



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

Berlin is the capital city of Germany. In 2021, its population was 3,766,082.<sup>1</sup> In January 2022, there were 184,978 people unemployed in Berlin.<sup>2</sup> Although the unemployment rate is declining, it is anticipated that it will take a long time before levels of unemployment in Berlin will return to the same levels as prior to the start of the Covid-19 pandemic.<sup>3</sup> Unemployment in Germany is closely connected to people's levels of qualifications.<sup>4</sup> Across Germany, almost half of people registered as unemployed in 2019 were people with low levels of qualifications.<sup>5</sup> About 17 per cent of people with low qualifications living in Germany faced unemployment in 2019.<sup>6</sup> Unemployed people over the age of 55 tend to take longer to re-enter the labour market than younger people.<sup>7</sup> In Berlin, youth have a relatively high drop-out rate: about 8 per cent of young people drop out of high school and 30 per cent from vocational training.<sup>8</sup>

### Context

Germany adopted its first Sustainability Strategy in 2002.<sup>9</sup> This strategy is updated every four years. In accordance with the United Nation's 2030 Agenda for Sustainable Development, Germany revised its strategy and adopted the National Sustainable Development Strategy in 2017.<sup>10</sup> This policy context provides the framework for the development of green jobs and skills in Germany.<sup>11</sup> In 2006, Berlin passed a local version of the federal sustainability strategy ('Lokale Agenda 21'), which signifies the city administration's commitment to creating a 'sustainable Berlin'.<sup>12</sup> Part of this local agenda focuses on work and the economy.

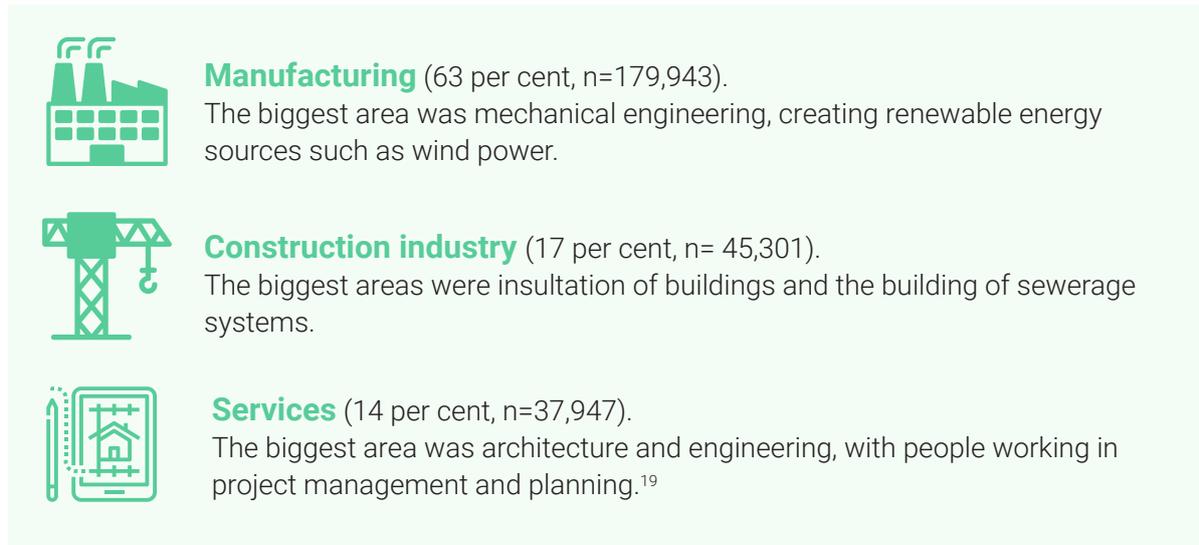
According to the Federal Agency for the Environment (*Umweltbundesamt*), about 2.8 million people (or 6.4 per cent of workers) worked in the environmental sector across Germany in 2017.<sup>13</sup> The economy in Germany has a high share of manufacturing,<sup>14</sup> a sector that is projected to undergo significant changes in the next few years. In accordance with the Skills Development Opportunities Act (*Qualifizierungschancengesetz*)<sup>15</sup> and the so-called Work of Tomorrow Act (*Arbeit-von-morgen-Gesetz – 'AmG'*)<sup>16</sup>, support is available to people who will need to retrain.

**2.8 million people**  
worked in the  
environmental sector  
across Germany in 2017

## Green job opportunities

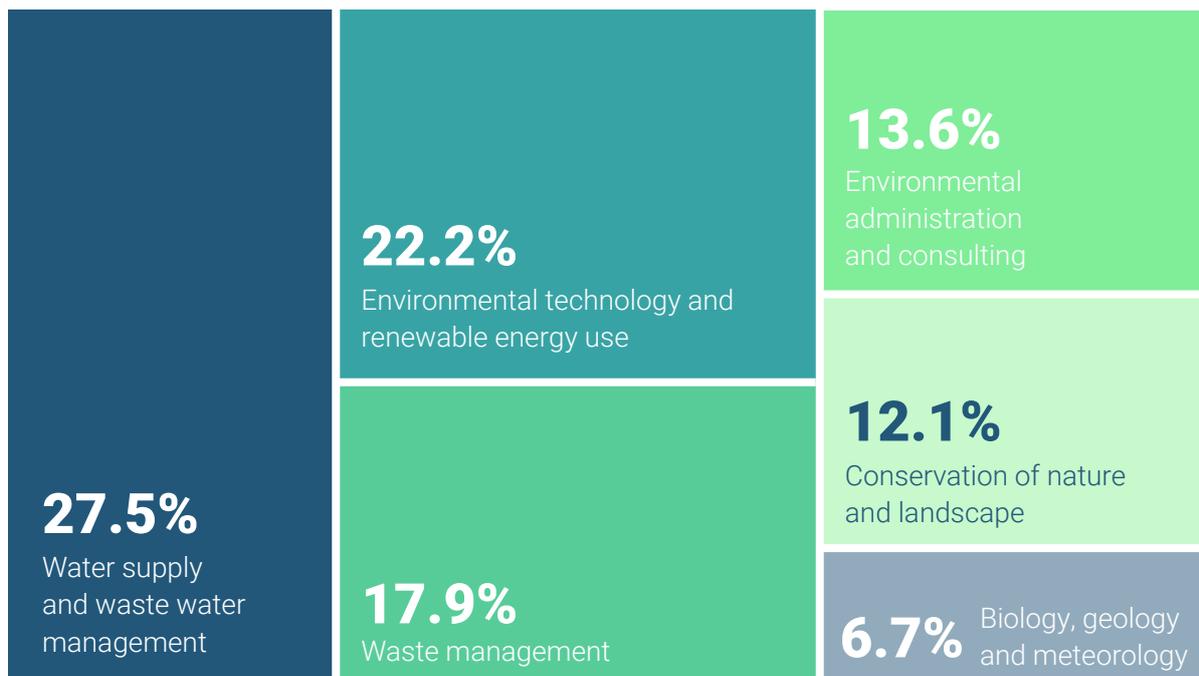
### Nationwide data on green jobs opportunities available in Germany

In 2017, Germany had some of the highest number of green employers among the EU27.<sup>17</sup> The green sector in Germany included about 263,883 employees (FTE).<sup>18</sup> This represented an increase from 251,222 in the previous year. These jobs were concentrated in these sectors:



In terms of occupations, 107,377 people were employed in environmental occupations in Germany in 2016.<sup>20</sup>

**Figure 1. Highest shares of environmental occupations<sup>21</sup>**





More broadly, future employment growth in Germany in 2020–2030 is expected to be highest in health and social care (505,000), professional services (238,000), wholesale and retail trade (213,000), accommodation and food (202,000), and transport and storage (190,000). Occupations with the highest employment growth by 2030 in Germany are expected to be farm and related workers, professionals, associate professionals, elementary workers and operators and assemblers (see **Annex B**).

### Local-level data on types of green jobs available in Berlin

The Skills-OVATE<sup>22</sup> 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 327,237 online job advertisements (OJAs) found in Berlin shows the following vacancies: technical labourers (13,236 OJAs), customer clerks (11,663), sales workers (8,690), personal service workers (7,306), office clerks (7,171), care workers (7,146), accounting clerks (7,129), and metal and machinery workers (5,733).

The specific search for green jobs carried out by RAND Europe (see **Methods**) identified 49 jobs in Berlin. More than half (25) of the identified jobs were green jobs at green employers. Another 21 jobs were regular jobs at green employers. Only three jobs identified constituted green jobs at a regular employer.

Most of these jobs were in the private sector (41). A small number of jobs (8) were in the third sector. Notably, none of the jobs identified were in the public sector. The job ads did not include minimum salaries.<sup>23</sup> Key sectors included economics/management (19), electrical/energy (9), engineering (13), and natural sciences (n=8).<sup>24</sup> Among the main occupations were science and engineering professionals (22), business and administration professionals (13), and business and administration associate professionals (4).



### Skills needed for green jobs

#### National-level data on skills needed for green jobs in Germany

The literature reveals the following skills as important for green jobs in Germany:

- The renewable energy sector seeks employees with both commercial and technical skills. As of 2018, there was no specific vocational scheme that caters to both demands. There is a need for qualified electronics technicians with ‘capacity for teamwork, a high level of independence and computer skills.’<sup>25</sup>
- Overall, an important focus on the political debate surrounding skills for green jobs has been the issue of digitalisation.<sup>26</sup>
- Energy-related building refurbishment is a complex area and requires upskilling of existing roles to help cope with new developments.<sup>27</sup>



While there is a tendency for green jobs in Germany to require high-skilled people, this does not exclusively mean university graduates.<sup>28</sup> Between 2010 and 2013, about 60 per cent of new hires in the green sector in Germany included people who had some qualifications, but not university degrees (see Figure 2 below).



Source: Adapted from Helmrich et al. (2014)<sup>29</sup>

\*Green sectors here include manufacturing, agriculture and forestry, construction, sciences and self-employed.

### Local-level data on skills needed for green jobs in Berlin

The analysis of skills in the Skills-OVATE<sup>30</sup> data shows that the most frequently sought characteristics by employers in Berlin (both green and regular) were so-called soft skills, namely attitudes, communication, collaboration and creativity. This was followed by languages, working with computers, and understandings of business, administration and law (see **Annex A**).

The analysis of green job ads identified by RAND Europe shows that 18 out of 49 job ads asked for 'some experience' but did not specify how many years. Similarly, 12 out of the 49 ads asked for 'many years' of experience, but also did not specify how many. Another 12 ads did not specify any number of years of experience required for the job. Only 7 out of the 49 ads specified a number of years of experience required: One ad asked for 5 years of experience, four

ads asked for 3 years of experience, and two ads asked for 2 years of experience. In terms of the qualifications needed, more than half of job ads required a university degree. Four out of the 49 ads required a master's degree and seven required applicants to be enrolled at university. A quarter of the ads (12) required the completion of apprenticeships. Only one ad did not specify any required qualifications.

In relation to skills, few job advertisements identified by RAND Europe explicitly required green skills. In cases where green skills were specified, the requirement was usually for applicants to have relevant knowledge. This included knowledge of climate change and protection (4), knowledge of environmental topics and issues (4), knowledge of renewable energy and resources (3), knowledge of aspects of sustainable buildings (1) and knowledge of environmental certifications (1). Soft skills sought after by employers included working with computers (37), communication, collaboration and creativity (35), languages (30), information skills (19), management skills (18), working in a team (3) and working independently (12). Finally, skills in the natural sciences, mathematics and statistics (18), engineering, manufacturing and construction (13), information and communication technologies (4), and working with machinery and specialised equipment (3) were regarded as important.

## Training and education provision for green skills

### National-level data

An analysis conducted by Cedefop concludes that 'new vocational training trades or university programmes are not needed for a green transformation of the [German] economy.... [I]nstead, additional qualification should be integrated into existing curricula.' For this, continuing vocational education and training (CVET) will be very important.<sup>31</sup> While participation in CVET is voluntary, uptake in Germany tends to be relatively strong.<sup>32</sup>

Apprenticeships are an important part of the German training and education system. Apprenticeships commonly take place in two training locations: a vocational school and a (certified) company offering practical experience. Upon completion, participants usually receive a qualification.<sup>33</sup>

In Germany, there are also a range of active labour market policies (ALMPs) and retraining measures for long-term unemployed, low qualified, elder employees and unemployed people interested in starting their own business.<sup>34</sup> Some of these are applicable to employment in the green sector.

Notable green training initiatives offered across Germany include:



'Power saving – check': Under this programme, job seekers are trained to provide instructions to low-income households on becoming more energy efficient.<sup>35</sup> Between 2009 and 2018, programme participants visited about 210,000 households. As of 2016, about 40 per cent of programme participants had been integrated into the labour market.<sup>36</sup>

## Local-level data

- Renewables Academy AG (RENAC), based in Berlin, provides training and capacity building on renewable energy.<sup>37</sup>
- Adapting and Installing Vocational Training for Renewal Energy (AIRE) targeted young people in Berlin who had dropped out from either school or vocational training.<sup>38</sup> The programme equipped 15 year olds from deprived districts in Berlin with technical skills and personal skills (such as public speaking, teamwork and time management).<sup>39</sup> Participants received an internationally recognised European Qualification Framework (EQF) Level 2 certificate upon successful completion.
- Vocational schools (*Oberstufenzentren*) can also offer both training that includes both educational and practical components.<sup>40</sup> At times, they can offer preparation courses to teach basic skills, including German, English and maths skills. They can also include some career coaching (e.g. how to draft CVs and apply for jobs) and support from a social worker who can support disadvantaged people in their individual challenges.<sup>41</sup>

## Relevant stakeholders and interventions

Within Berlin, 22 stakeholders were identified in relation to green jobs and green skills. Besides employers, stakeholders can be grouped into education and training providers, employment services, civil society organisations, local authorities and employer organisations. Some of the stakeholders identified are listed in the graphic below.



When it comes to green interventions, only one out of 20 identified interventions specifically targeted people with low levels of education. Four interventions catered towards unemployed or job-seeking individuals. One intervention targeted youth from low-income areas. Otherwise, interventions focused on women (10), young people (1), migrants/refugees/asylum seekers (6) and people with disabilities (1). The most relevant interventions are outlined below.



### **Voluntary Ecological Year<sup>42</sup>**

- Offered to young people between 16 and 27 years of age
- For a period of 12 months, young people can undertake activities to support the environment in exchange for a stipend.
- In 2018–2019, 3,000 young people participated in the programme nationwide.
- Through a combination of education, coaching and work placements, participants acquire a series of valuable 'green' skills.



### **CHANGE – Continuing Education for Women in Environmental Protection and Climate Change<sup>43</sup>**

- Six-month training programme focuses on unemployed or job-seeking women with foreign academic credentials
- Funded by the European Social Fund. Participation is free of charge and participants receive a certificate upon completion.
- Provides lessons on causes and effects of climate change, climate policy, climate adaptation and protection, presentation skills, communication and team management skills/conflict management, technical language skills and German skills for the professional environment.



### **Weiterbildung Umweltpädagogik (Continuing education in environmental education)<sup>44</sup>**

- Advanced training for people with completed relevant education in environmental or related studies to help learn how to 'design nature and environment-oriented leisure and teaching offers' for others.
- The training is available to jobseekers or career changers. It is available through job centres and is therefore free to attend.
- The training lasts four weeks and lessons are conducted in face-to-face. A maximum number of 25 participants may join each course.



### Continuing Education in Environment – Nature and Climate protection for Women<sup>45</sup>

- Offered by the *Umweltbüro für Berlin-Brandenburg e.V.*, this course provides a basic qualification by covering the basics of environmental law, nature conservation, waste and water management, climate protection, sustainable energy industry and resource efficiency.
- The course further offers training in project management, office application of geographic information systems (GIS) in nature and environmental protection, and introduces participants to job profiles in environmental, nature and climate protection.
- Participation is free for all women from Berlin who are registered as unemployed or looking for work. The course duration is four months with a 30-hour week.

## Summary conclusion

- In Berlin, green jobs for people with low qualifications can be found in manufacturing, administrative and support service activities, telecommunication, wholesale and retail, residential care activities and warehousing and support activities for transportation.
- **Green skills** frequently sought by (green) employers in Berlin included knowledge of environmental topics, climate change and protection, and green energy sources. Other skills sought after by employers included ICT skills, communication, collaboration and creativity, languages, management skills, working independently and working in a team. Finally, relevant skills in the natural sciences, mathematics and statistics, engineering, manufacturing and construction, and working with machinery and specialised equipment were considered to be important.
- Germany provides a strong policy context for facilitating the transition to the green economy. Laws and programmes aimed at supporting re-skilling or upskilling (e.g. such as the Skills Development Opportunities Act and Work of Tomorrow Act). Continuing education and vocational training are of great importance.
- The green sector in the Germany economy hires mostly people with qualifications, and less high-skilled or low-skilled people. Supporting people into programmes that offer qualifications or certificates will be key. There are some interventions in Berlin and Germany-wide that help expose people to the green sector and can function as a useful entry point.

## Methods

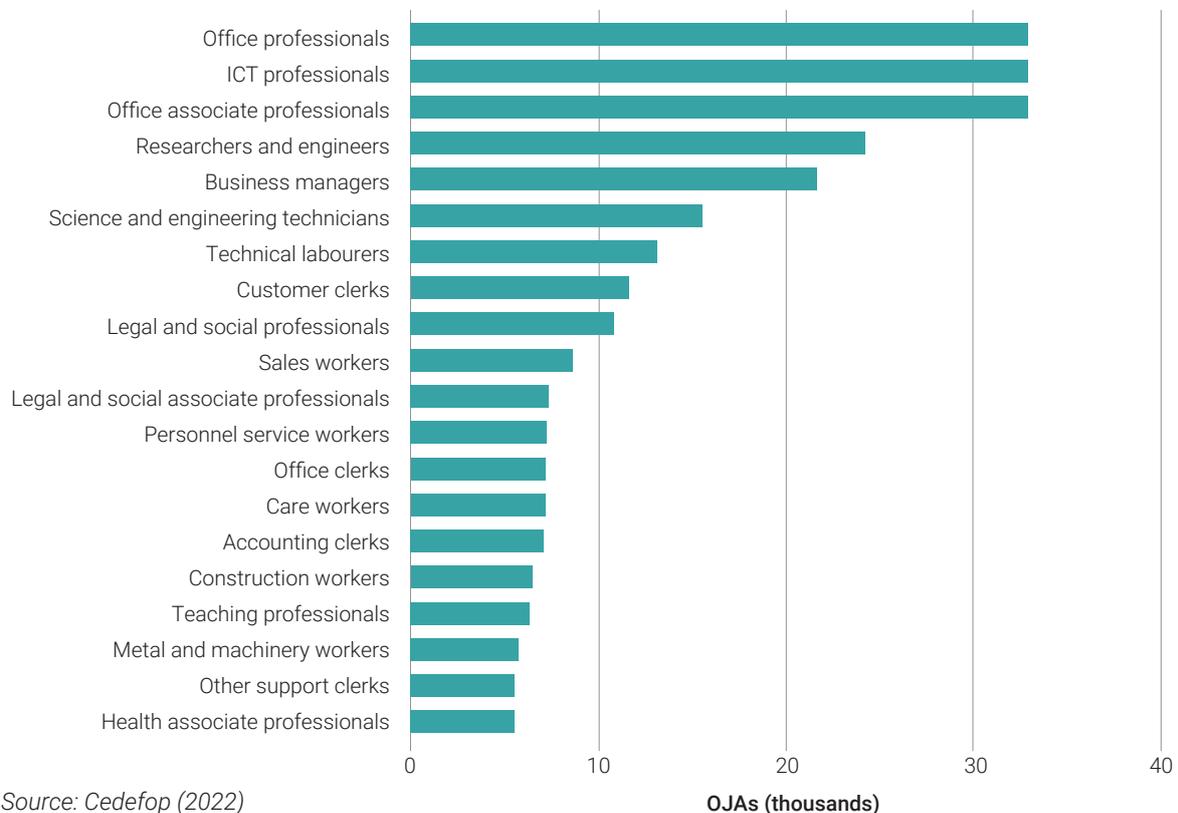
1. **Targeted documentation review:** The review followed a protocol that spelled out the search terms, inclusion and exclusion criteria (see details in the final report).<sup>46</sup> The full list of sources consulted is presented in **Notes and References**.

- 2. Analysis of EU Skills Panorama data:** The analysis used Germany data based on research conducted by Cedefop and 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. In December 2021, there were 327,237 OJAs in the Skills-OVATE database for Berlin covering the period from third quarter of 2020 to 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 49 green job advertisements in Berlin. 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)

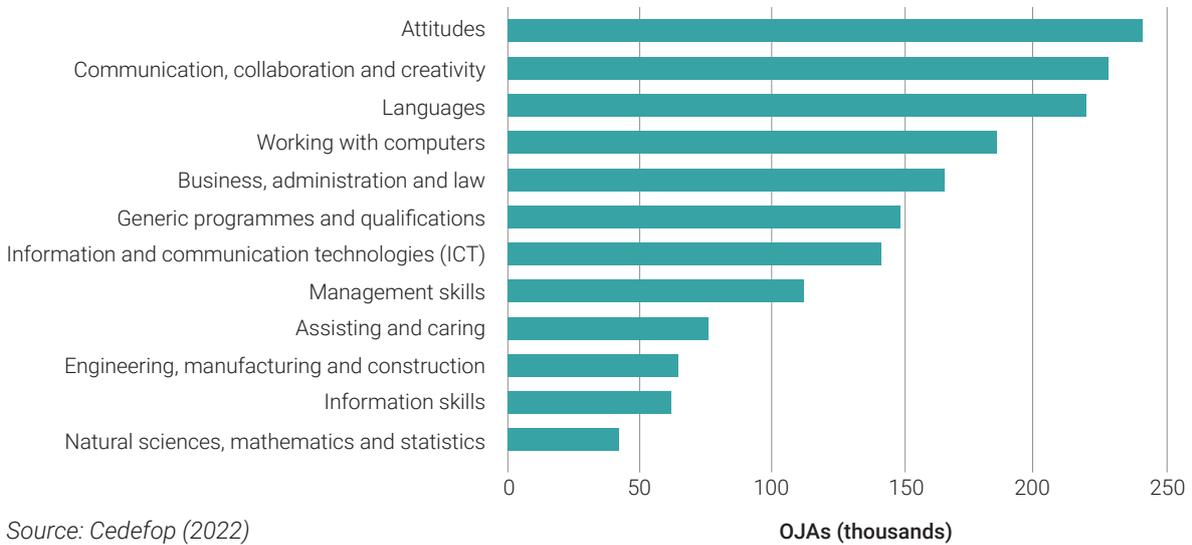
**Figure 3. Online job advertisements (OJAs) per occupation (Berlin)**



Source: Cedefop (2022)

Note: Cut-off point is the median of OJAs per occupation (5,542).

**Figure 4. Most requested skills – level 2 ESCO (Berlin)**

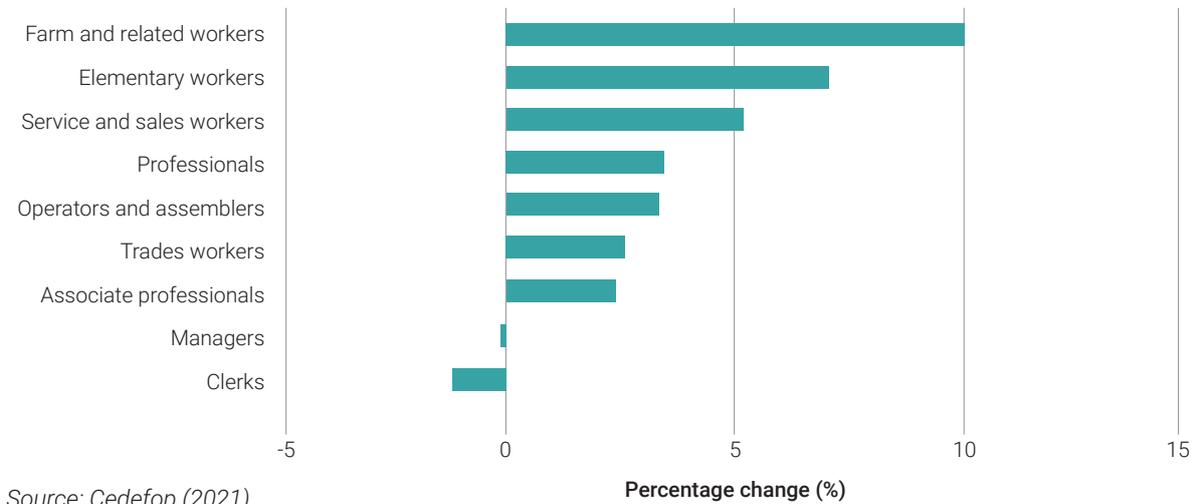


Source: Cedefop (2022)

Note: Cut-off point is the median of OJAs per skill (42.202).

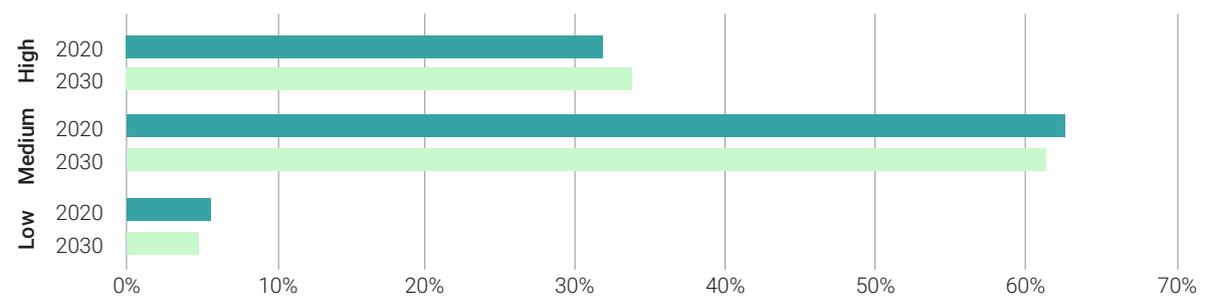
**Annex B. Analysis of EU Skills Panorama data**

**Figure 5. Future employment growth (% change) across occupations in Germany in 2020–2030**



Source: Cedefop (2021)

**Figure 6. Current and future employment for educational level possessed in Germany**



Source: Cedefop (2021)

## Notes and References

- 1 Amt für Statistik Berlin-Brandenburg. 2022. 'Kommunalstatistik Berlin, Einwohnerzahl im 1. Halbjahr 2021 erneut gesunken.' As of 26 May 2022: <https://www.statistik-berlin-brandenburg.de/219-2021>
- 2 Bundesagentur für Arbeit. 2022. 'Arbeitsmarkt im Überblick, Berichtsmonat Januar 2022 – Berlin.' As of 26 May 2022: <https://statistik.arbeitsagentur.de/Auswahl/raeumlicher-Geltungsbereich/Politische-Gebietsstruktur/Bundeslaender-SGBII/Berlin-SGBII.html>
- 3 Zeit Online. 2022. 'Agentur erwartet weiter sinkende Arbeitslosigkeit in Berlin.' Zeit Online, 4 January. As of 26 May 2022: [https://www.zeit.de/news/2022-01/04/agentur-erwartet-weiter-sinkende-arbeitslosigkeit-in-berlin?utm\\_referrer=https%3A%2F%2Fwww.google.com%2F](https://www.zeit.de/news/2022-01/04/agentur-erwartet-weiter-sinkende-arbeitslosigkeit-in-berlin?utm_referrer=https%3A%2F%2Fwww.google.com%2F)
- 4 Röttger, C., B. Weber & E. Weber. 2019. 'Qualifikationsspezifische Arbeitslosenquoten.' Institut für Arbeitsmarkt-und Berufsforschung (IAB). As of 26 May 2022: [https://doku.iab.de/arbeitsmarktdaten/qualo\\_2019.pdf](https://doku.iab.de/arbeitsmarktdaten/qualo_2019.pdf)
- 5 Röttger, C., B. Weber & E. Weber. 2019. 'Qualifikationsspezifische Arbeitslosenquoten.' Institut für Arbeitsmarkt-und Berufsforschung (IAB). As of 26 May 2022: [https://doku.iab.de/arbeitsmarktdaten/qualo\\_2019.pdf](https://doku.iab.de/arbeitsmarktdaten/qualo_2019.pdf)
- 6 Röttger, C., B. Weber & E. Weber. 'Qualifikationsspezifische Arbeitslosenquoten.' Institut für Arbeitsmarkt-und Berufsforschung (IAB). As of 26 May 2022: [https://doku.iab.de/arbeitsmarktdaten/qualo\\_2019.pdf](https://doku.iab.de/arbeitsmarktdaten/qualo_2019.pdf)
- 7 Bundesagentur für Arbeit. 2022. 'Arbeitsmarktsituation von langzeitarbeitslosen Menschen.' As of 26 May 2022: [https://statistik.arbeitsagentur.de/DE/Statischer-Content/Statistiken/Themen-im-Fokus/Langzeitarbeitslosigkeit/generische-Publikationen/Langzeitarbeitslosigkeit.pdf?\\_blob=publicationFile&v=4](https://statistik.arbeitsagentur.de/DE/Statischer-Content/Statistiken/Themen-im-Fokus/Langzeitarbeitslosigkeit/generische-Publikationen/Langzeitarbeitslosigkeit.pdf?_blob=publicationFile&v=4)
- 8 Eurocities. 2015. 'Green Jobs for Social Inclusion.' Brussels: Eurocities. As of 26 May 2022: [https://nws.eurocities.eu/MediaShell/media/353-green-web\\_final.pdf](https://nws.eurocities.eu/MediaShell/media/353-green-web_final.pdf)
- 9 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 10 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 11 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 12 Abgeordnetenhaus Berlin. 2006. 'Lokale Agenda 21: Berlin zukunftsfaähig gestalten.' As of 26 May 2022: [http://berlin21.he-hosting.de/sites/default/files/downloads/assoziiert/agenda\\_21\\_berlin.pdf](http://berlin21.he-hosting.de/sites/default/files/downloads/assoziiert/agenda_21_berlin.pdf)
- 13 Umweltbundesamt. 2021. 'Beschäftigung und Umweltschutz.' As of 26 May 2022: <https://www.umweltbundesamt.de/daten/umwelt-wirtschaft/beschaeftigung-umweltschutz#aktuelle-ergebnisse-und-entwicklung-im-zeitablauf>
- 14 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 15 Bundesministerium für Arbeit. 2019. 'Qualifizierungschancengesetz.' As of 26 May 2022: <https://www.bmas.de/DE/Service/Gesetze-und-Gesetzesvorhaben/qualifizierungschancengesetz.html>
- 16 Bundesministerium für Arbeit. 2020. 'Arbeit-von-morgen-Gesetz: Gesetz zur Förderung der beruflichen Weiterbildung im Strukturwandel und zur Weiterentwicklung der Ausbildungsförderung.' As of 26 May 2022: <https://www.bmas.de/DE/Service/Gesetze-und-Gesetzesvorhaben/arbeit-von-morgen-gesetz.html>
- 17 European Commission. 2020. 'Green Growth, Jobs and Social Impacts Fact Sheet (DG ENV.F1-Dec. 2020).' As of 26 May 2022: [https://ec.europa.eu/environment/enveco/pdf/FACT\\_SHEET\\_ii\\_Green\\_Growth\\_Jobs\\_Social\\_Impacts.pdf](https://ec.europa.eu/environment/enveco/pdf/FACT_SHEET_ii_Green_Growth_Jobs_Social_Impacts.pdf)
- 18 Statistisches Bundesamt (Destatis). 2022. 'Pressemitteilung Nr. 411 vom 22. Oktober 2019.' As of 26 May 2022: [https://www.destatis.de/DE/Presse/Pressemitteilungen/2019/10/PD19\\_411\\_325.html](https://www.destatis.de/DE/Presse/Pressemitteilungen/2019/10/PD19_411_325.html)

- 19 Statistisches Bundesamt (Destatis). 2022. 'Pressemitteilung Nr. 411 vom 22. Oktober 2019.' As of 26 May 2022: [https://www.destatis.de/DE/Presse/Pressemitteilungen/2019/10/PD19\\_411\\_325.html](https://www.destatis.de/DE/Presse/Pressemitteilungen/2019/10/PD19_411_325.html)
- 20 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 21 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 22 Skills-OVATE database by Cedefop collates OJAs from multiple sources, including private job portals, public employment service portals, recruitment agencies, online newspapers and corporate websites. In December 2021, there were 82,697 OJAs in the Skills-OVATE database for inner London. 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 and others are underrepresented.
- 23 There was one exception: one job ad for a communications role at a green employer advertised a salary of €45,000 per year. The employer focuses on renewable energy.
- 24 Other categories include architecture/planning (3), environmental sciences (3), geology/earth sciences (n=1), law (6), media/journalism (5), natural sciences (8), politics/political science (8), social sciences/policy (4), other (1), and not provided (8).
- 25 Spangenberg, P. et al. 2016. *Technische Ausbildungsberufe im Bereich Erneuerbare Energien*. Bonn: Wissenschaftsladen. In Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 26 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 27 Mohaupt, F. et al. 2011. Beschäftigungswirkungen sowie Ausbildungs- und Qualifizierungsbedarf im Bereich der energetischen Gebäudesanierung. Umwelt, Innovation, Beschäftigung des Umweltbundesamtes 01/2011 In Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 28 Helmrich, R.; M. Schandock, F. Mohaupt, C. Röttger, G. Zida, I. Thobe & I. Wolter. 2014. 'Arbeit und Qualifikation in der Green Economy.' As of 26 May 2022: [https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/uib\\_03\\_2014\\_green\\_economy.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/uib_03_2014_green_economy.pdf)
- 29 Helmrich, R.; M. Schandock, F. Mohaupt, C. Röttger, G. Zida, I. Thobe & I. Wolter. 2014. 'Arbeit und Qualifikation in der Green Economy.' As of 26 May 2022: [https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/uib\\_03\\_2014\\_green\\_economy.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/378/publikationen/uib_03_2014_green_economy.pdf)
- 30 Cedefop. 2022. Skills-OVATE data.
- 31 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 32 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 33 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 34 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 35 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 36 Cedefop. 2018. 'Skills for green jobs in Germany: an update [unedited proof copy].' As of 26 May 2022: [http://www.cedefop.europa.eu/files/germany\\_green\\_jobs\\_2018.pdf](http://www.cedefop.europa.eu/files/germany_green_jobs_2018.pdf)
- 37 Renac (homepage). 2022. As of 27 May 2022: <https://www.renac.de/>

- 38 Eurocities. 2015. 'Green Jobs for Social Inclusion.' Brussels: Eurocities. As of 27 May 2022: [https://nws.eurocities.eu/MediaShell/media/353-green-web\\_final.pdf](https://nws.eurocities.eu/MediaShell/media/353-green-web_final.pdf)
- 39 Eurocities. 2015. 'Green Jobs for Social Inclusion.' Brussels: Eurocities. As of 27 May 2022: [https://nws.eurocities.eu/MediaShell/media/353-green-web\\_final.pdf](https://nws.eurocities.eu/MediaShell/media/353-green-web_final.pdf)
- 40 Interviewee GER-B-02 (training organisation)
- 41 Interviewee GER-B-02 (training organisation)
- 42 Hilker, Malte. 2022. 'Neuer FÖJ-Jahrgang in allen Bundesländern gestartet.' FÖF e.V. As of 27 May 2022: <https://foej.de/neues-foej-projektjahr-gestartet/>
- 43 LIFE Bildung Umwelt Chancengleichheit e.V. 2022. 'Change: Arbeiten in Zeiten des Klimawandels eine deutschlandweite Weiterbildung für Frauen mit ausländischen Studienabschlüssen.' As of 27 May 2022: [https://life-online.de/wp-content/uploads/2022/01/Flyer\\_CHANGE-VI\\_bundesweit.pdf](https://life-online.de/wp-content/uploads/2022/01/Flyer_CHANGE-VI_bundesweit.pdf)
- 44 IBB. 2022. 'Weiterbildung Umweltpädagogik.' As of 27 May 2022: <https://www.ibb.com/weiterbildung/umweltpaedagogik>
- 45 Umweltbüro für Berlin-Brandenburg e.V. 2022. 'Praxisnahe Weiterbildung im Umwelt-, Natur- und Klimaschutz für Frauen.' As of 27 May 2022: <http://www.ubb.de/index.php/100-weiterbildung-fuer-frauen-2>
- 46 Hofman, Joanna, Michaela Bruckmayer, Katrin Feyerabend, Giulia Lanfredi & Lydia Lymperis. 'Green' jobs and skills development for disadvantaged groups.' Santa Monica, Calif: RAND Corporation. As of 27 May 2022: <https://www.rand.org/randeuropa/research/projects/green-jobs-and-skills-development-for-disadvantaged-groups-.html>

