More than 14 million green jobs across global megacities, as investment in climate action pays off

C40 Cities has unveiled initial results of the world's widest analysis of green jobs across global megacities.

The conclusion

Investing in a just transition to clean and affordable energy is paying off, as it is driving transformative change way beyond city limits, creating green jobs and accelerating a just transition away from fossil fuels.

The first-of-its-kind analysis of green jobs in 53 global cities on five continents revealed that of the more than **135 million** jobs captured overall, more than **14 million** can be classified as green jobs — more than **10%** of total jobs. This includes more than **9 million** direct green jobs and more than **5 million** indirect green jobs — a clear indication that in addition to creating direct green jobs, green investments are also increasing demand for materials and inputs, increasing jobs in supplier industries.
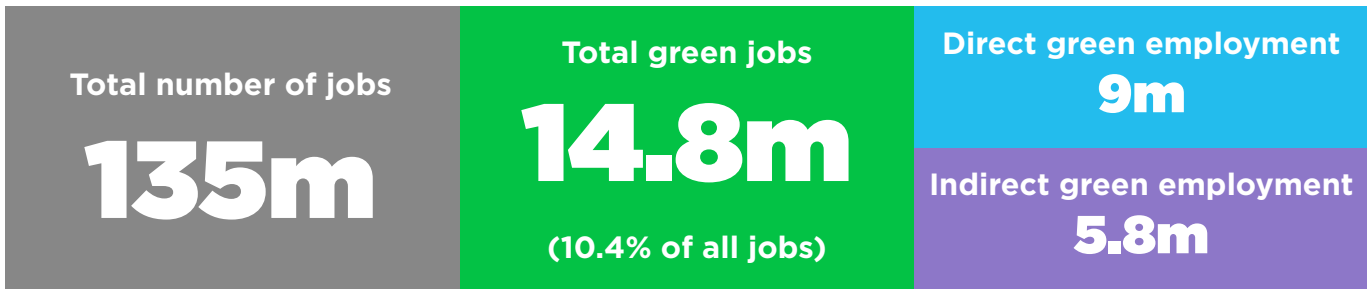
Direct green jobs produce the goods and services needed for the green economy, eg. in waste collection, recycling or the repair sector.

Indirect green jobs produce the goods and services needed by workers within direct jobs, eg. in education or supply chains.

Distribution of Green jobs in global megacities
Direct and indirect green jobs in 53 C40 member cities

Total number of jobs	Total green jobs	Direct green employment
135m	**14.8m** (10.4% of all jobs)	**9m**
		Indirect green employment **5.8m**

Source: Publicly available data (2019-2022) compiled by Circle Economy for C40 Cities

Green jobs are high in sectors that are strongly influenced by local public policy measures, including transport and waste management.

Sectors that are already more than 25% green include:

- Water supply, sewerage, waste management and remediation activities

- Transportation and storage

- Electricity generation, steam and air conditioning supply

- Construction and Buildings

Encouraging signs were found in the electricity and energy sectors: more than 30% of the jobs in the generation, distribution and supply of electricity were found to be green, between direct and indirect jobs, amounting to more than 150,000 jobs just in the 53 cities being analysed.

Distribution of green jobs across sectors of the economy
Direct and indirect green jobs in 53 C40 member cities
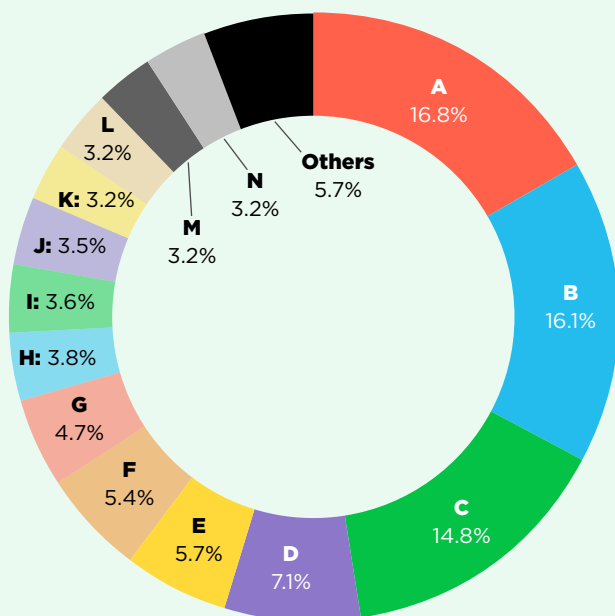
A: Transportation and storage

B: Wholesale and retail trade, repair of motor vehicles

C: Construction

D: Manufacturing

E: Agriculture, firestry and fishing

F: Administrative and support services activities

G: Professional, scientific and technical activities

H: Other service activities

I: Education

J: Water supply, sewerage and waste management

K: Accomodation and food service activities

L: Financial and insurance activities

M: Human health and social work activities

N: Public administration and defence; compulsory social security

This chart represents how green jobs distribute across the sectors of the economy studied (for example, 16.8% of the total green jobs in these cities come from the Transportation and storage sector).
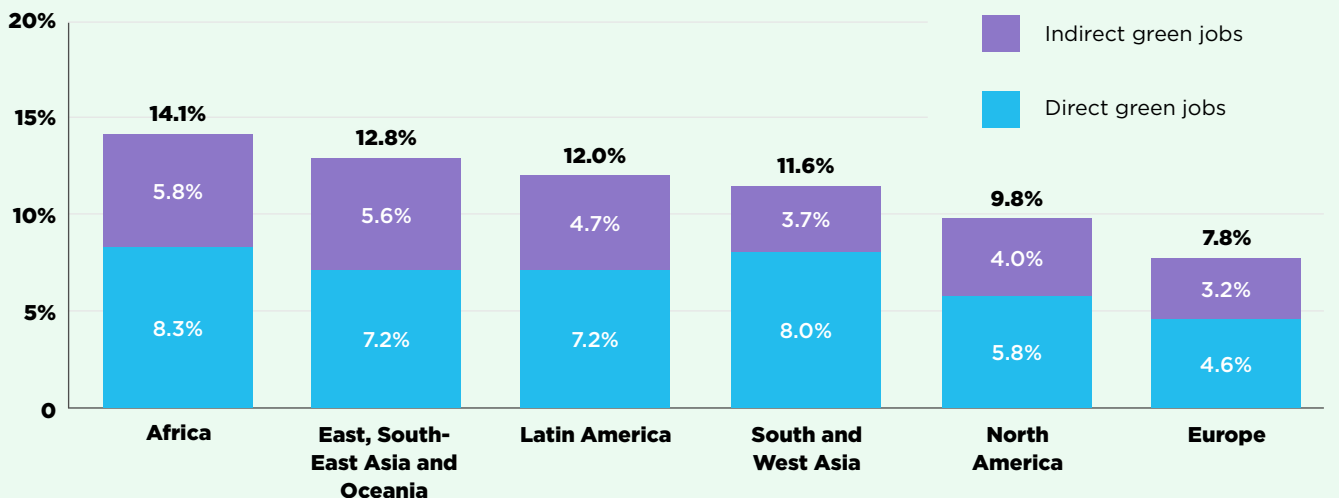
Note
Graph includes data for 53 cities, date ranging from 2019-2022. For visibility purposes, 'Others' includes all other employment sectors (from the ISIC-4 classification). Some sectors including health and care will be studied in more detail in next stages of the project.

Source: Publicly available data (2019-2022) compiled by Circle Economy for C40 Cities.

Green jobs share per region
Share of direct and indirect green jobs across 53 C40 member cities

Legend:
- Indirect green jobs (purple)
- Direct green jobs (blue)

Region	Total	Indirect green jobs	Direct green jobs
Africa	14.1%	5.8%	8.3%
East, South-East Asia and Oceania	12.8%	5.6%	7.2%
Latin America	12.0%	4.7%	7.2%
South and West Asia	11.6%	3.7%	8.0%
North America	9.8%	4.0%	5.8%
Europe	7.8%	3.2%	4.6%

Source: Publicly available employment data (2019-2022) compiled by Circle Economy for C40 Cities

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Cities with more than 20% of total green jobs include Nairobi, Lima, Quito and Bangkok.

It's important to bear in mind that more than 50% of jobs in many Global South countries are in informal sectors and may not be captured in official statistics. Many urban jobs in sectors like health or care are under-recognised as jobs that are essential to support a green economy.

Study methodology

The research was conducted by C40 Cities and Circle Economy. The methodology to analyse green jobs in cities was adapted from a methodology developed previously by Circle Economy using International Labor Organization (ILO) definitions and in partnership with the United Nations Environment Programme (UNEP) to measure circular jobs, aligned with C40's definition of good, green jobs, as follows:

- New green jobs or existing jobs transformed into green ones and sustained by transformative climate action

- Jobs that enhance our health and well-being, preserve or restore the environment, and help to limit greenhouse gas emissions

- Jobs that occur across a range of urban sectors, including construction, transport, energy, resiliency, health care and more

- Good quality jobs for sustainable economies, aiming to provide living wages and safe and stable working conditions

The analysis focused on C40 member cities with available employment sub-sectoral data: 53 cities across 5 continents.

Data sources include publicly available city data and nationally available data down-scaled to the city level.

Cities and local governments often have limited capacity to document and measure jobs over time and in some cases depend on national statistical data collection and support from international organisations.

More capacity for local data collection, disaggregation and monitoring is needed across many regions to also capture informal sector jobs that are a key source of livelihoods for many people.

The methodology was initially tested with a subgroup of 10 cities across regions, and reviewed by external experts.

Next steps

This research is part of an effort by C40 Cities to develop an open, universal and replicable methodology to determine green jobs in all sectors of the economy across its network of nearly 100 cities. C40 plans to expand its research to more cities and track data across time.

C40 will expand its focus on indicators of good jobs as well as often under-recognised urban sectors that make an important contribution to greening our economies and enhancing community resilience against global heating, including health and care.

No universally accepted definition of green jobs exists, with descriptions varying widely in scope, industry focus, skill sets included and/or basis on local and regional context.

While it is not the aim of our analysis, it can help to build consensus on how to define green jobs.