FRANKFURT

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

The region of Darmstadt constitutes one of three districts of the German state of Hessen. The region's four major cities are Frankfurt am Main (hereinafter Frankfurt), the city of Darmstadt, Offenbach and Wiesbaden.[1] In 2019, almost 4 million people lived in the district of Darmstadt.[2] About 791,232 people lived in Frankfurt, making it the largest city in the German state of Hessen and the fifth largest city in Germany.[3] In 2020, about 164,934 people lived in the nearby city of Darmstadt. Both cities are ethnically diverse, with many inhabitants holding foreign passports and/or are second or third generation immigrants.[4] In terms of economic output, the district of Darmstadt is one of Germany's most productive regions.[5] Frankfurt is home to a variety of important financial institutions, including the European Central Bank.[6] According to statistics published by the Federal German Employment Agency (*Deutschen Arbeitsagentur*),[7] there were 603,150 employees[8] in the city of Frankfurt in 2021.[9] Of these, 45 per cent of workers were female and 55 per cent were male. Additionally, 7 per cent were under the age of 25, about 19 per cent were over the age of 55 and the remainder were between 25 and 55 years of age.[10] In February 2022, there were about 25,307 people registered as unemployed in the city of Frankfurt.[11]

25,307
people registered as unemployed in the city of Frankfurt in Feb 2022

Context

Hessen has its own sustainability strategy that aims to support the development of sustainable communities, sustainable (food) consumption and sustainable business practices.[12] In addition, Hessen's Integrated Climate Protection Plan 2025 (*Integrierter Klimaschutzplan Hessen 2025*) emphasises the importance of creating synergies between policies aimed at environmental protection and policies relating to health, education and the economy.[13] The Climate Protection Plan 2025 points out that an ambitious climate change policy will economically constitute a 'no-regret' policy. This means that the investments made towards protecting the environment are expected to outweigh any costs associated with the transition towards a 'green economy'.[14]

Green job opportunities

Regional-level data on green job opportunities in the district of Darmstadt

The Federal German Employment Agency divides workers by four levels based on skills and qualifications: experts (*Experten*), specialists (*Spezialisten*), professionals (*Fachkräfte*), and assistants and entry-level workers (*Helfer- und Anlerntätigkeiten*).[15] Out of these categories, jobs on the 'assistant' level are of particular interest for this document given its focus on green employment for people with low qualifications. The graphic below shows the greatest sectors of employment on the assistant level in four major cities in the district of Darmstadt: Frankfurt, Darmstadt city, Wiesbaden and Offenbach in 2021.[16]

Sectors with largest numbers of employed people with low qualifications in the district of Darmstadt

Frankfurt

Building maintenance; gardening and landscaping (8,990)

Gastronomy (6,040)

Social services (excluding care homes and related institutions) (5,580)

Darmstadt (City)

Building maintenance; gardening and landscaping (5,100)

Social services (excluding care homes and related institutions) (3,790)

Homes (excluding leisure and holiday homes) (3,690)

Wiesbaden

Building maintenance; gardening and landscaping (3,450)

Social services (excluding care homes and related institutions) (2,430)

Construction (1,800)

Offenbach

Building maintenance; gardening and landscaping (3,070)

Construction (2,880)

Employment services (2,630)

The Skills-OVATE data gives 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 161,101 online job advertisements (OJAs) found in the district of Darmstadt, which also covers Frankfurt (see **Annex A**), shows that occupations in OJAs that would be suitable for people with lower qualifications were technical labourers (9,793), customer clerks (4,562), accounting clerks (3,861), sales workers (3,515), care workers (3,515), construction workers (3,081), metal and machinery workers (2,850), and machine and plant operators (2,850).

Local-level data on green jobs in the greater Frankfurt region

The specific search for green jobs carried out by RAND Europe (see **Methods**) identified 39 jobs in the greater Frankfurt region. Most of these were in the private sector (36) and a small number were in the public sector (3). More than half of the job ads were green jobs at green employers (21), about 11 ads were green jobs at regular employers and 7 ads were regular jobs at green employers. Only one of the 39 ads indicated an annual yearly salary, which was €61,949 for the position of a researcher (*Wissenschaftliche Mitarbeiterin*). Key sectors included land transport and transport via pipelines (12), electricity, gas, steam and air conditioning supply (6), other professional, scientific and technical activities (4), and specialised construction activities (3).

Sector growth projections in Germany and in the region of Hessen

Anticipating that green jobs will be more present across all sectors of the economy and across all occupations in the 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 country level for the 2020–2030 period. For Germany, growth is expected to be highest in health and social care (505,000), professional services (238,200), wholesale and retail trade (212,500), accommodation and food (201,700), transport and storage (190,400), administrative services (113,500) and manufacturing (99,700). Occupations with the highest employment growth by 2030 are expected to be farm and related workers, professionals, associate professionals, elementary workers, and operators and assemblers (see **Annex B**).

Hessen's Climate Protection Plan 2025 estimates that future investments in climate protection policies will lead to an increase of 2.3 per cent (approximately €5–6bn) in GDP in the region. It will further lead to an estimated increase of 1.5 per cent in employment (approximately 35,000 to 40,000 employees). These gains are anticipated to be particularly visible in sectors such as construction and building, trade, traffic and farming.
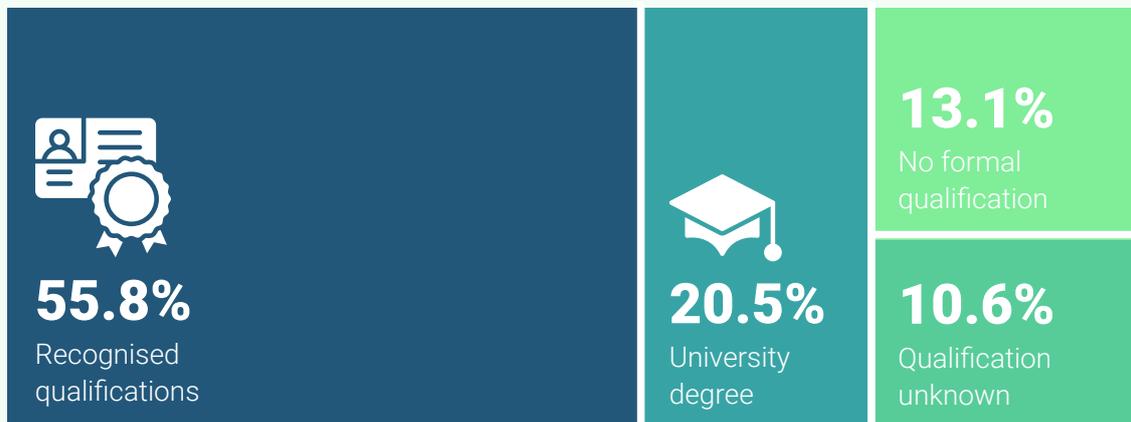
Skills needed for green jobs

Regional-level data on qualifications needed for green jobs in Hessen

Generally speaking, the majority of the working population in Hessen has at least one recognised qualification (see **Figure 1**). About 13.1 per cent of people do not

have any recognised qualification. This trend is in line with broader trends across Germany where the number of people with low qualification is decreasing.

Figure 1. Employees in Hessen by level of qualification

55.8%
Recognised qualifications

20.5%
University degree

13.1%
No formal qualification

10.6%
Qualification unknown

Source: Hessisches Statistisches Landesamt (2021)[17]

Local-level data on skills and qualifications needed for green jobs in Frankfurt

The analysis of skills in the Skills-OVATE[18] data showed that, for Frankfurt and the surrounding region, the most frequently sought skills were attitudes, languages, communication, collaboration and creativity, and working with colleagues.[19] Employers also often looked for skills in the following areas: business, administration and law, generic programmes and qualifications, and information and communication technologies (see **Annex A**).[20]

The analysis of green jobs identified by RAND Europe in the greater Frankfurt region showed that, in relation to skills, very few advertisements explicitly required green skills (7 out of 39), including knowledge of environmental topics and issues (4), knowledge of climate change and protection (2), knowledge of aspects of sustainable building (1) and knowledge of water management (1). Other skills sought by employers included engineering, manufacturing and construction (22), languages (21), working with computers (19), working independently (16), communication, collaboration and creativity (14), and working with machinery and specialised equipment (11).

Local-level data on qualifications needed in the greater Frankfurt area

The analysis of green jobs identified by RAND Europe shows that most green jobs adverts in the greater Frankfurt region make some sort of reference to a minimum number of years of required experience (30 out of 39), but often without being very specific: 14 of the 39 job ads asked for 'some experience' (without specifying a number of years) and five job ads asked for 'many years' of experience. Only 11 of the 39 ads specified a number of years: two ads required five years of experience, four ads required three years of experience and five of the 39 ads constituted entry level positions (i.e. not requiring any experience). In terms of qualifications needed, a total of 22 ads required some sort of university-level education. Out of those, 16 asked for 'university

degrees', but did not specify any particular level, three ads asked for bachelor's degrees, two for master's degrees and one ad asked applicants to be 'enrolled in a university degree'. However, 17 of the 39 ads did not require university-level education: eleven required 'apprenticeships', four required a 'technical diploma' and two ads did not require any qualifications (see **Figure 2**).

Figure 2. Qualifications needed for job found by RAND (39)

22 University education

15 Other qualifications

2 No formal qualifications
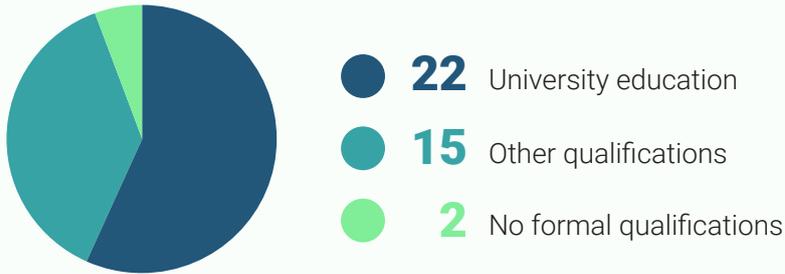
Training and education provision for green skills

Regional-level data

In line with an integrated policy approach towards sustainability for the region (see **Context**), there are a variety of training and education provisions aimed at equipping people with the right knowledge and skills to support the transition towards a green economy. Inspired by the UNESCO initiative 'Education for Sustainable Development',[21, 22] Hessen has made sustainability education part of the training for teachers who teach children as young as 0 to 10 years old.[23] In addition, some continuing education courses for adults have been made available.

An example of an important regional initiative is the 'Climate education for sustainable development' programme (*Klimabildung für nachhaltige Entwicklung (BNE)*). Available for participants of all ages, this course tries to enable participants to make increasingly sustainable decisions in all areas of their lives. This includes, but is not limited to, choices around food and diet, energy use, transport and retail consumption.[24] To enable participants to make sustainable choices, the course teaches so-called 'shaping skills', which refers to 'skills needed to be able to shape the future'.[25, 26] Shaping skills include, but are not limited to, skills such as being able to obtain information independently, being open to other viewpoints and being able to think and act with foresight.[27] It further includes the ability to communicate with others, work collaboratively with others to solve problems, practice self-reflection and feel empathy towards others.[28] The initiative has been ongoing since 2008.[29]

Local-level data on training and education provisions for green skills in the greater Frankfurt area
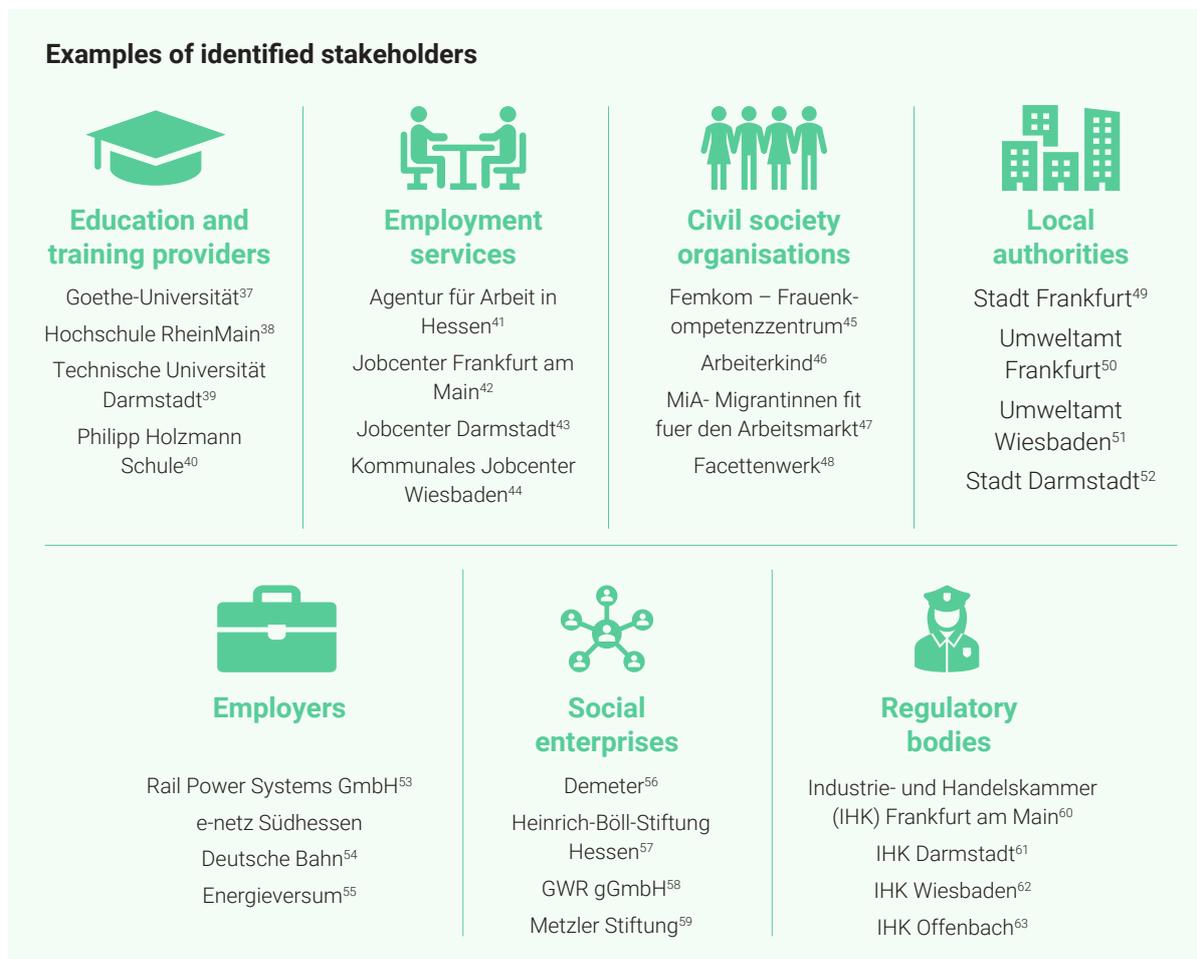
The city of Frankfurt offers a range of courses related to improving people's relationship with the environment. It is home to the Green Economy Academy, which aims to share practices and

facilitate information sharing about the green economy.[30] Given the city's large financial centre, there are also courses that lead to certificates in 'green finance'.[31] Focusing on young children, the city of Darmstadt offers an 'Environment diploma' (*Umweltdiplom*) for children.[32]

One interviewee commented that apprenticeships could provide training pathways.[33] However, even though apprenticeships used to be specifically aimed at people with low qualifications, the interviewee noted that there has been a shift towards apprenticeships programmes increasingly requiring qualifications as entry requirements.[34] Even in cases where school leaving qualifications are not essential for the job, the interviewee has observed that there has been a shift from lower secondary school leaving certificates to intermediate secondary school leaving certificates, and certainly in some cases towards A-levels.[35] The interviewee recommends that more low-threshold training opportunities are needed to help people with low qualifications access green jobs. [36]

Relevant stakeholders and interventions

In Frankfurt and the surrounding area, 93 stakeholders were identified in relation to green jobs and green skills. Aside from employers (23), these can be grouped into local authorities (6), civil society organisations (4), employment services (5), training organisations (6), social enterprise (4) and regulatory bodies (5). At least 12 stakeholders fell into 'multiple' categories. The graphic below shows some examples of stakeholders identified.

Examples of identified stakeholders

Education and training providers

Goethe-Universität[37]

Hochschule RheinMain[38]

Technische Universität Darmstadt[39]

Philipp Holzmann Schule[40]

Employment services

Agentur für Arbeit in Hessen[41]

Jobcenter Frankfurt am Main[42]

Jobcenter Darmstadt[43]

Kommunales Jobcenter Wiesbaden[44]

Civil society organisations

Femkom – Frauenkompetenzzentrum[45]

Arbeiterkind[46]

MiA- Migrantinnen fit fuer den Arbeitsmarkt[47]

Facettenwerk[48]

Local authorities

Stadt Frankfurt[49]

Umweltamt Frankfurt[50]

Umweltamt Wiesbaden[51]

Stadt Darmstadt[52]

Employers

Rail Power Systems GmbH[53]

e-netz Südhessen

Deutsche Bahn[54]

Energieversum[55]

Social enterprises

Demeter[56]

Heinrich-Böll-Stiftung Hessen[57]

GWR gGmbH[58]

Metzler Stiftung[59]

Regulatory bodies

Industrie- und Handelskammer (IHK) Frankfurt am Main[60]

IHK Darmstadt[61]

IHK Wiesbaden[62]

IHK Offenbach[63]

When it comes to green interventions, the Frankfurt area offers a diverse set of initiatives. Although some catered to other disadvantaged groups, few were specifically dedicated to people with low qualifications. The most relevant interventions are outlined below.

MINT Girls Camps Hessen[64]

These summer holiday camps focus on providing girls between 14 and 16 years of age training in STEM subjects. The intervention specifically targets girls who have 'only' completed lower secondary school qualifications (e.g Haupt-und Realschule). The week-long trainings have been running since 2018. About 12 girls can participate in each course.

Facettenwerk – Training[65]

This organisation provides specific apprenticeship programmes, education and training opportunities, and employment support for people with disabilities. Interventions include green space management and gardening. The organisation further supports participants by gaining work experience through apprenticeship-style programmes. During these two-year programmes, participants gain on-the-job experience three days per week and receive classroom-style theoretical training one day per week. Participants receive a certificate following successful completion of the programme.

Frankfurt Spring School on Conservation Project Management[66]

This is a four-week long intensive education course. Target groups include people either enrolled in university or people in entry-level positions related to the environment. The course covers a range of topics to help people become successful project managers in conservation. This includes project management concepts, budget management, basic human resource concepts and communication skills (including presentation skills).

Demeter Akademie[67]

One of the biggest certifiers of organic foods in Germany, Demeter also offers webinars, seminars, training courses, apprenticeships programmes and support for entrepreneurs through the Demeter Akademie. The key focus is to provide awareness and training to people working in organic agriculture and food production.

Summary conclusion

- The state of Hessen, and accordingly, the district of Darmstadt (including Frankfurt) has enacted an integrated policy framework focused on increased sustainability across all areas of life. While this sounds like a holistic approach, there is little mention of specifically preparing workers for green jobs.

- Across the four biggest cities in the district of Darmstadt (Frankfurt, Darmstadt, Wiesbaden and Offenbach), the largest number of people with low qualifications (*Helfer*) work in the building maintenance sector and the gardening and landscaping sector. Other important sectors include the social services sector, construction, homes and employment services.

- Existing training provisions seem to focus on supporting people to make sustainable choices in all areas of the lives, not just on gaining skills for employment in the green sector. There are some more specific initiatives, such as Green Finance certifications. However, these seem more geared towards high-skilled individuals.

- There is a wide variety of relevant stakeholders related to the green economy in the district of Darmstadt. This includes employers, civil society organisations, local authorities, employment services, training organisations, social enterprises and regulatory bodies. Few interventions in the region focus on supporting people with low qualifications into green jobs specifically.

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 Germany by 2030. 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 161,101 OJAs in the Skills-OVATE database for Darmstadt (including Frankfurt) 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 jobverde.de conducted on 23 September 2021 identified 39 green job advertisements in Frankfurt and surrounding area (NUTS code DE71). Data was extracted, coded and cleaned. Descriptive statistics was used to analyse the results.

Annex

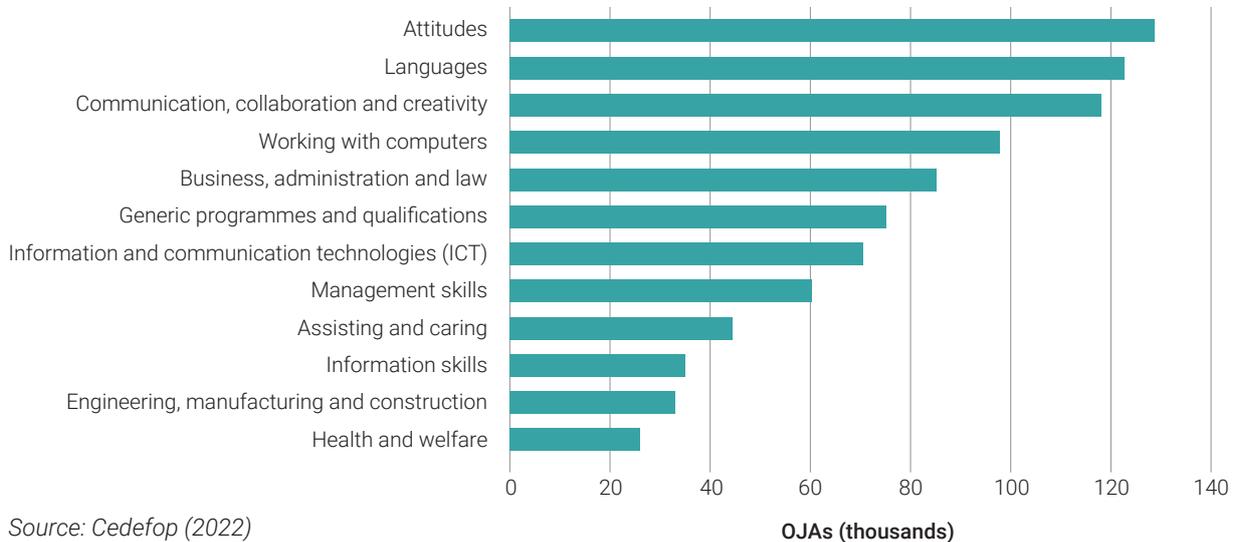## Annex A. Analysis of Skills-OVATE data (Q3 2020–Q2 2021)

Figure 3. Online job advertisements (OJAs) per occupation (Darmstadt Government District, including Frankfurt am Main)
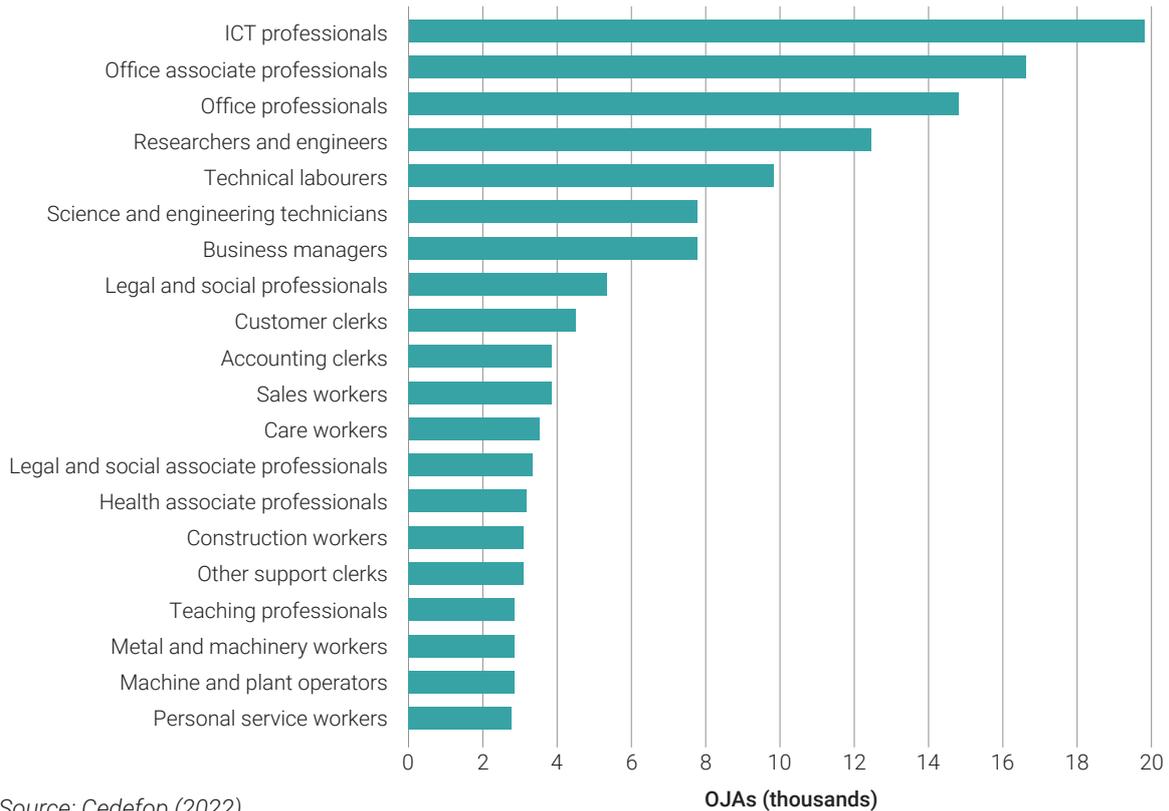
Source: Cedefop (2022)

Note: Cut-off point is the median of OJAs per occupation (2,752).

Figure 4. Most requested skills – level 2 ESCO (Darmstadt Government District, including Frankfurt)
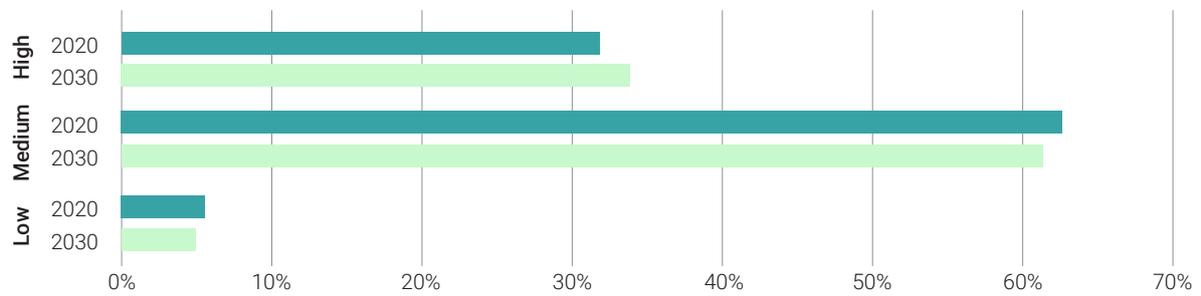

Source: Cedefop (2022)

Note: Cut-off point is the median of OJAs per skill (26,359).

Annex B. Analysis of EU Skills Panorama data

Figure 5. Current and future employment for educational level possessed in Germany

Source: Cedefop (2021)

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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.

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