

The idea in brief

What do young people want in a job? In the countries of the Asia Pacific region, they want what young people have always wanted: good pay, stability, opportunity. But increasingly, they also want to work in the green economy.²

They want to help economies transition to cleaner transportation. They are drawn to sustainable agriculture and land use. They seek to help the region "decarbonize."

In fact, in a landmark Accenture global survey,



of the young in Asia Pacific—people between the ages of 15 and 39—said they aspired to get a job in the green economy within the next 10 years.

Of that group, almost three-fourths (73%) expressed confidence that they would find such a job in that time. A little more than half (54%) even think they will accomplish that goal within five years.

For companies operating in Asia Pacific, this is both good news and a challenge. It's good news because many recognize the need to move more rapidly toward environmentally sustainable business outcomes. It's a challenge, because they need to start acting now to design the jobs that will attract motivated young people of a variety of skill levels.

Where do things stand today? According to our modeling of job creation, we estimate that by 2030, there will be 32.6 million green jobs in five countries (Australia, China, India, Indonesia, Japan) in the region.

These numbers come from a focus on two critical areas: the people needed to develop green infrastructure (think low-carbon transit systems) and the people needed to design clean technology solutions (think engineers of "nano" fuel cells).



How can companies attract this kind of talent? We see three imperatives:

Flip the script—for your future's sake.

The best of Asia Pacific's young will see through any efforts that don't go beyond rebranding: green change initiatives must be both genuine, and boldly transformational.

Deliberately design "green collar" jobs to spark innovation.

Companies seeking answers to the biggest environmental problems—and allocating the necessary resources—will become talent magnets.

Make everyone part of the green transition.

Not all jobs will require advanced technical degrees; companies will want to target energetic beginners and create pathways for them to come in—and up.

In the 2020s, green jobs may be what jobs in e-commerce and entertainment tech have been for the past two decades. This is a massive opportunity for companies in industries that have been out of fashion but remain critical to the region and to the global economy.



The idea of working, in some fashion, toward a more sustainable environment, has great appeal to young people all over the world. But Asia Pacific leads the way.

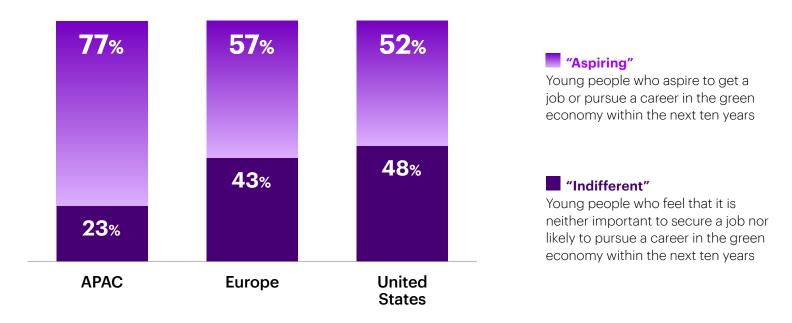
We asked 29,500 people between the ages of 15 and 39 in 18 countries: do you aspire to get a job or pursue a career within the green economy in the next 10 years? In Europe and the United States, more than half answered Yes. **But in Asia Pacific, the number** surpassed three-fourths of the respondents. (See Figure 1.)

Figure 1: Lure of the green economy

Compared with Europe and the United States, a much higher percentage of young people in Asia Pacific aspire to work in the green economy.

Aspirations to work in the green economy within the next ten years

Percentage of respondents



Sample size: APAC, n=17,000; Europe, n=7,500; US, n=2,000

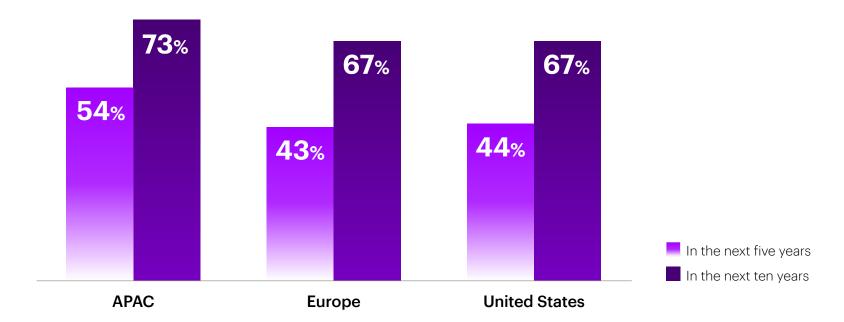
How confident are these aspiring under-40s that they will realize this goal? Almost three-fourths (73%) believe they will achieve what they aspire within the 10 years. And more than half (54%) see the time horizon as shorter: they are confident they will be in such a job, or on that career path, within five years. (See Figure 2.)

Figure 2: Long-term confidence

Throughout the world, many not only aspire to join the green economy but also believe they will succeed within 10 years—or even five. Again, more young people in Asia Pacific are confident when compared to other regions.

Confidence in ability to secure a job or build a stable career in the green economy

Percentage of respondents who selected "very high" or "high" on a five-point scale



Sample: APAC, n=17,000; Europe, n=7,500; US, n=2,000

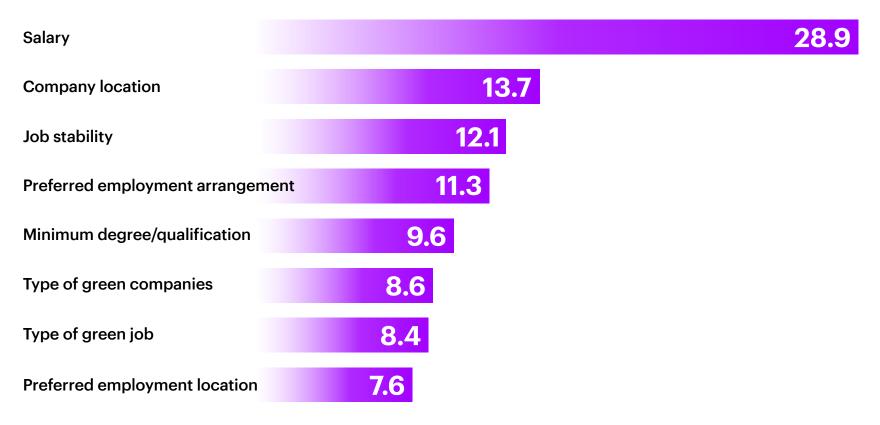
One final, but important, point about what young people are seeking. And that is that the desire to "do well by doing good" still prevails. In our survey, the importance of salary in any green job was deemed the most important attribute—twice as important as the runner up, which was company location. Job stability was third. (See Figure 3.) These priorities were consistent across the regions we surveyed, although young people in Asia Pacific placed a stronger emphasis on the type of green jobs, compared to their counterparts in both Europe and the United States.

Figure 3: Money (still) matters

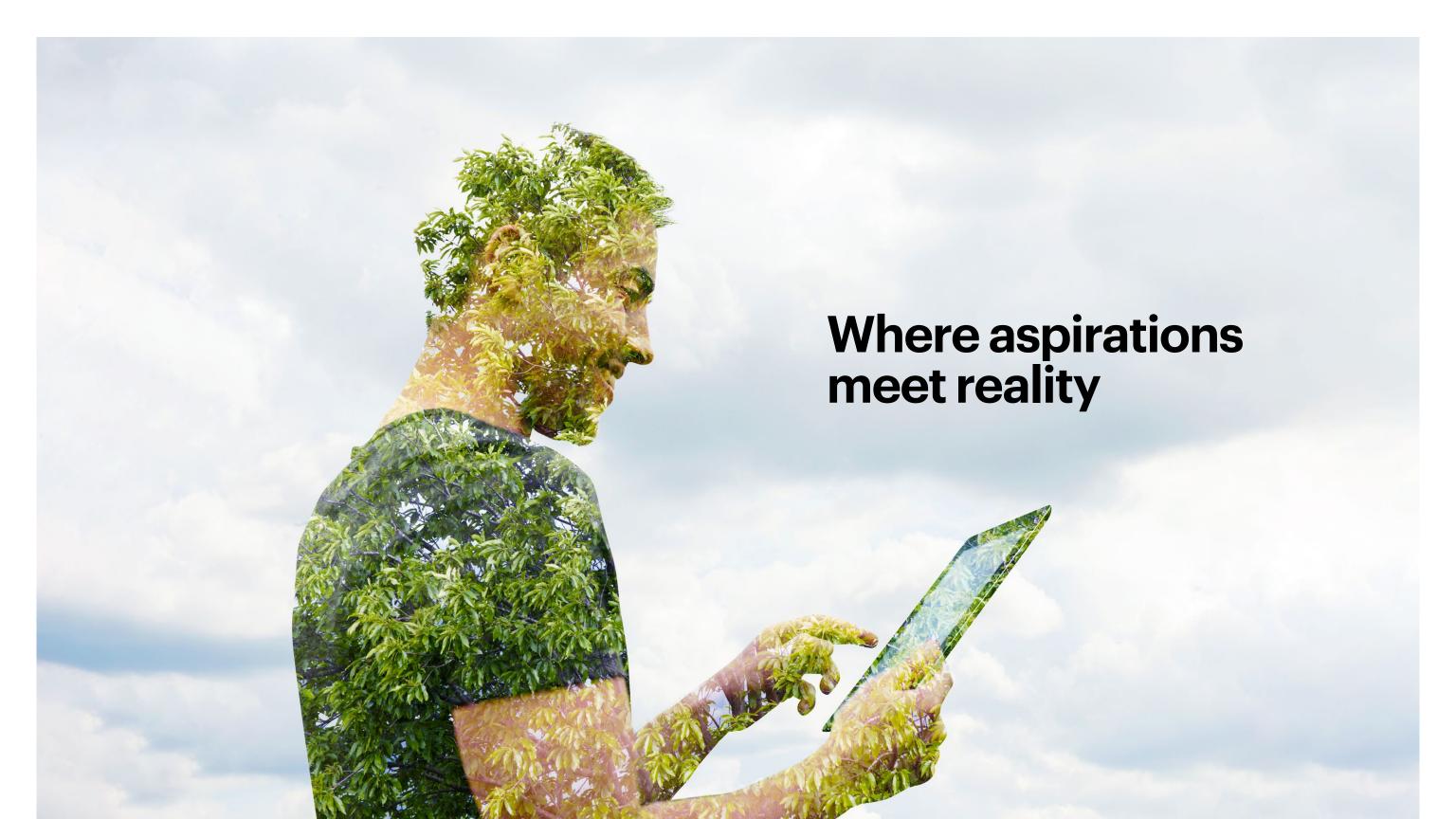
While young people want green work, they also expect pay and other traditional elements of a job to be desirable.

Important job attributes of a green job - APAC

Part-worth utility score*



^{*}Part-worth utilities are numerical scores generated through conjoint analysis that measure how much each attribute influences decisions in choosing a job. Part-worth utilities add up to a 100%.



On the jobs demand side, we see tremendous levels of aspiration and nearly matching levels of confidence.
But by some counts, Asia Pacific region is home to 1.3 billion young people today (15-39 years old)ⁱ. Will there be enough new green jobs by 2030 for these young people?

It certainly depends on what counts as a green job, and we narrowed the focus to two critical areas. First, the expansion of activities in existing sectors—such as the building of new green infrastructure like low-carbon transit systems. And second, jobs in entirely new industries or those with new technologies—such as clean-tech design.

Using those concepts as limits on our research, we then used data science to model green job growth in five Asia Pacific countries: Australia, China, India, Indonesia and Japan. Collectively, they account for 70% of the region's greenhouse gas emissions, representing 40% of global greenhouse gas emissions (as of 2019).

Over the next seven years, new jobs needed to drive a green transition in those five countries could jump by 62%. According to our model, of the nearly 33 million new green jobs that will be created by 2030, more than 12 million are expected in the area of transportation—for example, adding charging stations for electric cars or building out urban rail networks. Almost 10 million more will come from increasing the supply of low-carbon electricity, especially in the form of renewable energy. (See Figure 4.)

Youthquake meets green economy | 10

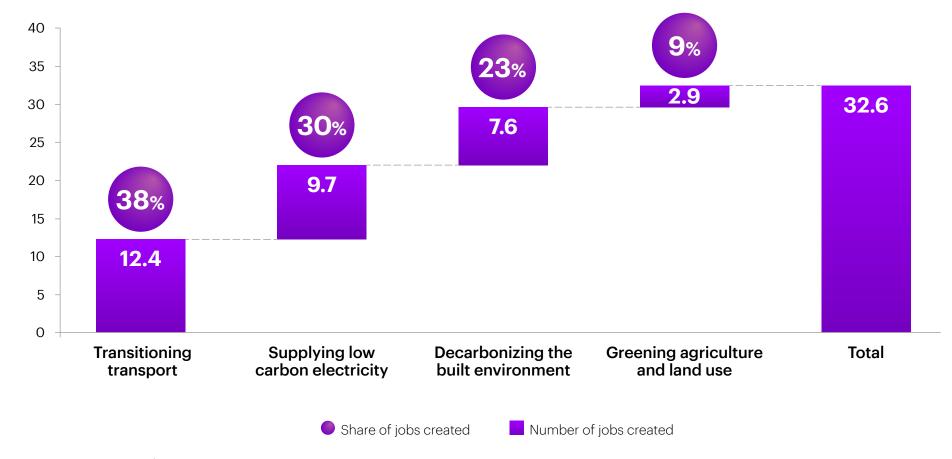
¹ Aged 15-39 population from ten Asia Pacific countries – including Australia, China, India, Indonesia, Japan, Malaysia, Philippines, Singapore, Thailand, and Vietnam. Sourced from International Labour Organization.

Figure 4: **Key pathways** of change

New green jobs will grow as part of a green transition in four broad areas, from transportation to agriculture.

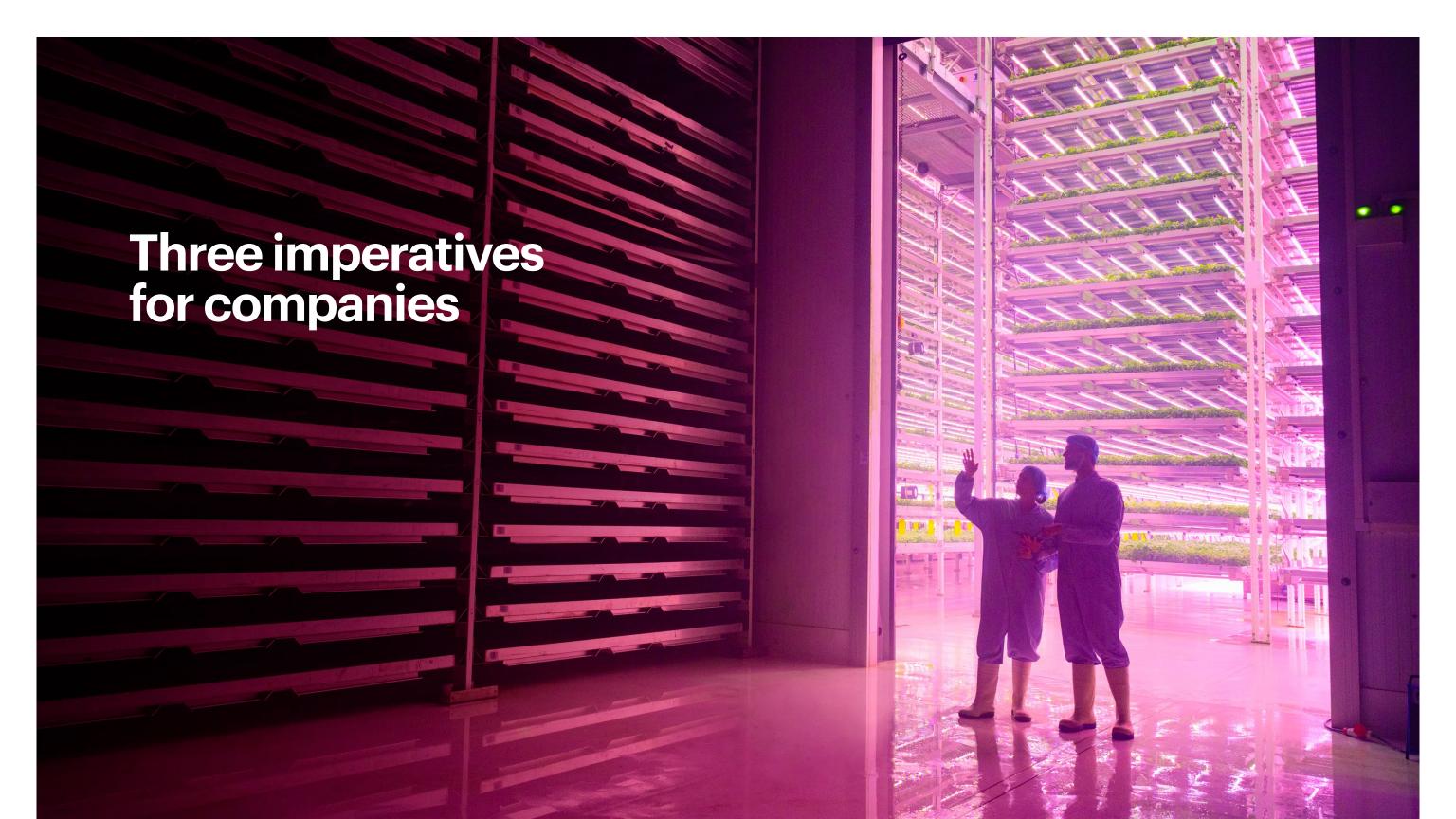
New job potential in 2030

Total jobs (Millions) across Australia, China, India, Indonesia and Japan



Source: Accenture analysis

Although 32.6 million new jobs in less than ten years might sound impressive, the truth is that green pathways are opening up too slowly from the perspective of young **people.** The five countries where we modelled jobs growth have a total of 665 million young people (15-39 years) active in the labor force today. In that context, 32.6 million green jobs provide opportunities for just 5% of the active workforce among the young population, far short of the anticipated demand.



As the demand for—and supply of—green jobs continues to grow, what do companies need to do? Many have started by making public commitments to sustainability. For example, as many as 250 Asia Pacific companies (out of 1,200 global firms) set carbon emission reduction targets in 2020—57% more compared with the year earlier.³ Now they have to execute, and that means they need talent, and often new forms of talent. A high degree of determination in this area will be critical to those that want to lead in the green economy.

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Flip the script—for your future's sake.

Here's a simple but perhaps unappreciated fact: the industries that will need to create the most green jobs are exactly those that have been seen in an unfavorable way in recent years.

Take for example the energy sector. And yet our model indicates that in the area of renewable energy to power the electrical grid, some 6.5 million new jobs will be created by 2030.

Young people look at many industries and see, not cool digital products and cutting-edge software, but use of resources, higher carbon emissions, extraction. Our data shows, for industries such as chemicals, metals & mining, utilities and energy lower desires to work and a higher perceived sense of adverse environmental impact. (See Figure 5.)

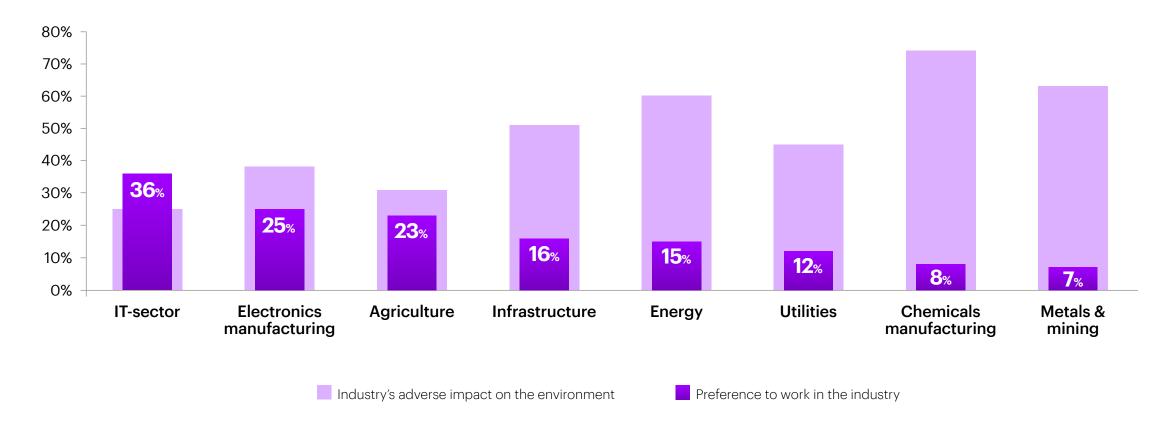


Figure 5: **Green transition can** uplift desirability

Many young people shy away from industries they perceive as having an adverse impact on the environment.

Perceived adverse impact on environment vs. Preference to work - APAC

Percentage of respondents



These perceptions are deeply ingrained and, in case it needs repeating, initiatives that amount to "rebranding"—to say nothing of out-and-out greenwashing—will not change them.

To show that they are serious about their commitment to a green economy transition, companies in "older" industries should focus on two strategic priorities.

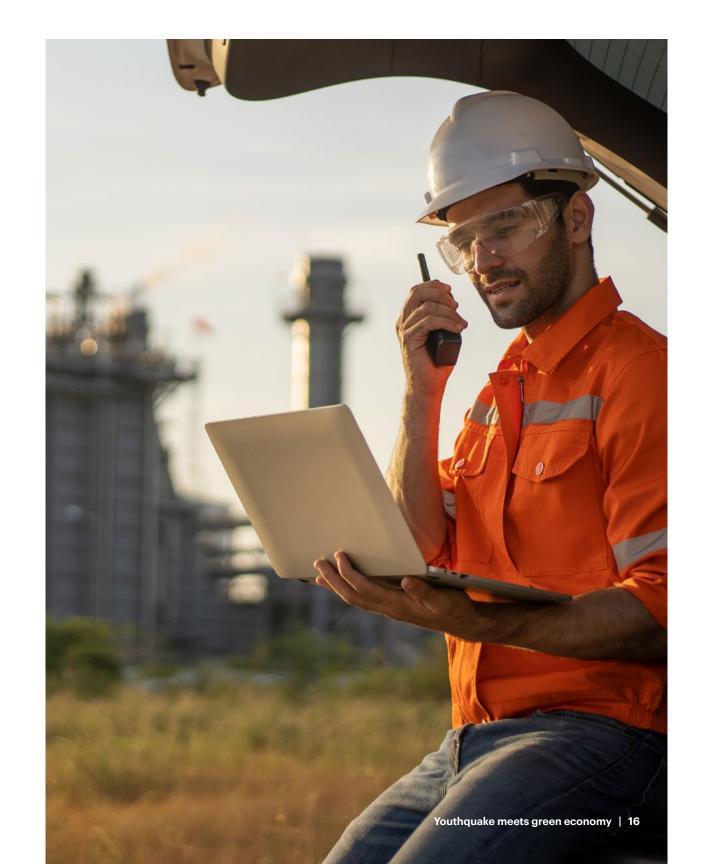
First, they should create new green businesses that are decoupled from legacy businesses. Second, they should build internal capabilities for sustainability in all business divisions, which could include introducing and tracking new sustainability KPIs, appointing new leadership and launching new services.

One company that is taking bold action is Australia's electricity giant AGL. In a move resembling the path utilities companies in Europe have successfully pursued in recent years,⁴ AGL has announced plans to split their business into two in response to increasing pressure from shareholders and customers demanding cleaner energy.⁵

AGL Australia will retain its electricity, gas and telecommunications business as a net-zero carbon portfolio. A new business, Accel Energy, will hold the company's coaland gas-fired power stations.

Accel Energy is expected to seek out energy transition projects and create low-carbon energy hubs, while it accelerates decarbonization efforts. AGL Australia will pursue net-zero emissions by 2050.

The decision to split will allow the two businesses to adopt decarbonization strategies that suit their assets and goals. This will allow AGL Australia to create a carbon-neutral entity quicker and Accel Energy to manage the exit from fossil fuels while ensuring that energy transmission remains stable and affordable.





Deliberately design "green collar" jobs to spark innovation.

Looking over the past few decades, it's not hard to recall what drove those with the most in-demand talents—apart from financial considerations. It was the chance to work on the cutting-edge, to help develop products and services that changed the world, and the global economy with it. Or, in a word, the chance to be in the thick of innovation.

This is where we are today with green technology. And companies, consumers, and societies need breakthrough solutions. Think hydrogen-powered batteries small enough to be used in everyday appliances, such as a barbecue or a bicycle. 6 Many solutions will emerge at the intersection of multiple disciplines: technology, science, engineering and economics.

The entrepreneurial business leaders we interviewed agree that today's sustainability problems demand fresh, hybrid solutions that will not only shape the future green economy, but also successfully run it. Some of these "green collar" jobs, at the innovation frontier, do not exist yet; others are in their infancy. (See Exhibit 1.)

Exhibit 1:

Innovative jobs in the green economy



Biofuel Engineer

Seeking fuels derived from plant sources



Biodynamic Agriculturalist

Analyzes how the movement of energy, stars and moon impact agriculture and plants



Bio-polymer Engineer

Combining marine science with polymers for plastic alternatives solutions



Nanotechnologist

Using nanotechnology and nanomaterials for sustainable solutions, for example batteries



Green Software Developer

Developing programs that can be applied to green jobs and green initiatives



Al Energy Engineer

Embedding artificial intelligence into energy solutions



Agronomisttechnologist

Convergence of the agriculture and technology domains to increase productivity



Environmental Technologist

Exploring environmental technologies such as new materials, sustainable packaging and more

Source: Accenture interviews with 30 senior leaders and thought leaders in Asia Pacific, May/June 2021



Or look at an industry such as agriculture. We estimate that by 2030, around three million green jobs will be created in this sector, as part of innovations needed to reduce emissions from livestock farming and optimize land use.

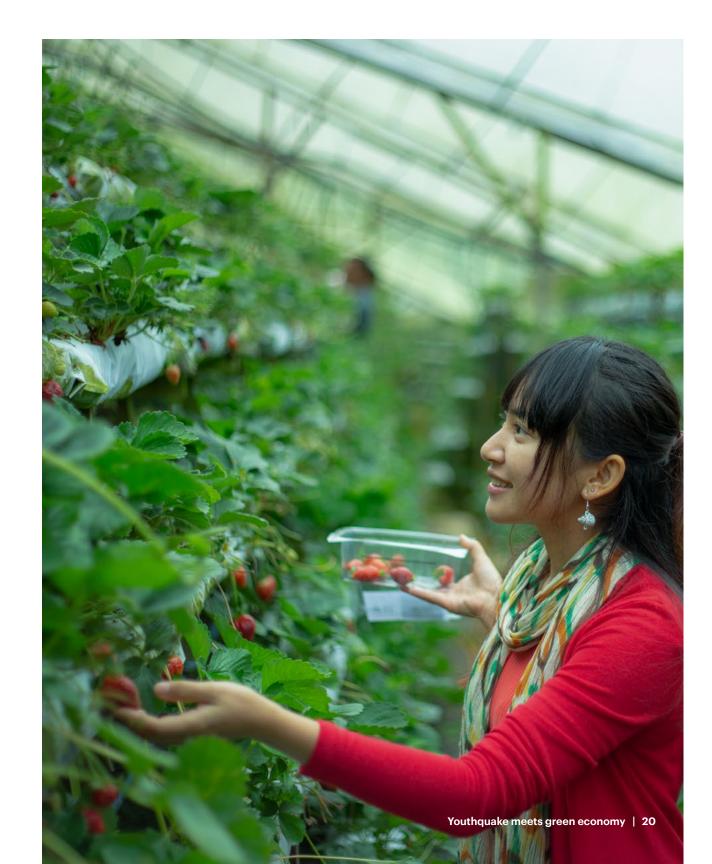
With these innovations, agriculture can then shift into unexpected new areas—often literally. Take for example Sustenir Agriculture, one of the first vertical farms to be created in highly urbanized Singapore. It uses a high-tech approach to produce the seemingly impossible: producing cold-weather crops such as kale and strawberries in a tropical environment.

In a market projected to grow from a little over \$2 billion in 2018 to almost \$13 billion in 2026, Sustenir is blending technology and farming to create sustainable solutions and new jobs.⁷

Founder Benjamin Swan's roots lie in construction and banking. He successfully combined these skills at Sustenir—with hydroponics and robotics. The desire for such blended skills extends to his

employees. Even with no agricultural background, his nursery manager's innate curiosity and passion has helped to advance experimentation in new indoor farming areas such as cultivating edible flowers.⁸

Companies that want to be at the frontier of the green economy need to bring in a mosaic of talent profiles into new types of teams. As with Josh, the bio-polymer engineer, they will need people with expertise in unusual combinations: chemical engineering-plus-innovation; climate science-plus-artificial intelligence; and sustainability-plus-psychology. Such companies will also want to grant creative freedom to innovators while supplying them with the latest instruments, such as advanced data platforms, analytical tools and new technologies.





Make everyone part of the green transition

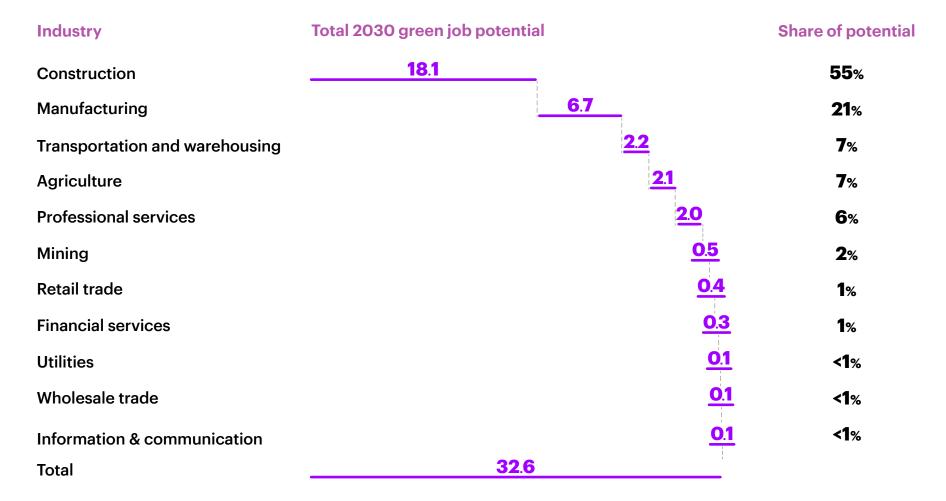
Let's not give the wrong impression, however: we're talking about more than 32 million new jobs. Most will not be at the level of bio-polymer engineer. Rather, companies will need people from all kinds of backgrounds, many of whom are just starting out in life. We estimate that about 18 million new jobs will be in construction, and another seven million in manufacturing. (See Figure 6.)

Figure 6: Modernizing the physical world

Green jobs aren't all about high-end degrees and knowledge work: many will require the traditional grit found in construction and manufacturing.

New job potential in 2030, by industry

Millions of jobs, include Australia, China, India, Indonesia and Japan



Source: Accenture analysis

Those sectors typically have a large proportion of entry-level roles and require vocational rather than advanced qualifications. Companies should seize the opportunity to make aspiring young workers aware of the possibilities in the green economy. Our research also revealed that young people in Asia Pacific are eager to receive specialized training or to "reskill/upskill" as needed. (See Figure 7.)

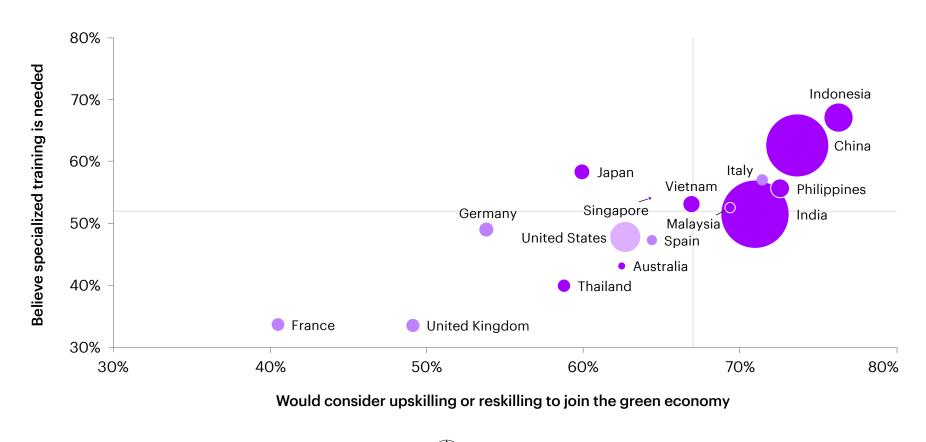
Figure 7: Willing to seek new skills

Many young people believe specialized training is needed to join the green economy, and many say they are willing to seek new or deeper skills. In countries such as Indonesia and China, high percentages say that both are true.

Size of bubble represents population aged 15-39, 2020

Specialized training needed vs. Willingness to upskill / reskill among young people, by country

Percentage of respondents



Source: Accenture Youth Survey, May 2021

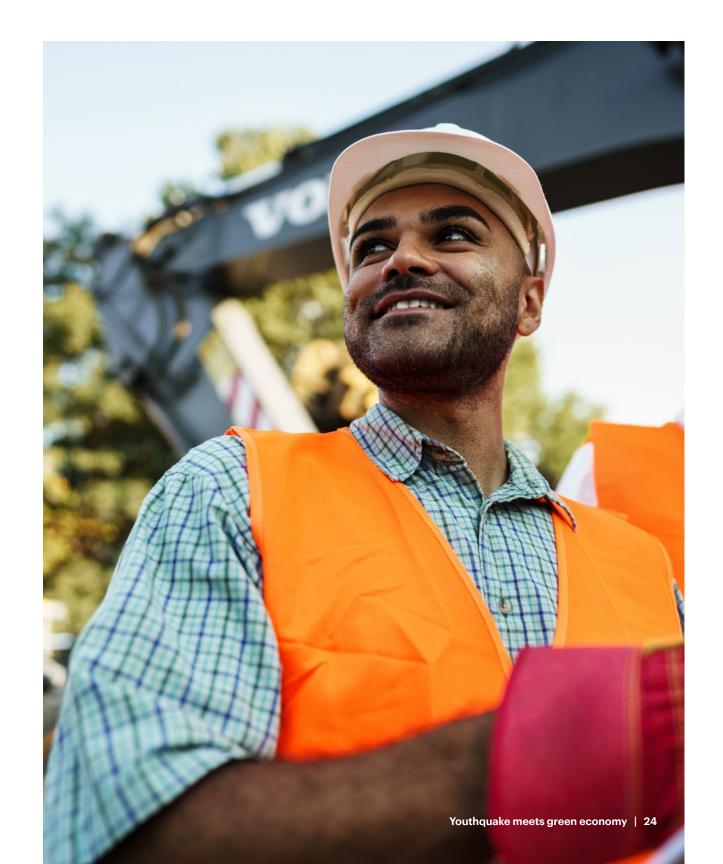
• APAC • Europe • US

This willingness to learn presents an opportunity for companies, and we see three key actions:

- Invest in baseline training programs that certify incoming semi-skilled or unskilled workers, and establish on-the-job "upskilling" and specialization pathways for employees.
- Open entry-level employment paths through innovative partnerships with academic and vocational institutions.
- Create exchange and rotation programs for young employees between legacy and new business lines.

For Indian conglomerate Larsen & Toubro Limited (L&T)—one of the largest players in the construction industry—pursuing a greener portfolio goes hand in hand with building its pool of young talent.

L&T has created a Construction Skills Training Institute, for example. Through the institute, it has trained more than 240,000 employees at construction sites across India. Specifically targeting unemployed and rural youth, the institute offers construction certifications for 15 occupations and 75 different job roles, including for example solar technician.⁹



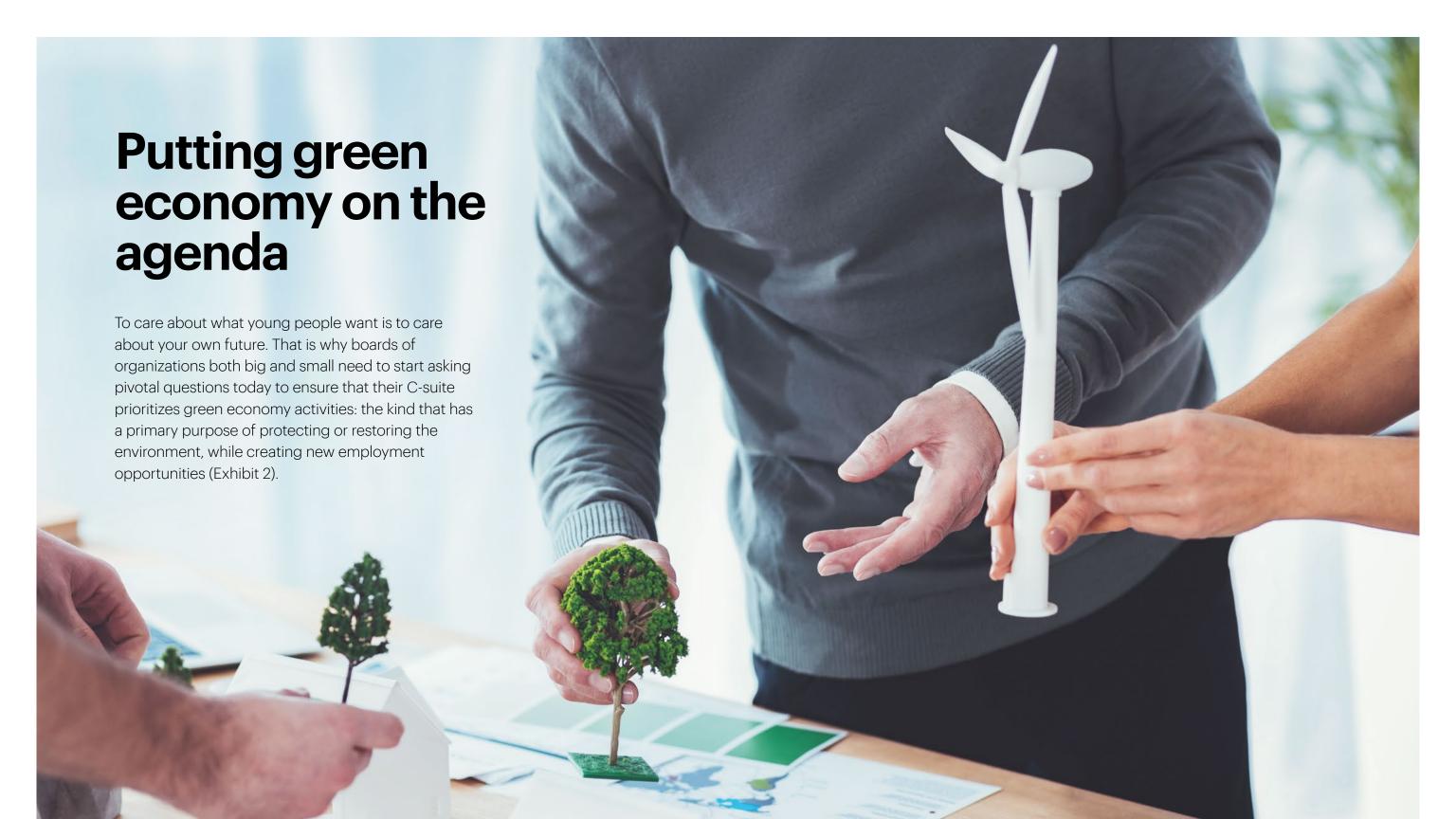


Exhibit 2:

Forward-looking boards should expect to see a genuine shift towards a green economy, through adoption of new corporate practices.

Corporate practices now	What boards want to know next
Appoint a Chief Sustainability Officer.	A dedicated Chief Sustainability Officer is a good start, but not the step-change we need. What are we doing to ensure that our actions do not run the risk of "greenwashing"?
Double down on active stakeholder engagement campaigns.	Signaling commitment to more sustainable growth that benefits all stakeholders is a good start, but we need to also keep our promises. How will we tangibly measure our non-financial performance (i.e., Environmental, Social, Governance, and other dimensions)?
Set ambitious talent diversity targets.	Talent diversity targets are now a baseline expectation. We need new job-related targets. How will we create new "green collar" jobs, needed to attract aspiring young people? And how will we ensure that our existing talent can succeed in the green economy of the future?



Companies can accelerate the transition to a green economy by shifting their own business activities toward environmental sustainability and stewardship. True progress hinges on their ability to attract more young people into new green jobs. Companies have their task cut out for them. Some will need to break away from the old industry roots that have become ecologically untenable.

They will need to double down on innovation and design meaningful new jobs so that transformative green solutions can become reality, sooner. And they will need to be prepared to invest in training for young people who are willing to seek new or higher skills, so they can succeed in the green economy in the long run.

About the research

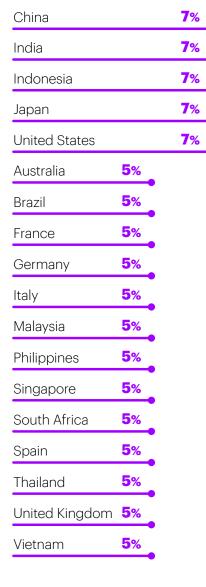
We conducted three streams of research to learn: what aspirations young people have; where the opportunities lie for green job creation; and how companies are attracting young people into the green economy of the future.

1. Survey of young people

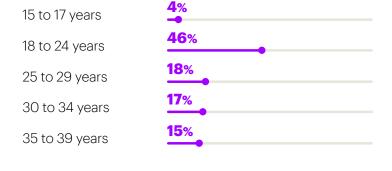
We surveyed 29,500 young people in 18 countries: Australia, Brazil, China, France, Germany, India, Indonesia, Italy, Japan, Malaysia, Philippines, Singapore, South Africa, Spain, Thailand, United Kingdom, United States and Vietnam. Each was between the ages of 15 and 39.

To better understand how young people make trade-off decisions when it comes to job selection, we also conducted choice-based conjoint analysis to identify the top job-attribute preferences. We tested eight job attributes for 22 levels, where every respondent was exposed to a total of 24 unique job profiles to indicate their preferences.

Country



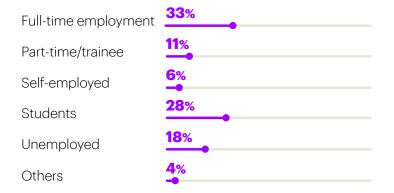
Age bracket



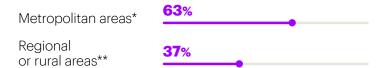
Education level

38%
12%
15%
28%
7 %

Employment status



Residential area



Sample size: Global, n=29,500

^{*} Metropolitan areas: e.g., large cities, major urban areas and surrounding territory

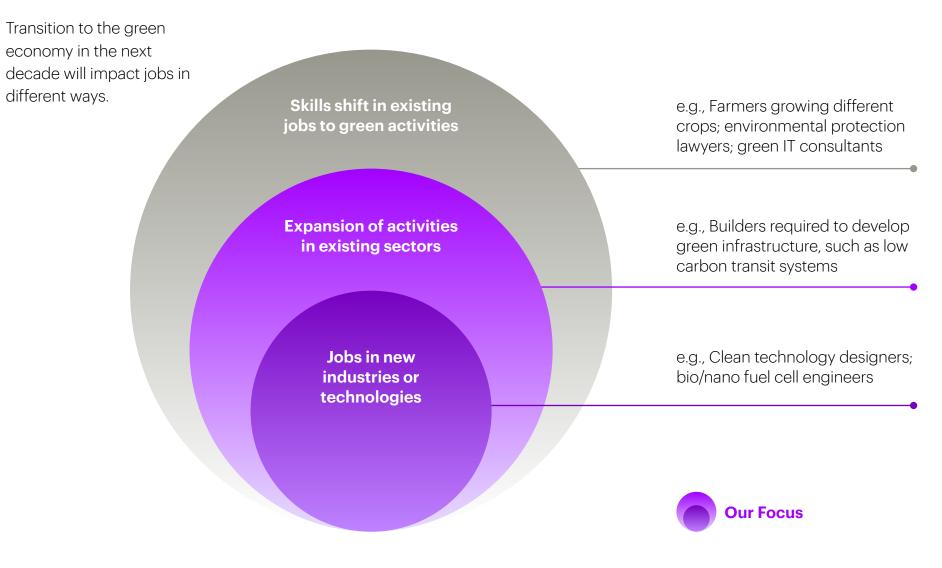
^{**} Regional or rural areas: e.g., towns or smaller cities, villages, farms, non-urban areas

2. Job-creation modeling

Model scope. We started with the assumption that most green jobs will be created in countries that emit the most greenhouse gases (GHG). From this assumption, we identified Asia Pacific's top GHG emitters. We then screened for countries that have a GDP over \$1 trillion. Finally, we looked for richness of publicly available public and private investment data on the screened countries. We also included both developed and developing nations to get a broad view of the impact of the green-economy transition. As a result, we focused on Australia, China, India, Indonesia and Japan.

Next, we defined the scope of jobs to model and focused on the creation of those needed to drive transition to a green economy in existing or new industries. We measured these jobs in two categories: those that will be created by the expansion of "greening" activities in existing sectors, especially through investment in green infrastructure, and those that will be created as new industries or technologies emerge. (See Exhibit 3.)

Exhibit 3: Model focus

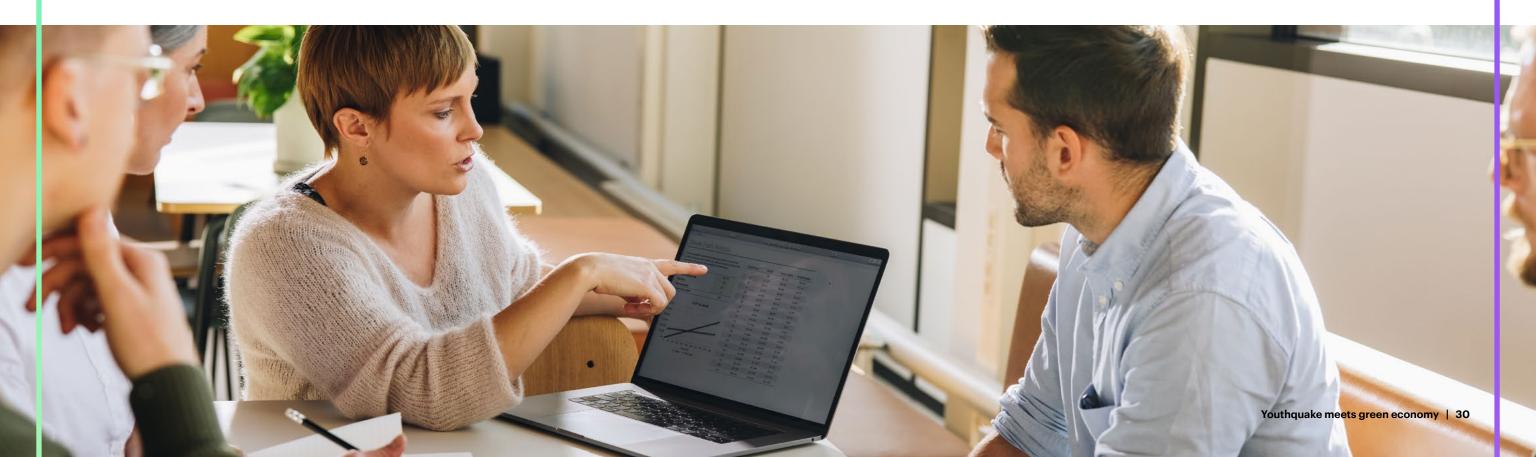


Data collection. We then identified sources of data to inform the model. Based on a wide literature review and drawing on subject matter expertise from our consulting practice, we created a framework that focused on four pathways to the green-economy transition over the next decade:

- Decarbonizing the built environment.
- Transitioning transport systems.
- Supplying low-carbon electricity.
- "Greening" agriculture and land use.

Within each pathway, we identified levers, or activities, that will both reduce emissions and create new jobs, either in existing industries or new industries and technologies. We then looked at the potential level of investment to 2030 for the activities, for each of the five countries, drawing on published studies of investment opportunities or assessments of current investment levels to project forward to 2030.

Modeling. We used this data to build a model to project the number of jobs that could be created by 2030. We first split the estimated investments for each lever based on inputs supplied from different industries. We then estimated the labor productivity in each industry for each country, factoring in any likely change in productivity over the course of the decade, to find the number of jobs created per dollar of investment. We then aggregated the job-creation figures at the country level and for all five in the study.





3. Qualitative interviews

We conducted 30 in-depth interviews with business leaders and thought leaders in Asia Pacific to gain new perspectives on future shifts in demand for green jobs, new and emerging green job profiles and skills, and how companies are attracting young people to work in the green economy. They were from innovative companies that included privately held start-ups as well as smaller (less than \$20 billion in revenue) public companies. We also hosted an Accenture Roundtable with 15 senior business leaders in large companies across the region.

About the authors



Gianfranco CasatiChief Executive Officer,
Growth Markets

Gianfranco Casati is the chief executive officer of Accenture in Growth Markets, with management oversight for all industries and services of Accenture's business in Asia Pacific, Africa, the Middle East and Latin America. He is also a member of Accenture's Global Management Committee. Gianfranco has helmed his current role since 2014. Prior to this role. Gianfranco was group chief executive of Accenture's Products group, which served clients in the air, freight and travel services; automotive; consumer goods and services; industrial equipment; infrastructure and transportation services; life sciences: and retail industries.



Dr. Vedrana SavicManaging Director,
Thought Leadership at
Accenture Research

Vedrana Savic is a global thought leader and published author in top business and academic journals. Her work is focused on green economy, value creation in the post-digital age, organizational renewal, portfolio innovation strategy and industry disruption. She has extensive experience in corporate strategy and management consulting and has advised executive teams of large companies across Asia Pacific, US and Europe.



Valentin de Miguel
Senior Managing Director and
Strategy & Consulting Lead,
Growth Markets

Valentin de Miguel leads Accenture Strategy & Consulting for Growth Markets—in the market units of Asia Pacific, Africa, Middle East and Latin America. In this role, he is focused on helping C-suite executives develop strategies to transform and reimagine their organizations to enable continuous innovation, from idea to execution.



Trevor GruzinSenior Managing Director,
Growth & Strategy,
Growth Markets

Trevor Gruzin is the senior managing director responsible for Growth & Strategy for Growth Markets. His role focuses on advising companies and governments on strategy (Business, IT, Digital), innovation applied to business and operating models, and transformation. His specific focus is on how technology can disrupt companies and industries. He is a member of the Accenture Global Leadership Council as well as the Accenture Strategy Leadership Team and the Growth Markets Leadership team.



Yoshinori Tachibana Senior Managing Director, Accenture Japan

Yoshinori Tachibana is the senior managing director responsible for overall business operations of Accenture Japan. He also leads several strategic business initiatives in Accenture Japan such as Supply Chain & Industry X. His career background is Technology Strategy and Digital thus utilizing the expertise for client services and internal strategy development and operations. He co-authored the books "Strong IT Strategy" (Toyo Keizai) in 2008 and "X-Tech 2020" (Nihonkeizai) in 2019.

Acknowledgments

The authors would like to thank Amy Chng, Koteswara Ivaturi, Lydia Pretty, Jenni Lai, Michelle Ganchinho, Rebecca Tan, Gargi Chakrabarty and David Light for their contributions to this report.

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