of such demand across the sector will likely require indirect growth such as:

- Road & Rail infrastructure improvements to plan efficient logistics and transportation processes<sup>34</sup>.
- Ports and shipping impacts on movement of materials and products.
- Research hubs & skills investment across industry and the supply chain to effectively resource plan.<sup>35</sup>

<sup>33</sup> Calculation of the current spend (2024 - £160M) against the potential maximum spend (2042/43 – c£1B) and analysing the % growth increase from today’s figures.

<sup>34</sup> [Major UK Infrastructure Projects: International Shipping Impacts \(ddcfpo.com\)](https://ddcfpo.com)

<sup>35</sup> The **National Nuclear Strategic Plan for Skills** sets out the nature of the challenge UK wide: “In order to meet demand from the growing nuclear programme and replace people who leave the sector, we will need to need fill 40,000 new jobs by 2030. This is a step-change which means we must more than double the current recruitment rate for our sector”[NSDG-National-Nuclear-Strategic-Plan-For-Skills.pdf \(nuclearskillsdeliverygroup.com\)](https://nuclearskillsdeliverygroup.com)

**North Wales Capacity - £567 million:**

- Maximum estimated spend of £595 million (2042/43) would take up **105%** of total known capacity in North Wales.
- Resource availability alongside organisational capability would not have enough capacity to satisfy the potential demand of this scenario.

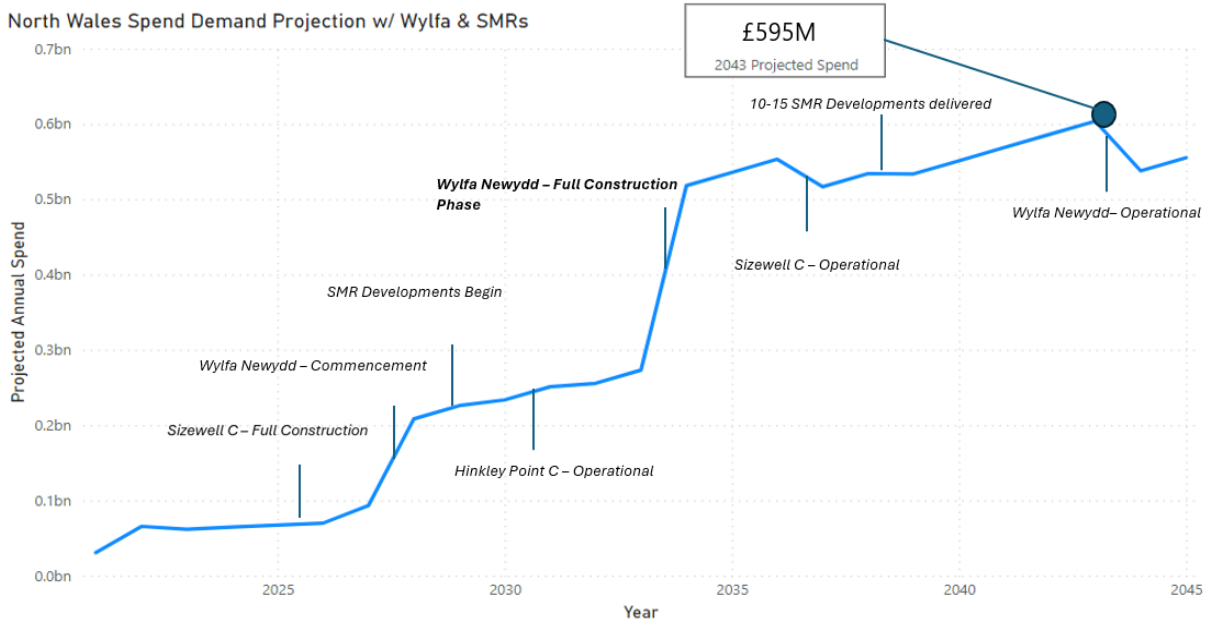


Figure 21: North Wales – All potential forecasted activity

**All Spend Demand Scenarios – North Wales:**

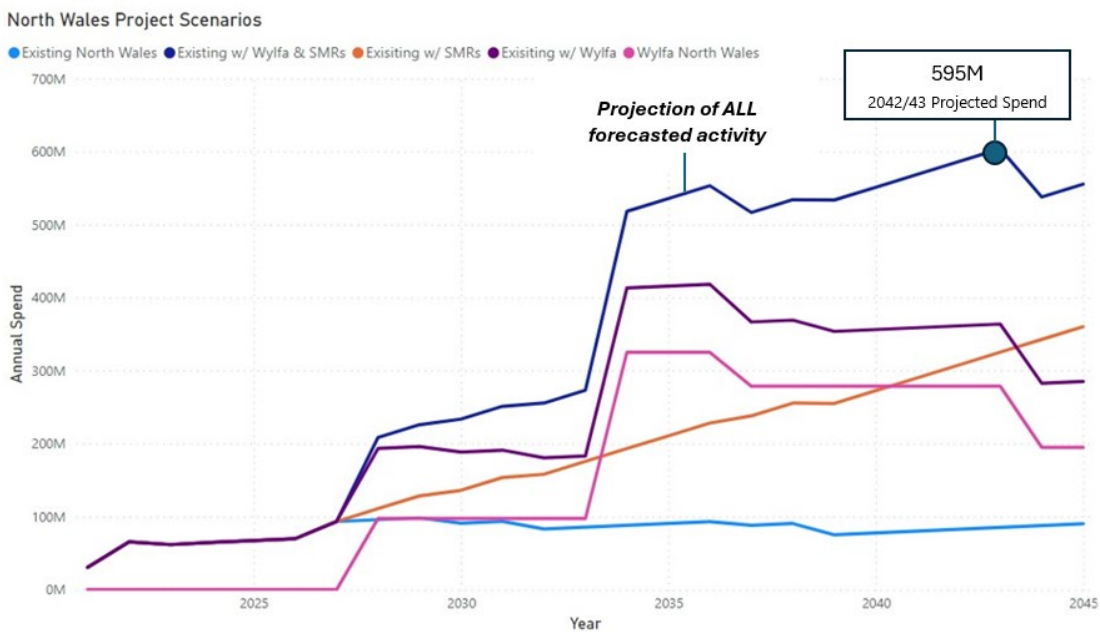


Figure 22: All Scenarios – North Wales

The above scenarios highlight all of the potential spend demand forecasts that may take place in North Wales. This graphic visualises the impact between existing ‘known’ future demand against the

‘potential’ avenues and sources of growth. The table below summarises the potential additional spend opportunities each scenario models<sup>36</sup>:

| Modelled Scenario  | Total Additional Annual Spend – Wales (£) 2025-2040 | Total Additional Annual Spend – North Wales (£) 2025-2040 |
|--|---|---|
| 1). Existing Nuclear Sector - No Change  | £3-4 billion  | £1-2 billion  |
| 2). Impact of Wylfa Only   | £3-4 billion  | £2-3 billion  |
| 3). Impact of Wylfa + Existing Known Demand  | £6-7 billion  | £3-4 billion  |
| 4). Impact of Wylfa, SMR & Existing Known Demand – All Potential Forecasted Activity | £9-10 billion                                       | £5-6 billion  |

Figure 23: Scenario total spend analysis

<sup>36</sup> Each modelled scenario in the table has highlighted the total additional spend as an estimated range. The total spend opportunity figure(s) show the estimated impact of all scenarios in Wales over the next 15 years.



# STUDY FINDINGS

## SECTION D: VIEWS FROM INDUSTRY

Alongside publicly available data sets and information provided by key nuclear players, this study gathered quantitative and qualitative data through industry engagement.

This section summarises feedback from stakeholders (including industry and regional bodies) as well as the main findings from a Welsh supply chain survey that was conducted as part of this study.

## 7. STAKEHOLDER FEEDBACK

Views were sought from a number of key stakeholder groups, which highlighted several challenges and opportunities within the Welsh supply chain, particularly concerning the nuclear industry. The findings, ranked by frequency and emphasis across feedback received, are summarised below.

### 7.1 Pipeline and Project Certainty

The most significant concern raised by stakeholders is the current uncertainty surrounding project pipelines, which directly impacts the engagement and sustainability of the Welsh supply chain, particularly SMEs.

- **Gaining Pipeline Visibility:** Stakeholders repeatedly emphasised the need for a consistent, visible and reliable pipeline of projects. SMEs, in particular, struggle to remain engaged without a steady stream of short-term opportunities, often diverting their focus to other opportunities if projects are delayed. The lack of a clear and guaranteed pipeline was cited as a major reason for disengagement, and that *"to provide project certainty across the Welsh supply chain, a clear map of the pipeline and project costs needs to be met and achieved across the industry."*
- **Project Certainty:** The uncertainty surrounding specific projects was highlighted as a barrier to maintaining supply chain engagement. One industry body noted that *"without clear commitment and project timelines, suppliers are reluctant to invest in the necessary accreditations and resources, leading to a potential loss of skilled suppliers to other sectors"*.
- **Confidence in Project Delivery:** There is a perceived lack of confidence in the realisation of major projects, particularly in the wake of past disappointments such as the Wylfa. A regional business organisation expressed scepticism, noting that *"many companies have been here before and were left disillusioned when Wylfa did not happen, making it difficult to get suppliers to engage with new initiatives."*

### 7.2 Skills Shortage and Workforce Development

Skilled workers within the Welsh nuclear industry and the broader infrastructure sector was identified as a critical issue. The shortage of workers with nuclear specific expertise specifically was cited as an ongoing risk.

- **Nuclear Skills Gap:** There is a significant shortage of skilled workers, particularly those with nuclear-specific expertise: *"the current skills shortage shortfall is a massive issue, exacerbated by the folding of construction companies and the high demand for skilled labour across multiple sectors"*.
- **Workforce Upskilling and Multi-skilling:** The need for a coordinated approach to upskilling the existing workforce and developing new talent was highlighted. Also, while there is anecdotal evidence of skills challenges, there is a lack of consolidated concrete data, making it difficult to plan shortages in forecast skills capacity effectively: *"organisations need to understand their starting point and engage in multi-skilling efforts to enable workers to move between sectors such as nuclear, offshore wind, and low carbon infrastructure"*. Major projects and programmes need to work with skills providers from the outset to minimise resource constraints.

- **Long-term Skills Planning:** The absence of long-term forecasting and strategic workforce planning was a major concern. Many of the stakeholders interviewed emphasised the need to work with educational institutions to map and develop skills that will be needed for future projects, arguing that *"there has been little coordination to train people in the relevant skills, which could have been developed over the years if there had been a clear strategy"*.

### 7.3 Supplier Engagement and Support

Engagement with local suppliers and SMEs was identified as a challenge, particularly in breaking down barriers to entry into the nuclear sector.

- **Accreditation and Bureaucracy:** The complexity and cost of obtaining the necessary accreditations were cited as major barriers for SMEs. Many SMEs perceive nuclear projects as out of reach due to high levels of accreditation requirements. There is a need to proactively engage with suppliers, offering one-on-one support and guidance to help them navigate these challenges with investment to support SME supply chains. The impact of investment into the 'fit for nuclear' programme for Hinkley Point C was highlighted<sup>37</sup>, stating that similar avenues will have to be adopted if Wylfa and future SMR growth is to be realised.
  - This is a critical issue. Few companies (particularly SMEs) will be able to secure accreditation as a business development activity. Supplier qualification takes time and is expensive, which requires a firm commitment from Government as well as industry and the suppliers themselves to upskill and become prepared for future opportunities.
  - Commitment from the project to the supplier is required (this could be from project level KPI's, strategic benefits maximising social value or contractual clauses maximising lower tier opportunities flowing through any future project level works information).
- **Perceptions and Demystification:** There is a widespread perception among suppliers that nuclear projects are too complex or irrelevant to their businesses. Stakeholders emphasised the importance of *"demystifying"* the nuclear industry to encourage broader participation. This includes highlighting non-nuclear-specific work opportunities within nuclear projects, which can be accessible to a wider range of suppliers. This will take clear and organised approach in engaging the wider Welsh supply chain.
- **Bite-sized Contracts:** The need for smaller, manageable contracts was identified as crucial for engaging SMEs; *"bite-sized contracts"* that are suitable for smaller companies, allowing them to participate without overextending resource.

### 7.4 Local Supply Chain Development and Coordination

The need for better coordination and mapping of the local supply chain was a recurring theme.

- **Supply Chain Mapping and Visibility:** The fragmentation and lack of coordination in supply chain mapping efforts were flagged as significant issues. There are *"multiple mapping projects across the Welsh Government,"* leading to data silos and inefficiencies. A more consolidated and coordinated approach is needed to ensure a comprehensive understanding of the supply chain and to facilitate engagement across sectors efficiently.

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<sup>37</sup> [Fit For Nuclear | Nuclear AMRC \(namrc.co.uk\)](#)

- **Regional Focus and Support:** A regional approach to supply chain development, with dedicated resources and support for local suppliers, was suggested as a way to strengthen the Welsh supply chain, such as the Somerset Larder<sup>38</sup> and the legacy impact of this at Hinkley Point C.

## 7.5 Economic and Social Impacts

Stakeholders expressed concerns about the broader economic and social impacts of large infrastructure projects on local communities across North Wales, in particular Anglesey.

- **Displacement of Existing Businesses:** There is a risk that large projects, such as Wylfa could displace existing businesses, particularly in sectors such as construction and tourism. Stakeholders noted that local builders and tourism businesses could be adversely affected if workers are drawn away by higher wages offered by large projects, or if tourism declines due to the influx of temporary workers. Supply chain engagement should be regionally managed so that other sectors (e.g., Tourism) are not adversely affected by large-scale growth.
- **Infrastructure and Housing:** The impact on local infrastructure, particularly transportation and housing, was another concern; there is a need for careful planning to ensure that infrastructure can support the influx of workers without negatively impacting the local community.
- **The Risk of Boom & Bust:** The risk of boom and bust was cited by multiple industry stakeholders. The impact of a major programme may benefit a local region for the timescale of the project. To continue a benefits-led legacy for local communities and the regional supply chain will be a challenge.

In summary, the study's industry engagement revealed a complex set of challenges and opportunities for the Welsh supply chain, particularly in relation to the nuclear industry. Addressing issues of pipeline certainty, skills shortages, supplier engagement, supply chain development and local economic impacts will be critical to ensuring the success of future projects and the sustainability of the Welsh supply chain.

## 8. WELSH SUPPLY CHAIN SURVEY

To enrich the findings of this study, the survey objectives were as follows:

- Gain a baseline understanding of current Welsh market appetite for future potential nuclear opportunities;
- Understand the perceived challenges and risks associated with working in the nuclear sector;
- To gauge what, if any, are the challenges of working in the nuclear sector (aimed at existing nuclear sector organisations);
- Identify key areas for opportunity across the existing and potential nuclear supply chain in Wales; and
- Identify actions that could positively impact and improve the prospect for companies in Wales to benefit from future nuclear sector growth.

In order to reach the widest pool of existing and potential suppliers across Wales, the study tapped into multiple industry networks to distribute the survey. The survey was distributed to an estimated **3,000+ organisations**. A summary of submitted responses is included below.

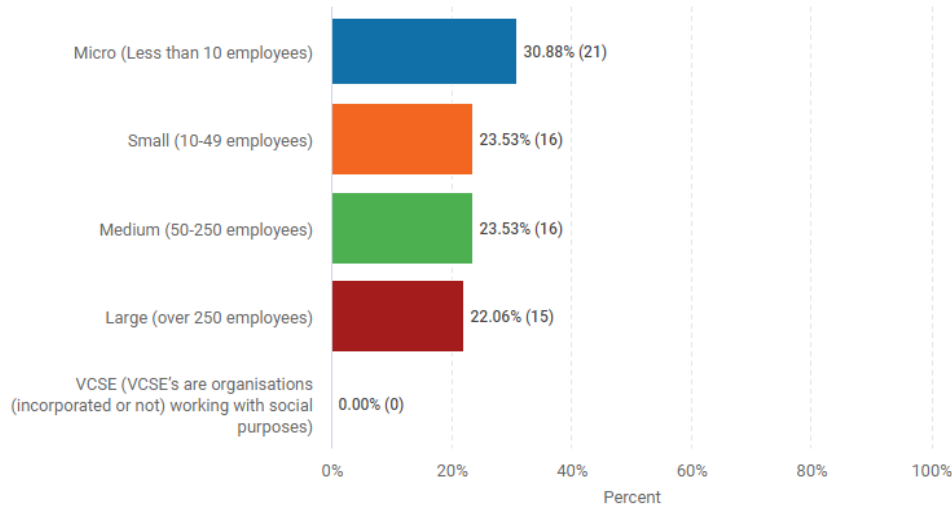
### 8.1 Survey Results: Overview

The 69 responses received amounted to an estimated 1-2% response rate across the supply chain. The response rate and level of engagement was a challenge, with a low percentage of organisations participating, even after wide-ranging communication and distribution through multiple industry-leading networks. The lack of certainty regarding future projects and confirmed growth in Wales could be a key factor which negatively affected engagement levels.

### 8.2 Organisational Breakdown: Business Type & Turnover

Of the 69 responses, the chart below highlights the breakdown in organisation by size, with 21 of the 69 (**31%**) respondents being Micro sized organisations (less than 10 employees):

What Type of Business is your Organisation?



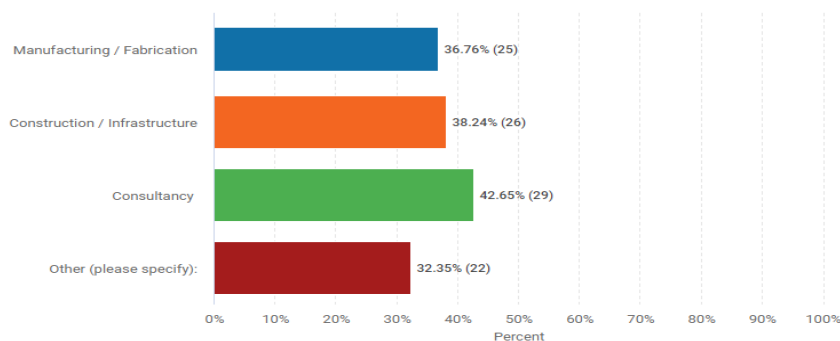
**Turnover breakdown** was broadly similar, with 55 of the 69 respondents (**80%**) latest turnover under £10 million. Over 36% of organisations who responded reported latest turnover of under £1 million. There were only 7 organisations (**10%**) who had turnovers of over £250 million.

### 8.3 Category Breakdown

In order to align with the wider study objectives, the survey broke down all organisations by the categories set out in Cwmni Egino’s brief:

- Construction
- Manufacturing
- Consultancy
- ‘Other’

Consultancy-based organisations were the most common category chosen, followed by construction and manufacturing:



Many organisations ticked multiple options, showing the variety in discipline and skillset of the businesses that responded. To provide a further layer of detail, the study aligned best-practice completed by the IAEA<sup>39</sup>, aligning category areas against a nuclear new build. This study has developed a detailed list of categories required to deliver all aspects of a New-Build, from design, feasibility to project controls.

### 8.4 Appetite & Sector Experience

Organisations were asked to state whether they had appetite for future nuclear related supply chain opportunities. Of the 69 organisations that responded to the survey, **68** stated that they have appetite for future nuclear opportunities across the sector. This corresponds to a **98.5%** appetite response. 62 of the 69 organisations who participated in the study (**90%**) would like to opt in to receive future information and potential opportunities.

Only one organisation did not have appetite for future opportunities in nuclear. The respondent stated that the perceived difficulty in entering the nuclear sector was a core reason behind the lack of appetite.

To better understand the breakdown of organisations who were active in the nuclear supply chain alongside organisations who were not currently active, the study asked respondents to state whether they had experience in the sector.

<sup>39</sup> IAEA Handbook

Over two thirds of organisations (69%) taking part in the survey had prior experience across the nuclear sector or had engaged in the market. 21 organisations (31%) had never had prior experience in the sector.

For those with prior experience, the survey prompted organisations to share their previous experience in the sector, with over **40 responses** received. These included *“undertaking enabling works with Wylfa, including the construction of a new link road”* and having worked in the industry for *“three decades, working with Sellafield sites on waste decommissioning projects”*. There was appetite in securing opportunities from Sizewell C, with four organisations currently delivering at Sizewell C. Existing Welsh nuclear suppliers highlighted their expertise in delivering works across NRS waste decommissioning sites specifically, having *“delivered ground investigation across multiple NRS sites, including Dounreay”*. and *“design, installation and inspection of remotely operated equipment within nuclear waste transfer cells at Magnox Harwell, with ongoing hazardous area inspections at Combwich Wharf and Hinkley Point C”*.

One company stated that *“we have provided goods and/or services to most of the nuclear sites around the UK, mostly to existing decommissioning sites. We work directly for NRS or as a subcontractor for tier 2/3 companies. Based on Anglesey, Trawsfynydd and Wylfa are both on our doorstep but have also worked in Berkeley, Hinkley Point A and Winfrith”*. Many of the organisations across Wales are operating indirectly in the supply chain, or operating as a tier 3 and 4 organisation.

In addition, the organisations that had prior nuclear experience in the sector were asked to rate how challenging working in the sector was, from ‘very easy’ to ‘very difficult’. The responses were as follows:

| Very easy | Easy  | Neither easy nor difficult | Difficult | Very difficult |
|-----------|-------|----------------------------|-----------|----------------|
| 2.00%     | 4.00% | 48.00%                     | 38.00%    | 8.00%          |
| 1         | 2     | 24                         | 19        | 4              |

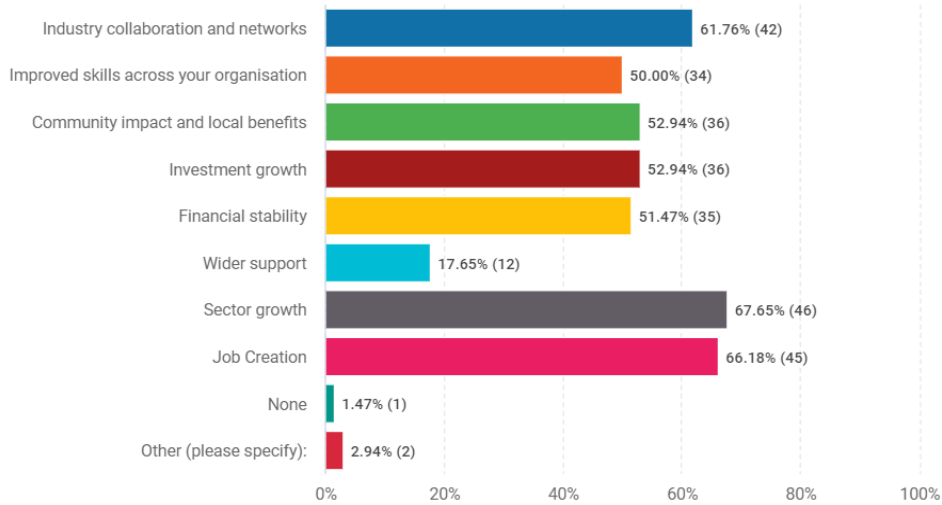
Responses were split between difficult or very difficult, with 23 organisations (46%) that think the nuclear sector is difficult to operate it. 24 organisations (48%) were neutral in their view, with a small number of responses believing the sector is easy to operate it.

## 8.5 Opportunities, Challenges & Future Prospects

In this section, organisations were asked for their view on the major opportunities, challenges and future benefits that potential nuclear investment could bring. The responses are summarised under each heading below.

### Opportunities:

Organisations were given a set of potential opportunities that future nuclear investment would present for them:



The top three opportunities that organisations believed potential nuclear growth would bring were:

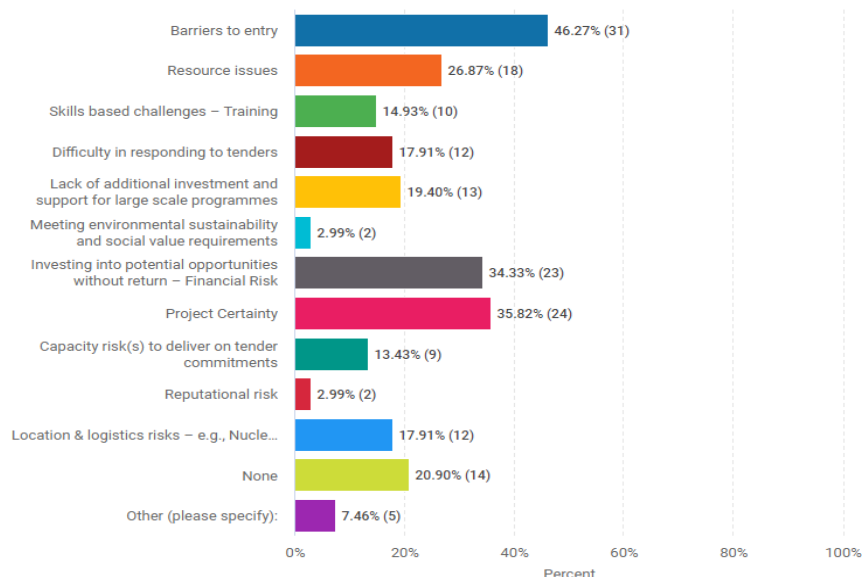
- Sector Growth – 68%
- Job Creation – 66%
- Industry Collaboration – 62%

There were a number of organisations in the survey’s ‘final comments’ section that built on the benefits of sector growth and job creation : *“As a local lad from Ynys Môn I hope new opportunities will come to the area, without disrupting the local communities too much. The nuclear sector is mainly to attract Welsh speaking young people back to live”*. In addition, a potential new entrant to the nuclear sector backed up this study’s industry findings around the need for cross-sector collaboration to realise benefits: *“this represents a great opportunity for companies based in North Wales and needs central coordination to truly maximise benefits”*.

Organisations participating in this survey, particularly Wales based organisations, perceive sector growth and further job creation as a positive for Wales. Many organisations highlighted that central co-ordination and sensitivity is critical in growing the sector, keeping local communities and people engaged.

### Challenges & Risks:

Organisations were asked to indicate which major challenges and/or risks they would face in seeking to enter the nuclear sector:





The top three challenges organisations believed they would face in the nuclear sector were as follows:

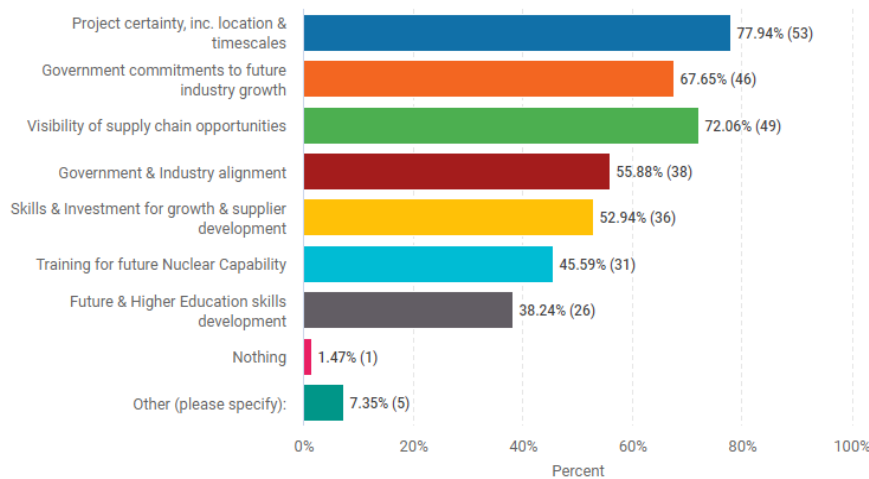
- *Barriers to Entry – 46%*
- *Project Certainty – 36%*
- *Investment without Return – 34%*

Nearly half of all respondents cited ‘barriers to entry’ as a strategic challenge across the nuclear sector. This directly aligns with the findings from across Welsh industry (see Section 5). There were a number of organisations in their final comments that cited how they would mitigate this ongoing challenge. One company outlined a plan to “*help as many local businesses get certified to ISO 9001, ISO 14001, ISO 45001 and where required ISO 19443. This will give local suppliers a better opportunity to win tenders on nuclear Projects. We are enthusiastic about helping as many local companies as possible to get opportunities for work in North Wales Nuclear and drive the local economy.*” Other responses cited size constraints as a micro supplier alongside a lack of sector expertise as barriers to entry into the sector.

Lack of certainty around future projects and investment without return, and the risk behind this were cited as major risks for the Welsh supply chain. Without a clear picture of where projects and programmes are going to happen, engagement and appetite building through this will be limited.

### Future Benefits for Wales & North Wales:

Organisations were asked what would positively impact and improve the prospects for companies in Wales to benefit from future growth in the nuclear sector growth:



The top three challenges organisations believed they would face in the nuclear sector were as follows:

- *Project Certainty – 78%*
- *Project and Pipeline Visibility – 72%*
- *Government Commitment to Growth – 68%*

The top key finding from this study's industry engagement was project and pipeline certainty alongside Government commitment to growth. When the study asked the supply chain as part of this survey, project and pipeline certainty was once again the main challenge to improving the prospects of companies across Wales. This was echoed by organisations in their final comments. An England based organisation close to the Welsh border stated that *"a full programme of works across new build, defence nuclear and decommissioning should be visible with realistic dates applied"*. In addition a local North Wales organisation who do not have experience in the nuclear sector highlighted that *"the lack of pipeline visibility in Wales for Welsh companies to tender for projects is an issue. Generally, from experience of other nuclear projects there's a fixed supply chain utilising large globally based companies as opposed to smaller Welsh companies"*.

The need for a commitment to Wylfa and future SMR investment across Wales was also cited by the supply chain. One organisation actively working in Wales said: *"It would great to see a firm commitment to Wylfa as a giga-watt scale investment in NW Wales, and in addition commitment to at least one SMR in S Wales, preferably at a site of a former coal-fired power station"*. Another Welsh company built on this statement, saying *"the Welsh Government need to commit to supporting nuclear projects, cutting red tape and get on with putting Wylfa and Trawsfynydd at the forefront of their plans"*.

## 9. CONCLUSIONS

This final section of the report draws conclusions from the high-level intelligence that has been uncovered alongside the opportunities and challenges that have been highlighted throughout this study.

The below conclusions cover the study’s quantitative data collection, comprehensive desktop research into the sector and the wide-ranging engagement findings from across Welsh industry and the supply chain.

1. There are currently 345 organisations based in Wales who support the nuclear sector, generating c£160M of sales per annum directly from nuclear. This excludes the contribution from regional offices of UK-wide businesses headquartered outside Wales. This constitutes 2-3% of UK-wide nuclear sector supply chain activity that is based in Wales.
2. There are currently 114 organisations based in North Wales who support the nuclear sector, generating c£63M of sales per annum directly from nuclear. This excludes the contribution from regional offices of UK wide businesses headquartered outside Wales. This constitutes <1% of UK wide nuclear sector supply chain activity that is based in North Wales.
3. There is potential to grow this through increase in nuclear new build arising from both UK wide programme opportunities and regional-specific projects located in Wales (Wylfa and Trawsfynydd). The table below summarises the potential total expenditure in each scenario modelled in this study:

| Modelled Scenario  | Total Additional Annual Spend – Wales (£)<br>2025-2040 | Total Additional Annual Spend – North Wales (£)<br>2025-2040 |
|--|--|--|
| 1). Existing Nuclear Sector - No Change  | £3-4 billion   | £1-2 billion   |
| 2). Impact of Wylfa Only   | £3-4 billion   | £2-3 billion   |
| 3). Impact of Wylfa + Existing Known Demand  | £6-7 billion   | £3-4 billion   |
| 4). Impact of Wylfa, SMR & Existing Known Demand – All Potential Forecasted Activity | £9-10 billion  | £5-6 billion   |

4. From the comprehensive set of data collected, the intelligence gathered suggests the capability in Wales is centered on SMEs and in the following areas of expertise:
  - ‘Supply’: Plant & Equipment & Non-specialised Wholesale Supply
  - Repair & Maintenance
  - Installation – (Electrical & Mechanical)
  - Waste Management
5. This provides the platform for organic growth in the sector by building on existing capability in the Welsh and North Wales supply chain. Therefore, any future next steps and interventions should focus on these areas (*e.g., Supply Chain Engagement focused on the known pool of Welsh SME suppliers to support existing sector demand*).
6. Engagement with industry experts during the course of this study highlighted the transferability – an estimated 85% - between nuclear and other energy sectors in terms of

supply chain requirements. This strongly suggests that nuclear supply chain development in Wales could support and open up opportunities in other industries.

7. In order to capture the opportunities, the following barriers and challenges identified need to be addressed. The challenges set out below were identified through the study's comprehensive stakeholder engagement and supply chain survey:
  - **Pipeline certainty and orders to create supply chain confidence and appetite in future sector opportunities.** There is a need to build a clearer picture of when and where projects and programmes are going to happen. This applies both to the nuclear sector and the wider infrastructure sector.
  - **Attracting new entrants into the sector.** The nuclear sector continues to be perceived as difficult to enter, with multiple barriers to entry (especially for micro & small organisations). The existing nuclear sector has a well-defined incumbent supply chain at a Tier 1 level. Future growth, and new entrants will have to mitigate these challenges in order for the Welsh supply chain to grow, in preparation for potential future nuclear opportunities in the sector.
  - **There is a shortage of skilled workers within the Welsh nuclear industry and the broader infrastructure sector (UK-Wide).** Furthermore, there is not enough capacity in North Wales currently to satisfy the forecast combined existing and potential nuclear sector demand.
  - **The challenge of adverse impacts across the local and regional communities across North Wales if major opportunities were confirmed (e.g., Wylfa).** It was highlighted through industry engagement that unless mitigated, there could be a risk of displacement of existing SME suppliers, and communities and other sectors may be negatively impacted by large-scale nuclear growth.
8. The challenges set out highlight an opportunity to proactively target potential new entrants. For example, through this study's market engagement, twenty-one potential new entrants to the sector have confirmed appetite for existing and future opportunities.
9. The pockets of cross-sector collaboration that have supported the outputs of this study will be critical in fostering skills, supply chain and industry preparedness for the potential growth and investment in the sector moving forward.

The opportunities and challenges set out in this study uncover a complex set of issues that need to be navigated to ensure that Wales and the Welsh supply chain are given the best opportunity to benefit from existing 'known' nuclear demand alongside potential future opportunities in the nuclear sector. Whilst it is possible to develop an intervention plan to enable the supply chain to engage with the opportunities at play, it is difficult to gain any commitment without firm order.

Therefore, this study concludes that the immediate focus should be on confirming the programme of nuclear new build alongside a clear future pipeline of decommissioning works for the Welsh supply chain.

## 10. GLOSSARY OF TERMS

The supporting section below provides a study specific definition to explain the terminology used throughout the report.

**Capacity:** This study defines capacity as follows: Organisational Turnover / Nuclear Spend = The average % of capacity that is taken up across organisations from this spend denotes a high-level estimation of their utilisation in the sector.

Capacity has been calculated with a focus on the identified organisations across Wales and North Wales.

**Capability:** This study defines organisational capability as a consolidated view of what a set of organisations can offer, driven from SIC code analysis. This has been driven against the four major areas of focus: Construction, Manufacturing and Professional Services, alongside Other.

Example: In Wales 16% of the known nuclear Welsh supply chain have construction capability. This is because 60 organisations out of 345 through SIC code analysis, and wider supply chain intelligence are directly linked to the construction sector. Therefore, the identified list of organisations are capable in the space of construction.

**Category:** A category of works denotes the industry or industries that companies belong to based on their business activities.

**Construction:** This study defines construction as the making and building of something (e.g., structures, development etc). The four main types of construction are: residential construction, commercial construction, industrial construction, and infrastructure construction.

**Manufacturing & Fabrication:** This study defines manufacturing as the creation or production of goods with the help of equipment, labour, machines, tools, and chemical or biological processing or formulation.

**Professional Services Consultancy:** Professional services and consulting are both about providing expertise to a client or a customer. Many types of consultants are considered to be in the professional services industry.

**'Other':** This study has defined 'other' from the organisational data collected where organisation SIC codes and business activities did not fit into the three areas of focus across construction, manufacturing and professional services consultancy. Other therefore has focussed on business activities such as supply of equipment and machinery, specialist installation and maintenance.

**SIC Code:** A Standard Industrial Classification (SIC) code is a system used to classify industries by a specific numerical code. It helps in the categorisation of businesses by their type of economic activity and supply activity.

**SME – Small, Medium Enterprise:** An SME is a business whose personnel numbers fall below certain limits. In the UK, a small enterprise has fewer than 50 employees, while a medium enterprise has fewer than 250 employees.

**Nuclear New Build:** Refers to the construction of new nuclear power stations, often part of energy strategies aimed at increasing electricity production from low-carbon sources.

**Waste Decommissioning:** The process of safely dismantling facilities, equipment, or infrastructure that is no longer in use, particularly in industries such as nuclear power, to manage and dispose of hazardous waste materials.

**NDA – Nuclear Decommissioning Authority:** A public body in the UK responsible for the safe decommissioning and cleanup of the UK's civil nuclear legacy, including overseeing the closure of nuclear power plants and other nuclear facilities.

**NRS – Nuclear Restoration Services:** A service provider focused on the restoration and cleanup of nuclear sites, helping to manage radioactive materials and ensure environmental safety.

**HPC – Hinkley Point C:** Hinkley Point C nuclear power station is a two-unit, 3,200 MWe EPR<sup>40</sup> nuclear power station under construction in Somerset, England. Hinkley Point C is the UK's largest infrastructure project. The new power plant will power six million homes and supply 7% of the UK's electricity.

**SZC – Sizewell C:** Sizewell C nuclear power station is a project to construct a 3,200 MWe nuclear power station with two EPR<sup>41</sup> reactors in Suffolk, England. The project was proposed by a consortium of EDF Energy and China General Nuclear Power Group, which own 80% and 20% of the project respectively. Sizewell C will generate low-carbon electricity for around 6 million homes across the UK.

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<sup>40</sup> The EPR is a Generation III+ pressurised water reactor design. It has been designed and developed mainly by Framatome and Électricité de France (EDF)

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**APPENDIX: APPROACH TO ESTIMATING & COSTING DEMAND**



**COST BREAKDOWN**

**Nuclear-New Build:**

| Phase                                       | Length Min (Years) | Length Max (Years) | Cost % (Min) | Cost % (Max) | Typical Activities  |
|---|--------------------|--------------------|--------------|--------------|---|
| Conceptual and Feasibility Studies          | 1                  | 2                  | 2%           | 5%           | Initial site selection, feasibility studies, preliminary design work, regulatory framework assessment, and cost estimation.             |
| Detailed Design and Engineering             | 2                  | 4                  | 5%           | 10%          | Detailed engineering design, safety analysis, licensing and permitting activities, finalising the project schedule and budget.          |
| Procurement (overlapping with Construction) | 2                  | 3                  | 15%          | 25%          | Procurement of Tier 1 Contractors (Construction, Design, Manufacturing)   |
| Construction                                | 5                  | 7                  | 40%          | 50%          | Site preparation, civil works, installation of equipment and systems, construction of reactor buildings, and associated infrastructure. |
| Commissioning                               | 1                  | 2                  | 5%           | 10%          | System testing, fuel loading, initial operation, performance verification, and regulatory approval for commercial operation.            |
| Operation and Maintenance                   | 40                 | 60                 | N/A          | N/A          | Regular maintenance, periodic upgrades, refueling, waste management, and decommissioning planning.                                      |
| Decommissioning                             | 10                 | 20                 | 10%          | 15%          | Decontamination, dismantling of structures, waste disposal, and site restoration.   |

**Waste Decommissioning:**

| Phase                           | Length Min (Years) | Length Max (Years) | Cost % (Min) | Cost % (Max) | Typical Activities  |
|---------------------------------|--------------------|--------------------|--------------|--------------|---|
| Planning and Project Management | 1                  | 3                  | 10%          | 15%          | Detailed planning, regulatory compliance, stakeholder engagement, project management, and oversight.                                      |
| Decontamination and Dismantling | 5                  | 10                 | 40%          | 50%          | Decontamination of radioactive materials, dismantling of reactor components, demolition of structures, and handling of radioactive waste. |
| Waste Management                | 10                 | 20                 | 20%          | 30%          | Segregation, treatment, storage, transportation, and disposal of radioactive waste, as well as non-radioactive waste.                     |
| Site Restoration                | 2                  | 5                  | 10%          | 15%          | Environmental remediation, soil cleanup, removal of non-radioactive structures, and landscaping.  |
| Support Services                | 18                 | 38                 | 5%           | 10%          | Throughout the decommissioning process. Security, health and safety services, monitoring, and contingency measures.                       |

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