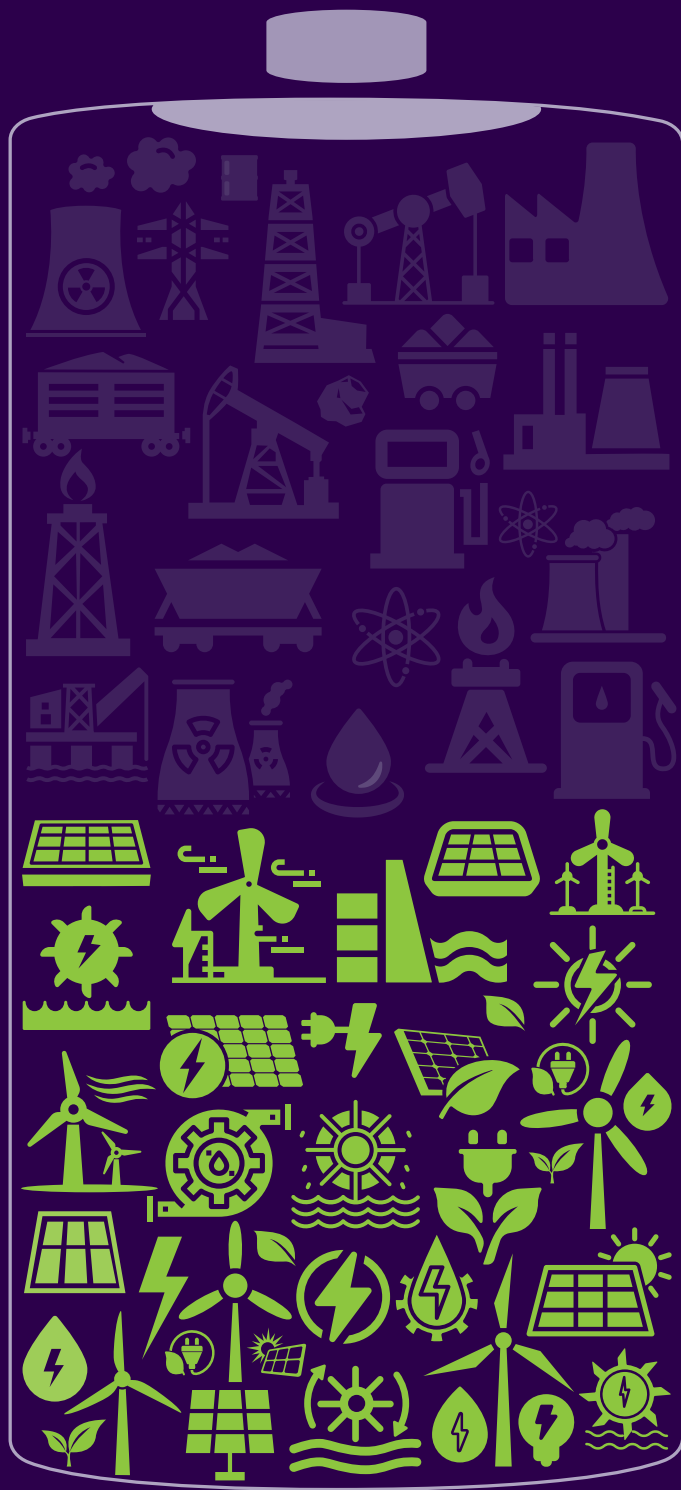


Powering Sustainability



Why **energy** and **utilities** companies need to view sustainability as an opportunity



Executive summary

What we heard in our research:

Organizations are starting to embrace sustainability and reaping the rewards

- Organizations are realizing benefits from sustainability:
 - More than six in ten organizations have driven an increase in revenues from sustainable operations.
 - 63% of organizations have experienced an improvement of the environment, social, and governance (ESG) ratings.
- Driven by pressures from investors, regulators, climate groups and consumers, large organizations are setting bold ambitions for sustainability.

Organizations lack the pace and scale of execution to meet the expectations on sustainability

- **Maturity of sustainability practices is low:**
 - Only 22% of energy companies rated their approach to economic inclusiveness practices as mature.
 - Only 27% of utilities say they have mature social responsibility practices such as safe working conditions or labor policies that guard against child labor, gender discrimination, and forced labor.
 - Only 3% of organizations are actively scaling some initiatives across regions or have comprehensive initiatives in place globally to reduce emissions from the use of their products (Scope 3 emissions).

Organizations severely lag behind in setting and meeting Paris Agreement targets:

- Only 6% of organizations said that they are on track to meet Paris Agreement goals.
- 93% of organizations do not yet have validated science-based targets.
- The extent to which organizations around the world have achieved scale with tech-related use cases is low, with Germany the best performer at the country level.

How can energy and utilities organizations radically transform and prepare for a sustainable future?

- Radically alter your business model with a clear roadmap
- Maximize renewables
- Use technology to accelerate the sustainability journey
- Offer low-emissions/clean energy solutions to customers to reduce Scope 3 emissions
- Scale social inclusion and economic sustainability efforts.

Introduction



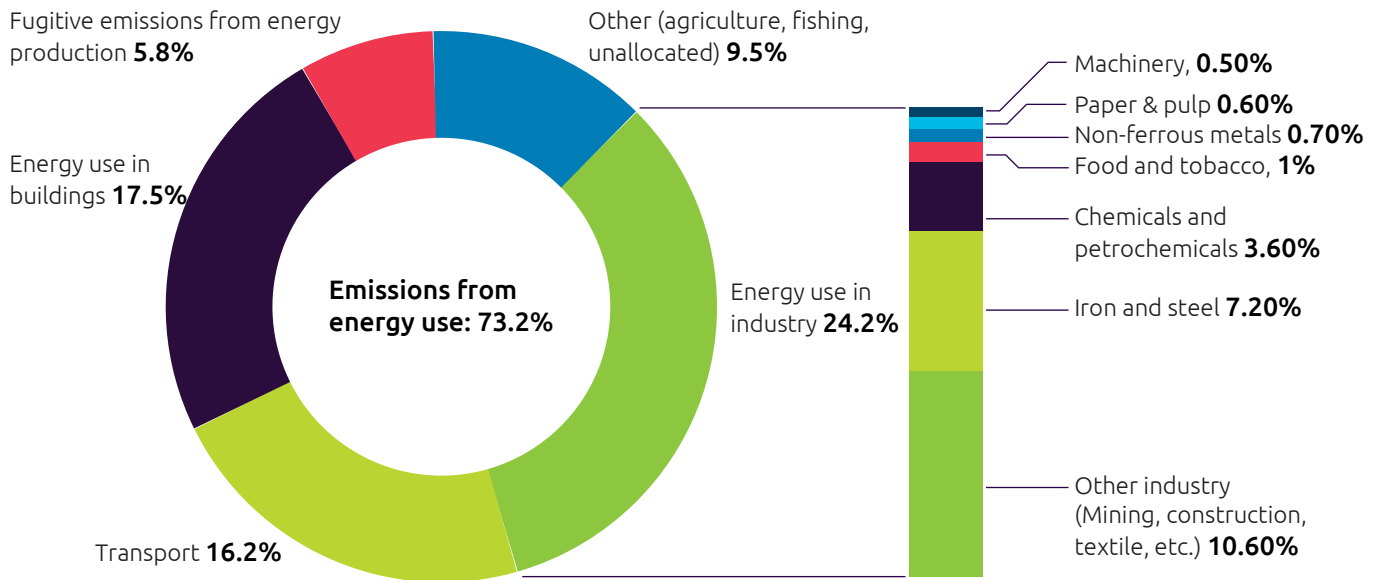
“We all want energy that is reliable and affordable, but that is no longer enough. It must also be cleaner. To deliver that, trillions of dollars will need to be invested in replumbing and rewiring the world’s energy system. This will require nothing short of reimagining energy as we know it. It will certainly be a challenge, but also a tremendous opportunity.”

– Bernard Looney,
CEO, BP¹

The energy and utilities industry has reached a tipping point in sustainability. The demand for oil may never recover as economies take decisive action to build a green future.²

- Energy-related greenhouse gas (GHG) emissions contribute to over 73% of all emissions globally, and various sectors contribute to it directly or indirectly (see Figure 1).³ While COVID-19 has caused the global decline of CO₂ emissions (of 2.4 Gt) at the fastest rate since 2010, CO₂ emissions need to decline another 60% to ensure that, by 2050, we keep temperature rises below 2°C of pre-industrial levels, in line with the Paris Agreement goals.⁴ This highlights the unprecedented steps needed to cut GHG emissions to permissible levels.
- Economic and socially sustainable practices are becoming more critical across sectors. Events such as oil spills or radioactive pollution have always had deep impact on employees, communities, economies, and overall biodiversity. Governments, regulators, and society are demanding urgent action from industry to address critical environmental and societal challenges, including securing energy supply in line with demand.
- Investors and financial institutions are curtailing financing for emissions-intensive assets. Other industries also depend on energy and utility companies to meet their own sustainability goals of decarbonizing their carbon footprint. As Figure 1 shows, energy use is spread across multiple sectors, which need to work together to create tangible impact on emissions.

Figure 1. Energy-related GHG emissions are spread throughout multiple industries and activities



Source: World Resources Institute, Our World in Data.

The energy and utilities sector must take action to ensure it provides access to secure, affordable, reliable sources of energy while decarbonizing its value chain. European utility and energy companies are leading the energy transition by recognizing the risks and opportunities early. Some have included energy transition in their new mission statement, making strong commitments toward net-zero emissions in the coming decades. Top utilities in Europe prioritized coal phase-out and reduced carbon intensity from heat and power generation by 10% on average every year from 2015 to 2019.⁵

Failing to act on clean energy could be expensive. The European Commission this year proposed legislation to make the continent climate neutral in terms of GHG emissions by 2050, and a goal to reduce GHG emissions by 50–55% by 2030 from 1990. It was accelerated from the target of 40% reduction set earlier.⁶ The European Parliament has also put a EUR1 trillion/10 year “Green Deal” before the pandemic, with 30% green share at the core of its economic recovery

from COVID-19. The stimulus package includes incentivizing sustainable behaviors such as efficient use of resources and restoring biodiversity, etc. from producers, users, and consumers. It also includes a carbon tax on imports, which could directly affect the revenues of companies exporting to Europe.⁷ State regulations in the US are also tightening. California enforced a law to make electricity generation carbon-free by 2045⁸ and phase-out gasoline cars by 2035.⁹ Although, the companies’ response depends on the regulations relevant to them, these developments can influence policy-making in other regions.

These stringent regulations came at a time when the sector has been hit hard by the price shocks and reduced demand for energy due to the COVID-19 pandemic, accelerating the onset of “peak oil,” which is the point where the maximum rate of petroleum extraction is reached. Yet the demand to curb GHG emissions has not eased but intensified. These pressures together create a situation where what might once have been considered as a sustainability milestone for energy and utility companies is now merely table stakes (see figure 2).

Figure 2. Evolving expectations from energy and utility companies on sustainability



¹The Task Force on Climate related Financial Disclosures (TCFD) aims to publish consistent, coherent principles and guidelines for companies to disclose their climate related risks.

²Global Reporting Initiative opening parenthesis missing for (GRI) helps businesses and governments worldwide understand and communicate their impact on critical sustainability issues such as climate change, human rights, governance, and social well-being.

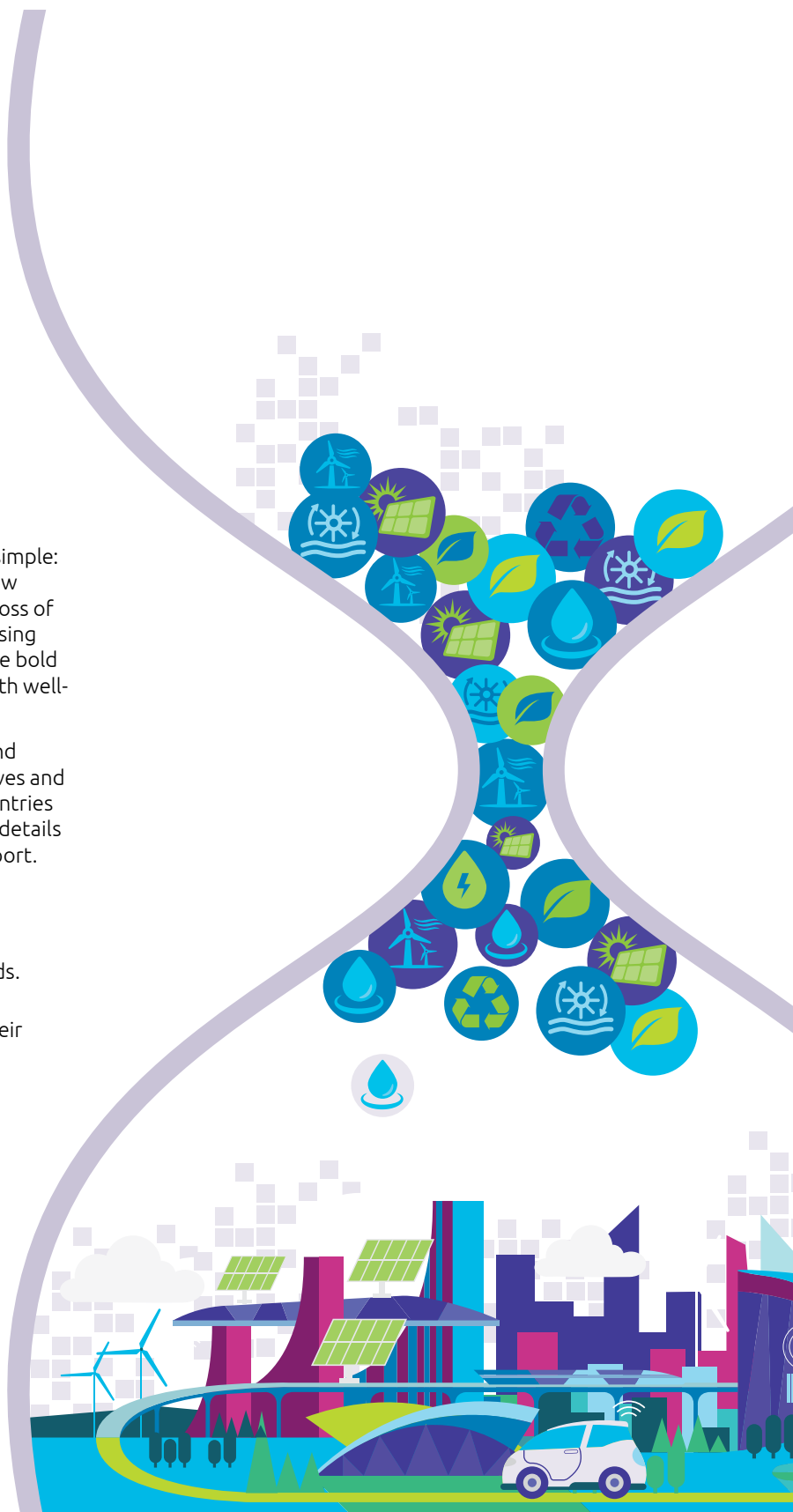
Source: Capgemini Research Institute analysis.

For energy and utilities organizations, the message is simple: the scale of the challenge is huge and continues to grow further. Companies that do not act with urgency face loss of revenue, alienated investors, and heightened risk of losing their social license to operate. Incumbents need to take bold steps now: setting out a clear path to sustainability, with well-defined goals and determined action.

To understand the prevailing situation in the energy and utilities sector, we surveyed 300 sustainability executives and 300 business/tech executives across more than 15 countries and interviewed more than 10 industry experts. More details on the research methodology are at the end of the report.

This report looks at the following areas:

- 1 How organizations that are driving the sustainability agenda are reaping the rewards.
- 2 Where organizations are falling behind in their sustainability initiatives.
- 3 How energy and utilities organizations can accelerate sustainability.



“Sustainability” defined

The United Nations definition of sustainable development strives to strike a balance between the present and the future: “Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.” Building on this definition, we assess sustainability in energy and utilities industry along three dimensions:

- Environmental responsibility (conservation of natural resources, reducing carbon and greenhouse gas emissions, etc.)
- Social responsibility (safe working conditions, fair labor policy against child labor, gender discrimination, and forced labor, etc.)
- Economic inclusiveness (fair trade, committed to a wider cause – poverty eradication, education, etc.)

The UN Sustainable Development Goals (UN SDGs) define 17 global goals (such as no poverty, gender equality, affordable and clean energy, climate action) for a sustainable future, incorporating the above aspects. Companies in the sector report progress in achieving these goals as per the standards set by the Global Reporting Initiative (GRI).

Figure 3. Examples of sustainability initiatives across various functions

Department	Examples of sustainable initiatives
R&D, engineering, and installation	<ul style="list-style-type: none"> • Product/service sustainability (emitting low or no carbon – developing low carbon fuels) • Vendor sustainability • Biodiversity impacts of operations.
Energy sourcing and generation	<ul style="list-style-type: none"> • Sustainable exploration, production, field development. and generation (prevent carbon leakages and spills, energy efficiency) • Renewable energy generation • Unconventional sources of energy (green hydrogen, biofuels, etc.) • Shift to low-carbon sources of generation (e.g., oil to gas)
Storage, transport, and processing/refining	<ul style="list-style-type: none"> • Carbon capture and storage (using technology such as direct air capture or natural sources such as reforestation) • Low emissions during transport/retail (electrification, vapor recovery) • Change refinery feedstock to sustainable fuel sources during refining • Sustainable transmission and distribution.
Energy services and retail	<ul style="list-style-type: none"> • Energy efficiency solutions (smart energy monitoring and management) • Electrification of energy (EVs, agriculture) • Low-carbon alternatives for consumers • V2Grid applications
Repairs, monitoring, and maintenance	<ul style="list-style-type: none"> • Reducing human intervention using technology • Leakage prevention.

Source: Capgemini Research Institute Analysis.

Other sustainability initiatives across functions:

Supporting and promoting a circular economy:

The circular economy is an industrial or economic system that maximizes the use of resources by being restorative and regenerative by design and intention. It favors reuse of materials instead of the traditional manufacturing cycle of “take-make-use-dispose.” Examples of circular economy initiatives include waste to energy (recycling used oil/city or agriculture waste/plastics back into production), secure disposal and recycling of renewable waste, reuse of water and heat, energy recovery.

Safety, health, and security: Employee safety, occupational injury and illness, and process safety to ensure no harm comes to communities.

Other social aspects include human rights management (against child labor, gender discrimination, slavery), freedom of employees to unionize, local community engagement, social investment.¹¹


Sustainability in IT examples include energy consumption in data centers.

Understanding Scope emissions

Scope 1 greenhouse gas emissions are direct emissions released to the atmosphere from owned or controlled sources. Production of electricity by burning coal is an example of a Scope 1 emission.

Scope 2 greenhouse gas emissions are the emissions from the indirect consumption of an energy commodity. For example, “indirect emissions” come from the use of electricity produced by the burning of coal in another facility.

Scope 3 emissions are indirect greenhouse gas emissions other than Scope 2 emissions that are generated in the wider economy. They occur as a result of the activities of an entity, but from sources not owned or controlled by that entity’s business. Some examples are extraction and production of purchased materials, transportation of purchased fuels, use of sold products such as aviation fuel or lubricants in vehicles, and services. Scope 3 also includes emissions associated with contracted solid waste disposal and wastewater treatment.¹²



1-Organizations are starting to embrace sustainability and reaping the rewards



“Sustainability is tied to our Mother Earth, and it should be tied to the business and bring some return on investment. The topic of sustainability represents a transformation in the way we have to see and think as businesses. We have to see and understand business as embedded in Mother Nature.”

Director at a large US energy services company

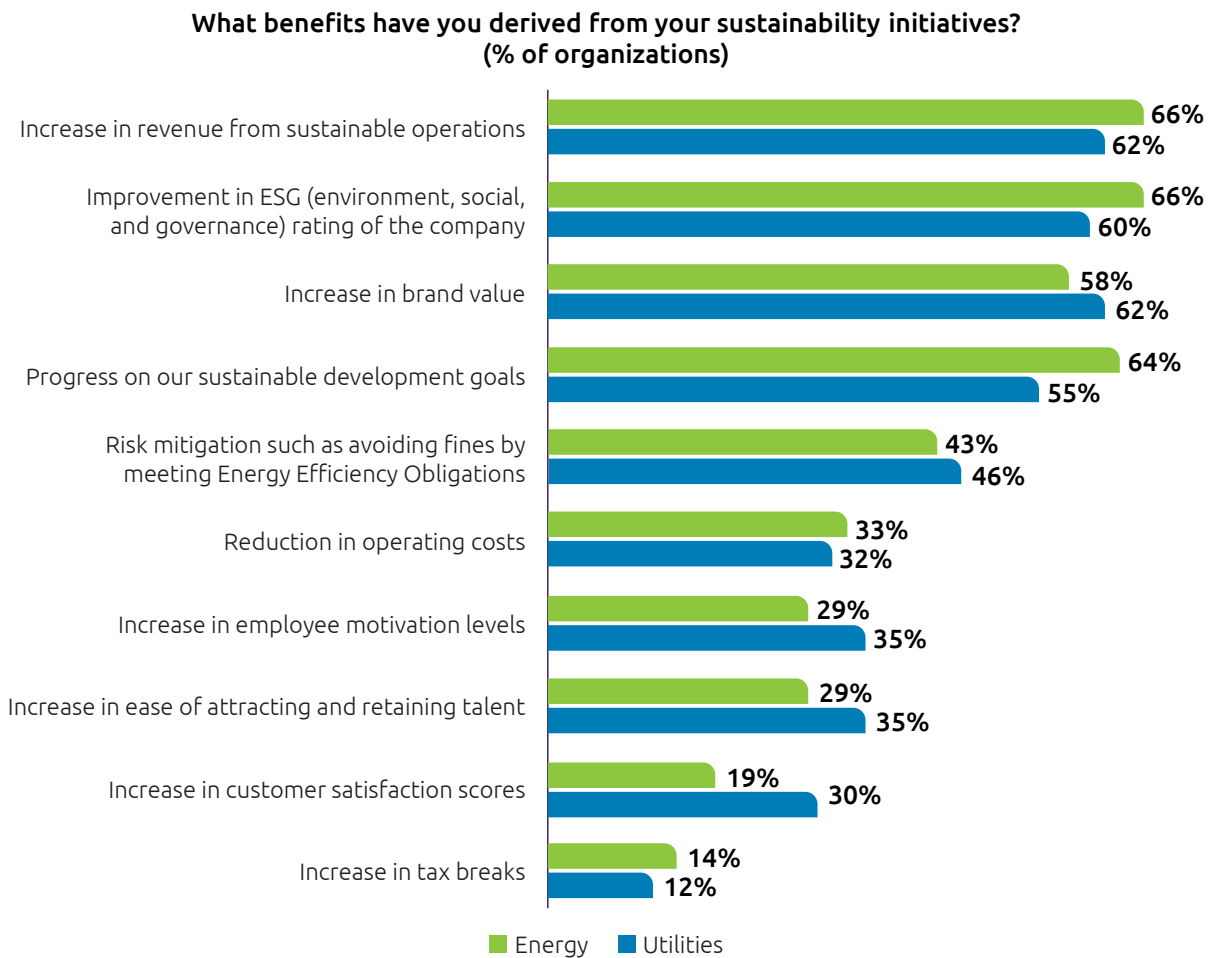
There has already been a sea change in the way sustainability is viewed by organizations, especially large ones, in the energy and utilities sector. These companies are moving from viewing sustainability as a threat to seeing it as an opportunity, and from securing the “license to operate” to playing a critical role in transitioning to clean energy. In parallel, they are being rewarded.

Organizations are realizing benefits from sustainability

Over six in ten organizations said that they have already generated a revenue increase from sustainable operations such as solar, wind power generation and energy services.

Over six in ten organizations also cited increase in brand value and positive environment, social, and governance (ESG) ratings thanks to their sustainability initiatives (see Figure 4).

Figure 4. More than six in ten organizations have driven an increase in revenue from sustainable operations



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, 300 business executives.

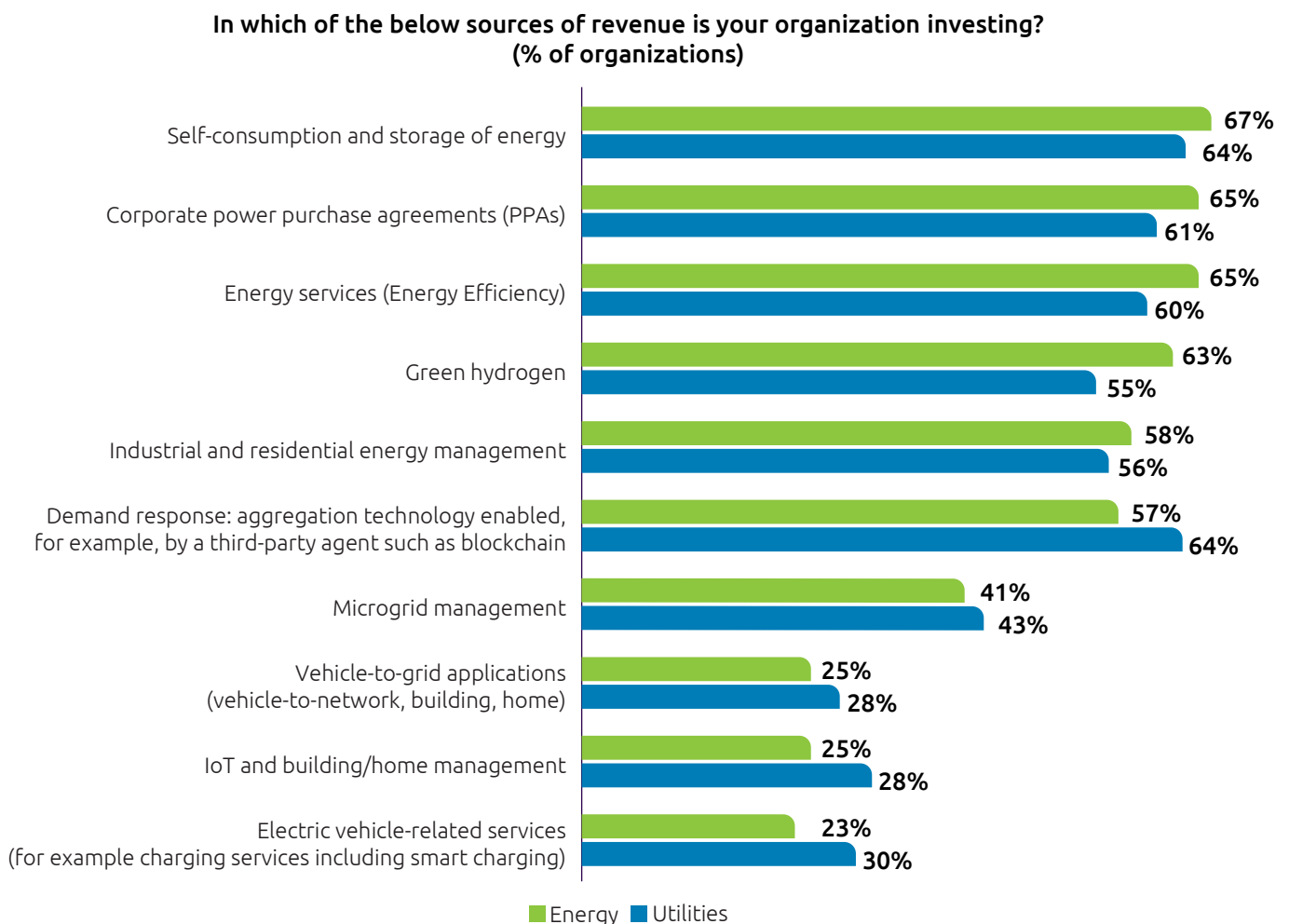
With their sustainability initiatives organizations are able to diversify into clean sources of revenues, cut operating costs and reduce emissions across the industry value chain. As economic recovery packages are linked to the energy transition objectives (such as the European Green Deal), companies that are ahead in sustainability will reap significant rewards, including maintaining their license to operate, access to capital, and better customer acceptance.

Companies within the energy and utilities sector are exploring a range of emerging sources of revenues, with almost two-thirds investing in self-consumption (generating energy at consumer of company sites for their own consumption) using solar photovoltaics (PV) or wind energy installations (see Figure 5). Utility company Endesa is one of the leading players in solar self-consumption in Spain, offering upto 50% savings in annual electricity bills to customers. It reduced customers' emissions of 13,500 tons in 2019.¹³

Another popular source of revenue is green corporate power purchase agreements (PPAs), where large businesses purchase clean energy for the long term at set prices. This is part of decentralized generation, where electricity is produced near the point of use. Large energy companies are already diversifying into power generation, lured by improving cost economics for customers as renewable energy costs decline (For further discussion on cost curves of renewables, please refer to Section 3 of this report). In the US, Exxon, Occidental, Chevron, and Energy Transfer Partners have signed corporate PPAs in the last two years. Although returns on investments for such projects are lower than those of fossils-based investments, companies are entering this area to prepare for the future. Overall, more than 100 companies signed corporate PPAs in 23 countries during 2019.¹⁴

While a number of small and medium-sized players are active in this market, the large incumbents continue to push boundaries when it comes to the size of PPAs. Danish energy company Orsted signed the largest ever corporate PPA with Taiwan-based TSMC. The PPA is based on 920MW of energy from offshore wind farms over 20 years.¹⁵ Orsted CEO Henrik Poulsen said: *“We have signed four fixed-price corporate PPAs in less than 18 months. Corporates are increasingly looking to stabilize their electricity costs while decarbonizing their businesses and contributing to a greener and more sustainable planet.”*¹⁶ Orsted already generates 86% of its energy from green sources and has a target to reach 99% by 2025.

Figure 5. More than half of organizations are investing in at least six clean sources of revenues



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, 300 business executives.

Sources of revenue stretch into other areas, too. Organizations are exploring energy management services, such as demand response, storage, and EV battery charging units. As Vitor Fagali, VP of business development at CPFL Energia, one of the largest electric utilities in Brazil, told us: *“We have a huge portfolio of products we offer to our clients to improve their energy efficiency. We make clients self-generator using solar panels, the focus are public hospital aiming at reducing their operational cost allowing them concentrate on their core business, which is serve the population. We have smart meters....to provide clients a real-time measurement of their energy consumption so they could optimize their energy usage.”*

Revenue-generation opportunities can also sprout in what might previously have been considered unusual areas. Dominion Energy, a US electric utility, partnered with Smithfield Foods, the world’s biggest pork producer, to trap the GHG emitted by millions of pigs. Dominion injects this gas and sells it directly to customers through pipelines, and in the process removing CO₂e emissions of 3.5 million tons per year,

Large energy and utilities companies are taking the lead in sustainability within the sector

This year has already been significant for sustainability pioneers in the energy and utilities sector. Many large organizations have declared clear and ambitious goals for reducing or eliminating carbon from their value chain. European oil majors Total, Repsol, and Shell are investing heavily in the electricity value chain, from clean generation to EV charging. As Maarten Wetselaar, director, Integrated Gas and New energies at Shell, noted: *“We believe we can be the largest electricity power company in the world by the early 2030s.”*¹⁹ Similarly, energy major Total plans to increase electricity generation from renewables by five times to 25GW by 2025.²⁰

Pressure is mounting from climate groups, regulators, and shareholders. Investors, meanwhile, are now actively shunning companies with low ratings or performance in ESG metrics. One of the largest asset managers in the US, BlackRock, recently put 244 companies “on watch” for failing to take sufficient action on climate change. It also took voting action (holding directors accountable or supporting shareholder proposals) against 53 of these, including 37 energy and seven utility companies.²¹

equivalent to keeping 750,000 cars permanently off the road. Furthermore, due to its negative-carbon characteristics, the gas from livestock earns carbon credits equivalent to USD100 million a year.¹⁷

Investments in green hydrogen (powering electrolysis of water with renewables to obtain hydrogen), although nascent, are growing. Our research shows that more than half (59%) of organizations are now investing in this area. NextEra Energy, a US-based utility, is a case in point. It is closing its last coal-fired power unit and investing in green hydrogen produced from solar power. The hydrogen will replace natural gas to power a portion of its three turbines by 2023. Rebecca Kujawa, the company’s CFO, has outlined the potential benefits: *“What makes us really excited about hydrogen – particularly in the 2030 and beyond timeframe – is the potential to supplement a significant deployment of renewables [and energy storage]. That last amount of emissions you’d take out of the system to get down to zero could be most economically served by hydrogen.”*¹⁸

Rising pressure from financial institutions for sustainability impact

- Australia’s biggest financial institution, Commonwealth Bank, plans to exit the coal-fired-power sector by 2030.²²
- US banking company, Citi announced a USD100 billion Environmental Finance Goal aimed at supporting environmental solutions that will reduce climate change impacts and benefit society.²³
- The world’s largest cooperative financial institution, Crédit Agricole, is planning to stop financing the coal sector in the future and phase out coal assets from its portfolio by 2030 in the EU and OECD, and by 2040 in the rest of the world.²⁴
- UK-based banks, RBS and Lloyds Banking Group, plan to at least halve the climate impact of their financing activity by 2030.²⁵ RBS will further end financing major oil and gas companies unless they have credible transition plans in place by the end of 2021.²⁶

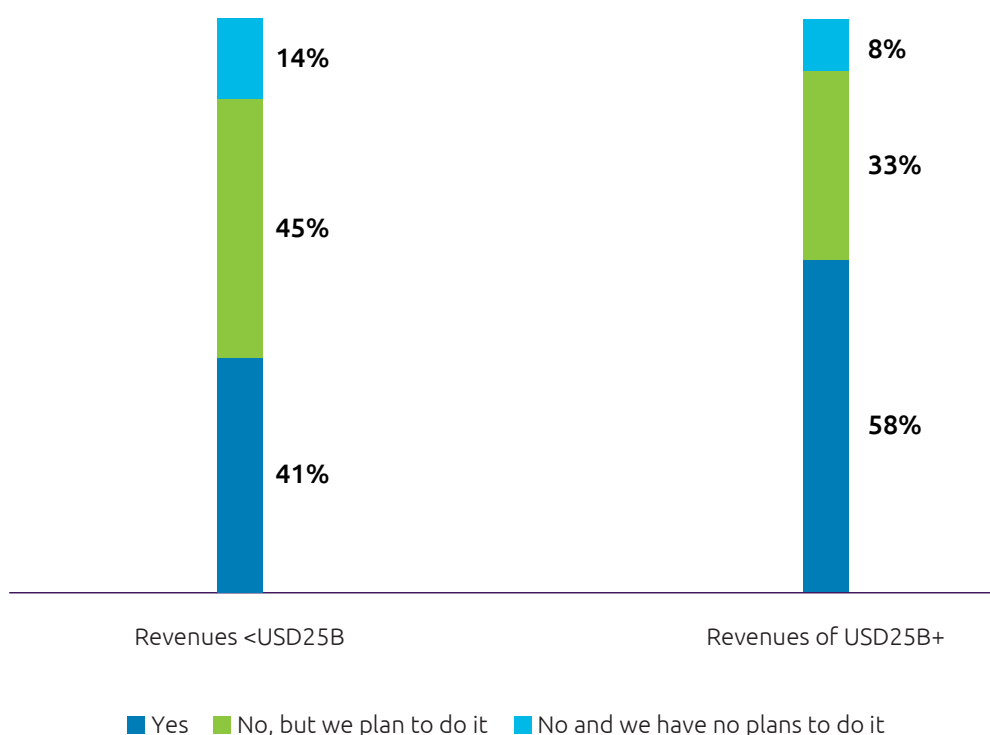
Companies have announced measures in all or some of the following areas:

- Becoming a net-zero company or committing to enhanced emissions reduction targets – in 2020, companies including BP, Petrofac, Total, Shell, Equinor, Southern Co., etc. announced net-zero targets to be achieved in the coming decades.
 - US-based utility company Duke Energy committed to halve its carbon emissions by 2030 and eliminate them completely by 2050. It enhanced its 2030 carbon reduction target from 40% to 50%, from 2005.²⁷
 - BP is targeting net zero carbon emissions by 2050 and refreshed its strategy to become a large electric utility in a decade.²⁸
 - Equinor plans carbon neutral operations by 2030, boost renewable energy tenfold by 2026, and cut carbon intensity from production to consumption of energy produced by at least 50% by 2050.²⁹
 - French energy company Total announced its ambition to reduce emissions to net zero for all its European businesses by 2050 or earlier.³⁰
- Shortening the time to reduce carbon emissions – In May, large electric utility, Southern Co. advanced its target year from 2030 to 2025, for reducing carbon emissions by 50% (base year 2007).³¹ *“We have committed to both our 2030 and 2050 greenhouse reduction goals in the absence of any state or federal mandates,”* said Thomas Fanning, president and CEO, Southern Co.
- Taking responsibility for expanding the “scope” of emissions reduction targets from Scope 1 to Scope 2 or 3 – Scope 3 emissions, which emerge from the combustion of fuel products sold to customers, account for a large part (typically over 80% of total emissions for energy and utilities companies) of overall emissions. Companies are making commitments to work with their B2B and retail customers to help them offset their emissions.
 - In December 2019, Spanish energy company, Repsol, extended its ambition from 40% lower carbon intensity by 2040 to net-zero emissions by 2050, including those from Scope 3. It was the first oil and gas company in the world to set a net-zero target.³²
 - Total committed to net-zero emissions from customer use of its products (Scope 3) in Europe and to reduce carbon intensity of its sold products worldwide by 60% or more, by 2050.³³
 - Shell, a UK-based energy company, committed to cut carbon emissions from the energy products it sells to 65% by 2050.³⁴ The company aims to shift energy mix in favor of advanced biofuels and hydrogen as well as work with its partners (such as in the aviation sector) to achieve this.

Our research shows that more than half (58%) of organizations with revenue over USD25 billion have closely aligned their sustainability goals to the United Nations’ Sustainable Development Goals (SDGs). Large European and UK companies are even further ahead – 68% aligned their sustainability goals with the UN SDGs. This compares with only 41% of smaller companies with revenues less than USD25 billion (see Figure 6).

Figure 6. Larger organizations are more actively aligning their sustainability goals with UN SDGs

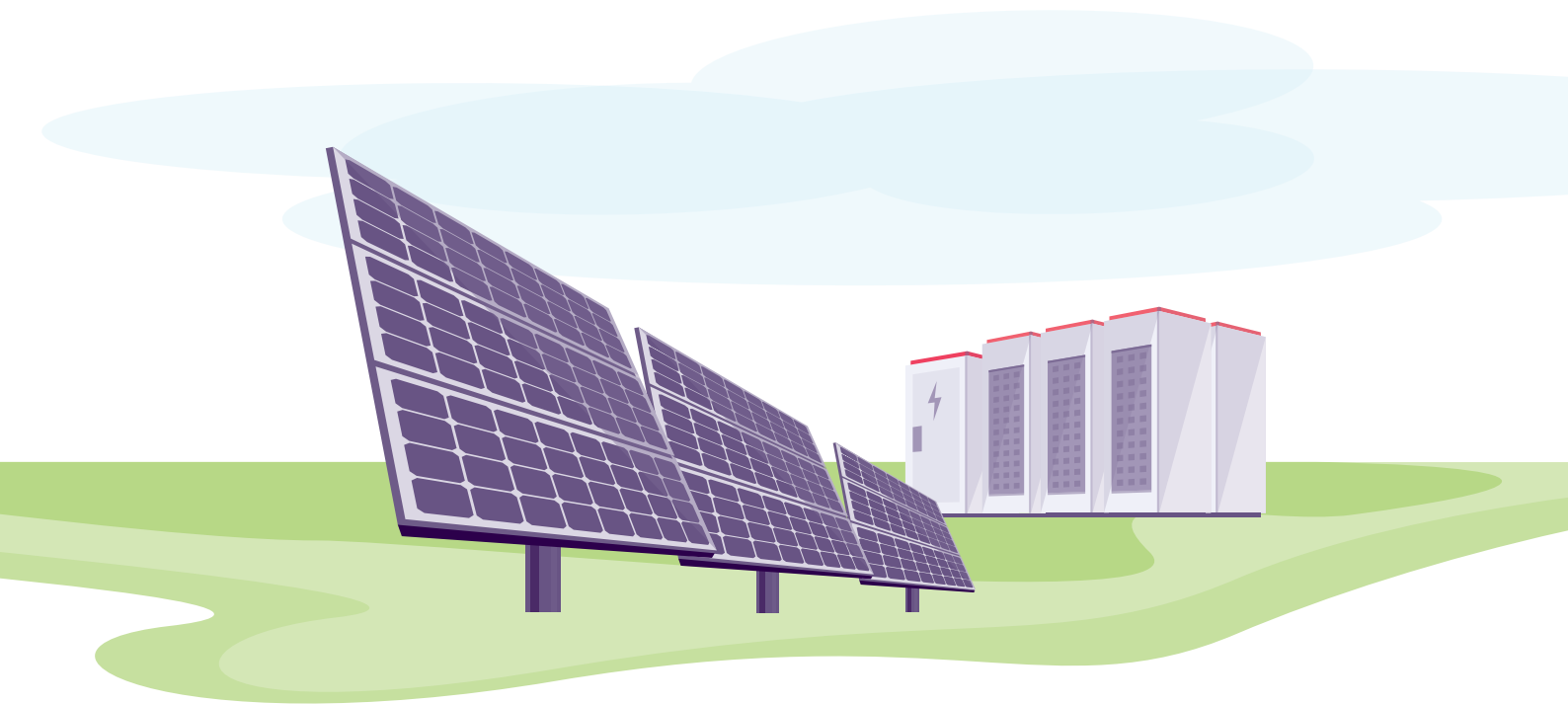
Have you closely aligned your sustainability goals to the United Nations' Sustainable Development Goals (SDGs)?



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, 300 business executives.

Companies such as Enel align its capital spending with the UN SDGs. Around 95% of its capital spending was in line with the SDGs in its 2020–22 strategic plan. It included products, services or solutions and technologies to promote low-carbon energy. The company also reported 91% of its EBITDA (earnings before interest, depreciation, and amortization) from low-carbon products and services in 2019.³⁶

Large organizations in the sector are clearly setting the forward-looking agenda for sustainability. However, the game is far from over. Achieving some of their ambitious targets will still be a huge leap forward given that renewables are not yet scaled in many countries and technologies/clean energy sources – such as carbon capture or green hydrogen – are yet to be proven to work at a global scale.



2- Organizations lack the pace and scale of execution to meet sustainability expectations

Few organizations display wide-ranging sustainability maturity

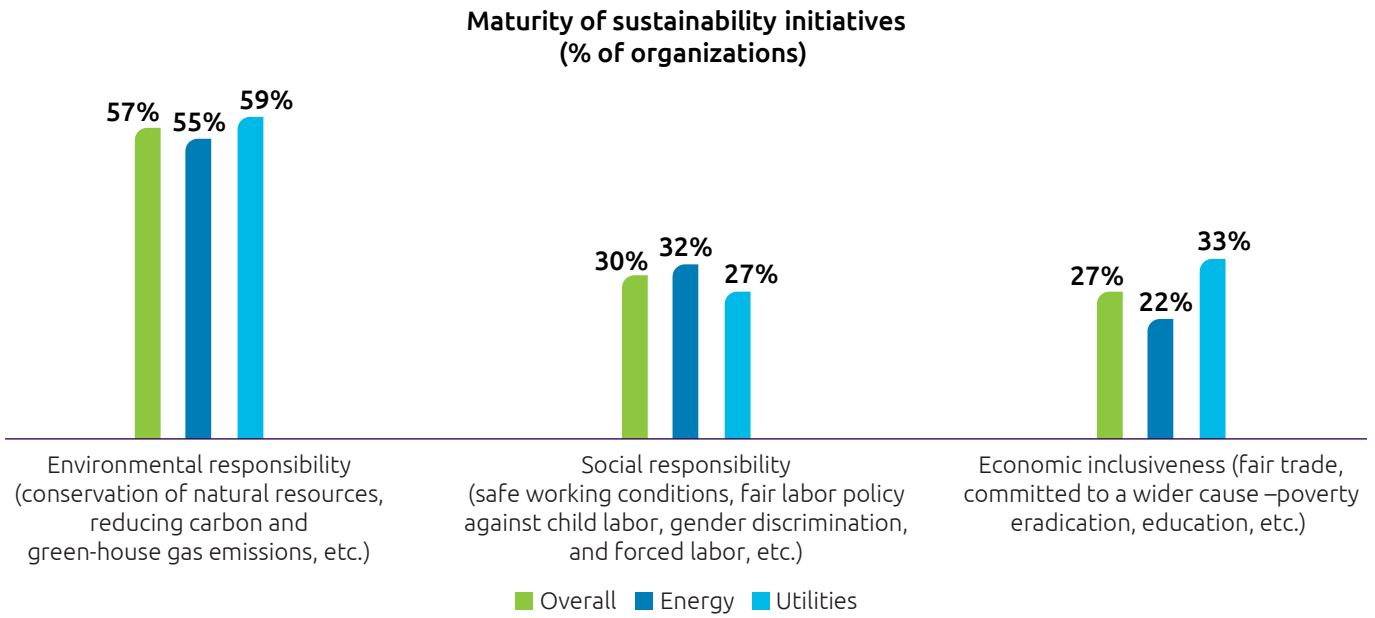
Despite the progress made so far, energy and utilities companies are falling short in scaling and accelerating sustainability practices. In our survey, when we asked executives about the maturity of their sustainability practices, 57% said they had a mature approach – meaning they had sustainability initiatives deployed widely throughout the organization in terms of environmental responsibility. However, as Figure 7 shows, this relatively strong maturity does not reflect in other areas:

- Only 22% of energy companies rated their approach to economic inclusiveness practices as mature.
- Only 27% of utilities say they have mature social responsibility practices, such as safe working conditions or labor policies that guard against child labor, gender discrimination, and forced labor.

The low level of maturity here is a significant concern. In the energy industry, the importance of safety and anti-hazardous practices in preserving natural resources and protecting employees is paramount. The Deepwater Horizon oil spill of 2010 released nearly 200 million gallons of oil into the Gulf of Mexico. Eleven workers lost their lives, biodiversity and the environment were negatively impacted, and the company bore huge fines as a result.³⁷



Figure 7. Fewer than one in three organizations have mature social and economic practices



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives.

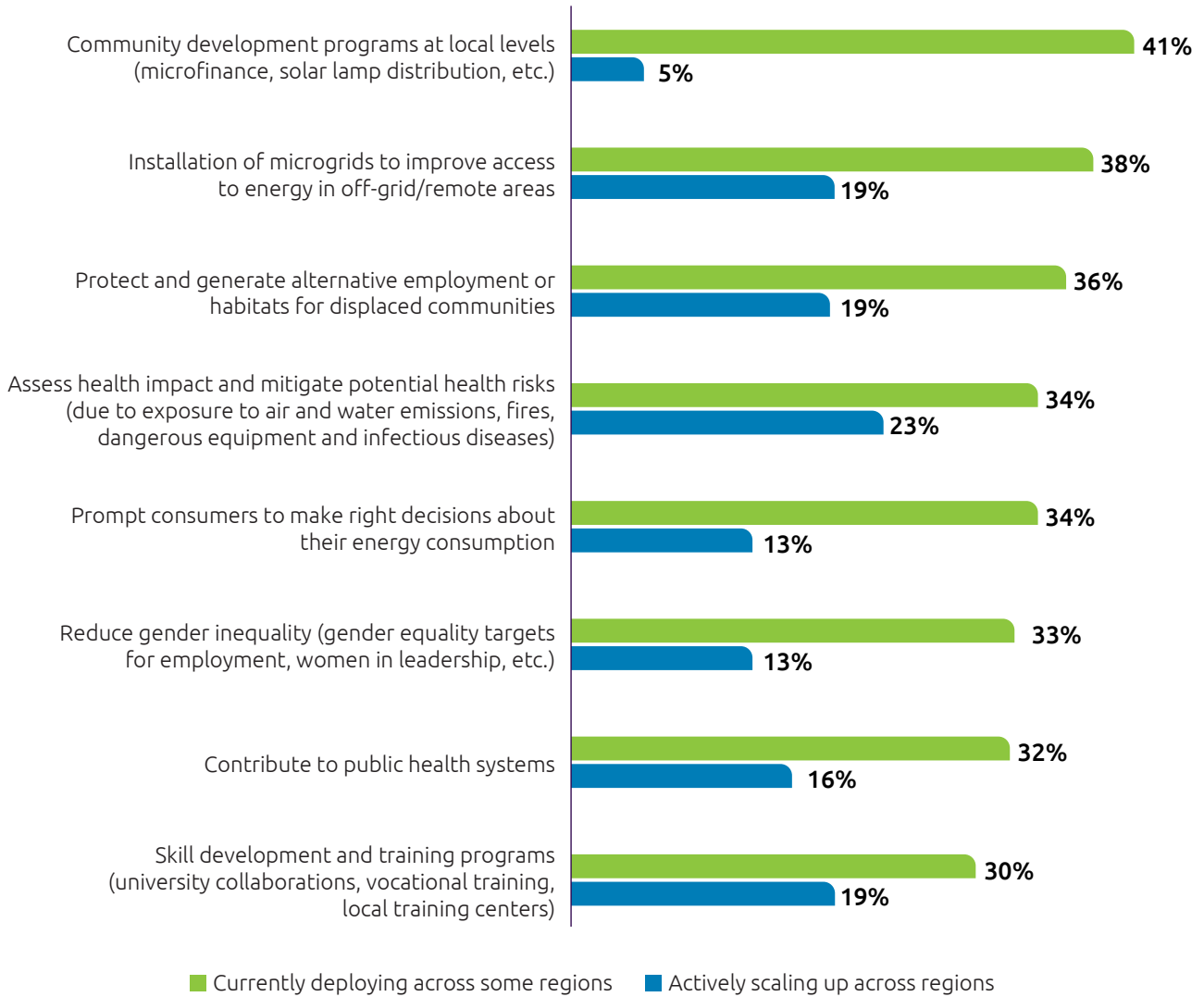
Given the significance of social responsibility, we looked into the current level of maturity in health, safety, and community initiatives. Our evidence suggests these initiatives rarely scale. While nearly four in 10 organizations reported deploying some practices, such as community development programs (41%), assessing health impact and mitigating potential health risks (34%) across some regions, fewer than one in five reported actively scaling such practices across regions (see Figure 8). Although the extent of scaling is low, it is important to consider the context within which these projects are set. As Mara Cristina Papetti, head of global sustainability infrastructure and networks, Enel Group said: *“You need to understand the context in which you want to scale something up. There is no single solution. A successful business*

project in Chile, for instance, cannot simply be scaled up in Africa since the contexts are different. The impacts that can be generated are different. The environment is different. Most of all, the people are different.”

Evidence from the energy sector suggests some organizations are taking solid steps to ensure employee safety and health. Total sought to transform towards a safety culture. This involved investing in training and tools to establish safe work practices. Formal tools, such as management observation cards and the safety management system program, are used for process control activities. Many of their interventions led to a total recordable injury rate that is 90% below the Bureau of Labor Statistics (BLS) average.³⁸

Figure 8. Few organizations scale major social responsibility initiatives across their global footprint

What is your organization’s current level of maturity of the health, safety, and community initiatives below?

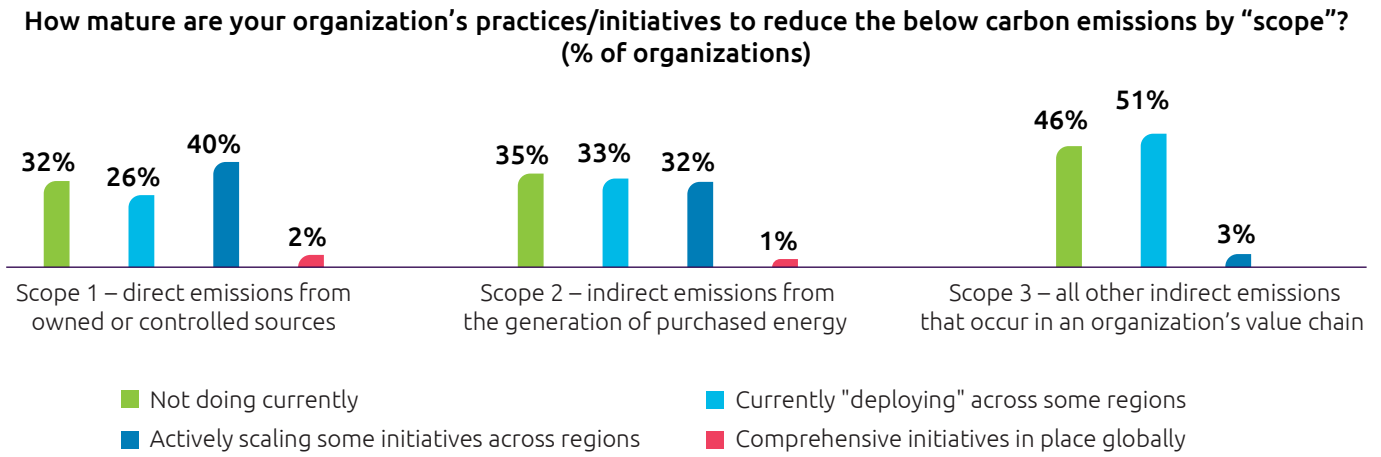


Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives.

Still, when it comes to reducing carbon emissions, our research suggests that there is much work to be done. Fewer than half of organizations have mature practices in reducing Scope 1 emissions, and only 3% have mature practices for tackling Scope 3 emissions (see Figure 9). *“Scope 1 is way bigger than Scope 2 for us, which is probably similar to most,”* says the director, director of environmental

sustainability of a large oilfield services company. *“For Scope 1, we have about five key pillars that use fuel. We first look at behavior-based changes, so idling and fuel efficiency and journey management projects. For Scope 2, we specifically look at the ongoing facility rationalization project. For Scope 3, we are looking at efficiency of our logistics.”*

Figure 9. 42% of organizations are actively scaling some initiatives across regions or have comprehensive policies in place globally for reducing direct emissions (Scope 1)

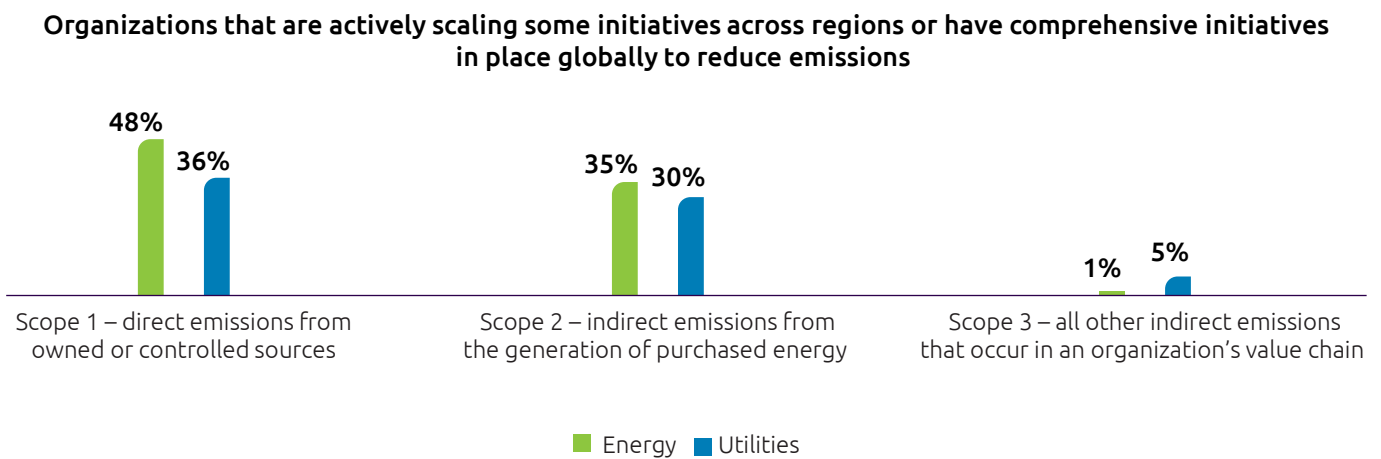


Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives.

Our research shows that variations also exist between industries and more respondents in the energy sector have initiatives across regions to reduce Scope 1 and Scope 2 emissions when compared with the utilities sector (see Figure 10). This difference is probably due to the fact that more pressure is applied to energy players from stakeholders than on utilities to cut Scope 1 and Scope 2 emissions. Scope

3 emissions are a significant factor across many utilities companies and some organizations are already taking a lead in combating these. In 2017, E.ON developed a new climate strategy with specific focus on the reduction of carbon emissions released due to the sale of power and natural gas to their customers (Scope 3). These emissions constitute the majority of E.ON's CO₂e footprint.³⁹

Figure 10. Only 1% of energy and 5% of utility companies are actively scaling initiatives to reduce Scope 3 emissions



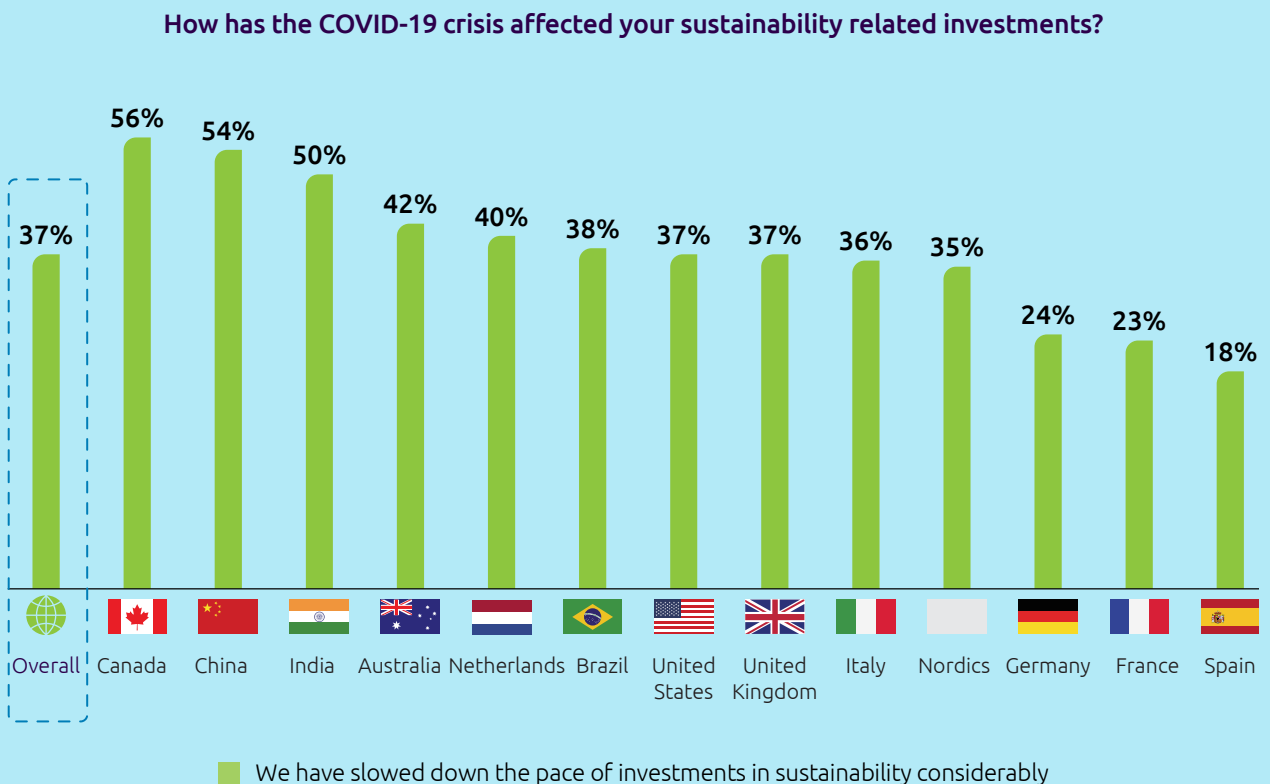
Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives

Organizations have slowed down the sustainability efforts in the short-term, due to COVID-19

While the ongoing COVID-19 crisis has brought to the forefront the question of sustainability, it has derailed sustainability efforts for over a third of organizations. Thirty-seven percent of survey participants said

that they have significantly slowed the pace of sustainability investment, while 6% have suspended sustainability initiatives entirely. As Figure 11 shows, organizations in Canada, China, and India slowed sustainability investments the most.

Figure 11. Many organizations have slowed or suspended sustainability investments and initiatives



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, N=300 business executives.

The decline appears temporary due to the delays at renewables farms construction, deployment, and component manufacturing sites, as the lockdowns affected the movement of labor and

goods.⁴⁰ Additionally, companies are redefining their sustainability strategy to account for drastic changes in the economic environment, pausing some investments in renewables.

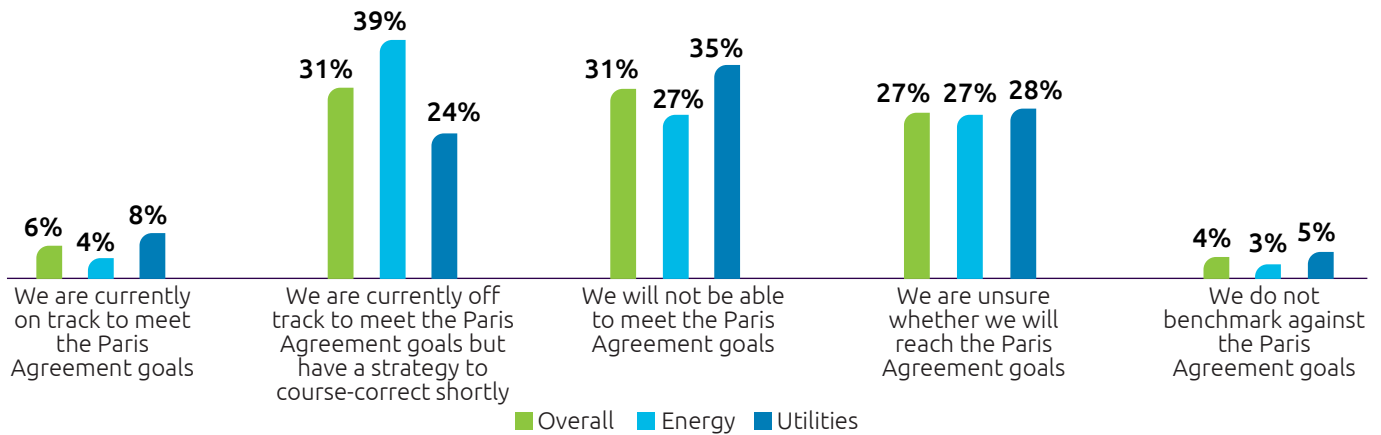
Organizations lag behind in setting and meeting Paris Agreement targets

The Paris Agreement aims to strengthen the global response to the threat of climate change, but such objectives need to be more than some distant goal. We found that while some organizations have set targets for the long run, they are

already failing to meet them. Just 6% of organizations are on track to meet the Paris Agreement goals (see Figure 12). Worse, three in five organizations doubt they will be unable to meet the goals at all.

Figure 12. Fewer than one in 10 organizations are on track to meet the Paris Agreement goals

Please assess your organization’s ability to meet the Paris Agreement goal of limiting temperature rise to 1.5°C

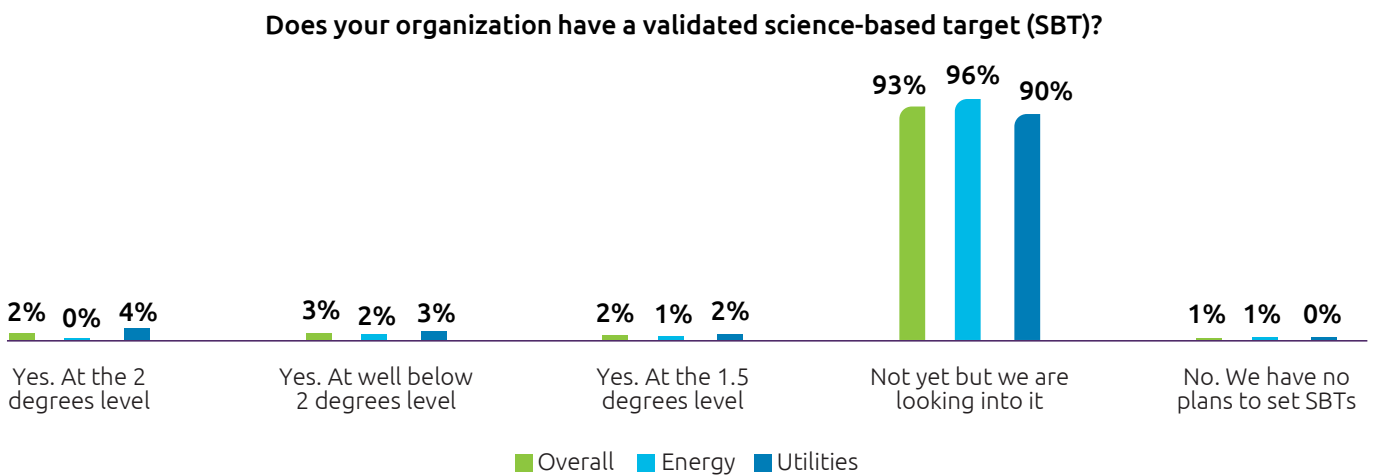


Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, N=300 business executives.

Help comes in the form of science-based targets. These targets provide companies with a clear path to emission reduction by specifying how much and how quickly they need to reduce GHG. Targets adopted by companies are considered “science-based” if they are in line with the Paris

Agreement to keep global warming below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C.⁴¹ Yet we found that nine in ten companies do not have science-based targets (see Figure 13).

Figure 13. Nine in 10 organizations do not have science-based targets yet but plan to implement them



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives.

The paucity of SBTs is reason for concern. However, some companies are taking strides in setting them. Take the example of Olivier Le Peuch, CEO and director of Schlumberger Limited: *“Unlike setting a net-zero target for some distant, future date, we are committed to setting a science-based target by 2021, which we are on track to do, with results to be completed within five to 15 years. These targets will cover both our direct emissions and those of our key suppliers, including end products and services. Our target will be validated externally by the science-based targets initiative.”*⁴²

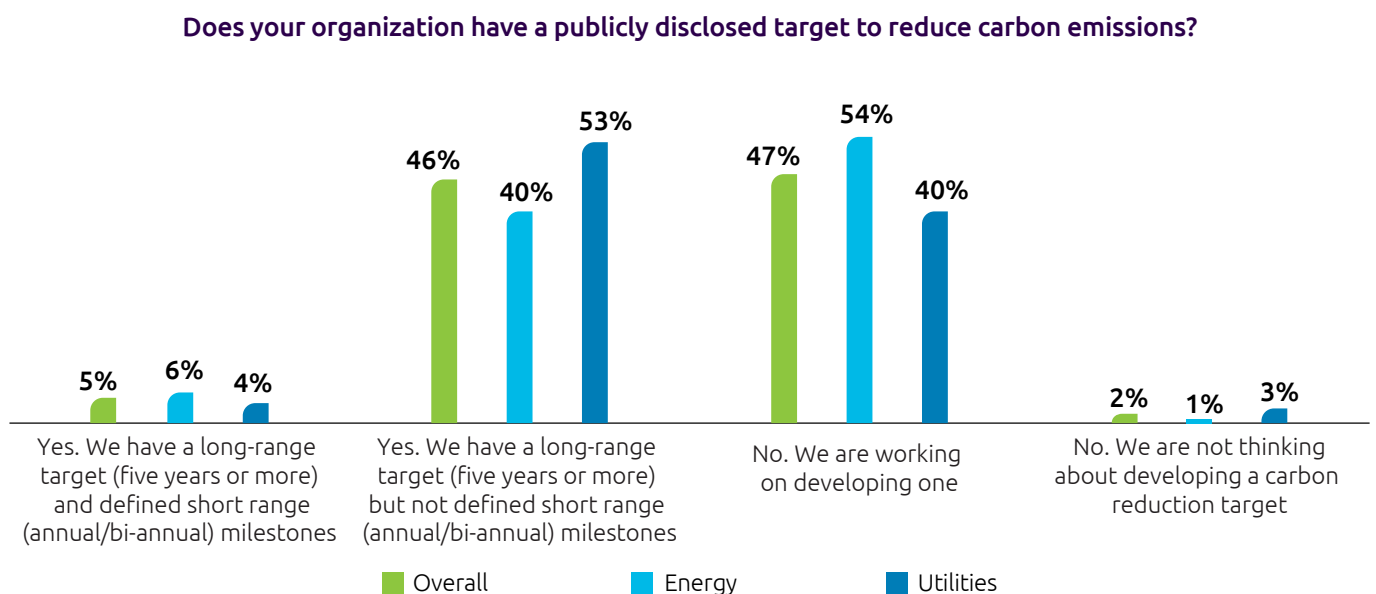
Science-based targets in action

- EDP, the largest generator, distributor, and supplier of electricity in Portugal, has committed to reducing Scope 1 and 2 emissions by 75% by 2030, compared to the 2015 levels. The company has also committed to reducing absolute value chain emissions (Scope 3) by 40% over the same period.⁴³
- Ørsted has committed to reducing its GHG emission intensity from energy production by 96% by 2023, using a 2006 base year.⁴⁴
- NRG Energy, Inc., a large US energy company, has committed to a 50% reduction in absolute emissions by 2030, from a 2014 base year.⁴⁵

Our research suggests that more organizations will soon take similar steps forward, but more companies must grasp the nettle. Almost half (47%) of respondents that said that they don't have SBTs are working on developing publicly

disclosed carbon emission reduction targets. More than half of utilities respondents from those that don't have SBTs claim to have a long-range target but have not defined short-range milestones (see Figure 14).

Figure 14. Two in five organizations do not have publicly disclosed short-range targets to reduce emissions



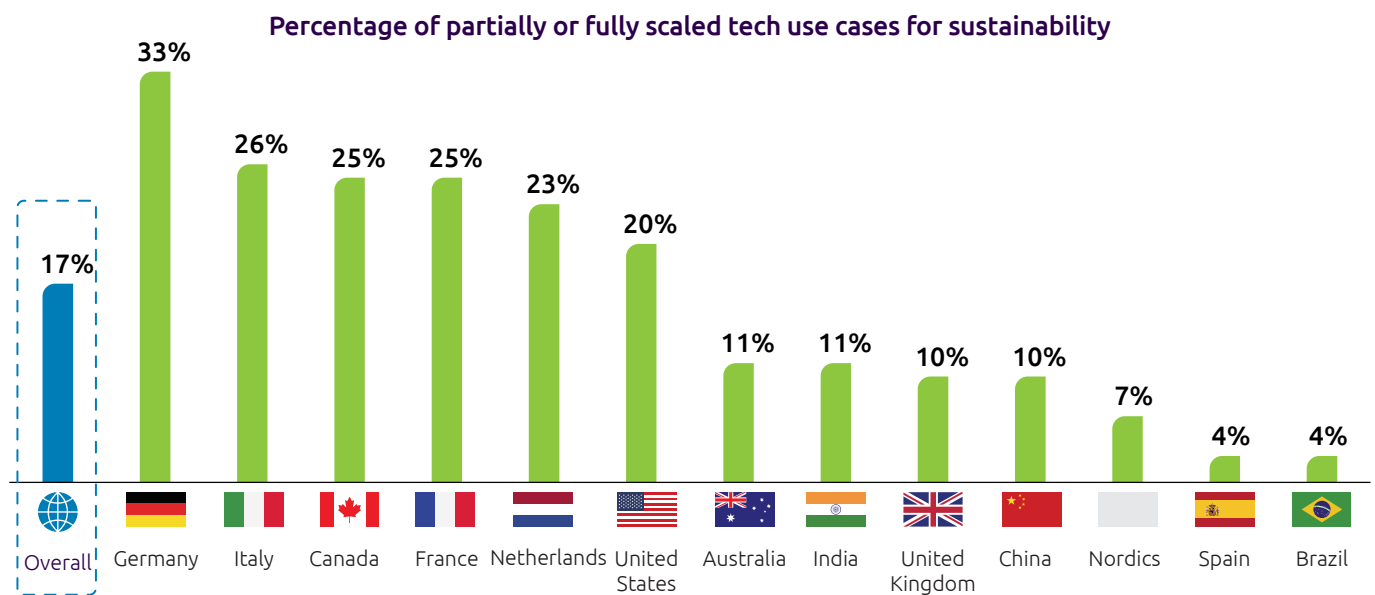
Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=561 executives who said that they don't have science-based targets.

Technology use cases to improve sustainability remain subscale

Technology has proven to be beneficial to delivering sustainability goals. Potential areas of influence include algorithms to automatically identify defects and predict failures without interrupting operations, carbon-capture technologies, and energy-efficiency solutions and storage.

Yet despite these potential benefits, the extent to which organizations around the world have achieved scale with tech-related use cases is low (see Figure 15), with Germany the best performer at the country level.

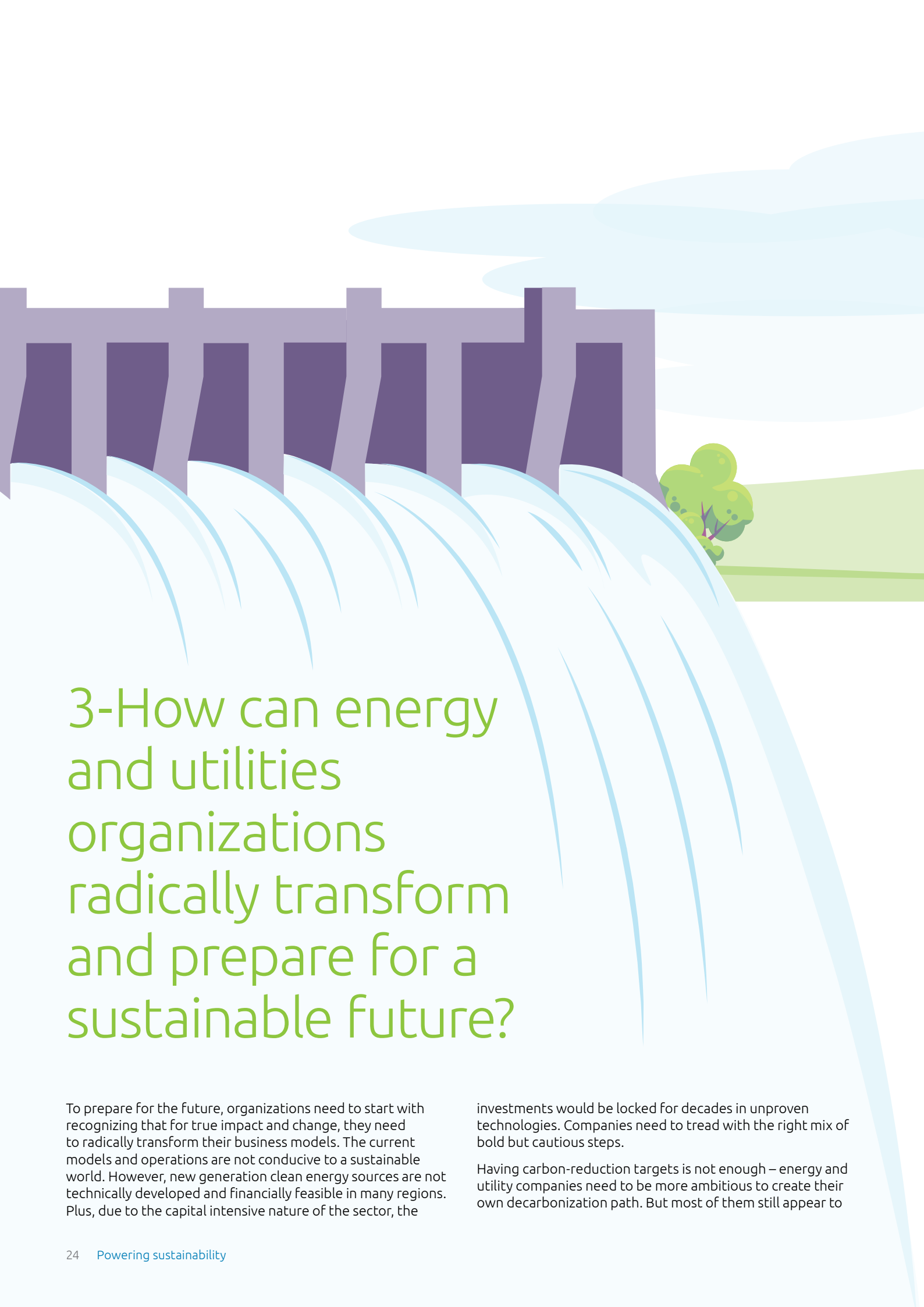
Figure 15. Fewer than one in five organizations have partially or fully scaled tech use cases for sustainability



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 business executives.

Across functions, the implementation of tech use cases for sustainability is low. Possibly, many of the technologies needed to decarbonize the sector are not yet mature and need further investments, before they can be scaled.

- Only one in four organizations reported having piloted/prototyped tech use cases for sustainability
- Only 15% of organizations have partially scaled tech use cases in retail and sales
- Only 2% organizations have fully scaled tech use cases for sustainability in other internal operations such as AI to mitigate financial and insurance risks of climate change, energy consumption optimization of IT infrastructure, among others.



3-How can energy and utilities organizations radically transform and prepare for a sustainable future?

To prepare for the future, organizations need to start with recognizing that for true impact and change, they need to radically transform their business models. The current models and operations are not conducive to a sustainable world. However, new generation clean energy sources are not technically developed and financially feasible in many regions. Plus, due to the capital intensive nature of the sector, the

investments would be locked for decades in unproven technologies. Companies need to tread with the right mix of bold but cautious steps.

Having carbon-reduction targets is not enough – energy and utility companies need to be more ambitious to create their own decarbonization path. But most of them still appear to



care more about compliance than actually transforming for the future. They persistently underinvest in sustainability – just 1% of their revenues as per our survey. Moreover, only 16% of executives expect investments in sustainability to increase during the next three years, as per our survey. *“Huge parts of the global [fossil fuel] industry have yet to make clean energy transition a top priority. For example, the oil companies that have pledged to reduce their own emissions to net zero*

produce less than 10% of global oil output. They [oil and gas companies] have a huge amount of work to do,” said Fatih Birol, director, International Energy Agency (IEA).⁴⁶

Based on our research – as well as our experience working with organizations in the sector – this section highlights key actions that energy and utilities companies need to take to execute the transformation.

Radically alter your business model with a clear roadmap

The energy and utility business of the future will have all or a combination of:

- A portfolio of predominantly renewables for producing energy
- Low-emissions solutions for customers
- Electrified end use of energy.

The broad pillars cover a vast playing field for companies to change their business in alignment with the new world.

Leading companies are already acting on the energy transition. BP, for instance, is pivoting from being an international oil company to an integrated energy company, not just targeting net-zero carbon emissions but ceasing all oil exploration in new countries. According to Bernard Looney, CEO at BP: *“In doing so, we are accelerating our transition from a company focused on producing resources to an integrated energy company that is focused on delivering solutions for customers.”*

By 2030, BP aims to increase its capacity for renewable energy generation tenfold, and double customer interactions and collaborations with cities and sectors to help them meet their own net-zero goals. The company met its fossil-fuel based divestment target of USD15 billion one year ahead of schedule and is diversifying to become large utility company with 50GW renewable generation capacity, including solar PV and wind energy, by 2030.⁴⁷

Companies which do not act face the risk of stranded assets – or projects becoming unviable before their useful life, either due to their high carbon emissions or lower competitiveness with respect to other assets, such as renewables. For example, over 97% of coal-fired power plants were estimated to become unprofitable by 2030.⁴⁸ This could permanently devalue companies’ existing fossil-based assets. Organizations need to:

1. Progressively curtail capital investments in fossil-fuel businesses for growth.
2. Create a roadmap to phase out existing emissions-intensive assets.
3. Divert capital into renewables and low-emissions operations to meet the energy transition scenarios aligned with the Paris Agreement goals.

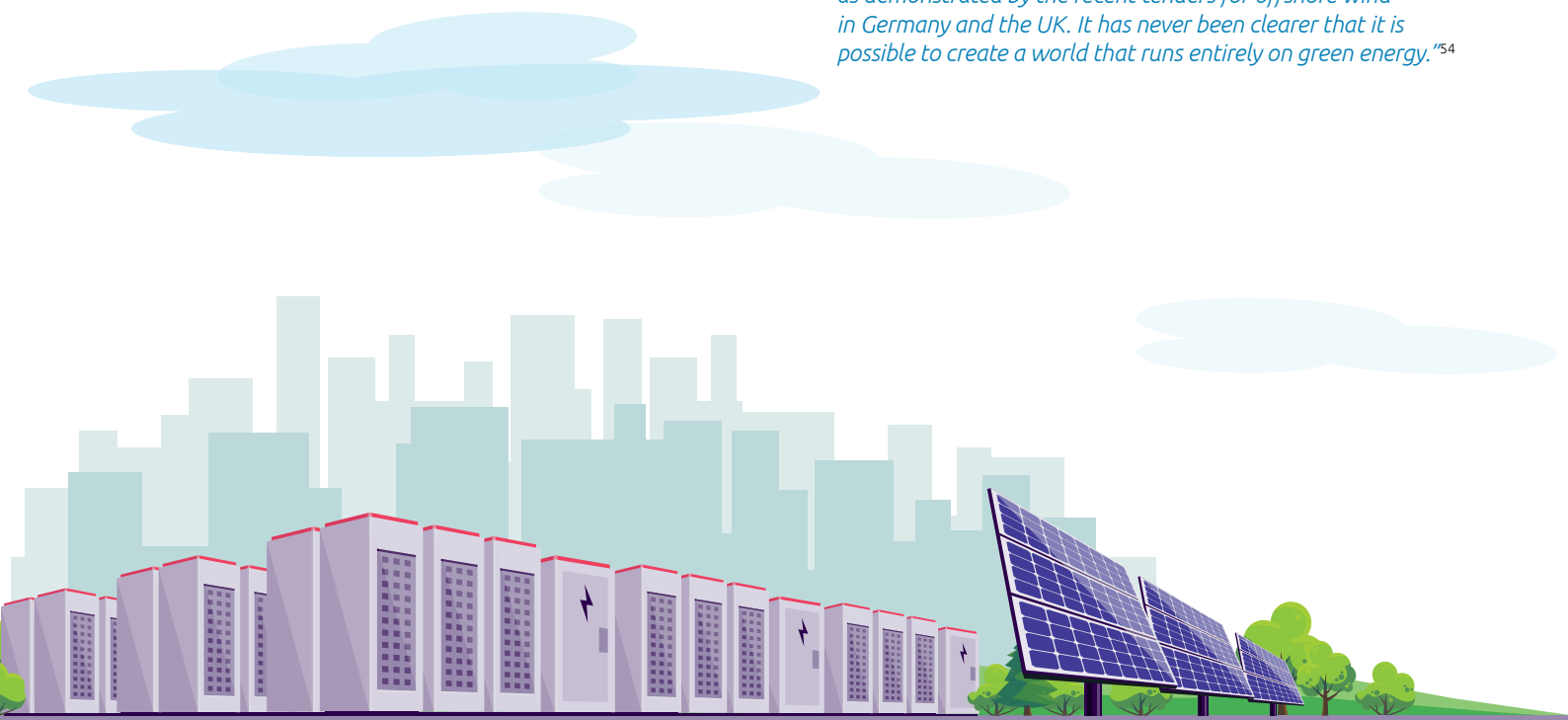
However, many companies are stuck in the ROI conundrum – should they forego higher incremental return on fossil fuel operations to invest for the future? To overcome this challenge, industry incumbents need to take strategic risks. For example, Shell recently announced a large offshore wind power project in the Netherlands, where it will also look to build the floating solar, battery storage, and hydrogen to supplement wind power generation. Ben Van Beurden, CEO of Shell, has pointed out that embracing nascent technologies such as these sometimes requires efforts from others to make the economics work: *“... before such a technology ... commoditizes and becomes subject to the usual competitive forces, there is a sweet spot where very good revenues can be captured. But to find that sweet spot, indeed, you have to take risk. Or sometimes, you have to figure out ways and means to make the economics work, sometimes even with government support and other ways to sort of level the playing field against the conventional alternatives.”*⁴⁹

While Shell is an example of a company that has looked to embrace nascent technologies, other organizations are actively reallocating capital as they set out on the path to a decarbonized future:

- US-based oil refiner, Phillips 66, announced an investment of up to USD800 million to convert its oil refinery in California to the world’s largest biofuel plant. It will make renewable diesel, gasoline, and jet fuel, from used cooking oil, fats, greases, and soybean oils by 2024.⁵⁰
- Swedish-power producer, Vattenfall, closed its last coal-fired plant in the Netherlands. Also, it plans to phase out coal to generate power from its own operations by 2030, ahead of the German government’s target of 2038.⁵¹

Given the enormity of the challenge, companies have to take the leap of faith. Here are two examples of organizations that have made that leap:

- Eneco, a Dutch electric utility, set an ambition to become sustainable and climate-friendly in 2007. It immediately pivoted to position itself for the energy transition, selling off gas and coal plants, as well as related assets, into renewables and providing solutions to customers. Over a decade later, the company has around 50% of produced energy from renewables, including offshore and onshore wind, solar, and biomass. The company’s gas-fired generation is used to balance the intermittency of renewable power. The company has been compensating for carbon emissions of its own operations through purchase of carbon credits, since 2008. It now rates among the top 15% performers in ESG.⁵²
- Similarly, DONG Energy (now Orsted), a Danish energy company, exited the oil and gas business in 2017 to fully focus on renewable energy, leading to more than doubling of its market valuation since then, rivalling that of energy giant BP in 2020.⁵³ Commenting on the profound shift, its CEO Henrik Poulsen said: *“2017 will be remembered as the year when offshore wind became cheaper than black energy, as demonstrated by the recent tenders for offshore wind in Germany and the UK. It has never been clearer that it is possible to create a world that runs entirely on green energy.”*⁵⁴

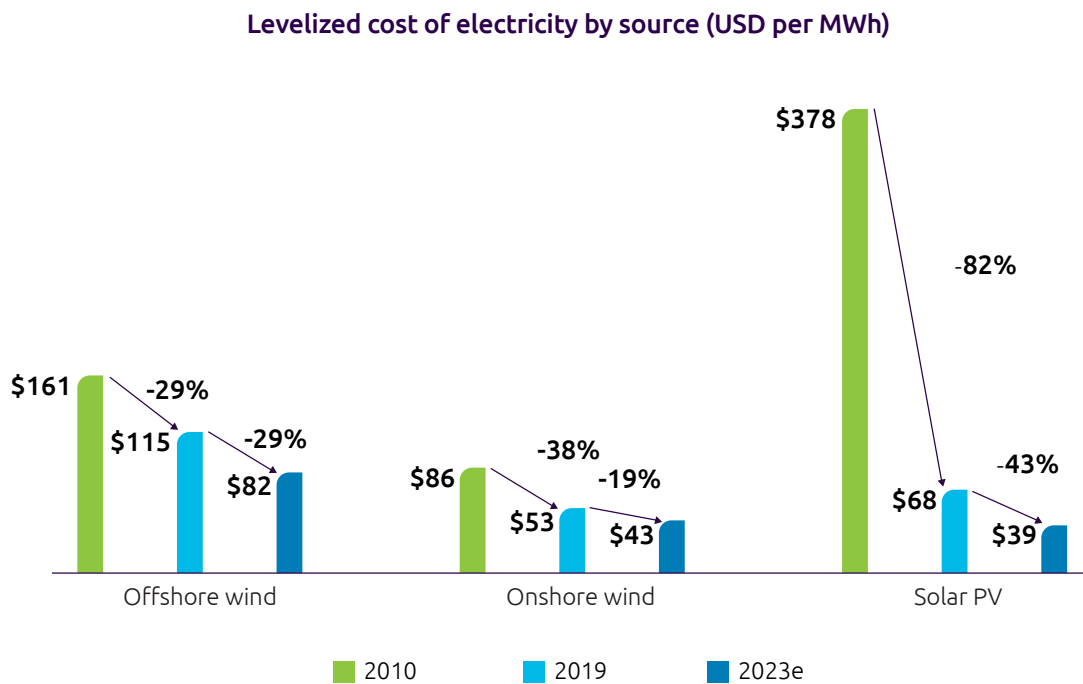


Maximize renewables

In our survey, just 20% of organizations cite maximizing renewables as a priority on their sustainability agenda. In 2018, renewables formed only 23% of all sources of electricity generation globally, which is just slightly higher than the 19% level that has predominated for the past three decades.⁵⁵ However, as solar and wind-energy cost have plummeted (see Figure 16), renewables have become

competitive in many parts of the world. Of particular note are solar photovoltaics and onshore wind energy. These two are the cheapest source of electricity generation across more than two-thirds of the world.⁵⁶ Within the next decade, most renewable power sources will undercut fossil fuel energy cost almost everywhere. Organizations should aggressively shift new investments to renewables for long-term viability and to reduce the risk of stranded assets.

Figure 16. Wind and solar costs are continuing to decline



Source: International Renewable Energy Agency

It should also be recognized that the operating costs associated with running a fossil fuel business are rising due to tightening regulations across the world. These regulations and rising costs will help to create a level playing field and make clean sources a more viable option when compared with conventional sources.

Add in uncertainty in oil demand due to COVID-19 and the result is companies having to recognize large impairments in conventional businesses, especially high-emitting ones such as heavy crude, oil sands, and LNG. Companies such as

Exxon and Chevron and fracking firms such as Diamondback Energy have shut in wells and slashed investment during the pandemic, driving down US crude oil production by nearly one million barrels per day from March to April – the third-largest monthly decline in a century.⁵⁷ In the quarter ending June 2020, major energy companies – including Shell and Total – wrote down the value of their oil and gas assets by billions of dollars. French energy major Total impaired USD8.1 billion of assets, including two oil sands projects in Canada.⁵⁸

Use technology to accelerate the sustainability journey

Technology is already helping some companies reduce emissions, increase energy efficiency, cut waste and lower costs. However, there is scope to do more. Organizations must look to adopt and adapt technologies that could help them achieve their sustainability goals.

Among sector technologies, companies need to accelerate investments in technology for green energy carriers and solutions, including utility-scale battery storage capacities, hydrogen, pumped hydro storage, and carbon capture utilization and storage (CCUS). Occidental Petroleum, for example, has gained substantially from CCUS by improving oil recoveries and storing carbon at the same time. It is now the world leader in the technology and stores about 20 million tons of CO₂ per year.⁵⁹

In our survey, automation, data analytics, battery and storage technologies – as well as AI/ML – are the top-ranked technologies that energy and utility companies are investing in. More than half (55%) of companies have collaborated with established technology firms to bring new ideas and practices to their sustainability agenda. A similar number (49%) of companies have established innovation centers to develop new initiatives for sustainability. However, only 25% of companies are working with startups to develop new ideas and practices for sustainability.

Technology is helping to accelerate the journey to sustainability in a range of important areas. These include capturing carbon, automating tracking and reporting of emissions, maintaining assets, and preventing flaring, venting and leakages in operations through the use of IoT, AR/VR, drones, and 3D modelling:

- ExxonMobil is testing eight technologies to reduce GHG emissions from methane leakage in nearly 1,000 sites using drones, ground-based mobile, and fixed-position sensors.⁶⁰
- Vattenfall is using drones to make inspections more cost-efficient, frequent, and safe for technicians. It tested the technology at a 30-meter-high boiler, resulting in completion of the inspection in a couple of hours, compared to the several days that are normally required for building a scaffold and conducting a manual inspection.⁶¹

Organizations should start evaluating the potential for technology to help boost sustainability at the earliest opportunity. Energy and utility companies can explore top use cases across core operations, retail and sales, and other internal operations (see Figure 17). Organizations should evaluate these use cases for their specific context and put in place plans to pilot and implement these innovations.

Figure 17. Top tech use cases for sustainability for energy and utilities – by function

Department	Examples of sustainable initiatives
<p>Core operations:</p>	<ul style="list-style-type: none"> • Carbon-capture technologies for production • Tracing carbon emission of supply chain (for energy companies only) • Logistics optimization (for energy companies only) • Supply chain tracking (for utilities companies only) • Pipeline maintenance and leakage detection (for utilities companies only).
<p>Retail and sales:</p>	<ul style="list-style-type: none"> • Energy efficiency solutions and storage • Making electric supplies more reliable and bespoke to consumer needs • Incentivizing electrification of building heating through incentives for utilizing renewable energy, thereby enabling predictive grid balancing (for energy companies only) • Consumer behavior analysis (including home device usage) using advanced analytics (for utilities companies only).
<p>Other internal operations:</p>	<ul style="list-style-type: none"> • Automation of carbon emissions, tracking, and reporting • Energy consumption optimization of IT infrastructure and employee work facilities using edge computing/deep learning • Reduce travel needs of remote-working employees by designing AR/VR portals. For example, a VR technology deployed at Reliance, an India-based oil and gas company, uses virtual walkthrough of plant environment for interactive training, testing, and process simulation of all critical plant personnel, improving safety of personnel.⁶²

Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 business executives.

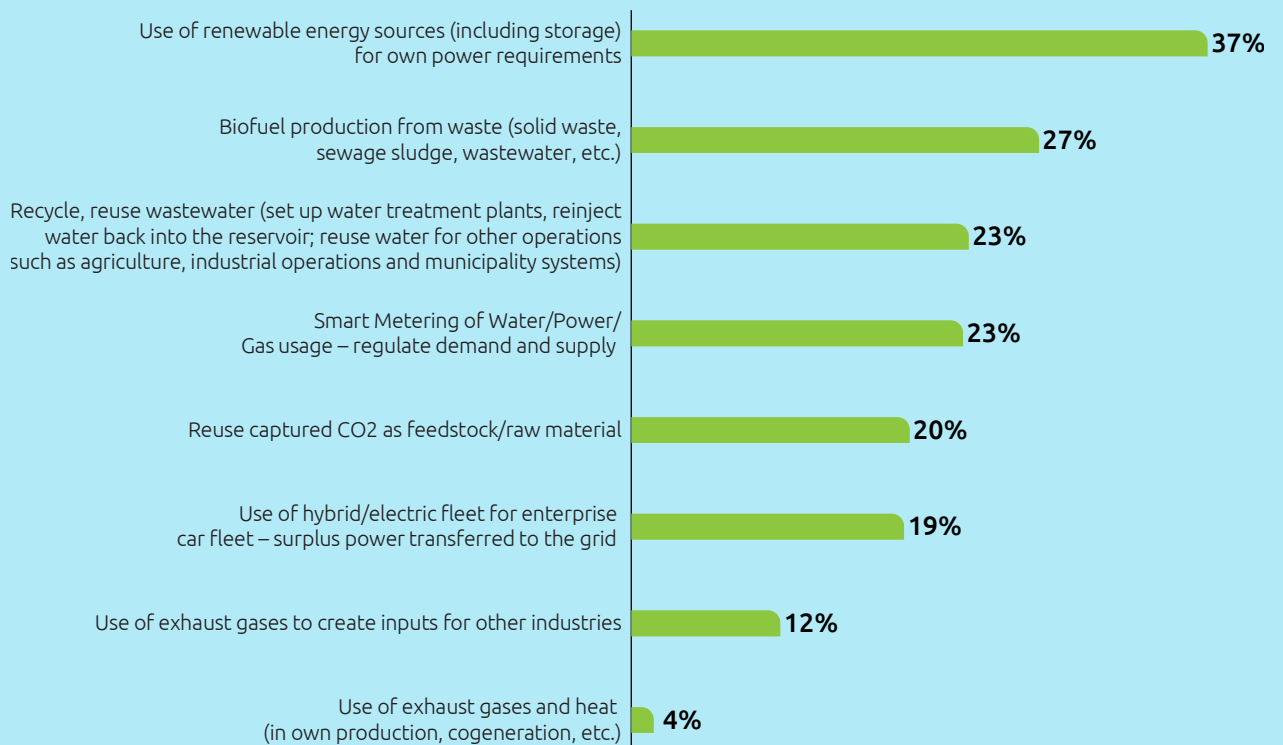
Work with partners to implement circular economy approaches

While the circular economy – which aims to design out waste and keep materials in production – can have a transformative impact on sustainability, our survey found that only 30% of companies said that they have the strategy, infrastructure, and resources to drive circular economy initiatives, while a similar number of organizations collaborate with their value-chain partners to implement circular economy initiatives.

In fact, companies that have mature approaches to a range of circular economy initiatives are in the minority (see Figure 18). Only 27% of organizations have a mature approach for turning waste into biofuels. Just 23%, meanwhile, class their recycle and reuse water strategy as mature.

Figure 18. Only a minority of organizations have reached maturity in a range of circular economy areas, such as biofuel production from waste

What is your organization's current level of maturity of the below circular economy initiatives? (% of organizations)



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives.

Despite the lack of maturity regarding the circular economy, there is evidence of some companies setting concrete targets. Repsol, for example, plans to focus on the circular economy as a tool for the efficient use of resources. It aims to double the production of high-quality biofuels from hydrogenated vegetable oils to 600,000 tons per year by 2030, half of which is planned to be produced using waste by 2025.⁶³

Similarly, companies are tackling the challenges of equipment decommissioning through circular economy principles. For instance, BP recovered 99% of the steel recovered from demolishing its refinery in the UK in 2019.⁶⁴

Circular economy at Neste in partnership with McDonald's⁶⁵

Neste, an oil-refining and marketing company, collaborated with fast-food giant McDonald's to turn the latter's used cooking oil into renewable diesel across its more than 250 outlets in the Netherlands. The diesel also powers the trucks that transport the used cooking oil to Neste's refineries. Using biodiesel can help its users reduce GHG emissions by up to 90% over the lifecycle of the fuel.

To set up the arrangement, the two companies worked closely to overcome a number of challenges. The key was to link the operational models of both organizations, including a common language that could be used across the refining, restaurant, and logistics industries. For example, 1.4 million liters of used cooking oil is an enormous amount for a

restaurant but not much for a refinery.

Approximately 80% of Neste's feedstock for the production of renewable products comes from waste and residues, and a part of that is used cooking oil. The company is expanding such partnerships with city governments. In 2019, it partnered with the City of Oakland to fuel the city's fleet with renewable diesel made from used cooking oil, grease, and other waste and residue materials. It will be sourced from local businesses in the San Francisco-Oakland-Hayward metropolitan area.⁶⁶

Offer low-emissions/clean energy solutions to customers to reduce Scope 3 emissions

Without reducing Scope 3 emissions, companies will not be able to decarbonize the energy and utility value chain. Some companies are leading the charge to provide energy solutions to their customers. Engie, an energy company in France, adopted its corporate purpose “to accelerate the transition towards a carbon-neutral economy.” In doing so, it aims to become the world leader in the zero-carbon transition “as a service” for its customers.⁶⁷

Companies need to encourage **electrification** of energy use, from green sources of energy, in areas such as building, transportation, and industrial processes, which emit the majority of overall emissions. Energy and utility companies need to partner with end users to make electricity a primary fuel along with the use of digital technologies to reduce overall energy consumption. Some examples include, EVs, switch to heat pumps for space heating, green hydrogen, electric cooking, electric boilers, etc.

The opportunity size is massive. Take EVs for instance. In our research report, *The Automotive Industry in the Era of Sustainability*, only 56% of automotive original equipment manufacturers (OEMs) cited that they embedded EVs in their sustainability strategy.⁶⁸ Energy and utilities companies need to work closely with the transport sector to decarbonize the entire industry value chain. A case in point is the recent JV between OEMs Groupe PSA/Opel, energy major Total, and battery solutions provider Saft to manufacture EV batteries. One of the aims of the JV is to offer clean mobility solutions and reduce the environmental footprint of vehicles.⁶⁹

Energy services agreements, where an energy company provides solutions to manage energy needs of its customers, are a “win-win” – hence, the opportunity size continues to expand. On the commercial side, corporate PPAs backed by renewables is a good example. These allow predictable cash flows to energy providers and cut emissions as well as energy costs of their B2B customers, leading to increased demand.

More such commercial revenue lines are opening up for energy and utilities companies. Examples include smart buildings (energy management); smart heating and cooling networks, decentralized power generation, energy efficiency improvement solutions, smart public lighting, urban asset management, etc. EDF, for instance, manages over 400 contracts with local authorities to manage public lighting, urban traffic, illumination, and maintenance of assets. It achieved between 50% to 90% of savings in energy in its projects to renovate public lighting or artistic lighting in 2019.⁷⁰

On the residential side, evidence suggests customers buy more from companies prioritizing sustainability. Our recent study on sustainability in consumer products and retail shows that 42% of consumers had changed their purchase patterns based on social, economic, or environmental impact, and 37% of consumers said that they may do so.⁷¹ Companies are offering home energy management services through internet-connected devices to residential customers. These services allow customers to better manage their energy consumption.

- Shell launched an EV smart-charging service. Using an AI algorithm, the service works to offer the opportunity to charge EVs at times when (1) it is most beneficial for the power grid and (2) when it offers the best cost advantage for customers.⁷²
- E.ON has installed 4.4 million smart thermostats in Europe, which allows a household of four members to reduce its carbon footprint by 600 kg annually. The solution displays and adjusts the current room temperature from anywhere, anytime, and is linked to weather forecasts.⁷³



Scale social inclusion and economic sustainability efforts

As we saw in Section 2, the maturity of social and economic inclusion efforts continue to be low. It is critical that energy and utilities companies ramp up their efforts on ensuring social and economic inclusiveness. Various issues become critical when thinking about economic and social sustainability.

Public perception and acceptability is important to be considered as there can be various issues that emerge. For example, implementation of wind power and hydro-power plants raise concerns around population displacement, visual intrusion, and noise pollution, among others. In the case of nuclear power, public acceptability is mainly affected by the perceptions related to health and safety issues, including nuclear accidents nuclear proliferation and radioactive waste management and storage.

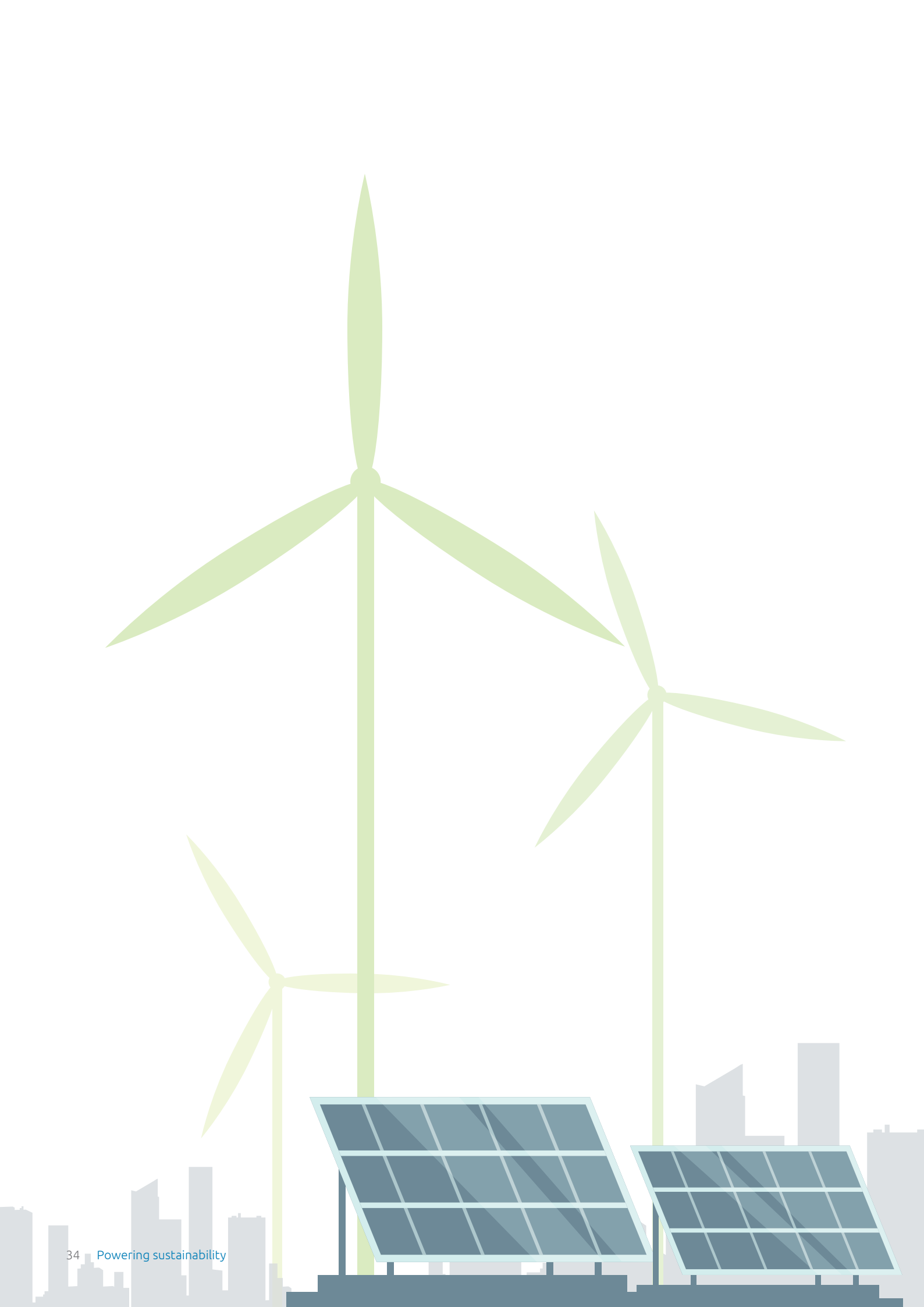
The use of fossil fuels not only cause environmental degradation but can also have health impacts and safety risks due to emissions of toxic gases and particulate matter. Organizations also need to consider intergenerational aspects such as mitigation of climate change, the long-lived

hazardous wastes that stay on in power plants over a period of time and can have negative consequences in the future.⁷⁴

Therefore, organizations need to focus on key areas, such as employee health and safety, upholding human rights, ensuring gender equality, positive community practices, and fair trade. Some organizations are already making headway.

- At Chevron, employees are collaborating with peers in the oil and gas industry to raise awareness of human trafficking. They are also sponsoring Truckers Against Trafficking, a nonprofit organization dedicated to fighting modern slavery, by working with transport and logistics providers.⁷⁵
- National Grid, while reporting its gender pay gap, shared that in the UK women have represented a greater proportion of promotions than in the prior year and the company has seen a year-on-year increase in women in leadership roles.⁷⁶





Conclusion

With nearly 75% of emissions coming from energy uses, the energy and utilities sector is expected to bring solutions for the wider economy, across industries and consumers. The energy and utilities sector is scrutinized for its progress on sustainability today more than ever before. In this “decade of delivery,” aiming low is a mistake. Investors are increasingly differentiating between companies who deliver on their sustainability agenda and the ones who falter. Moreover, the transition into clean energy presents numerous opportunities for early movers. Companies with advanced sustainability initiatives earn more revenues, improve their brand/valuations, and are perceived positively by the investors and regulators. They also face lower risk of stranded assets. With

a peak oil scenario closing in, the time is ripe for energy and utilities organizations, especially energy players to diversify into green business models.

Despite the urgency, barring a few large organizations, companies have not taken concrete steps to become sustainable. Some have even failed to frame the issue of sustainability in the right context. To retain their license to operate, companies in the sector need to take comprehensive measures with a clear energy transition roadmap, the right governance structures and technology solutions, and close engagement with stakeholders. The cost of inaction is huge, but the right steps can future-proof companies’ business models for decades. The need to take decisive action on sustainability is critical.

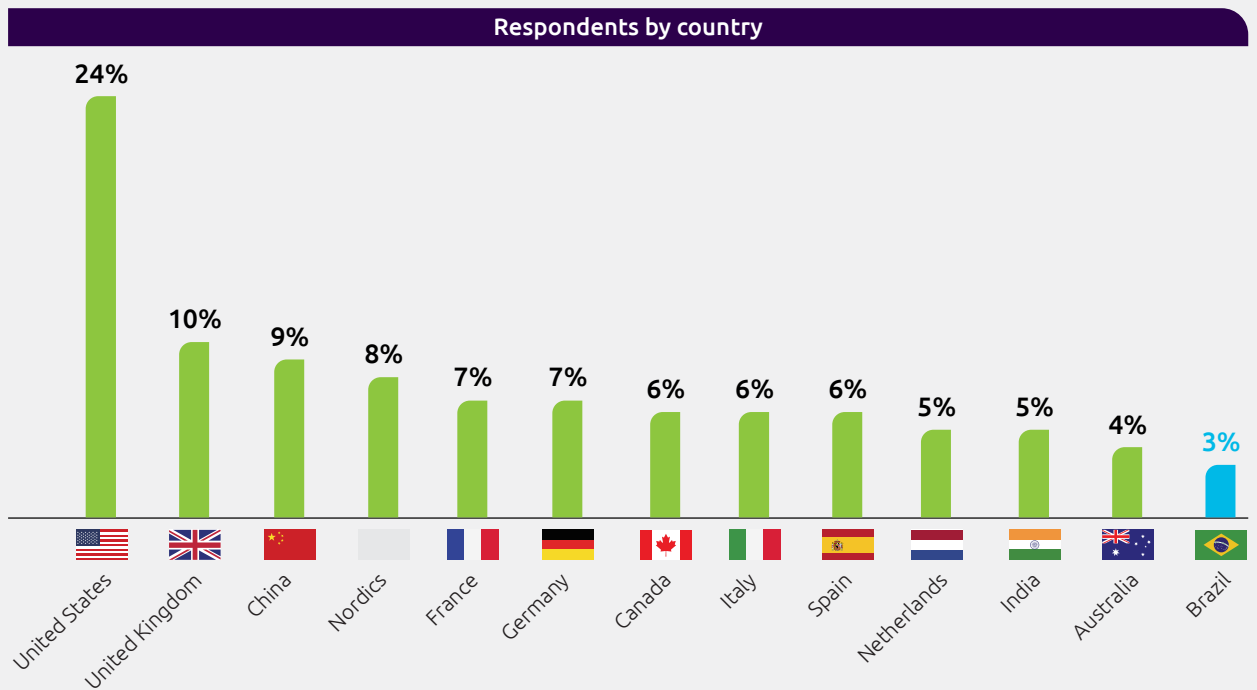


Research methodology

For this research, we conducted a survey of 600 executives across 300 organizations in 17 countries/regions. Each organization was represented by one sustainability executive and one business executive in the energy and utilities sector:

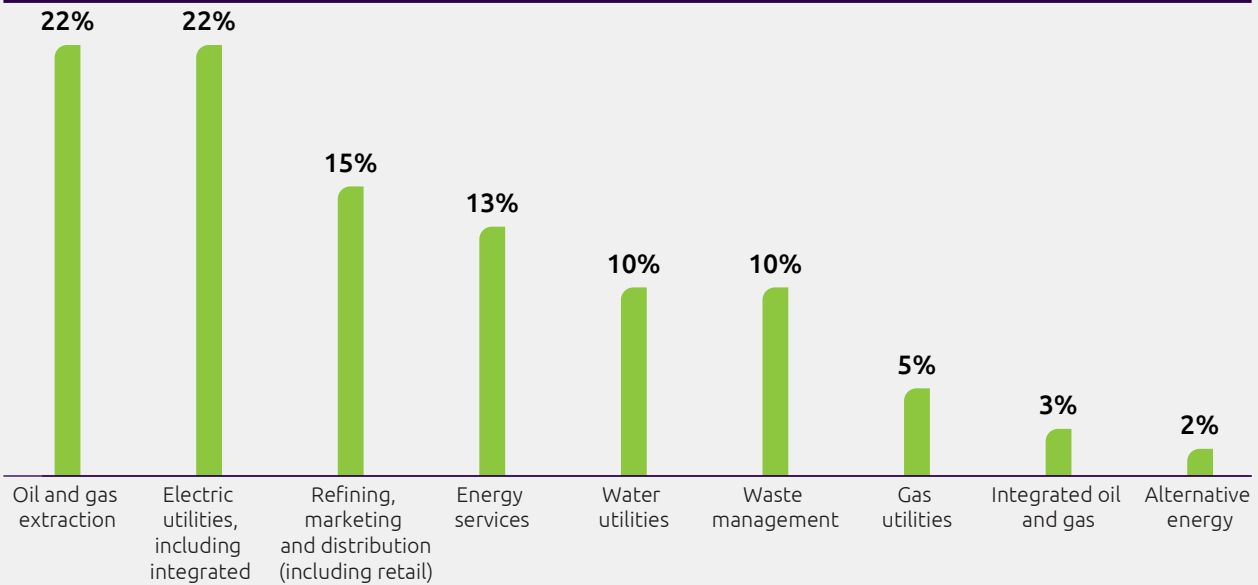
- Countries/regions included: US, Canada, UK, Nordics (Denmark, Finland, Iceland, Norway, Sweden), France, Germany, Netherlands, Italy, Spain, Australia, India, China, Brazil.

We also conducted 10 interviews with sustainability and industry experts to understand their approach towards sustainability, its benefits, challenges, and leading practices.



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, N=300 business executives.

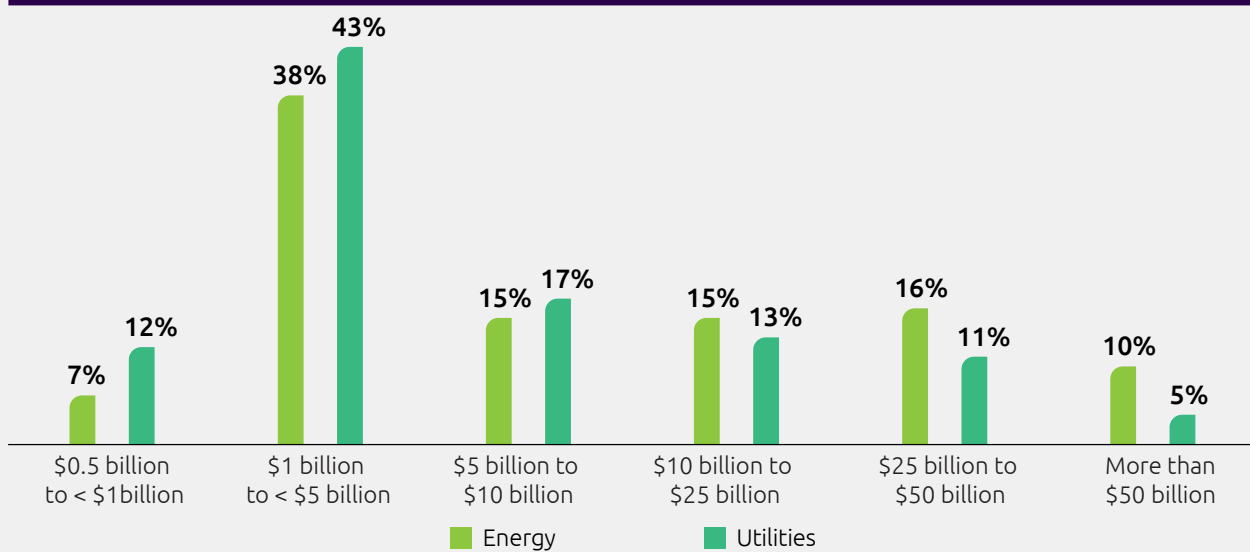
Respondents by industry



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, N=300 business executives.

*Sum total exceed 100% due to rounding error.

Respondents by revenue



Source: Capgemini Research Institute, Sustainability in Energy and Utilities survey, July–August 2020, N=300 sustainability executives, N=300 business executives.

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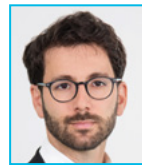
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Value proposition and approach

Why us?

As a globally renowned technology and digital leader, Capgemini inherits the responsibility, the ambition, and the means to contribute to solving major societal questions that shape our world – and at Capgemini Invent we are contributing to making this ambition a reality. Invent for Society showcases how social impact is part of the fabric of what we do for our clients every day. For more information, please visit:

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We partner with clients to:

- Increase the share of low-carbon fuels for all types of transportation – including electric, natural gas, and hydrogen
- Help industrial organizations, buildings and cities to reduce their energy consumption and CO2 footprint
- Leverage AI and digital to reduce CO2 emissions and create new business models

Who do we work with, in the E&U field?

Utilities, oil & gas majors, and developers to increase their share of renewables – we're helping to develop the growth strategy for a leading energy firm's renewable offering, enabling it to be a European renewable leader. We're also supporting the development of biogas and setting up an e-mobility business unit for a client, for whom we're defining the digital vision to support the development of its renewable activities. We're defining the governance model for the partnership management of a firm's domestic solar business, and we're designing and building operational services to enable 5% of the UK population (3m people) living in high-rise buildings and large properties to have access to smart meters, leading to a reduction in energy consumption. Some of the largest electricity providers are also making energy savings as a result of our support.

New market entrants to create energy transition offers – we're defining new business models on the energy storage market, as well as a sustainable financing offer. Our green/clean offers have seen us entering the

gas and power retail markets, and we're helping brands to reposition in the context of how leaps in battery technology can help the planet and human society moving forward.

Equipment manufacturers' new business model for energy transition – we helped to set up a global battery manufacturer to produce battery cells enabling the transition from fossil fuels to clean energy, and we've developed a user-friendly electric vehicle (EV) charging app.

Investors to accelerate funding for energy transition – we're identifying and scouting startups and innovation projects, as well as supporting the development of a dedicated cleantech acceleration program.

Energy consumers to reduce their energy and CO2 footprint – we set up the first French renewable power purchase agreement, helped to qualify and select providers for renewable energy, and defined the 2030 climate strategy and project set up. We are also helping a client to optimize energy mix consumption leveraging data and AI. And we're building green IT reporting, helping cities to develop a new mobility concept, and enabling some countries to run carbon free for weeks at a time.

Want to know more about what we can do for you ?

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- Florent Andrillon and Arthur Arrighi de Casanova, in charge of Energy transition and sustainability within Energy & Utilities, florent.andrillon@capgemini.com & arthur.arrighi-de-casanova@capgemini.com
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Please have a look to our dedicated "environment" pillar presentation on

<https://www.youtube.com/watch?v=Ay7E-LTEe24>

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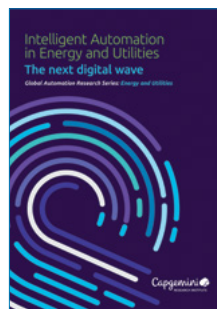
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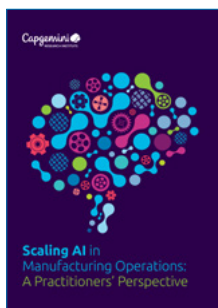
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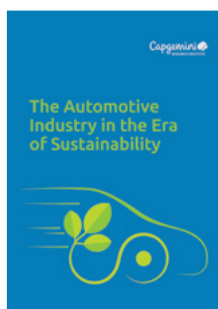
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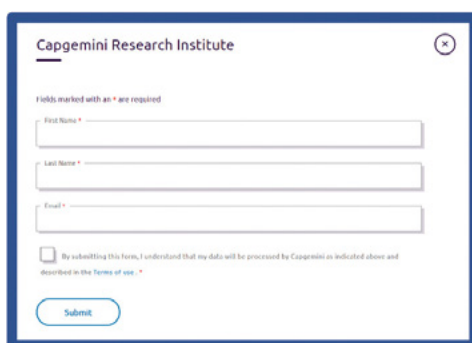
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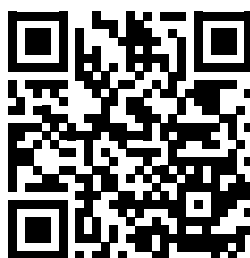
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