BVGAssociates

Economic impact of Dogger Bank Wind Farm

October 2025

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Executive Summary

SSE Renewables (SSER), Equinor and Vårgrønn are currently constructing Dogger Bank Wind Farm, which will have a total installed capacity of 3.6 GW.

Once operational, it will become the world's largest offshore wind farm, with a capacity to power up to 6 million homes annually.

Around 45% of the investment in Dogger Bank was made in the UK: Local content, those realised in north-east England (here taken to include Tees Valley, Durham, Northumberland, Tyne and Wear, as well as the ceremonial counties of North Yorkshire and the East Riding of Yorkshire), accounts for 17% of the total spend on Dogger Bank Wind Farm, while the rest of the UK content accounts for 28%.

Over the lifetime of Dogger Bank Wind Farm, the total UK spend is estimated to be approximately £8.4 billion. The highest proportion local content is in O&M, reflecting the significant local activity required for ongoing wind farm operations.

Dogger Bank Wind Farm will create approximately 70,510 full-time equivalent (FTE) years and £6.1 billion GVA (direct and indirect)[1] over the lifetime of the wind farm in the UK. Of this, 28,120 FTE years and £2.4 billion will be created locally.

Peak level of employment was reached in 2025, with an estimated total of 3,600 direct and indirect FTE years created across the UK. Of this, approximately 1,500 FTE years were generated locally and 2,100 FTE years in the rest of the UK.

Operations and maintenance (O&M) is the area with the most direct economic impact locally and in the rest of the UK. It is expected over its 35-year operational period, Dogger Bank Wind Farm will create around 49,260 direct and indirect FTE years.

UK spend	£8.4 billion
UK direct and indirect	70,510 FTE years
Local direct and indirect	28,120 FTE years
UK direct and indirect	£6.1 billion gross-value added
Local direct and indirect	£2.4 billion gross-value added
UK	45% content
Local	17% content

Development and project management	UK direct and indirect 7,020 FTE years
	Local direct and indirect 760 FTE years
Balance of Plant	UK direct and indirect 1,790 FTE years
	Local direct and indirect 910 FTE years
Installation and commissioning	UK direct and indirect 5,640 FTE years
	Local direct and indirect 3,100 FTE years
Operations and maintenance	UK direct and indirect 49,260 FTE years
	Local direct and indirect 21,650 FTE years
Decommissioning	UK direct and indirect 6,810 FTE years
	Local direct and indirect 1,700 FTE years

[1] UK direct and indirect GVA does not include capital depreciation, rent, and insurance as these do not represent new economic activity in this context.

1. Introduction

SSE Renewables (SSER), Equinor and Vårgrønn are currently constructing Dogger Bank Wind Farm, which will have a total installed capacity of 3.6 GW. The project is being developed in three 1.2 GW phases and is expected to be complete by 2027. Once operational, it will have the capacity to power up to 6.42 million homes annually.[2]

These phases are considered as separate phases:

- Dogger Bank A (1.2 GW)
- Dogger Bank B (1.2 GW), and
- Dogger Bank C (1.2 GW)

Unless otherwise stated in this report, Dogger Bank Wind Farm refers to all three phases.

As a globally significant project, Dogger Bank Wind Farm offers an opportunity to develop the UK's offshore wind supply chain and generate socioeconomic benefits for both the local and national economies.

Dogger Bank Wind Farm commissioned BVG Associates (BVGA) to assess the socioeconomic impact of all three phases of the project on behalf of Dogger Bank Projco 1, Dogger Bank Projco 2, and Dogger Bank Projco 3, which are each owned by SSER (40%), Equinor (40%) and Vårgrønn (20%).

1.1. Project background

Dogger Bank Wind Farm is located between 125 and 290 km off the east coast of Yorkshire. As shown in Figure 1, Dogger Bank A and B will connect to the existing Creyke Beck substation near Cottingham in the East Riding of Yorkshire, and Dogger Bank C will connect to the Lackenby substation in Teesside.

In 2019, all three phases secured Contracts for Difference in the UK Government's Allocation Round 3. Dogger Bank A, the first phase, generated its first power in October 2023 and is on track for installation completion by the end of 2025. Dogger Bank B and Dogger Bank C are expected to follow approximately 12 months from completion of the previous phase, targeting completion of the overall wind farm in late 2027. SSE is lead operator for the development and construction of Dogger Bank Wind Farm. Equinor will be lead operator of the wind farm on completion for its expected operational life of around 35 years. Vårgrønn provides specialist offshore wind expertise to the project.

Figure 1 Location of Dogger Bank Wind Farm.

[2] Based on Typical Domestic Consumption Values (Medium Electricity Profile Class 1, 2,700 kWh per household; OFGEM, May 2023), typical 55% wind load factor, and projected installed capacity of 3.6 GW.

2. Economic impact methodology

Economic impacts are typically quantified as GVA and FTE years for the project. GVA is the value generated by any unit engaged in the production of goods and services, and one FTE job year is one full-time job for one year. The FTE year unit is the only means of expressing employment in a way that comparisons can be made because the duration of individuals working on the wind farm will vary considerably and, in many cases, their commitment to the project will be less than 100% at any point in time.

These metrics are modelled at a local level and a UK-wide level. We consider local benefits to be those realised in north-east England. This region is defined as the former Government Offices for the Region, which covers Tees Valley, Durham, Northumberland, and Tyne and Wear, along with ceremonial country of North Yorkshire and East Riding of Yorkshire.

We used the economic impact methodology that BVGA developed to model economic impacts for the offshore wind industry. The method is based on the offshore wind "local" content methodology developed by BVG Associates for RenewableUK that seeks to understand the supply chain in the lower tiers and produces a figure that is equivalent to direct and indirect GVA. Calculating a national and local content figure, and understanding profit margins, costs of employment and salaries enables direct and indirect FTE years to be calculated.

The remaining expenditure is analogous to the direct and indirect GVA created. GVA is the aggregate of labour costs and operational profits. We can therefore model FTE employment from GVA, provided we understand some key variables. In our economic impact methodology, employment impacts are calculated using the following equation:

$$FTE_a = \frac{(GVA - M)}{Y_a + W_a}$$

Where:

FTEa = Annual FTE employment

GVA = Gross-value added (£)

M = Total operating margin (£)

Ya = Average annual wage (£), and

Wa = Non-wage average annual cost of employment (£).

To make robust assessments, therefore, we considered each major component in the offshore wind supply chain. We estimated typical salary levels, costs of employment and profit margins, bringing together BVGA's specific sector knowledge and research into typical labour costs for the work undertaken in each part of the supply chain.

For this analysis, we modelled direct and indirect impacts only.

2.1. Key assumptions and data inputs

Four key inputs were used for the economic impact modelling:

- Project specification
- Supply chain narrative
- Costs of the wind farm, and
- Salaries and employment costs.

Dogger Bank Wind Farm began development and project management activities in 2010. This covers 17 years of development activity until the estimated commercial operations date (COD) of the final phase, Dogger Bank C, in 2027.

All four key inputs reflect contributions from this period through 35 years of operations, with associated total economic impact figures based on this timeframe.

For modelling purposes, all annualised profiles depicted graphically in section 3.3 represent total development and project management contributions over six years.

2.1.1 Project specification

Dogger Bank A

Dogger Bank A is located around 131 km from shore at its closest point and has a development area of around 515 km². It will have an installed generation capacity of 1.2 GW, comprised of 95 turbines each 13 MW capacity.

The grid connection will be via a high voltage direct current (HVDC) link, making it the first offshore wind farm in the UK to do so. Scheduled for completion in 2025, it will operate for 35 years.

Dogger Bank B

Dogger Bank B, the largest phase with a development area of 599 km², is also located 131 km offshore at its nearest point. It will feature 95 turbines, each with a 13 MW capacity.

Dogger Bank B is scheduled for completion in 2026. It will also operate for 35 years, with grid connection via HVDC connection.

Dogger Bank C

Dogger Bank C, the final phase scheduled for completion in 2027, has a development area of around 560 km^2 and is located 196 km from shore.

It will use 87 turbines, each with an installed capacity of 14 MW. It will have the same operational lifespan as Dogger Bank A and B, with grid connection via HVDC connection.

2.1.2 Supply chain narrative

To analyse the economic impact across various parts of the supply chain, the supply chain was split into categories. These were defined by client and are shown in Table 1.

The client provided the distribution of local and national suppliers to date, along with the expected distribution for the operations and maintenance (O&M) phase. We used these assumptions to develop the supply chain narratives and estimate the percentage of expenditure locally and in the rest of UK.

Table 1 supply chain categories used in this analysis.

Level 1 category	Level 2 category
Development and project management	Project management
	Consenting
	Insurance
Turbine	Turbine supply
Balance of plant	Foundation
	Array cable
	Export cable
	Offshore substation
	Onshore substation and electrical equipment
Installation and commissioning	Turbine
	Foundation
	Array cable
	Export cable (offshore)
	Export cable (onshore)
	Substation
Operations and maintenance (O&M)	Wind farm operation
	Turbine maintenance and service
	Balance of plant O&M
	Transmission maintenance
	Vessels
Decommissioning	Decommissioning

2.1.3 Wind farm costs

The expenditure expectations across each of the supply chain categories were provided by the client.

2.1.4 Salaries and employment

We researched salaries and employment costs from public sources and data collected by BVGA.

BVGA has gathered a significant amount of data on the number of jobs associated with different offshore wind activities. This was used to validate outputs from the model.

3. Results

3.1. Supply chain

During all stages of development, construction and operation the Dogger Bank Wind Farm project team has aimed to utilise as many local and UK-based suppliers where reasonably possible. While most major tier one supply chain packages were awarded to established companies with proven experience in Europe or Asia, several tier two, and tier three contracts have been awarded to companies locally and in the rest of the UK. Some contracts mark industry milestones as the largest or first of their kind, such as those with Boston Energy and North Star Renewables (see case study 2 and 4).

Many of these opportunities are concentrated in the O&M and development and project management phases. There has also been local involvement in the installation phase, with pre-assembly and onshore civil work support.

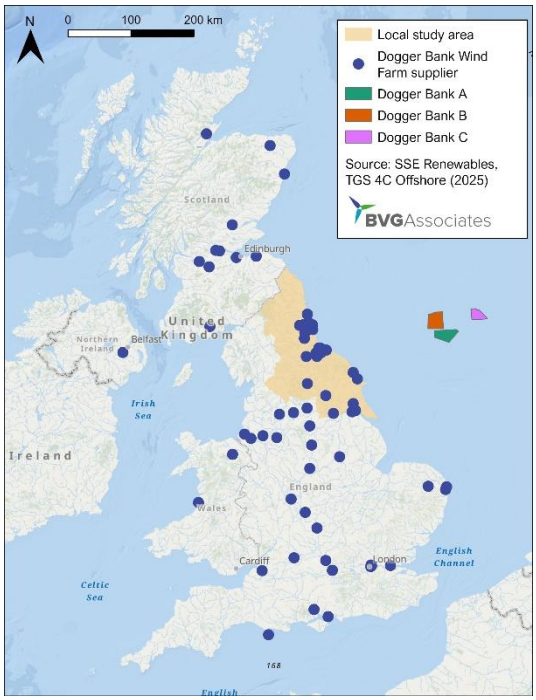

Figure 2 Dogger Bank Wind Farm UK suppliers. This is a representative illustration and does not capture all companies participating in the supply chain.

In this section, we provide an overview of each supply chain category, highlighting key contracts awarded locally and in the rest of the UK.

3.1.1 Development and project management

Development and project management covers the activities up to the point of final investment decision and managing the construction of the project through to COD. This includes activities required to secure planning consents, such as, activities required to define the design and engineering aspects, and all aspects of project management.

Project management was led by SSER from its Scottish offices. Contracts have been awarded to local and rest of UK based companies. Gardline Marine Sciences, a Great Yarmouth-based company, provided geophysical, geotechnical, and environmental marine surveys for all three projects. A UK team from Haskoning conducted the environmental impact assessment for each project.

Development and project management was 10.1% of the total expenditure of which local content was 0.6%, and the rest of the UK was 8.3%.

Development and project management

The development and project management team for Dogger Bank Wind Farm was made up of 150 staff members in 2024. It is estimated that 120 of these roles are based in the UK, with the remaining 30 based in Norway at Equinor's offices.

SSER, leading on the development and construction on the windfarm is headquartered in Perth, Scotland. It employs around 2,000 people and operates from four UK offices, where the Dogger Bank Wind Farm project team are based.

These roles are focused on procurement, commercial operations, community engagement, package management, and contract oversight.

DOGGER BANK WIND FARM · sse Renewables · equinor · vårgrønn

3.1.2 Turbine supply

Turbine supply includes the fabrication of towers, nacelles, rotor hubs and blades. Dogger Bank Wind

Farm awarded GE Vernova the supply, installation and commissioning of the wind turbines for all three phases. This included providing 190 13 MW for Dogger Bank A and B and 87 14 MW turbines Haliade-X turbines for Dogger Bank C. All turbine components were manufactured outside the UK. All UK activity related to the GE Vernova contract was in the installation and commissioning phase (see section 4.1.4).

Turbine supply was 17.7% of the total expenditure of which local content was 0%, and the rest of the UK was 0%.

3.1.3 Balance of plant

Balance of plant includes all the components of the wind farm, except the turbines. This includes transmission assets built as a direct result of the wind farm. It includes turbine foundations, array cables, export cables, onshore substations and offshore substations.

Balance of plant was 19.7% of the total expenditure of which local content was 0.4%, and the rest of the UK was 0.4%.

Foundations

Dogger Bank Wind Farm awarded the contract for the turbine foundation supply to a joint venture between the Sif Group and Smulders. This includes the supply of all 277 monopiles and transition pieces.

Sif was responsible for the fabrication and supply of monopiles and transition pieces, as well as marshalling all foundation components. This work was carried out outside the UK, at the port of Rotterdam in the Netherlands. Smulders was responsible for manufacturing secondary steel and assembling the transition pieces. This work was carried out at Smulder's facilities in Poland and Belgium.

The monopile foundations and transition pieces were designed by the UK-based designers, Wood Thilsted. Steel manufactured by Tata Steel in Wales and processed in Corby and Hartlepool was used in the secondary steel of the transition pieces.

Smulders contracted Granada Material Handling, a UK industrial lifting specialist, to supply around 200 davit cranes to support the foundation installation phase on Dogger Bank A and B. The cranes were custom designed to meet the specific requirements of Dogger Bank Wind Farm.

Array cables

Dogger Bank Wind Farm awarded DEME Offshore the engineering, procurement, construction, and installation (EPCI) contract for array cables.

DEME Offshore awarded Hellenic Cables the contract to design and manufacture around 650km of 66kV XLPE-insulated array cables for all three phases. All array cables were manufactured outside of the UK.

Export cables

Dogger Bank Wind Farm awarded NKT Cables the EPCI contract for the export cables. This included the manufacturing of two 265 km and four 175 km 320 kV DC offshore export power cables as well as a 320 kV DC onshore export power cables.[3] The power cables were manufactured at NKT Cables production facility in Karlskrona, Sweden.

Onshore substations and electrical equipment

Dogger Bank Wind Farm awarded Hitachi Energy the contract to deliver six converter stations - three offshore and three onshore. Hitachi Energy supplied the electrical systems for all six stations, including HVDC technology for the offshore platforms, and was also responsible for constructing the onshore converter stations. Hitachi Energy has also played a key role in the UK supply chain (see case study).

Offshore substations

Aibel provided the three offshore platforms that house the HVDC systems. The topsides were built at Aibel's Laem Chabang yard in Thailand and transported to Haugesund, Norway for outfitting.

[33] Dogger Bank Wind Farm UK, NKT. Available at: https://www.nkt.com/references/dogger-bank-wind-farm-uk

Case study 1: Hiatchi Energy

Hitachi Energy is a global technology and energy company with expertise in HVDC technology for offshore wind connections. Though headquartered in Switzerland, Hitachi works closely with the UK supply chain.

Major UK contracts were awarded to Aureos Infrastructure (formerly Keltbray Group), a Nottinghamshire-based civil engineering firm who undertook the groundworks on the onshore converter stations across all three phases, and Finley Steel Structures from Durham, who provided structural services. Other services provided by local companies include environmental management, site cleaning, catering, and enabling works.

Key project sites are the grid connection points at Creyke Beck (Dogger Bank A and B) and Teesside (Dogger Bank C). The construction programme at the Creyke Beck substation took two years, with peak employment reach around 150 workers on-site. Peak employment at Redcar reached peak employment at around 100 workers.

Representatives from Hitachi recently took part in a panel discussion with Imperial College London, alongside representatives from GE and the Dogger Bank Wind Farm team. The discussion focused on HVDC technology, highlighting Dogger Bank Wind Farm as the UK's first project to use it.

Figure 3 Representatives from Aureos, Hitachi, and Dogger Bank Wind Farm visiting the onshore converter station site in September 2022.

3.1.4 Installation and commissioning

The installation and commissioning phase involves the transportation of wind farm components from the construction port to the development site where they will be installed.

Installation and commissioning was 14.2% of the total expenditure of which local content was 2.0%, and the rest of the UK was 1.4%.

Turbine

Pre-assembly activities took place at Able Seaton Port in Hartlepool. GE Vernova subcontracted several UK and local companies to support installation and commissioning works (see case study).

They have also participated in several initiatives aimed at long-term supply chain development and broader community engagement (see case study 2).

The transportation and installation of the GE Vernova Haliade-X offshore wind turbines was awarded to Jan De Nul Group, a European company, headquartered in Belgium.

Jan De Nul Group's newest jack-up installation vessel Voltaire installed the first turbine at Dogger Bank A in October 2023 and will be used for installation at Dogger Bank B and Dogger Bank C.

Foundations

The contract for the transport and installation of monopile foundations and transition pieces was awarded to Seaway 7. Seaway Strashnov and Seaway Alfa Lift vessels have installed foundations at Dogger Bank B and C.

Substations

Saipem was awarded the installation contract for the two HVDC offshore converter platforms for Dogger Bank A and Dogger Bank B. Heerema Marine Contractors was awarded the installation contract for Dogger Bank C.

Case study 2: GE Vernova

GE Vernova subcontracted Boston Energy and Eastgate Engineering to support pre-assembly operations that will be carried out at Able Seaton Port in Teesside.

Boston Energy undertook the onshore commissioning and offshore mechanical and electrical work. They estimate this will involve more than 190 direct UK based personnel at its peak - its largest offshore wind contract to date.[4] Boston Energy has employed 80% of its offshore team and 85% of its onshore team from the north-east of England.

Eastgate Engineering provided electrical and mechanical support for towers and nacelle pre-assembly and will support approximately 90 direct jobs in north-east England.[5]

Figure 4 Boston Energy has secured a contract, Dogger Bank Wind Farm, November 2023

Other subcontractors include Mammoet, based in Thornaby Teesside, to supply onshore heavy lifting and transport for the staging and assembly.

GE Vernova has spent a significant number of hours volunteering in key community initiatives in Redcar and Cleveland, East Riding of Yorkshire, and South Tyneside.

In 2023 and 2024, GE Vernova spent over 460 hours volunteering in the north-east of England.

More than 60% of volunteering hours were focused on science, technology, engineering and maths (STEM) related initiatives, such as StemFEST and GirlsGetSet, both organised by the north-east STEM Hub, and the Building Our Futures Programme, which is an initiative funded by Redcar and Cleveland Voluntary Development Agency and Dogger Bank Wind Farm.

As part of these efforts, GE Vernova also organised a site visit for 30 students from Grangetown Primary School, where they had the opportunity to explore the assembly site of the turbines. Within this, GE Vernova has also volunteered approximately 40 hours at local foodbanks to support the community.

Array cables

DEME Offshore was awarded the EPCI contract for the array cables and carried out the installation.

Spie Wind Connect (formally Correll Group), based in Cleveland, was awarded a contract by DEME Offshore to complete array cable termination and testing. It was supported by the CCL Group, an Essex based offshore cable specialist.

DEME Offshore awarded the contract to supply cable protection systems (CPSs) to Tekmar Energy in County Durham. This was Tekmar's largest CPS supply contract, and it manufactured 552 CPSs for Dogger Bank Wind Farm.

All systems were manufactured at Tekmar's facility which is less than 50 km from Dogger Bank Wind Farm's export cable landfall site in Teesside. Other UK companies involved in array cable installation include Proserv, Taylor Hopkinson, Tidewater Marine UK, and Clarkson Port Services.

DEME Offshore used the cable installation vessel Viking Neptun and Living Stone to install the cables.

[4] Yorkshire engineering specialist wins contract on world's largest offshore wind farm, Dogger Bank Wind Farm, November 2023. Available at: https://doggerbank.com/construction/yorkshire-engineering-specialist-wins-contract-on-worlds-largest-offshore-wind-farm/

[5] GE Renewable Energy selects Eastgate Engineering to support Dogger Bank Wind Farm project, March 2023. Available at: https://doggerbank.com/uncategorised/ge-renewable-energy-selects-eastgate-engineering-to-support-dogger-bank-wind-farm-project/

Export cables (offshore)

This covers all activities associated with the offshore installation of the export cables, including the supporting nearshore works.

The cable-laying vessel NKT Victoria installed the export cables for Dogger Bank A, B, and C. NKT subcontracted Helix Robotics Solutions, an Aberdeen-based company, for offshore trenching across all three phases. Additional offshore support from UK companies included LMR Drilling for horizontal directional drilling and NewWaves Solutions (part of DEME Group) for offshore rock placement.

Some near shore works were also undertaken by UK companies. This includes Pharos Offshore Group and Jones Bros.

Export cables (onshore)

This covers all activities associated with the onshore installation, including cable routing, access works and onshore installation.

Jones Bros was contracted as a tier one contractor by Dogger Bank Wind Farm for the installation of onshore cable infrastructure for the Creyke Beck grid connections. They were also appointed to deliver the enabling works package for the onshore converter station platforms for Dogger Bank C, in a joint contract with neighbouring Sofia Offshore Wind Farm (see below).

Case study 3: Jones Bros

Jones Bros is a civil engineering contractor headquartered in North Wales, with regional offices in Swansea, Oxford, Inverness and Edinburgh.

Jones Bros estimate that around 85% of its contract value was delivered by itself or UK-based companies, with 55% of Jones Bros' subcontracted work awarded to firms in north-east England.

Other UK-based contractors included FB Taylor, a North Yorkshire-based cable installation specialist, for electrical works, and Joseph Gallagher, an Essex-based company that undertook directional drilling. Additional services, such as land management, concrete placement, civil works, security, and professional support, were also provided by companies in north-east England.

Jones Bros reported that the contract supported 115 direct jobs internally and 116 indirect jobs in its supply chain.

As part of its workforce development, Jones Bros ran apprenticeship programmes on site. This included eight higher-level engineering apprenticeships, one of which was filled by a local recruit from north-east England. After completing their programmes and gaining site experience, 75% of these engineering apprentices were retained by Jones Bros.

The company had 41 plant operatives and groundworkers on site as apprentices, including seven local recruits, with around 30% retained upon completion. In both cases, each apprentice was paired with an experienced engineer or plant operator for one-on-one training as part of their apprenticeship.

Figure 5 Jones Bros Civil Engineering Specialist, Dogger Bank Wind Farm, December 2021.

3.1.5 Operations and maintenance

O&M includes the ongoing operation of the wind turbines, balance of plant and associated transmission assets. This area of the supply chain usually has a high level of local content, and the spend continues over the operational lifetime of the wind farm.

GE Vernova has a five-year service warranty agreement to provide operational support for the wind turbines.

Many local and rest of UK based companies have been contracted to support the O&M phase of the project. As part of the project, an O&M base was built at the Port of Tyne (see case study 5).

Given the wind farms' distance from shore, Dogger Bank Wind Farm will be maintained using service operation vessels (SOVs). This will allow crews to stay at the wind farm sites for several weeks, reducing transfer time and increasing technician availability. Aberdeen-based North Star Renewables has secured a contract with Dogger Bank Wind Farm to deliver four SOVs and four accompanying daughter craft (see case study below).

O&M was 33% of the total expenditure of which local content was 12.9%, and the rest of the UK was 14.7%.

Case study 4: North Star Renewables

North Star Renewables (North Star) is a UK company employing 1,400 people across facilities in Aberdeen, Newcastle and Lowestoft.

The company initially secured a contract worth an estimated £270 million to design and deliver three SOVs for Dogger Bank A and B. It was later awarded an additional contract, worth approximately £90 million, to deliver a fourth SOV for Dogger Bank C. Each SOV will be delivered with a daughter craft and will operate under a minimum 10-year charter agreement.

These contracts are expected to support 170 UK jobs at North Star in management and operations.[6]

Figure 6 North Star's Grampian Derwent vessel, Dogger Bank Wind Farm, October 2023.

The supply chain also sees significant involvement from UK-based companies, including Chartwell Marine, a naval architecture consultancy, which was contracted to design and build all four daughter vessels. All four daughter vessels were built by Alicat Workboats in Great Yarmouth.

In the operational stage, other UK subcontractors include Durham Lifting and Ferguson Logistics. North Star also operates the largest cadet programme in the UK, a three-year training programme supporting careers in marine engineering and as deck officer.

In 2024, six of the 87 cadets gained hands-on experience aboard Dogger Bank SOVs in 2024. South Shields Marine School, a local in the north-east, is one of four colleges attended by cadets.

North Star supports local communities in the north-east, including a partnership with St Oswald's Hospice to supply books for its libraries onboard the vessels.

NORTH STAR RENEWABLES

[6] Dogger Bank confirms fourth Service Operations Vessel to North Star, Equinor, December 2021. Available at: https://www.equinor.com/news/uk/dogger-bank-fourth-service-operations-vessel-north-star

Case study 5: Port of Tyne

The Port of Tyne is home to the Dogger Bank O&M Base, which was completed in 2022. Bowmer + Kirkland, a Sunderland based company, was the tier one contractor for the construction of the O&M base. During this phase, it is estimated that £4.4 million was spent within the South Tyneside Local Authority area, with an additional £3.1 million invested in the wider north-east region through local contracts.

The Port of Tyne also hosted several supply chain events throughout the construction process, aimed at highlighting opportunities for local involvement. In 2023, the port was recognised for its commitment to sustainability, receiving the Net Zero and Sustainability Award at the Constructing Excellence in the north-east awards.

Figure 7 Port of Tyne O&M base, Dogger Bank Wind Farm, November 2022.

3.1.6 Decommissioning

Decommissioning involves the removal or making safe of offshore infrastructure at the end of its useful life. Turbines, foundations, cables and substations must be removed, shipped to shore and either disposed of or reused. The process is likely to involve similar services and companies to installation and commissioning.

Because decommissioning practice could evolve over the operating life of the wind farm, there is less certainty in local and rest of UK content.

Decommissioning was 5.2% of the total expenditure of which local content was 1.0%, and the rest of the UK was 3.1%.

3.2. National and local content

Table 2 shows the local, rest of the UK and rest of the world content broken down by supply chain category and project phase. Figure 8 shows this in chart format for Dogger Bank Wind Farm. Due to rounding, broken down percentages within the table may not sum to the totals depicted in the figure.

Local content accounts for 17% of the total spend on Dogger Bank Wind Farm, while the rest of the UK content accounts for 28%. This translates to a total UK spend of approximately £8.4 billion over the lifetime of Dogger Bank Wind Farm. The highest proportion local content is in O&M, reflecting the significant local activity required for ongoing wind farm operations.

Rest of UK content is also notably high in O&M and development and project management activities. Non-UK content is 55.0%.

Across the three phases, the proportion of local and rest of UK content is similar, with minor variations mainly due to differences in phase scope. Any differences in expenditure distribution across phases are reflected in the supply chain narrative. Transmission network use of system charges (wider) is included within the scope of Dogger Bank C and sits within the operational phase of the phase content. A detailed breakdown of local and rest of UK content at the level two category by phase is provided in Appendix A.

Table 2 Local, rest of UK and rest of world content for supply chain categories. Figures are rounded and some columns and rows may not total exactly. Figures are rounded and some columns and rows may not total exactly.

	Percentage of total spend Dogger Bank Wind Farm	Territory	Percentage of total expenditure			
			Dogger Bank A	Dogger Bank B	Dogger Bank C	Dogger Bank Wind Farm
Project development and management	10%	Local	0.7%	0.5%	0.5%	0.6%
		Rest of UK	9.0%	8.3%	7.6%	8.3%
		Rest of world	1.5%	1.2%	1.1%	1.3%
Turbine supply	18%	Local	0.0%	0.0%	0.0%	0.0%
		Rest of UK	0.0%	0.0%	0.0%	0.0%
		Rest of world	18.3%	18.8%	16.1%	17.7%
Balance of plant	20%	Local	0.4%	0.4%	0.4%	0.4%
		Rest of UK	0.4%	0.5%	0.4%	0.4%
		Rest of world	18.9%	18.8%	18.9%	18.9%
Installation and commissioning	14%	Local	2.3%	1.9%	2.0%	2.0%
		Rest of UK	1.7%	1.3%	1.3%	1.4%
		Rest of world	11.6%	10.5%	10.0%	10.7%
Operation, maintenance and service	33%	Local	12.6%	13.4%	12.8%	12.9%
		Rest of UK	12.3%	13.2%	18.6%	14.7%
		Rest of world	5.3%	5.7%	5.2%	5.4%
Decommissioning	5%	Local	1.0%	1.1%	1.0%	1.0%
		Rest of UK	3.0%	3.3%	3.1%	3.1%
		Rest of world	1.0%	1.1%	1.0%	1.0%
Total	100%	Local	16.9%	17.3%	16.7%	17.0%
		Rest of UK	26.4%	26.6%	31.1%	28.1%
		Rest of world	56.6%	56.1%	52.3%	55.0%

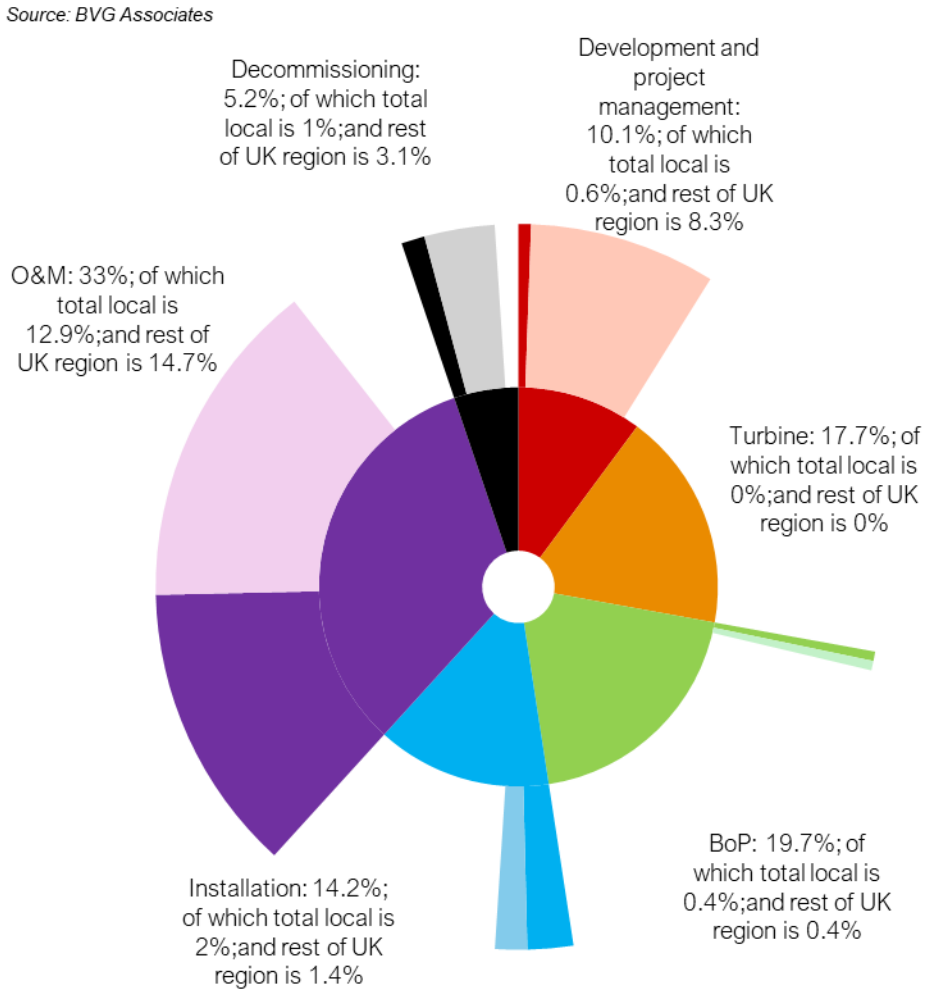

Figure 8 Local and rest of UK content in Dogger Bank Wind Farm level one category. The inner ring shows the lifetime expenditure by level 1 category. For the outer ring, the darker shade shows the local content estimates, and the lighter shade shows the rest of the UK content.

3.3. Economic impacts

3.3.1 FTE years

Table 3 and Table 4 shows the direct and indirect FTE years delivered locally and in the rest of the UK over the lifetime of the project by supply chain category and by phase respectively.

Dogger Bank Wind Farm will create approximately 28,120 FTE years over the lifetime of the wind farm locally and 42,390 FTE years in the rest of the UK.

Locally, Dogger Bank A created around 9,570 FTE years, Dogger Bank B created 9,150 FTE years and Dogger Bank C created 9,410 FTE years.

O&M is the area with the most direct economic impact locally and in the rest of the UK. Dogger Bank Wind Farm has contracted many local and rest of UK based companies to support the O&M phase of the project. Jobs roles include vessel

crews, engineers, logistics specialists, and health and safety control room staff.

A clearer picture can be gained from the annual profiles. The local and rest of UK FTE years delivered annually under for each supply chain category for Dogger Bank Wind Farm are shown in Figure 9 and Figure 10 respectively. The total UK FTE years is shown in Figure 11.This covers the period from 2019, six years before the COD of the first phase, Dogger Bank A, until 2063, 35 years after the COD of the final phase, Dogger Bank C. The peak level of employment was reached in 2025, with an estimated total of 3,600 FTE years created across the UK. Of this, approximately 1,500 FTE years were generated locally and 2,100 FTE years in the rest of the UK.

Table 3 Dogger Bank Wind Farm direct and indirect FTE years created locally and in rest of UK by level one category. Figures are rounded and some columns and rows may not total exactly.

	FTE Years								
	Local			Rest of UK			Total UK		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Development and project management	370	390	760	3,030	3,230	6,260	3,400	3,620	7,020
Turbine	-	-	-	-	-	-	-	-	-
Balance of plant	340	570	910	250	630	880	590	1,200	1,790
Installation and commissioning	750	2,360	3,100	1,020	1,520	2,530	1,760	3,870	5,640
O&M	12,600	9,050	21,650	4,830	22,780	27,610	17,430	31,830	49,260
Decommissioning	1,450	250	1,700	4,360	740	5,110	5,820	990	6,810
Total	15,510	12,610	28,120	13,490	28,900	42,390	29,000	41,510	70,510

Table 4 Direct and indirect FTE years created locally and in rest of UK by phase. Figures are rounded and some columns and rows may not total exactly.

	FTE Years								
	Local			Rest of UK			Total UK		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Dogger Bank A	5,200	4,370	9,570	4,100	9,000	13,090	9,290	13,370	22,660
Dogger Bank B	5,080	4,060	9,150	3,770	9,320	13,090	8,860	13,380	22,240
Dogger Bank C	5,230	4,180	9,410	5,620	10,580	16,200	10,850	14,760	25,610
Dogger Bank Wind Farm	15,510	12,610	28,120	13,490	28,900	42,390	29,000	41,510	70,510

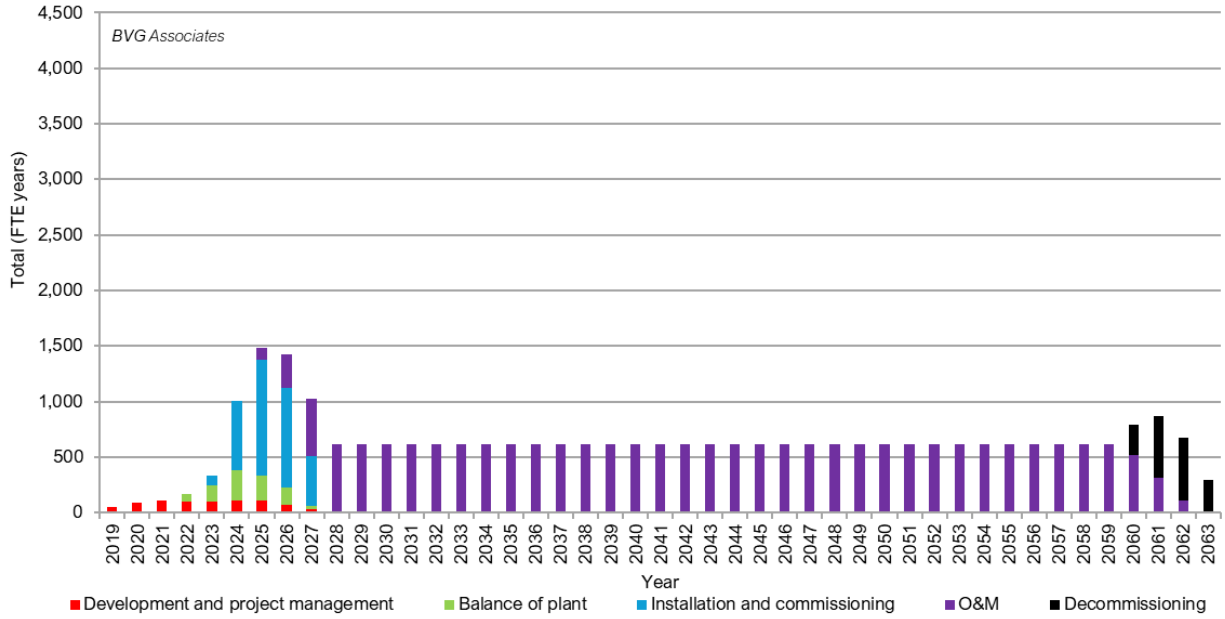

Figure 9 Local FTE years created by Dogger Bank Wind Farm.

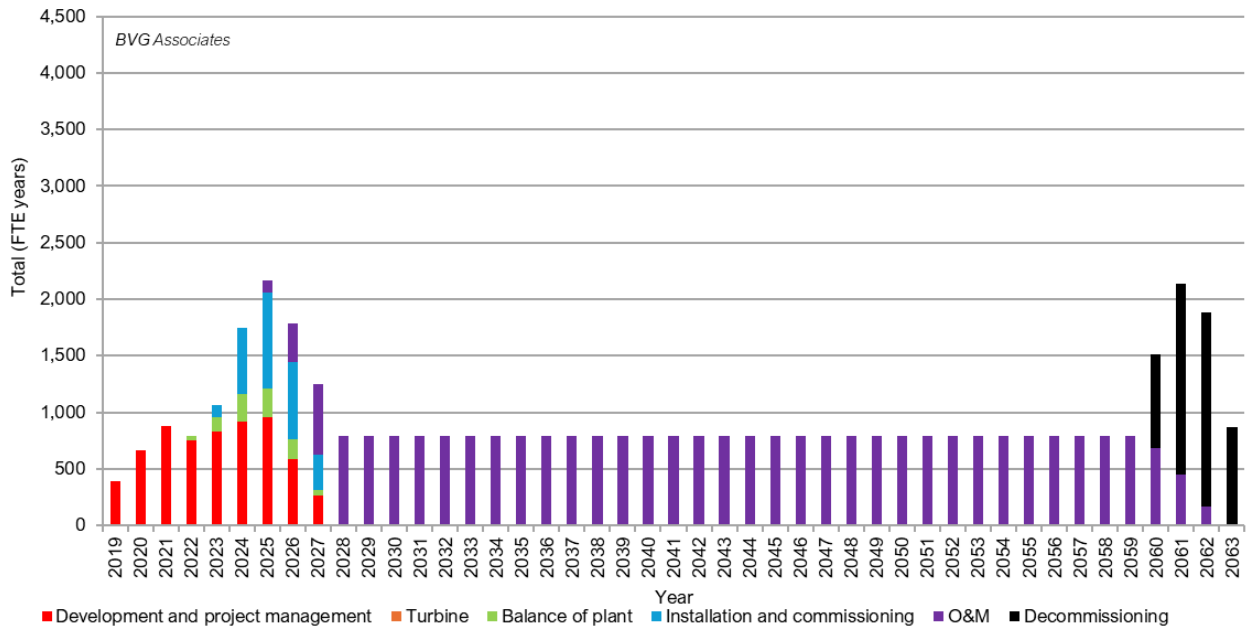

Figure 10 Rest of UK FTE years created by Dogger Bank Wind Farm.

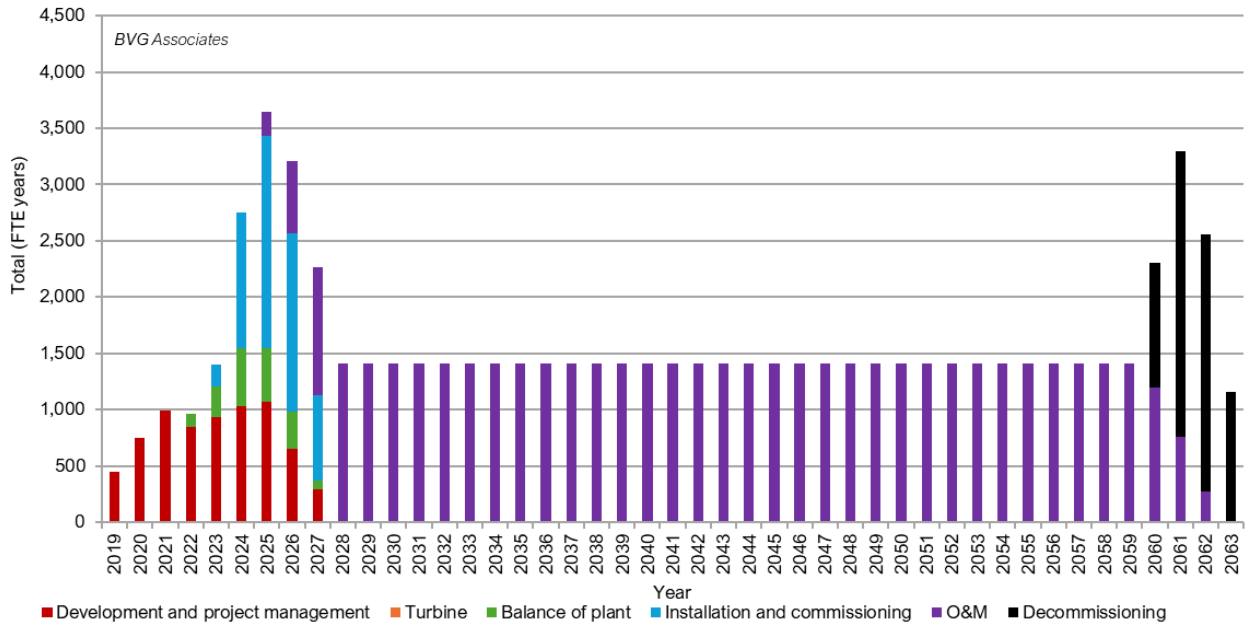

Figure 11 Total UK FTE years created by Dogger Bank Wind Farm.

3.3.2 GVA

Table 5 and Table 6 show the direct and indirect GVA delivered locally and in the rest of the UK over the lifetime of the project by supply chain category and by phase respectively.

Dogger Bank Wind Farm will create over £2.4 billion GVA over the lifetime of the wind farm locally and over £3.7 billion in the rest of the UK.

Locally, Dogger Bank A created around £819 million of this, Dogger Bank B created £783 million of this, and Dogger Bank C created £808 million of this.

The local and rest of UK GVA delivered annually under for each supply chain category for Dogger Bank Wind Farm are shown in Figure 12 and Figure 13 respectively. The total UK FTE years delivered annual is shown in Figure 14. This covers the period from 2019, six years before the COD of the first phase, Dogger Bank A, until 2063, 35 years after the COD of the final phase, Dogger Bank C. The peak level of GVA was reached in 2025, with an estimated total of £319 million created across the UK. Of this, approximately £125 million is generated locally and £194 million is created in the rest of the UK.

Table 5 Dogger Bank Wind Farm direct and indirect GVA created locally and in rest of UK. Figures are rounded and some columns and rows may not total exactly.

	£ million								
	Local			Rest of UK			Total UK		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Development and project management	36	36	73	298	304	602	334	341	675
Turbine	-	-	-	-	-	-	-	-	-
Balance of plant	32	41	74	24	49	73	56	91	147
Installation and commissioning	63	198	261	85	123	208	148	321	469
O&M	1,125	743	1,868	494	1,953	2,446	1,619	2,695	4,314
Decommissioning	116	19	136	349	58	407	465	78	543
Total	1,372	1,038	2,410	1,249	2,488	3,737	2,622	3,525	6,147

Table 6 Direct and indirect GVA created locally and in rest of UK by phase. Figures are rounded and some columns and rows may not total exactly.

	£ million								
	Local			Rest of UK			Total UK		
	Direct	Indirect	Total	Direct	Indirect	Total	Direct	Indirect	Total
Dogger Bank A	459	360	819	372	772	1,143	831	1,132	1,962
Dogger Bank B	449	334	783	341	809	1,150	790	1,143	1,934
Dogger Bank C	464	344	808	537	907	1,443	1,001	1,250	2,251
Total Dogger Bank Wind Farm	1,372	1,038	2,410	1,249	2,488	3,737	2,622	3,525	6,147

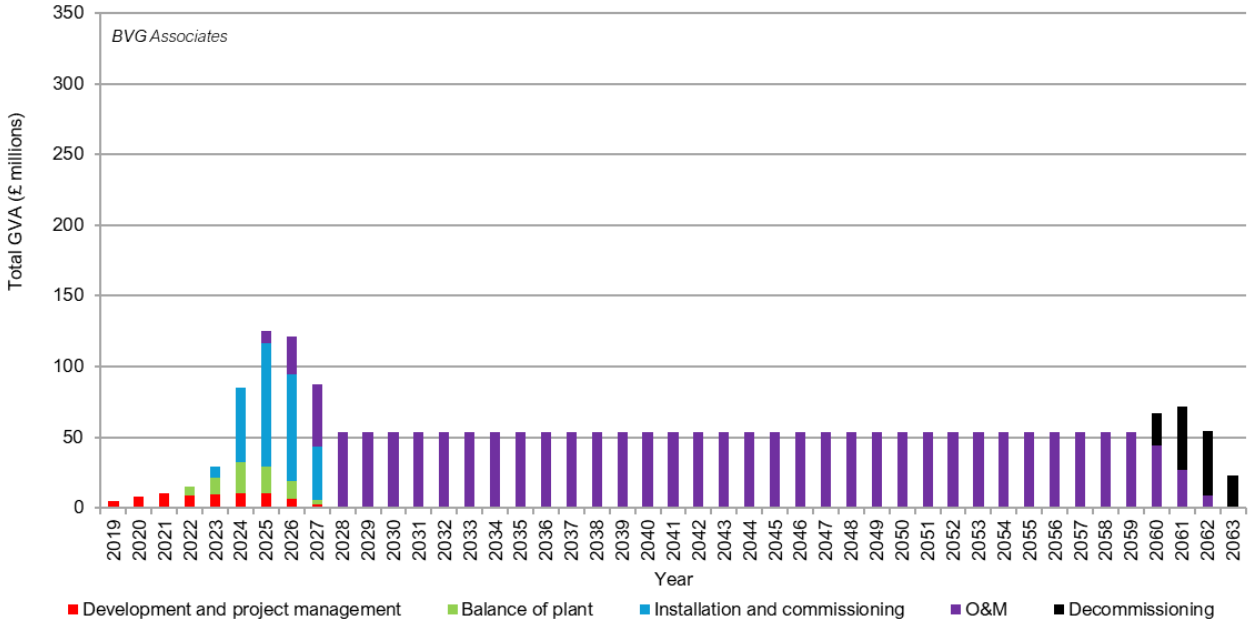

Figure 12 Local GVA created by Dogger Bank Wind Farm.

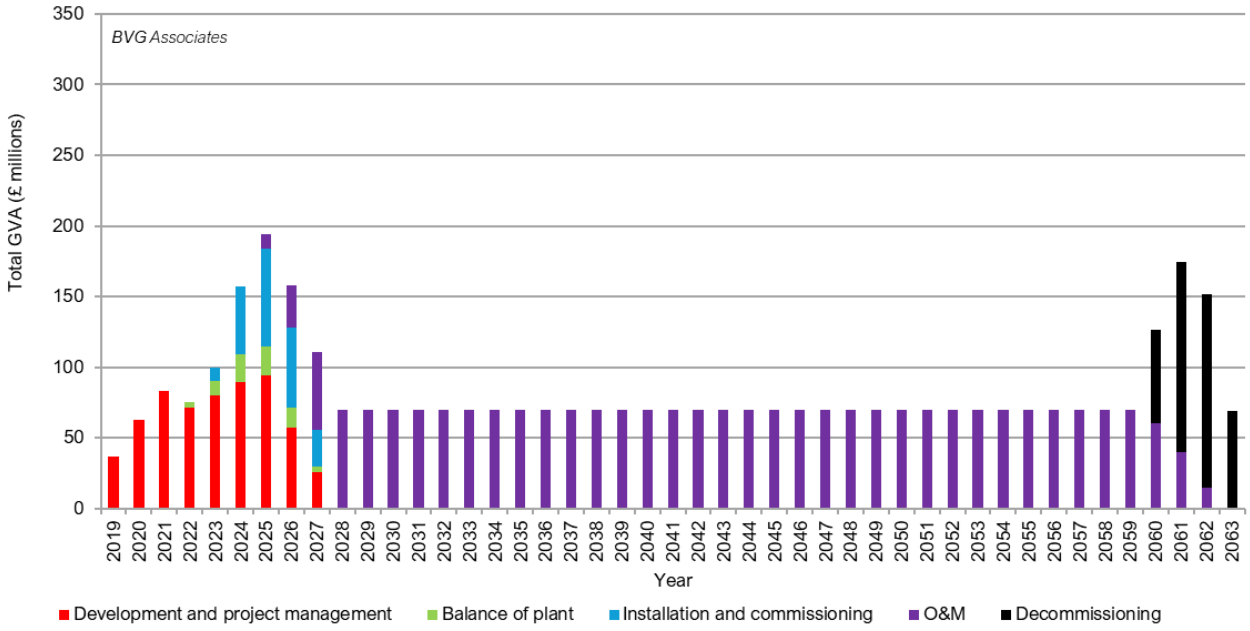

Figure 13 Rest of UK GVA created by Dogger Bank Wind Farm.

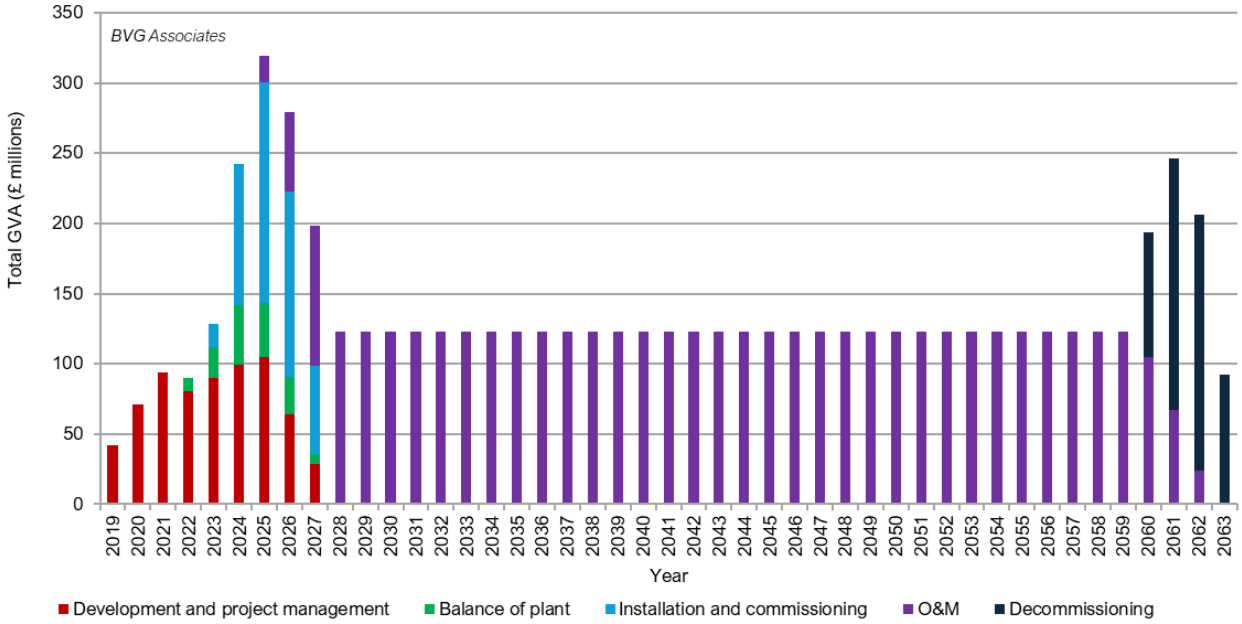

Figure 14 Total UK GVA created by Dogger Bank Wind Fam..

BVGAssociates

Appendix A Content by phase

Table 7 Local and rest of UK content at level two category by phase. Figures are rounded and some columns and rows may not total exactly.

Level 1 category	Level 2 category	Dogger Bank A		Dogger Bank B		Dogger Bank C	
		Local	Rest of UK	Local	Rest of UK	Local	Rest of UK
Development and project management	Project Management	10%	70%	10%	70%	10%	70%
	Consenting	8%	72%	8%	72%	8%	72%
	Insurance	0%	100%	0%	100%	0%	100%
Turbine	Turbine supply	0%	0%	0%	0%	0%	0%
Balance of plant	Foundation supply	0%	3%	0%	3%	0%	3%
	Array cable supply	0%	0%	0%	0%	0%	0%
	Export cable supply	0%	0%	0%	0%	0%	0%
	Offshore substations	1%	0%	1%	0%	0%	1%
	Onshore substation and electrical	8%	3%	8%	4%	8%	3%
Installation and commissioning	Turbine installation	22%	8%	22%	8%	26%	10%
	foundation installation	0%	0%	0%	0%	0%	0%
	Array cable installation	13%	10%	8%	4%	8%	5%
	Export cable installation (offshore)	1%	38%	0%	26%	5%	18%
	Export cable installation (onshore)	37%	45%	37%	45%	39%	42%
	Substation installation	0%	3%	0%	3%	0%	3%
O&M	Wind farm operation	41%	53%	41%	53%	43%	51%
	Turbine service and maintenance	67%	25%	66%	26%	68%	25%
	Balance of plant operations, service and maintenance	1%	64%	1%	64%	1%	64%
	Transmission maintenance	10%	78%	10%	78%	2%	95%
	Vessels	54%	8%	54%	8%	54%	8%
Decommissioning	Decommissioning	20%	60%	20%	60%	20%	60%

Appendix B Economic impact by phase

Total economic impact

Table 8 Total GVA created locally, rest of UK, by level one category split by phase. Figures are rounded and some columns and rows may not total exactly.

	Territory	Total direct and indirect GVA (£million)			
		Dogger Bank A	Dogger Bank B	Dogger Bank C	Dogger Bank Wind Farm
Project development and management	Local	30	22	21	73
	Rest of UK	241	185	176	602
Turbine supply	Local	-	-	-	-
	Rest of UK	-	-	-	-
Balance of plant	Local	25	23	26	74
	Rest of UK	24	25	25	73
Installation and commissioning	Local	98	76	87	261
	Rest of UK	83	60	66	208
Operation, maintenance and service	Local	622	617	628	1,868
	Rest of UK	663	745	1,038	2,446
Decommissioning	Local	44	45	46	136
	Rest of UK	133	136	138	407
Total (rounded)	Local	819	783	808	2,410
	Rest of UK	1,143	1,150	1,443	3,737

Table 9 Total FTE years created locally and rest of UK, by level one category split by phase. Figures are rounded and some columns and rows may not total exactly.

	Territory	Total direct and indirect FTE years			
		Dogger Bank A	Dogger Bank B	Dogger Bank C	Dogger Bank Wind Farm
Project development and management	Local	310	230	220	760
	Rest of UK	2,520	1,920	1,830	6,260
Turbine supply	Local	-	-	-	-
	Rest of UK	-	-	-	-
Balance of plant	Local	310	280	310	910
	Rest of UK	280	300	300	880
Installation and commissioning	Local	1,170	900	1,040	3,100
	Rest of UK	1,010	720	800	2,530
Operation, maintenance and service	Local	7,230	7,170	7,260	21,650
	Rest of UK	7,610	8,450	11,550	27,610
Decommissioning	Local	560	570	580	1,700
	Rest of UK	1,670	1,700	1,740	5,110
Total (rounded)	Local	9,570	9,150	9,410	28,120
	Rest of UK	13,090	13,090	16,200	42,390

Dogger Bank A

FTE years

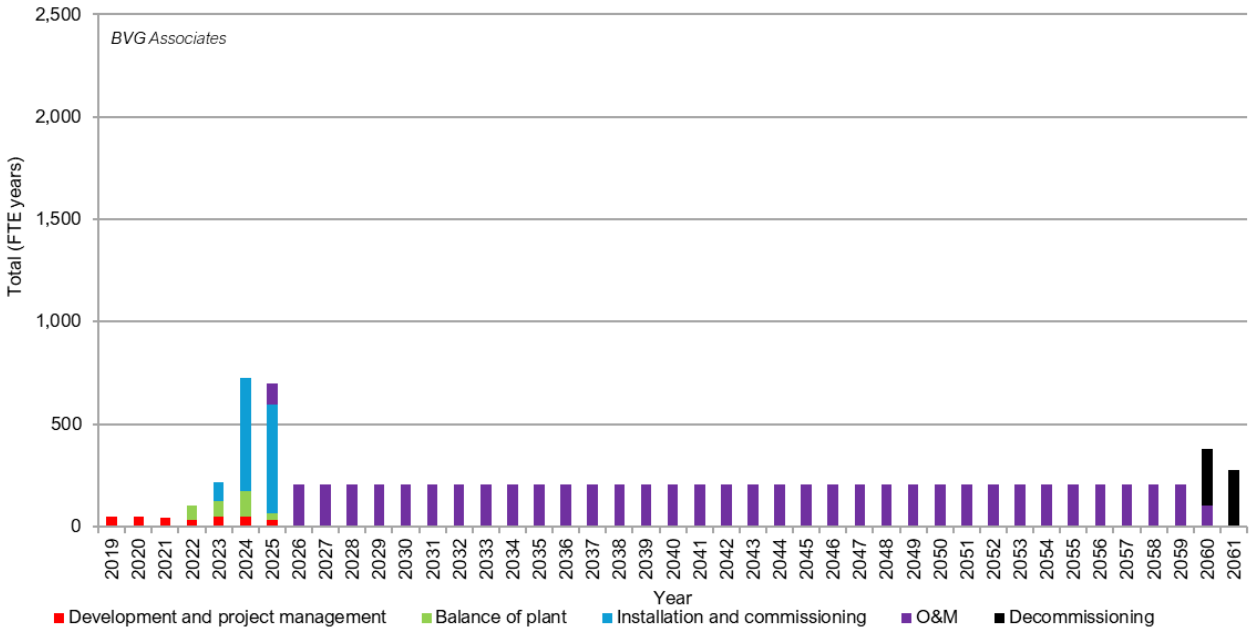

Figure 15 Local FTE years created by Dogger Bank A over the lifetime of the phase.

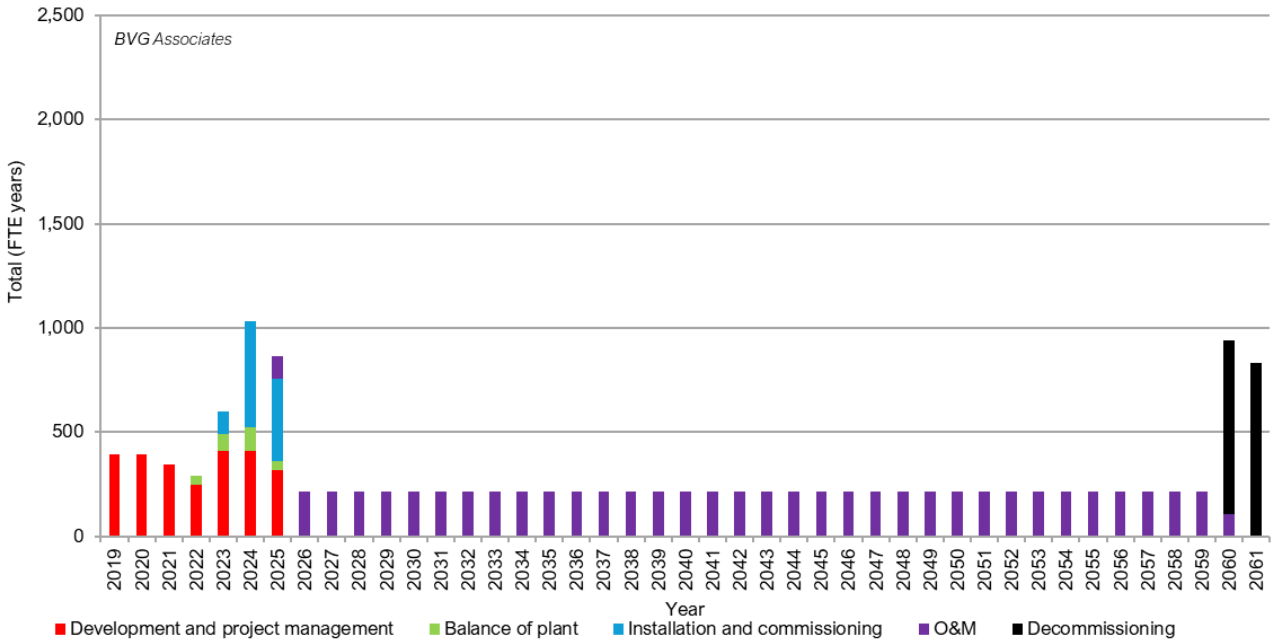

Figure 16 Rest of UK FTE years created by Dogger Bank A over the lifetime of the phase.

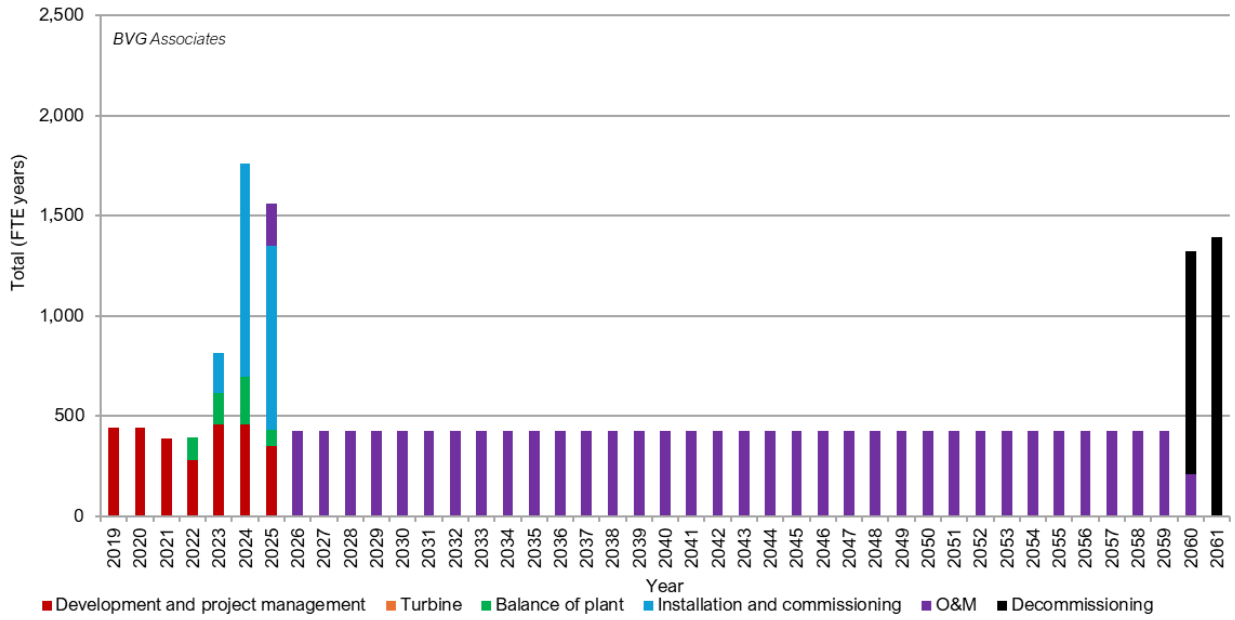

Figure 17 Total UK FTE years created by Dogger Bank A over the lifetime of the phase.

GVA

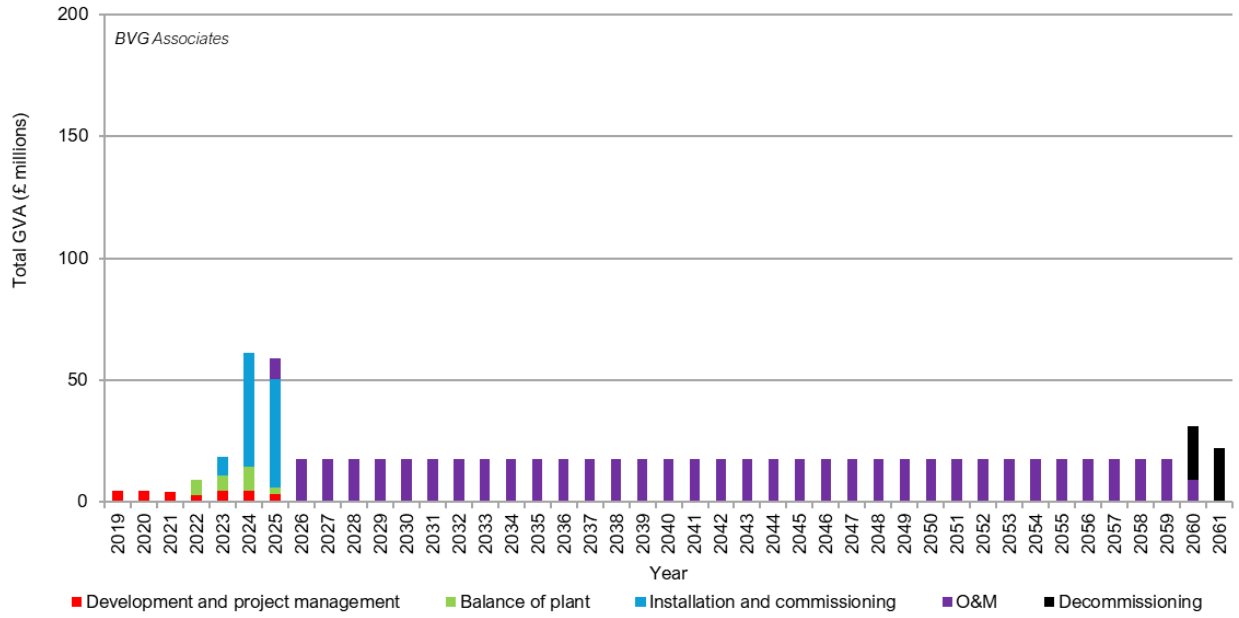

Figure 18 Local GVA created by Dogger Bank A over the lifetime of the phase.

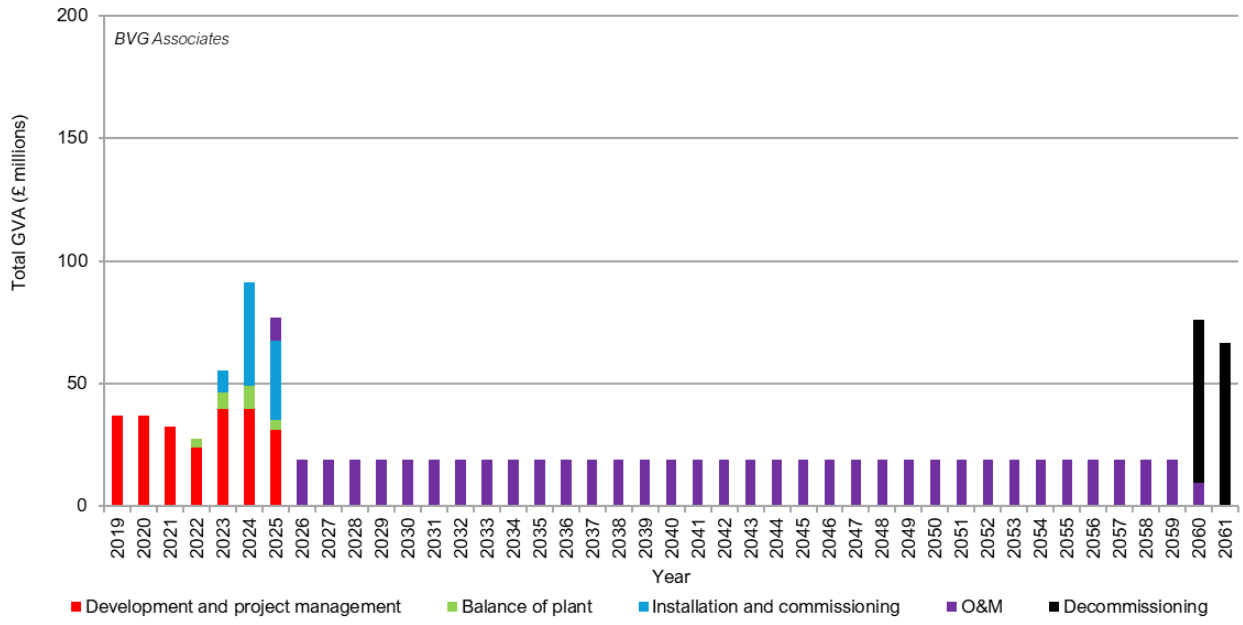

Figure 19 Rest of UK GVA created by Dogger Bank A over the lifetime of the phase.

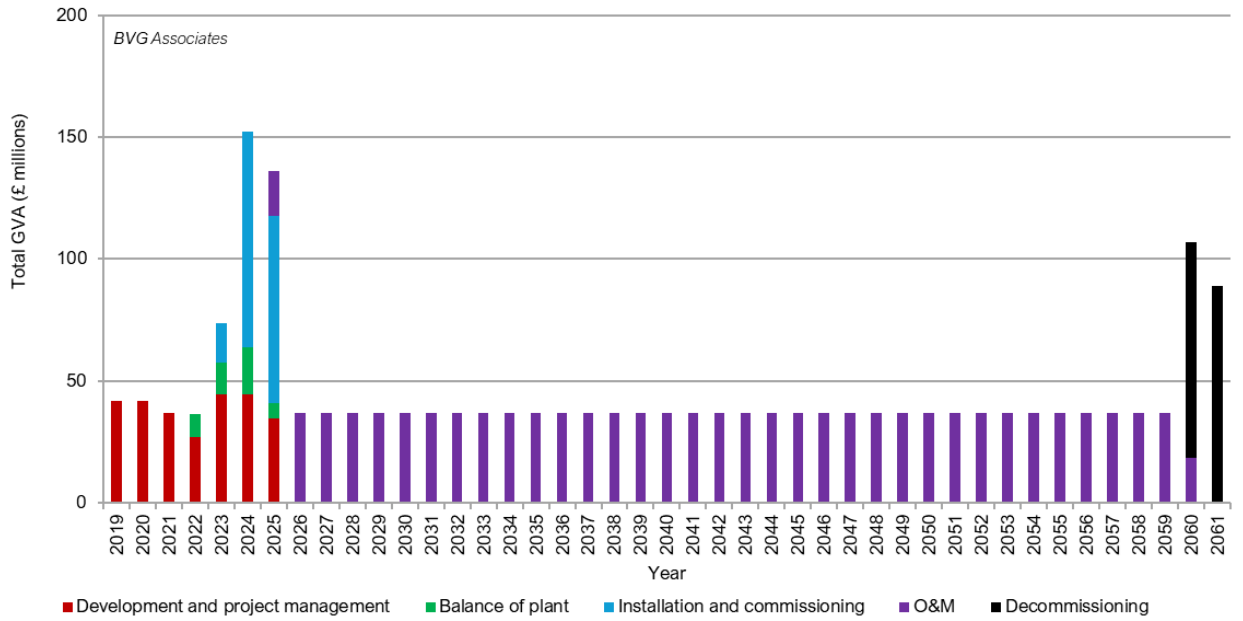

Figure 20 Total UK GVA created by Dogger Bank A over the lifetime of the phase.

Dogger Bank B

FTE years

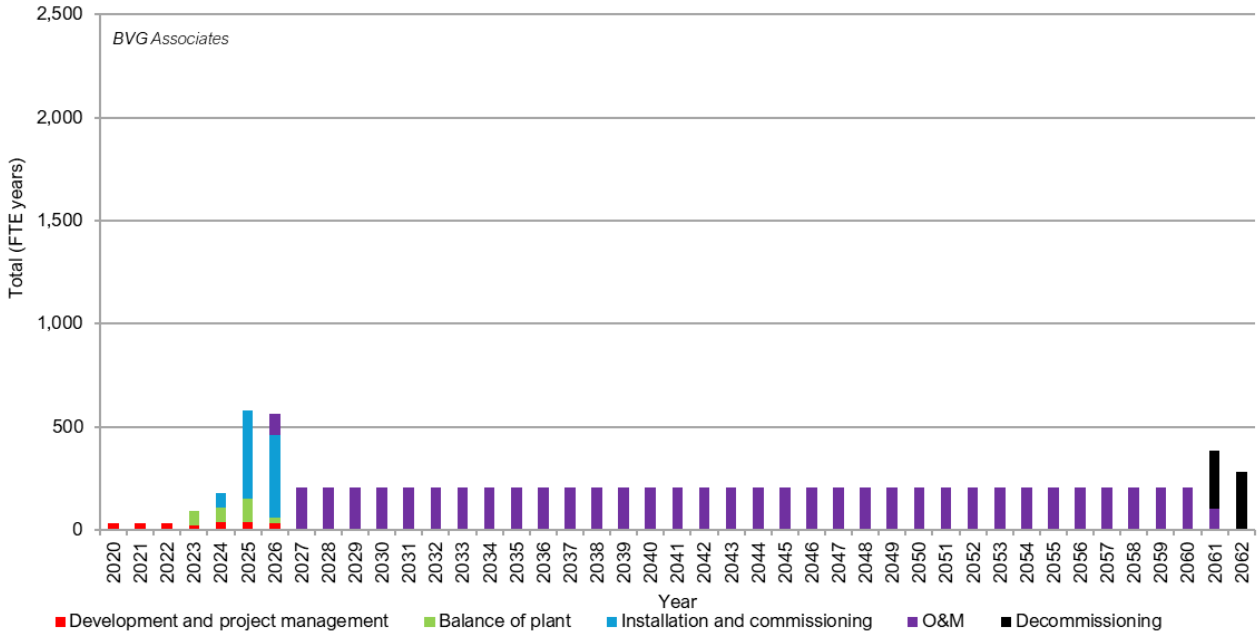

Figure 21 Local FTE years created by Dogger Bank B over the lifetime of the phase.

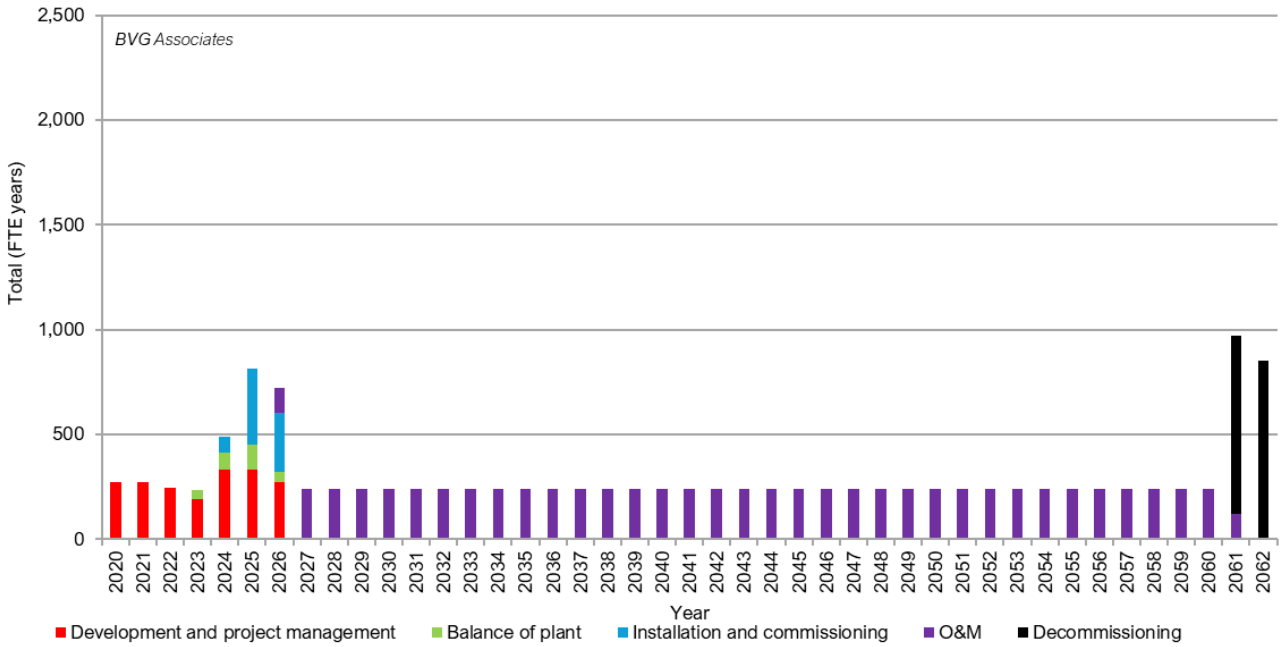

Figure 22 Rest of UK FTE years created by Dogger Bank B over the lifetime of the phase.

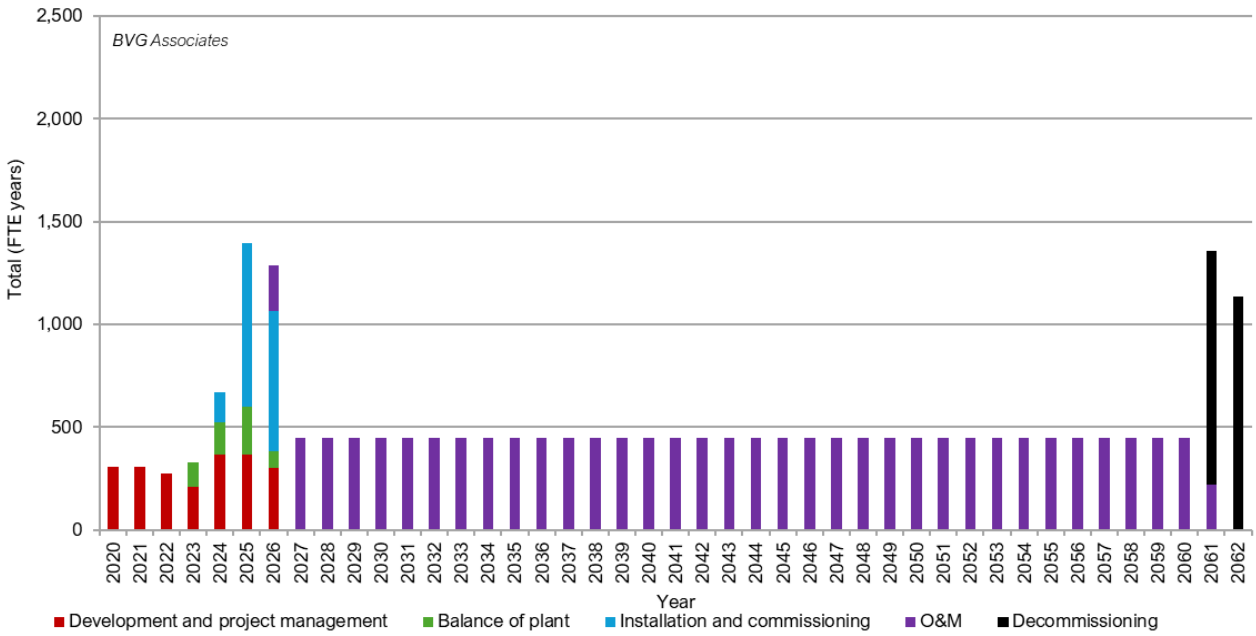

Figure 23 Total UK FTE years created by Dogger Bank B over the lifetime of the phase

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GVA

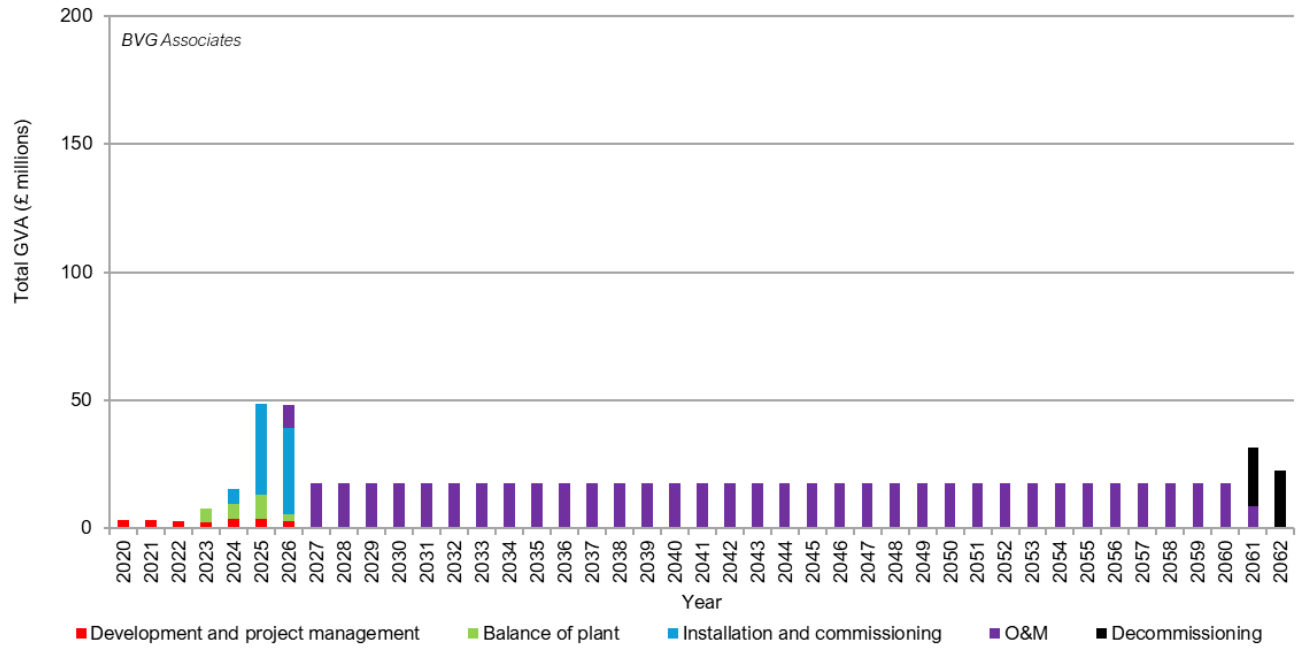

Figure 24 Local GVA created by Dogger Bank B over the lifetime of the phase.

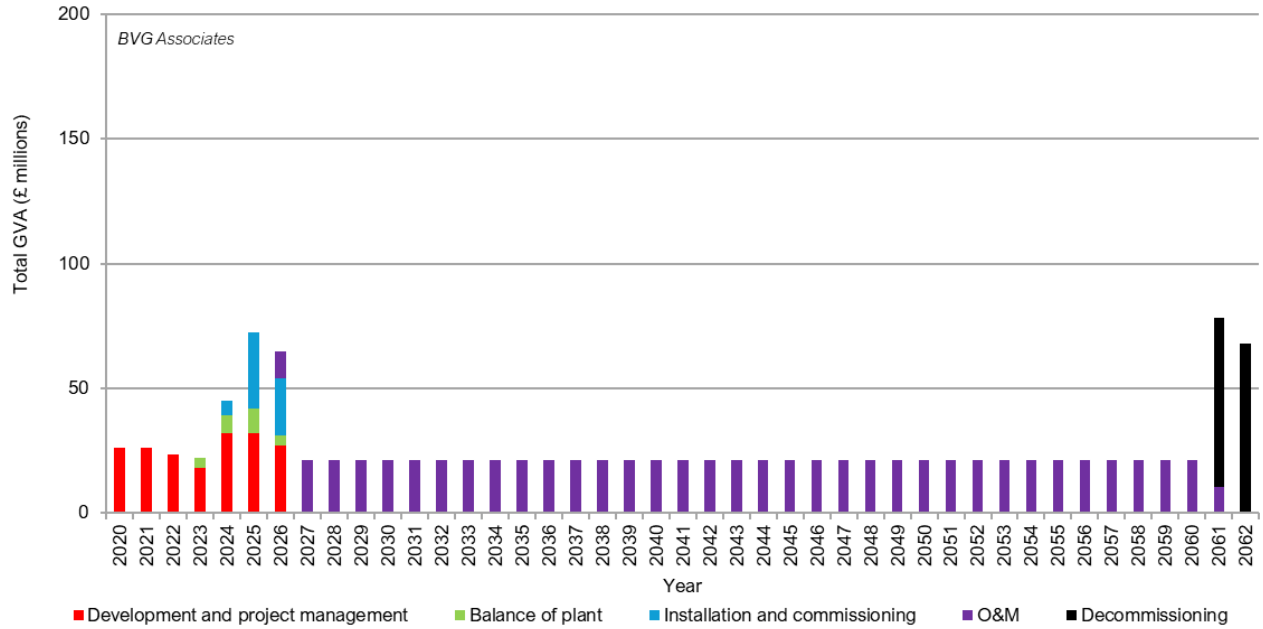

Figure 25 Rest of UK GVA created by Dogger Bank B over the lifetime of the phase.

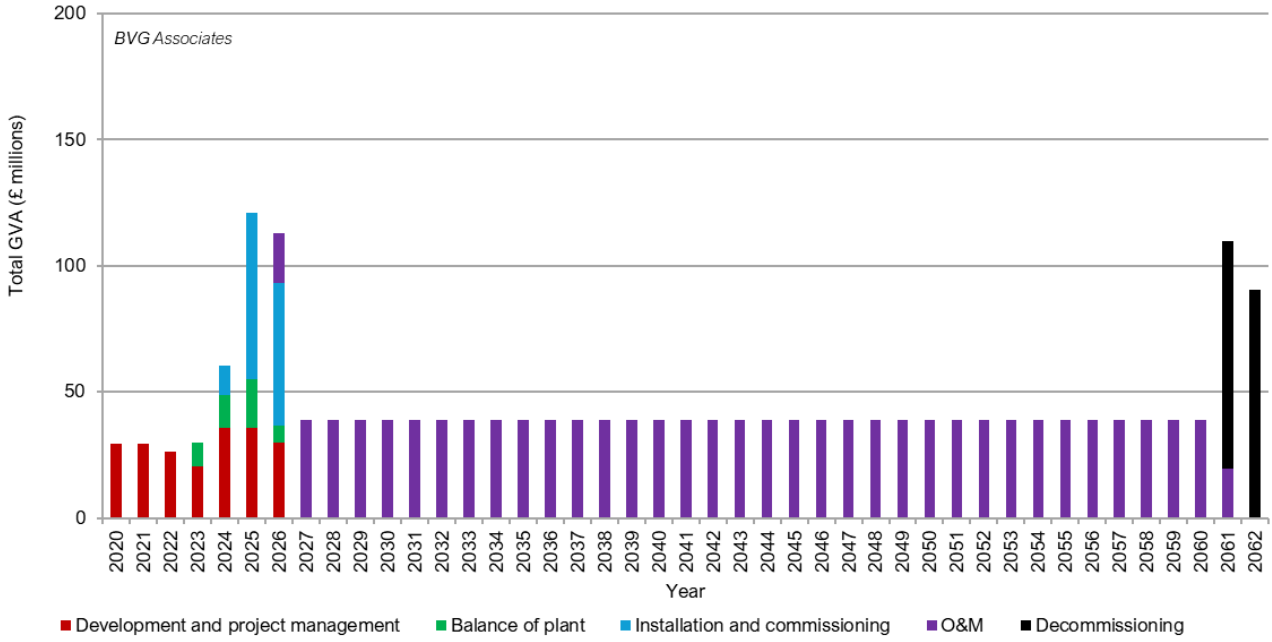

Figure 26 Total UK GVA created by Dogger Bank B over the lifetime of the phase.

Dogger Bank C

FTE years

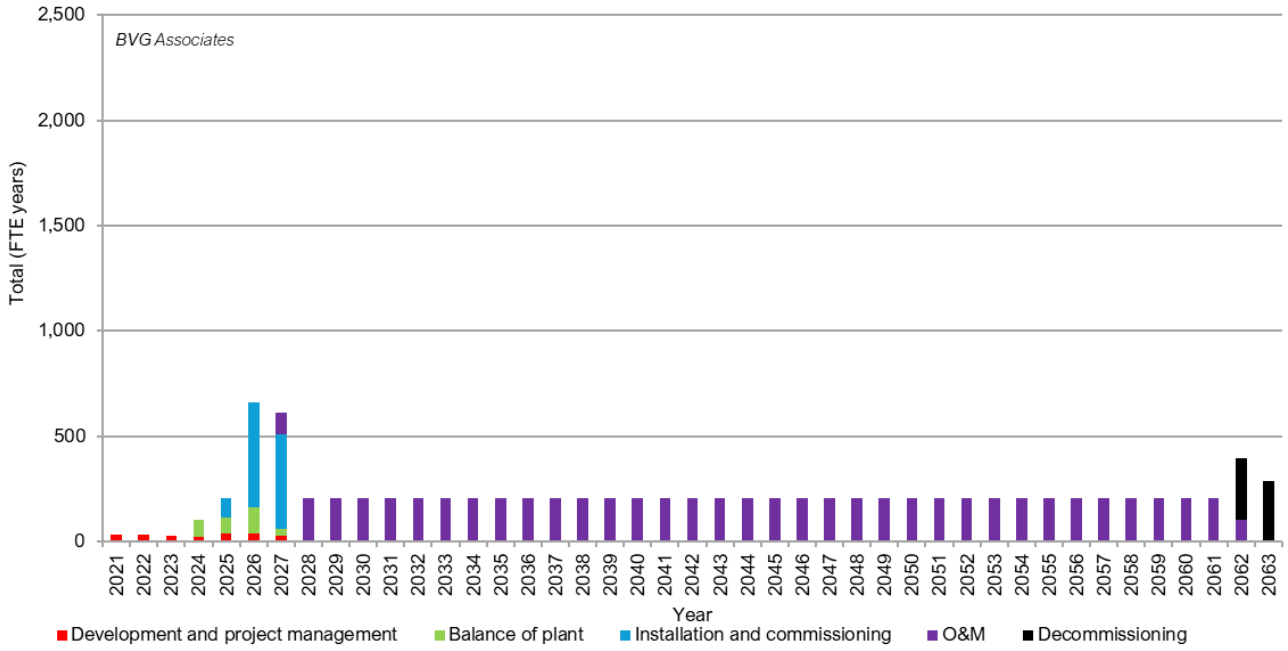

Figure 27 Local FTE years created by Dogger Bank C over the lifetime of the phase.

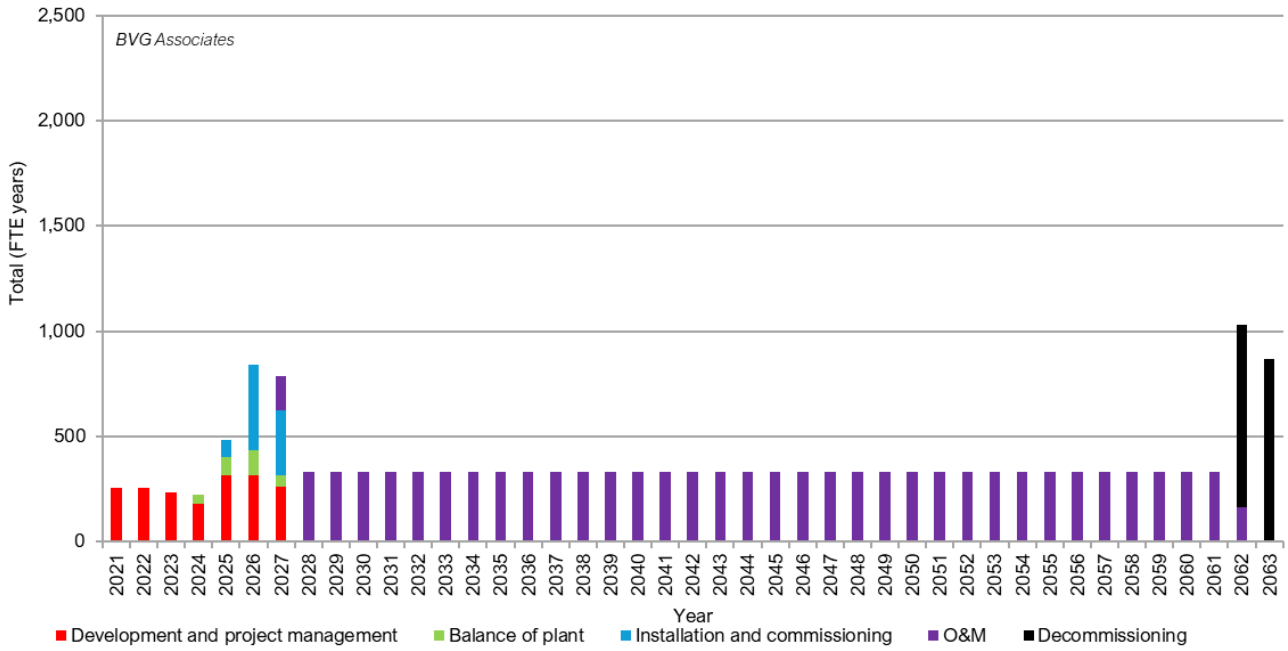

Figure 28 Rest of UK FTE years created by Dogger Bank C over the lifetime of the phase.

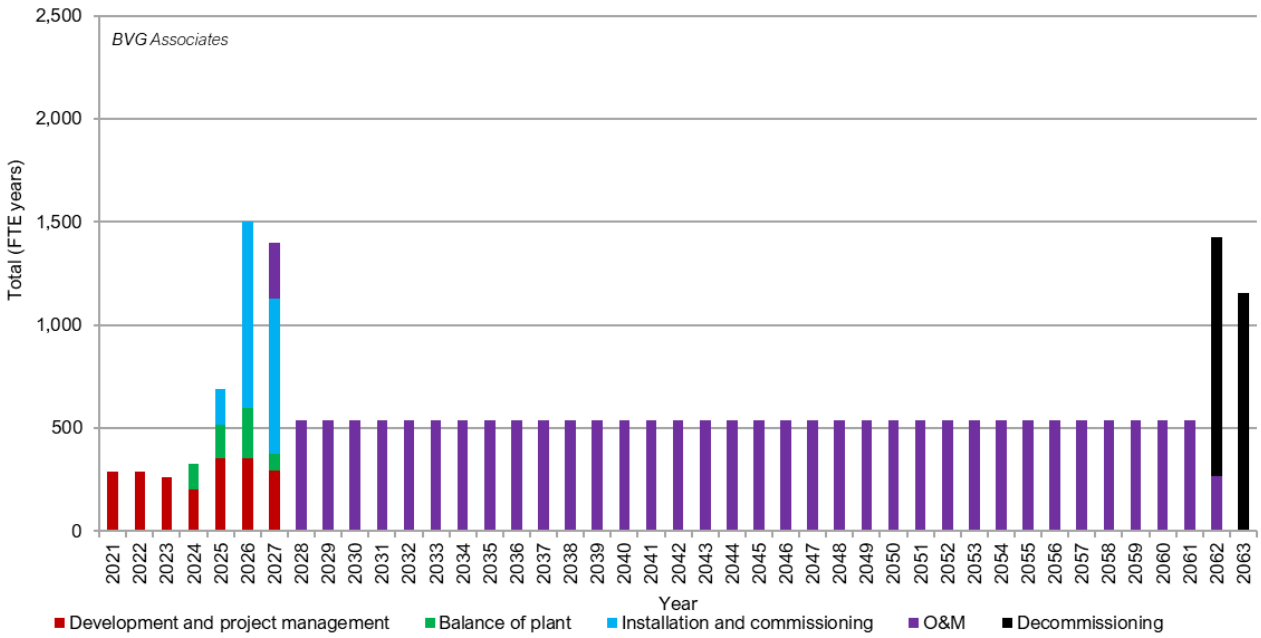

Figure 29 Total UK FTE years created by Dogger Bank C over the lifetime of the phase.

GVA

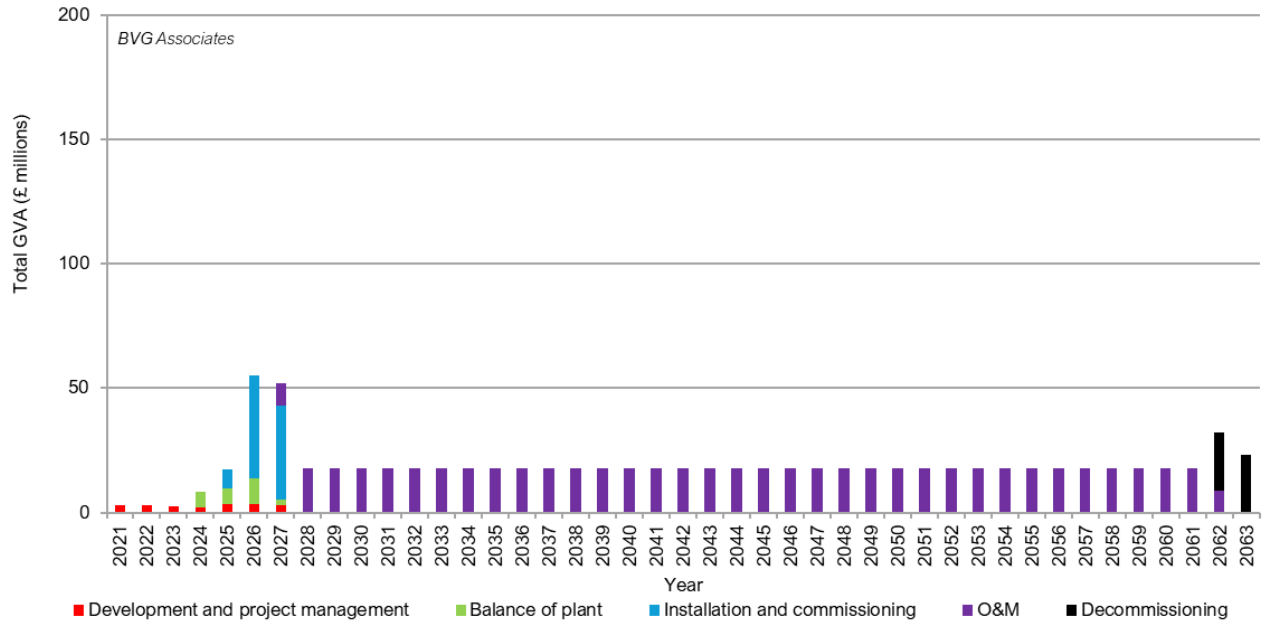

Figure 30 Local GVA created by Dogger Bank C over the lifetime of the phase.

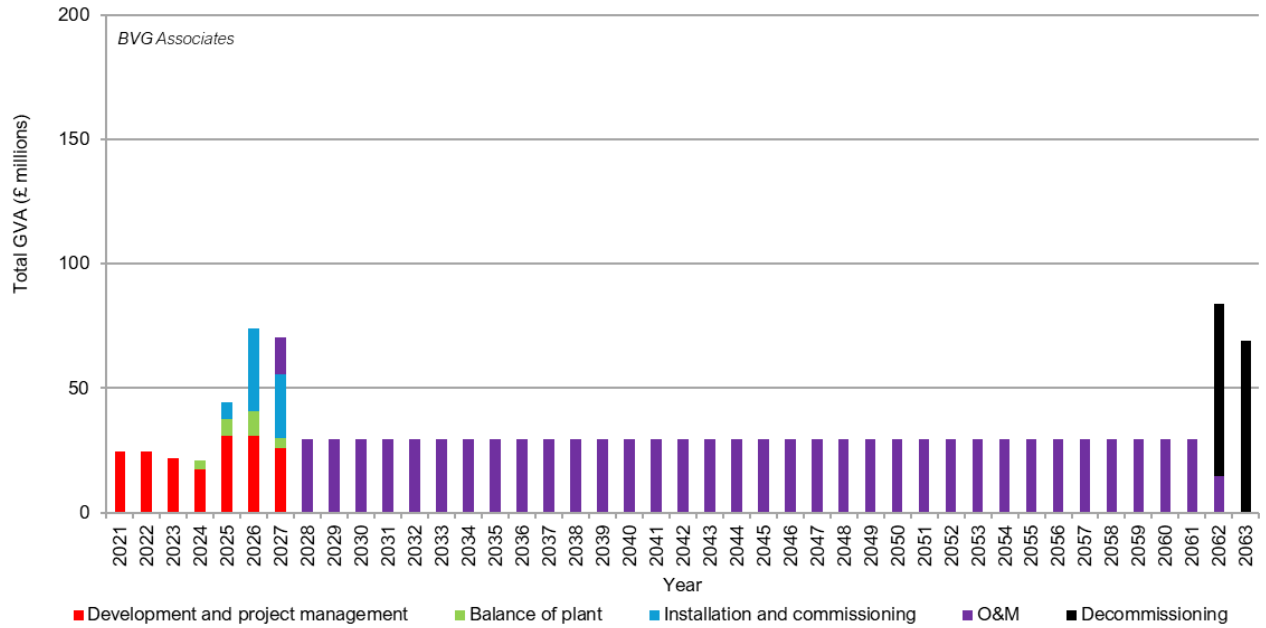

Figure 31 Rest of UK GVA created by Dogger Bank C over the lifetime of the phase.

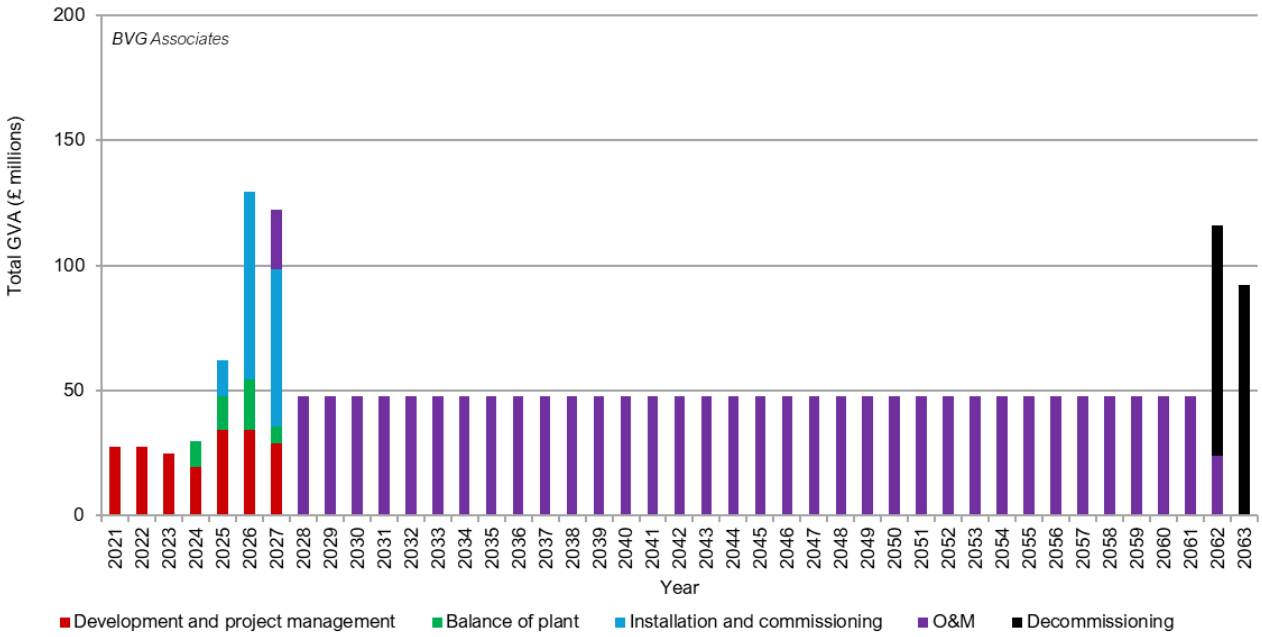

Figure 32 Total UK GVA created by Dogger Bank C over the lifetime of the phase.

About BVG Associates

BVG Associates is an independent renewable energy consultancy focussing on wind, wave and tidal, and energy systems. Our clients choose us when they want to do new things, think in new ways and solve tough problems. Our expertise covers the business, economics and technology of renewable energy generation systems. We're dedicated to helping our clients establish renewable energy generation as a major, responsible and cost-effective part of a sustainable global energy mix. Our knowledge, hands-on experience and industry understanding enables us to deliver you excellence in guiding your business and technologies to meet market needs.

- BVG Associates was formed in 2006 at the start of the offshore wind industry.
- We have a global client base, including customers of all sizes in Europe, North America, South America, Asia and Australia.
- Our highly experienced team has an average of over 10 years' experience in renewable energy.
- Most of our work is advising private clients investing in manufacturing, technology and renewable energy projects.
- We've also published many landmark reports on the future of the industry, cost of energy and supply chain.

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