

Ashurst

Powering Change

Technologies fuelling the future

Chapter 2 | Regulatory readiness

May 2024



Outpacing change

Ashurst

Powering Change

Technologies fuelling the future



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Introduction

In chapter one of *Powering Change: Technologies fuelling the future*, published earlier this year, we identified high levels of optimism about the prospects for carbon emissions among those executives surveyed.

This impetus towards reducing emissions is reflected in the ways in which businesses are maturing and diversifying in terms of how they are seeking to contribute to the energy transition. A wide range of technologies – both in renewable energy and storage systems – are being explored to help the world meet its climate goals. Many of these, such as wind and solar, are already well established. Others, such as batteries, are ramping up rapidly. Still more, including technologies like hydrogen, pumped hydro and decentralised energy that have previously not had significant capital deployed to them, are now moving forward.



However, our survey also uncovered increasing levels of concern among corporates that the goals of the transition are being hindered by a series of barriers preventing quicker adoption of less progressed technologies.

In particular, in many jurisdictions, regulation was thought to be getting in the way of the faster growth of clean energy production. Many respondents felt, as a whole, governments were insufficiently committed to playing their part in the transition.



This second chapter of Powering Change examines those barriers in detail, and identifies ways in which they can be overcome. It looks at how legislation (or lack of new legislation) risks stymying further development, but also offers examples of the way rules can be adapted to better facilitate the transition. It highlights instances where regulatory change has already led to positive outcomes, and it asks what actions governments need to take if they are to overcome the scepticism we found.

It is increasingly clear that corporates need more certainty about what the regulatory landscape will look like over the years to come, to help them plan and build out their businesses and their supply chains. In order to access the full potential of private capital to support the world's decarbonisation objectives, greater liberalisation and

modernisation of certain energy markets around the globe will be critical. Governments will need to focus on rethinking legislation – much of which is rooted in the energy landscape of the past – so it is fit for clean energy production and emissions reduction targets.

As ever, we hope you enjoy reading this chapter of Powering Change, and find it informative and useful. If you have any questions, or want to know more about how we can support your own transition strategies, please get in touch with your local Ashurst team.

Barriers to change

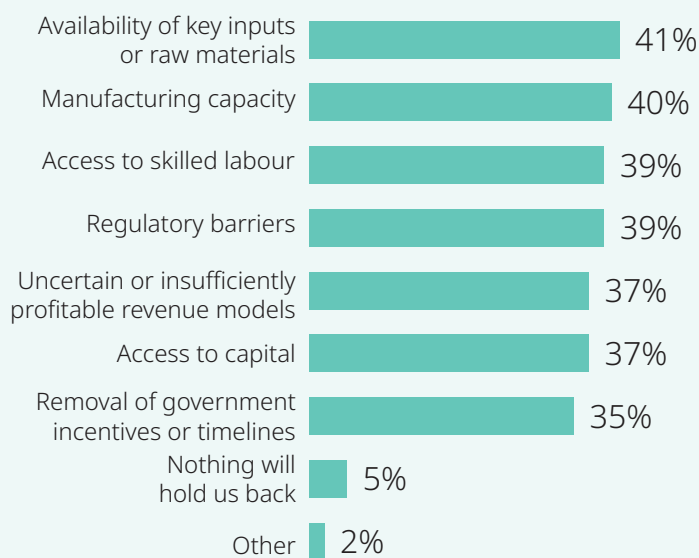
This year's responses confirm the findings of our previous surveys, that the energy transition is now a core feature of business strategies.

However, while some of the technologies are well understood in terms of how they can support the energy transition, there is less certainty around others, leading to differing views about where investment should be allocated. Part of the reason for this uncertainty may be that a series of barriers are perceived by corporates to be preventing them from investing more.

Some of these barriers may simply be linked to the prevailing economic climate and the growing pains of what are relatively new industries. For example, reflecting the issue of supply shortages which still impact many sectors, the top concern our survey found was the availability of key inputs or raw materials. Globally, more than two in five organisations found access to such materials was holding them back when scaling new energy technology over the next five years. Issues affecting manufacturing capacity ranked second.

However, the regulatory burden was also a significant concern, ranking joint third as a barrier to scaling new energy technologies. A total of 39% of respondents named this as an issue for them.

What do you believe could hold your organisation back when scaling new energy technology/technologies over the next 5 years?





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“It is our experience that both the pace with which new renewables facilities are being constructed and the deployment at scale of pioneering technology which has not yet been fully tried and tested are key drivers of disputes. The entrance into the market of new players, and diversification of traditional fossil fuel companies into less familiar technologies and processes, also bring challenges. Whilst governments need to do more to support the energy transition, including providing certain and stable regulation, that will not eliminate the risk of commercial disputes arising. Pre-empting and properly managing commercial disputes risk from the outset avoids the entire viability of a project being jeopardised.”



Emma Johnson
Partner, London



Matthew Saunders
Partner, London

What, though, are the main regulatory issues corporates tell us they face? What needs to change to mitigate the problems they cause, and create a better climate for corporates to operate in?

First, many say they feel existing regulations are often not fit for purpose, and need to be updated. In a number of markets around the world, much of the current rulebook was designed for the traditional, fossil fuel-based energy market, and is not appropriate for higher penetration of more intermittent generation. Nor is it appropriate for the associated revenue models. Planning regimes, for example, often add years to the delivery of clean energy assets, simply because they have not evolved to accommodate technological change. Regulations need to foster an environment that allows for speedier and more efficient development and deployment of technology – without sacrificing environmental, social or other policy considerations.

Second, corporates feel there remains a lack of regulatory impetus in driving greater market liberalisation. Many governments are still reluctant to cede control of their power infrastructure for national security reasons, a fact only reinforced by the invasion of Ukraine. On a more global note, the standoff between Spain and France over the MidCat pipeline linking the two countries is one example of how energy policies, economic considerations and national interests can impact key energy infrastructure projects.

There are a number of ways in which greater liberalisation often leads to positive outcomes. State-owned enterprises can be slower to embrace change, since they are often not incentivised to operate more efficiently, while business cultures in the public sector are sometimes less suited to innovation than elsewhere. The private sector also offers a wider pool of human capital, often with greater experience than the public sector. When it comes to carbon capture for example, oil and gas companies already have an abundance of offshore expertise which will need to be harnessed when developing carbon storage. Embracing liberalisation and allowing a greater role for the private sector has been shown on many occasions to increase efficiency, and speed up the development of renewable energy.



Case Study

How outdated environmental legislation in Asia can frustrate the growth of renewables

“Certain legislation in Asian jurisdictions, in particular in respect of permitting and consents, is not fit for purpose for renewable energy projects. In Japan, Korea and other markets like the Philippines and Vietnam, consistent feedback from developers is that the permitting and consenting regimes require urgent attention by policymakers. In certain jurisdictions it can take anywhere between five and eight years to procure the environmental impact assessment approval for example – this is not a sustainable timeframe if the ambitious renewable energy targets of various governments in Asia are to be met within the desired timeframes. The policy makers know that the situation needs to improve, but the position is quite slow moving which is creating stakeholder frustration in industries such as offshore wind, which in turn is delaying investment. Asking developers to apply to around 20 different government departments to get their permits is not a status quo that can be allowed to continue. By contrast, there are a number of places where permitting is a one-stop shop – you apply to just one government department who then take the application forward. So it can be done.”



Peter Grayson
Partner, Tokyo

Case Study

A multi-nation solution to the push for greater liberalisation in Southern Africa

“Across Africa, energy transition projects play a very different role than in western countries. We are seeing many decentralised power projects there. For example, for our part, we have advised on mini grids in the Democratic Republic of the Congo, and are also financing a number of solar home systems across the continent.

“Looking at energy regulation, some countries and regions are ahead of the game. In a renewables context, Morocco is significantly ahead of a number of countries, which is why it has been successful. Meanwhile, Southern Africa benefits from the Southern African Power Pool, (which spans a number of countries in the region) and, as a result, we are starting to see independent power trading and Corporate Power Purchase Agreements (PPAs), which are effectively passing national utilities. One of the impediments in those jurisdictions has been national power companies, who have stifled liberalisation and not been effective enough when it comes to putting projects in place. The quicker the region can allow energy traders to buy and sell power, the quicker it will be able to transition from fossil fuels to lower carbon energy production.”



Mark Barges
Partner, Paris



Yann Alix
Partner, London

Third, changing market dynamics are impacting the way energy systems need to function, especially when they involve cross-border supply. The regulatory environment therefore needs to reflect the different infrastructure which the decentralisation of energy will require, particularly an increased transmission capability across energy grids. In our survey however, 84% of respondents felt a lack of investment in such infrastructure was likely to stall the development of renewable projects.

Renewable sources of energy such as solar and wind means power generation can take place far from where it is required, sometimes even in different countries. Improved infrastructure that better reflects these evolving market dynamics and increasing connectivity will be critical in bringing down barriers and ensuring a more effective energy transition.

Case Study

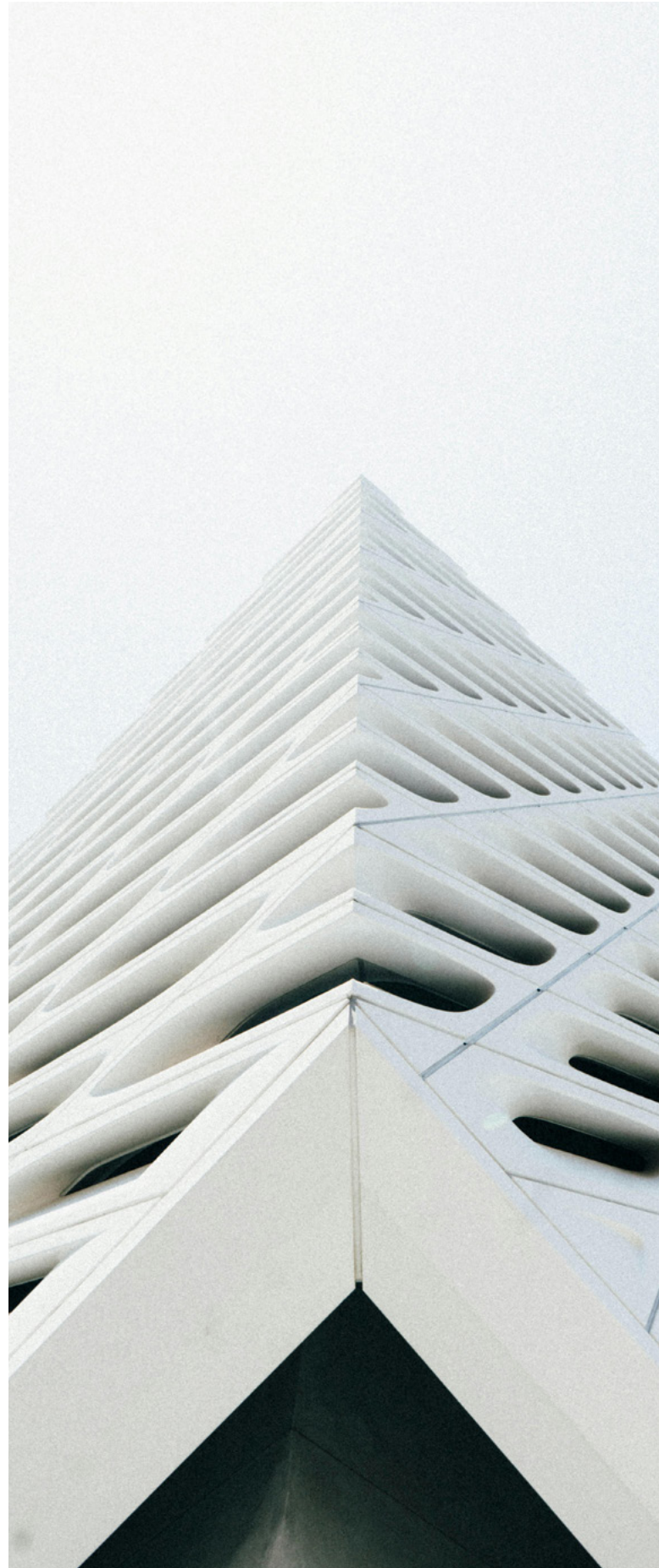
How Singapore is embracing renewables

“Power systems in Singapore aren't set up for renewables. It's a small country, so there just isn't enough room for sufficient solar panels or wind turbines. Virtually every single electron that is produced in the country comes from gas. The power market has, therefore, been based on the assumption that power can be dispatched as and when necessary, and with generation always there as a back-up.

“Now, however, the country is looking to integrate intermittent solar power, installing huge amounts of it in the sparsely-populated islands of Indonesia just across the Singapore Strait. But there are issues: trying to get a solar project to work like a gas-fired project is very challenging. So, a lot of work we are doing is getting the two to match, aiming to come up with a sensible approach that means you are not being too hard on the solar projects, and making sure the risk is appropriate. There needs to be enough upside for both the country where the power is being used, and for the country where it is generated. The private sector is another party that needs to be considered, so there needs to be the right investment climate for it to take part. Creating a framework that has the right incentives for all parties is key.”

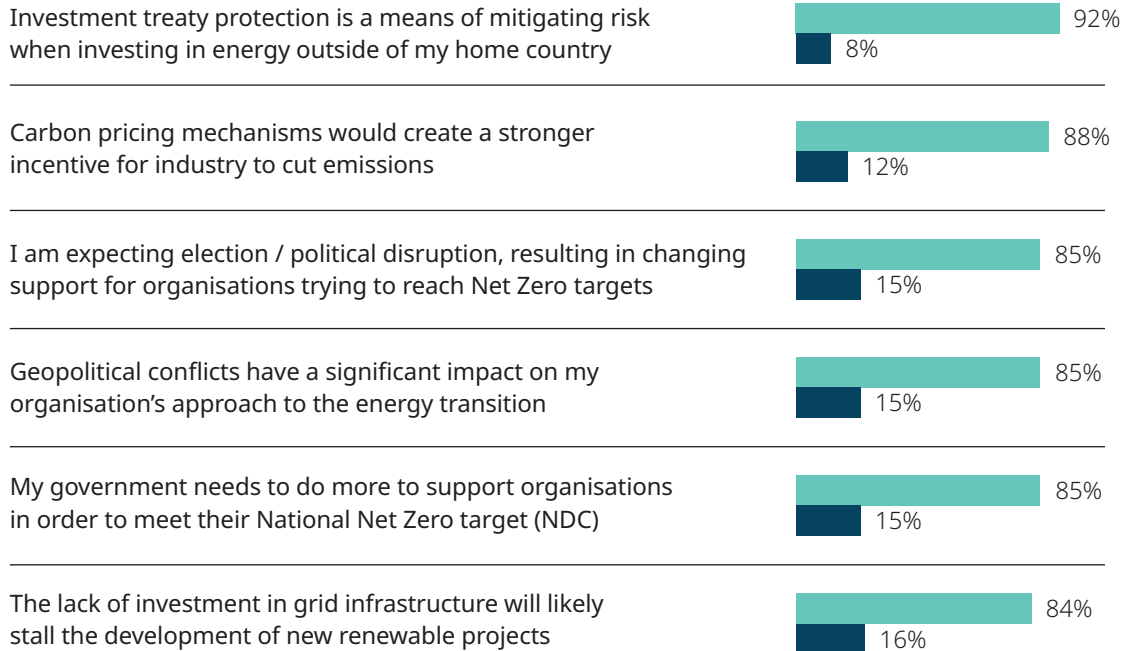


Jean-Louis Neves Mandelli
Partner, Singapore



How strongly do you agree or disagree with the following statements?

Agree Disagree



“

“In many markets, the desire to embrace renewable and alternative energies is often coupled with a need for foreign investment. Foreign investment offers more than funding – it can offer relevant experience, expertise and specialist infrastructure. It can also allow states to mitigate the political and financial risks attached to energy transition technologies and projects.

In this context, it is noteworthy that 92% of those surveyed agree that investment treaty protection is a means of mitigating risk when investing in energy outside of their home country. Investment treaties offer foreign investors protection against regulatory change or other government interference that might otherwise deprive those investors of the full benefit of their investment. We regularly advise clients on how best to structure their investments to secure maximum international law protection, including a right to arbitrate should a host state seek wrongly to interfere with a foreign investment.”



Myfanwy Wood
Partner, London



Arne Fuchs
Partner, Frankfurt





Role of governments

Many of the current barriers around availability of raw materials, constrained supply chains, and lack of manufacturing capacity are linked to global forces, and may ease as the industry further matures.

Others, though, are more within the power of industry and governments to control. For that to happen however, governments will have to play a more positive role in creating the right environment in which industry can thrive.

That is likely to require a significant change in government mindsets. At the moment, the perception among many corporates is that governments are failing to pull their weight. Our survey found that, around the world, more than a third felt a lack of government support was a barrier to their organisation investing in renewable energy, the energy transition or decarbonisation technologies, or making net-zero commitments.

However, corporates also see governments as the stakeholder most likely to put extreme pressure on them to invest in the transition. Politicians, then, are viewed as piling the pressure on the private sector to deliver net zero, while at the same time providing insufficient support for them to do so. This paradox may explain why 85% of our survey respondents agreed their governments needed to do more to support organisations in order to meet their national net-zero targets.

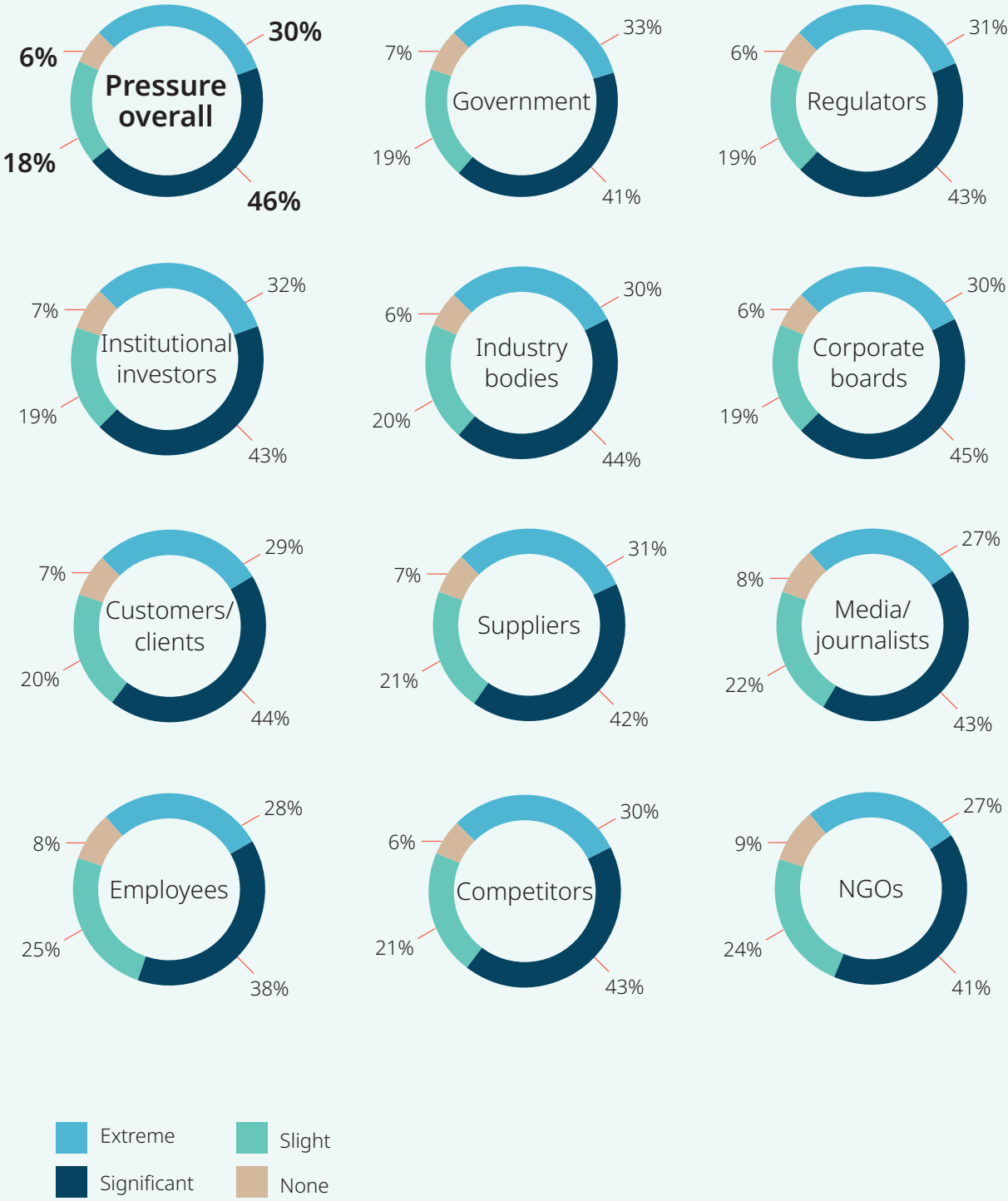
This concern about the role of governments is also reflected in our survey findings on how prepared countries were felt to be about making the most of the opportunities offered by the transition. Indeed, the results demonstrate that many believe their jurisdictions are ill-prepared to reap the benefits. For example, although pumped hydro was the top new non-power generation technology organisations were considering utilising or investing in over the next five years, it came joint last when organisations were asked whether their country was fully prepared to adopt the technology.

Hydrogen, decentralised energy and carbon capture fared little better. Meanwhile, the full-scale development of even relatively mature technologies also appears to be at risk. Globally, just 44% of corporates believed their country was fully prepared for electric vehicles, while only 43% felt it was completely ready for smart meters. Indeed, just 41% considered their government was fully prepared for the adoption of batteries, a technology viewed as fundamental to a successful energy transition.

Overcoming this preparedness gap will require significant changes. What opportunities do governments need to embrace in order to improve the landscape, and what steps can they take to create more supportive frameworks?



In your country, how would you rate the pressure from the following stakeholders in your country to invest in renewable energy, energy transition and decarbonisation technologies?



Case Study

The UK's 2023 Energy Act: "A real landmark in the development of energy transition."

"The UK Energy Act of 2023 is a very broad piece of legislation that looks across a whole host of technologies. There's a lot on carbon capture and storage, hydrogen and nuclear, as well as other new developments in the energy market. It's an attempt to bring together all the different pieces of the energy transition agenda."

"It's a real landmark in the development of energy transition. It deals with a new licensing regime for carbon transport and storage. It also deals with revenue support across the capture, transport and storage of carbon dioxide and the production and transport of hydrogen. It has set the groundwork for future subsidy support and business model structures. Policy-wise, the UK Government is on the front foot. Other governments around the world will be watching developments in the UK with interest, as they seek to develop their own models for energy transition."



Philip Vernon
Partner, London



Samuel Outtridge
Partner, London

Case Study

How changing the regulatory regime around offshore wind fostered the growth of offshore wind in the UK

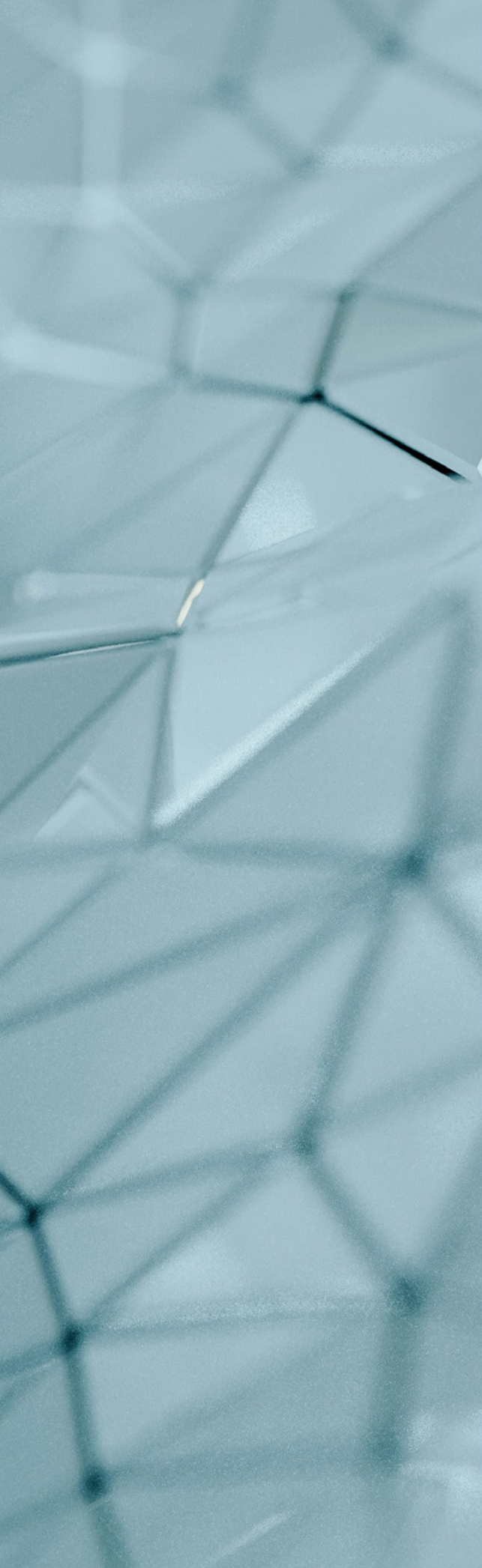
"The way that the UK government swapped from Renewable Obligation Certificates (ROCs) to Contracts for Difference (CFDs) several years ago is a good example of where regulatory change has driven investment. Under the original regime for developing renewables where providers obtained ROCs, a project had two revenue streams: one from its power price, the other from its green certificate. The government took the view that this wasn't sufficiently attractive to drive the volumes of investment needed, because although the ROC revenue was a fixed stream, the generators were still exposed to a fluctuating power price. The introduction of the CFD – which offered a top-up to a fixed strike price over the market price – stabilised the revenue stream, and that in turn offered both equity and debt investors greater comfort on the viability and financeability of a project. As a result, the UK is now one of the world's leading offshore wind markets."



David Wadham
Partner, London



Peter Grayson
Partner, Tokyo



Continuous shifts in policy which stifle the development of renewable technology are a common complaint. So, first, governments should aim to provide the greatest possible certainty in what are high-change environments. Numerous cases exist in which such a mindset has led to positive market impacts. In the UK for example, the landfill tax – introduced in 1996 – has helped drive behaviours and support better outcomes across the energy-from-waste industry. Its success is due, at least in part, to the government decision to give long-term policy direction about the tax many years into the future, enabling corporates to build their plans around it. The challenge will be to replicate this success in other areas, such as emissions trading schemes and carbon capture.

Such certainty is vital not least because of the growing international competition for the capital required to fund the transition. Investors will balk at allocating capital to a market that might not exist in the future.

Second, more robust legislation focused on supporting newer technologies will be required. In Africa, Mauritania has been one of the leaders engaged in putting together a code to help facilitate the development of green hydrogen. In other countries, change is also happening, albeit sometimes too slowly for many. The need for clearer rules dealing with standalone battery storage are a particular concern. In Japan, for instance, huge interest exists in the technology because of the country's significant levels of solar power, yet legislation to regulate and permit the use of battery storage has been slow in coming into effect. The country is also now putting in place more suitable rules around offshore wind. It has recently announced legislation outlining plans to develop its Exclusive Economic Zone (EEZ) beyond its 12-mile limit. As a result, the sector is already attracting international investment.

Third, balance sheets should be better leveraged to deliver good policy outcomes. Often this is not a case of just how much money governments need to offer as incentives and subsidies: rather, it is about timing, and the processes that are set up to deliver the support.

Governments must strike a difficult balance. Legislation and support mechanisms can drive the energy transition, but decarbonising the power supply has to happen at an acceptable cost. Governments are therefore aiming to develop subsidy schemes which stimulate investment, but do so at an affordable price for consumers while also not landing taxpayers with an overly expensive bill. Meanwhile, governments also need to ensure the processes they put in place are clear and transparent: many projects fail not because of the size of a subsidy, but because of the administratively onerous way in which it needs to be accessed.



Case Study

France: Why floating offshore windfarms are a core part of the solution to the country's renewable strategy

"Since the petroleum shocks of the 1970s, France's energy mix has been mostly nuclear – around 75% of France's electricity comes from nuclear generation. Another 10% is hydro, so 85% of France's energy mix is already decarbonised. This policy has been reinforced by the need for energy security, particularly after the invasion of Ukraine. As a result, France has been a little slow to the renewables game: they just didn't see a massive need to decarbonise their energy mix further.

"However, the government now recognises that many of its nuclear power stations are ageing, and during the time taken to transition to a new crop of plants there will be a need for renewables. Compared to the UK or Germany though, France doesn't have access to the North Sea, so offshore wind wasn't initially a significant option. There is also a fair degree of nimbyism – objecting to something unsightly if it is built close to you – related to the technology.

"France's answer is floating offshore wind. At Ashurst, we advised on one of the first pilot 30MW offshore wind projects in the Mediterranean. The next two tender rounds will be for 250MW and 500MW projects (split in two sub projects). What floating offshore does is effectively push windfarms out of sight. Because they are so far away, huge wind turbines can be constructed which are much more efficient and produce more consistently, as they are so much taller. You effectively have Eiffel Towers out at sea sitting on floating oil platforms, generating vast amounts of energy. It is very expensive at the moment, but it may offer long term solutions."



Mark Barges
Partner, Paris



There are other dangers inherent in the way governments leverage their balance sheets. They can try to go too far, too fast, or not take account of the changing market. In Japan for example, switching to a feed-in premium regime for offshore wind has left many struggling with their supply chains. Meanwhile the UK offshore wind auction in 2023 highlighted that even the most successful schemes need to take account of changing market conditions – in this case, elevated interest rates and restricted supply chains. Clean energy is a dynamic market: the costs of projects change frequently, and governments need to ensure their support mechanisms respond to market requirements.

Finally, once the right legislation is in place, governments should decide how best to harness private sector capital. Private sector businesses are often more adept at delivering outcomes appropriate for a country's needs. In Southern Africa, for instance, the region's dependency on older, less efficient diesel generators could be more rapidly overcome if the private sector were better able to provide electricity using cheaper, more efficient, solar and wind power. Such a policy would also help with the region's balance of payments, by reducing imports of oil and gas.

Not every country will follow the same path when it comes to the energy transition. Governments will still need to work out how best to bring the private sector along for the transition journeys they are on.

Case Study

Hydrogen in Asia-Pacific: Why global investors are attracted by a cross-border approach

"In Asia, there has been a focus on whether hydrogen or hydrogen-related products, such as ammonia, can be used to decarbonise generation, rather than just be a substitute for gas heating as is the case for much of Europe. For example, co-firing of ammonia with coal can reduce the carbon intensity of generation.

"In Asia we are now seeing the potential for cross-border flows of green hydrogen. This involves, for example, developing large-scale renewable projects in Australia where there is abundant wind and solar resource, and producing a product such as green ammonia which is then available to be transported across the region. We are seeing a significant interest in the subsidy regimes that places like Japan and Korea are looking to put in place for green hydrogen, and we are assisting with a number of projects in Australia where part of the underpinning economic rationale is developing green ammonia for export precisely to qualify for those support regimes. The subsidy regimes therefore facilitate international cross border investment. It's still early days, and green hydrogen has to prove its cost competitiveness, but there is a concerted drive in North Asia to put in place mechanisms which can support the development of large-scale green hydrogen."



David Wadham

Partner, Tokyo

Case Study

Australia: Different States, different approaches to meeting the demands of the energy transition

“The governments of the three States along Australia’s east coast are pursuing very different paths when it comes to driving the energy transition. They face different challenges, and have developed distinct roles for both government and the private sector in order to overcome them. The way the policies have unfolded has important lessons not just for the country, but for the wider global drive to net zero.

“To the north, Queensland – a traditional extractive industry state – has been able to move quickly on the transition because the government has retained ownership of energy generation assets rather than privatising them as was done in other parts of Australia. This has helped the government put its stamp on how it wants the energy transition to happen. While there is an acknowledgment of the need for private capital, the government has legislated a state ownership strategy requiring 100% ownership of transmission, 100% ownership of deep storage (being pumped hydro over 1,500MW) and 54% ownership of generation. The government has also struck offtake arrangements under which it is the offtaker, which has helped resolve one of the major challenges facing renewable energy: finding a secure and stable revenue arrangement that makes

private sector investments financially viable. The policy has unlocked capital for projects which might not have had routes to market without a government sponsored offtake.

“In the south, in Victoria, where there are fewer wind and solar sources than in Queensland, there has traditionally been a focus on fossil fuels, which the government is now addressing. Indeed, the state government was an early mover in renewable energy, focussing initially on offtake as its means of participating in the market. Now, however, the low-hanging fruit has been taken, so further steps are underway. The government has given new responsibilities to the revived State Electricity Commission (SEC), most of whose assets were privatised years ago. The SEC made its first investment last year, and is now looking at a number of additional projects. Victoria is also the place that has leaned most strongly into the opportunity from offshore wind, being the only State which has announced plans to offer revenue support to the sector.

“Situated between Queensland and Victoria, the government in New South Wales has focussed on network infrastructure and long-term revenue contracts. This reflects the recognition of the fact that the State’s



– and the nation's – existing network infrastructure and regulation are not future fit to accommodate a significant and swift uptake of renewable energy. The “State government is aiming to create a more competitive and efficient environment by creating Renewable Energy Zones (REZs), a policy attracting significant interest from both Australian energy participants and international investors. The State's tenders for long term revenue underwriting contracts have been successful, with this model adopted in the Federal government's Capacity Investment Scheme. A relatively similar offtake product is now being rolled out nationally and on a larger scale.

“The transition strategies in all three States are viewed not just as a way of driving net zero. They are also seen as an opportunity to achieve other, wider community, employment and social goals. Victoria, for example, is using them as a way to better involve First Nation people in the design and benefits of projects, while also resetting what has traditionally been a male-dominated industry into one that is more diverse.

“The three governments have taken very different approaches to the transition. This is often a challenge for the private sector, since it can be expensive to work out how to best engage and harness opportunities in each market. There is an opportunity for governments to better co-ordinate with each other – as well as with the private sector – and take a more clear and consistent approach. These efforts are increasing (including

through G2G agreements), but more is needed to help reduce some of the costs of the energy transition which ultimately will be borne by consumers and tax payers.

“Governments have a significant role to play in the transition. However, they need to be clear about where that help should be focussed and the level of involvement they should have. Change is complex, but governments need to concentrate their attention on where the market risk or failure is, and practically how this can be overcome alongside industry.”



Ratha Nabanidham
Partner, Brisbane



Kylie Lane
Partner, Melbourne



Cassandra Wee
Partner, Sydney





Conclusion

The speed of the energy transition will be driven by a number of factors. A strong global economy will, for example, help enable greater investment and support the unblocking of supply chains. However, a robust commitment from private sector corporates will also be key.

This year's Powering Change survey demonstrates the extent to which corporates are keen to play their part. What is holding them back is not their own ambition. Rather, a series of external barriers are preventing them from taking even greater steps towards developing, implementing and managing renewable energy projects.

Of these barriers, improved regulation is the most obvious change that is within the power of governments to deliver. More appropriate rules that encourage the use of both private and public funds, support liberalisation, and pave the way for better infrastructure will be critical if the industry is to thrive.

At a wider level, governments need to better understand what corporates will require if they are to maximise the impact of the energy transition. Providing greater certainty, and using their balance sheets in a smarter way, will be critical in this regard.

Powering Change demonstrates just how optimistic energy sector corporates are about the transition. But also shows the depth of their frustration that they are not able to deliver more.

The overwhelming consensus at the recent COP28 summit was that the world was not doing enough to prevent climate change. More than ever the energy transition will rely on all the stakeholders involved – businesses, governments and others – pulling in the same direction to create a positive environment for the development of clean energy around the world. The energy industry may be ready, but regulations will need to be overhauled and governments become more engaged if the world is to make the most of the benefits the transition offers.

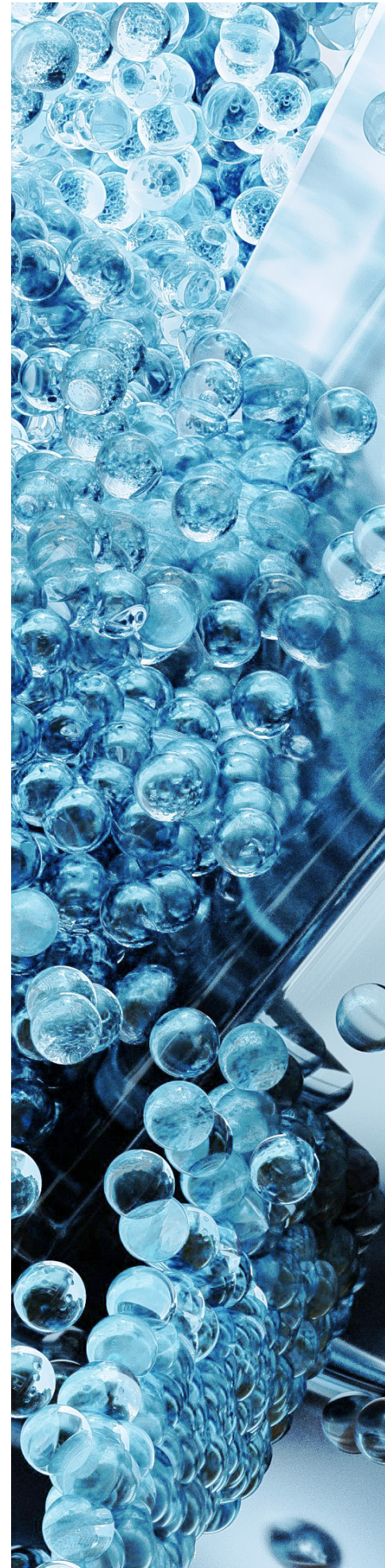
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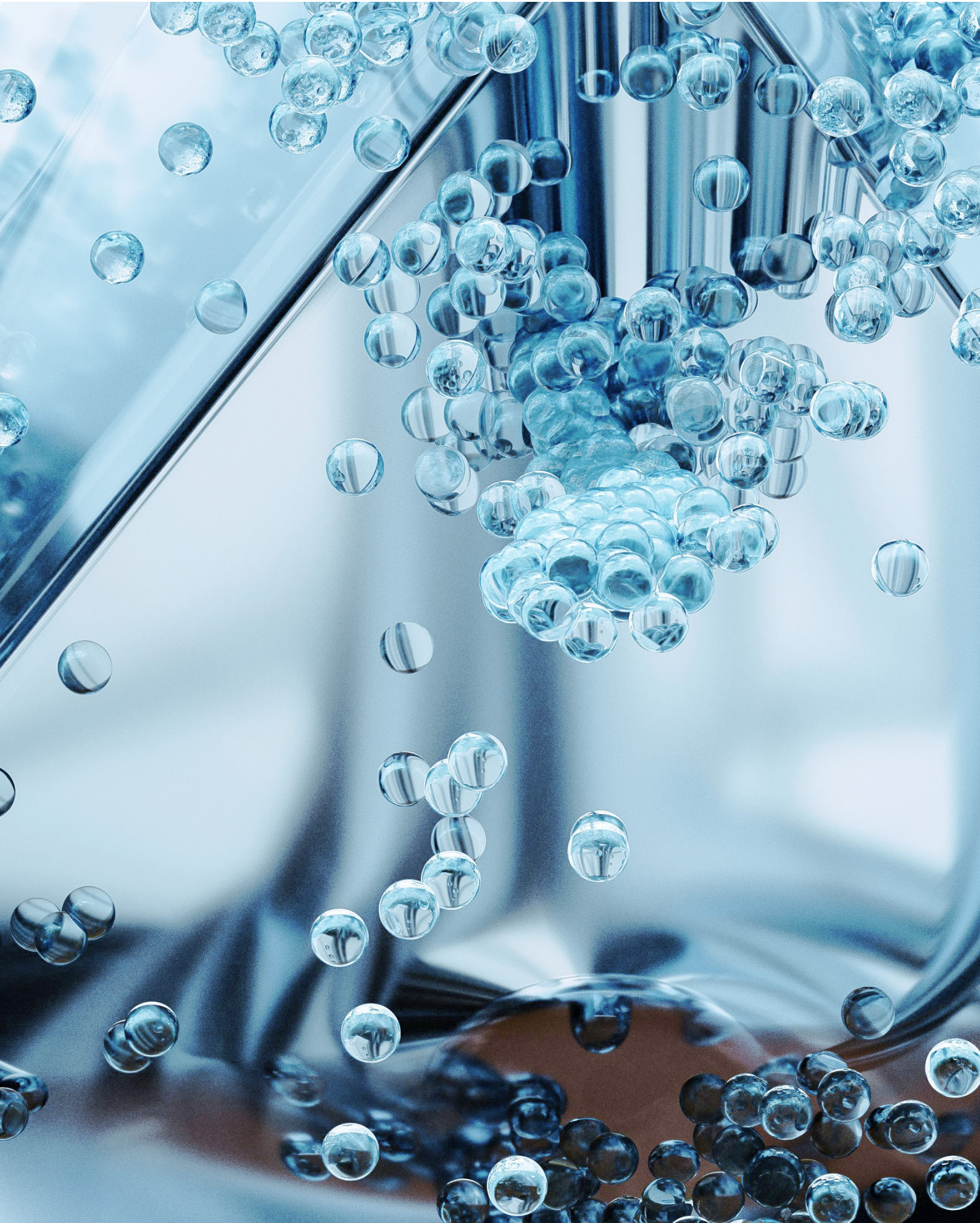
A note on methodology

We surveyed a total of 2,140 senior executives and managers who are involved in energy decision-making in businesses across the G20 nations between 29 October and 3 November 2023. The average annual global turnover of the companies whose executives we surveyed was US\$15.1 billion.

What we mean by the energy transition

For the purposes of this research, we define the energy transition in the following way: the transition of the global energy sector away from fossil-based fuels to net-zero carbon emissions from energy and industrial systems. This comes through a combination of improvements in energy efficiency and digitalisation of electricity grids (e.g. smart grids and meters), decarbonising the energy mix through lower carbon fuels (including gas and hydrogen) and higher levels of renewable energy sources, integration of batteries and other storage technologies, as well as the electrification of other economic sectors (e.g. transport, heavy industries, manufacturing, agriculture and buildings).





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