Global Green Skills Report 2024

Linkedin

Executive summary

The climate crisis is increasingly steering decision-making at the highest levels of government and business, yielding a cascading series of sustainability targets, commitments, and mandates. **But data from LinkedIn's more than one billion members reveals that the global workforce is not on track to realize these ambitions.**

We need to double the size of the green talent pool by 2050—at a bare minimum—to keep pace with projected demand.[1] Roughly half of jobs in the 2050 green economy will lack qualified candidates if we don't focus on strategic, expansive upskilling.

This report illuminates global trends at the intersection of climate action and the workforce. We show how government policies are already shifting the supply and demand for green skills, and recommend high-impact policies for growing the green talent pool. We spotlight two groups critical to the goal of doubling green talent: Gen Z, which desperately wants to be part of the climate solution but is struggling to break in, and women, who make up just a third of green talent worldwide. We also delve into four industries where green skills development is particularly important to reaching climate targets: energy production & utilities, construction, manufacturing, and technology, information, & media.

Definitions

Green skills are those that directly combat the effects of climate change.

Green jobs are those that have sustainability at their core and cannot be performed without extensive knowledge of green skills.

Green talent is a Linkedin member who has explicitly added at least one green skill to their profile and/or are working in a green job.

[1] Comparing the growth trajectories of the share of job postings for green talent and the supply of such members on our platform can help us understand supply / demand imbalances. Our estimates of a doubling of the workforce is based upon the assumption that supply was equal to demand when we began tracking this data. Based on survey research, we believe this is a conservative estimation. Kaura, A. (2024). "Understanding the Green Transition." Linkedin Economic Graph Research Note.

This is an inflection point for our planet. 2024 has been a record year for extreme weather, with deadly flooding, destructive hurricanes, and the hottest summer in recorded history. By early 2025, signatories to the Paris Agreement will submit their most ambitious climate plans yet, following an agreement at COP28 to triple renewables capacity and double energy efficiency by 2030. With this deadline and the 2035 target for fulfilling climate plans looming, government leaders are now preparing to make unprecedented investments in new infrastructure and innovations that will reduce global warming — and shape the economy for decades to come.

The world of work is changing rapidly, and we need people with the skills to combat the climate crisis, right now. Already, we have found, the hiring rate for green talent is 54.6% greater than the hiring rate overall. By helping workers develop green skills, we will position them to access opportunities during this unique window and over the long term.

Green skills will pave the path toward climate goals and economic prosperity. If we don't invest in producing a global workforce capable of addressing the climate crisis and participating in the green economy, we will fail both our planet and our people.

"This data is a wakeup call, and there's no more time to hit the snooze button. Every single climate goal is at risk if we don't have a workforce prepared to deliver the change we urgently need. Our data reflects policymakers' power to shape green talent demand and supply. As governments finalize the next decade of climate commitments, they must include explicit investments to create the green-skilled workforce to combat the climate crisis."

Sue Duke,
Vice President of Public Policy & Economic Graph, LinkedIn

Key findings

11.6% — Global demand for green talent grew twice as quickly as supply between 2023 and 2024—with demand increasing by 11.6% and supply by 5.6%.

1 in 2 — By 2030 — halfway to the deadline for fulfilling nationally determined contributions (NDCs) — **one in five jobs will lack the green talent to fill it. By 2050, this gap will balloon to one in two jobs.**

54.6% — **Job seekers with green skills or titles see a 54.6% higher hiring rate** than the workforce overall. In the **US** this rises to 80.3% higher, with **Ireland** 79.8% higher.

15% — Globally, the fastest-growing green skill is **Sustainable Procurement**—which **15% more people added to their LinkedIn profiles in 2024** than 2023.

The utilities industry — **driven by the rapid expansion in renewable energy — leads all industries in green talent demand, with nearly a quarter of job postings (23.1%) requiring green skills.** Green skills are likely to become increasingly important as the industry confronts the complexities of overhauling the power grid and transitioning to renewables.

Construction, a hard-to-abate sector **responsible for 37% of global emissions**, is poised for a substantial influx of climate-related investment and will be crucial to reach climate targets. **Construction has the second-highest demand for green talent — one in five job postings (20.6%) require green skills.**

Manufacturing delivers the technologies and products that transform other industries, but is a large contributor of emissions. **13.2% of job postings require green skills.** Manufacturers will face additional pressure to reach net zero as companies across industries seek to decarbonize their supply chains.

The sharpest green talent demand spike between 2023 and 2024 was in the technology, information, & media industry — where the share of jobs requiring green skills surged 60% as AI gains further traction and companies add datacenter capacity.

Chapter 1

Workers desperately needed:
The growing green skills shortage

Governments and companies are investing heavily in reaching ambitious climate targets. But these goals will be unattainable, and resources squandered, if we don't have people with the skills to build and power new infrastructure, develop and deploy innovative technologies and processes, and rethink existing business models. We are already falling behind.

The current green talent supply and demand trajectory will leave us lacking nearly one-fifth (18.7%) of the green talent we'll need by 2030 — the midway point between the 2025 deadline for countries to commit to NDCs, as outlined in the Paris Agreement, and the 2035 target for fulfilling them. By 2050, this gap will swell to 101.5% — leaving us without half the green talent that employers will need.

Governments have the power to influence demand for green talent and create a strong supply of skilled workers. When governments invest in, incentivize, and de-risk climate solutions — and when they partner with educational institutions and private sector players to upskill the workforce — climate plans can become blueprints to deliver economic opportunity and a viable path to net zero.

Green demand versus green supply

As employers strive to hit sustainability targets, they are driving up demand for green talent in most countries. **In 2023, 7.3% of job postings on LinkedIn were for a green job or required green skills. This year, that figure rose to 7.7%.**

The percentage of job postings requiring green skills is highest in the **UK,** an early mover in establishing climate targets[2]; 13% of UK jobs now require at least one green skill. Following closely behind are **Ireland** (12.4%), **Saudi Arabia** (11.7%), **Norway** (11.6%), and **Switzerland** (11.5%).

Portugal, where the largest utility announced a $27 billion investment in nearly doubling its renewable energy capacity last year, posted the most robust green talent demand growth between 2023 and 2024. Their share of jobs requiring green skills surged 71.3%, with other notable spikes in the **UK** (46%), **Costa Rica** (40%), **Singapore** (27.1%), and **Luxembourg** (27%).

[2] The UK was the first country to introduce a legally binding framework to reduce greenhouse gas emissions with the Climate Change Act 2008.

Green talent demand by country


Legend: ■ 2023 ■ 2024
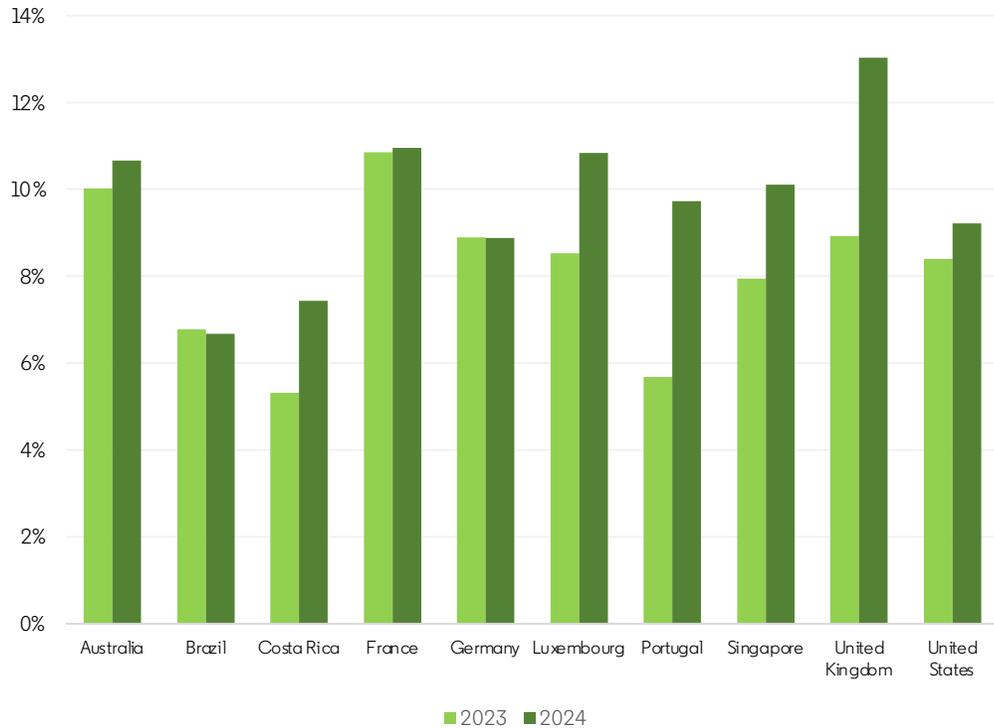
The global supply of green talent, however, is lagging farther behind. **While green talent demand grew 11.6% from 2023-2024, supply only increased by 5.6%.**

By 2050, the gap between green talent supply and demand will balloon to 101.5% if current trends continue. Unless we at least double the size of the green talent pool projected to exist that year, we will put sustainability goals at risk.

Green talent demand and supply (proj. 2025 onwards)
Indexed to 2021 | Median Values and CAGR used for projected data

Legend: —— Demand —— Supply
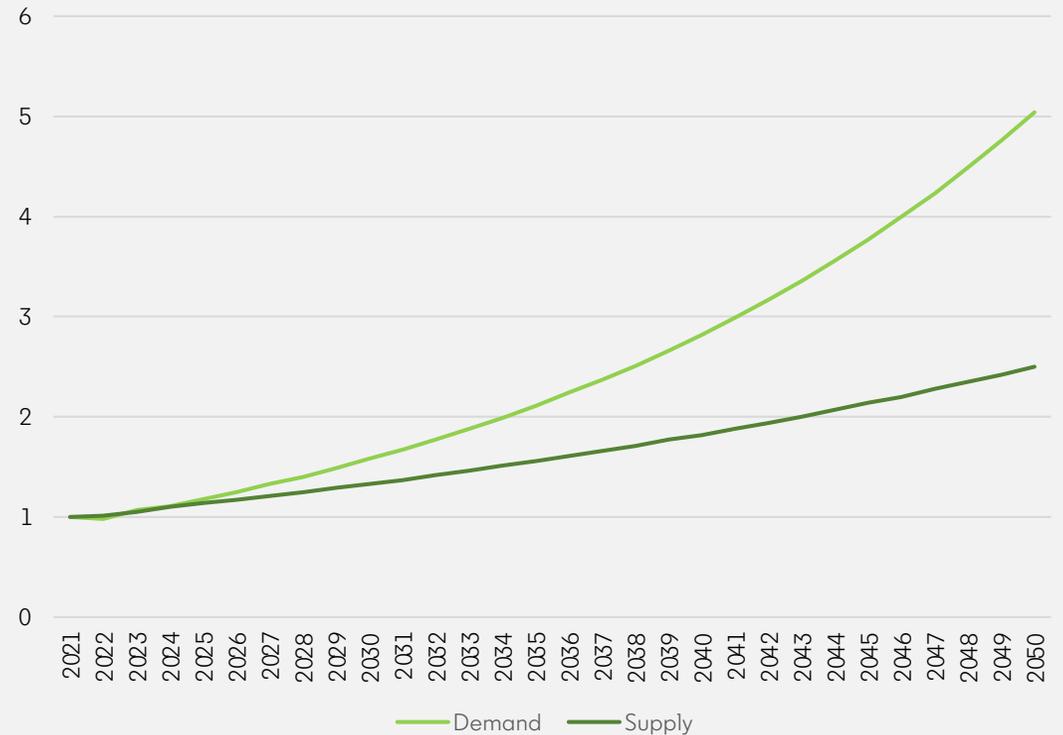
Why are some green skills suddenly red hot?

Globally, we see the greatest demand and supply growth for skills in areas that have been the focus of recent government climate policies. These include supply chain decarbonization, sustainable construction, renewable energy, and ecosystem management.

Supply chain decarbonization

Policies like the EU's Carbon Border Adjustment Mechanism (CBAM), which attaches a fee to emissions generated during the production of imported products, are prompting companies to examine the climate impact of their entire supply chains. In conjunction with this imperative, this year's fastest-growing skill is sustainable procurement — which 15% more workers added to their LinkedIn profiles in 2024 than in 2023. In the UK, where the Sustainability Disclosure Requirements (SDR) policy demands greater transparency into emissions throughout the supply chain, the share of workers with responsible sourcing skills grew fivefold over the past year.

Sustainable building and retrofitting

Regulations, incentives, and investments related to building decarbonization and energy efficiency are fueling demand for expertise in sustainable building practices. In the **US**, where policies such as the Inflation Reduction Act and Bipartisan Infrastructure Law focus on the nexus of climate and the built environment, the share of workers with building performance skills is 80 times higher this year than it was in 2023. In the **UK**, where decarbonizing the existing building stock is a top priority, the share of workers adding the building performance skill grew fiftyfold.

Renewable energy

Global initiatives emerging from COP28 like the UAE Consensus, which calls for tripling renewable energy capacity by 2030, have intensified the focus on skills in renewable energy generation.

Skills related to solar energy led the growth, accounting for 5 of the 10 fastest-growing skills within the global renewables sector. The sharpest spike was for the solar system design skill in **Brazil,** which 9x as many workers added to their profiles in 2024 as in 2023. Brazil's booming solar energy sector overtook wind as the country's second-largest electricity source in 2023, the same year the government announced $82B in energy transition investments through its New Growth Acceleration Program (PAC). By the end of the year, Brazil had 113,147 megawatts of new solar capacity in the pre-construction phase — second only to China.

Another notable skill adoption spike was in **Germany,** where a plan to transition away from fossil fuel dependence by prioritizing green hydrogen is reflected in an accelerated adoption of skills in green hydrogen (up 224.5% over the past year) and hydrogen storage (up 130.7%).

Ecosystem management

Workers are also accelerating their adoption of skills related to ecosystem management, amid policies targeting the health and environmental risks posed by contaminated soil and water, prioritizing climate resilience, and supporting the renewable energy sector's need for additional land. In this area, we see the greatest year-over-year increases in the skills of water & wastewater design in **Germany** (up 391%), hazard mitigation in **Brazil** (264%), vertical farming in the **US** (144%), carbon management in **Singapore** (108%), and hazardous waste management in **Peru** (89%).

Fastest-growing green skills					
US	Brazil	Australia	UK	Germany	France
1. Building Performance	1. Integrated Supply Chain Management	1. Environmental Risk	1. Building Performance	1. Industrial Maintenance	1. Electrification
2. Responsible Sourcing	2. Health, Safety, Security, and Environment (HSSE)	2. HSSE	2. Decarbonization	2. Integrated Supply Chain Management	2. Sustainable Business Strategies
3. Environmental Projects	3. Hazardous Chemicals	3. Environmental Protection	3. Low Carbon	3. Ocean	3. Environmental Protection
4. Environmental Due Diligence	4. Solar System Design	4. Water Industry	4. Responsible Sourcing	4. Water & Wastewater Design	4. Energy Engineering
5. Sustainable Growth	5. Sustainable Management	5. Land Use	5. Environmental Studies	5. Sustainability Strategy	5. Climate Change Mitigation

Chapter 2

Opportunity knocks:
Green skills open doors, but many lack access

Green skilling is one of our most powerful levers for reversing climate change. It is also a pathway to economic opportunity. As noted in our previous report, workers with green skills are more likely to be hired and green skills have proven more resilient during economic downturns. Workers who develop these skills position themselves for roles in the green transformation underway — future-proofing their careers as green skills move from "good to have" to "must have," much like digital skills.

We need everyone for this transition, and everyone deserves access to the economic opportunity it brings. But certain populations, including Gen Z and women, demand special focus in our quest to double green talent by 2050. Gen Z, which will make up more than a third of the workforce in 2050, is highly motivated to be part of the climate solution but struggles to break in. Women, who are disproportionately impacted by the ravages of climate change, are less likely than men to have green skills: 10% of women have at least one green skill on their profile compared to 17% of men.

Across industries, green candidates rise to the top of the pool

In a [slowing labor market](#), with stiff competition among job seekers and hiring declines in many economies, green hiring is bucking the trend, presenting an opportunity for workers across all generations and geographies. **Green talent is far more likely to secure a job, getting hired at a global rate 54.6% above the economy-wide hiring rate.**

In the **US**, where demand for green talent grew 9.8% between 2023 and 2024 (while supply increased by 3.1%), the hiring rate for green talent is 80.3% greater than the hiring rate for talent overall.

In **Ireland,** where demand for green talent grew 22.1% between 2023 and 2024 (while supply increased by 6.3%), the hiring rate for green talent is 79.8% greater than for talent overall.

In the **UK,** where demand for green talent grew a staggering 46% between 2023 and 2024 (while supply increased by 5.3%), the hiring rate for green talent is 72% greater than the hiring rate for talent overall.

Remarkably, our data also shows that even when job postings do not explicitly list green skills, employers find these skills appealing — and are more likely to hire candidates who have them. In **Finland** and the **Netherlands,** where between 2023 and 2024 the share of job postings requiring at least one green skill dropped 43.8% and 20.1%, respectively, green talent is more than twice as likely as other talent to be hired. Similarly, in **Belgium,** where the share of job postings requiring green skills fell 18.6% in the past year, workers with green skills are still 90.3% more likely to be hired.

Job seekers with green skills or titles see a 54.6% higher hiring rate than the workforce overall.

54.6%
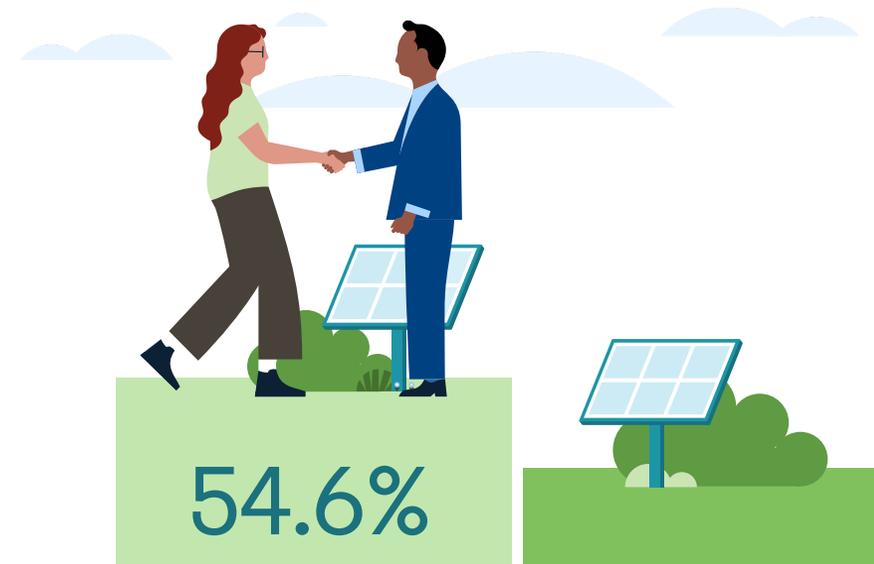
Gen Z wants green jobs but can't break in

Gen Z is perhaps the most promising target for global efforts to double green talent, but today, only 1 in 20 Gen Z workers have green skills. This generation (born between 1997 and 2012) is entering the workforce more quickly than any other generation and tends to view the climate transition as both an existential threat and a promising source of economic opportunity.

Gen Z will make up one-third of the workforce by 2030, a key staging post for achieving net zero. But at the current rate of progress, only one in 10 Gen Z workers will have green skills by then.

This is not due to lack of interest. More than half of Gen Zers (61%) want to work in a green job in the next 5 years, and more than three-quarters (78%) believe they could pick up green skills if offered the training.[3] But they are struggling to find a way in.

[3]Based on a global survey LinkedIn conducted of 7,141 citizens across the UK, US, Germany, Netherlands, Brazil, and the UAE in May 2024.

What are the main barriers to securing a green job?

Lack of available job opportunities	63%
Lack of experience	45%
Lack of green skills	40%
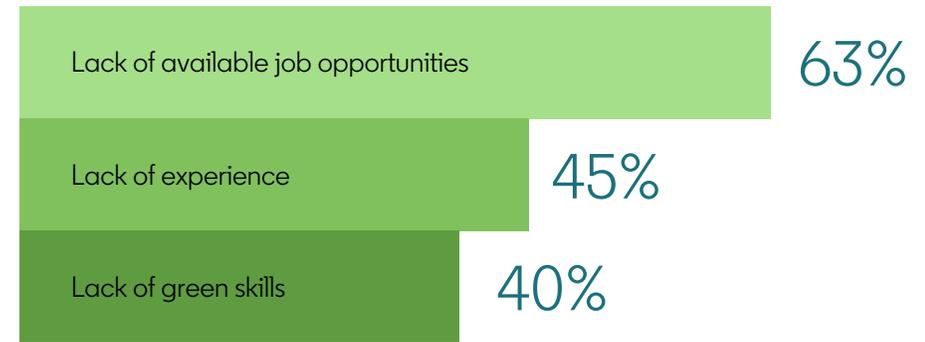
Gen Z workers are confident in their ability to learn green skills, if only they could easily identify programs that teach them. 78% of Gen Z workers believe that if offered training, they'd be able to learn the new skills needed to perform a green job. But employers have been slow to give Gen Z the green skills they want, with just 30% of Gen Z workers saying their current employer offers green skills training. Green upskilling is also difficult to come by from other sources. Fewer than half of Gen Z workers (41%) have access to green skills training programs. In the US, this figure drops to 25%.

Gen Zers, like other generations, are insufficiently aware of the enormous range of roles, across industries, that can impact climate change. Fewer than 1 in 5 Gen Zers have a full understanding of the different career paths for breaking into green jobs — and what a green job can be.

Women underrepresented as green gender gap persists

There is a persistent gender gap in the green workforce. Currently, 10% of women have at least one green skill, compared to 17% of men.

The global green gender gap has been steadily widening, by an average of 0.17 percentage points per year. This is happening even as women are gaining green skills more quickly than men. Since 2023, the share of green talent has risen 12% among women and 8.3% among men. The growth in women entering the green workforce is still 3 times too slow to close the widening green talent gender gap.

OnePointFive | Green upskilling program takes a page from coding academies

When Laurel Yaros found herself on the job market after her B2B software sales team was cut during a reduction in force, she seized the moment to pivot into the green economy. "There was a lot of doom and gloom that I was reading about — wildfires, coastal shorelines being destroyed — and I wanted to be doing something to help," says Yaros, 27. She searched and networked extensively for months. But without skills or experience in sustainability, she found, "It was not easy."

Eventually she enrolled in OnePointFive Academy (or OPF Academy), an 8 week cohort-based program where she gained skills in decarbonization strategy, life cycle analysis (assessing the environmental impact of a product or service over time), and sustainability reporting. She heard about the latest trends in climate innovation, financing, and standards from guest speakers including a climate tech CEO, a decarbonization-oriented investor, a carbon accounting expert, and the executive director of a climate nonprofit. And she cemented her new knowledge through hands-on projects simulating the tasks she might do on the job — like using mock data to build a greenhouse gas accounting model.

By pairing her new green skills with her existing skills in B2B software sales, Yaros transitioned into the green economy while continuing to ascend the career ladder. She now sells fleet and route optimization solutions designed to improve the efficiency of operating heavy-duty vehicles, like sanitation trucks and snow plows.

"When I speak with someone in a sustainability role, I'm able to leverage the knowledge I learned in OPF Academy to build rapport, find common goals, and move the deal forward," she says.

Neil Yeoh, the founder and CEO of OnePointFive — a sustainability advisory firm — created OPF Academy after noticing how many professionals, from GenZers to mid-career workers, experienced the same dilemma as Yaros. "We stumbled upon the huge problem of this Catch-22: You can't get the skills without getting the job, but you can't get the job without the skills," he says.

OPF Academy is part of a growing constellation of climate-focused training programs modeled on the software engineering boot camps that have proliferated over the past decade. Within a year and a half of its 2023 launch, it has upskilled 700 people in 45 countries. Yeoh's goal: training and activating 100,000 sustainability professionals by 2030.

"Academia is far behind the rapidly moving green skill space, and organizations are upskilling in the wrong places," Yeoh says. "We're able to use case studies from our advisory work with real-world companies to train others. Being able to say, 'What do these skills actually mean for a company?' is what differentiates us."

Chapter 3

Pivotal industries:

Energy production & utilities, manufacturing, construction, and technology, information, & media

The energy production & utilities, manufacturing, construction, and technology, information, & media industries are indispensable to reaching climate targets. They merit special attention from policymakers seeking to achieve emissions reductions at speed and scale and to capitalize on the economic opportunities arising from the climate transition.

We are operating on an extremely tight timeline. The more quickly and effectively we build and deploy the infrastructure and innovations that will transform these industries, the greater our prospect of achieving 2030, 2035, and 2050 decarbonization goals. If we're slow to grow green talent, we will jeopardize our chances.

Energy production & utilities

The success of the green transition rests on the successful transformation of the energy industry, which is responsible for approximately 75% of global greenhouse gas emissions. Governments around the world are prioritizing the sector, earmarking roughly $2 trillion for renewable energy since 2020.

The energy landscape is shifting, with further disruption ahead. The world added 50% more renewable capacity in 2023 than in 2022, with the next five years expected to see the fastest growth yet. By 2030, the International Energy Agency predicts that renewables will meet half of global electricity demand. For workers, this is a time of opportunity and uncertainty.

In describing IEA's World Energy Outlook 2024, IEA Executive Director Fatih Birol said, "We're now moving at speed into the Age of Electricity, which will define the global energy system going forward and increasingly be based on clean sources of electricity."

Renewable energy companies are already reporting a shortage of highly qualified talent. Fossil fuel workers are seeing their jobs change, as companies experiment with renewable sources and look for ways to cut emissions. And utilities are in urgent need of workers capable of helping them revamp aging infrastructure, limit the rising costs of weather-related damage, switch to renewable sources, prepare for an expected demand surge, and decarbonize their own operations.

Renewables are on the rise

In every country we studied, more workers are joining the renewable energy industry than leaving it, a strong sign of employment growth. Likewise, renewable energy employs a growing share of many countries' workforces, while fossil fuels employ a declining share.

In **Germany,** the share of the workforce in renewable energy grew 8.2% over the past year, while the share in fossil fuels dropped 2.8%. In **Sweden,** the share of the workforce in renewables grew 11% while the share in fossil fuels dropped 0.5%. In the **UK,** the share of the workforce in renewables grew 8.3% while the share in fossil fuels fell 0.12%.

In some countries, the share of the workforce in fossil fuels has not declined but has grown more slowly than the share in renewables. In **India,** for example, the share of the workforce in renewables grew 5.5% while the share in fossil fuels grew 3.6%. In **Brazil,** the share of the workforce in renewables grew 5.4% while the share in fossil fuels grew 2.1%.

In the **US,** hiring in the renewable energy sector has been outpacing fossil fuel hiring as far back as June 2020. Hiring in renewables is now 120% higher than in fossil fuels. Comparing specific renewable energy sources, we see that this increase is driven by solar, where hiring is 97% higher than in fossil fuels, followed by biomass (79% higher) and wind (42% higher).

Compounded annual growth rate for the share of the workforce by industry (2016–2024)

■ Fossil fuel ■ Renewable
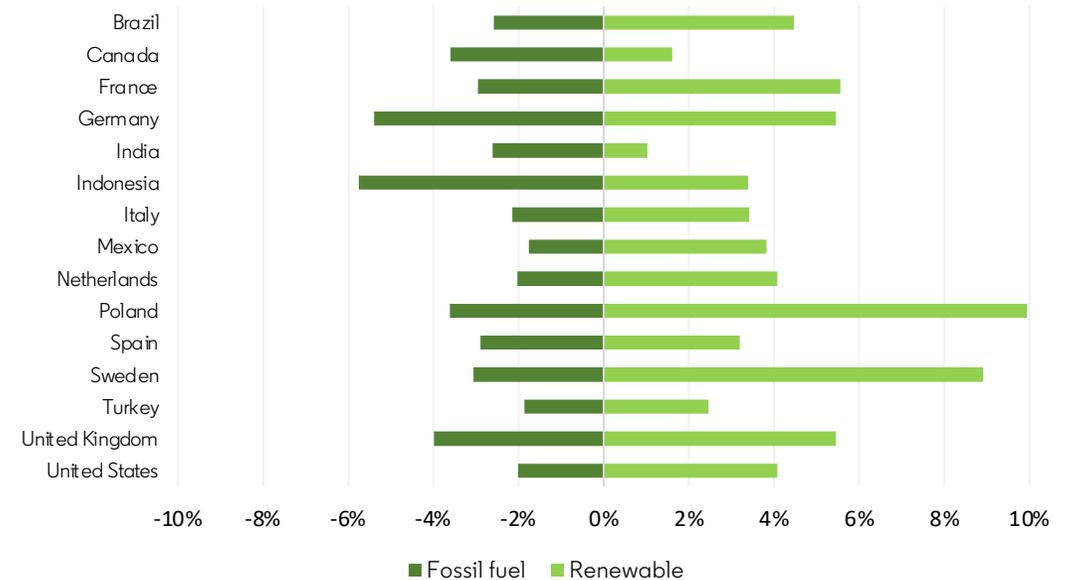
Source: Kaura, A. (2024). "Accelerating the Transition to Electric Vehicles." LinkedIn Economic Graph Research Note.

The skills mix is changing as the energy mix evolves. In the **US,** where several states have passed laws designed to spur the growth of geothermal energy, the share of the workforce dedicated to geothermal electric power generation has increased by an average of 4% each year between 2016 and 2024. The US geothermal sector is followed by increases in the share of the workforce in solar electric power generation and wind electric power generation (up 2.6% and 2.4%, respectively). In **Brazil,** where policymakers have similarly passed laws to develop the country's solar capabilities, the share of the renewables workforce employed in solar electric power generation has increased 12% each year since 2016.

Green skills emerging in the fossil fuel industry

Green skills are growing in the fossil fuel industry. The share of fossil fuel workers with green skills grew 3.5% over the past 3 years, and 5% between 2023 and 2024 alone. Hiring trends show that green skills are poised to become more prevalent throughout the industry, with green talent comprising 6% more of 2024's new hires than 2023's.

The fastest-growing green skill categories in the fossil fuel industry are ecosystem management, waste prevention, and pollution prevention.[4] This suggests that climate regulations are driving a significant shift in the fossil fuel industry, spurring companies to upskill or recruit workers with skills needed to adapt to emerging technologies and develop more sustainable practices.

[4] We organize green skills into 12 categories. See Methodology for more information.
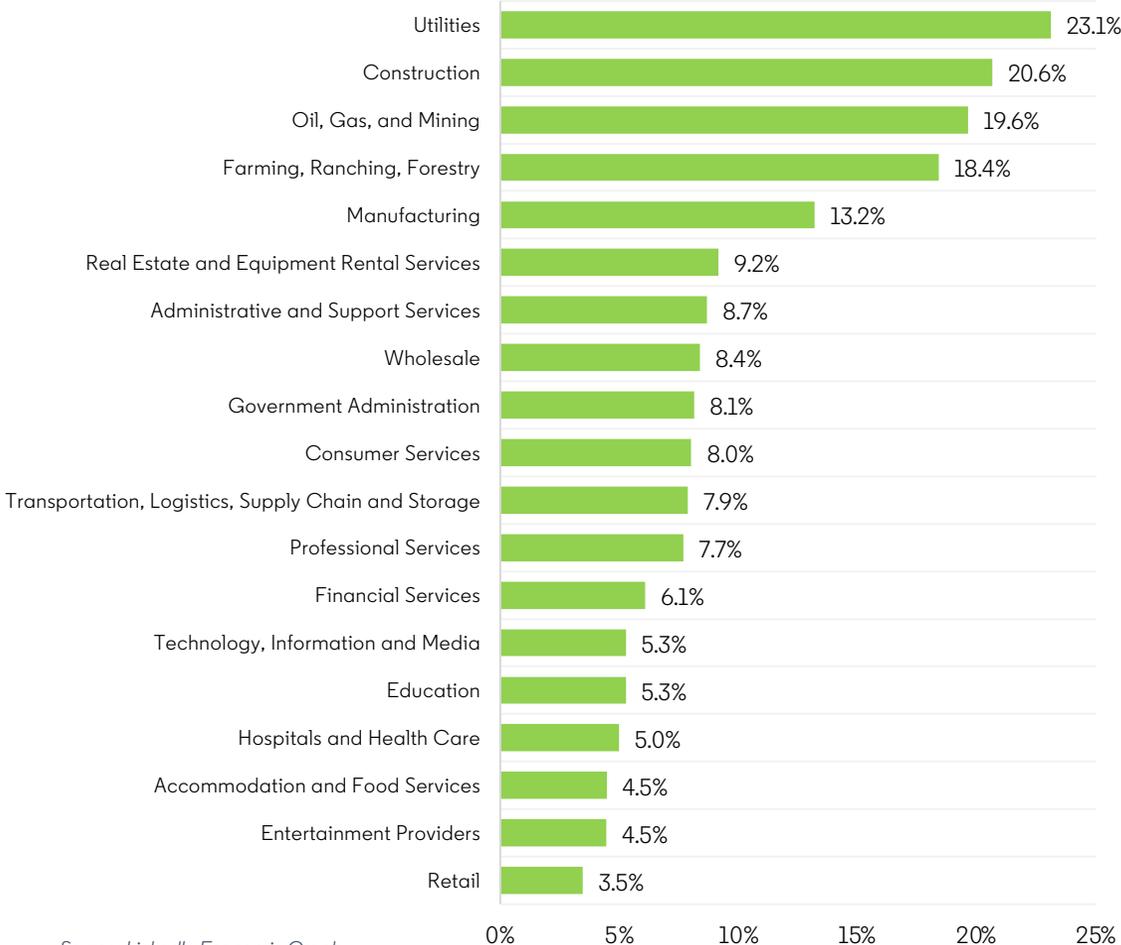
Energy transformation is driving greening of utilities

Around the world, utilities is the industry with the greatest share of green talent (28.1%) and the greatest demand for it (23.1% of job postings require green skills). This stands to reason, as the industry includes the growing renewable energy sector. But green skills are also becoming increasingly important in other segments of the utilities industry, including electricity transmission and distribution and services related to natural gas, water, and sewage.[5]

The challenges of meeting electricity demand expected to grow 3.4% a year through 2026, modernizing the power grid, and transitioning to renewable sources are particularly complex — requiring a massive infusion of green skills, including complex capabilities that cannot be developed overnight.
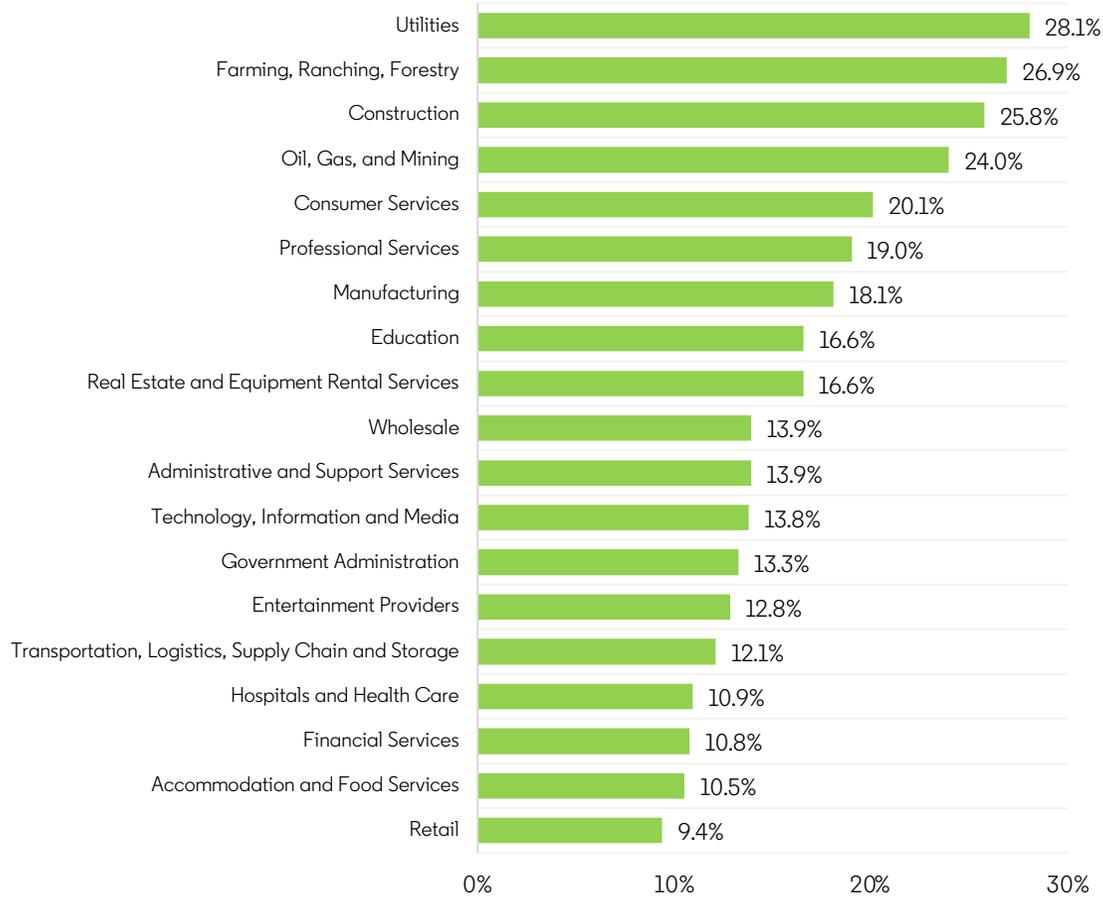
[5] Learn more about our industry taxonomy here.

Global green talent demand by industry
Share of 2024 job postings requiring green skills

Industry	Share
Utilities	23.1%
Construction	20.6%
Oil, Gas, and Mining	19.6%
Farming, Ranching, Forestry	18.4%
Manufacturing	13.2%
Real Estate and Equipment Rental Services	9.2%
Administrative and Support Services	8.7%
Wholesale	8.4%
Government Administration	8.1%
Consumer Services	8.0%
Transportation, Logistics, Supply Chain and Storage	7.9%
Professional Services	7.7%
Financial Services	6.1%
Technology, Information and Media	5.3%
Education	5.3%
Hospitals and Health Care	5.0%
Accommodation and Food Services	4.5%
Entertainment Providers	4.5%
Retail	3.5%

Source: LinkedIn Economic Graph

Global green talent supply by industry
Share of workers with green skills in 2024

Industry	Share
Utilities	28.1%
Farming, Ranching, Forestry	26.9%
Construction	25.8%
Oil, Gas, and Mining	24.0%
Consumer Services	20.1%
Professional Services	19.0%
Manufacturing	18.1%
Education	16.6%
Real Estate and Equipment Rental Services	16.6%
Wholesale	13.9%
Administrative and Support Services	13.9%
Technology, Information and Media	13.8%
Government Administration	13.3%
Entertainment Providers	12.8%
Transportation, Logistics, Supply Chain and Storage	12.1%
Hospitals and Health Care	10.9%
Financial Services	10.8%
Accommodation and Food Services	10.5%
Retail	9.4%

Source: LinkedIn Economic Graph

Within the utilities industry, renewable energy and electrification skills are experiencing the most notable growth. In the **US** utilities industry, the share of LinkedIn members adding the skill of electrification to their profiles grew 165% in the past year. This growth is driven by substantial investments in clean energy technologies through climate policies like the Bipartisan Infrastructure Law and Inflation Reduction Act. In **Spain**, where the National Integrated Energy and Climate Plan aims to deploy 39 gigawatts of cumulative photovoltaic capacity by 2030, the share of workers adding solar power skills grew 46.6%. In **Germany**, where the 2022 policy known as the Easter Package mandates that nearly all of the country's electricity come from renewable sources by 2035, the fastest-growing green skills in the utilities industry are energy engineering (up 235.7%) and energy technology (212%). In **Brazil**'s utilities industry, energy management (up 33.1%), renewable energy (19.5%), and wind energy (16.8%) are among the fastest-growing green skills.

Overall, demand for green utilities talent is highest in **Singapore, Ireland, Portugal,** and the **United Arab Emirates**, where more than a third of job postings require green skills. Governments in these countries have developed robust policy initiatives in areas including smart grids, energy efficiency, and specific energy sources like solar, wind, and green hydrogen.[6]

[6]The Singapore Green Plan 2030 aims to quadruple solar energy deployment by 2025 and achieve net-zero emissions by 2050. Ireland's Climate Action Plan 2023 targets 80% renewable electricity by 2030, with investments in offshore wind energy and grid modernization. In Portugal, the revised National Energy and Climate Plan (PNEC) 2030 sets ambitious targets, including 51% renewables in final energy consumption and a significant boost in green hydrogen production. The UAE Energy Strategy 2050 aims to increase the contribution of clean energy to 50% by 2050, with substantial investments in solar and nuclear energy, and the development of green infrastructure.

# Arevon | Exploring new talent pools to fuel renewable energy growth

AREVON®

Renewable energy is a rapidly growing industry, says Jon Faltis, Chief People Officer at Arevon, which develops, builds, owns, and operates utility-scale solar and energy storage projects across the United States.

"There is a shortage of highly qualified talent, and it's difficult to find people with prior experience," Faltis says. As a result, companies are increasingly turning to the easiest place to find people who have done the work before: industry peers.

While hiring workers away from peer companies fills an immediate job opening, Faltis is fully aware that this approach does not fulfill an important long-term objective: bringing more workers into the renewable energy industry. These days, Arevon is broadening its lens on talent by seeking out candidates who have honed certain critical skills in other industries — and by investing in energy-specific skill development on the job.
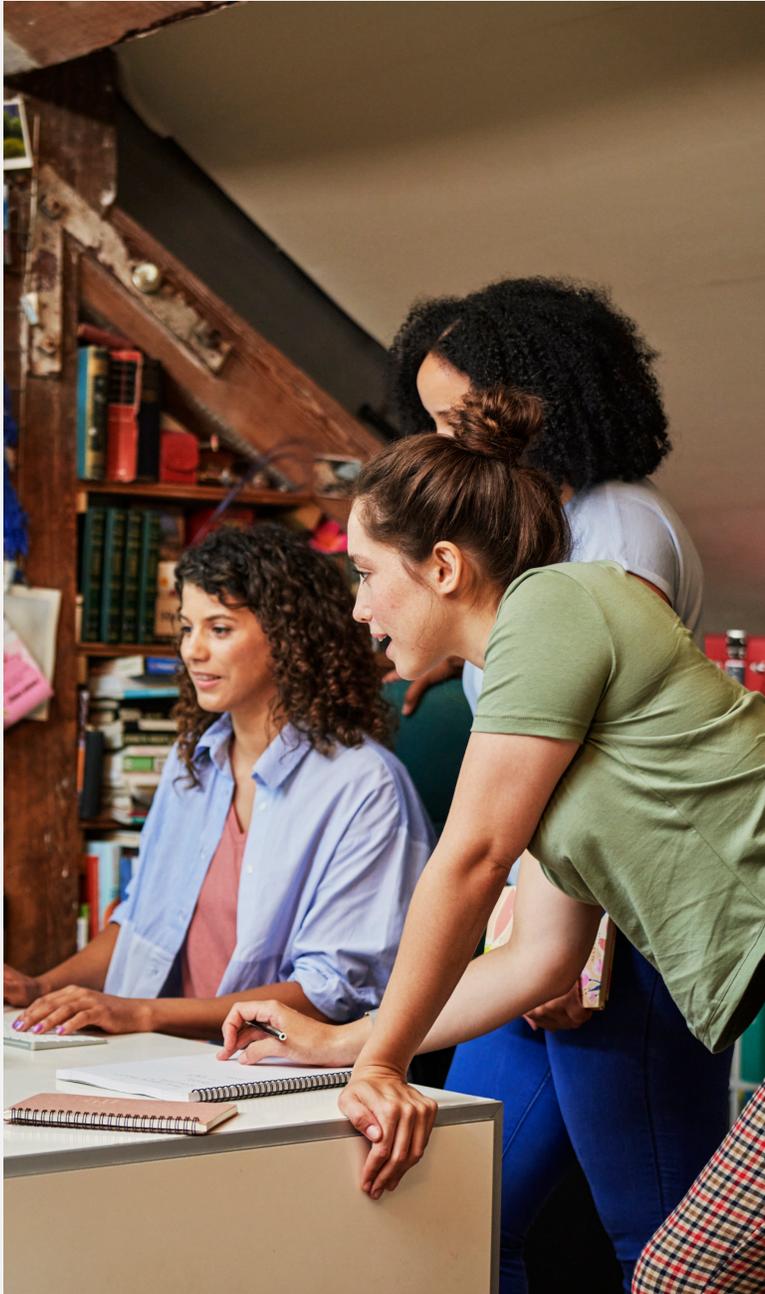
"Workers with the most relevant skills do not always come from the industries you might expect," Faltis notes. For example, given the nuances and challenges of solar energy asset management, Arevon has found that it can be beneficial to have experience in commercial real estate, for example, versus direct experience in the renewable energy sector.

In order to continue to support its employees' knowledge and expertise, Arevon recently launched a generous tuition reimbursement program and is investing heavily in learning, development, and training. "One size does not fit all at this organization, and because of that the upskilling and L&D mission is quite nuanced," Faltis says. "The things you need to teach an accountant are different from the things you need to teach an asset manager."

From a company culture perspective, Faltis sees inherent value in hiring workers who are new to the renewable energy industry. "If we have a core requirement that you have to have prior experience in the sector, then not only are we going to be missing out on a lot of talent with high potential, but we also might be inadvertently stifling the diversity of the organization," he says.

Potential candidates may not even realize there are relevant roles for them in renewable energy — and that the sector is hiring not only engineers and solar panel installers but also accountants, data scientists, human resources specialists, and more.

"We need to change the perception that a green job means only a skilled labor worker," Faltis says. "There are so many different opportunities to work in clean energy, and Arevon looks forward to hiring passionate, mission-driven professionals to continue to advance the energy transition."

# Coalfield Development | Reviving and greening Appalachia's economic legacy

Coalfield Development, a West Virginia nonprofit dedicated to rebuilding the Appalachian economy, exemplifies how skills development can create economic opportunities in communities impacted by mine, power plant, and factory closures. The organization creates and supports green social enterprises, which train and employ those living in areas heavily impacted by the decline of the coal industry.

Coalfield targets people with barriers to employment (like long-term joblessness) and helps them transition into solar energy, sustainable manufacturing, and other sectors of the green economy. For 6 months, workers spend 33 hours a week gaining hands-on experience, industry-specific skills, and professional certifications. They are paid full-time, spending the remaining 7 hours working with a team of "navigators" to resolve financial issues, earn a high school equivalency degree, or clear other hurdles to employability.

Some of the people Coalfield serves are former coal miners themselves, and many come from families with deep mining roots. Their experiences speak to the long-term damage caused when communities that revolve around changing industries don't have a viable path to access new opportunities.
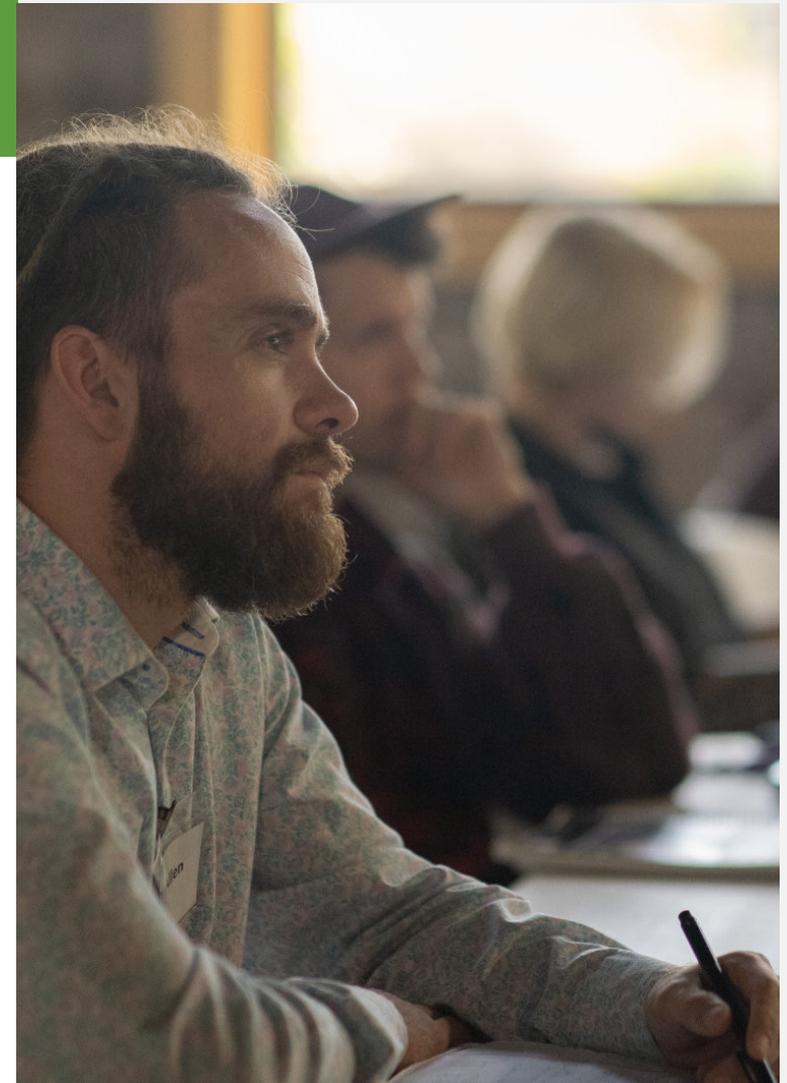
"We're helping people who have been most impacted take control of their economic futures, which we think is very important as we rebuild this economy that has collapsed," says Marilyn Wrenn, Coalfield's Chief Program Officer. "We're seeing a real hunger for people to engage in employment. Everyone is trying to figure out what's next."

Coalfield has helped attract more than $160 million in new investments to the region — including $62.8 million in US Economic Development Administration funding that was accompanied by $26 million in matching funds from other sources. That award, part of the federal government's Build Back Better Regional Challenge, was given to the Appalachian Climate Technologies (ACT Now) Coalition — which Coalfield created and leads.

Coalfield is now extending its reach into other parts of the country, by sharing its expertise and resources with organizations seeking to support the green workforce transition. In all of these places, Wrenn says, policymakers will be critical to success."

"The state of West Virginia is changing its attitude toward helping people work in climate-friendly jobs," Wrenn says. "We're seeing green bus manufacturers come into West Virginia. We're seeing battery recycling, steel recycling, metal stamping for EV cars. For some of these businesses to come, the state has had to come to the table in really big ways."

These new industries build upon the region's legacy as an energy and manufacturing hub, which resonates with workers. "There's a cultural comfort with working in energy production," Wrenn says.

Case study

SSE | Decarbonizing energy using skills honed in fossil fuels

SSE, one of the UK's leading energy companies, is at the center of the diversifying energy mix that is reshaping the industry and its workforce. More change is underway, as SSE strives to increase renewables output fivefold by 2030 while reducing carbon intensity by 80%.

The company's 14,000 employees are spread across onshore and offshore wind, hydropower, thermal power, electricity transmission and distribution, grid management, and energy products and services. To reach its net zero goals, SSE has prioritized upskilling its people and exploring talent pools with considerable skills overlap, particularly within traditional energy sectors like fossil fuels. In 2023-24 alone, SSE invested more than £12.5 million ($16.2 million) in learning, training, and development.

In one example, the company recently introduced a utility arborist apprenticeship program. Utility arborists manage trees and vegetation surrounding power lines, to help prevent outages and fires. This role is becoming even more important as storms, floods, wildfires, and other environmental risks to the distribution network become increasingly common. In another example, SSEN Transmission is developing employees' skills in high-voltage direct current (HVDC), so SSE can add the electricity transmission capacity needed to connect more renewable energy assets to the grid (a company priority).
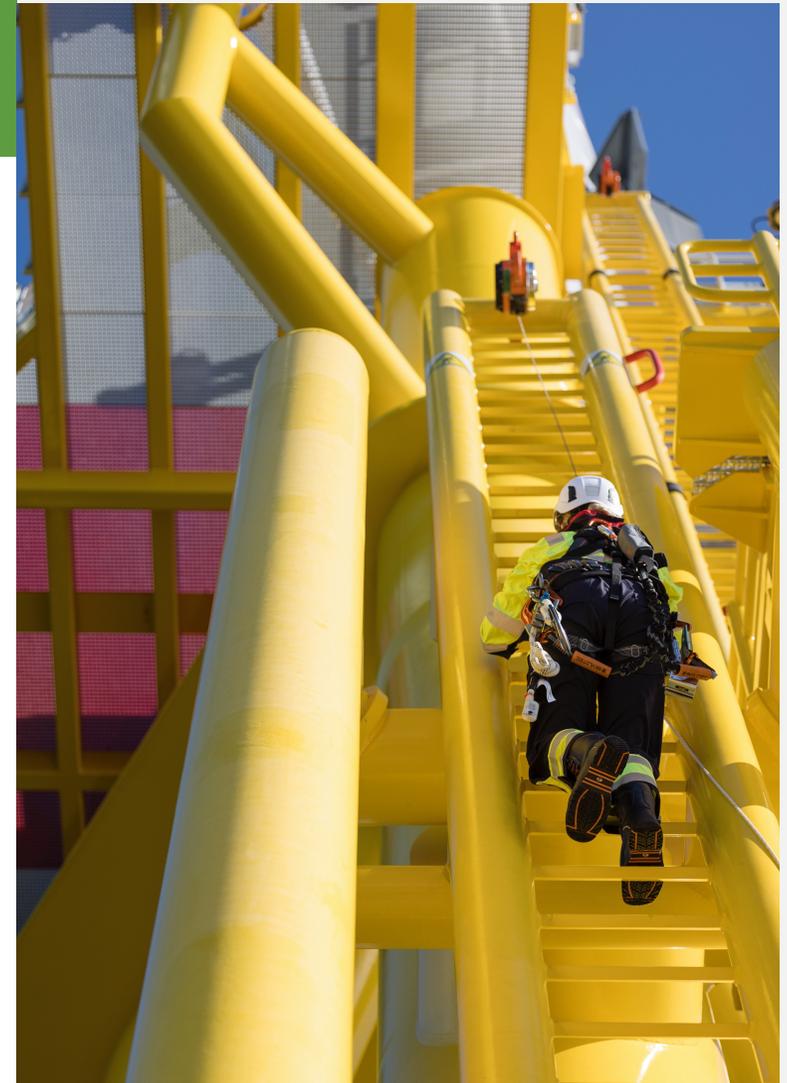
SSE has had tremendous success attracting workers with experience in carbon-intensive energy. 2023 figures show that 1 in 4 SSE employees transitioned from such roles, up from 1 in 5 in 2021. Transition rates are particularly high in the SSE Renewables (SSER) division. SSER's 2024 sustainability report p. 18 describes a company-wide commitment to put "listening and learning from workers who have made the transition to a low-carbon role at the forefront, to help us understand how to leverage that transferability and, importantly, make transitions as easy as possible."

34-year-old Grant Garden worked in fossil fuels for 11 years before SSE hired him as a control room manager at the Seagreen wind farm, off the coast of Scotland. "I was looking for something new and had been keeping up to speed with how the wind and renewables industries were booming," Garden says, in a Q&A featured in the SSER report. "When I saw the job at Seagreen advertised, I jumped at the chance."

Garden realized he had many of the required skills from his years in offshore oil rig control rooms.

"The way that big sites and plants operate and are maintained share lots of similarities and processes, so the move to renewables wasn't totally alien," Garden says. For others considering a switch, he adds, "The main advice would be to go for it!"

Construction

The construction industry is critical to achieving net zero. It already accounts for roughly [one-fifth of greenhouse gas emissions](#) and [60% of the buildings that will exist in 2050](#) have not yet been erected. Making the construction industry more sustainable is also key to curbing energy consumption, with building operations responsible for [30% of energy use worldwide](#).

Government policies prioritizing sustainable building and retrofitting are starting to reshape green talent trends. Globally, 1 in 5 construction job postings (20.6%) require green skills and 26% of workers have green skills, up 3.1% in the past year. While the construction industry is adding green talent at an annual rate of 2.2%, this growth is insufficient for an industry charged with transitioning to low-carbon concrete, maximizing buildings' energy efficiency, and collaborating with transportation and manufacturing players to decarbonize the production and transport of materials.

Sustainable building is on the rise

By examining the fastest-growing green skills in construction, we see that decarbonizing buildings, complying with environmental regulations, and mitigating buildings' impact on nature are among the factors driving green skills adoption. Building performance — a skill that involves assessing and improving energy efficiency — stands out for its rapid growth among the workforce in countries like the UK and US, where the share of workers who added this skill increased eightyfold and fiftyfold, respectively, from 2023 to 2024. Interestingly, growth of this skill is much higher in the professional services industry than the construction industry. This suggests that construction companies are relying heavily on external consultants as they seek to conserve resources, curb emissions, adhere to government mandates, and develop their own capacity to do this work.

Construction roles evolve with policy

Regulations around how buildings and construction projects impact human health and safety, wildlife, and the natural environment also appear to be driving momentum. Roles related to these priorities dominate our lists of the fastest-growing green jobs in construction.

In the **UK,** which has passed measures to curb emissions from new homes and buildings, job postings in construction for the role of head of environment, health, and safety rose nearly fourfold over the past year (up 373.7%), while postings for environment specialists more than tripled (up 245.4%). In **Canada,** where the 2024 Green Buildings Strategy allocates hundreds of millions of dollars toward retrofitting buildings — lowering emissions as well as residents' energy bills — environmental health safety specialist job postings nearly tripled (up 196.6%), while postings for environmental consultant (up 158.9%) and health and safety manager (up 141.3%) more than doubled. In **France,** job postings for safety manager more than doubled (up 142.3%), with further growth in postings for the role of arborist (up 64.2%) and health safety environment engineer (up 49.5%). In the **US,** environmental director was one of the fastest-growing construction jobs (up 90.9%).

These trends play out elsewhere in the world, too. In **India,** where developers certified in sustainable construction are eligible for tax benefits, low-interest loans, and expedited approvals, postings for sustainability consultant rose 41.9% over the past year, while in **Brazil,** environmental engineer job postings rose 53.1%.

Green talent trends also show that efforts to standardize metrics and reporting practices related to environmental sustainability and health are gaining traction. Construction industry workers in multiple countries accelerated their adoption of skills related to sustainability standards and certifications including ISO 14001; Quality, Health, Safety, and Environment; and the National Examination Board in Occupational Safety and Health. Around the world, governments take such certifications into account when awarding developer contracts, which could include large tax incentives.

Kubik | Creating green building materials and opportunities in Ethiopia

Kubik, based in Addis Ababa, Ethiopia, is on a mission to "build dignity through clean and affordable living for all" by transforming plastic waste into low-carbon, affordable building materials. Its approach to decarbonizing construction also addresses other urgent problems shared by cities across the Global South — attracting attention from investors, builders, and the Global Startup Awards, which named Kubik 2023's startup of the year.

As urbanization sweeps through the Global South, cities are grappling with affordable housing shortages, rising emissions from construction, a dearth of stable employment opportunities, and mountains of plastic waste. African cities are expected to see some of the world's highest growth rates through 2035.

The inspiration for Kubik came when Kidus Asfaw, its CEO and co-founder, was working at UNICEF, on a project building schools from plastic waste. "If we can prove this as a concept, we can decarbonize a heavily polluting sector while driving housing affordability and eliminating trash," he says.

> "I think Africans are the best innovators, because we're the ones seeing these challenges firsthand. We're seeing coastal communities flood. We're seeing crops fail. And we're trying to do something about it," Asfaw says.

Kubik sources plastic waste and converts it into interlocking bricks, columns, and beams that it then assembles into walls. The company estimates that its walls are 40% cheaper and five times less carbon-intensive than walls made from cement. For every aspect of the business, Kubik recruits workers with overlapping skills and partners with foundations, nonprofits, and aid organizations to develop the green skills they need to be successful.

Kubik and its partners have trained 700 waste pickers, primarily women, who previously sustained themselves by scouring landfills for items that brokers may or may not buy. "We pay them about five times as much because aggregators make a majority of the profit," Asfaw says. "And we guarantee that as long as they bring it, we'll buy it."

Safety training is "very important" at Kubik, Asfaw says. Workers receive protective equipment and instruction from health and safety experts. Kubik also trains collectors on the waste management lifecycle, explaining how they can earn more by sorting and cleaning the plastic themselves. "The idea is to show that they can work at the top of the value chain if they provide us with clean, segregated sets," Asfaw says.

Kubik's factory employs a mix of workers with and without prior experience. The senior quality control specialist for Kubik's bricks is one among several former waste collectors who have risen through the company's ranks. "She can leave Kubik and go work at another manufacturing site," Asfaw says proudly. "When our people leave Kubik for other green jobs, we can provide more opportunities for others."

Manufacturing

The manufacturing industry contributes [roughly a quarter of global emissions](#). Manufacturing is also a significant contributor to the carbon footprint of virtually every other industry, because it produces the materials and components on which they depend. As companies develop strategies for reducing Scope 3 emissions — those generated not by the company itself but by its suppliers and consumers — manufacturing is in the spotlight. The industry is under mounting pressure to decarbonize the production of essential materials like steel and cement, as well as the components of vehicles, electronics, construction materials, and beyond.

Additionally, as the renewable energy industry expands, the market for mass-manufactured technologies like batteries, solar panels, and heat pumps is expected to [more than triple by 2030](#) to a yearly value of $650 billion. For the global workforce this means close to 14 million manufacturing jobs supporting renewable energy, more than twice as many as exist today.

To capture this opportunity, the manufacturing industry needs workers with the right skills. Over the past year, the share of green talent hired into manufacturing increased by 7%.

The skills making manufacturing more sustainable

Companies are increasingly working with manufacturers to identify opportunities for reducing emissions throughout the value chain. Nearly 100 of the world's largest companies are collaborating to scale and purchase low-carbon versions of steel, cement, and other products, under the banner of the First Movers Coalition. This important demand signal illustrates how purchasing power can support decarbonization efforts across the manufacturing industry.

In line with this momentum around sustainable manufacturing, waste prevention and management skills are among the industry's fastest-growing green skills in many countries, including **Australia, Brazil, France, Germany, India,** the **UK,** and the **US.** Carbon management and decarbonization skills are also on the rise in these countries, demonstrating the focus on measuring and minimizing manufacturers' carbon footprints.

The development of energy-efficient processes and facilities is another important sustainability strategy for manufacturers. In line with this, energy management and efficiency skills are on the rise in **Australia, Brazil, France, India,** the **UK,** and the **US.**
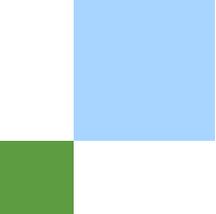
EVs highlight manufacturing's role in climate innovation

The green transformation of manufacturing is not only about reducing emissions and waste, but producing the very technologies that enable a greener future. A prime example: electric vehicles (EVs), which are reshaping the auto industry and changing the mix of skills required on the factory floor.

EV sales have continued to accelerate since 2016, making up 18% of all car sales worldwide in 2023. The US, Europe, and China accounted for most of these sales, but EVs are also gaining momentum in other parts of the world. Because EVs rely on electric motors and advanced electronics rather than traditional internal combustion engines, workers who want to remain in the industry must develop new competencies in areas like battery technology, electrical engineering, and software development.

The share of automotive industry workers with green skills has been steadily increasing, in parallel with EV car sales. These green skills include battery testing, automotive electrical systems, and capabilities specific to developing lithium-ion batteries. Within the automotive industry, 4.4% of workers have skills related to EVs. Between 2016 and 2024, the share of EV-skilled workers grew by an average of 16% a year.[7] **Sweden** continues to lead the way, with 9 of every 100 automotive workers possessing EV-related skills. **Germany** is not far behind at 8.9%, followed by the **UK** (8.3%), **India** (5.8%), and **Turkey** (5.6%).

[7]Based on data for 11 countries from March 2024. Kaura, A. (2024). "Accelerating the Transition to Electric Vehicles." LinkedIn Economic Graph Research Note.

UAW Center for Manufacturing of Green Economy | Training the talent that will power EVs

Electric vehicle (EV) battery factories are cropping up around the world, as companies race to supply a sector that now captures roughly one-fifth of global car sales. Battery manufacturing jobs are brand new by definition, requiring creative approaches to recruitment and reskilling.

The UAW Center for Manufacturing a Green Economy (UAW-CMGE), a nonprofit formed by the United Auto Workers union (UAW), is taking on the challenge using $2 million in federal funding awarded after the UAW reached a neutrality agreement with the battery company Sparkz. The UAW-CMGE is building a replicable model for recruiting and training EV workers nationwide, beginning with a newly opened Sparkz factory in California.

The model is intensive. Step one is recruiting talent that's demographically representative of the local community. Workers are then invited to participate in a "pre-employment" phase, where they are given a primer on climate change, the role of batteries in emissions reduction, the science and technologies behind EV and grid-scale batteries, workplace communication skills, and basic health and safety protocols that will remain relevant as the production process evolves.

Throughout this 3 week period, workers will be given a stipend, childcare services, transit passes, and additional support where relevant (like English-as-a-second-language classes).

"That is how you make a transition," says Priyanka Mohanty, the UAW-CMGE's executive director. "When people are leaving their jobs and deciding to take on a new job, you need to make sure that they feel economically and socially supported."

Workers will then be placed in EV battery manufacturing plants, where they will spend 12 to 18 months training on the job as paid apprentices (and union members). They can extend the apprenticeship period if they choose to prepare for higher-level positions, like maintenance technician, after seeing first-hand how the factory functions.

"Suddenly, it's not just a job," says Mohanty. "It's a way to build a career through this industry."

Like Sparkz, many companies are looking at new partners, including labor unions, to prepare workers with in-demand skills. The Inflation Reduction Act and Bipartisan Infrastructure Law changed the dynamic of such partnerships, with incentives like extra tax credits for businesses that pay above a certain threshold and upskill through registered apprenticeships.

"The federal legislation that's been passed has been absolutely critical to incentivizing companies, particularly small to medium-sized manufacturers, to work with labor in a way that they were not working with labor before," Mohanty says. "We have really tried to leverage that."

Technology, information, & media

The technology, information, & media industry[8] has been at the forefront of the corporate sustainability movement, with companies making news for announcing ambitious climate targets — including reducing carbon emissions, creating products from recycled waste, reducing resources used in operations (like water), and advocating for disclosures that improve accountability and drive progress.

As investments in AI infrastructure continue to grow, the technology sector will grapple with the energy and resource needs of generative AI technology — from the construction of new data centers to the clean energy needed to power operations. At the same time, AI holds the potential to be part of novel climate solutions and is already having a positive impact on climate solutions today.
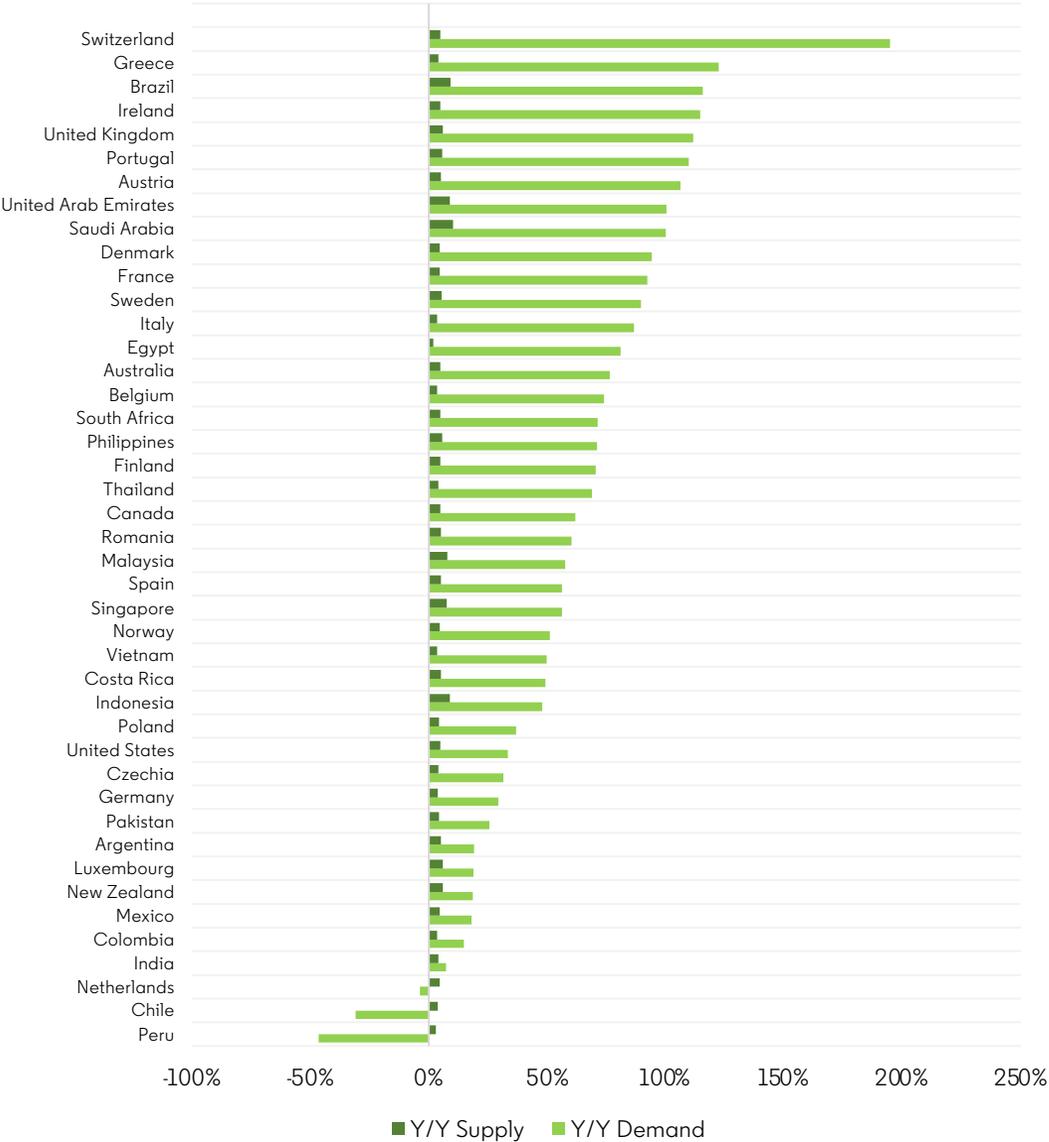
[8]The technology, information, & media industry includes a wide array of companies ranging from software development and internet platforms to newspaper and periodical publishing. The technology industry has the largest share of employment in volume terms. View our industry taxonomy in detail here.

Technology sees sharpest one-year spike in green skill demand

Against this backdrop, the share of job postings in this industry requiring green skills soared 60% over the past year — more sharply than in any other industry. Green hiring rose 7.3% during that period, while supply rose 4.8%. This acceleration in demand comes at a pivotal moment for the industry, as it navigates the shift toward greater resource demands for construction and electricity generation.

Year over year growth in green talent supply and demand by industry

■ Y/Y Supply ■ Y/Y Demand
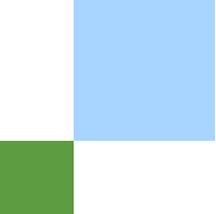
Technology's fastest-growing green skills

Not only does the rise of green skills in technology, information, & media signal an important evolution within the industry, but so too does the mix of green skills that are consistently among the fastest-growing around the world. Broadly, they fall into three categories: corporate sustainability and environmental policy, energy generation and management, and waste reduction and circularity.

Growth in the corporate sustainability and environmental policy category reflects an imperative to take action to meet ambitious climate targets as the technology sector, in particular, faces additional scrutiny in terms of environmental impact. Over the past year, the skill of sustainability was among the fastest-growing in the technology industry across many countries, including **Brazil** (61.9%), **India** (56.4%), the **US** (46.9%), and **France** (41.4%). Employers are also increasingly thinking about how to share progress against sustainability goals, including as required by new regulations such as the EU's Corporate Sustainability Reporting Directive (CSRD). Data shows that this trend is playing out in the technology sector. For example, the skill of sustainability reporting is growing quickly in countries including **Germany** (78.4%), **India** (70.4%), and the **UK** (23.3%).

One of the most crucial focus areas for sustainability within this industry centers around renewable energy solutions. Growth in skills across the energy generation and management category shows a need to procure renewable energy in alignment with climate goals and find efficiency gains to help manage energy demand. Energy efficiency is among the fastest-growing green skills in the technology industry year-over-year in **France** (52.7%), the **UK** (39.3%), and **India** (6.9%).

For most companies, Scope 3 emissions make up the largest share of emissions. This makes circularity an increasingly valuable approach for everything from the lifecycle of devices to product packaging. The focus on circularity is new for many technology employers, and this shows up among the skills workers are adding. Year over year, the skill of product lifecycle management is growing rapidly in multiple countries, including Australia (59.3%), the UK (37.4%), India (24.9%), the US (21.1%), and Brazil (19.9%).

Technology industry's dual role

The same technologies, particularly AI, that pose new challenges for infrastructure and resource needs, are also part of the suite of tools that can help accelerate sustainability solutions that the world needs to meet climate targets. AI can help improve efficiency, enable greater resilience and disaster preparedness, and identify breakthroughs to existing bottlenecks.

LineVision, a company that uses AI to rate the capacity of transmission lines, is helping utilities bring more renewable energy onto the grid. National Grid UK leveraged LineVision to increase transmission line capacity by 60%, making it possible to add 600 megawatts of offshore wind power to existing transmission lines.[9] Predicting severe weather is another area where AI can be useful, given its ability to handle the complex mix of factors that influence events like hurricanes and wildfires. For example, Microsoft's AI for Good Lab is using AI to help communities better predict wildfires and engage in land management through models that combine weather, vegetation, and land use data.[10] And just as AI helped accelerate the development of an effective COVID-19 vaccine from years to weeks, AI models can help identify new chemical compounds for batteries that reduce reliance on rare earth minerals while cutting costs for consumers.[11]

Unlocking the tech sector's unique potential for generating game-changing climate solutions will require a workforce with the right combination of green and AI skills. As companies collect increasingly voluminous amounts of data on emissions and waste within their own operations and those of their suppliers, corporate sustainability professionals will need to know how to use large language models (LLMs) to quickly derive insights from the data and take action.

Companies and governments generally, and the technology industry specifically, are in the early stages of understanding how new software tools will be part of climate progress. The growth of new companies founded with this goal in mind shows the promise. Carbon Direct, a New York-based startup focused on carbon management and removal solutions, and Watershed, a San Francisco-based startup that supports enterprise-level measurement and reporting for sustainability, are among LinkedIn's 2024 Top Startups in the US. Similarly, companies like BiofuelCircle, 1KOMMA5°, and Greenly make Top Startups lists in India, Germany, and France, respectively.

Whether focused on improving biomass supply chains, calculating carbon footprints, or promoting building decarbonization, technology tools will play an increasingly important role in enabling climate outcomes. To be successful, companies will need to hire more workers with the skills to develop these solutions and take them to market.

[9]National Grid. "The Innovative and Futuristic Technology Improving Our Electricity Networks" (2023)
[10]Gholami, S., Kodandapani, N., Wang, J., Lavista Ferres, J. Where there's Smoke, there's Fire: Wildfire Risk Predictive Modeling via Historical Climate Data. *Proc. AAAI Conf. Artif. Intell.* 35, 15309-15315 (2021)
[11]Liu, Y., Guo, B., Zou, X., Li, Y. & Shi, S. Machine learning assisted materials design and discovery for rechargeable batteries. *Energy Storage Materials.* **31**, 434-450.

The policy imperative

The data is clear: Government policies can heavily influence the green skills mix across the economy. Workers with green skills have better economic prospects. And the green talent pool is growing far too slowly to match the demand growth projected as countries commit to climate action. If we want to double green talent while expanding access to the vast economic opportunities that the green transition brings, the public policy environment must set the stage for comprehensive skills development at the speed and scale to meet this moment now and into the future.

Policy recommendations

Climate commitments have to include investments in the workforce.
Every pathway to net zero relies on a workforce prepared to turn climate ambition into climate reality. The next submission of nationally determined contributions (NDCs) can be the hinge point where countries lay out not just their plans for achieving their Paris Agreement commitments through 2035, but equally bold plans for building a climate workforce that can deliver whole-of-economy transformation. By including explicit, substantial workforce development commitments in their NDCs, countries can position themselves to achieve climate targets while positioning their people for economic opportunity. This sends a critical signal to all levels of government, investors, educators, and the private sector that climate action requires parallel investments in green skills development.

Declare workers as enablers of climate ambition at COP29.

With the first-ever thematic day dedicated to human development, COP29 is the moment to build upon COP28's UAE Consensus with a clear message: Investments in people are a matter of enormous urgency if we want to triple renewable energy production, double energy efficiency, and achieve our other collective climate goals. We simply cannot reach our targets if we don't have a global workforce empowered with the skills to get the work done. An official COP declaration could help galvanize the cross-sector solutions necessary to ensure that skills development takes its rightful place center-stage in the climate change narrative. The time to send this signal is now, as countries devote resources to decarbonization projects that only workers with green skills will be able to complete.

Integrate workforce agencies, partners, and insights into climate policy development.

Climate policy developed in a silo is destined to fall short. Governments must match bold climate ambition with a focus on implementation, collaboration, and data to achieve climate ambition and realize the inclusive economic opportunity of the climate transition. The building blocks are clear:

- All levels of government must ensure collaboration of energy and climate agencies with workforce and education peers.
- Strategic engagement should extend beyond the walls of government to include employers, educational institutions, training providers, and workers who bring projects to life.
- Implement ways to measure the supply and demand for the green workforce in local economies to help track progress on climate goals and ensure that no community or demographic group is left behind.

Conclusion: Giving workers the skills the planet needs

This is a critical moment for our planet and the global workforce. Governments are starting to channel enormous financial resources toward infrastructure and innovations that will shape society, power the economy, and impact our natural environment for decades to come. The better prepared our workforce is to take on the challenges ahead, the stronger our chances of making good on our collective climate investments.

The global economy has the potential to be our most powerful tool for tackling climate change, and the battle against climate change has the potential to be our most powerful tool for expanding economic opportunity. By giving workers the right skills — green skills — we can make this a reality.

LinkedIn looks forward to partnering with governments, policymakers, industry leaders, nonprofit organizations, educational institutions, and workers to dramatically accelerate the pace of green skills adoption — and double the size of the green talent pool that's currently projected to exist in 2050. Together, we can create a thriving green economy that saves our planet and enriches the lives of the workers who call it home.

Methodology

This report represents the world seen through LinkedIn data, drawn from the anonymized and aggregated profile information of LinkedIn's one billion members around the world. As such, it is influenced by how members choose to use the platform, which can vary based on professional, social, and regional culture as well as overall site availability and accessibility. In publishing these insights from LinkedIn's Economic Graph, we prioritize statistical accuracy as well as member privacy. As a result, all data show aggregated information for the corresponding period, following strict data quality thresholds that prevent disclosing any information about specific individuals.

Data in this report focuses on the following list of countries and encompasses data from January 2021 to July 2024 unless otherwise mentioned:

Argentina	Finland	New Zealand	Sweden
Australia	France	Norway	Switzerland
Austria	Germany	Pakistan	Thailand
Belgium	Greece	Peru	United Arab
Brazil	India	Philippines	Emirates
Canada	Indonesia	Poland	United Kingdom
Chile	Ireland	Portugal	United States
Colombia	Italy	Romania	Vietnam
Costa Rica	Luxembourg	Saudi Arabia	
Czechia	Malaysia	Singapore	
Denmark	Mexico	South Africa	
Egypt	Netherlands	Spain	

Skills are the main building blocks of the insights in this report. They are sourced from LinkedIn members (skills explicitly listed on member profiles or inferred from other aspects of members' profiles, such as job titles, fields of study, etc.) or from job postings. Skill names are standardized by expert taxonomists, who have identified more than 41,000 skills across 249 skill categories. Our taxonomists have identified 1,200 of these skills as green skills. They fall into twelve categories:

- Pollution Prevention
- Waste Prevention
- Energy Management
- Renewable Energy Generation
- Environmental Remediation (including Waste Management, Water Quality Management, Environmental Restoration, Habitat Restoration, and Urban Redevelopment)
- Ecosystem Management (including Natural Resource Management, Erosion Control, Biodiversity Conservation, Water Resource Management, Climate Change Mitigation, and Climate Change Adaptation)
- Sustainability Education
- Sustainability Research
- Environmental Auditing (including Environmental Impact Assessment andCarbon Accounting)
- Environmental Policy (including Energy Law and Environmental Law)
- Sustainable Procurement
- Environmental Finance

- Green talent demand and supply:
  - We use aggregated member profile data to measure green talent supply.
  - We use aggregated job postings data to measure green talent demand. While we use this as the primary measure of green talent demand, we also rely on hiring data, where available, to aid our analyses.
  - For more information on how we implement these metrics using various components of the Economic Graph, please refer to Kaura, A. (2024). "Understanding the Green Transition." Linkedin Economic Graph Research Note.
  - Note that as our skills list evolves to include more skills, we backfill our metrics for prior periods as well. This can result in changes in levels and growth estimates compared to previously released work. However, we will update the entire time series from 2021 onwards in every successive release to ensure continuity in reporting.

Growth in skills and job titles is calculated using the share of members (or job postings as specified) in all cases. Further, to protect member privacy and ensure data quality, we apply the following thresholds in our reporting:

- For fastest growing skills, we only use skills with at least 100 skill adds in the last year (2023) in a given country or country/industry combination.
- For fastest growing jobs we only use job titles that at least 100 members have added to their profiles in a given country or country/industry combination.

Data on the EV workforce comes from Kaura, A. (2024). "Accelerating the Transition to Electric Vehicles." LinkedIn Economic Graph Research Note. When discussing this workforce in the automotive industry or otherwise, we refer to the following skills from our Economic Graph skills taxonomy:

- Electric Vehicles
- Battery Charger
- Battery Electric Vehicle (BEV)
- Battery Management Systems
- Battery Testing
- Hybrid Electric Vehicles
- Electric Cars
- Electric Motors
- Electric Power
- Electric Propulsion
- Electric Transmission
- Electric Utility
- Batteries
- Lithium-ion Batteries
- Lithium Batteries
- Nickel
- Cobalt
- Lithium
- Manganese

- Graphite
- Automotive Electrical Systems
- Automotive Design
- Automotive Engineering
- Automotive Technology
- Automotive Electronics
- Fuel Cells
- Powertrain
- Energy Efficiency
- Charging
- Environmental Compliance
- Environmental Policy
- Energy Policy
- Smart Grid
- Electricity Markets
- Power Systems
- Power Transmission
- Power Generation
- Power Distribution

For more details on our industry classification, please refer to this documentation.