



October 2025





Sectoral Skills Assessments

First launched in 2017, Sectoral Skills Assessments (SSAs) provide a robust and consistent evidence base to support strategic skills investment planning. Skills Development Scotland (SDS) has worked with key partners and stakeholders to produce SSAs, ensuring an inclusive approach to their development, dissemination and utilisation.

SSAs include published data sets. Inevitably, when using published data there is a time lag, but the data contained is the most up-to-date available at the time of writing. SSAs also include forecast data commissioned through Oxford Economics. The Technical Note¹ provides full detail on the caveats that must be applied when using forecast data, but broadly, it should be noted that:

- Forecasts are based on what we know now and include past and present trends projected into the future.
- The more disaggregated they become, especially at smaller geographical units, the less reliable they are likely to be.
- Their value is in identifying likely directions of travel rather than predicting exact figures.
- The forecasts do not account for national or sectoral activities, initiatives or investments that are planned.

Industries and occupations used in the SSAs are defined by Standard Industrial Classifications (SIC)² and Standard Occupational Classifications (SOC).³

This SSA report is for the Energy Sector. This contains the following SIC 2007 codes:

- 05: Mining of coal and lignite
- 06: Extraction of Crude petroleum and natural gas
- 09: Mining support service activities
- 19: Manufacture of coke and refined petroleum
- products
- 20.14: Manufacture of other organic basic
- chemicals
- 35: Electricity, gas, steam and air conditioning
- supply
- 36: Water collection, treatment and supply
- 38.22: Treatment and disposal of hazardous waste
- 71.12/2: Engineering related scientific and
- technical consulting activities
- 74.90/1: Environmental consulting activities

Definition of the Energy Sector

The renewable energy industry does not have a SIC code for statistical reporting purposes and as such is not fully included in the figures presented here. While a portion of renewables employment and output will be captured in this SSA, the industry's activities may be also classified as construction, business services, engineering or manufacturing. We are looking for ways to capture the sub-sectors that are important for ensuring a Just Transition to Net-Zero emissions.

The SSAs are part of a suite of Labour Market Insight publications by SDS. Other products in the suite include:



Economy, People and Skills report which provides succinct and up-to-date evidence on Scotland's economy, businesses and people. It is published monthly.



Regional Skills Assessments provide a coherent, consistent evidence base to inform future investment in skills, built up from existing datasets and forecasts for College regions, Rural Scotland and all City and Growth Deals regions. These are published annually.



The <u>Data Matrix</u> is an interactive tool, offering more detailed data from a variety of sources in a visually engaging format. It is updated frequently.

Alongside the suite of Labour Market Insight publications, SDS also produces a wide range of reports such as statistics on Modern Apprenticeships and the Annual Participation measure for 16-19 year olds. This includes a wide range of data related to equalities. Further information can be found on the Publications and Statistics section of the SDS website.

We value user feedback on the Sectoral Skills Assessments. If you would like to provide feedback, please do so here. For any further information or queries on the SSAs or any of our other products, please contact: RSA@sds.co.uk

^{1.} SSA Technical Note (2025).

^{2.} Office for National Statistics UK Standard Industrial Classification (SIC) 2007.

^{3.} Office for National Statistics UK Standard Occupational Classification (SOC) 2010.

The Context for Scotland's Labour Market

Over the past decade, the Scottish economy has experienced disruption driven by changes in the global political landscape, the cost-of-living crisis and conflicts in the Middle East and Ukraine. In addition, megatrends in demography, technology, and the environment have continued to shape Scotland's economy and labour market, many of which are interdependent. Below is an overview of the drivers that are expected to have the greatest influence on Scotland's labour market outlook in the near term, based on a comprehensive analysis of both structural and cyclical factors.

The Economy

Scotland and the UK experienced weak economic growth of 1.1% in 2024, with inflation also staying above the 2.0% target. Forecasters expect economic growth to remain at around 1.0% in 2025, with inflation also expected to remain elevated. The effects of rising prices and high interest rates continue to impact Scottish households and businesses. This contributes to the Scottish labour market being cooler in 2025, following a period of sustained tightness in recent years.

Demographic Change

Scotland's population is projected to grow until mid-2047, largely driven by positive net migration, which will offset the anticipated natural decline due to a falling fertility rate. However, whilst the population is growing, it is also ageing. Around one-fifth of Scotland's residents were aged 65 or over in 2024. By 2047, the number of people of pensionable age is expected to increase by 21%. This demographic change has implications for the economy and labour market, by affecting caring responsibilities, tax revenue. and productivity.

Inclusion and Equality

There is a lingering effect from the cost-of-living crisis, which began in 2021, with rising energy prices and financial pressures continuing to have a disproportionate impact on lowto-middle income households. Poverty, including in-work poverty, persists; however, the Fair Work policy agenda aims to reduce labour market inequalities. Barriers to accessing the labour market remain for disabled people and minority ethnic groups, and gender equality still requires progress.

Technology and Automation

Artificial Intelligence (AI) continues to be the core driver in technology transformation. Scotland has a strong technology sector, underpinned by extensive academic and business presence in AI and related fields. The adoption of Al is rapidly increasing among Scottish businesses, particularly in optimising workflows. However, the implications of AI for the labour market remain uncertain. Scotland's strong base in digital and data skills could provide an advantage, but maintaining a skilled workforce will be essential.

Climate Change and Net Zero

The transition to net zero will directly impact the labour market as actions are taken to meet net zero targets. This shift offers significant opportunities for job creation in Scotland, particularly in the clean energy sector. Scotland has strong natural assets, and existing sectoral strengths provide a strong foundation for a green economy. However, upskilling will be crucial for transition to net zero. Especially in the construction. manufacturing, agriculture, energy and transport sectors



Sectoral Insight¹

The <u>Green Industrial Strategy (2024</u>) stated that to ensure the education and skills system is responsive to Scotland's green economic priorities, the Scottish Government has committed to developing a national approach to skills planning, which will help develop a better understanding of skills needs at the national level, including skills for the net zero transition and how Scotland can better address them.

Skills challenges include:

- Skills Gaps: Critical skills gaps exist in areas like construction, electrical engineering, data analytics, and marine-related disciplines. There is a need to increase the supply of a skilled workforce with the technical and professional capabilities essential for meeting both current and future demands of Scotland's energy transition, with a focus on critical skills and those that offer strong value for money and contribute significantly to economic impact.
- Future Demand: The transition to net zero will significantly increase demand for skills. According to the Energy & Utility Skills Partnership, the energy and utilities sector will require approximately 312,000 new workers by 2030. These roles span various areas, including power generation, gas networks and renewable energy and demand skills in engineering, project management and technical operations.

- Skills Transferability: Leveraging skills from the oil and gas sector can contribute to meeting demand, but challenges remain due to premium wages and an ageing workforce.
- Strategic Investment in skills development is crucial, but uncertainties exist regarding the timing and scale of investment in certain sub-sectors, particularly with nascent industries and technologies such as green hydrogen production and carbon capture, utilisation and storage. There is a need to strengthen alignment between industry, further and higher education, and other providers to ensure training provision reflects the needs of the sector.
- Place-Based Challenges, including the need to attract and retain talent in various regions, improve infrastructure, and collaborate on training and apprenticeships.
- Sector Stability: With less certainty around the
 future of oil and gas, in addition to increased costs
 for businesses including changes to the national
 minimum/living wage, there have been fewer
 pledges for APTUS apprenticeship places. The
 energy industry and transition will be reliant on a
 skilled workforce, and so it is important that
 apprenticeships are prioritised.

It is important to note that the forecasts used in this Sectoral Skills Assessment are policy and investment neutral.

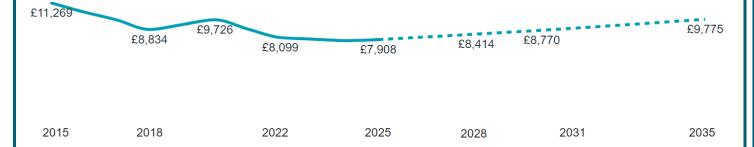


This means the figures present a baseline outlook that takes into account historical trends and external economic conditions, but the figures do not reflect investment or policy that is unconfirmed or at planning/development stage. This would include, for example, the £150m capital investment in offshore wind, announced in the 2025/26 budget, which is year two of a five-year commitment to invest up to £500m into the sector. Significant public investment has already been directed toward this effort. Examples include:

- £24.5 million in grant funding for <u>Sumitomo</u>'s
 £350 million subsea cable manufacturing facility at the Port of Nigg.
- A £100 million joint credit facility with the UK Government to support the <u>Ardersier port</u> redevelopment.

Therefore, the forecasts should be used in conjunction with other sources, and readers are encouraged to overlay these with their own local and sectoral knowledge.

Gross Value Added (GVA, £m) (2015-2035)^{1, 2}



In 2025, GVA in the Energy sector was estimated to be £7,908m, generating 4.7% of Scotland's total economic output. Between 2015 and 2025, GVA in the sector was estimated to have declined by 3.3% on average each year, compared to equivalent annual growth of 0.9% across Scotland.

Looking ahead, GVA in the sector is forecast to return to growth, rising at an average of 2.1% each year between 2025 and 2035, which is slightly above Scotland's average (1.7%). In 2035, the Energy sector is forecast to account for 4.9% of Scotland's total economic output.

Energy forecast GVA in 2028:

Energy forecast GVA in 2035: **£9.775**m





up 16.2% from 2028

Scotland forecast GVA in 2028: £177,951m

Scotland forecast GVA in 2035: £199,512m

up 5.2% from 2025

up 12.1% from 2028

Productivity (GVA per job) 1, 3

In this report, we have used Oxford Economics' measure of productivity, which is calculated by dividing total sectoral GVA by total sectoral employment (measured by jobs). Please note, there are different ways of calculating productivity, and caution is needed when interpreting productivity data presented in this report. It must be considered in the context of other data and insight.

In 2025, productivity in the **Energy** sector was estimated to be £116,200. In comparison, the Scottish average was £57,700.





Energy forecast productivity in 2028: £127.600



up 9.8% from 2025

Scotland forecast productivity in 2028: £59.100



up 2.4% from 2025



Energy forecast productivity in 2035: £158,000

Scotland forecast productivity in 2035: £63,600



up 23.9% from 2028



up 7.5% from 2028

- 2. GVA is the measure of the value of goods and services produced within the economy and is an indicator of the sector's health.
- 3. Productivity is the measure of goods and services produced per unit of labour input. The Oxford Economics forecasts of productivity shown here have been calculated by dividing total sector GVA by total sector

^{1.} SDS (2025). Oxford Economics Forecasts.

Current Demand

Workforce size 2025: 92,700 people¹

This was estimated to account for 3.4% of Scottish employment.

The sector's workforce was estimated to have **increased** by **0.7%** (or **600** people) between 2015 and 2025.

This compares to a Scotland wide increase of **5.5%** or **141,500** people between 2015 and 2025.



Employment by Region (people), 2025¹

The greatest number of people employed in **Energy** were estimated to be in:

Aberdeen City and Shire

Glasgow College Region*

Highlands and Islands

Edinburgh, East and Midlothian

46,100

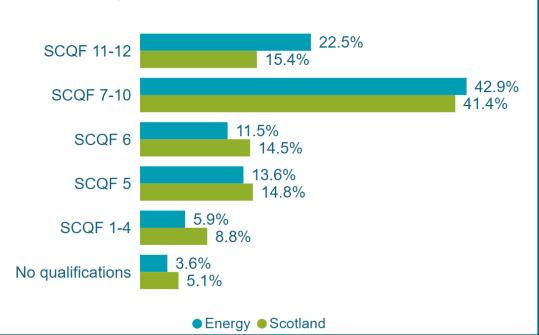
9,100

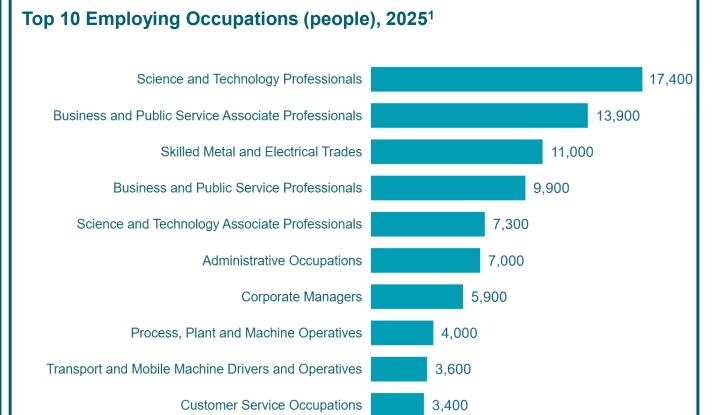
8,200

7.900

Workforce Qualifications, 2025¹

It was estimated that workers in the **Energy** sector had higher qualifications than the Scottish average. In 2025, it was estimated that 65% of workers in the sector were qualified to SCQF Level 7 and above.²





^{1.} SDS (2025). Oxford Economics Forecasts.

^{2.} See <u>SCQF Framework</u> for further information on SCQF qualification levels.

^{*}Glasgow College Region covers East Dunbartonshire, East Renfrewshire and Glasgow City local authorities.

Current Demand

The Energy sector definition does not fully capture the renewable energy industry (see page 2).

The proportion of Local Authorities' workforce employed in Energy, 2025^{1, 2}

Scottish local authorities have sectoral strengths that make them unique. This means that the **Energy** sector may be more important to some local economies, as a higher proportion of the local workforce is employed in the sector.

The sector was most prominent in these local authorities:

Aberdeen City

20.5%

Aberdeenshire

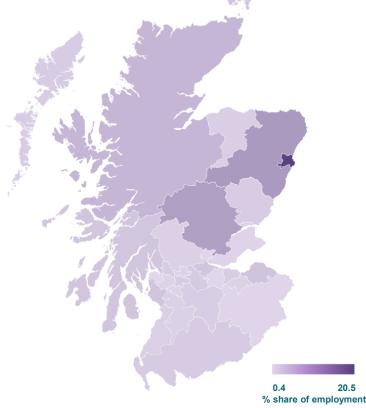
8.5%

Perth and Kinross

7.7%

Highland

4.6%



1. SDS (2025). Oxford Economics Forecasts.

2. The proportion of the workforce in the Local Authority employed in the sector is calculated by dividing the sectoral employment in the area by total employment in the area.

3. Scottish Government (2025). Annual Survey of Hours and Earnings: 2024. The figures for 2023 have been revised. Due to data availability, a 'best fit <u>SIC code</u> approach' has been used, so the sectoral definitions and totals in this section may vary from those we have used elsewhere.

Real Living Wage and Gender Pay Gap³

Individuals earning Real Living Wage or more:

In April 2024, the real living wage rate for employees who did not work in London was £12.00.



Mining and Quarrying; Electricity, Gas, Steam and Air Conditioning Supply; and Water Supply

No data available

Manufacturing All sectors

2023: **90.8**% 2024: **89.1**% 2023: **89.8**% 2024: **88.6**%

Gender Pay Gap for median full-time hourly earnings:4



Water supply; Sewerage, Waste Electricity
Management and Remediation Air Cond

2023: No data 2024: **6.6%**

Electricity, Gas, Steam and Air Conditioning Supply

2023: **13.3%** 2024: 5.0%

Manufacturing

2023: **15.7%** 2024: **9.7%**

Scotland 2023: 1.4%

2024: **2.2**%

Due to data availability, a 'best fit SIC code approach' has been used, so sectors definitions here may not fully match key sector definitions.

Modern Apprenticeships⁵



MA starts for Engineering & Energy Related*:

Q4 2023/24: **2,042** Q4 2024/25: **2,038**

For the latest quarterly MA statistics, please click **here**.



MAs in training for Engineering & Energy Related*:

Q4 2023/24: **5,299** Q4 2024/25: **5,868**

* Based on SDS Occupational Groupings.

For data on FAs and GAs please see the Publications section of our <u>website</u>. For data on colleges and universities please see Scottish Funding Council and Higher Education Statistics Agency.

- 4. No data available for Mining and Quarrying.
- 5. SDS (2025). Modern Apprenticeship Statistics.

Job Postings^{1,2}



Between July 2024 and June 2025, there were **505,170** job postings in Scotland across all sectors. The labour market across the country has cooled following a peak in job postings in 2022, and since the end of 2023 the number of jobs postings each month has been broadly stable.



Spotlight on... Energy Plant Operatives³

Between July 2024 and June 2025, there were **760 job postings**. The number of job postings has decreased by **11.1%** compared to the period between July 2023 and June 2024 (**8.0%** decline across all occupations comparatively). However, demand for these roles remained steady.

Top Locations between July 2024 and June 2025:



Glasgow City
130 job postings



Edinburgh City
100 job postings

Specialised skills and knowledge requested (July 2024 and June 2025) included:

- Machinery
- Boilers
- Environment Health and Safety
- Plumbing and Heating Systems



Median real-time advertised salary: £31,200

1. Lightcast 2025. Online job postings data provides a useful barometer for the health of the jobs market. It is important to note that the data does not capture all activity, so it should be considered as an estimate of activity.

2. Job postings are rounded to the nearest 10 or 100.



Spotlight on... Fuel Cell Engineers⁴

Between July 2024 and June 2025, there were **240 job postings**. The number of job postings has increased by **53.2**% compared to the period between July 2023 and June 2024 (**8.0**% decline across all occupations comparatively).

Top Locations between July 2024 and June 2025:



Aberdeen City
30 job postings



Highland 30 job postings

Specialised skills and knowledge requested (July 2024 and June 2025) included:

- Smart Meter Systems
- Safety Procedures
- Electrical Power Distribution Systems
- Auditing



Median real-time advertised salary: £39,900

- **3**. Data is based on SOC 8133 for the whole of Scotland. Median salary based on 39% of job postings.
- **4.** Data is based on job titles for the whole of Scotland. Median salary based on 71% of job postings.



Spotlight on... Offshore Managers⁵

Between July 2024 and June 2025, there were **570 job postings**. The number of job postings has decreased by **25.0%** compared to the period between July 2023 and June 2024 (**8.0%** decline across all occupations comparatively). However, demand for these roles remained steady.

Top Locations between July 2024 and June 2025:



Aberdeen City
300 job postings



Glasgow City
70 job postings

Specialised skills and knowledge requested (July 2024 and June 2025) included:

- Project Management
- Environment Health and Safety
- Oil and Gas
- Basic Offshore Safety Induction and Emergency Training (BOSIET)



Median real-time advertised salary: £64.900

5. Data is based on job titles for the whole of Scotland. Median salary based on 19% of job postings.

Spotlight: Digital Practitioners in Energy

Digital Practitioners in Scotland

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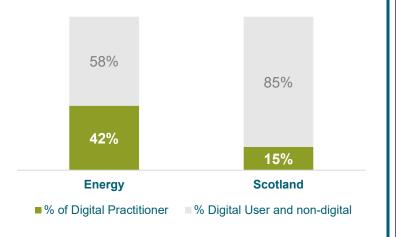
Recognising that digital skills permeate roles across all sectors and are no longer confined to traditional technology roles, SDS has undertaken research to define Scotland's Digital Economy in 2025, building on the <u>Digital Economy Skills Action</u> Plan.

This definition strengthens the evidence base and ensures SDS and partners can understand the spread of digital jobs across Scotland's key sectors and identify how digital transformation is shaping skills demand, productivity and sectoral growth. More information on this research is available in Appendix 1.

This spotlight focuses on the presence of **Digital Practitioner** roles within the Energy sector. Digital Practitioners are occupations that utilise technical and professional digital skills, either within the traditional digital sector or integrated into other roles outside the sector. Digital Practitioner roles include occupations like **Environment Professionals** and **Engineering Project Managers and Project Engineers**.

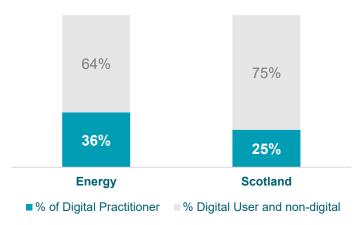
Employment ¹

In 2022, **42**% of people employed in the Energy sector were employed in Digital Practitioner roles. This was higher than the Scottish average of **15**%.



Gross Value Added (GVA)²

Digital Practitioner roles within the Energy sector make a sizeable contribution to the GVA of the whole sector (36% in 2022), higher than the average in Scotland.



Digital Insight for Energy³



Scotland's energy sector requires advanced digital skills like data science, artificial intelligence, and cybersecurity to support the transition to net zero and drive innovation in areas such as offshore wind, smart grids and local energy systems, as well as improving efficiency and reducing emissions in the oil and gas sector.

Digitalisation improves predictive maintenance, grid stability and data-driven decision-making, creating demand for both intermediate and advanced digital competencies. Organisations like Skills Development Scotland are working to develop these skills through training programs and apprenticeships, aiming to future-proof the workforce and unlock export opportunities.

- 1. SDS analysis of Lightcast Labour Market Data (2022, accessed in 2024).
- 2. SDS analysis of Annual Business Survey Data (2022, published in 2024).
- 3. Insight from the sector gathered via Skills Development Scotland (2025).

Future Demand: Mid-term (2025-2028)¹

The Energy sector definition does not fully capture the renewable energy industry (see page 2).

Top 10 Employing Occupations (people), 2028¹

In the mid-term (2025-2028), the number of people in employment is forecast to decline by 1.9% (-1,800 people) in the Energy sector. This is in contrast with the growth that is forecast overall across Scotland, where employment is anticipated to rise by 2.5% (68,000 people).

By 2028, the regions forecast to have the greatest level of sectoral employment are **Aberdeen City and Shire** and **Glasgow College Region**, the same as in 2025. Between 2025 and 2028, the sector is forecast to see the greatest growth in **Business and Public Service Professionals (100 people)**, and **Corporate Managers (100 people)**.

Forecasts for the mid-term (2025-2028) suggest there could be demand for **8,500 people in the sector**, as a result of the need to **replace workers** leaving the labour market.

Workforce (people), 2028¹



Workforce size 2028: 91,000 people



The sector's workforce is expected to **decline** by **-1.9**% (or **-1,800** people) between 2025 and 2028



Compared to a Scotland wide increase of 2.5% or 68,000 people

Total Requirement^{1,2}



2. Total requirement for people is made up of expansion and replacement demand.



+



Total requirement: **8,500** people

Replacement demand: 10,300 people

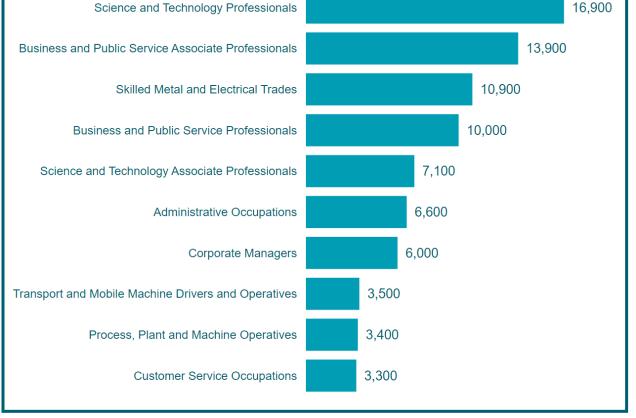
Expansion demand: -1,800 people

Energy is forecast to account for **2.1**% of Scotland's total requirement for people in the mid-term (2025-2028)

in the mid-term (2025-2028) 1. SDS (2025). Oxford Economics Forecasts.

The expansion demand is the number of people required as a result of economic growth or contraction.

The replacement demand is the number of people required to replace workers leaving the labour market (i.e. those who retire, move away or change jobs). Please note, figures are rounded to the nearest 100 and as a result totals may not equal the sum of the constituent parts.



Future Demand: Long-term (2028-2035)¹

The Energy sector definition does not fully capture the renewable energy industry (see page 2).

Employment contraction in the **Energy** sector **is forecast to continue**, **with a decline of 4.1% (-3,700 people)** in the long-term (2028-2035). This is in contrast with the growth that is anticipated overall across Scotland, where employment is forecast to rise by 4.0% (112,500 people).

By 2035, the regions forecast to have the greatest level of sectoral employment are **Aberdeen City and Shire** and **Glasgow College Region**. Between 2028 and 2035, the greatest growth is forecast to be in **Business and Public Service Associate Professionals (200 people)**, followed by **Business and Public Service Professionals (100 people)** in the sector.

Forecasts for the long-term (2028-2035) estimate that **19,200 people** could be required in the sector. This will be driven by **the need to replace workers** leaving the labour market.

Workforce (people), 2035¹



Workforce size 2035: 87,200 people



The sector's workforce is expected to **decline** by **4.1**% (or **-3,700** people) between 2028 and 2035



Compared to a Scotland wide increase of 4.0% or 112,500 people

Total Requirement^{1,2}









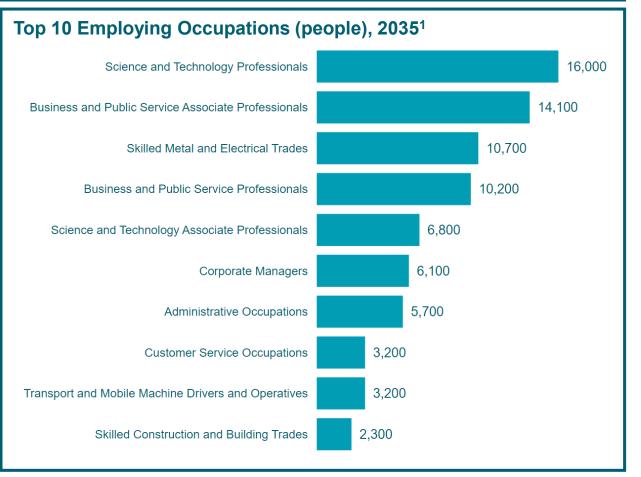
Total requirement: 19,200 people

Replacement demand: 22,900 people

Expansion demand: -3,700 people

Energy is forecast to account for **2.2**% of Scotland's total requirement for people in the long-term (2028-2035)

1. SDS (2025). Oxford Economics Forecasts.



The replacement demand is the number of people required to replace workers leaving the labour market (i.e. those who retire, move away or change jobs). Please note, figures are rounded to the nearest 100 and as a result totals may not equal the sum of the constituent parts.

^{2.} Total requirement for people is made up of expansion and replacement demand. The expansion demand is the number of people required as a result of economic growth or contraction.

Appendix 1: Digital Economy Definition Research

Project Background

In March 2023, SDS released the <u>Digital Economy Skills Action Plan</u> (DESAP), which emphasised the increasing importance of digital skills across all sectors in Scotland. While the Digital Tech Sector is well-defined and focuses on activity related to the production of digital technologies, the DESAP noted a lack of comparable data for the wider Digital Economy (which encompasses all economic activity that is enabled by digital technology) due to an unclear definition. To address this, SDS worked collaboratively with stakeholders to define the Digital Economy with the aim of improving the understanding of related jobs and skills.

Methodology

Definition

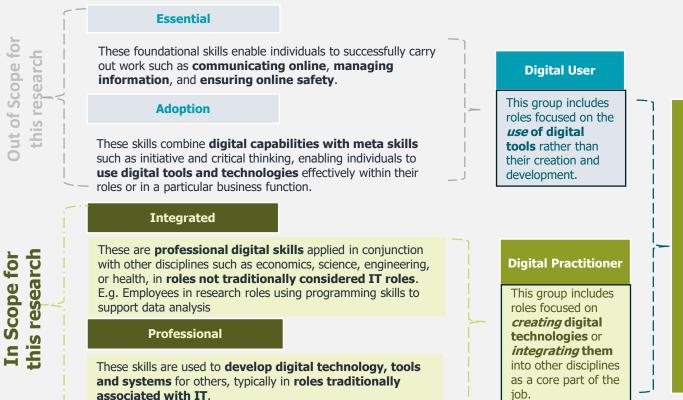
Economy

Digital |

Following a literature review and stakeholder consultations, a final definition of the digital economy was produced (see below). This was then used to identify jobs (based on SOCs) and skills (from the Lightcast Skill Taxonomy) that were considered part of the Digital Economy. The research focused on Digital Practitioners as a particular area of interest to understand how skills that create or integrate digital technologies are permeating across occupations. This list of Digital Practitioner jobs and skills was then applied to the Scottish Labour Market to assess the economic value of Digital Practitioner jobs in Scotland.

Definition of the Digital Economy

E.g. cyber security, software engineering



Key Findings for Scotland



Estimated at almost 400,000, Digital Practitioner jobs in Scotland account for **15% of the total** workforce. This is comparable to the size of the Human Health and Social Work sector.



Digital practitioner roles contribute £34.6 billion in GVA to Scotland's economy, which represents around **25% of Scotland's GVA**.



At least **half** of all Digital Practitioner job postings require a **bachelor's degree or equivalent.**



The median advertised salary for Digital Practitioner job postings in Scotland was £38,627. This was 35% higher than the average median advertised salary across all Scottish job postings.



For further information or queries on the SSAs or any of our other products, please contact: RSA@sds.co.uk