



EDINBURGH

A case study on green jobs and skills development for people with low qualifications

Edinburgh is the capital city of Scotland. With a population of 527,620 in mid-2020, Edinburgh is Scotland's second-most populous city and the seventh-most populous city in the United Kingdom.¹ Between October 2020 and September 2021, the employment rate for people aged 16 to 64 in Edinburgh was 76.5 per cent and the unemployment rate was 3.9 per cent.²

3.9%
unemployment rate for
people aged 16 to 64
between Oct'20 and Sep'21

Context

The Scottish government has proposed a legally binding target of net zero emissions by 2045.³ In line with that, the City of Edinburgh launched its own plans in December 2021 to ensure it achieves net zero emissions by 2030. The 2030 Climate Strategy⁴ sets out the vision for meeting the city's toughest emissions reduction target to this date by reducing its transport emissions, reducing emissions from buildings and making homes more energy efficient. The strategy also includes plans for creating opportunities for new jobs and making Edinburgh a leader in green industries and innovations. It indicates that Edinburgh is well placed to secure many of 367,000 green jobs that are expected as part of Scotland's transition to a low-carbon economy. It specifically points to citizens and communities who are at greatest risk of poverty and outlines the crucial action needed to work with city partners to align skills development programmes to ensure access for people from all backgrounds to employment opportunities is created as part of Edinburgh's transition a net zero city.

Green job opportunities

National-level data on green job opportunities in Scotland or the UK

According to estimates from the Office of National Statistics (ONS),⁵ there were **20,500 green jobs** in **Scotland** in 2020, representing close to 10 per cent of all jobs in the **low carbon and renewable energy economy** across the UK.^{6,7} Most of these (64 per cent) jobs were concentrated in four sectors:



Anticipating that green jobs will be more present across all sectors of economy and across all occupations in future, Cedefop's EU Skills Panorama forecasts for employment growth are used to identify where more or fewer jobs are expected in general. These projections are available at the UK level for the 2020–2030 period. The growth is expected to be highest in professional services (422,600), administrative services (412,800), arts and recreation (355,400), wholesale and retail trade (225,000), and education (207,100).⁸ Occupations with the highest employment growth by 2030 are expected to be associate professionals, farm and related workers, elementary workers, managers, and service and sales workers (see **Annex A**).⁹

Considering Scotland's decarbonisation needs on the way to meet its 2045 net zero objective, a number of occupations were projected to require a significant expansion in Edinburgh's trained workforce. The largest potential for green jobs for people with low qualifications existed in Scotland in the buildings sector, where skills shortages were likely to occur in trades such as **plastering, drylining, glazing, plumbing and heating**, as well as the transport sector, where a surge in demand for **plant mechanics and fitters** was expected.¹⁰

Regional-level data on green job opportunities in eastern Scotland

In **eastern Scotland**, there were **80,447 jobs related to the circular economy**¹¹ (almost 8 per cent of all jobs in the region). There were 13,763 core circular jobs,¹² accounting for 17 per cent of all circular jobs in the region. Of these, **most related to the resource management¹³ and repair sectors**, generating 12,220 jobs (15 per cent of circular jobs in the region). The remaining 1,543 jobs were in the **production and supply of renewable energy**. Most circular jobs in

eastern Scotland were generated by enabling circular sectors (36,824 jobs and almost 46 per cent of circular jobs in the region). The majority of these jobs were in the **digital technology sector**, which alone generates **22,893 circular jobs** in the region. Some 29,860 circular jobs are generated by sectors indirectly supporting the circular economy (37 per cent of all circular jobs). These jobs are mainly generated through demand for core circular products or services through **tourism, education, manufacturing, wholesale, retail, public administration, healthcare and social work**. No data was identified about availability of green jobs at the city level.

The Skills-OVATE¹⁴ data give insights to job opportunities advertised online without distinction to green jobs but allows the filtering of vacancies suitable for people with low qualifications if we exclude occupations such as professionals, managers or researchers, which likely require a university degree. The analysis of 149,775 online job advertisements (OJAs) found in the Edinburgh and South East Scotland city region (see **Annex A**) shows that occupations in OJAs that would be suitable for people with low qualifications were care workers (6,385 OJAs), machine and plant operators (5,153), sales workers (4,895), office clerks (4,316), science and engineering technicians (4,154), metal and machinery workers (4,115), ICT technicians (3,202) and personal service workers (3,106)¹⁵ (see **Annex A**).

The specific search for green jobs carried out by RAND Europe (see **Methods**) identified 41 in Edinburgh and the eastern Scotland region. Most of the jobs were in the private sector (32) and were offered either by green employers (i.e. those from green industries), such as waste management, (28) or other employers (13). While only the minority of adverts (10) provided salary indications, the average annual salary in the region amounted to £41,108. Key sectors included other professional, scientific and technical activities (30) and education (7). Among the main occupations were science and engineering professionals (33) and teaching professionals (6). Most of these opportunities would not be suitable for people with low qualifications as most required tertiary education (see **Skills needed for green jobs**).

Future projection for green jobs in Edinburgh

Local forecasts for the 2024–2031 period expect that future employment growth in the Edinburgh and South East Scotland City Region Deal¹⁶ will be concentrated in a small number of sectors, with four of these accounting for 110,300 jobs (57 per cent): **wholesale and retail trade** (34,500, 18 per cent), **human health and social work** (32,300, 17 per cent), **education** (22,100, 11 per cent) and **administrative and support services** (21,400, 11 per cent).¹⁷ Occupations with the highest employment growth between 2024 and 2031 are expected to be caring personal services, health professionals, business and public service professionals, corporate managers, business and public service associate professionals, and managers/proprietors in agriculture and services.¹⁸

According to the Just Transition Jobs Tracker,¹⁹ there were about **26,358 jobs** in Edinburgh that were **expected to be in high demand in future** due to their **important role in the net zero economy**, representing 11 per cent of the demand for all jobs across Scotland.²⁰ These jobs included specialised positions in the green economy, such as wind turbine installers, but also

welders, builders and engineers already working to build the infrastructure of a green economy. Most of these jobs (62 per cent) were concentrated in six sectors:



Skills needed for green jobs

Future demand for green skills in Edinburgh is expected to concentrate around the three sectors with the highest green employment growth projections: **zero carbon energy** (primarily **offshore wind**), **buildings** and **transport**. While technical skills in the occupations listed above (e.g. plastering, drylining, glazing, plumbing and heating, transport mechanics) will be key, soft skills such as **team working** and **team living** are also expected to be important.²²

Existing gaps that are likely to be exacerbated by the transition to net zero, along with sector-specific skills challenges that are anticipated to occur on the back of expansion in activities required to meet the net zero targets, are provided below:



Zero carbon energy (offshore wind)

- Technical skills – mechanical, electrical, and control and instrumentation, blade and turbine technicians, including ICT skills.
- Advanced first aid and rescue.
- Offshore skills – working in confined spaces and at heights.
- Asset management, project management, leadership skills.
- Scientists – marine biology, geophysics, hydrography, oceanography.²³



Buildings

- Building envelope specialism.
- Plastering and drylining skills.
- Technical knowledge related to glazing.
- Construction site management skills.
- Plumbing and heating, ventilation, and air conditioning expertise.²⁴

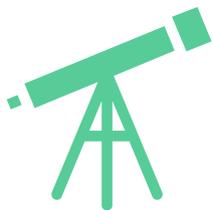


Transport

- Specialist building skills.
- Non-construction professional, technical, ICT, and other office-based skills (excluding management).
- Knowledge of plant maintenance and repair.
- Expertise in smart meters, electric vehicles (EVs) and batteries.
- EV maintenance skills²⁵

The analysis of skills in the Skills-OVATE²⁶ data for the Edinburgh and South East Scotland city region shows that the most frequently sought characteristics were soft skills, namely attitudes, communication, collaboration and creativity, generic programmes and qualifications,²⁷ or assisting and caring. This is not surprising as these skills are applicable across sectors and occupations that would require different technical or sector-specific skills. Employers also often looked for management skills, knowledge of business, administration and law, ability to work with computers, ICT skills, information skills, skills needed in engineering, manufacturing and construction, knowledge of health and welfare, as well as natural sciences, mathematics and statistics (see **Annex A**).²⁸

The analysis of green jobs identified by RAND Europe shows that most green job adverts in the Edinburgh and South East Scotland City Region Deal (36 of 41) did not indicate the minimum years of required experience. Only a few jobs required minimum two years (2) and the average was about four years of experience. In terms of qualifications needed, 34 adverts indicated at least a bachelor's degree and only 1 listed other specialised technical qualifications. This reflects both the employment structure in the region and the overrepresentation of some sectors in OJAs. In relation to skills, very few advertisements explicitly required green skills and those that did asked for knowledge of environmental topics and issues (21 out of 41), of climate change and protection (2) and of water management (2). Other skills sought after by employers included knowledge related to natural sciences, mathematics or statistics (28 of 41), management skills (22), working with computers (19), communication, collaboration and creativity (17), information skills (11), or working with machinery and specialised equipment (11).



While long-term (2024–2031) employment growth in the Edinburgh and South East City Region Deal is expected to be greatest for jobs that require high-level qualifications (Scottish Credit and Qualifications Framework (SCQF)²⁹ 7–10, i.e. from a higher education certificate to an honours degree), there is a need for people with qualifications at lower levels to meet the requirement in the region. Specifically, out of the 192,500 job openings expected by 2031, 40,100 (21 per cent) are expected to be open to individuals qualified at SCQF Level 5 (e.g. who have completed an apprenticeship or a vocational qualification), while a further 16,100 (9 per cent) will range from requiring SCQF Level 4 (e.g. a vocational qualification at that level or a national certificate with a total credit value of 72 credit points) to having no qualification requirements.³⁰

Overall, the number of jobs requiring a high-level qualification (Regulated Qualifications Framework³¹ Level 4 and above or RQF4+ or SCQF Level 7 and above)³² in the UK as a whole is expected to grow and the number of workers with qualifications at RQF Level 1 or below (entry level) will fall³³ (see also the Cedefop projections in **Annex B**).

Training and education provision for green skills

National-level information on training and education provisions for green skills in Scotland



The Climate Emergency Skills Action Plan (CESAP) 2020–2025³⁴ sets out the Scottish government’s plan to maximise the transition to net zero for the country, ensuring that Scotland’s workforce has the required skills. The CESAP focuses on both immediate action as well as the longer-term systemic change that will need to take place by 2045. It therefore recognises the need to mitigate potential risks and provide targeted support to communities and groups who are most likely to lose out from structural changes in employment.

The Green Jobs Workforce Academy³⁵ launched in August 2021 with an aim to help guide people of all ages through a process of identifying the skills they have and the skills they will need to find in order to secure green jobs.³⁶ Developed on behalf of the Scottish government by Skills Development Scotland (SDS),³⁷ the Academy operates as a nationwide online service that supports individuals interested in these jobs by providing access to career advisers and the right training to help their career progress.³⁸

Other measures in the Plan include establishing a Green Jobs Skills Hub that will cascade intelligence into the skills system on the numbers and types of green jobs that will be needed over the next 25 years and maximising the uptake of apprenticeships in green jobs, while also developing new work-based learning pathways.^{39,40} At the time of writing this, work to establish such a hub is still ongoing.⁴¹

Overall, agile and responsive work-based learning, including foundation, modern and graduate apprenticeships, represents a powerful lever for realising the transition to net zero by equipping individuals with in-demand green skills.⁴² In addition to direct skills and education provision, the roles of the Energy Skills Partnership (ESP)⁴³ in engaging with the college sector to establish a responsive, flexible approach to emerging priorities and of the Scottish Funding Council (SFC)⁴⁴ in supporting the Innovation Centres programme⁴⁵ are both key in this regard.⁴⁶

In Spring 2021, Zero Waste Scotland,⁴⁷ in partnership with Edinburgh Napier University,⁴⁸ also developed and launched a series of executive leadership modules for executive and senior leaders currently working in the built environment industry in Scotland who would like to gain an increased understanding about the circular economy and construction, national and international circular economy strategies, applying circular economy and leadership thinking to their own organisations, and identifying the skills required.⁴⁹

Regional-level information on training and education provisions for green skills in eastern Scotland

The Housing, Construction and Infrastructure (HCI) Skills Gateway,⁵⁰ worth £6m over eight years, was announced in early 2020.⁵¹ Supported by the Edinburgh and South East Scotland City Region Deal and funded by the Scottish government, the scheme aims to deliver integrated progression routes into construction careers by providing multi-level support to schools, new entrants to the sector and upskilling the existing workforce. Delivered by the region’s universities and colleges, the HCI Skills Gateway includes a diverse range of short work-ready courses in

renewable energy for homes, installing electric vehicle charging points, highways and roads infrastructure, environmental technologies and engagement with school pupils. The initiative is committed to inclusive growth and has an explicit focus on supporting unemployed entering this sector, as well as attracting more women into construction and engineering.⁵²

One interviewee mentioned that training regarding energy-friendly building insulation will become increasingly important.⁵³ However, they felt that individuals can be zero-skilled in construction and go straight into a basic training course with a great future opportunity in the insulation sector.⁵⁴

Relevant stakeholders and interventions

Within Edinburgh, 22 key stakeholders were identified in relation to green jobs and green skills. These can be grouped into **education and training providers** (e.g. University of Edinburgh,⁵⁵ Scotland Rural College Edinburgh Campus (SRUC)),⁵⁶ **government organisations** such as the Natural Environment Research Council (NERC)⁵⁷ or **local authorities** (e.g. the City of Edinburgh Council),⁵⁸ **civil society organisations** (e.g. Zero Waste Scotland,⁵⁹ Sniffer),⁶⁰ and private sector **employers** such as Wood Mackenzie⁶¹ or consultancies like Ecus⁶² and Jacobs.⁶³



When it comes to green interventions, only a few were specifically dedicated to people with low qualifications and most were tailored to young people. The most relevant interventions are outlined below.



Energy Efficiency Apprenticeships, Green Home Skills Academy

This project is implemented by Green Home Systems, in partnership with Edinburgh College. The partnership aims to create new energy efficiency apprenticeships to address skills shortages within the industry in helping achieve Scotland's energy efficiency targets.

It offers training modules on Cavity Walls, External Wall Insulation and Cold and Warm Roof Insulation, as well as in numeracy, ICT and communications. Apprenticeships are open to entrants of all ages.⁶⁴



The Environmental Placement Programme (EPP)

This initiative is delivered by Bright Green Business, an Edinburgh-based private company supporting Scottish businesses in implementing improved environmental practices. The programme aims to offer project-based placements to students and recent graduates with a college or university background looking to gain experience in the environmental sector.

EPP placements have an environmental focus, with projects that can vary from environmental management and carbon behaviour strategies to active travel, waste management and community engagement. The programme aims to ensure that students and graduates are gaining work experience, with an emphasis on ownership and responsibility for the work they produce.

The placements are paid and run all-year round. The majority are short-term ranging from 8 to 12 weeks and take place with organisations and companies across Scotland.⁶⁵



Creative Pathways Environmental Design Programme

Creative Pathways was a 12-week employability programme for 16–26-year-olds who were not in education, employment or training. The programme was run in Edinburgh by Impact Arts between 2016 and 2021.

The programme provided activities for young people with multiple barriers to education and employment and aimed to provide them with life skills.

Every participant was supported to complete a qualification. Most young people gained the Scottish Qualifications Authority (SQA) Employability Award and worked towards units such as Problem Solving, Preparing for Employment and Personal Development.

Between 2016 and 2021, a total of 622 young people participated in the programme, over half of whom gained qualifications. According to an evaluation, nearly 70 per cent of all participants progressed to further education, employment or training.⁶⁶



Renewable & Energy Efficiency Training Centres

Supported by a £500,000 investment by the ScottishPower Energy Networks Green Economy Fund, which is to be managed by the Energy Skills Partnership (ESP), the initiative will establish a Renewable & Energy Efficiency Training Centre, together with a centre of excellence for Insulation in Edinburgh College.

The aim of the two new centres will be to increase Scotland's capability and capacity to deliver the skills needed to create green jobs and accelerate the transition to net zero by 2045, as well as boost local economic growth.

In addition, the initiative will support staff training and continuing professional development in current and emerging technologies, as well as support overall curriculum development.

The launch of the two new centres in Edinburgh College was announced in June 2021.⁶⁷

Summary conclusion

- In Edinburgh, the largest **potential for green jobs for people with low qualifications** exists in construction (and includes occupations such as plasterers, dryliners, glaziers, plumbers and heating technicians), in transport (as plant mechanics and fitters) and in manufacturing (as machine and plant operators, and metal and machinery workers).
- **Green skills** forecast to be needed in Edinburgh include technical skills, such as mechanical, electrical, and control and instrumentation skills, blade and turbine knowledge, and offshore capabilities, such as working in confined spaces and at heights. Knowledge of environmental topics and issues, climate change and protection, as well as water management were also sought by employers. Among **other skills** sought after by employers were knowledge related to natural sciences, mathematics or statistics, management skills, working with computers, communication, collaboration and creativity, information skills, and working with machinery and specialised equipment.
- There are some recent initiatives for developing green skills in Scotland (e.g. Green Jobs Workforce Academy, Green Jobs Skills Hub). Specifically in Edinburgh, the Housing, Construction and Infrastructure (HCI) Skills Gateway supports career development in construction for new entrants and existing workforce through short courses in renewable energy, clean transport and environmental technologies. Opportunities for upskilling executive and senior leaders in construction are also available.
- Only a few **interventions** aimed at developing green skills for people with low qualifications. Most of these focused on young people.

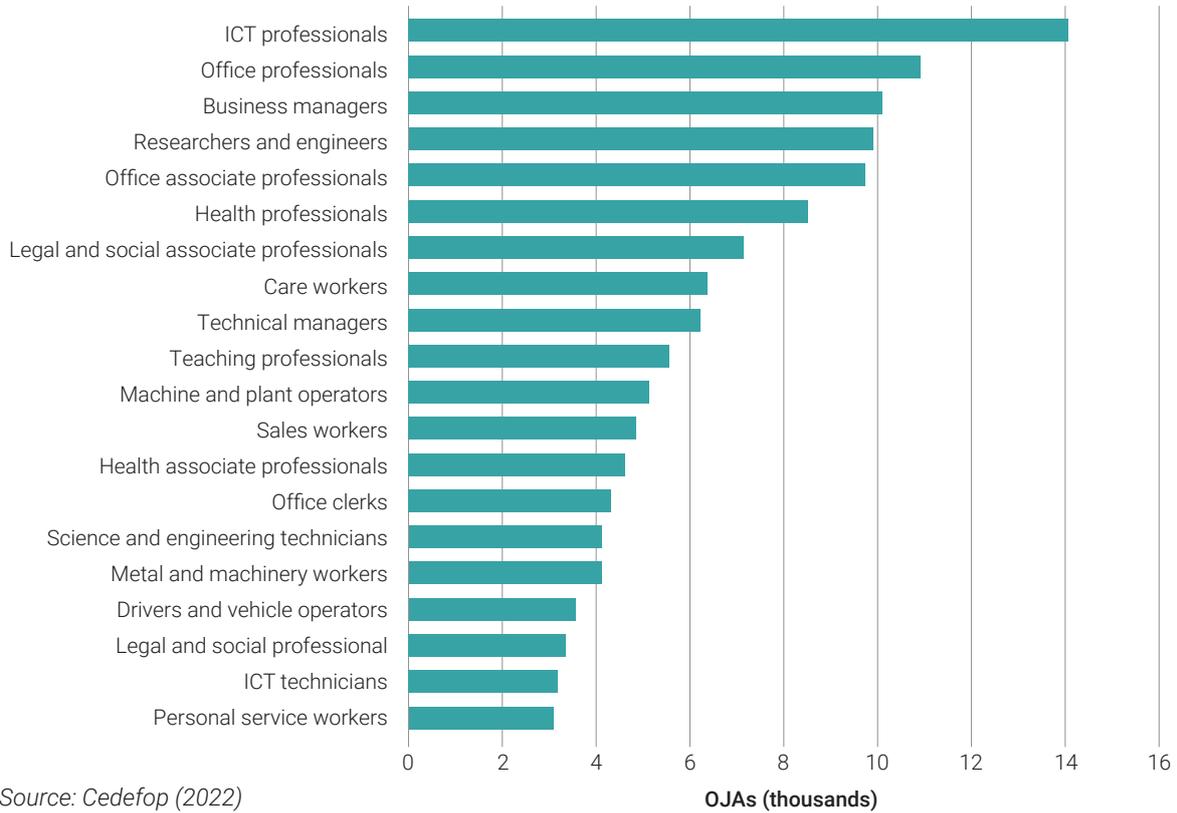
Methods

- 1. Targeted documentation review:** The review followed a protocol that spelled out the search terms, inclusion and exclusion criteria (see details in the final report).⁶⁸ The full list of sources consulted is presented in **Notes and References**.
- 2. Analysis of EU Skills Panorama data:** The analysis included Cedefop projections of future employment growth across all sectors and occupations, as well as the changes in the level of education expected in the UK by 2030. The analysis used UK data based on research conducted by Cedefop before the UK's exit from the European Union on 31 January 2020. The dataset uses NACE Rev. 2 (statistical classification of economic activities) and International Standard Classification of Occupations (ISCO-08).
- 3. Analysis of Skills-OVATE data:** The database provided by Cedefop collates OJAs from multiple sources, including private job portals, public employment service portals, recruitment agencies, online newspapers and corporate websites. The dataset uses NACE Rev. 2 (statistical classification of economic activities) and classification of European Skills, Competences, Qualifications and Occupations (ESCO). In December 2021, there were 149,775 OJAs in the Skills-OVATE database for the Edinburgh and South East Scotland city region covering the period from the third quarter of 2020 to the second quarter of 2021. The database does not allow filtering out green job vacancies or opportunities only for people with low qualifications. OJAs do not reflect the market demand for jobs across all occupations and sectors equally well: some sectors or professions are overrepresented if they are more likely to advertise online, while others are underrepresented.
- 4. Online search for green jobs and data analysis:** The search of www.greenjobs.co.uk and uk.indeed.com conducted on 23 September 2021 identified 41 green job advertisements in the Edinburgh and South East Scotland city region. Data were extracted, coded and cleaned. Descriptive statistics was used to analyse the results.

Annex

Annex A. Analysis of Skills-OVATE data (Q3 2020–Q2 2021)

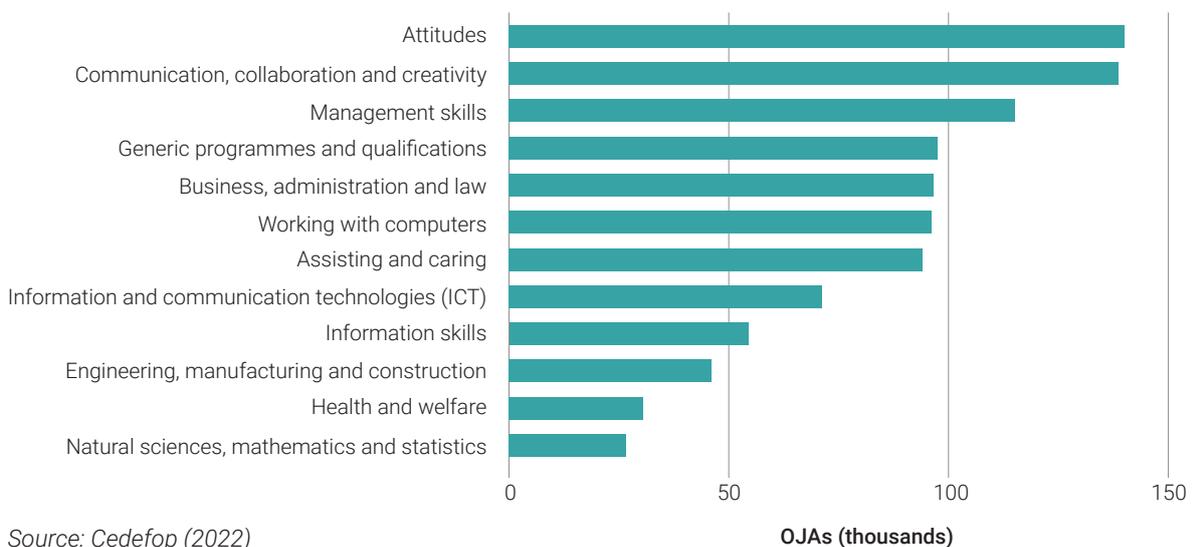
Figure 1. Online job advertisements (OJAs) per occupation (Edinburgh)



Source: Cedefop (2022)

Note: Cut-off point is the median of OJAs per occupation (3,106).

Figure 2. Most requested skills – level 2 ESCO (Edinburgh)

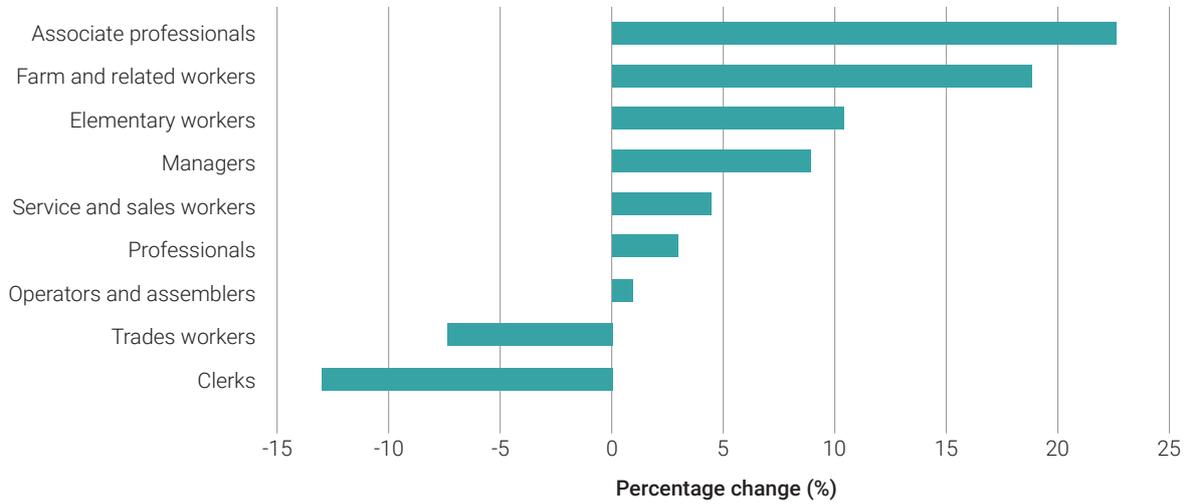


Source: Cedefop (2022)

Note: Cut-off point is the median of OJAs per skill (26,347).

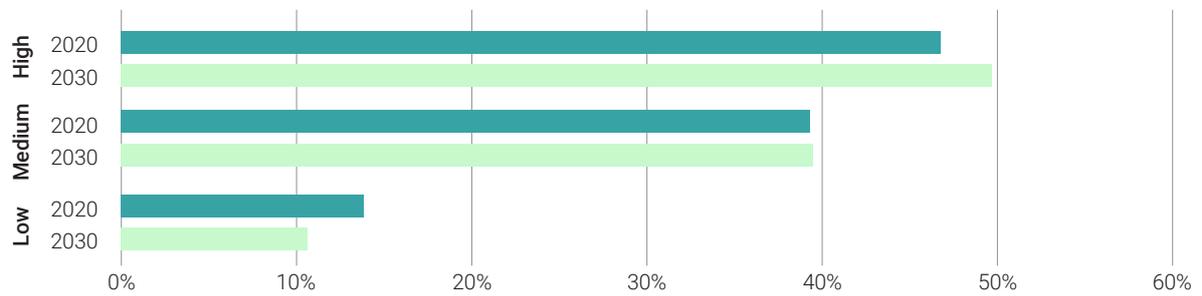
Annex B. Analysis of EU Skills Panorama data

Figure 3. Future employment growth (% change) across occupations in the UK in 2020–2030



Source: Cedefop (2021)

Figure 4. Current and future employment for educational level possessed in the UK



Source: Cedefop (2021)

Notes and References

- 1 Office for National Statistics. 2021. 'Estimates of the population for the UK, England and Wales, Scotland and Northern Ireland: Mid-2020.' As of 5 June 2022: <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/datasets/populationestimatesforukenglandandwalesscotlandandnorthernireland>
- 2 Nomis, Office for National Statistics. 2022. 'Labour Market Profile – City of Edinburgh.' As of 5 June 2022: <https://www.nomisweb.co.uk/reports/lmp/la/1946157416/report.aspx>
- 3 Scottish Government. 2021. 'Reaching Net Zero.' As of 5 June 2022: <https://www.gov.scot/news/reaching-net-zero-1/>
- 4 The City of Edinburgh Council. 2021. '2030 Climate Strategy.' As of 5 June 2022: <https://www.edinburgh.gov.uk/downloads/file/30353/2030-climate-strategy>
- 5 Office for National Statistics (homepage). 2022. As of 5 June 2022: <https://www.ons.gov.uk/>
- 6 Robins, N., A. Gouldson, W. Irwin & A. Sudmant. 2019. *Investing in a just transition in the UK: How investors can integrate social impact and place-based financing into climate strategies*. London School of Economics.
- 7 Office for National Statistics. 2022. 'Low carbon and renewable energy economy estimates.' As of 5 June 2022: <https://www.ons.gov.uk/economy/environmentalaccounts/datasets/lowcarbonandrenewableenergyeconomyfirstestimatesdataset>
- 8 Cedefop. 2021. 'EU Skills Panorama: Skills Intelligence, United Kingdom.' As of 5 June 2022: <https://www.cedefop.europa.eu/en/tools/skills-intelligence/countries?occupation=§or=&country=UK#5>
- 9 Cedefop. 2021. 'EU Skills Panorama: Skills Intelligence, United Kingdom.' As of 5 June 2022: <https://www.cedefop.europa.eu/en/tools/skills-intelligence/countries?occupation=§or=&country=UK#5>
- 10 Transition Economics. 2021. 'Green Jobs in Scotland.' Scottish Trade Union Congress. As of 5 June 2022: https://www.scottishconstructionnow.com/uploads/STUC_Green_Jobs.pdf
- 11 The circular economy is an economic and industrial development model based on the principles of reducing consumption of natural resources, designing out waste and pollution, keeping products and materials in use for as long as possible and extracting maximum value from them while in use, and recycling the materials at the end of each service life. It is a restorative and regenerative system underpinned by innovative technologies and integrated services, strengthened local and regional supply chains, and the decarbonisation of energy supply. See Zero Waste Scotland & Circle Economy. 2020. 'The Future of Work: Baseline Employment Analysis and Skills Pathways for the Circular Economy in Scotland.' As of 5 June 2022: https://assets.website-files.com/5d26d80e8836af2d12ed1269/602f9914a0d4b61b91af1d2e_ZWS1543%20Future%20of%20Work%20-%20Emp%20%26%20Skills%20report%20FINAL%20compressed.pdf
- 12 Jobs in the circular economy, shortly 'circular jobs', include: (i) core circular jobs (i.e. jobs that ensure that raw material cycles are closed and thus form the core of the circular economy, such as those in renewable energy, repair, and waste and resource management sectors); (ii) enabling circular jobs (i.e. jobs that enable the acceleration and upscaling of core circular activities and thus form the supporting shell, such as jobs in leasing, engineering and digital technology, albeit only those that actually contribute to circularity); and (iii) indirect circular jobs (i.e. jobs that provide services to the primary circular activities above and thus form the activities that indirectly uphold the circular economy, for example, jobs in education, logistics and the public sector). For more information on how 'circular' jobs differ from 'green' jobs, see Zero Waste Scotland & Circle Economy. 2020. 'The Future of Work: Baseline Employment Analysis and Skills Pathways for the Circular Economy in Scotland.' As of 5 June 2022: https://assets.website-files.com/5d26d80e8836af2d12ed1269/602f9914a0d4b61b91af1d2e_ZWS1543%20Future%20of%20Work%20-%20Emp%20%26%20Skills%20report%20FINAL%20compressed.pdf
- 13 This includes jobs associated with both circular and non-circular activities in the resource management sector as this could not be corrected on a regional level.

- 14 Skills-OVATE database by Cedefop collates online job advertisements (OJAs) from multiple sources, including private job portals, public employment service portals, recruitment agencies, online newspapers and corporate websites. In December 2021, there were 149,775 OJAs in the Skills-OVATE database for the Edinburgh and South East Scotland city region. The database does not allow filtering out green job vacancies only. OJAs do not reflect the market demand for jobs across all occupations and sectors equally well: some sectors or professions are overrepresented if they are more likely to advertise online, while others are underrepresented.
- 15 Cedefop. 2022. Skills-OVATE data. Occupations such as professionals, managers or researchers, were excluded, as these likely required a university degree. Cut-off point was the median of OJAs per occupation (3,106).
- 16 Edinburgh and South East Scotland city region covers the city of Edinburgh, Scottish Borders, East Lothian, Fife, Midlothian and West Lothian local authorities.
- 17 Skills Development Scotland. 2021. Regional Skills Assessments: Edinburgh and South East City Deal July 2021.' As of 5 June 2022: <https://www.skillsdevelopmentscotland.co.uk/media/47109/rsa-report-edinburgh-and-south-east-city-deal.pdf>
- 18 Skills Development Scotland. 2021. Regional Skills Assessments: Edinburgh and South East City Deal July 2021.' As of 5 June 2022: <https://www.skillsdevelopmentscotland.co.uk/media/47109/rsa-report-edinburgh-and-south-east-city-deal.pdf>
- 19 The Just Transition Jobs Tracker identifies the number of current jobs that need significant upskilling, and those that will be in high demand, as a result of the push to net zero emissions to tackle the climate crisis. See Place-based Climate Action Network. 2022. 'Tracking Local Employment in the Green Economy: The PCAN Just Transition Jobs Tracker.' As of 5 June 2022: <https://pcancities.org.uk/tracking-local-employment-green-economy-pcan-just-transition-jobs-tracker>
- 20 Robins, N., A. Gouldson, W. Irwin & A. Sudmant. 2019. *Investing in a just transition in the UK: How investors can integrate social impact and place-based financing into climate strategies*. London School of Economics.
- 21 Robins, N., A. Gouldson, W. Irwin & A. Sudmant. 2019. *Investing in a just transition in the UK How investors can integrate social impact and place-based financing into climate strategies*. London School of Economics.
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- 24 Forbes, D., I. Hill & S. Lilley. 2018. 'Local Construction Skills Needed for Scotland.' CITB. As of 5 June 2022: https://www.citb.co.uk/media/cafn5a0d/local_construction_skills_needs_scotland_summary_july2018.pdf
- 25 Transition Economics. 2021. 'Green Jobs in Scotland.' Scottish Trade Union Congress. As of 5 June 2022: https://www.scottishconstructionnow.com/uploads/STUC_Green_Jobs.pdf
- 26 Cedefop. 2022. Skills-OVATE data.
- 27 Generic programmes and qualifications are those providing fundamental and personal skills education that cover a broad range of subjects and do not emphasise or specialise in a particular broad or narrow field. See ESCO (homepage). 2022. As of 5 June 2022: <https://ec.europa.eu/esco/portal/skill>
- 28 Cedefop. 2022. Skills-OVATE data. Cut-off point was the median of OJAs per skill (14,428).
- 29 For an understanding of the different levels of the Scottish Credit and Qualifications Framework (SCQF), see Scottish Credit and Qualifications Framework. 2022. 'The SCQF Interactive Framework.' As of 5 June 2022: <https://scqf.org.uk/about-the-framework/interactive-framework/>
- 30 Skills Development Scotland. 2021. 'Regional Skills Assessments: Edinburgh and South East City Deal July 2021.' As of 5 June 2022: <https://www.skillsdevelopmentscotland.co.uk/media/47109/rsa-report-edinburgh-and-south-east-city-deal.pdf>

- 31 Gov.uk. 2022. 'What qualification levels mean.' As of 5 June 2022: <https://www.gov.uk/what-different-qualification-levels-mean/list-of-qualification-levels>
- 32 The Scottish Credit and Qualifications Framework (SCQF) has more levels than the RQF. SCQF Level 7 is equivalent to RQF Level 4, SCQF Level 10 is equivalent to RQF Level 6 and SCQF Level 11 is equivalent to RQF Level 7.
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This study focused on people with low qualifications, meaning those with at most a lower secondary qualification who experience a high risk of poverty and social exclusion, and explored green job opportunities that exist for them, including those that would require reskilling (training to obtain different skills) or upskilling (training to obtain more advanced skills). In this study (unless stated otherwise), green jobs are understood as jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources, and green skills denote skills needed to adapt products, services and processes to climate change and the related environmental requirements and regulations. Evidence presented here includes national-level data (where regional and local information was not available) and focuses on data specific to green jobs or people with low qualifications. Full details can be found in the main report.

For more information on this publication, visit www.rand.org/t/RRA1603-1

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