

# Germany



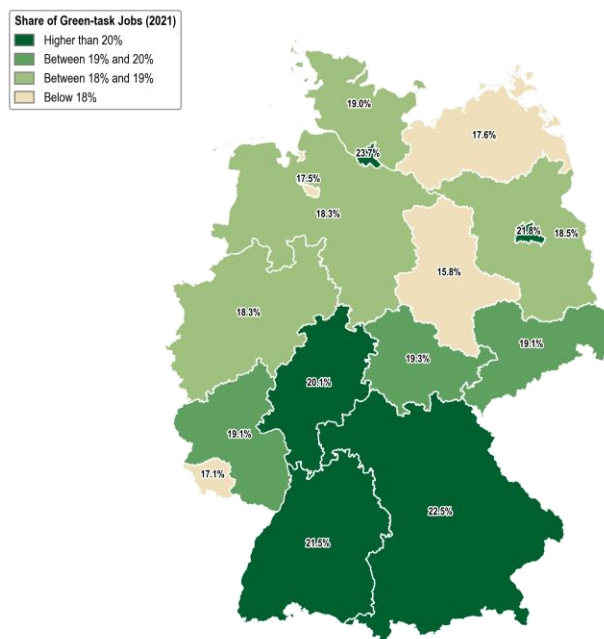
The report [Job Creation and Local Economic Development 2023: Bridging the Great Green Divide](#) assesses the local labour market impact of the green transition. It presents novel evidence on the share of jobs with a significant proportion of green tasks (green-task jobs) as well as polluting jobs, those which face a higher risk of disappearing, across regions within countries. Furthermore, it analyses current socio-economic and gender implications of the green transition within local labour markets. The report covers all OECD countries for which detailed data on employment by occupation is available.

## How green are regional labour markets in Germany?

### *Regional employment in green-task jobs*

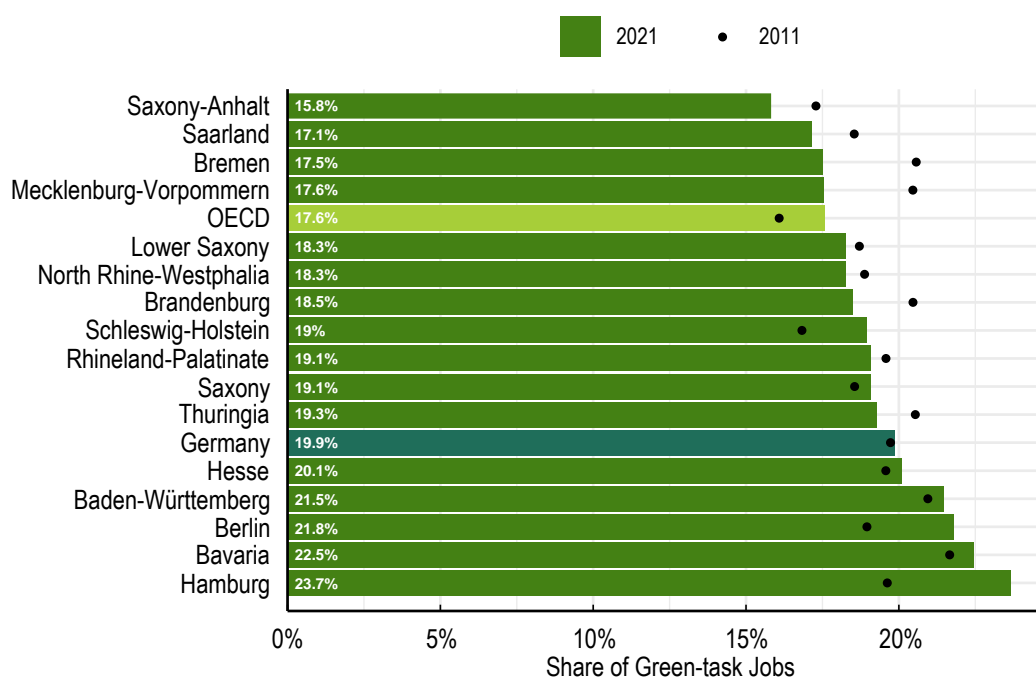
In Germany, on average around 19.9% of workers are employed in jobs with a significant share of green tasks that contribute to environmental objectives. This is 2.3 percentage points more green than the OECD average of 17.6%. This figure ranges from 15.8% in Saxony-Anhalt to 23.7% in Hamburg. Between 2011 and 2021, 7 out of 16 regions in Germany recorded an increase in the share of green-task jobs in their employed labour force.

**Figure 1 Share of green-task jobs in TL-2 regions**



Note: See annex for examples of green tasks and occupations.  
Source: OECD calculations based on EU LFS.

Figure 2 Green-task jobs in TL-2 regions (2011 - 2021)



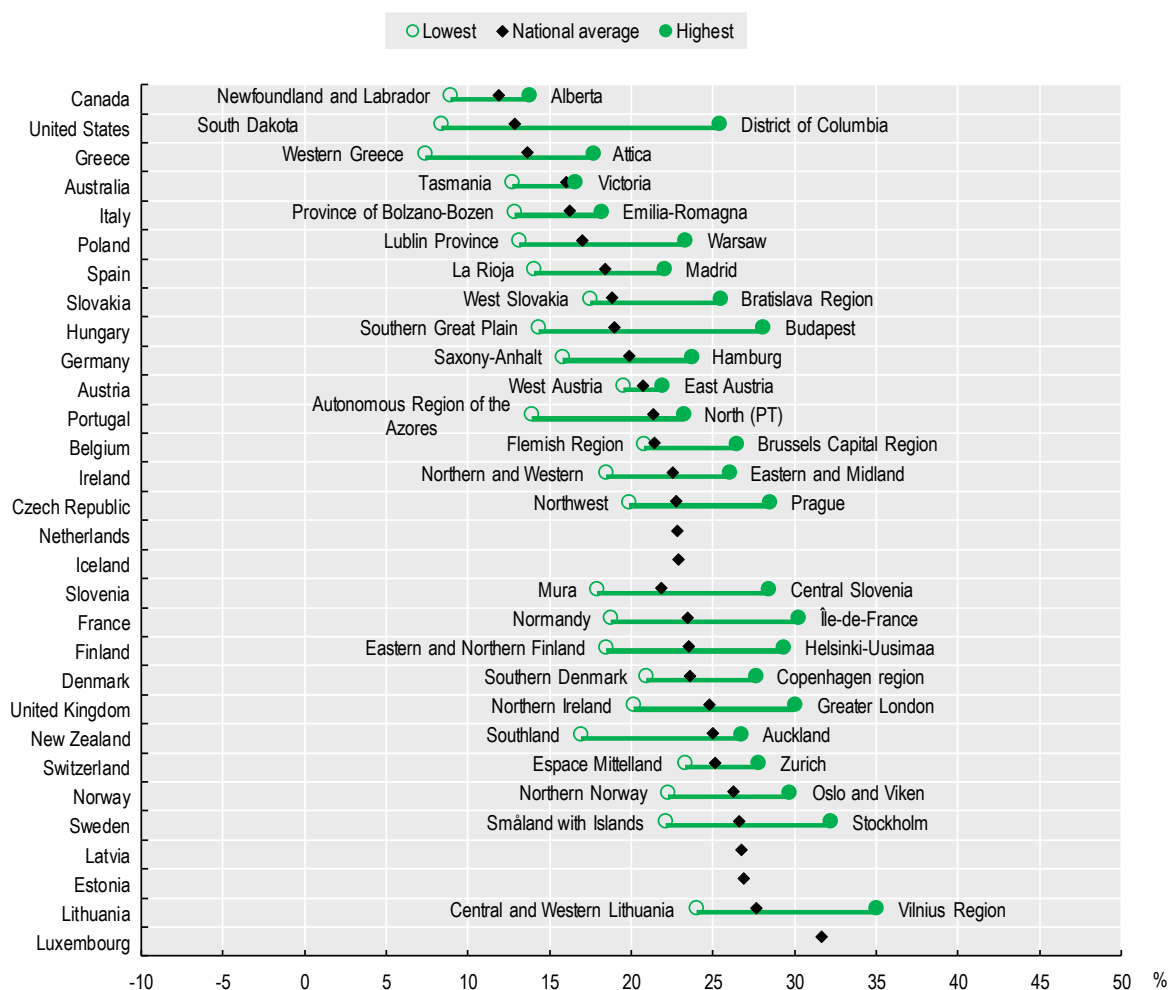
Note: See annex for examples of green tasks and occupations.

Source: OECD calculations based on EU LFS.

### ***Regional differences in green-task jobs across regions in Germany and the OECD***

Across the OECD, regional labour markets differ substantially in their greenness. The leading regions record employment shares in green-task jobs of around 30%, while in those regions at the bottom, green-task jobs only account for less than 10% of employment. Regional disparities in the share of green-task jobs are relatively more pronounced in Germany compared to other OECD countries, as the regional gap between the leading and lagging regions is of 7.9 percentage points, compared to 7.2 percentage points within OECD countries on average.

Figure 3 Regional values for the share of green jobs



Note: Last available year. 2019 for the UK. 2020 for Iceland. 2021 for Australia, Canada, EU countries, Norway, New Zealand, Switzerland, and the US. See annex for examples of green tasks and occupations.

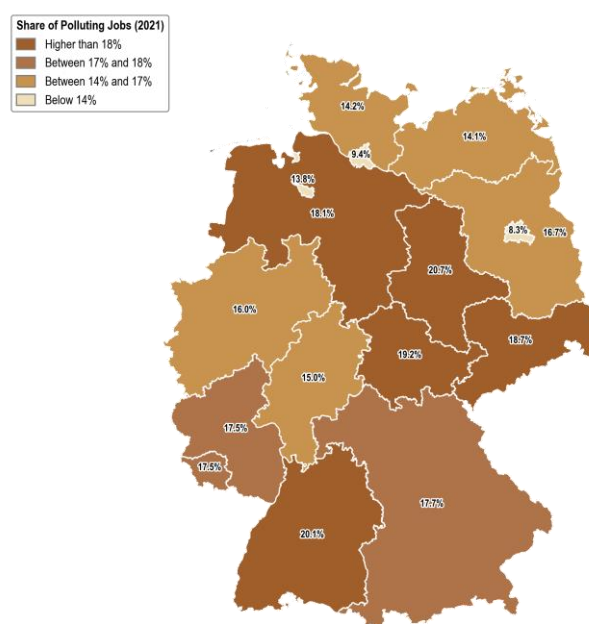
Source: OECD calculations based on EU LFS, Canadian LFS (StatCan), OEWS (U.S Bureau of Labour Statistics), Table EQ08 (Australian Bureau of Statistics), HLFS (Stats NZ), Slovenian LFS (Statistical Office of the Republic of Slovenia) and Polish LFS (Statistics Poland).

### Polluting jobs

Polluting jobs in emission intensive sectors, such as mining or oil and gas, are heavily concentrated in some regions, raising the risk of those regions being left behind in the green transition. In Germany, on average around 16.8% of workers are employed in polluting jobs that will face a greater risk of displacement due to the green transition, compared to 11.7% on average in OECD countries. The share of polluting jobs differs across regions in Germany, ranging from 8.3% in Berlin<sup>1</sup> to 20.7% in Saxony-Anhalt. Since 2011, 14 out of 16 regions in Germany reduced their share of polluting jobs, falling on average by 3 percentage points.

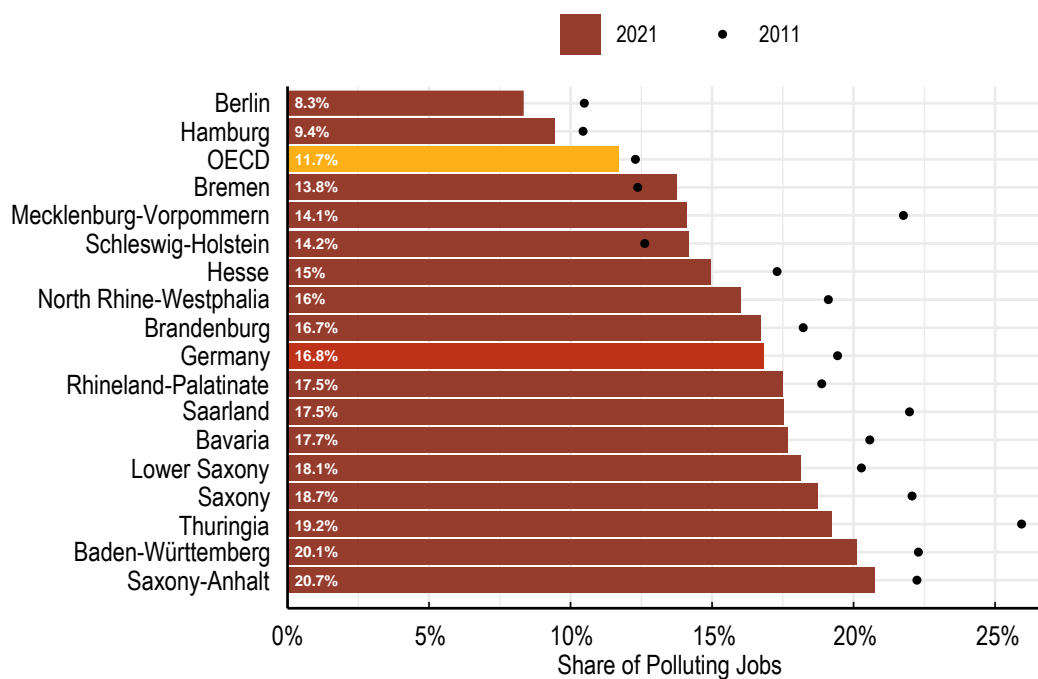
<sup>1</sup>Note that the regions of Berlin, Hamburg and Bremen has a particular economic and demographic structure that set them apart from the rest of the German regions. This explains, at least in part, the gap between this and other regions in regard to the indicators presented in this report.

Figure 4 Polluting jobs in TL-2 regions



Note: See annex for further details on polluting occupations  
Source: OECD calculations based on EU LFS.

Figure 5 Polluting jobs in TL-2 regions (2011 - 2021)



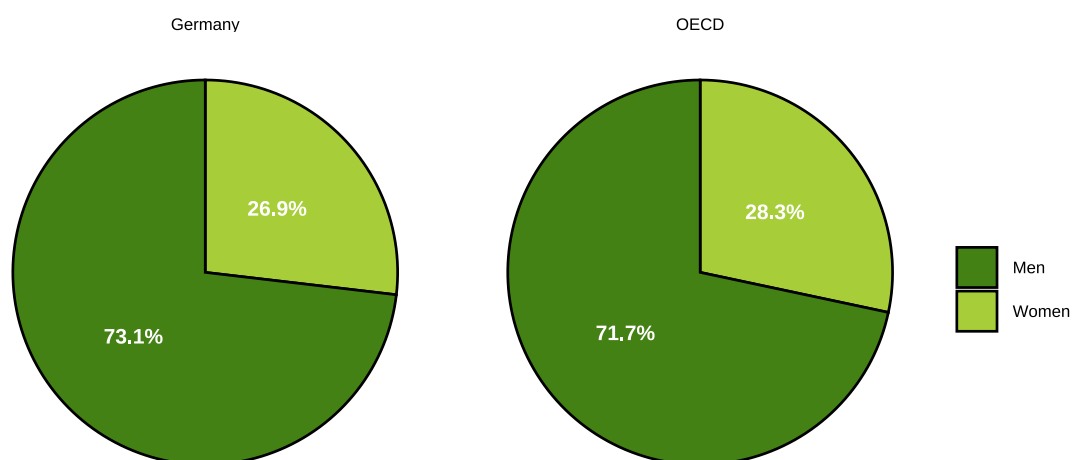
Note: See annex for further details on polluting occupations

Source: OECD calculations based on EU LFS.

### ***Green-task jobs: a new gender divide***

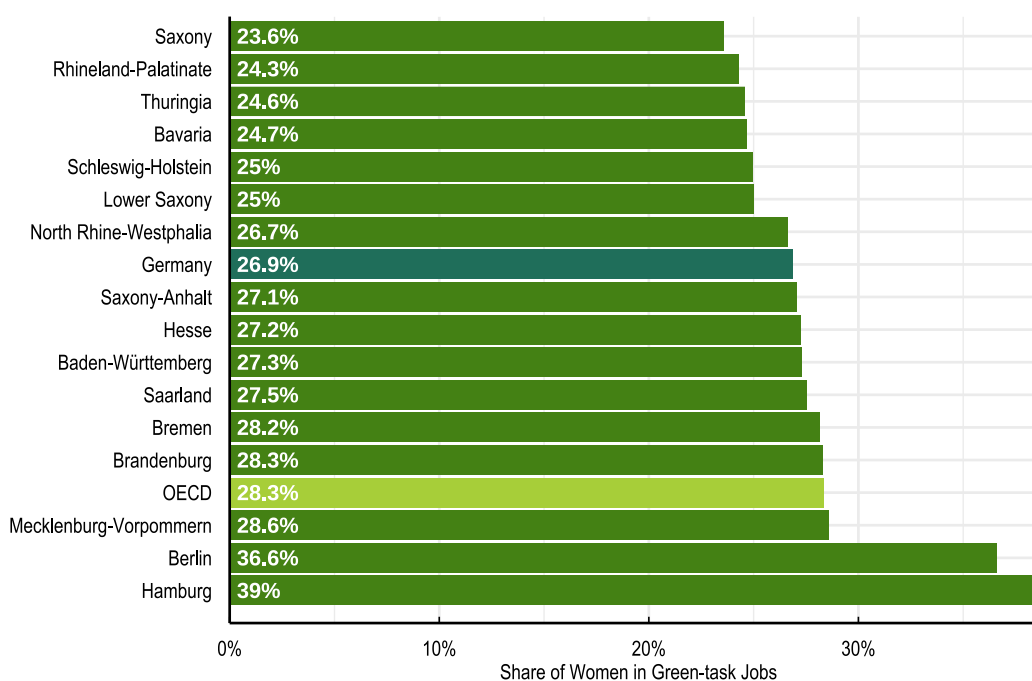
Women are drastically underrepresented in green jobs. On average, women account for less than third (28.3%) of workers in green-task jobs across the OECD. In Germany, women make up a lower share, accounting for 26.9% of workers in green-task jobs. Hamburg is the region that is closest to gender parity with 39% of green-task jobs held by women. In comparison, women account for only 23.6% of green-task jobs in Saxony.

**Figure 6 Share of women in green jobs**



Note: Data for 2021. See annex for examples of green tasks and occupations.  
Source: OECD calculations based on EU LFS.

Figure 7 Share of women in green jobs across TL-2 regions



Note: Data for 2021. See annex for examples of green tasks and occupations.

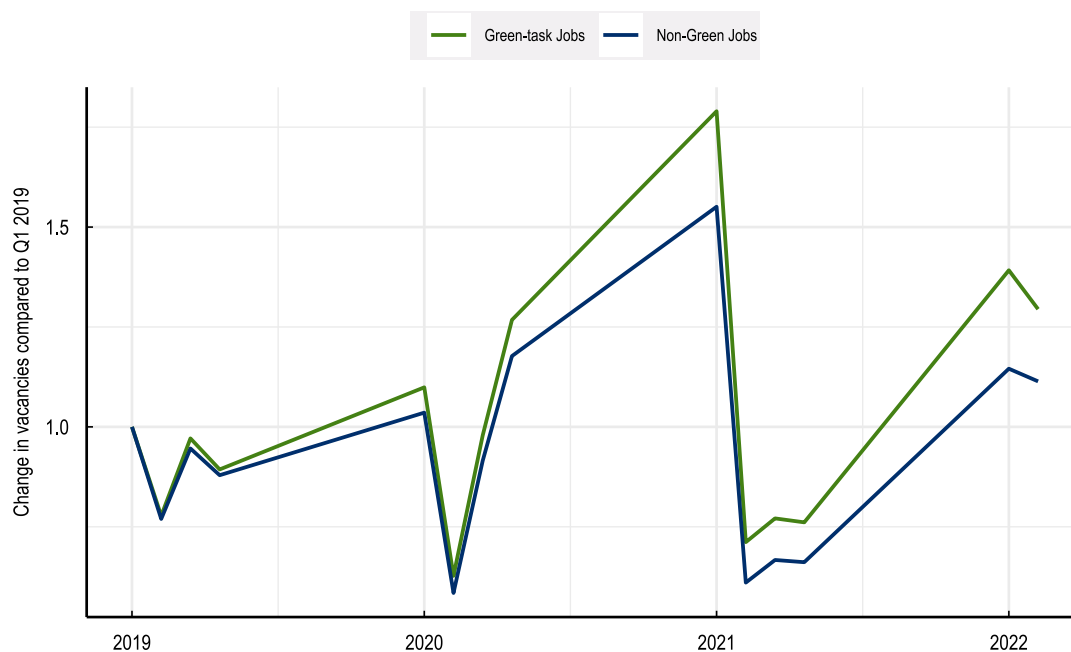
Source: OECD calculations based on EU LFS.

### ***Current labour market demand for green-task jobs***

Speeding up the slow pace of growth in green jobs is critical to reach net zero. While most local labour markets have not become much greener over the last decade, since the start of the pandemic growth in the demand for green-task jobs has outpaced overall labour market demand by 20% across the OECD.

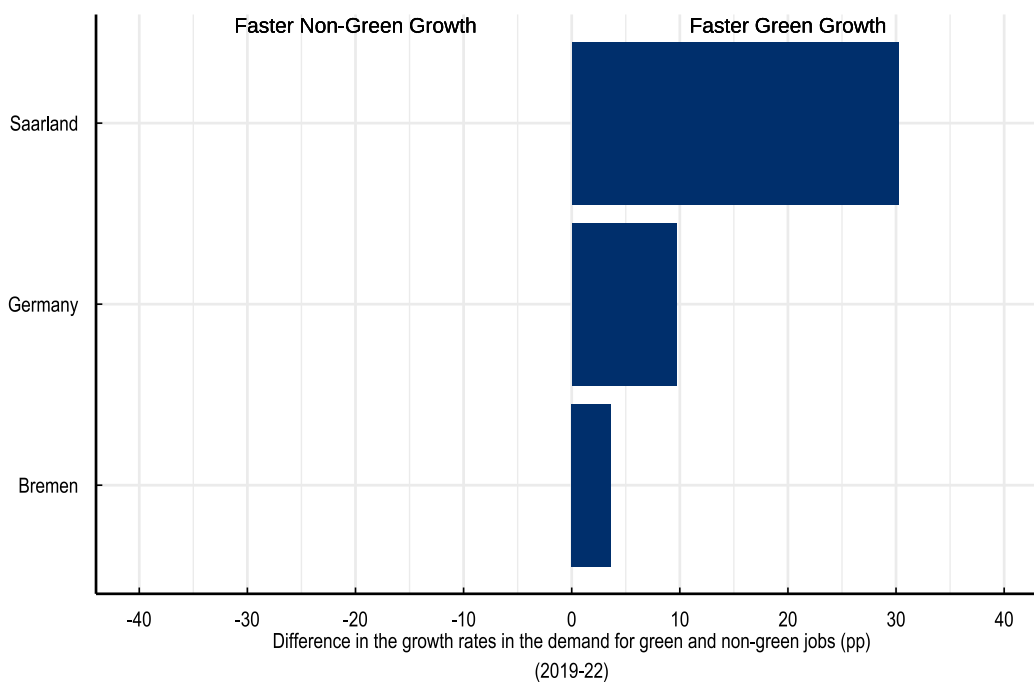
As the OECD overall, Germany has also experienced faster growth in the demand for green jobs than for non-green jobs. On average, the demand for green jobs grew by 9.7% more between Q1 2019 and Q1 2022. In Germany, the relative growth in the demand for green jobs was highest in Saarland (30.2%) and lowest in Bremen (3.7%).

**Figure 8 Online job posting over time, compared to base year (2019)**



Source: OECD calculations based on Lightcast job posting data.

**Figure 9 Relative growth of green and non-green online job postings**



Source: OECD calculations based on Lightcast job posting data.










## Annex - Measuring the share of green-task and polluting jobs

### Green tasks and green jobs

Green-task jobs are defined and analysed at the occupation level based on the greenness of their related task content. It relies on classifications developed by O\*NET, which provides a taxonomy of the greenness of all tasks for more than 900 occupations. Tasks identified as green contribute to environmental objectives such as preserving the environment and reducing emissions.

Using the information on the tasks of an occupation, one can compute a greenness score for each occupation, ranging from 0 to 1. A score of 0 denotes an occupation with no green task. Infographic 2.1 offers a number of illustrating examples of different occupations, including those with a very high greenness score, those with some green tasks, and those with no green tasks. Based on O\*NET's classification, the majority of jobs have no green task. Occupations with no green tasks in O\*NET's classification are not necessarily 'dirty', as illustrated by examples below.

Figure 10 Occupation and task examples

		Proportion of green tasks		
		Green	Partially green	Non-green
Level of education	High-skilled	<b>Solar Energy Systems Engineers</b> <ul style="list-style-type: none"> <li>- Engineering analysis or evaluation of energy efficiency and solar projects</li> <li>- Design solar domestic heating systems</li> </ul> 	<b>Civil Engineers</b> <ul style="list-style-type: none"> <li>- Designing construction and maintenance of building structures</li> <li>- Overseeing facilities such as roads, railroads or airports</li> </ul> 	<b>Accountants</b> <ul style="list-style-type: none"> <li>- Determine or maintain record of assets, liabilities, profit and loss, tax liability or financial services of an organisation</li> <li>- Analyse financial information and prepare financial reports</li> </ul> 
	Medium-skilled	<b>Wind Energy Project Managers</b> <ul style="list-style-type: none"> <li>- Manage construction of projects</li> <li>- Lead or manage the development and evaluation of potential wind energy business opportunities</li> </ul> 	<b>Transportation Vehicle, Equipment and Systems Inspectors</b> <ul style="list-style-type: none"> <li>- Inspect and monitor transportation equipment, vehicles, or systems ensure compliance with regulations and safety standards</li> </ul> 	<b>Sales Managers</b> <ul style="list-style-type: none"> <li>- Plan, direct, or coordinate the distribution or movement of a product or service to the customer</li> <li>- Analyse sales statistics gathered by staff to determine sales potential and inventory</li> </ul> 
	Low-skilled	<b>Refuse and Recyclable Material Collectors</b> <ul style="list-style-type: none"> <li>- Collect and dump refuse or recycle materials into truck</li> <li>- Drive truck</li> </ul> 	<b>Plumbers</b> <ul style="list-style-type: none"> <li>- Assemble, instal, or repairs pipes, fitting, or fixtures of heating, water, or drainage systems</li> <li>- Follow plumbing codes and other specifications</li> </ul> 	<b>Helpers – Extraction Workers</b> <ul style="list-style-type: none"> <li>- Help extraction craft workers, such as earth drillers or blasters, by performing duties requiring less skill</li> <li>- Duties include supplying equipment or cleaning work area</li> </ul> 

Note: The greenness of occupations is based on their task content and the fact whether those tasks are green or not. The greenness score of occupation ranges from 1 (all tasks are green) to 0 (all tasks are non-green). The classification of high-, medium-, and low-skilled occupations follows ISCO.

Source: OECD elaboration based on O\*NET's Green Tasks Data.

### Green-task jobs

To examine the geography of jobs with a significant share of green tasks and to examine differences across workers within regional labour markets, a binary measure is constructed which classifies an occupation as being green-task or non-green-task. For this report, green-task jobs consist of those occupations with at least 10% of their tasks considered green.



***Polluting jobs***

Polluting jobs are a subset of non-green-task jobs (i.e. they have no green tasks) that are particularly concentrated in highly polluting sectors, based on the emission of seven contaminants: CO, VOC, NOx, SO2, Pm10, PM2.5, lead and CO2.

## References

OECD (2023), Job Creation and Local Development 2023 – Bridging the Great Green Divide:  
<https://doi.org/10.1787/21db61c1-en>

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