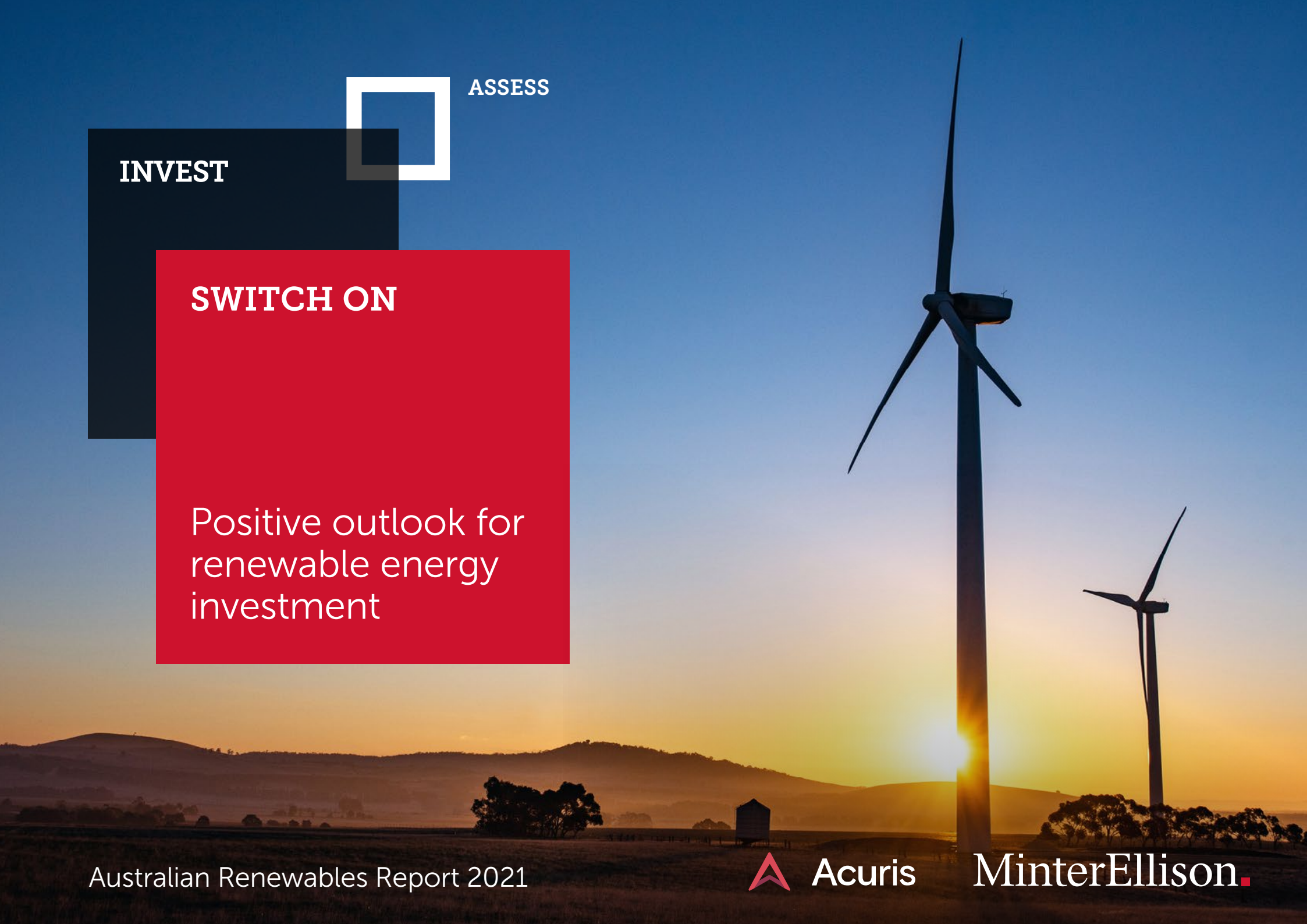
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Positive outlook for renewable energy investment
Australian Renewables Report 2021
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Contents

Views on Australian renewables: Market sentiment points the way

This is our second Australian Renewables Report presenting domestic and global views on opportunities and challenges shaping the sector. We compare our findings today to those from 2019, and provide an overview on changing sentiments toward renewables in Australia to guide investors as they search for and invest in this growing and promising sector.

March 2021

Foreword

While 2020 was certainly a challenging year for dealmakers – following Australia's "black summer" bushfires in 2019 and then the COVID-19 health crisis quickly thereafter – it was also a year in which the scales tipped decisively in favour of clean energy.

First, capital markets made a decisive shift away from carbon-based investments as banks and institutional investors moved away from fossil fuels.

Second, 2020 saw state and territory governments roll out ambitious programs to stimulate renewable energy. In Western Australia, for example, the state government has brought forward its renewable hydrogen target. Meanwhile, New South Wales has pledged to make the state a renewable energy superpower and has mandated the construction of 12GW of clean energy and 2GW of storage over the next ten years – potentially unleashing AU$32bn in private investment.

Third, momentum is building behind firming and storage technologies that make better use of existing grids. Battery deployments have moved further and faster than expected. Victoria's recently-proposed mammoth 300MW Tesla battery near Geelong will be among the biggest in the world, and MinterEllison was pleased to have assisted the Victorian State Government in facilitating the implementation of this project.

Meanwhile, interest in green hydrogen is growing. Hydrogen is less dependent on grids and paves the way to lucrative energy exports.

All of this bodes well for the future of utility-scale renewables. So what does 2021 hold for investors in Australian renewables? We ask 100 Australian and overseas investors in the renewable energy sector for their insights.

Overall, international and domestic renewables investors are confident in the market, with positive sentiment pointing to a robust year ahead. Indeed, 65% say they will increase investments as they search out clean energy opportunities in Australia. Also, while some investors sat out 2020 amid the COVID-19 health crisis, half (50%) have charged ahead with investments and another 35% will return to the market within the year. Australia's vast energy market continues to inspire – and the outlook has never looked better.

This report will interest investors, policy makers and those working in the energy sector and related fields. We trust you will find it informative and invite you to join the conversation by reaching out to me or one of our renewable energy specialists.

Simon Scott
Energy & Resources Lead
MinterEllison

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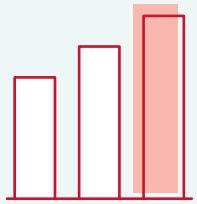
Key findings

65%

of investors say they will increase investments into Australian renewables in the next 12-24 months



50%

say COVID-19 is having no impact on their investment strategy

Australia's top advantages

(according to investors):

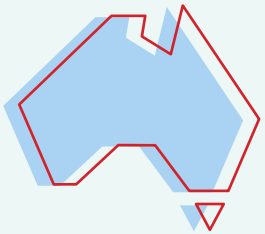
Climate and topography

Greenfield opportunities

Advanced technology

Favourable tax regime

Political and regulatory stability

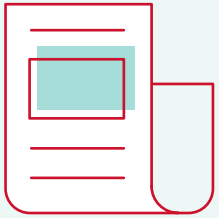


86%

say state policies will be supportive toward renewables in the year ahead

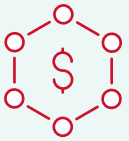
80%

say likewise for federal policies

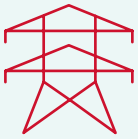


Potential challenge areas

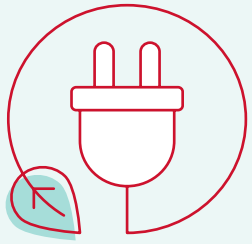
Instability around incentives



Regulatory complexity



Accessing the grid



53%

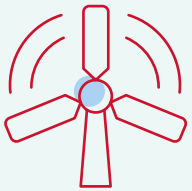
say accessing the grid is more difficult than 12 months ago

63%

expect major improvements within the next year

87%

say that Australia will have the most supportive financing environment for renewables compared to global markets over the next year

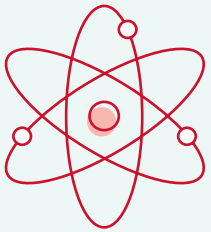


PV solar

and offshore wind are the top opportunity sectors where investors will focus in 2021

Geothermal

ranks as the top risk sector



49%

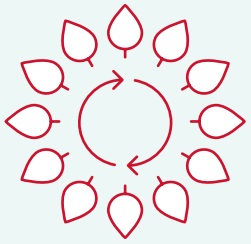
say hydrogen will be an investment hotspot in 2021

39%

say that hydrogen will play an important part in transportation developments, with another 26% seeing industrial applications as a key driver

69%

say developments in Australia's hydrogen economy will cross an inflection point in the year ahead



92%

say Asia Pacific investors will increase activity in Australia toward renewables in the year ahead, compared to Europe (76%) and North America (67%)

81%

say hybrid solutions combining wind, solar and storage hold huge potential in Australia

86%

say development of Renewable Energy Zones is critical to facilitating further investment projects

From strength to strength: Investor sentiment toward Australian renewables remains robustly positive

COVID-19 does not seem to have put a significant dent in interest toward Australian renewables opportunities. This is largely due to the country's numerous advantages that make it a difficult market to ignore.

Investors are overwhelmingly positive about the outlook for Australian renewables. Nearly two-thirds (65%) say they will increase investment in the next 12-24 months, with another 20% saying their current level of investment will remain unchanged (Figure 1).

This compares favourably with sentiment prior to the onset of COVID-19. To put this in context, our inaugural 2019 study showed that 68% of investors planned to increase investment.

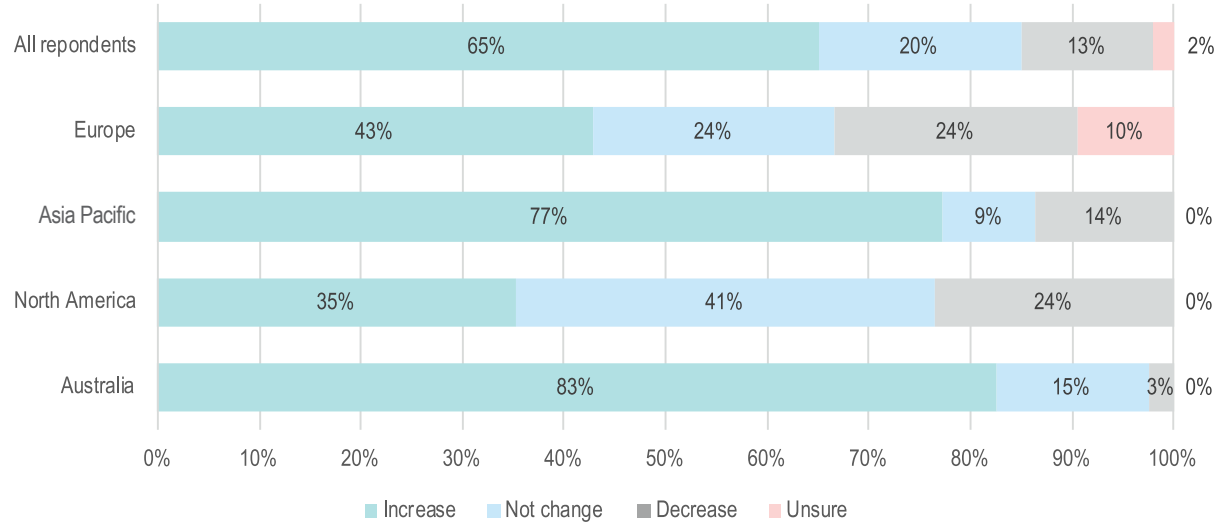
Domestic investors remain the most enthusiastic with 83% of Australia-based respondents planning to increase the amount they invest. The prospect of increased competition for Australian assets is one driver: *"Foreign corporations have already shown intent in investing larger sums,"* says the Chief Investment Officer of an Australia-based fund. *"We want to increase investments before the competition does."*

Investors from Asia Pacific are increasingly bullish about Australian renewables with 77% expecting to increase investment versus 45% in our 2019 study. Australia's safe haven credentials are a key attraction. *"Increasing investments will help us to manage global volatility and uncertainties,"* says a South Korea-based investor.

Investors from North America, by contrast, appear to be more cautious. Only 35% expect investment to increase compared to 65% previously. One reason for this could be US investors betting on an uptick in their own renewables market, which will be energised by the new White House administration's climate agenda as it plans a massive energy overhaul in the years ahead. As one Singapore-based investor put it: *"North American investors are favouring changes in their domestic markets."*

> "We want to increase investments before the competition does."
>
> **Chief Investment Officer**
> **Australia-based fund**

Figure 1. Are you planning to increase, decrease or not change your current level of investment into Australian renewables in the next 12-24 months?

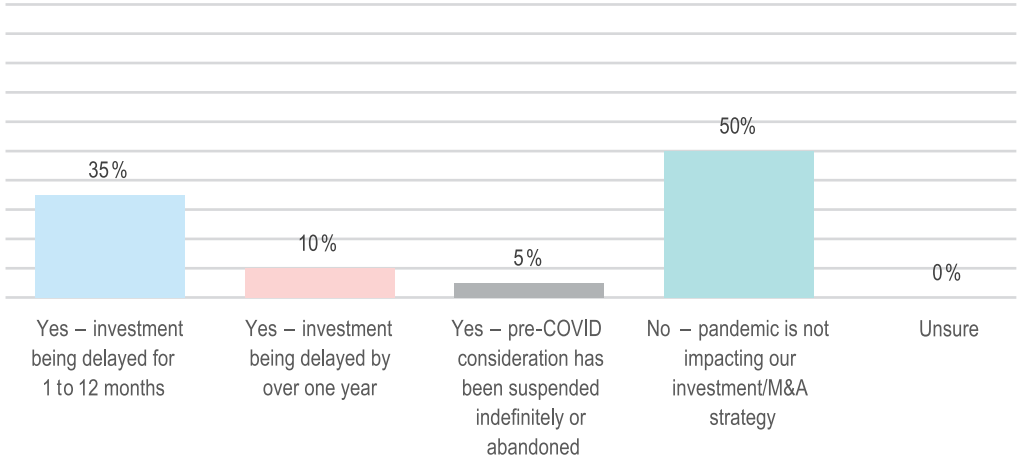


COVID-19: Limited impact

Stringent government lockdown measures mean that the spread of COVID-19 in Australia has been much less than it has been in most other developed nations. As a consequence, the pandemic has not proved to be the deal breaker many initially feared. As the Managing Director of an Australia-based financial sponsor puts it: *"The pandemic has not influenced our investment decisions or strategies at present. I think the Australian government took the right measures to control the pandemic in time."*

Half of respondents say that COVID-19 has not delayed their strategy, while 10% say they will delay investment by a year or slightly more. Another 35% expect short-term delays in their plans. Only 5% say that projects have been suspended indefinitely or abandoned (Figure 2). This augurs well for the future and underlines the fundamental resilience of the Australian renewables sector.

Figure 2. Has the COVID-19 health crisis delayed your investment decision to invest in Australia's renewable energy space?



Australia's advantages

Australia's renewables performance and potential makes it an attractive investment destination. Respondents point to the country's strong fundamentals as a draw for capital (Figure 3).

Climate and topography

As well as having vast onshore and offshore wind resources, Australia is unique in that it has more solar potential than any other developed nation. For this reason, 79% of respondents say its favourable climate and topography are its top attraction. *"The capacity for consistent generation is higher because of the topography and reliable climatic conditions,"* says the Managing Director of a Singapore-based fund.

Greenfield opportunities

The abundance of greenfield opportunities is also a major draw. Australia's relatively low population density means that the cost of acquiring land rights is potentially lower than it is in other developed countries, certainly European ones – one of the reasons why greenfield opportunities are mentioned by 74% of respondents. However, grid bottlenecks continue to impede deployment of otherwise viable new projects. *"Greenfield opportunities will grow as the government works on infrastructure connectivity,"* says the Managing Director of a Japan-based bank.

Support for new/advanced tech

More than two-thirds (67%) of respondents point to support for new/advanced technology as an attraction. *"Each state/territory has maximised their scope in the wind or solar sub-sectors. They have consciously pursued renewables technology and infrastructure with the government's help,"* says an executive at an Australia-based energy company.

Favourable tax regime

Many respondents (62%) also say Australia's favourable tax regime is one of its key advantages regarding renewables investments. Echoing sentiment shared by many respondents, the Managing Director of a UK-based fund says, *"With a favourable tax regime, there will be investments from small to large global companies. Many would want a stake in the promising future of the Australian renewables space."*

Political and regulatory stability

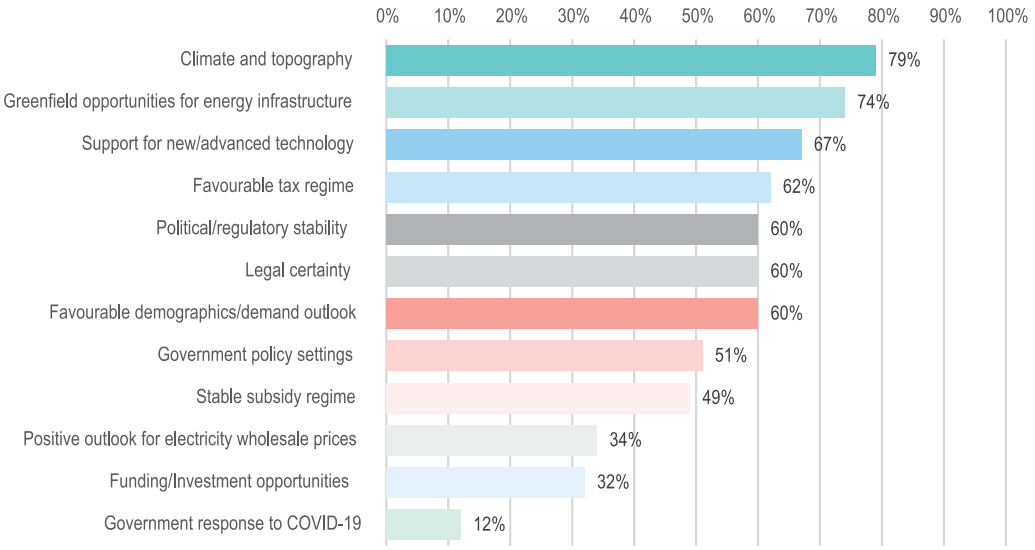
There is also strong positive sentiment toward Australia's political and regulatory stability, cited as an attraction by 60% of respondents. *"In Australia, there is political certainty. Reforms and initiatives provided by the government are stable – these do not change because of shifting political views,"* says the CFO of an Australia-based energy firm.

Legal certainty

Australia's rules-based legal system provides a further layer of assurance and this is highlighted by 60% of respondents. *"Legal certainty is a benefit, mainly for new investors. They can be certain about the future capabilities of their investments,"* says the CFO of an Australia-based energy company.

> "Greenfield opportunities will grow as the government works on infrastructure connectivity."
>
> **Managing Director**
> **Japan-based bank**

Figure 3. What makes Australia attractive for investments into renewable energy (Select all that apply)



"Australia's energy market structure and regulatory regime are facing reform, making them fit for purpose for new and advancing renewable technologies. Alongside its natural advantages like climate, topography and land, and government and business support, stability and certainty, Australia promises to provide renewable investors and projects the critical foundations for success."

Matt Knox

Partner – Energy | Renewables | Market regulation

Renewables infrastructure investment and M&A trends: 2020 year in review

While sentiment is strong toward future investments, trends over the past two years show a drop-off in activity. Renewable projects of all types (greenfield, brownfield and refinancings) have declined since 2018 (AU$17.1bn and 49 transactions), with 2020 posting only 20 deals valued at AU$3.8bn (Figure 4).

Grid integration problems and transmission losses may be among the reasons for this declining investment. Pandemic restrictions also weighed on dealmaking throughout 2020. However, the trend toward progressively lower deal values is also linked to the massive improvement in the efficiency of renewable generation over the past decade.

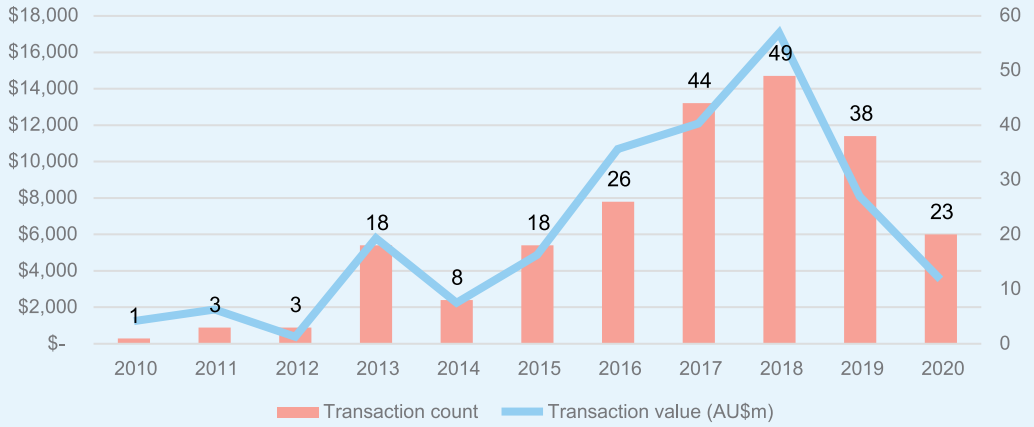
To put this in context, the cost of utility-scale solar photovoltaic fell by 82% between 2010 and 2019, while concentrating solar power (CSP) costs dropped 47%. Meanwhile, International Renewable Energy Agency data shows offshore wind and onshore wind costs fell by 29% and 39% respectively. In short, this is a bang-for-buck story. In the case of solar photovoltaic, a dollar invested today generates five times more electricity than it did a decade ago.

Falling costs have paved the way for a new generation of increasingly ambitious projects. 2019 saw plans unveiled for the Sun Cable Tennant Creek 10GW Solar and Battery Project, an AU$25bn (US$17.4bn) renewable megaproject in Australia's Northern Territory. Meanwhile, the proposed Asian Renewable Energy Hub in Western Australia is slated to accommodate 26GW of wind turbines and solar photovoltaic panels. Both projects have an eye to energy export markets.

COVID-19 stimulus measures are providing a further boost for investment in renewables. Western Australia's government, for example, is backing renewable hydrogen as part of its recovery plan. The state government sees hydrogen as an increasingly important economic driver, particularly given its export potential. Initiatives include the 1520MW Oakajee green hydrogen site.

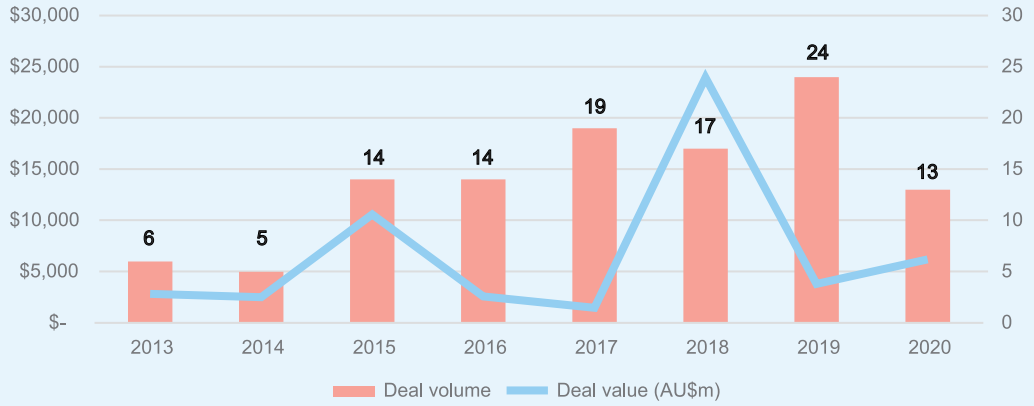
What makes projects like these so interesting is that they do not, primarily, depend on existing grids to make money out of renewable energy. New subsea cables to Asian markets, hydrogen (liquefied or converted to ammonia) and mass battery storage are key elements in the emerging megaproject story. Paradoxically, lack of conventional grid access could be seen as a spur to innovation rather than a hindrance.

Figure 4. Australian infrastructure (renewable energy) transaction trends (financial close)



*Source:Inframation Group

Figure 5. Australian renewable/alternative energy M&A



*Source: Mergermarket

M&A interest: Renewables remain compelling

While M&A dealflow was muted in 2020, value was up compared with 2019 (Figure 5). Among active dealmakers were power producers and institutional investors, who continued to bolster their portfolios with acquisitions of pipeline projects and already-operational renewable energy assets.

Among the top M&A transactions of 2020 was the takeover of Australian renewable energy developer Infigen Energy by Spain-based utility giant Iberdrola for AU$893m (US$645m). Iberdrola sees Australia as a key growth geography and the company has more than 450MW of capacity under construction and a project pipeline of over 1,000MW in development.

2020 also saw the acquisition by power producer Engie ANZ of the Hills of Gold Wind Farm development for AU$750m (US$528m). The deal involves the purchase of the project entity Wind Energy Partners Pty Ltd. Engie will be responsible for developing and operating the 420MW facility, which will be built near Hanging Rock in New South Wales.

Looking ahead, renewable energy assets look to be an increasingly attractive target for infrastructure investors as they confront lacklustre returns from sub-sectors such as airports and toll roads, which have been hit hard by the pandemic.

"Australian renewable projects are going from strength to strength. We expect to see increasing amounts of deal activity and capital flows, both domestic and international, into Australian market transactions. Specialist funds, OEMs, sovereign and pension funds are all looking at Australian opportunities."

Andrea Frank
Partner – Project acquisitions and divestments | Joint ventures

Policy and financing: Opportunities amid challenges

While policy and stable subsidies around renewables are a top challenge for investors, many nonetheless say that Australia's governments at the state and federal level will support investment.

Investors see federal and state government policies as being supportive toward the renewable energy sector, and they are expected to remain so. However despite this, the proportion of respondents who think both state and federal government policies will be supportive over the next 12-14 months (83%) has fallen in recent years (92%) (Figures 6 and 7).

While both state and federal government policies are expected to support investment in the sector over the next 12-24 months, state government support is expected to be slightly higher (86%) than federal government support (80%).

"Federal policies are unsupportive right now, but there may be changes soon," says the Head of Corporate Development at a Canada-based energy company. *"More financial support will also be required from the federal government. There could be more finances allotted to renewables projects."*

Both domestic and foreign investors point to a slightly more favourable outlook for state versus federal policy, APAC-based investors in particular (96%). European investors are the notable exception with 66% expecting state policies to be supportive versus 81% for federal policies.

Australia-based investors are marginally less positive about government support than they were in the previous survey with 91% anticipating supportive policies from state government and 85% from federal government, versus 90% overall (federal and state) in the 2019 study.

> "More financial support will also be required from the federal government. There could be more finances allotted to renewables projects."
>
> **Head of Corporate Development**
> **Canadian energy company**

Figure 6. How supportive will Australian government policies (FEDERAL) toward the renewable energy sector be in 12-24 months' time?

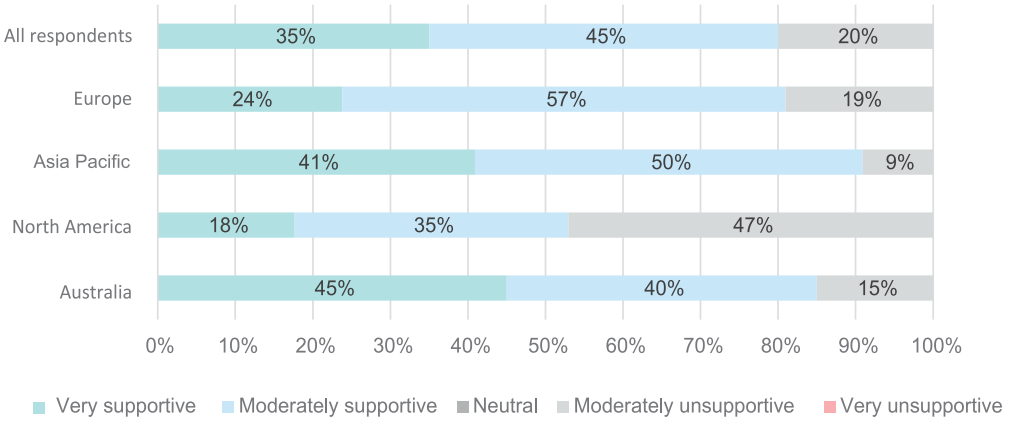
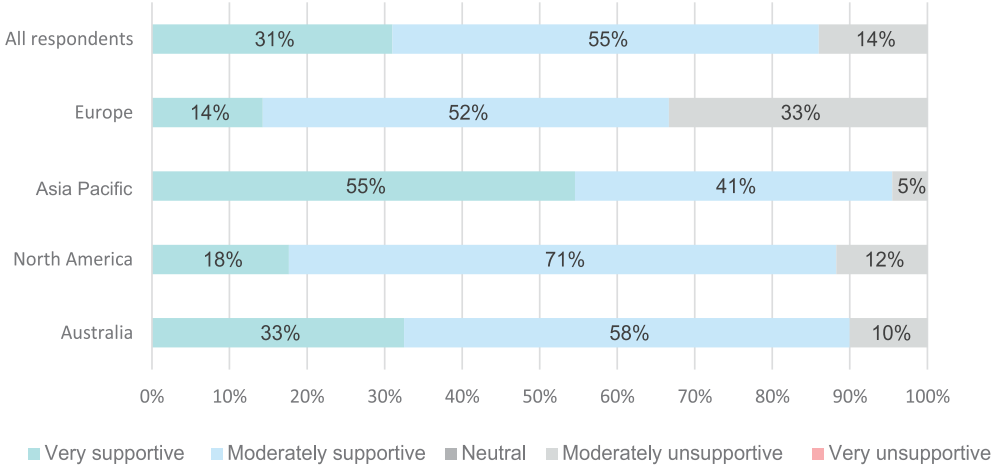


Figure 7. How supportive will Australian government policies (STATE) toward the renewable energy sector be in 12-24 months' time?



Top challenges:
Policy uncertainty and regulatory complexity

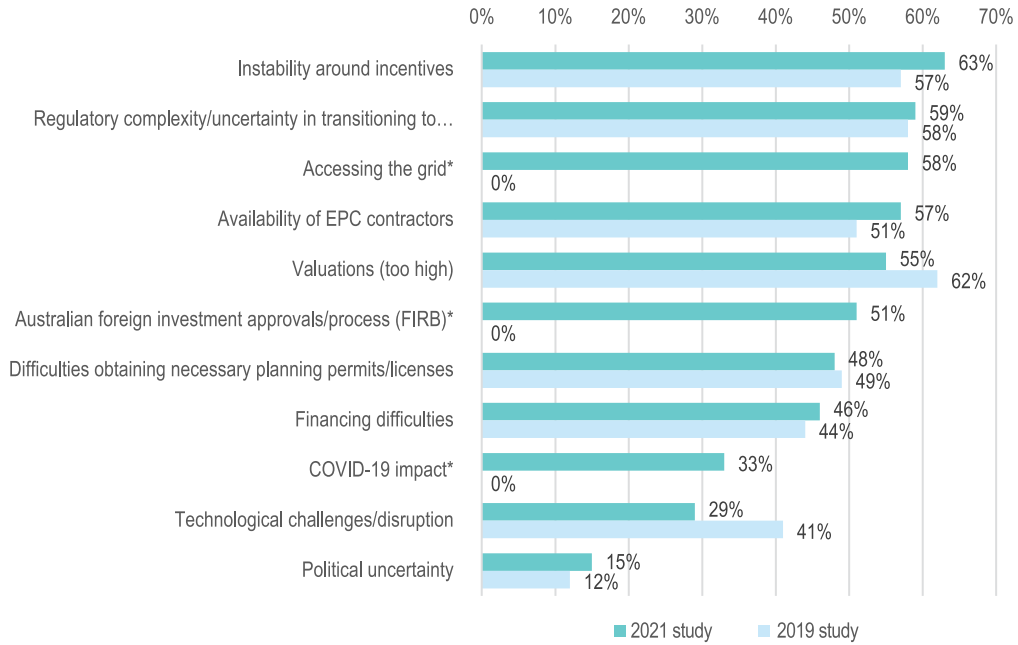
Respondents point to instability around incentives for renewables, cited by 63% of investors, rather than 2019's high valuations, as their main hurdle going forward (Figure 8). *"This uncertainty does not facilitate smooth planning and diversification for investors,"* says the Director of Corporate Development and Investments at an Australia-based energy company.

As well as instability, several overseas investors point to ambiguity and a lack of clarity surrounding incentives. *"We do not know how much to expect from incentives,"* says the Managing Director of a Switzerland-based financial sponsor. Meanwhile, the Head of M&A at a Netherlands-based energy company says: *"The instability surrounding incentives and the take in different states is not inviting for foreign investors."*

While investors are attracted to Australia's stable regulatory systems, regulatory complexity is concerning to 59% of investors, a slight increase on our 2019 study. Reforms to Australia's foreign investment rules are a key area of concern, cited by a number of respondents. These changes have implications for foreign investors acquiring an interest in, or starting, a *"national security business"*. This includes energy businesses.

"For foreign investment groups, the stricter approval process could be a major barrier," says the Managing Director of a China-based financial sponsor. *"The instability surrounding investment does not allow companies to plan their investments or diversification strategies."*

Figure 8. Which of the following will be the most significant barrier/challenge to investment in Australian renewables in the next 12 months? (Select all that apply)



*Option not included in 2019 survey

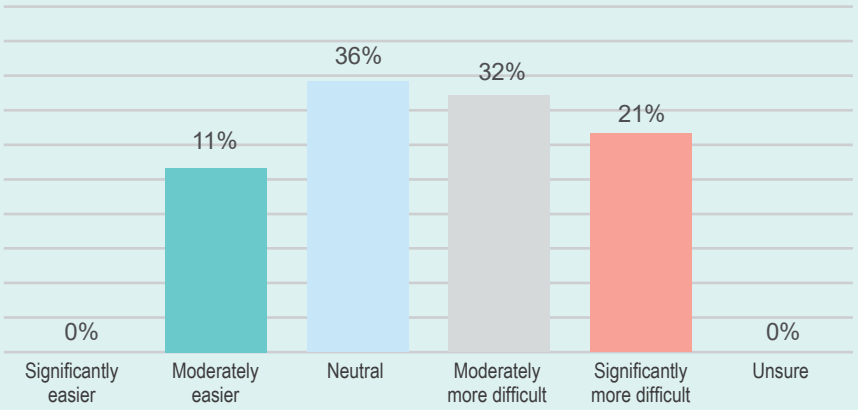
Accessing the grid: Shifting perceptions

Grid access is a challenge and respondents say that it is getting more difficult. This problem is not unique to Australia. Grids seldom get the investment they deserve. In many developed economies, grids evolved to connect coal-fired power generation (often sited near coalfields) with cities. But in most cases, the best sites for modern renewable generation are far from the traditional transmission network.

More than half (53%) of respondents say accessing the grid is getting more difficult compared to a year ago (Figure 9). *"Unless effective measures are taken to solve the issue, connectivity problems will persist,"* says the CFO of an Australia-based energy company.

Despite this, 63% expect there will be improvements within the next 12 months (Appendix A). Development of Renewable Energy Zones (REZs) by state governments will help. *"Grid connection issues will become easier to manage as government is taking steps to manage the inconsistencies,"* says the Managing Director of an Australia-based energy firm.

Figure 9. Is accessing the grid getting easier or more difficult compared to 12 months ago?



> "Grid connection issues will become easier to manage as government is taking steps to manage the inconsistencies."
>
> **Managing Director**
> **Australian energy company**

Regulatory reform

Renewable energy targets are a feature of both federal and state energy policy and investors see these as key in the development of clean energy projects in Australia (Figure 10). However, there are big differences between federal and state governments in their approach to targets.

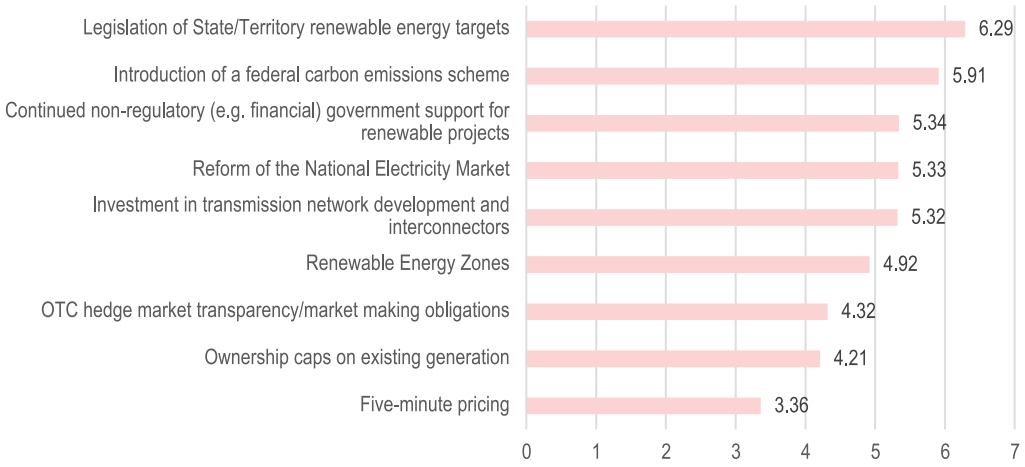
At the federal level, the national Large-Scale Renewable Energy Target (RET) for utility-scale generation has been a cornerstone of Australian energy policy for 20 years. Australia was one of the first countries to introduce such a scheme, which requires liable entities (including electricity retailers) to buy large-scale generation certificates (LGCs) from renewable energy generators.

The target for the RET – 23.5% of total electricity sourced from renewables by 2020 – was reached in 2019. The RET scheme will continue until 2030. However, the downside for renewable energy generators is that the income stream from LGCs will dwindle as the amount of renewable energy in the grid – and therefore the number of certificates issued by generators – rises over the coming decade.

As there is no longer a federal target, goals set by state and territory governments are assuming greater significance. Some of these targets have already been achieved. The island state of Tasmania, for example, recently reached its goal of 100% renewable generation – something it achieved two years early. Tasmania is now legislating for a 200% target by 2040. The Australian Capital Territory also has 100% renewable electricity, although using renewable power largely generated outside the territory.

Interestingly, respondents are lukewarm about the importance of investment in transmission network development (ranked fifth). Given the problem of grid constraints, these rankings are lower than might be expected.

Figure 10. What is the most important regulatory reform or government programs to assist the development of renewable projects in Australia? (Where 9 is most important and 1 is least important)



"Three Australian states have already committed to Renewable Energy Zones. The state that can best manage the needs of government, energy regulators, transmission networks and developers to balance the coordination between renewable generation and transmission capacity will have an incredible advantage in attracting domestic and international investment and projects."

Clay Wohling

Partner – Network connection | Electricity regulatory and licensing

Renewable Energy Zones: The way forward?

Despite its lower ranking in Figure 10, respondents see Renewable Energy Zones (REZ) as critical to facilitating further investment in renewables projects (Figure 11). Indeed, 86% agree with this idea, noting that REZ development holds out hope for the future because they offer greater coordination between renewable generation and transmission capacity than has been the case historically.

Three state governments – New South Wales, Victoria, and Queensland – have so far committed to developing REZs. These are intended to provide large-scale renewable energy generation and storage to replace coal-fired power stations as they reach the end of their lives. By taking into account the need for shared transmission infrastructure, REZs promise to alleviate the grid access problems that have held back some projects.

Our survey shows that investors are nonetheless cautious about REZs with particular reference to grid access and bankability. *"To ensure a renewable energy zone is sustainable, it needs to have easier connection to the grid, certain marginal loss factors and bankability,"* says the Managing Director of an Australia-based fund. *"If any of these are not taken care of, the entire development can become ineffective."*

Figure 11. To facilitate further renewable investment projects, how critical are each of the following network developments to the Australian market?

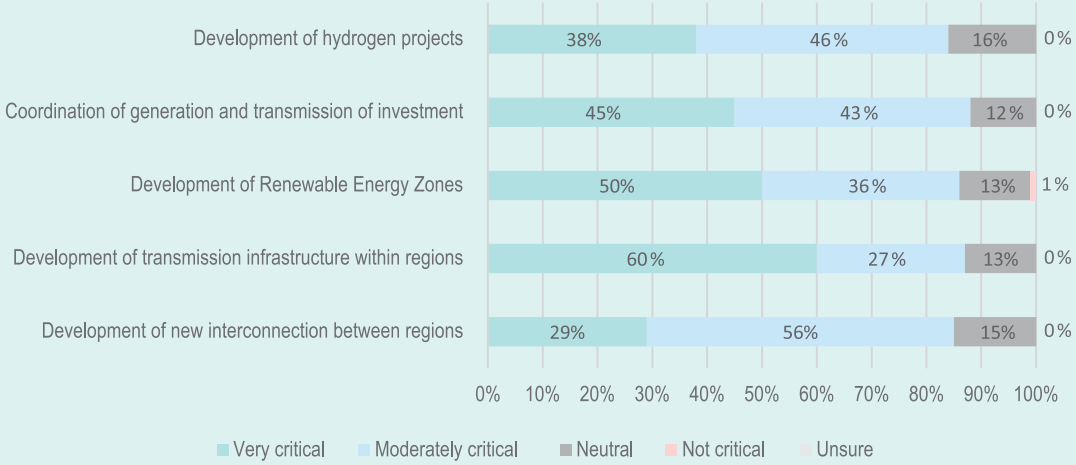
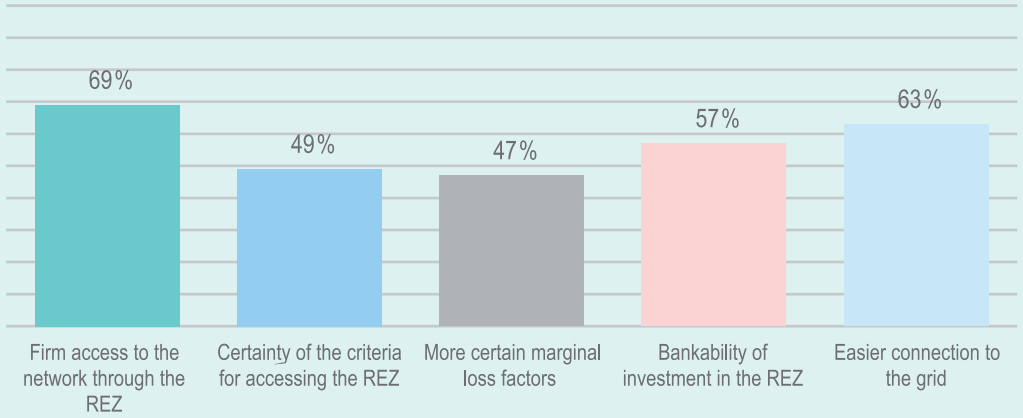


Figure 12. What considerations will be important in the development of Renewable Energy Zones? (Select all that apply)



"Confidence in Australian greenfield renewable energy projects continues notwithstanding recent grid integration issues and transmission losses. Buoyed by investment in transmission infrastructure and strengthened renewable energy policies (including an emerging pathway for the exciting hydrogen sector), new projects with strong fundamentals will continue to be financed and developed."

Ros O'Mally

Partner – Project Finance | Government funding

Positive financing outlook

Australia ranks high among the countries offering the most supportive financing environment for renewables, with 87% of respondents predicting that it will have the most supportive environment in 12 months' time versus 68% today (Figure 13). This performance is comparable with the likes of major renewables markets in Europe (Germany) and North America (Canada).

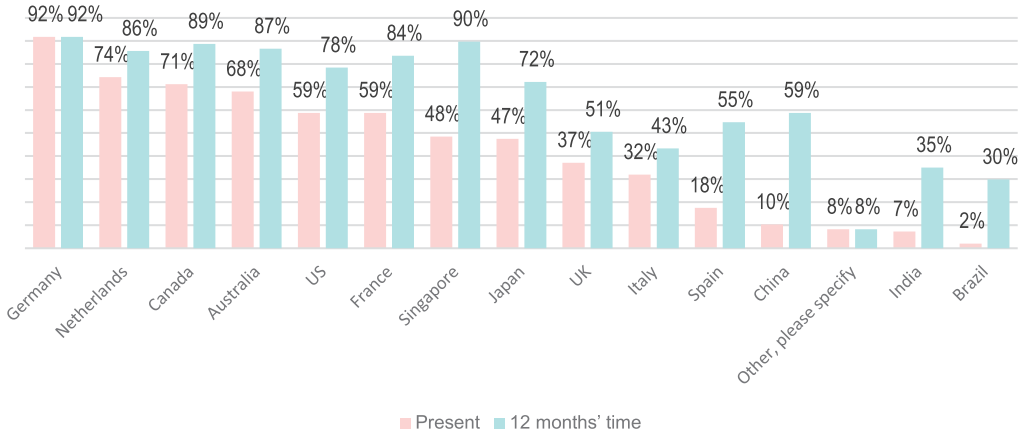
The retreat from fossil fuels and the decisive shift toward socially-responsible investing continue to provide firm underpinnings for Australia's renewables sector. Only 46% of respondents see financing as a challenge, on par with 2019 (44%).

"Australia will become a more supportive environment because most of the active projects have been planned well," says the Investment Director of an Australia-based fund. *"Financers and investors have confidence that returns can be maximised over time."*

One of the positive factors shaping the renewables financing environment is the growth of ESG lending and investing. 2020 was a year in which both domestic and overseas banks and financial institutions reappraised lending on fossil fuel projects. Most are actively decarbonising their portfolios – in some cases, writing off coal-fired investments altogether – while looking to back renewable energy projects.

Renewables developers also continue to benefit from federal support. This is provided by the Clean Energy Finance Corporation (CEFC), a government-owned green bank (acting as a lender or investor) and by ARENA, the Australian Renewable Energy Agency (which primarily provides grant funding). Between them, these agencies have invested approximately AU$8.5bn in clean energy projects over the past eight years.

Figure 13. Which of the following countries has the most supportive financing environment for renewables projects at present? Which will have the most supportive environment in 12 months' time? (Please select all that apply)



"Australia will become a more supportive environment because most of the active projects have been planned well. Financers and investors have confidence that returns can be maximised over time."

Investment Director
Australian fund

Sectors in the spotlight

Investors see opportunity in multiple segments of renewables, with particular interest in hydrogen. However, risks in certain areas remain.

Views about opportunities and risks in different sub-sectors have shifted significantly since our 2019 report. Notably, solar and offshore wind are seen as prospective, while geothermal has seen a dramatic fall from favour.

Solar and wind: Charging ahead

Confidence in photovoltaic (PV) solar and offshore wind continues to grow, with 94% and 83% of investors respectively saying these sub-sectors are the most attractive (Figure 14). This is a significant change since our 2019 study.

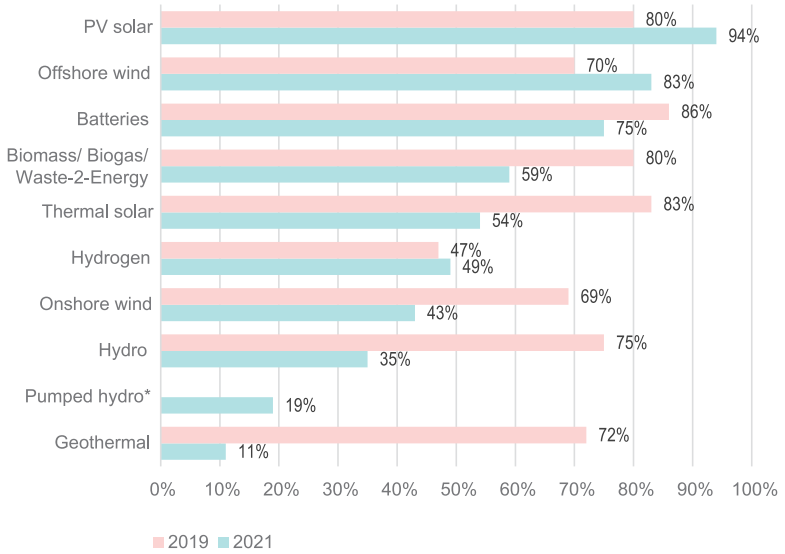
Aside from providing the greatest opportunities, PV solar and offshore wind are also seen as lowest risk among sub-sectors. Indeed, only 1% of investors say offshore wind has the greatest risk (compared with 30% in the 2019 study) while none say PV solar has the greatest risk (Figure 15). According to the partner of a UK-based fund, *"PV solar has good opportunities. With the expansive region and availability of greenfield opportunities, there can be faster developments."*

Batteries are also highly rated by investors. This is not surprising: Australia is home to one of the world's biggest grid batteries – the Tesla battery at Hornsdale in South Australia – and more big batteries are in the pipeline. Three-quarters of investors point to batteries as offering the most opportunities, although this is down slightly from sentiment in 2019.

Geothermal and hydro are seen as much riskier compared with our previous survey. Investors point to factors such as environmental concerns and construction risk. *"I think the most risk is geothermal energy, because of the environmental effects,"* says the Managing Director of a UK-based fund. *"There are more chances that environmentalists will protest and cause a hindrance to projects."*

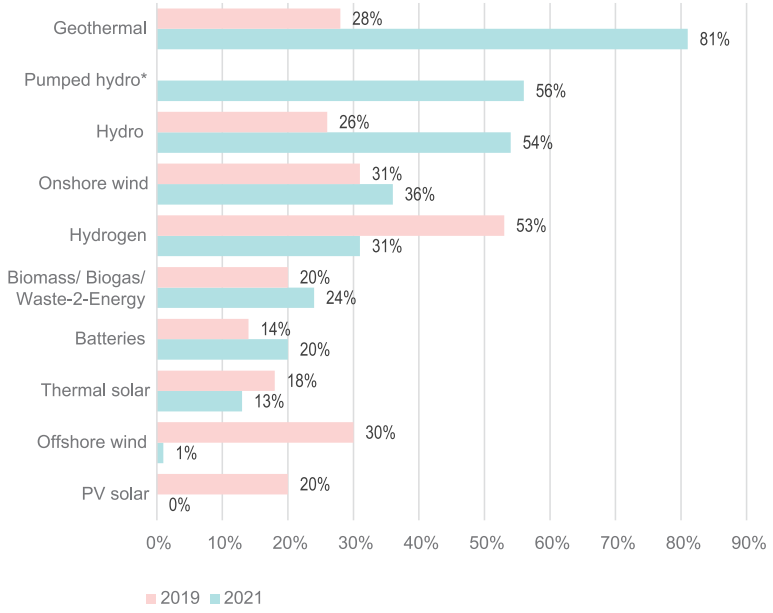
> PV solar has good opportunities. With the expansive region and availability of greenfield opportunities, there can be faster developments."
>
> **Partner, UK-based fund**

Figure 14. Which sub-sectors of renewable energy have the most opportunities (are most attractive)? (Select all that apply)



*Option new to 2021 survey

Figure 15. Which sub-sectors of renewable energy have the most risks in Australia? (Select all that apply)



*Option new to 2021 survey

"In addition to increased residential take-up, we have seen batteries come into their own in the NEM in the last 12-18 months with a number of utility-scale projects either completing or being announced, including the Victorian 'Big Battery'. Being relatively quick to install, they are increasingly seen as a cost competitive source of reliability for the grid. But like a lot of areas in the NEM, regulatory reform is required to smooth the entry of batteries into the system, and this remains a work-in-progress for the NEM agencies."

Joel Reid

Partner – PPAs | Network connection | Project development

Firming up the future

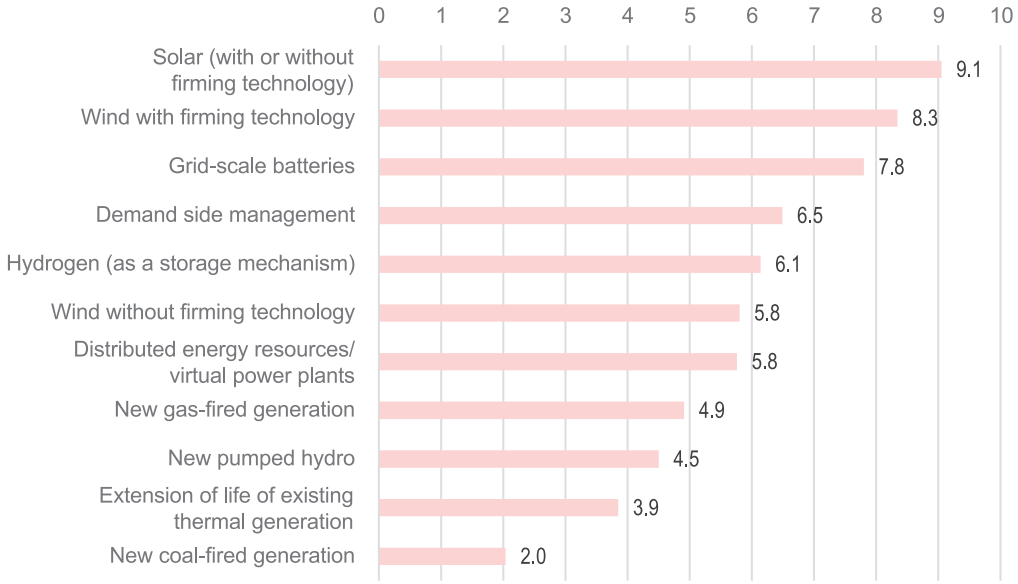
Combinations of solar, wind and batteries could hold the key to providing reliable and consistent generation as existing thermal generation reaches the end of its life. Indeed, 81% of respondents think that hybrid solutions combining wind, solar and storage hold huge potential for Australia. (Appendix A).

Delving into the detail, investors see solar (with or without firming) as the most likely candidate to meet system stability requirements within the next decade as existing thermal power plants are phased out (Figure 16). According to the Director of M&A at an Australian energy company, *"Australia will be using solar, paired with firming technology as the main preference. When it comes to the reliability, solar energy is a stable form, and the energy consumption can be met on a regular basis."*

Wind with firming technology also scores highly among investors, as does the provision of grid-scale batteries. The least-likely options highlighted by respondents are life-extension of existing thermal plants and the construction of new coal-fired generation.

Interestingly, respondent sentiment reveals a significantly greater awareness of the need for firming when compared with our 2019 survey. This finding underlines the growing maturity of the renewables sector and its willingness to shoulder more responsibility for providing reliable, consistent and resilient power supplies.

Figure 16. Within the next 10 years, as existing thermal generation reaches the end of its life, what will most likely meet system reliability requirements in Australia (Please rank from 1 to 11, where 1 = least likely and 11 = most likely)



> "Australia will be using solar, paired with firming technology as the main preference. When it comes to the reliability, solar energy is a stable form, and the energy consumption can be met on a regular basis."
>
> **Director of M&A at an Australian energy company**

The rise and rise of hydrogen

Hydrogen has exciting potential as a future fuel for industrial, transport and household use. It also has potential as an export earner.

Hydrogen has a number of characteristics making it attractive. First, it can be produced using renewable electricity using only water as a feedstock. Second, liquefied hydrogen has an extremely high energy density – three times greater than petrol and more than 100 times higher than a fully-charged battery per unit of weight. This makes it useful in transport applications. Third, it produces zero emissions when used as a fuel – the only exhaust is water vapour. Finally, it can be stored indefinitely.

Hydrogen is also especially interesting for its potentially symbiotic relationship with renewable generation. For instance, electricity can be used to produce hydrogen; equally, hydrogen can be used to produce electricity. Deploying renewable generation, electrolysers and fuel cells on the same site therefore has the potential both to minimise curtailment risks and to provide flexible load and frequency services to the grid. This is possible because electrolysers (which consume electricity) and fuel cells (which produce electricity) can be ramped up and down rapidly. In short, hydrogen could provide a way of getting around grid access issues.

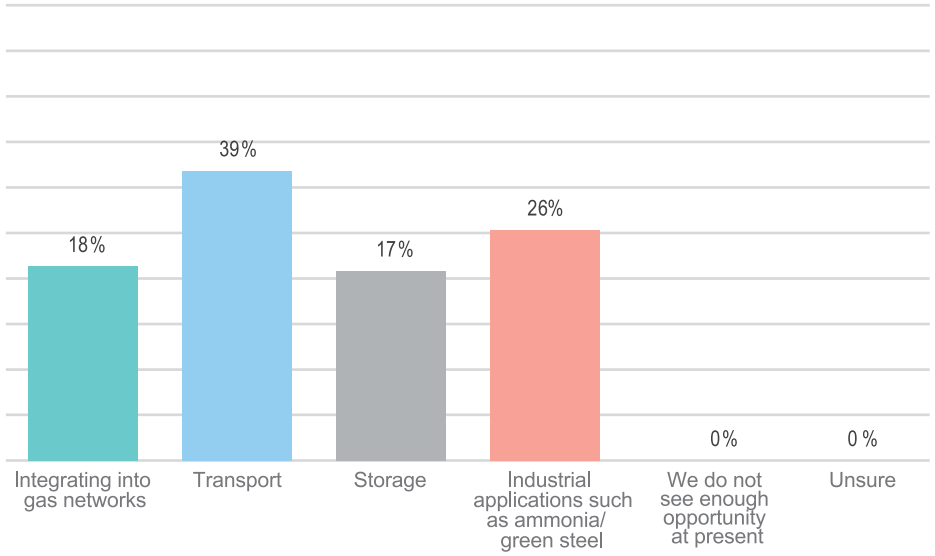
Risk-reward sentiment is shifting in favour of hydrogen. In 2019, 47% of investors said it was an opportunity sector, although 53% said it was too risky. This study shows that 49% see it is an opportunity sector. Notably, only 31% now say it is too risky. In short, positive momentum is building. Echoing the sentiments of many respondents, the Director of Corporate Development at an Australian energy company says *"Hydrogen has more opportunities. Investors can invest in the earlier stages of a project for valuable returns."*

Additionally, more than two-thirds (69%) of respondents agree that developments in Australia's hydrogen economy will cross an inflection point in the year ahead and allow the country to become a primary supplier for energy markets within the next 12-24 months (Appendix A).

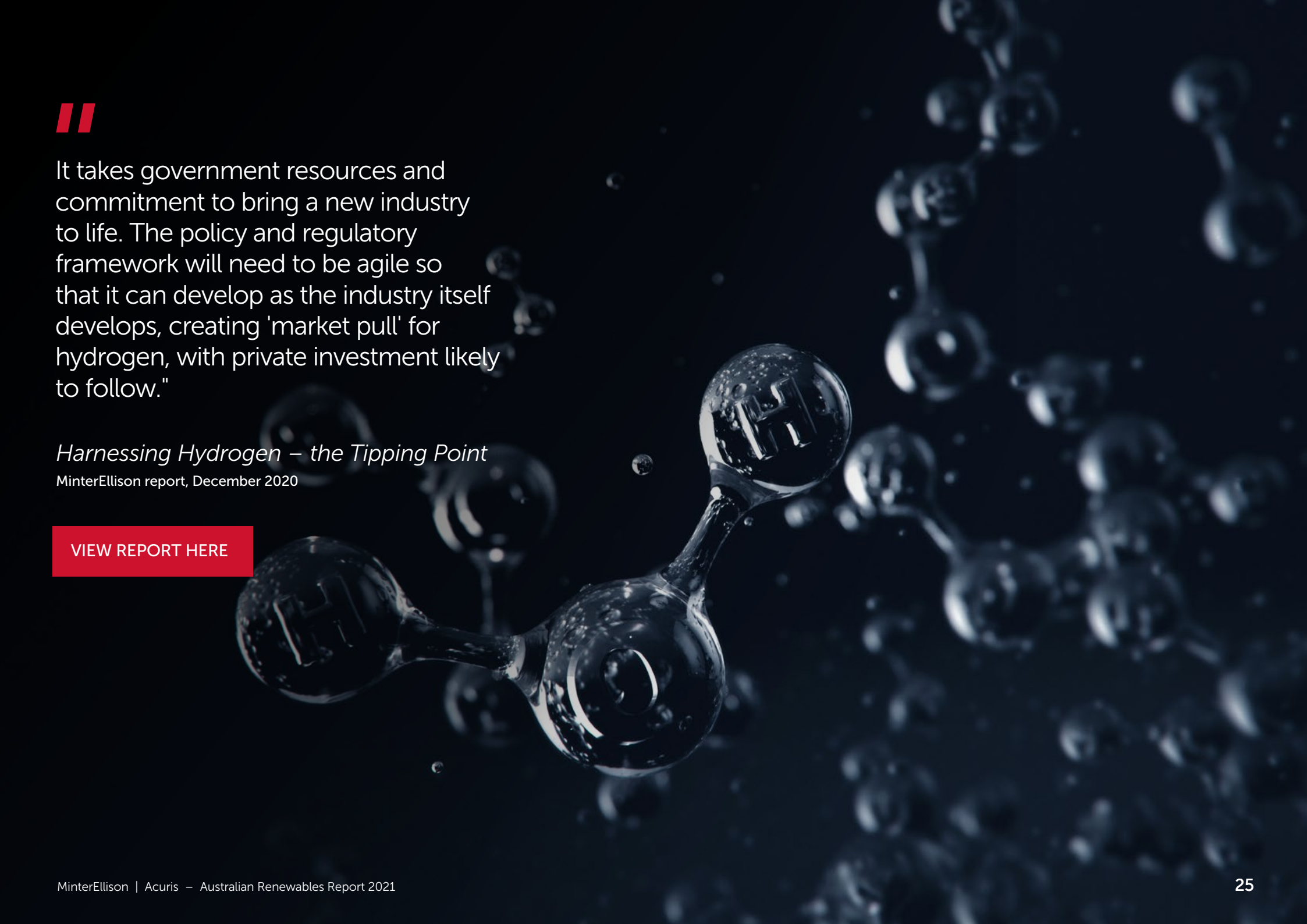
Respondents envisage multiple uses of hydrogen in the not too distant future. Transport (39%) and industrial applications (26%) are seen as the top hydrogen opportunities (Figure 17). According to the Managing Director of an Australian bank, *"Hydrogen can be used for creating a sustainable transport ecosystem. The current burning of conventional fuel is expensive and replacements would really transform the transport sector performance."* Integrating hydrogen into gas networks (i.e. blending hydrogen with the existing natural gas supply to reduce its carbon content) is highlighted by 18% of respondents.

> "Hydrogen has more opportunities. Investors can invest in the earlier stages of a project for valuable returns."
>
> **Director of Corporate Development**
> **Australian energy company**

Figure 17. What do you see as the greatest opportunity for hydrogen?



> "Hydrogen can be used for creating a sustainable transport ecosystem. The current burning of conventional fuel is expensive and replacements would really transform the transport sector performance."
>
> **Managing Director**
> **Australian bank**



"It takes government resources and commitment to bring a new industry to life. The policy and regulatory framework will need to be agile so that it can develop as the industry itself develops, creating 'market pull' for hydrogen, with private investment likely to follow."

Harnessing Hydrogen – the Tipping Point

MinterEllison report, December 2020

VIEW REPORT HERE

Fossil fuels: Headed for retirement?

Many respondents (47%) agree that governments in Australia are acting quickly to retire Australia's existing fleet of coal-fired power stations (Appendix A). However, 27% disagree, saying these steps are not being taken.

This divergence of opinions is not surprising. First, there are significant variations between states. Second, the future of coal is a sensitive political issue. Coal is mined in many parts of Australia and remains the dominant fuel in the country's electricity generation mix, contributing 56% in 2019, according to the Department of Industry, Science, Energy and Resources. It is also Australia's second-biggest export.

Yet the long-term trend away from coal is clear. AEMO, Australia's national energy planner, envisages that more than 26GW of new grid-scale renewables will be needed to replace the 63% of coal-fired generation that will reach the end of its technical life by 2040.

In addition, AEMO notes that up to 19GW of new dispatchable power will be required to provide firming for renewable generation. This could be provided by pumped hydro, battery storage systems, virtual power plants (VPPs), demand side participation (DSP) or gas.

Unless dispatchable renewal power can be delivered economically and at scale, fossil fuels are likely to maintain a foothold as providers of firming resources. Against this background, federal government is looking to a "gas-led" recovery from the pandemic. This could include the construction of new gas-fired power plants to replace coal.

Offshore investors

Despite having less access to the market due to border closures and COVID-19 travel restrictions, offshore investors are expected to play an important role in driving deals in 2021 and beyond.

After hitting a peak in 2018, inbound renewable investment fell sharply in 2019, a downward slide that continued in 2020. However, investors are banking on a rebound for Australian renewables over the next one to two years with majorities expecting offshore investment to increase.

Asia Pacific: Great expectations

Most respondents (92%) believe that APAC-based investors will lead investment in Australian renewables in the near term. More than half (58%) think the level of investment by APAC-based backers will increase significantly (Figure 18).

China and Japan are expected to lead these inflows (Figure 19). In the case of China, this is a significant uptick versus our previous study in which only 30% of respondents thought China would be more active.

"In the next 12-24 months, China will increase investments significantly," says the partner of a UK-based fund. *"Already, they have shown intent to globalise operations and collaborate with other countries to support internal development goals."*

> "Due to the tariff war between the US and China, both have been looking for alternative markets to divest from current holdings in each of these regions. They will find Australia attractive, and there may be more competition for assets."
>
> **CIO**
> **Canadian financial sponsor**

Figure 18. What do you expect will happen to the level of investment into the Australian renewable sector from the following international investor groups in the next 12-24 months?

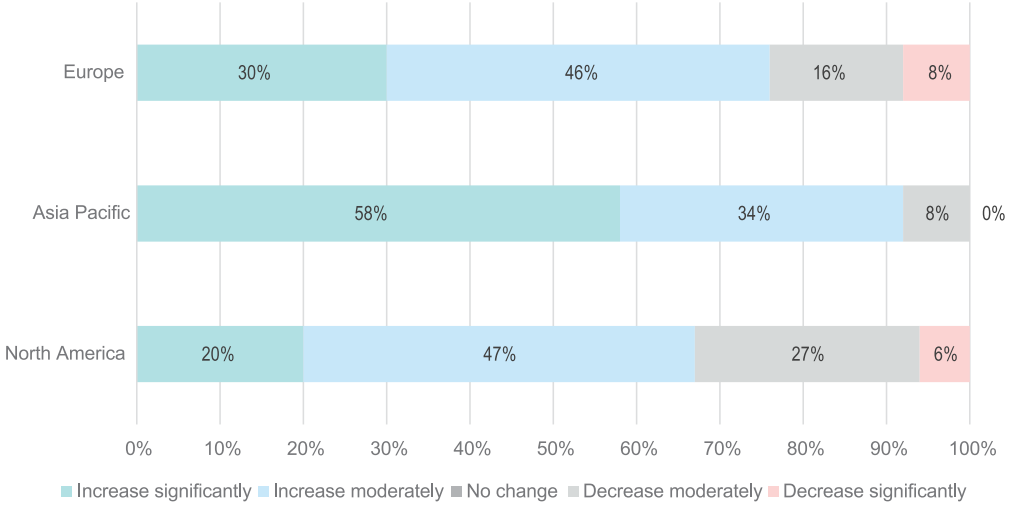
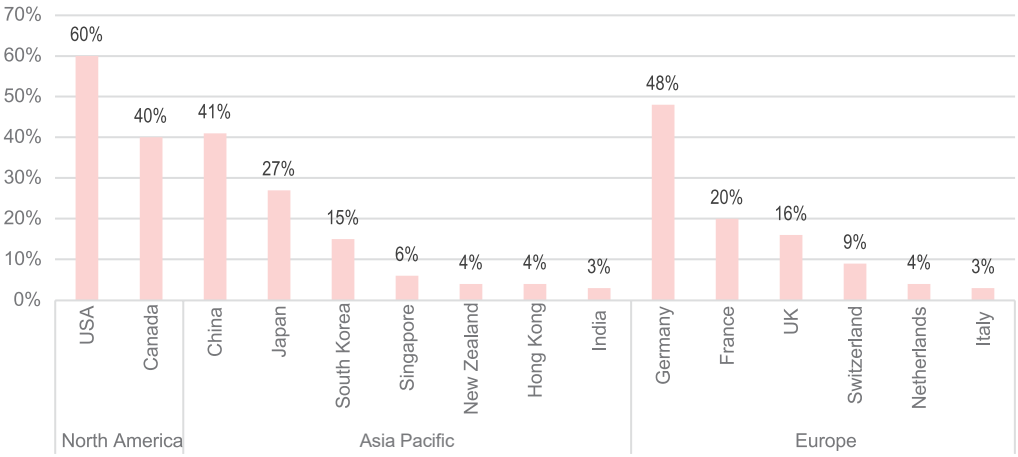


Figure 19. What do you expect will happen to the level of investment into the Australian renewable sector from the following international investor groups in the next 12-24 months?

Specifically, which countries within these regions will be most active?



Offshore investors

Investors are clearly betting on a thaw in the currently strained relations between Canberra and Beijing. Meanwhile, US-China tensions continue to make Australia an attractive target relative to the US for China-based investors – provided they can overcome Australia's tightening foreign ownership rules.

Respondents point to Australia's strong fundamentals. *"Chinese companies are looking for new investment opportunities,"* says the Chief Investment Officer of a Canada-based financial sponsor. *"Since Australia is a strong marketplace, with lower economic fluctuations and a positive regulatory environment, investment has increased overall."*

APAC investment in Australian renewables peaked in 2018 with AU$7.6bn and 24 investments but dropped precipitously in 2019 to only AU$2.4bn and eight investments. Meanwhile, 2020 saw four investments worth AU$403m (Figures 20 and 21).

Europe: German inbound on the rise?

More than three-quarters of all respondents (76%) believe that European investors will increase allocations. Germany is expected to be the top inbound investor from Europe by 48% of respondents.

Like Australia, Germany has an eye to opportunities in the hydrogen economy and the potential synergies are attractive, notes the Managing Director of an Australia-based bank: *"Germany has shown interest in the Australian renewables markets and new partnerships are being discussed. Decarbonising efforts in Germany will benefit from the hydrogen power models in Australia."*

In line with broader inbound trends, European investment saw steep declines from 2018 to 2019, with a continued drop in 2020. However, European investors were the most active in 2020, deploying AU$1.1bn through six investments.

Figure 20. Inbound renewables investment by bidder geography (value AU$m)

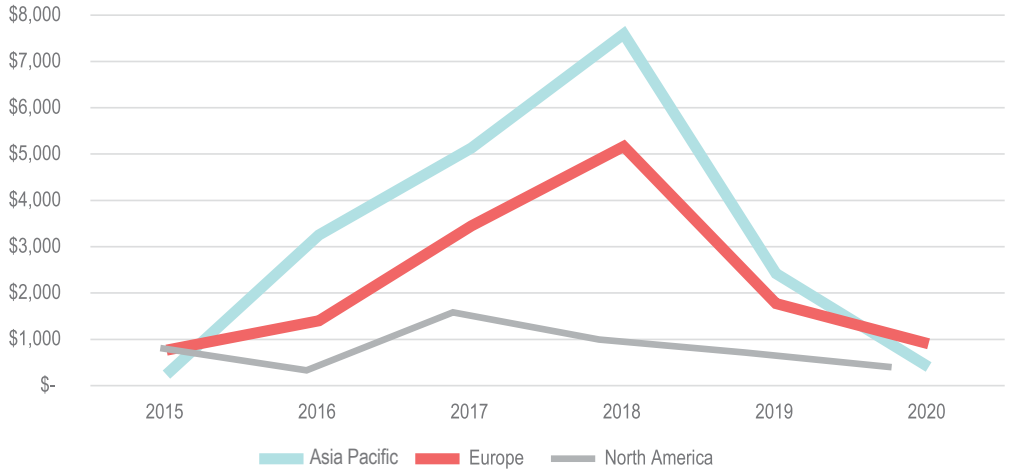
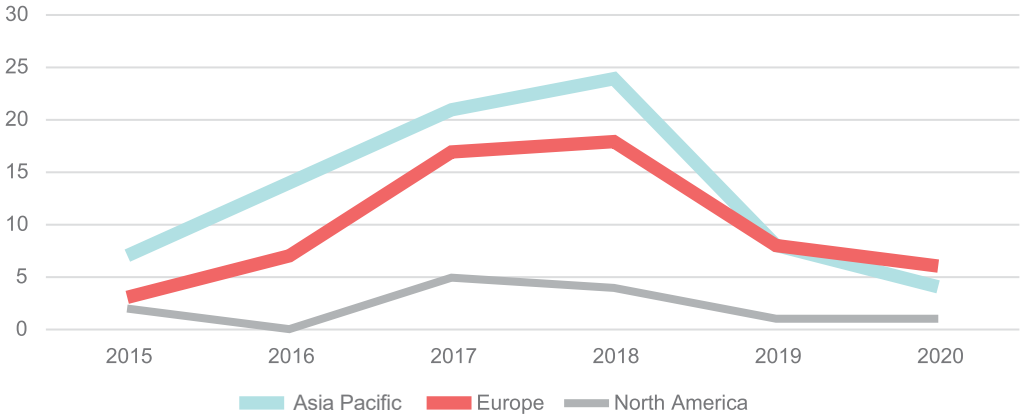


Figure 21. Inbound renewables investment by bidder geography (volume)



Source: Inframation Group

"It remains to be seen how the recent change of administration in the United States will influence US-Australia-China relationships, and Australia's new Foreign Investment Review Board regime is yet to be fully tested. In the short term, we are working with clients to make their proposed transaction structures to be their most FIRB, government and vendor friendly."

Bi Chen

Partner – MinterEllison Beijing

Offshore investors

North America: Competing for assets?

Just over two-thirds (67%) of all respondents think investment from North America will increase over the next two years. This is lower than both APAC and Europe, and down from 84% in our previous study. However, the US achieves the highest country ranking and is cited by 60% of respondents as the investor likely to be the most active in Australia over the next one to two years.

Geopolitical factors could be working in Australia's favour for US investors – a point made by the CFO of an Australia-based energy company: *"Due to the tariff war between the US and China, both have been looking for alternative markets to divest from current holdings in each of these regions. They will find Australia attractive, and there may be more competition for assets."*

Investment from North America has waned since 2017, dropping from AU$1.3bn to AU$70m in 2020 with single investments completed for each year in 2019 and 2020.

Corporate and financial sponsors

Renewables developers are expected to be the most active investor group in the coming year, according to 99% of respondents (Figure 22). Meanwhile, 89% believe power producers will play a greater role in the market, up from 82% in the last study. *"Power producers will be active because Australia has plans to substitute current conventional energy usage completely within the next few years,"* says the Managing Director of a Singapore-based financial sponsor.

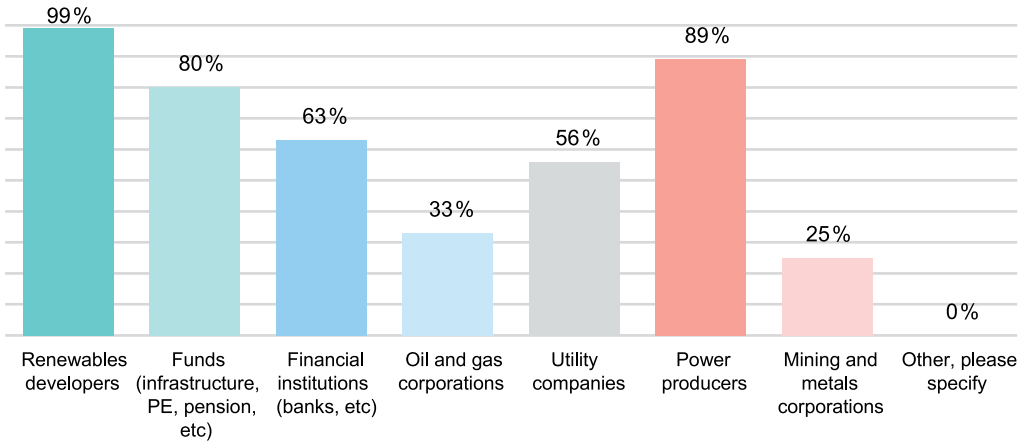
Funds – which include infrastructure, private equity and pension/superannuation funds – also ranked highly, with 80% of respondents expecting these to be among the most active. Inbound infrastructure developers and investors could be an important factor here: 71% of respondents think that regional renewables funds, similar to Singapore-based Equis, will be increasingly active and competitive in the Australian market in the year ahead (Appendix A).

Domestic pension/superannuation funds – as well as those based in Europe and North America – have also been showing a keen interest in Australian renewables, observes the Strategy and Business Development Director of a France-based energy company: "The long-term yield and alternative investment model is ideal for their returns anticipations."

Financial institutions, including banks, are also expected to be active in the renewables market in the year ahead (cited by 63%). This is higher than in our previous survey and it is likely to reflect the fact that banks are decarbonising their portfolios and switching lending to renewables instead – a trend that gained momentum throughout 2020. All of Australia's big four banks have now said they will restrict financing to thermal coal projects.

"Banks are offering tailored solutions for the renewables market," says the Managing Director of an Australia-based bank who does not want to miss out on any investment opportunities that open up in the next two years.

Figure 22. Which of the following corporate/financial sponsor groups do you expect to be most active in the Australian renewables market in the year ahead? (Select all that apply)



Unleashing growth: Renewables in agribusiness and mining

Australia's vast agriculture and natural resources industries stand to benefit from renewables as both sectors turn clean and green.

Two of Australia's primary industries – agribusiness and mining – could reach new levels of growth and development with increasing adoption of renewable solutions.

Agribusiness: Going green for growth

Australia's agriculture sector continued to grow throughout 2020, despite disruption caused by the pandemic. Agribusiness is currently worth AU$60bn, but this is expected to climb to AU$100bn by 2030.

Respondents are clear that renewable energy will play a critical part in delivering this growth: 80% of respondents in our recent report on Australian agribusiness *(Ahead of the Harvest: 2020-2022)* said that increasing use of renewables would have a positive impact on the industry's growth, with 39% saying that renewables will have a transformative effect.

Agriculture is a significant energy user. For example, processes such as water pumping, desalination and temperature control in greenhouses require huge energy inputs. In addition, the need to be on-grid limits the range of locations available for some types of farming activity. Cost-effective solar would allow more farmers to go off-grid, says the Managing Director of a Switzerland-based bank: *"With the help of renewable energy generated on site, powering farming equipment and storehouses will become cost-effective. The usual utility bills will be minimised."*

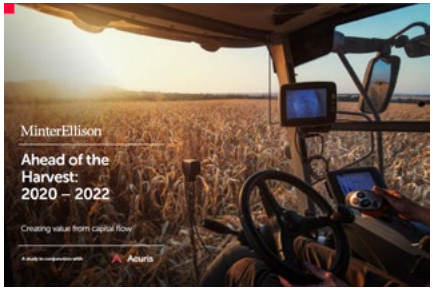
The rise of renewable energy clearly has a role to play in helping farms become more sustainable. But only a fraction of the potential has so far been realised. In the meantime, farmers benefit from an income from renewable assets built on their land even if they are not using the energy directly. *"Larger companies looking for open space will create opportunities for the agriculture sector,"* says the Managing Director of an Australia-based bank. *"Land can be leased out by owners for wind turbines and solar panels."*

> "With the help of renewable energy generated on site, powering farming equipment and storehouses will become cost-effective. The usual utility bills will be minimised."
>
> **Managing Director**
> **Switzerland-based bank**

80%

of agribusiness investors say increasing use of renewables would have a positive impact on the industry's growth*

Findings from Ahead of the Harvest: 2020-2022 released in 2019



Mining: Light at the end of the tunnel

Mining accounts for nearly a fifth of Australia's total final energy consumption. Diesel and natural gas provide the bulk of the energy required. However, large-scale photovoltaic solar and wind provide an economically viable route to reducing the reliance of mines on fossil fuels for power generation.

Respondents point to opportunities between renewables and the mining sector. Processes directly linked to extraction – which account for around a third of overall energy consumption in mineral operations – are prime candidates for conversion. *"For digging and deep-drilling activities, the use of renewables will really prevent carbon emissions,"* says the CFO of a China-based energy company.

Mining is exposed to high levels of investor scrutiny. This in itself could accelerate renewables uptake in the sector. *"Levels of carbon emissions are being monitored closely by investors,"* says the Head of Finance at a Japan-based energy company. *"Changing practices will be vital for development in the sector."*

"

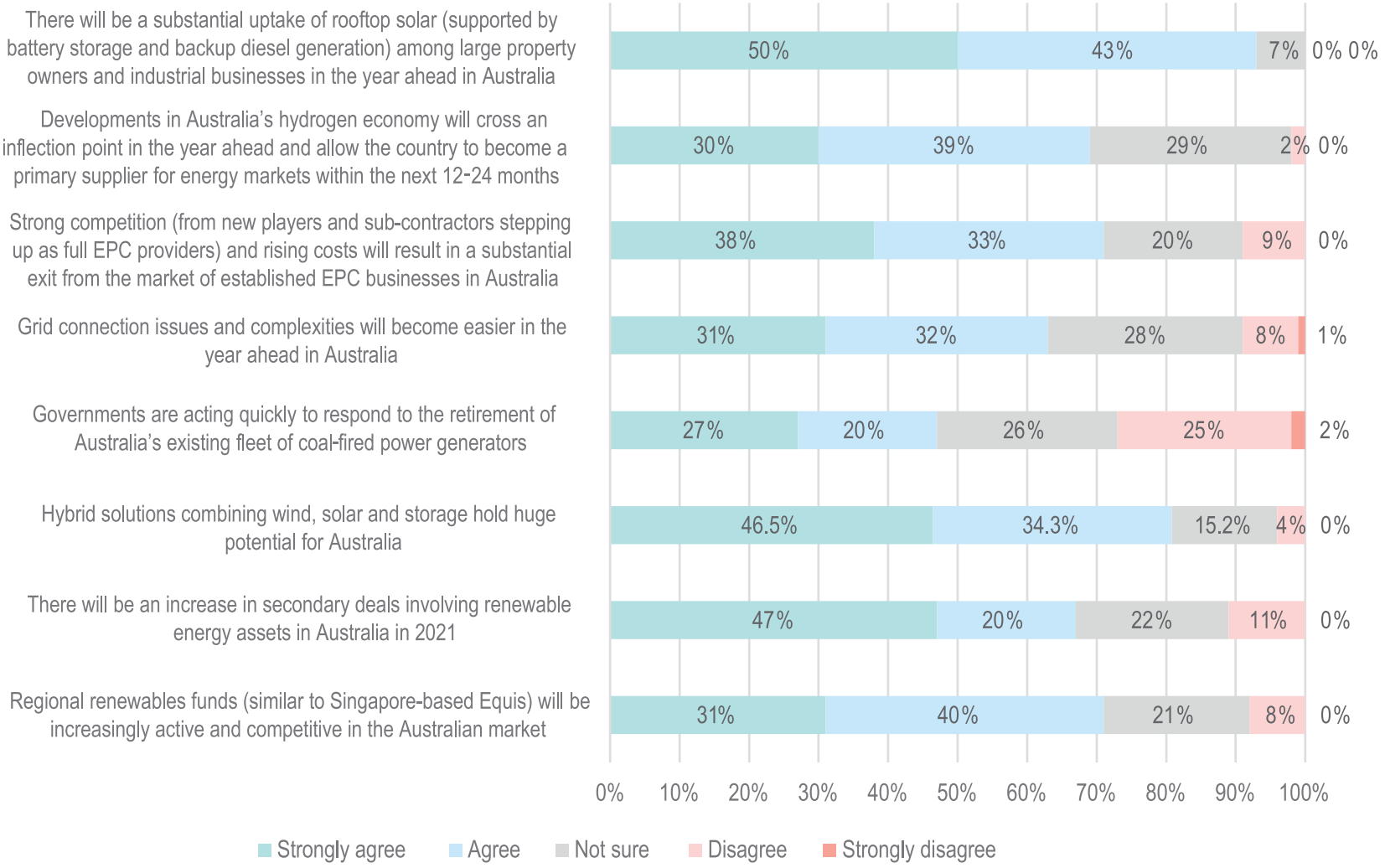
Most miners are rethinking their operational processes and existing power supplies to invest in and integrate renewable energy sources. The benefits of investing directly in solar and wind power and smart storage, or otherwise buying green power, are clear: to drive down energy costs, curb emissions, improve safety, and lessen investor scrutiny.

Simon Scott

Energy & Resources Industry Lead

Appendix A:
Supporting views on the state of renewables

For each of the following statements, please select from the following options: (A) strongly agree, (B) agree, (C) not sure, (D) disagree, (E) strongly agree (Select one for each statement)



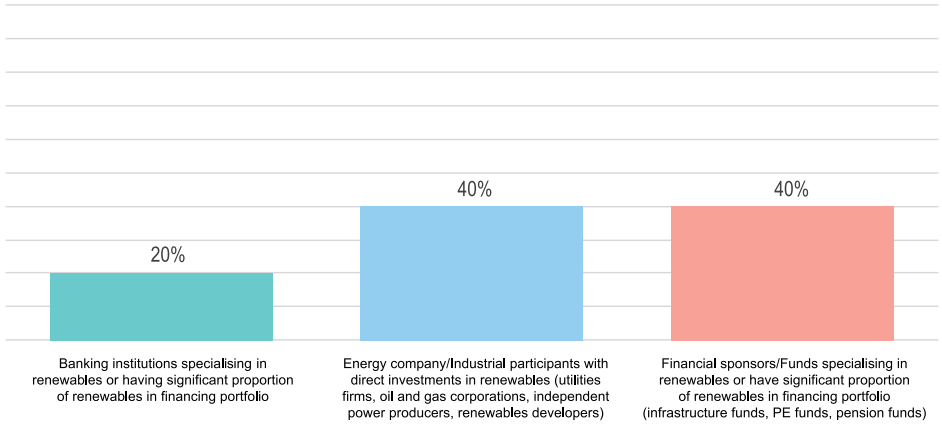
Methodology

From September to October 2020, MinterEllison and Acuris Studios, the publishing division of Acuris, canvassed the opinions of 100 renewable energy investors to gauge their views on the investment opportunities, trends and challenges in Australia. 60% were based outside Australia while 40% were domestic Australian firms. All respondents had in the past 12-24 months developed/funded/invested in at least one Australia-based renewable energy project.

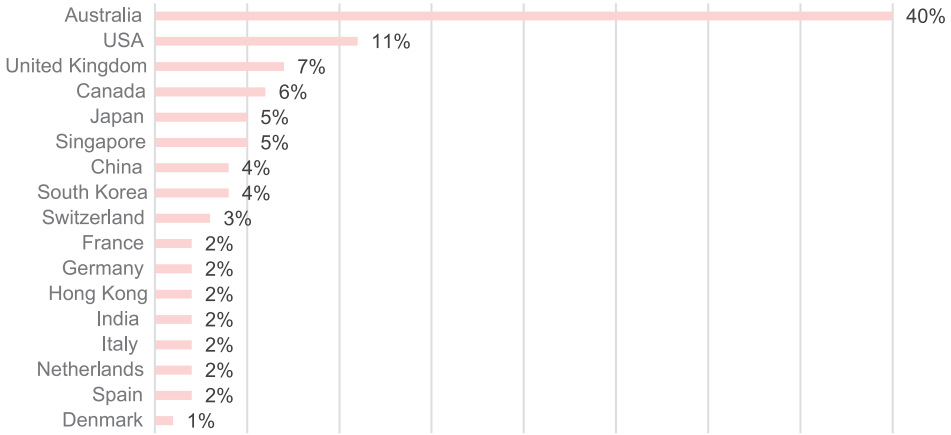
Within the graphed survey results, percentages may not sum to 100% due to rounding, or when respondents were allowed to choose more than one answer.

All quoted data is propriety Mergermarket and Inframation Group data unless otherwise stated.

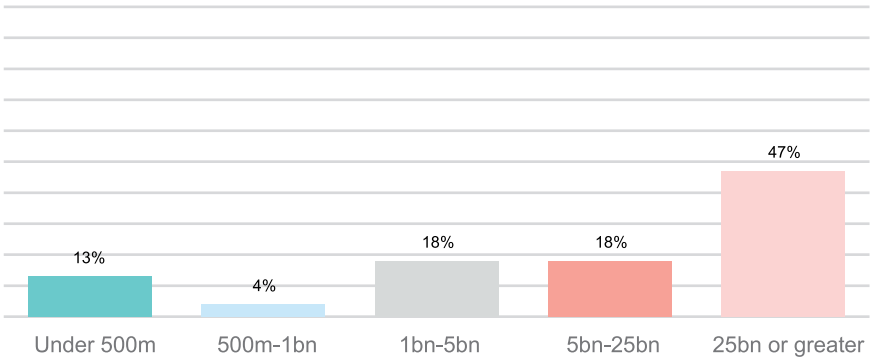
Which of the following best describes your organisation?



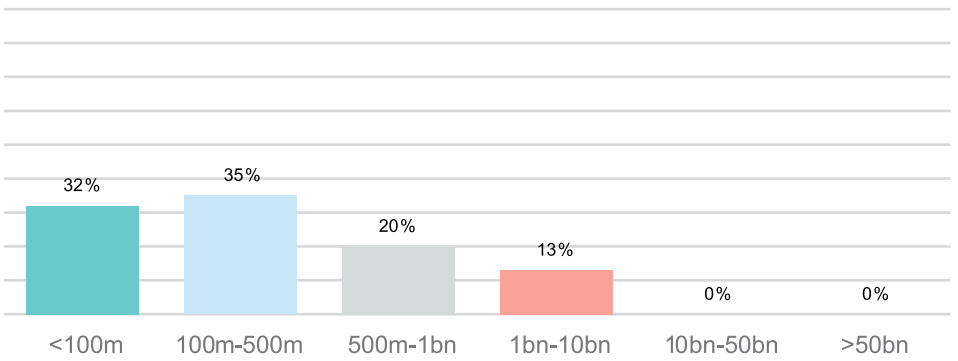
Where is your organisation based?



What was your organisation's most recent annual revenue/assets under management (US$)?

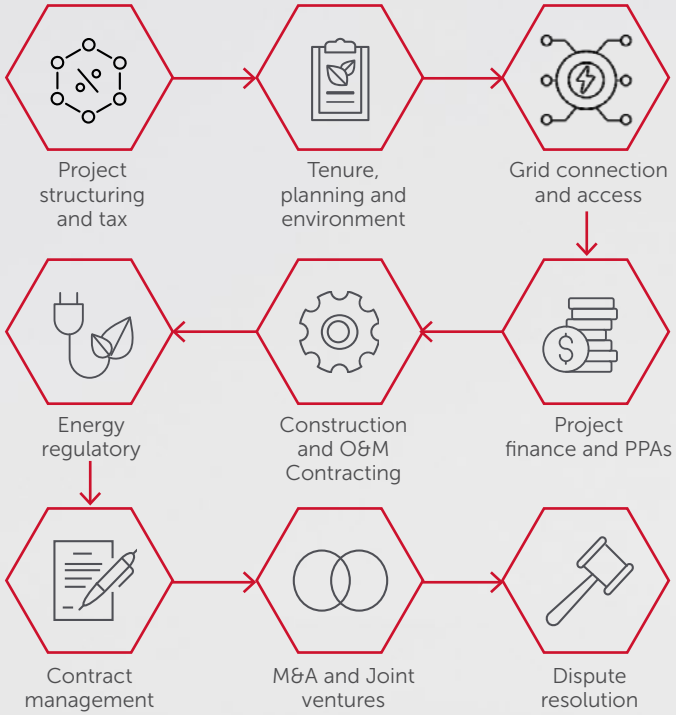


What has been the level of your Australian renewable energy investment over the past 12 months?



How we can help

MinterEllison provides legal and consulting advice to energy and renewable companies and developers, financiers and investors, and government and energy regulators across the lifecycle of renewable projects. The Energy & Resources team works with clients to help them build, manage and protect their businesses, developing strategies to minimise risk, realise opportunities for growth, and deliver investor value. We bring deep industry experience together with legal expertise to bring the best of MinterEllison to clients and create lasting impacts.



At MinterEllison we are driven to deliver solutions that create lasting impacts. We start by **listening**: we ask questions that **challenge** the status quo, then come up with solutions that help clients manage risk, realise efficiencies, **grow** and contribute back to their stakeholders and communities.

Simon Scott
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