



OffshoreWind IndustryCouncil

Offshore Wind Skills Intelligence Model Report SUMMARY – February 2021



Introduction

This report provides a snapshot of the **UK Offshore Wind workforce for 2020**.

It summarises an extensive People & Skills Survey exercise across the UK sector, which has been input into a **Skills Intelligence Model** to allow further analysis to the delivery of the UK Offshore Wind Sector Deal.

The following organisations have supported this summary report:

- **RenewableUK:** People & Skills sponsor for Sector Deal, and provision of Project Intelligence and Jobs Forecasting.
- **National Skills Academy for Rail:** developers of the Skills Intelligence Model.
- **Opergy Group:** delivering industry and supply chain engagement, data analysis and reporting.



Offshore Wind Sector Deal

Sector Deal – People & Skills Headlines

- Increasing to **27,000 direct jobs by 2030**, up from c.15,000 today, supporting at least 60,000 total jobs in the sector.
- **33% women** in offshore wind by 2030 (up from 18%) with ambition to reach 40%
- **9% BAME employees** in offshore wind by 2030 (up from c.5%) with ambition to reach 12%
- **2.5%** of employed workforce from/on apprenticeship schemes by 2030
- Supporting transition training for former **military** personnel
- Developing an '**Offshore Energy Passport**' to facilitate greater job-mobility between offshore industries
- Audited more than **60 apprenticeship standards & frameworks**



Step 1 INDUSTRY SURVEY

- Survey to offshore wind industry, collecting detailed workforce data
- All responses checked and uploaded to Skills Intelligence Model

Step 2 EXTRAPOLATED WORKFORCE FOR TODAY

- Using robust extrapolation formula, ratios, and government multipliers, estimate the total current workforce

Step 3 FORECAST WORKFORCE DATA FOR TOMORROW

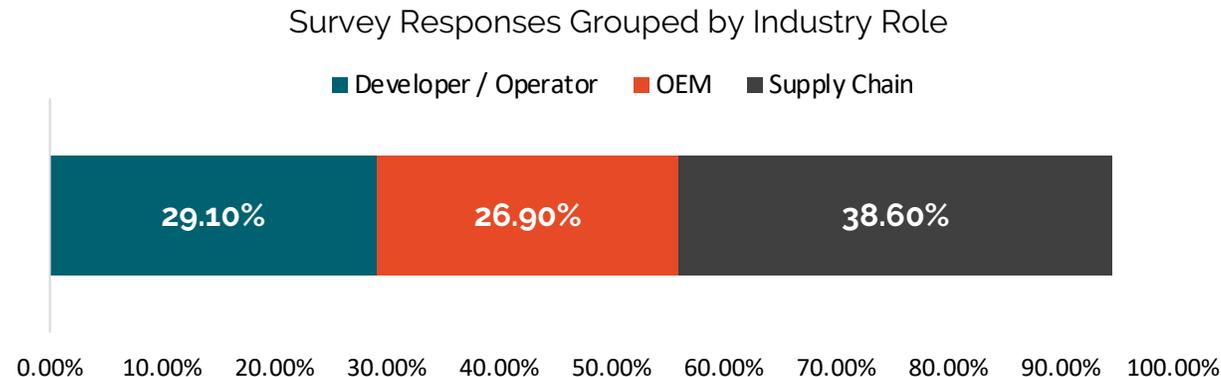
- Drawing from RenewableUK's Project Intelligence Database and insights from the Industry Survey, forecast the future workforce requirements based on investment levels.

Industry Survey

A significant campaign to engage the offshore wind industry was undertaken through H2, 2020. Of more than 500+ companies identified and approached, **85 detailed responses** were received from a broad range of developers, operators, OEMs, and supply chain firms.

11,365 specific jobs are identified, with varying levels of response on gender, ethnicity, or employment status.

Note: all survey responses are GDPR compliant with non-identifiable personal details being captured, analysed and recorded.



1. Data Collection

2. Today's Workforce

3. Tomorrow's Workforce

Analysis and Presentation

Offshore Wind Job Roles

- 5 Job Role Groups and 25 Sub-groups have been designed to standardise reporting of how offshore wind jobs are structured.
- These have been tested with skills professionals and industry practitioners to ensure a robust approach.
- Skills levels are assumed for England, but translatable for Devolved Administrations.
- For the purposed of this report, all job titles and roles identified through survey entries have been classified against these roles.

Role Groups	Role-Sub Groups	Skill Levels
Management	Leadership	Skill Level 7+
	Management Corporate	Skill Level 6
	Management Operational	Skill Level 6
Technical / Professional	Technical	Skill Level 6
	Professional	Skill Level 7+
Corporate Services	Corporate Services HR	Skill Level 6
	Corporate Services IT	Skill Level 5
	Corporate Services Finance	Skill Level 5
	Corporate Services Legal	Skill Level 7+
	Corporate Services General	Skill Level 4
	Corporate Services Administration	Skill Level 2
HSEQ	Health & Safety	Skill Level 5
	Quality	Skill Level 5
	Environmental	Skill Level 5
People Development	People Development & Skills	Skill Level 5
	Graduate	Skill Level 5
	Trainee	Skill Level 3
	Apprentice	Skill Level 3
Commercial	Sales & Marketing	Skill Level 5
	Commercial	Skill Level 5
	Procurement	Skill Level 5
Skilled Manual		Skill Level 4
Semi Skilled Operative		Skill Level 3
Not Provided		Not Provided
Other		None

Skill Levels Framework

Skill levels are determined by:

- Regulated Qualifications Framework England and Northern Ireland (RQF),
- Credit and Qualifications Framework for Wales (CQFW), and
- Scottish Credit and Qualifications Framework (SQCF)

Note: For the purposes of this report, all Skill Levels are referenced as RQF.

Framework	RQF / CQFW Level	SQCF Level	Example Awards
Secondary / Further Education	Level 1	4	GCSE grade D-G BTEC at level 1 OCR Nationals Functional Skills at level 1
	Level 2	5	GCSE grade A* - C NVQ Level 2 BTEC at Level 2 Functional Skills at level 2
	Level 3	6	AS/A Level NVQ Level 3 BTEC at Level 3 OCR Nationals
Framework for Higher Education Qualifications	Level 4		Certificate of Higher Education BTEC Diploma and Advanced Diploma at Level 4 City & Guild Licentiate Higher National Certificate (HNC) Diploma in Teaching in the Life Long Learning Sector (DTLLS) Level 4 NVQ
	Level 4&5 Combined	7 - 8	Senior Command, Leadership & Management Courses
	Level 5		Foundation Degree Diploma of Higher Education BTEC Diploma and Advanced Diploma at Level 5 Higher National Diploma (HND) Individual University Modules at Level 2** (e.g. through Open University)
	Level 6	9 - 10	UK Bachelors degree
	Level 7	11	UK Masters Degree Postgraduate Certificate 7 Enhanced Diploma
	Level 8	12	Doctorates

Direct vs Indirect Jobs

Definitions

Direct employment: refers to a FTE that is directly involved in the Manufacturing, Development, Construction, Operation and Maintenance of an offshore windfarm, including Engineering, Procurement, Construction, and Installation of any of the wind farm's finalised kit: Turbines, Foundations, Substations and Cables.

When an organisation is involved in both direct and indirect work, we include it in the category (direct or indirect) in which the company has the biggest contract (or biggest project in MW).

Indirect employment: refers to employment in industries that supply and support the core activities of offshore wind renewable energy deployment. Usually, these workers do not consider themselves as working in renewables; they produce steel, plastics, or other materials, or they provide financial and other services. These industries are not directly involved in renewable energy activities but produce intermediate inputs along the value chain of each renewable energy technology (RET). A review of employment factors available in the literature indicates that the inclusion of indirect jobs typically increases overall job numbers by anywhere from 50% to 100%.

The ratio for indirect/direct employment used in this analysis is 0.83. This means that adding indirect jobs to the total direct jobs estimated will increase the overall job number by 83%.

Self-employed: Self-employed people are those who define themselves as working for themselves, rather than receiving a wage or salary from an employer. They are therefore not included in the census data we collected from various offshore wind organisations as part of this analysis.

According to the ONS *Labour Market Economic Commentary* from May 2019, the construction sector has the highest share of self-employed workers in the secondary industry while administration and support services are the highest in the tertiary industry. For this reason, this analysis focuses on workers from these two sectors only. The ratios for self employed used comes from the "self-employment analysis by NUTS1 2019" published by the ONS in 2020 using their 2019 *Annual Population Survey*.

IRENA definition used in *Renewable Energy and Jobs*, Box 2.2 key definitions: Employment factors, p.41, 2013.

From *Economic impacts of the UK offshore wind sector: Scenarios for the Sector Deal*, Vivid Economics, March 2018: "Indirect jobs were estimated by multiplying the total number of jobs supported in the offshore wind sector by a jobs multiplier of 0.83, as recommended in Centre for Economics and Business Research (2012)".

<https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/selfemploymentbynuts1region>

Assumptions & Method

Future Workforce Assumptions

- Using the level of investment (CAPEX, DEVEX, OPEX per year) estimates for 2020 and the jobs estimate for 2020, we determine an index for the year.
- Using the investment projected per year, calculated using the capacity coming online over the next 15 years, we can project the level of jobs supported per year.
- Self-employed data only includes employees who register as self-employed and does not include contracted workforce from temp or recruitment organisations, these are assumed to be accounted for within the survey data already.
- Using the ONS figures from 2019 and quick surveying with the biggest tier 1 construction organisations within our sector, we evaluate that on average 57% of the total workforce in Construction services is self-employed, while 33% of the total workforce in administration services is self employed in the UK. The data provided by the ONS is split in regions so we can apply the corresponding ratio to the corresponding job roles in each region from our survey:

Admin and support services	Ratio Self/Employed
North East	0.25
North West	0.27
Yorkshire and The Humber	0.30
East Midlands	0.33
West Midlands	0.38
East of England	0.43
London	0.29
South East	0.44
South West	0.49
Wales	0.29
Scotland	0.26
Northern Ireland	0.26

Source: ONS, Self Employment by NUTS1 2020

Primary production, utilities, construction	Ratio Self/Employed
North East	0.39
North West	0.55
Yorkshire and The Humber	0.47
East Midlands	0.53
West Midlands	0.62
East of England	0.53
London	0.67
South East	0.65
South West	0.66
Wales	0.65
Scotland	0.30
Northern Ireland	0.79

Source: ONS, Self Employment by NUTS1 2020

Testing these figures with industry, we decided to apply this ratio to the relevant construction and administration roles which we collected through our survey, separating for direct and indirect roles using the 0.83 multiplier. We find an extra 3,692 offshore wind workers self employed in the various UK regions, working in administrative or construction/engineer jobs.

Self-employed jobs	All	Direct	Indirect	Ratio
Admin and support	612.20	402.25	209.94	0.52
Engineering and construction	3,079.31	2,561.73	517.58	0.20
TOTAL	3,691.50	2,963.99	727.52	0.25

RESULTS. Adding the total jobs from our survey sample estimates and our self-employed estimates from the ONS ratios, the total number of estimated workers in the offshore wind industry is 26,093 of which 15,205 direct employed.

Below highlights the contributing companies providing detailed survey responses into the Skills Intelligence Model.

- 4C Offshore
- Armech Solutions
- ASCO UK Ltd
- Aspect Land & Hydrographic Surveys Ltd
- ATKINS
- Ayrshire College
- Borders College
- Burntisland Fabrications Ltd
- C&S Offshore Services
- Computer Service Centre
- Core Oil & Gas
- DeepOcean
- Deutsche Windtechnik Ltd
- DM Fabrication Ltd
- Dumfries & Galloway College
- Dundee & Angus College
- Durham University
- Earth Stream Global
- East Coast College
- ECITB
- EDF Renewables
- EEEGR
- Equinor
- Facilitating Change
- Fife College
- Frontera Enterprise
- Furthermore Marketing
- Global Energy Group
- Green Tech Investment Partners AS
- Halpin Consulting Ltd
- Harry Maiden Ltd
- Innogy
- Inosys
- ITC Hydraulic Service Ltd
- James Fisher
- JDR Cable Systems Ltd
- Leask Marine
- Load Monitoring Systems
- LV Shipping
- Maclean Electrical
- Maersk Training UK Ltd
- MELCAL Marine UK Ltd
- MHI Vestas
- Miros Scotland
- North East Scotland College
- Newcastle College - Energy Academy
- North Highland College
- Npower
- Offshore Renewable Energy Catapult
- OHT Renewables
- Opergy Ltd
- Orsted
- Oteac Ltd
- People With Energy
- Port of Cromarty Firth
- Primo Marine
- Proeon Systems Limited
- Proserv
- Red Rock Power
- RelyOn Nutec UK Ltd
- Renewable Resource Solutions
- RenewableUK
- RIGOCAL Engineering Ltd
- RMi Engineering Ltd
- RovCo
- RWE Renewables
- Schneider Electric
- Scottish Power
- Scottish Renewables
- Seajacks
- Siemens Gamesa
- Signum Geophysical Ltd
- SSE Renewables
- Stowen Group
- Suffolk County Council
- Sunrock Recruitment
- Taylor Hopkinson Ltd
- TECOSIM Simulation Ltd
- Tekmar Group
- University of Hull
- Van Oord Offshore Wind UK Limited
- Vattenfall
- Wellton Limited
- Whittaker Engineering (Stonehaven) Ltd
- Windhoist

Today's Workforce



Today's Workforce

26,093

Total UK Offshore Wind Workforce

15,205

Direct Jobs

10,888

Indirect Jobs

Status	Direct	Indirect	Total
Employed	12,241	10,160	22,401
Self-Employed	2,964	728	3,692
Total	15,205	10,888	26,093

Source: Estimated figures by RenewableUK as at December 2020



Survey Results Headlines

Total Responses

85 Companies
Contributing Data

Gender Balance

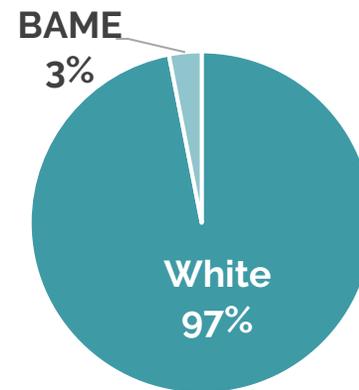


11,365

(**8813** Direct / **2552** Indirect)
Employees Recorded

*Sample of 44% of total estimated
current UK workforce*

Ethnicity



Apprentices and Graduates



Age Profile

17

Min Age

41

Mean Age

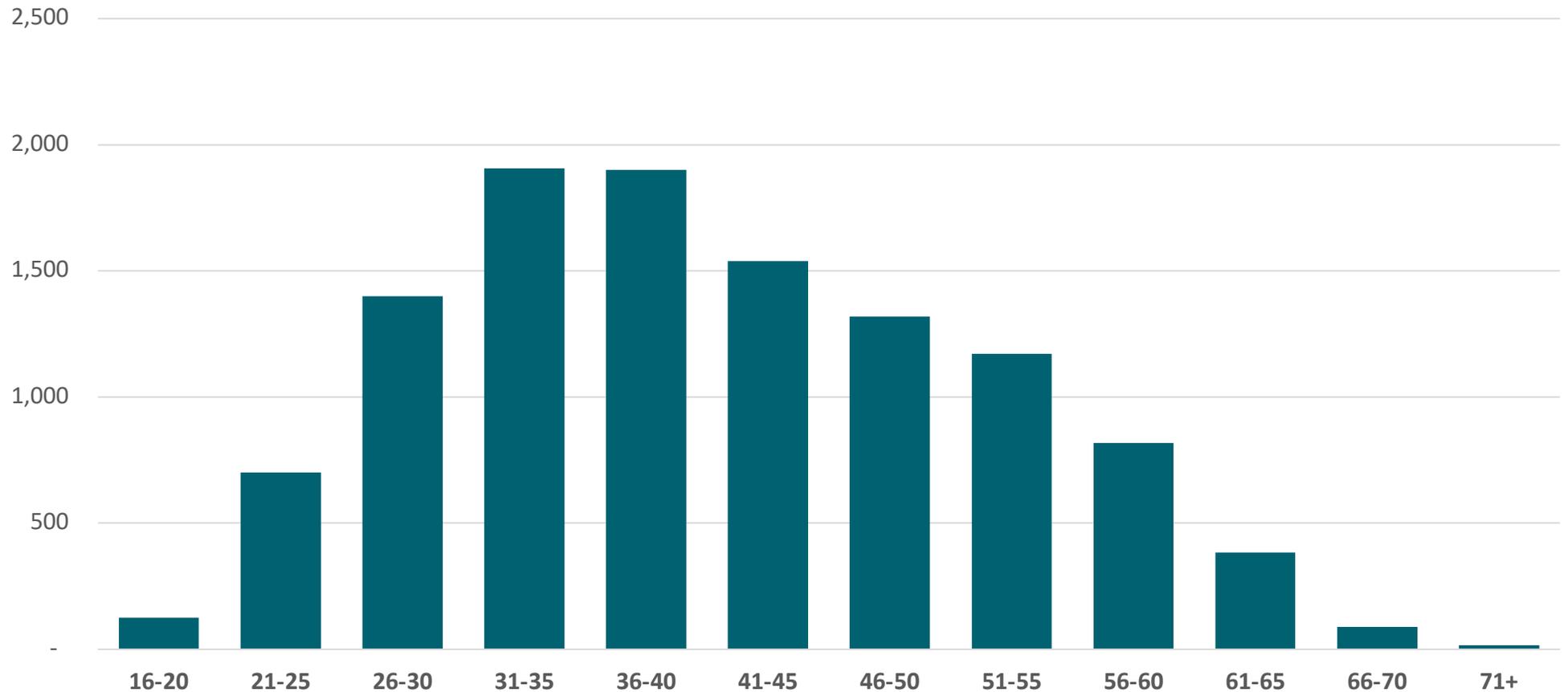
76

Max Age

117

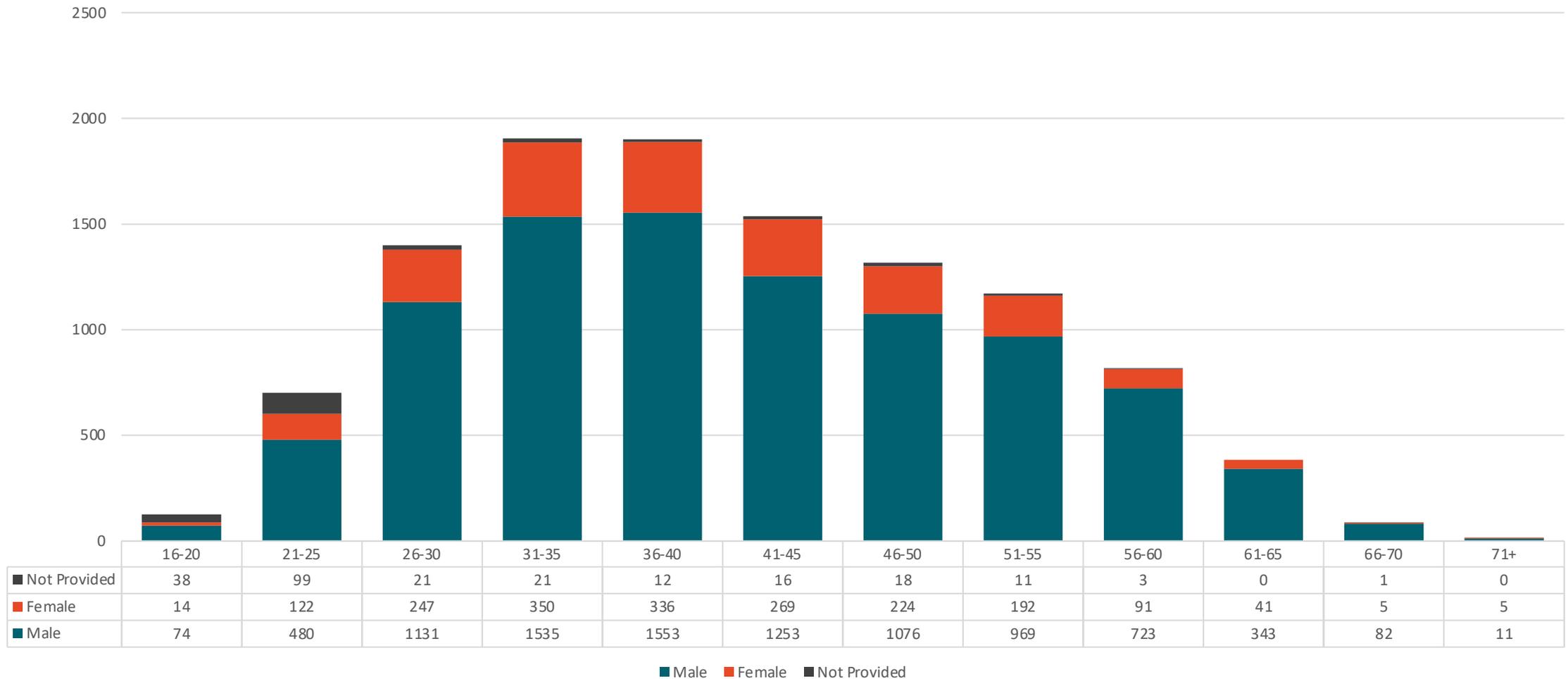
At 65+ (1%)

UK Offshore Wind Workforce – Age Profile



Age Profile by Gender

UK Offshore Wind Workforce – Age Profile by Gender



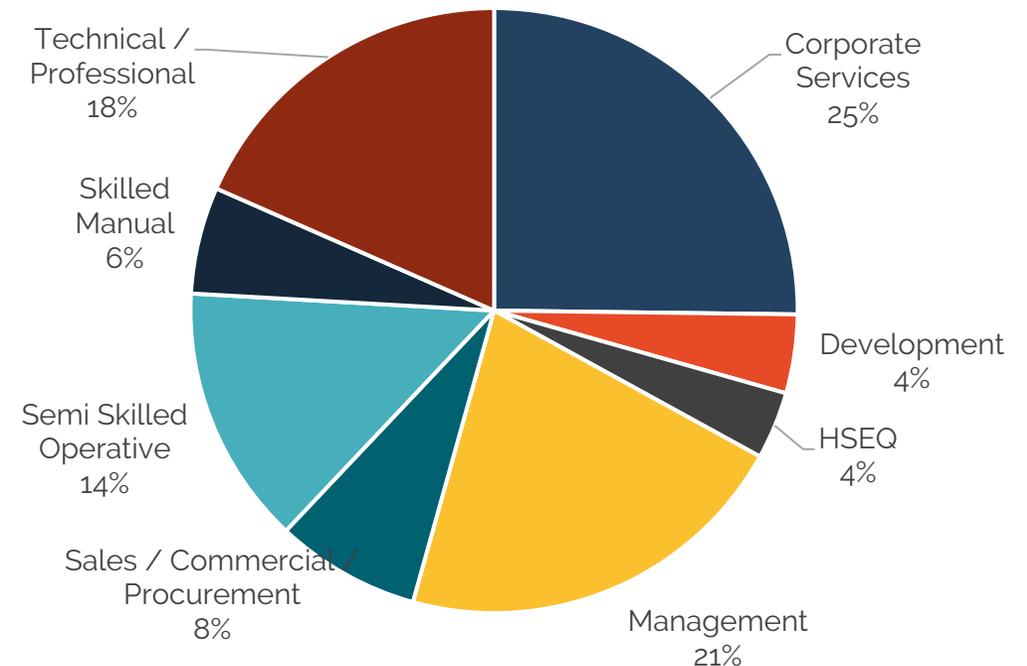
Gender Balance

- Survey data includes **2,003** women (**18%**) compared to **8,961** (**79%**) men
- Gender not provided for 401 employees in the survey
- Dominant skills levels for women in the industry are **levels 6 & 5** (Bachelor's Degree and Higher Education Diploma)



Women most frequently work in **corporate services** and **management roles** including:

- Operational Management
- Administration
- Finance



Source: NSAR Skills Intelligence Model Survey Results/Opergy Ltd. January 2021

Case Studies



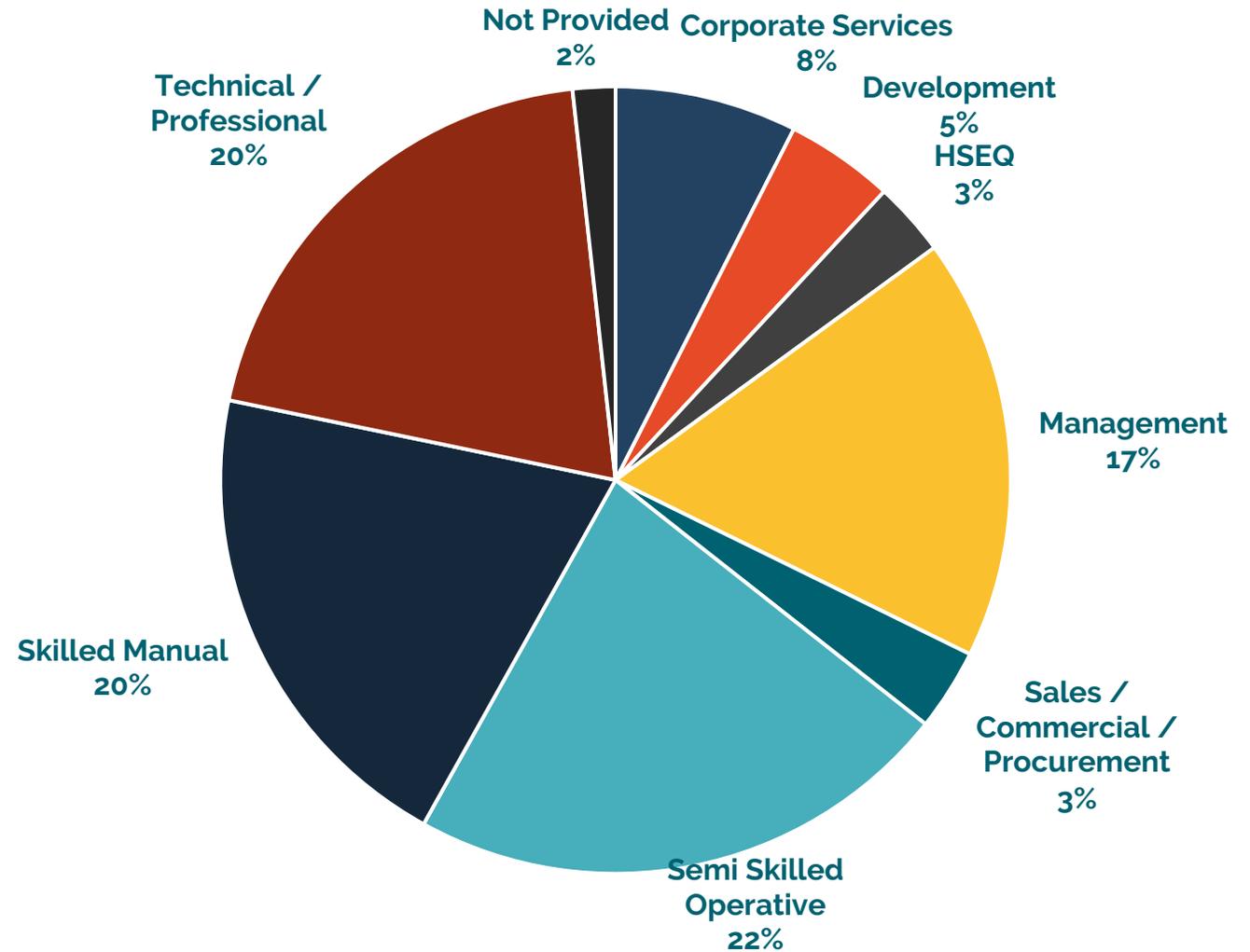
[Top Left: Vattenfall supporting young women using VR technology; Bottom Left: Stine Myhre Selås, Equinor; Right: Scottish Power Renewables celebrating 'Woman's Day EAONE', 6-8th March 2020.]

Job Groups

UK Survey Results

Skilled, Technical and Professional job roles account for **62%** of responses.

Leadership, Corporate and Operational Management roles account for **17%** of responses.



Skill Levels

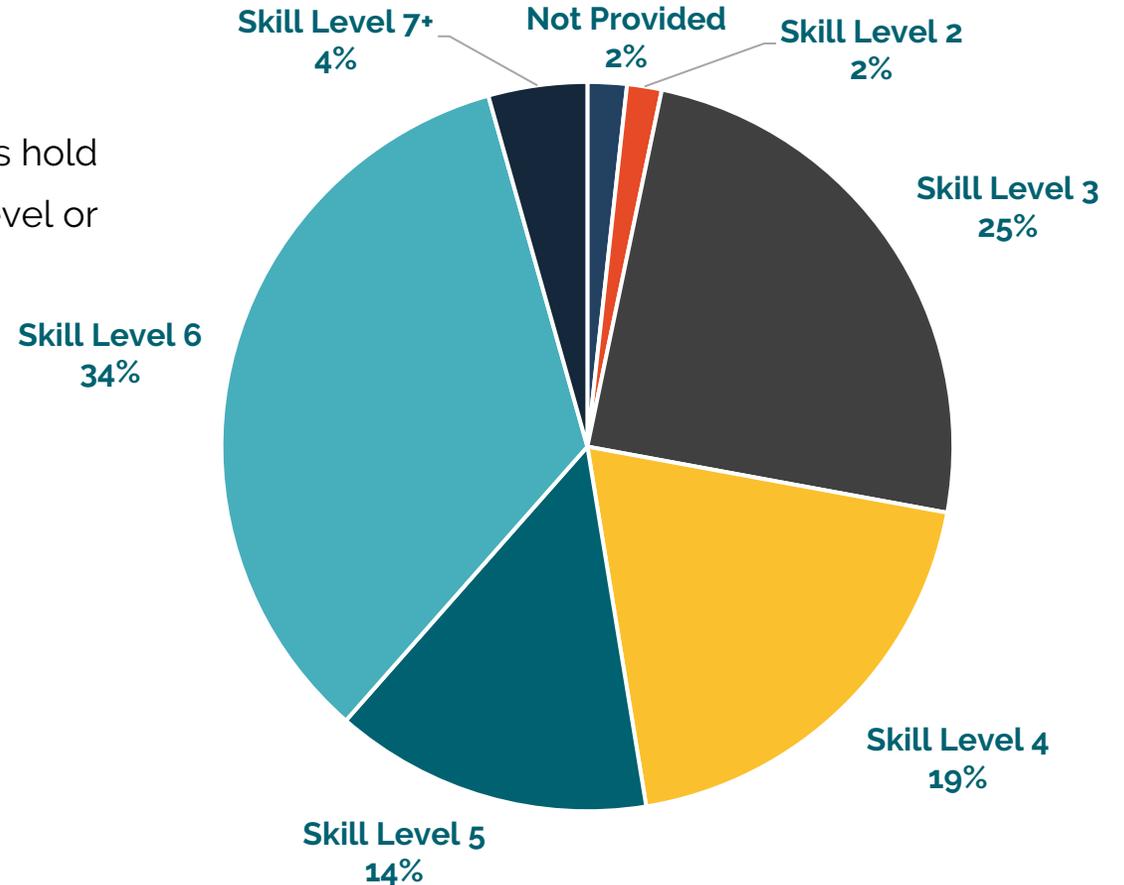
Note: reported using RQF levels

UK Survey Results

71%

of responses are skilled roles at Level 4 or above.

38% of responses hold qualifications at degree level or higher (Level 6+)



Full Time / Part Time Status

87.5%

Full Time Employees

3.5%

Part Time Employees

Note: 9% of responses did not provide employment status data.

Source: NSAR Skills Intelligence Model Survey Results/Opergy Ltd. January 2021

Apprenticeships

Target 2.5%

Industry agreed target for percentage of workforce recruited through apprenticeship schemes

Current Apprentices 1.8% (206)

Graduates & Trainees 1.4% (158)

Apprentices and Graduates currently fulfil a **wide range of roles across all disciplines**, from **corporate service functions** such as finance, HR, and administration; to **technical and engineering** roles both **onshore and offshore**.



Orsted Offshore Wind Technician Apprentices

Regional Survey Results



Regional Breakdown

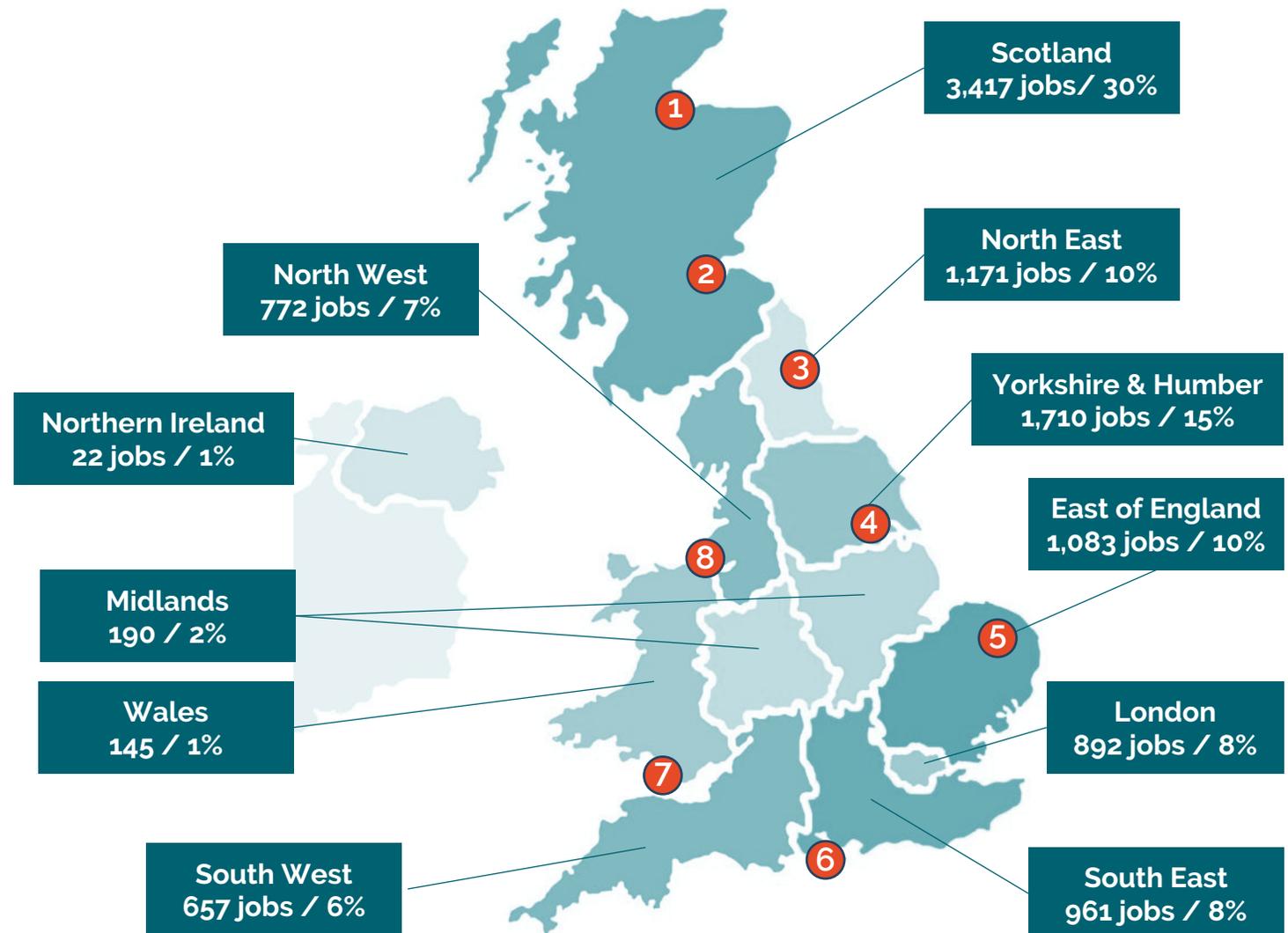
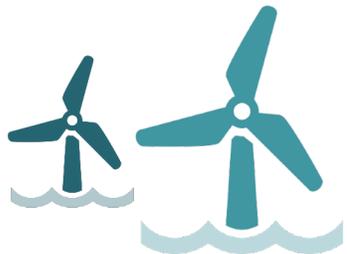
UK Survey Results

Data shown by UK region.

Map represents 44% of estimated total UK offshore wind workforce, based on actual data submitted for 11,365 jobs.

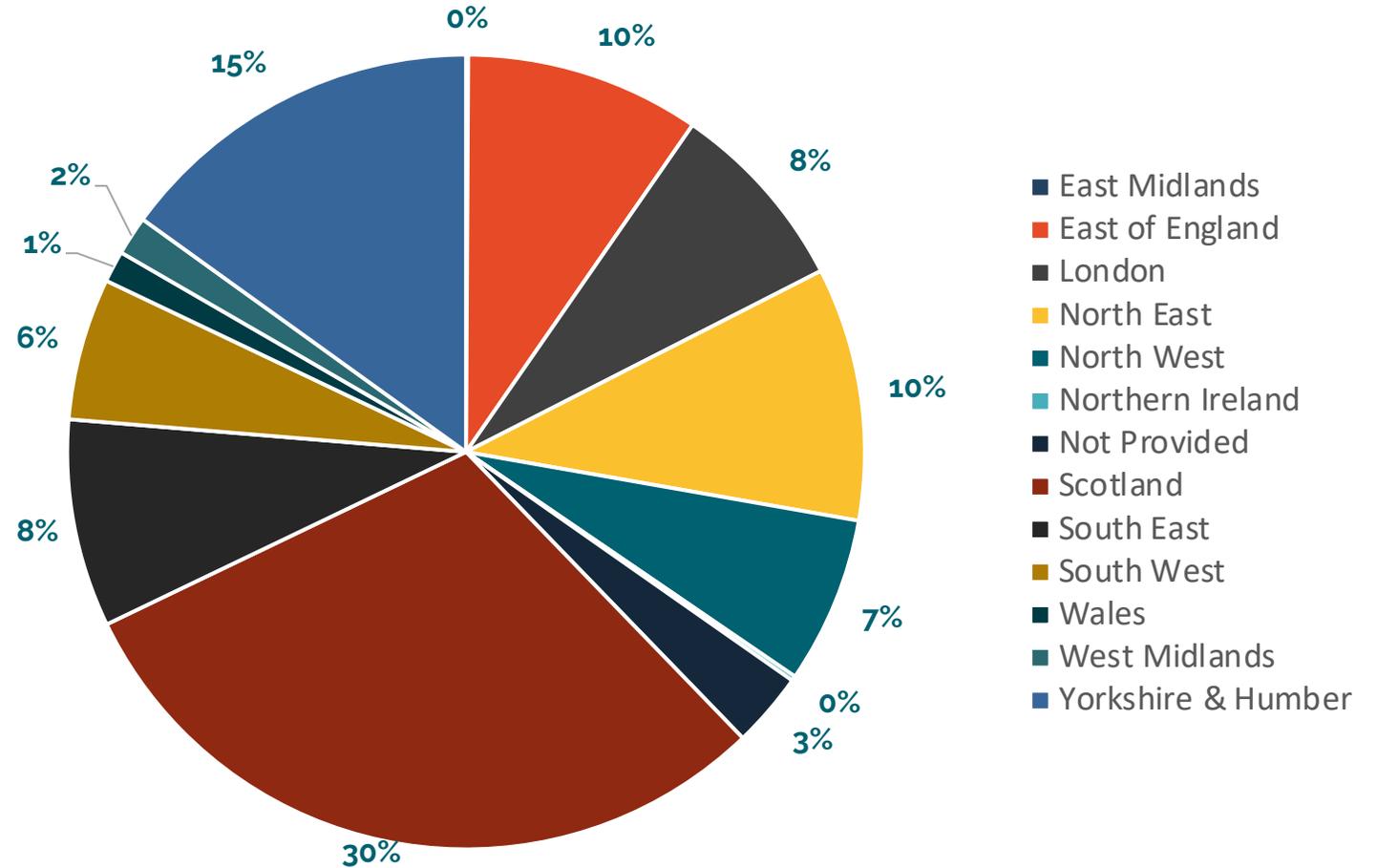
● represents Sector Deal 'Clusters'

1. DeepWind (North Scotland)
2. Forth and Tay Offshore
3. North East England
4. Humber
5. East Anglia
6. Solent
7. Celtic Sea Cluster
8. North West and North Wales



UK Region

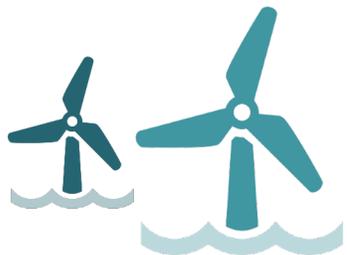
Region	Employee Count	%
East Midlands	10	0%
East of England	1,083	10%
London	892	8%
North East	1,171	10%
North West	772	7%
Northern Ireland	22	0%
Scotland	3,417	30%
South East	961	8%
South West	657	6%
Wales	145	1%
West Midlands	180	2%
Yorkshire & Humber	1,710	15%
No Location Data Provided	345	3%



Gender

London and South West are at 32%

Yorkshire & Humber, South East and North West have the lowest gender balance at 9%



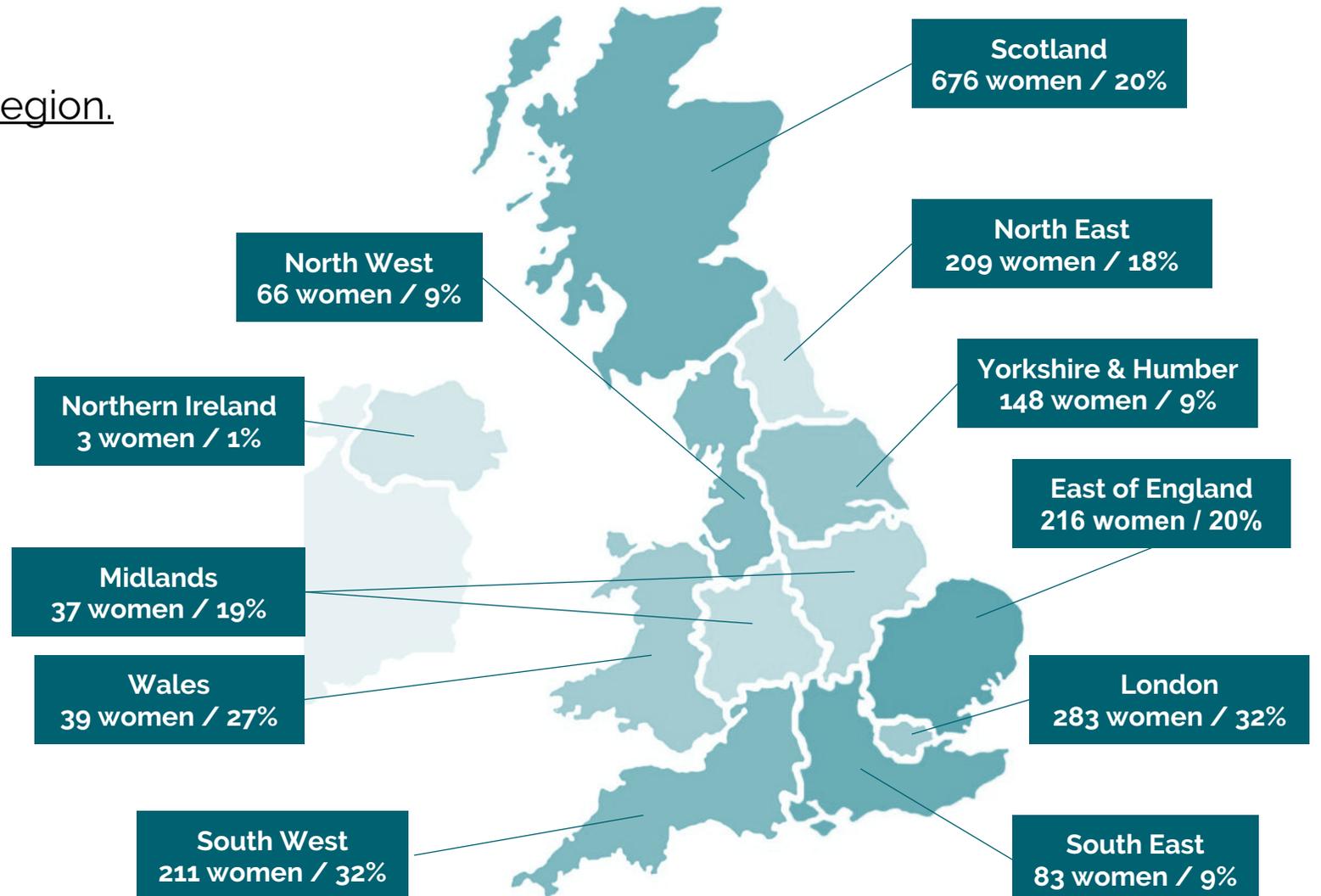
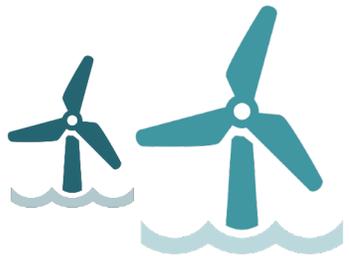
Region	Women		Men		Not Provided		Total
	Total	% of total	Total	% of total	Total	% of total	
East Midlands	3	30%	7	70%	0	0%	10
East of England	216	20%	866	80%	1	0%	1,083
London	283	32%	572	64%	37	4%	892
North East	209	18%	893	76%	69	6%	1,171
North West	66	9%	642	83%	64	8%	772
Northern Ireland	3	14%	17	77%	2	9%	22
Scotland	676	20%	2,667	78%	74	2%	3,417
South East	83	9%	876	91%	2	0%	961
South West	211	32%	433	66%	13	2%	657
Wales	39	27%	103	71%	3	3%	145
West Midlands	34	19%	145	81%	1	1%	180
Yorkshire & Humber	148	9%	1,429	84%	133	8%	1,710

Regional Breakdown

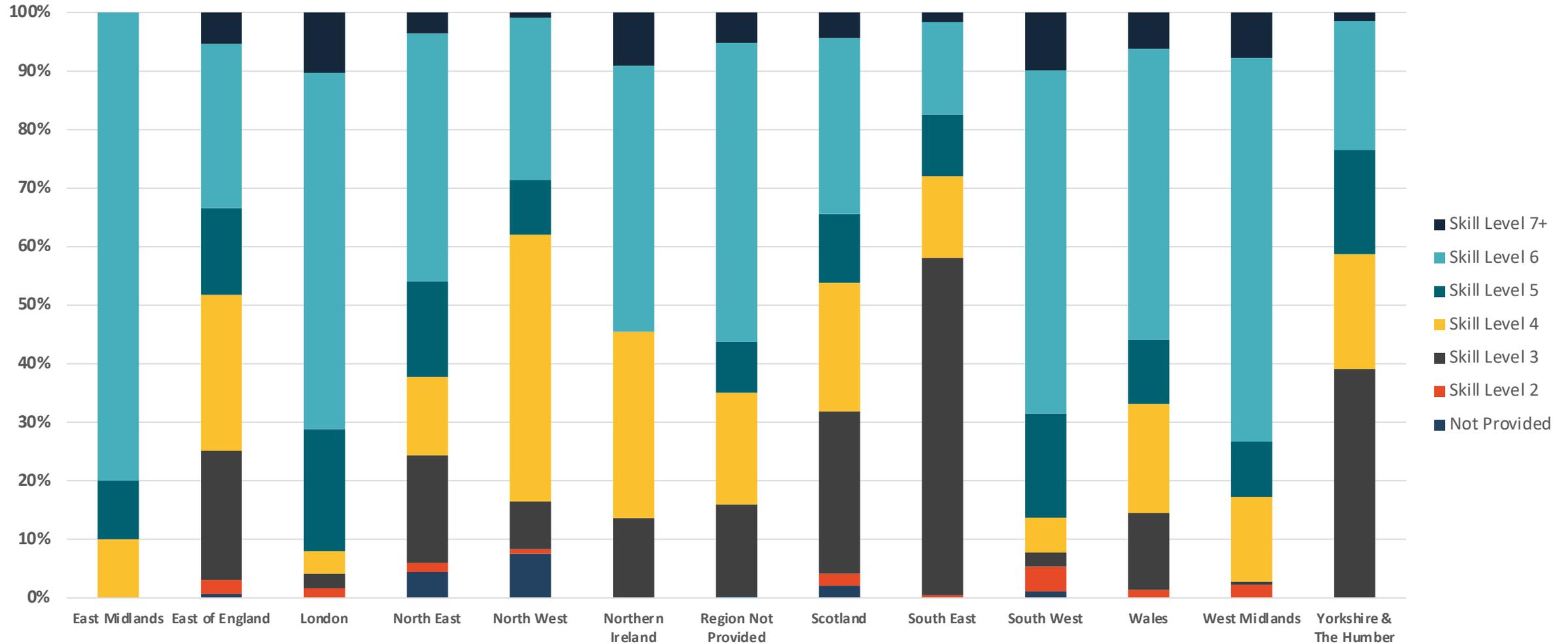
UK Survey Results

Gender Balance Data shown by UK region.

Note: Figures are based on survey results, which represent 44% of the estimated total UK offshore wind workforce, based on actual data submitted for 11,365 jobs.



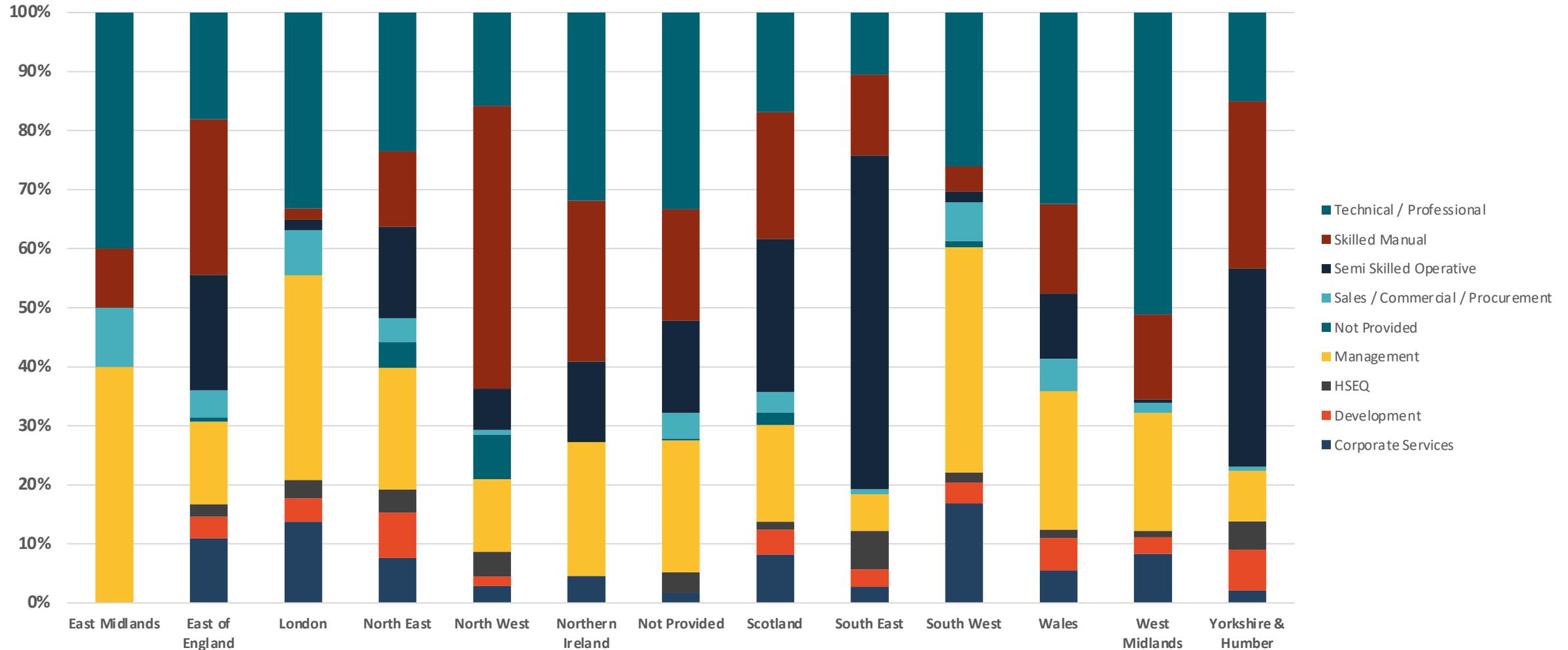
Skill Levels by Region



Skill Levels by Region

Skill Levels	East Midlands	East of England	London	North East	North West	Northern Ireland	Scotland	South East	South West	Wales	West Midlands	Yorkshire & Humber	Not Provided	Grand Total
Skill Level 2	nil	26	15	18	6	nil	69	4	28	2	4	2	<i>nil</i>	174
Skill Level 3	nil	239	22	215	63	3	948	554	16	19	1	666	54	2800
Skill Level 4	1	289	34	157	352	7	751	134	39	27	26	336	66	2219
Skill Level 5	1	160	186	191	72	nil	401	101	117	16	17	304	30	1596
Skill Level 6	8	304	543	496	214	10	1028	152	385	72	118	377	176	3883
Skill Level 7+	nil	58	92	42	7	2	148	16	65	9	14	25	18	496
Not Provided	<i>nil</i>	7	<i>nil</i>	52	58	<i>nil</i>	72	<i>nil</i>	7	<i>nil</i>	<i>nil</i>	<i>nil</i>	1	197
Grand Total	10	1083	892	1171	772	22	3417	961	657	145	180	1710	345	11365

Job Groups by Region



Job Groups by Region

Role Groups	East Midlands	East of England	London	North East	North West	Northern Ireland	Scotland	South East	South West	Wales	West Midlands	Yorkshire & Humber	Not Provided	Grand Total
Corporate Services	nil	118	123	89	22	1	279	26	111	8	15	36	6	834
Development	nil	40	35	90	13	nil	144	29	23	8	5	118	nil	505
HSEQ	nil	23	28	46	32	nil	46	62	11	2	2	82	12	346
Management	4	152	309	241	95	5	561	60	251	34	36	147	77	1972
Not Provided	nil	7	nil	52	58	nil	72	nil	7	nil	nil	nil	1	197
Sales / Commercial / Procurement	1	50	68	47	6	nil	120	8	43	8	3	12	15	381
Semi Skilled Operative	nil	212	16	181	54	3	884	543	12	16	1	573	54	2549
Skilled Manual	1	285	17	150	370	6	736	132	28	22	26	485	65	2323
Technical / Professional	4	196	296	275	122	7	575	101	171	47	92	257	115	2258
Grand Total	10	1083	892	1171	772	22	3417	961	657	145	180	1710	345	11365

Apprenticeships

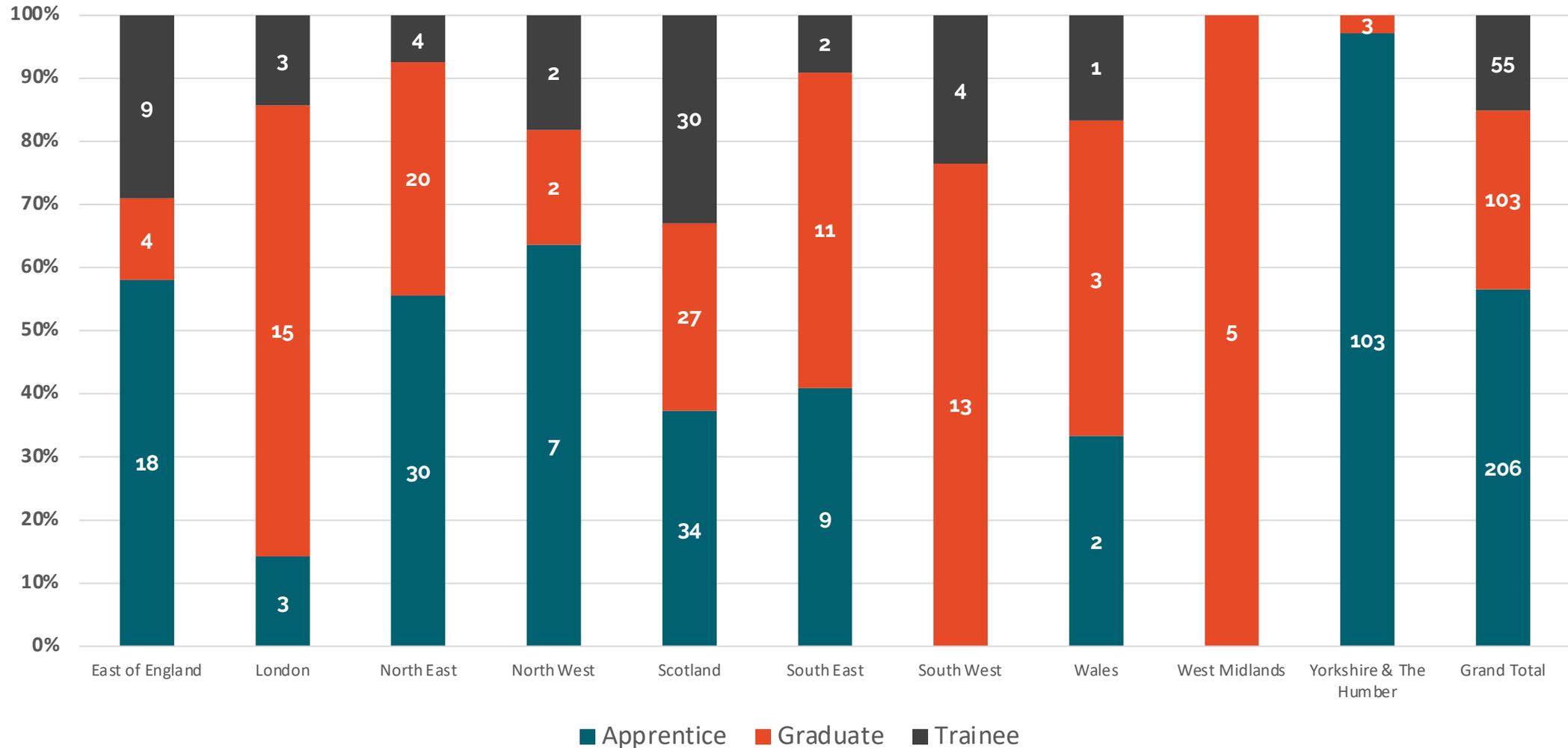
	East Midlands	East of England	London	North East	North West	Northern Ireland	Scotland	South East	South West	Wales	West Midlands	Yorkshire & Humber	Grand Total
Apprentice	No Data Available	18	3	30	7	No Data Available	34	9	nil	2	nil	103	206
Graduate		4	15	20	2		27	11	13	3	5	3	103
Trainee		9	3	4	2		30	2	4	1	nil	nil	55
Grand Total		31	21	54	11		91	22	17	6	5	106	364



Images [Left to Right]: Former apprentice and now Triton Knoll turbine technician Chris Hughes; Hope Reynolds, left, training instructor Gary Croft and Jovita Beeston, ScottishPower Renewables/East Anglia ONE; Nathan Jones, RWE Renewables Turbine Technician Apprentice at Greater Gabbard; Hope Reynolds and Jovita Beeston.

Apprentices by UK Region including Graduates & Trainees

Apprentice, Graduate & Trainees by UK Region



Future Workforce Forecasts



Jobs Forecast

Drawing from **RenewableUK's Project Intelligence Database**, the jobs forecasting model uses extrapolated data and robust assumptions to forecast jobs growth and investment to 2026.

A forecast **potential investment of £60.8bn** covering the whole project lifecycle through Devex, Capex, and Opex across all UK offshore wind projects between 2021 and 2026.

Assumptions include floating wind projects.

The total workforce **peaks at 69,848 in 2026** based on current investment forecasts.

At present, there is some assumed fluctuations in the construction profile for projects, which will have an impact on workforce requirements beyond this period.

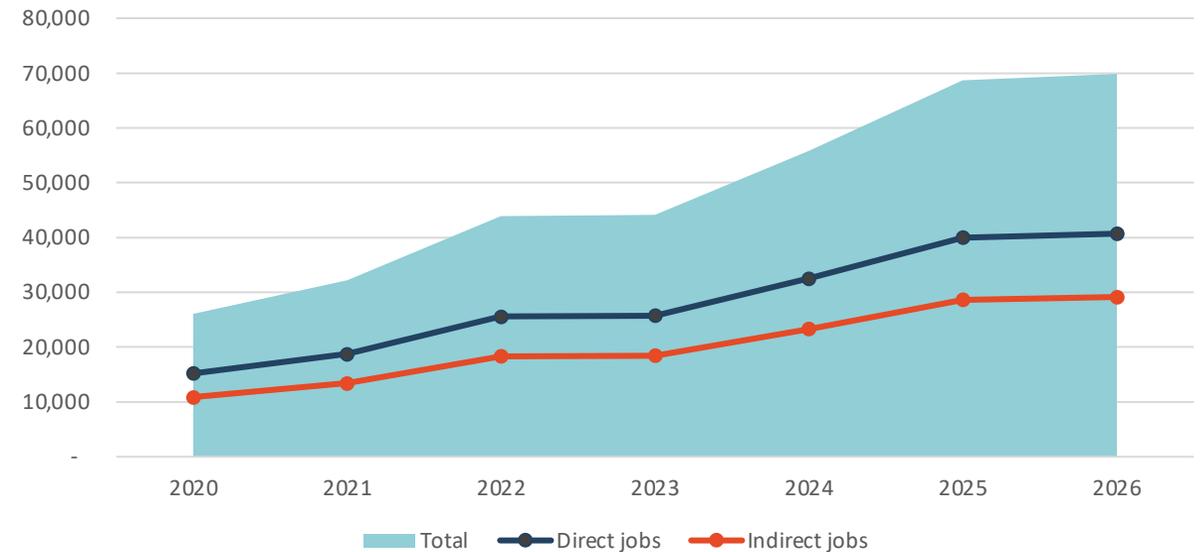
By **2026**, UK Offshore Wind is forecast to employ



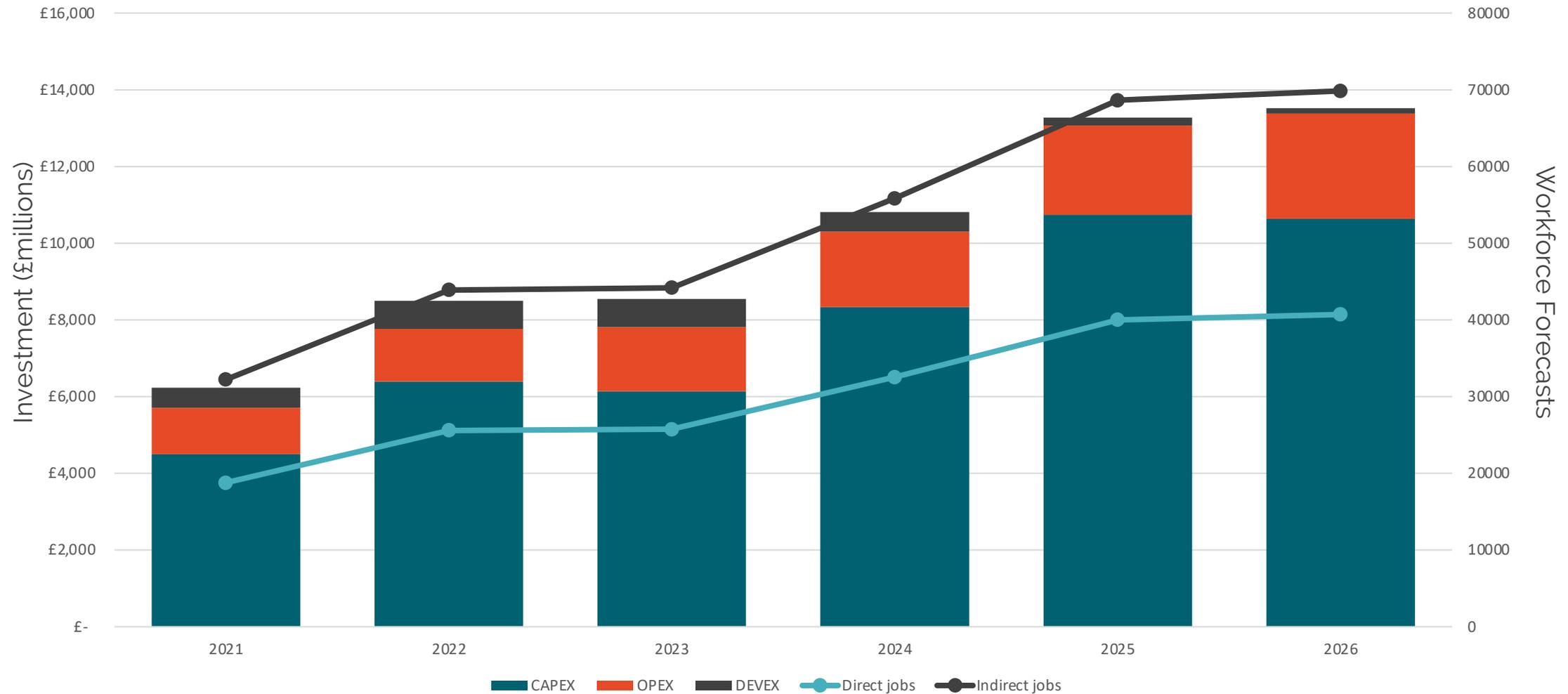
69,848

jobs. 40,700 direct jobs and 29,148 indirect jobs.

UK Offshore Wind Jobs Forecast to 2026

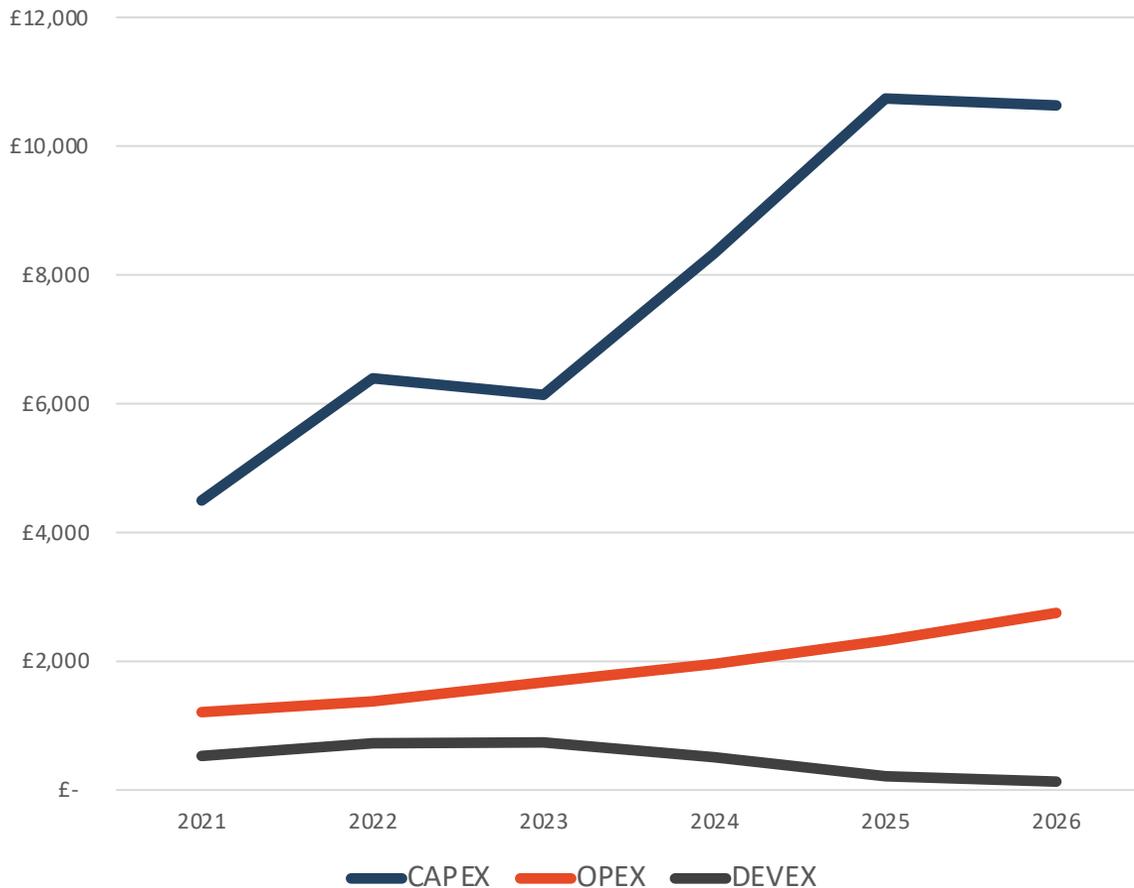


Jobs & Investment Forecast



Investment Profile

Investment Profile by Spend (£mn)



£10.1bn

Average Annual Investment

(2021 to 2026)

The investment forecasts, applied to all future projects, assumes the following assumed profile.

- Year 1** – DEVEX
- Year 2** – DEVEX
- Year 3** – DEVEX
- Year 4** – **Year 1** CAPEX
- Year 5** – **Year 2** CAPEX
- Year 6** – **Year 3** CAPEX, **Year 1** OPEX (30%)
- Year 7** – **Year 4** CAPEX, **Year 2** OPEX (60%)
- Years 8 – 33** – OPEX (at 100%)
- Years 33 – 35** – Decommissioning.

Regional Forecasts 2026

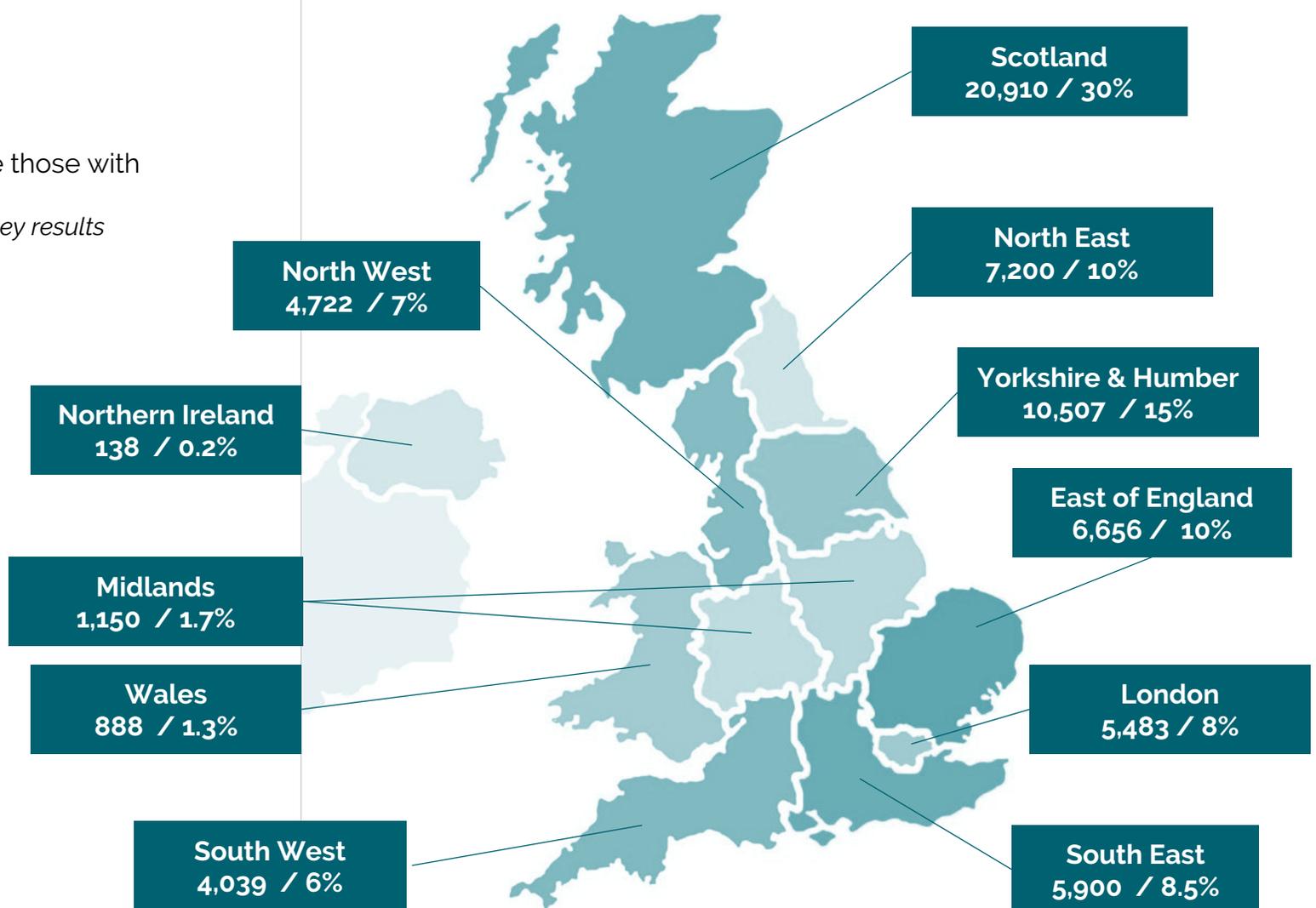
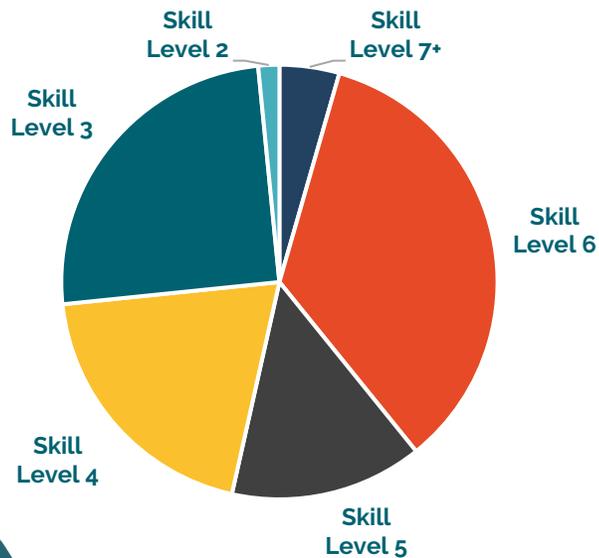
UK Total Workforce Forecasts

Data shown by UK region.

Scotland and the east coast regions of England are those with the greatest share of forecasted jobs.

Note: Regional Forecasts are extrapolated based on survey results proportions applied to investment forecasts.

Forecast Skill Levels (at 2026)



Job Groups by Region 2026

Role Groups	East Midlands	East of England	London	North East	North West	Northern Ireland	Scotland	South East	South West	Wales	West Midlands	Yorkshire & Humber
Corporate Services	-	728	757	547	135	7	1,717	157	680	48	90	220
Development	-	245	213	553	77	-	883	177	142	47	30	725
HSEQ	-	139	175	282	195	-	283	378	67	14	11	503
Management	25	935	1,898	1,483	586	32	3,449	370	1,542	209	204	904
Sales / Commercial / Procurement	7	305	417	289	36	-	737	50	267	47	18	73
Semi Skilled Operative	-	1,302	99	1,114	333	18	5,342	3,338	73	99	7	3,522
Skilled Manual	7	1,752	106	923	2,273	37	4,523	810	172	135	161	2,980
Technical / Professional	25	1,206	1,818	1,690	751	44	3,533	620	1,052	289	565	1,580
Other	-	44	-	319	336	-	443	-	44	-	-	-
Grand Total	64	6,656	5,483	7,200	4,722	138	20,910	5,900	4,039	888	1,086	10,507

Offshore Wind Industry Council

For more information on the Offshore Wind Industry Council and Sector Deal, visit www.owic.org

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