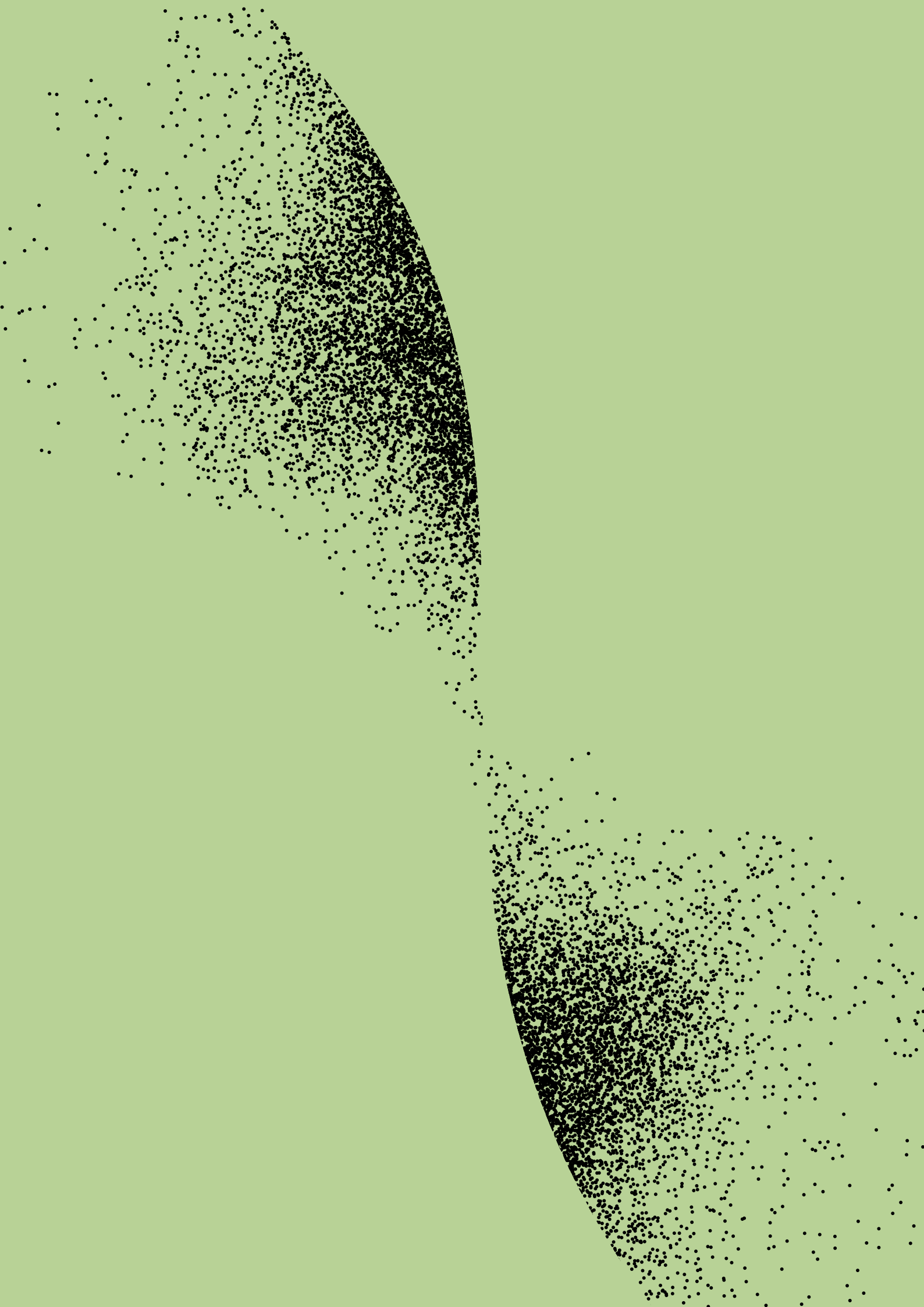




# **SUSTAINABILITY REPORT 2020**



# WE'RE COMMITTED TO MAKING THE RIGHT KIND OF IMPACT.

<b>Chairman and CEO Message</b>	3
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This year Horizon has increased its focus on sustainability. We engaged a sustainability consultant to undertake a materiality review of the environmental, social and governance issues arising from our operations. Our materiality review is our first step in building an environment, social and governance (ESG) framework and action plan for the company.

Horizon is reporting for the first time against the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD). We are also participating in the Carbon Disclosure Project (CDP) in 2020<sup>1</sup>. This is consistent with Principle 7.4 of the ASX Corporate Governance Council Principles and Recommendations (fourth edition), which recommends that ASX listed entities disclose any material exposure to environmental or social risks, and how the company manages or intends to manage those risks.

The content of this report has not been externally assured.

<sup>1</sup> CDP runs the global environmental disclosure system. Each year CDP supports thousands of companies, cities, states and regions to measure and manage their risks and opportunities on climate change, water security and deforestation. CDP provides disclosure at the request of their investors, purchasers and city stakeholders.





**Our approach to sustainability is aligned to our strategic priorities. We are committed to making the right kind of impact; ensuring the safety of our people, being sensitive to the environment and enhancing the communities in which we operate.**

**Chris Hodge**  
Chief Executive Officer

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# A MESSAGE FROM OUR CHAIRMAN AND CEO

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Welcome to the new face of Horizon's Sustainability Report. We are proud to present our key initiatives for FY 2020.

Our approach to sustainability is aligned to our strategic priorities. We are committed to making the right kind of impact; ensuring the safety of our people, being sensitive to the environment and enhancing the communities in which we operate.

Horizon is an oil producer, and developer and explorer of oil and gas assets. In doing so, it is critical that we adhere to the highest possible operating and social standards, and strongly encourage our Operator partners to do the same.

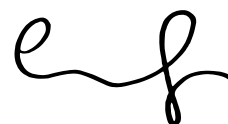
With respect to climate, financial models which apply decarbonisation scenarios published by the International Energy Agency (IEA), indicate that Horizon's asset portfolio (excluding PNG<sup>2</sup>) is currently resilient to climate-related financial risk - including in a future where emissions are reduced to meet the global temperature targets in the Paris Agreement. In addition, our asset portfolio is resilient because the material impacts of climate change, as described in the IEA's scenarios, occur after our assets' economic life.

However, we firmly recognise the responsibility and role Horizon must play to support a lower emissions future and Horizon's growth strategy will take into account climate change, from both an opportunity and a risk perspective.

We hope you find this report informative and we look forward to updating you, and building on our progress, year-on-year.



**Mike Harding**  
Chairman



**Chris Hodge**  
Chief Executive Officer

<sup>2</sup> Given that the commercialisation pathway for Horizon's PNG assets is uncertain, these assets have not been included in Horizon's scenario analysis.

# OUR SUSTAINABILITY APPROACH

## Materiality Review

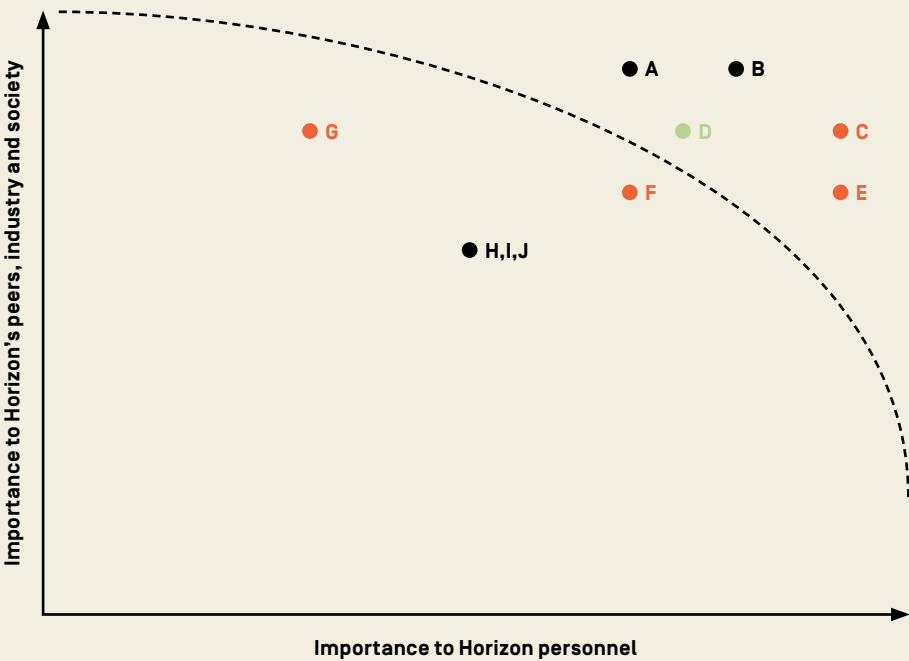
Horizon engaged a sustainability consultant to undertake a materiality review of the environmental, social and governance issues that present risks or opportunities to us, while taking into consideration the issues of most concern to Horizon personnel, and the society in which we operate. The materiality review was conducted applying principles of AA1000 Accountability Principle Standards.

Horizon identified its material issues of FY2020 through a combination of researching its peers and industry and interviews with a broad and statistically significant cross-section of Horizon personnel. Following the identification process, Horizon’s executive team prioritised and validated the identified material issues.

## Key Material Issues

Horizon’s key material environmental, social and governance issues arising from our operations are set out below. The vertical axis represents material issues identified by our peers, industry and the society in which we operate. The horizontal axis represents material issues identified by a cross-section of Horizon personnel.

Materiality: Horizon's key material environmental, social and governance issues arising from our operations



- MATERIAL
- A Market Change
  - B Transparency & Corporate Conduct
  - C WHS & Community Safety
  - D Climate Adaptation
  - E Empowering Employees
- WATCHLIST
- F Community Investment
  - G Gender Diversity
  - H [Geo] Political Risk
  - I Modern Slavery
  - J Climate / Environment Resilience
- Environment
- Social
- Governance

# Our Priorities

Our sustainability priorities are our commitments to improving lives for our people, communities and the wider world. Recognising our responsibility as a business to support a lower emissions future as well as promoting diversity, safety and high ethical standards, are just some of the ways Horizon is aiming to do business better.

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## 1. HEALTH, SAFETY & ENVIRONMENT

Horizon's first priority is the health and safety of our workforce and communities, and the protection of the environment in which we operate. In our operations, we focus on eliminating fatalities and reducing workplace injuries and health impacts. In our non-operated assets, we work closely with our Operators in China and New Zealand to ensure that they maintain asset integrity and have in-place appropriate workplace management systems that reflect our high expectations for health and safety. Horizon maintains an active interest in our Operators' programs to maintain their focus on safety.

## 2. GOVERNANCE

Horizon is committed to making the right kind of impact and applying Australian rigour to what we do, whether in-country or in its foreign operations, such as China, New Zealand and Papua New Guinea. We promote, and are committed to, a high standard of integrity and ethical and transparent behaviour in business.

## 3. CLIMATE CHANGE

Horizon recognises the responsibility and role it has to play to support a lower emissions future. Horizon is reporting for the first time against the recommendations of the Taskforce on Climate-related Financial Disclosures (TCFD). We are also participating in the Carbon Disclosure Project in 2020.

## 4. OUR PEOPLE: EMPLOYEES & COMMUNITIES

Our employees will deliver Horizon's future. We want our employees to be proud to work for Horizon. Horizon recognises that it must empower employees and promote diversity so that its people can achieve their personal best. We also acknowledge the communities that we work in, and that our sustainability comes from investing in our communities.

## OUR PRIORITIES

# HEALTH, SAFETY AND ENVIRONMENT

Horizon's first priority is the health and safety of our workforce and communities, and the protection of the environment in which we operate. In our operations, we focus on eliminating fatalities and reducing workplace injuries and health impacts.

In FY 2020, there were no fatalities across Horizon's operated assets in PNG nor its non-operated assets in China and New Zealand.

In FY2020, Horizon achieved a target Total Recordable Injury Frequency Rate (TRIFR) less than the National Offshore Energy Regulator (NOPSEMA) industry average in Australia, across its operated and non-operated assets.

For its operated assets, Horizon recorded its sixth year with no recordable injuries and a Lost Time Injury Frequency Rate (LTIFR) and Total Recordable Injury Frequency Rate (TRIFR) of 0.

For its non-operated assets, Horizon proactively engages with its operators to ensure asset integrity and promote all aspects of health, safety and environment (HSE) in their operations. Horizon's Board have oversight of all material HSE incidents, through regular incident reporting.

## 0 LTIFR

A Lost Time Injury Frequency Rate of zero across our operated assets

## 0 TRIFR

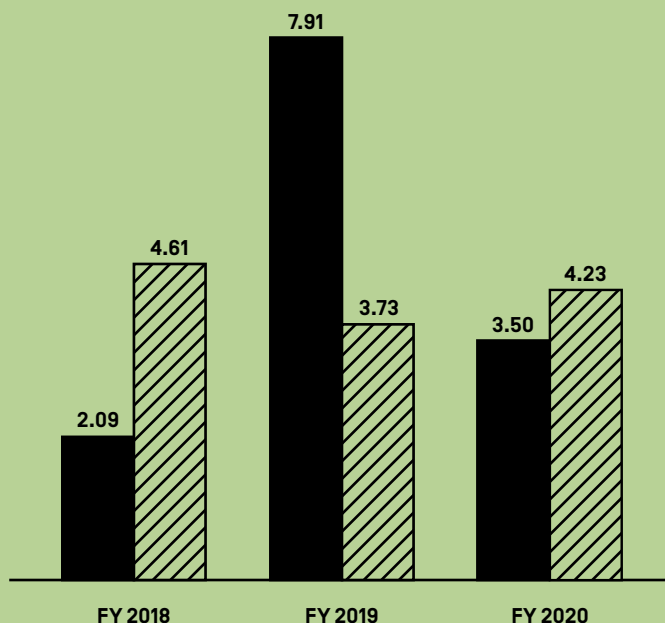
A Total Recordable Injury Frequency Rate of zero across our operated assets

## 0 fatalities

across Horizon's operated assets in PNG and our non-operated assets in China and New Zealand

### Total Recordable Injury Frequency Rate (TRIFR)

■ HZN Group Result  
▨ NOPSEMA Benchmark







Local communities in the Western Province of Papua New Guinea collecting materials for use in revegetation trials and future revegetation activities.

In FY 2020 there were no material spills across Horizon's assets, both operated and non-operated. For its operated assets, monitoring and environmental protection programmes are in place including periodic water, sediment, and atmospheric emissions monitoring along with biodiversity initiatives such as the cetacean spotting and reporting programme in New Zealand.

In FY 2020 Horizon engaged local communities in the Western Province, Papua New Guinea, to assist with trialling revegetation methods to rehabilitate sites of historic activity. The local community contributed through the collection and preparation of materials which are locally and sustainably sourced for use in the revegetation trials and future revegetation activities.

# GOVERNANCE

We are committed to making the right kind of impact and applying Australian rigour to what we do, whether in-country or in our foreign operations, such as China, New Zealand and Papua New Guinea.

## **Commitment to ethical and transparent behaviour in business**

We are committed to making the right kind of impact and applying Australian rigour to what we do, whether in-country or in our foreign operations, such as China, New Zealand and Papua New Guinea. We promote, and expect from our people, a high standard of integrity, and ethical and transparent behaviour in business.

During FY2020, Horizon was the subject of corruption allegations in a series of articles published in the Australian Financial Review relating to its payment to acquire an interest in Petroleum Retention Licence 21 in PNG. Horizon's Board initiated an in-depth investigation, which was overseen by an Independent Board Committee and conducted by Herbert Smith Freehills and Deloitte. As announced on 9 June 2020, Horizon confirms that the investigation did not establish any breach of Australian foreign bribery laws.

We have a zero-tolerance policy on bribery and other forms of corruption. Employees found to have breached our Code of Conduct or our Anti-Bribery policies are subject to disciplinary action which may include termination of their employment. In 2020, Horizon will refresh its Code of Conduct and Anti-Bribery Policies and conduct training on the policies across our workplace.

During FY2020, Horizon's Board also approved a new Whistleblower Policy and training was conducted on the new policy across our workplace. Horizon has engaged Deloitte to run an independent service that enables whistleblowers to report suspected misconduct easily and anonymously.

Horizon is also conducting due diligence on its value and supply chain to identify and assess any incidence of modern slavery. Horizon will report under the Modern Slavery Act 2018.



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## Horizon's Governance

Horizon's Board has five members – two are independent, two are non-executives affiliated with our substantial shareholder and one is our Managing Director and CEO. Through our Diversity Policy, Horizon champions diversity and inclusion recognising a demonstrated business case for a diverse and inclusive workplace. Twenty percent of our Board and twenty-five percent of our executive team are women. We have set targets for FY2021 to increase women on the Board to thirty percent, and maintain women on our executive team at least at twenty percent.

Horizon's Board Committees include an Audit Committee, a Remuneration and Nomination Committee and Risk Management Committee. During FY2020, the Board also established an Independent Board Committee to oversee an investigation into the allegations of corruption first made against the company in the Australian Financial Review on 10 February 2020. The investigation closed on 9 June 2020.

Horizon reports on an 'if not, why not' basis against the ASX Corporate Governance Principles Recommendations (fourth edition). Our Corporate Governance Statement FY2020 is available on our website.

## Risk Management

Horizon's Board, through the Risk Management Committee, is responsible for Horizon's risk management framework. Horizon has in place a risk management framework that applies a robust bottom-up approach to risk identification, assessment and evaluation of financial, operational, environmental, health and safety and social risks; applying principles of AS31000. Complementing Horizon's bottom-up risk management framework is a top-down strategic risk review conducted each year as part of our strategic planning.

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**20%**

percent of our Board  
are women

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**25%**

percent of our executive  
team are women



[Our Corporate Governance Statement FY2020 is available on our website.](#)

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## OUR PRIORITIES

# PEOPLE: EMPLOYEES AND COMMUNITIES

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The success of the projects we deliver relies in turn on our ability to harness the intelligence, imagination and audacity of our people. These values underpin everything we do and our goal is to nurture them by providing a culture where people are proud to work for us.

## Our People

As at the end of FY2020, Horizon employs 18 persons in Australia and Papua New Guinea. We value our employees and believe in providing remuneration structures and benefits that attract high performing people and create a high impact team. In Australia, Horizon has put in place a new paid parental leave policy to recognise the responsibilities of new parents and ensure that valuable members of the company are attracted, retained and feel appreciated.



## DIVERSITY

Oil and gas is traditionally a male-dominated industry. Horizon proactively promotes equal opportunities for women, and sets measurable objectives each year to help women progress into leadership roles.

Horizon has adopted the following measurable objectives for FY2021:

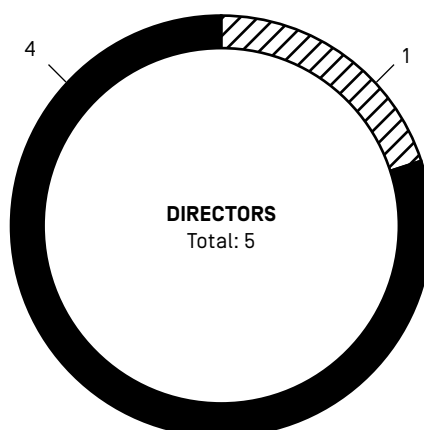
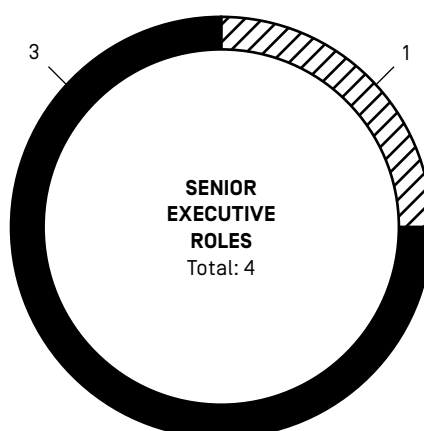
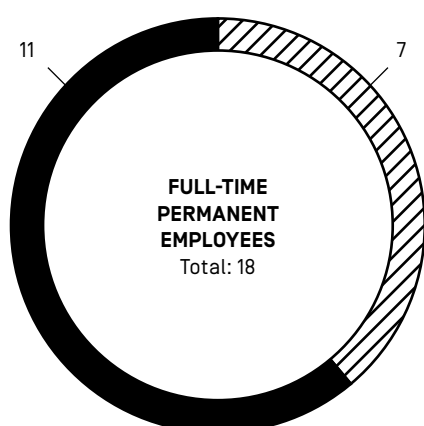
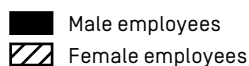
- Increase the representation of women in management roles and under-represented roles with a focus on the structure of its recruitment and selection practices at all levels to ensure a diverse range of candidates are considered
- Encourage training and personal development to assist in furthering career goals
- Maintain a target of at least 20% women employees in senior executive roles
- Achieve a target of 30% women directors on the Board.



[Our Corporate Governance Statement FY2020 is available on our website.](#)



## GENDER DIVERSITY



## Our Community

Horizon operates pre-development and exploration assets in the Western Province of Papua New Guinea. In FY 2020, Horizon continued to:

- Support development of sustainable healthcare infrastructure in the region by material financial and in-kind sponsorship of Australian Doctors International and MercyWorks; and
- Deliver small scale participatory vocational training programs to rural communities within its project areas. This included funding of a guest house in Kiunga whereby young women from remote areas could reside free of charge while completing their schooling or vocational training.

Horizon also assisted customary landowners from within the Elevala/Ketu project impact area to establish a company so that they may be ready to participate in potential business opportunities associated with a future development of Elevala/Ketu.



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## OUR PRIORITIES

# CLIMATE CHANGE

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In July 2017, the Task Force on Climate-Related Financial Disclosures (TCFD) released its final recommendations under the mandate of the G20 Financial Stability Board. These recommendations outline a voluntary framework (TCFD Framework) to promote better disclosure of climate-related financial risks. This section forms part of Horizon's disclosures under the TCFD Framework.





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## Climate-related governance and risk

The Board oversees climate-related opportunities and risks through Horizon's strategic planning and Horizon's risk management framework. Building on its materiality review, Horizon intends to put in place an Environmental, Social and Governance Framework in FY 2021.

### MANAGEMENT'S ROLE

Horizon has a sustainability steering committee which is responsible for identifying, assessing and managing climate-related issues. The sustainability steering committee contains a majority of senior executives and draws on appropriate skills and expertise across the company.

### STRATEGIC PLANNING

One of Horizon's strategic priorities is to drive growth. Horizon holds both a strategic planning workshop and Board strategy meeting every year. As part of the company's strategic planning, Board and management review the strategic opportunities and risks facing the company across long, medium and short time horizons. Horizon forecasts an external outlook for future global energy mix, which it continually re-assesses based on industry forecasts and lead and lag indicators. Horizon also uses commodity price forecasting and scenario modelling [see section 'Resilience of our Portfolio'] to identify and assess future outcomes. Climate change risks and opportunities are part of this decision-making process. Horizon's strategy is informed by this assessment.

Fundamental to Horizon's near-term strategy is to re-populate its portfolio with assets across the exploration-development-production life cycle. Horizon supports the transition to a lower emissions economy. Horizon's future decisions will take into account climate change opportunities and risks, and the company will be targeting assets, which are resilient to climate change-related financial risk.

### RISK MANAGEMENT FRAMEWORK

The Board delegates to the Risk Management Committee responsibility for Horizon's risk management framework. Horizon has in place a risk management framework that applies a robust bottom-up approach to risk identification, assessment and evaluation; applying the principles of AS31000.

Management reports to the Board material and uncontrollable risks twice a year, except for material changes to Horizon's risk profile which are reported to the Board as they arise. Horizon's bottom-up risk management framework focusses on operational and financial risk and is complemented by Horizon's top-down strategic risk review as part of the company's strategic planning.

### ENVIRONMENTAL, SOCIAL AND GOVERNANCE FRAMEWORK FOR FY2021

Horizon has undertaken a materiality review to identify the environmental, social and governance issues that present risks or opportunities to the business. This is our first step to putting in place an Environment, Social and Governance framework. Having undertaken an assessment of material issues to Horizon, it has identified four focus areas: Health & Safety, Governance, Climate Change and People -our employees and our communities.

Based on our materiality assessment, Horizon's objective for FY2021 is to prepare an Environmental, Social and Governance Framework for FY2021 that includes a 3-year action plan with respect to each of these focus areas.

## OUR PRIORITIES

### CLIMATE CHANGE [Continued]

## Climate-related risks & opportunities

Horizon identifies, assesses and mitigates its climate-related risks and opportunities in accordance with its risk management framework.

### HORIZON CLIMATE-RELATED RISKS

RISK TYPE		DESCRIPTION	POTENTIAL FINANCIAL IMPACTS	TIME HORIZON
PHYSICAL RISK	ACUTE & CHRONIC	Severe weather events such as cyclones impacting production in Beibu (CN) and Maari (NZ) fields	Declining revenue due to disruptions to operations and supply chains, increased repair costs, write-off of physical assets damaged by weather events, unable to meet operational budgets and KPIs leading to a decline in expected shareholder returns	Short, medium, and long term
	POLICY & LEGAL	Legislation and regulation to address climate change and risks associated with policy-driven transitions.	Increased compliance costs, changes in demand and pricing, and potential litigation arising from non-compliance. Restrictions on use of carbon-intensive assets, stranded assets.	Medium to long term
TRANSITION RISKS	REPUTATIONAL	Reputational damage arising from association with an asset or company. Damage to reputation by targeted shareholder activism or divestment.	Reduction of shareholder value and declining access to finance.	Medium to long term
	MARKET	Changes in supply, and demand for carbon-intensive assets resulting from new technologies as the market transition to a lower-carbon economy.	Declining revenues, asset write-offs and reduction of shareholder value.	Long term

### HORIZON CLIMATE-RELATED OPPORTUNITIES

OPPORTUNITY	DESCRIPTION	POTENTIAL FINANCIAL IMPACTS	TIME HORIZON
<b>RESOURCE EFFICIENCY</b>	Commercial opportunities arising from new technologies as the market transitions to a lower-carbon economy	Improved operating efficiency and accelerated technological innovation, resulting in lower operating costs for the business.	Medium to long term



## NOTES

Taking into consideration the economic life of our current asset portfolio, Horizon has applied the following time horizons to its identification of climate-related risks and opportunities:



Horizon categorises climate-related risks and opportunities in line with the TCFD framework, as follows:

### TRANSITION RISK

Transitioning to a lower-carbon economy will involve extensive policy, legal, technology, and market changes and risk associated with these changes.

### PHYSICAL RISK

Physical risk can be both acute and chronic. Acute physical risks are event-driven, including increased severity of extreme weather events, such as cyclones, hurricanes, or floods. Chronic physical risks are longer-term shifts in climate patterns (e.g., sustained higher temperatures) that may cause sea level rise or chronic heat waves.

### RESOURCE EFFICIENCY OPPORTUNITY

Reduction of operating costs by improving efficiency across production and distribution processes, buildings, machinery/appliances, and transport/mobility, including broader materials, water, and waste management. Innovation in technology is likely to assist in such reductions.

## OUR PRIORITIES

### CLIMATE CHANGE [Continued]

## Greenhouse gas emissions

The National Greenhouse and Energy Reporting (NGER) scheme established by the National Greenhouse and Energy Reporting Act 2007 is Australia's national framework for reporting greenhouse gas emissions. The NGER scheme requires companies with operational control over facilities, which emit greenhouse gases above specified thresholds, to report their Scope 1 and Scope 2 emissions. Horizon has no oil and gas operations in Australia. Horizon does not have operational control of its oil operations in China and New Zealand. Accordingly, Horizon is not required to report under the NGER scheme.

Whilst Horizon does not report under the NGER scheme, it has applied the methodology from the NGER scheme to calculate its Scope 1, Scope 2 and Scope 3 emissions.

Horizon offsets its greenhouse gas emissions by purchasing carbon credits under the New Zealand Emissions Trading Scheme (NZ ETS). By offsetting its greenhouse gas emissions, Horizon reduces its effective total Scope 1 and 2 emissions by about 72 percent and total Scope 1, 2 and 3 emissions by about 6 percent.

Horizon continues to assess options for emissions reductions and intends to set future emissions targets at its next strategic review.

### INITIATIVES TO REDUCE SCOPE 1 EMISSIONS

Horizon proactively engages with the operators of its production assets in China and New Zealand to reduce Scope 1 emissions. For our Beibu field in China, gas from the WZ6-12 wellhead platform is used for power generation with excess gas commingled with gas from other fields. This integrated gas utilisation approach minimises flaring. For our Maari field in New Zealand, the joint venture has developed a plan under which it considers initiatives to reduce Scope 1 emissions.

## HORIZON'S GREENHOUSE GAS EMISSIONS SUMMARY

SCOPE	DESCRIPTION (PRIMARY CATEGORY)	ACCOUNTING BASIS	FY20 [excl. offsets]	ACCOUNTING TONS/CO <sub>2</sub> e FY20 [incl. offsets]
SCOPE 1	Emissions related to the consumption of fuel gas to produce electricity and the flaring of gas at our non-operated producing fields in China and New Zealand	Equity	60,831	16,821
SCOPE 2	Emissions related to purchased electricity at our office facilities in Sydney, Port Moresby and Kiunga.	Equity	45	45
SCOPE 3	Emissions related to the final use of produced oil from our non-operated producing fields in China and New Zealand	Equity	631,408	631,408
TOTAL EMISSIONS INTENSITY (Scope 1 + Scope 2)		Equity	0.04 tCO <sub>2</sub> e/boe	0.01 tCO <sub>2</sub> e/boe
TOTAL EMISSIONS INTENSITY (Scope 1 + Scope 2 + Scope 3)		Equity	0.47 tCO <sub>2</sub> e/boe	0.44 tCO <sub>2</sub> e/boe



Horizon proactively engages with the operators of its production assets in China and New Zealand to reduce Scope 1 emissions. For our Beibu field in China, gas from the WZ6-12 wellhead platform is used for power generation with excess gas commingled with gas from other fields.





















## OUR PRIORITIES




### CLIMATE CHANGE [Continued]

## Resilience of our portfolio

### SUMMARY OF THE RESILIENCE OF HORIZON'S CURRENT ASSET PORTFOLIO

Horizon's current asset portfolio [excluding PNG<sup>3</sup>] shows resilience to climate change-related financial risk through its economic life, and in the medium-term with value generation in a range of decarbonisation scenarios. The risk of our low-cost Beibu and Maari production assets being stranded in a carbon-constrained world is low. Both fields are expected to remain economic until at least the end of the existing licence periods in 2027/2028.

ASSET	SCENARIO	SHORT-TERM NPV	MEDIUM-TERM NPV	ECONOMIC LIFE	COMMENT
MAARI	IEA Current Policies				Positive oil prices and CO <sub>2</sub> prices impact
	IEA Stated Policies				Positive oil prices partially mitigated by higher CO <sub>2</sub> prices
	IEA Sustainable Development				Asset still shows robust economics with lower medium-term oil prices and higher CO <sub>2</sub> prices
BEIBU	IEA Current Policies				Positive oil prices and CO <sub>2</sub> prices impact
	IEA Stated Policies				Positive oil prices and CO <sub>2</sub> prices impact
	IEA Sustainable Development				Economics slightly lower due to lower medium-term oil prices and higher CO <sub>2</sub> prices

 Positive/negligible impact
  Moderate negative impact
  Significant negative impact

Across each IEA decarbonisation scenarios, Horizon's Beibu and Maari production assets remain NPV positive, and the economic life of the production assets is not shortened.

### CLIMATE SCENARIO ANALYSIS METHODOLOGY

#### [A] Methodology

We have applied each of the IEA scenarios to Horizon's base case modelling<sup>4</sup>, namely IEA forecast commodity pricing and IEA forecast carbon pricing, to evaluate the potential impact on the Net Present Value (NPV) of our assets. We have compared the NPV impact for each IEA scenario with Horizon's base case to determine the resilience of Horizon's current asset portfolio. Resilience was assessed based on whether the IEA scenarios resulted in a material impact to the asset NPV or the current forecast economic life of each project or asset. We also examined the impact over the short and medium term. Horizon assumes that the Beibu and Maari projects are economic until at least the end of the existing licence periods in 2027 and 2028 respectively.

<sup>3</sup> Given that the commercialisation pathway for Horizon's PNG assets is uncertain, these assets have not been included in this scenario analysis.

<sup>4</sup> Beibu and Maari's CO<sub>2</sub> volumes forecasts are based on extrapolation of historical production data and internal assumptions.



## [B] IEA scenarios

Horizon's scenario analysis utilises the IEA's commodity demand and supply data, and associated commodity price forecasts for the following three scenarios:

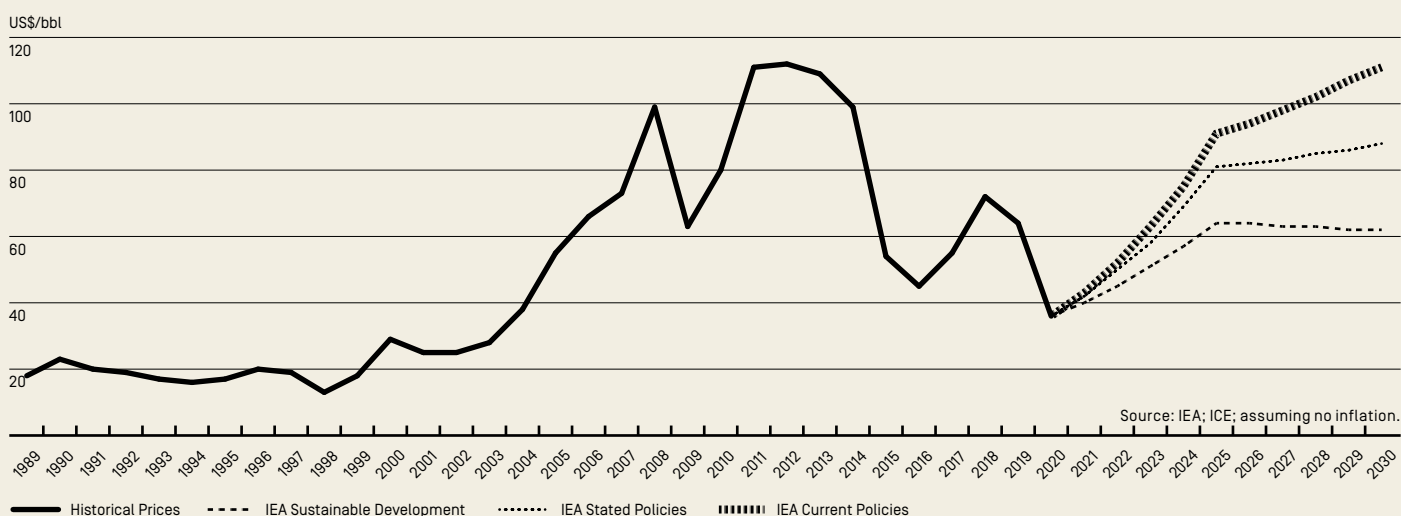
**TABLE 1: 2019 IEA CLIMATE SCENARIOS**

KEY FEATURES	SCENARIOS		
	IEA CURRENT POLICIES	IEA STATED POLICIES	IEA SUSTAINABLE DEVELOPMENT
<b>Overview</b>	Upward march in energy-related emissions and growing strains on almost all aspects of energy security	Rise in emission slows but with no peak before 2040.	Sharp emission cuts are achieved.
<b>Energy demand</b>	Rise by 1.3% each year to 2040.	Rise by 1% each year to 2040; oil demand flattens out in the 2030s.	Compounded annual decline rate of 0.3% to 2040.
<b>Oil Demand &amp; Supply</b>	111.5 mb/d in 2030 121.0 mb/d in 2040	105.4 mb/d in 2030 106.4 mb/d in 2040	87.1 mb/d in 2030 66.9 mb/d in 2040
<b>Gas Demand &amp; Supply</b>	4,940 bcm in 2030 5,891 bcm in 2040	4,720 bcm in 2030 5,404 bcm in 2040	4,264 bcm in 2030 3,854 bcm in 2040
<b>CO<sub>2</sub> emissions</b>	37.4 Gt in 2030 41.3 Gt in 2040	34.9 Gt in 2030 35.6 Gt in 2040	25.2 Gt in 2030 15.8 Gt in 2040

## [C] IEA commodity price forecasts

Horizon's scenario analysis applies IEA forecast commodity prices associated for each scenario.

**FIGURE 1: GLOBAL OIL PRICES BY SCENARIO<sup>5</sup>**



<sup>5</sup> 2020 oil price represents a combination of actual oil prices and Dated Brent Futures prices to reflect the impact by COVID-19 pandemic. Prices from 2025+ have been extrapolated from the IEA 2019 World Energy Outlook. Inflation has been assumed to be minimal.

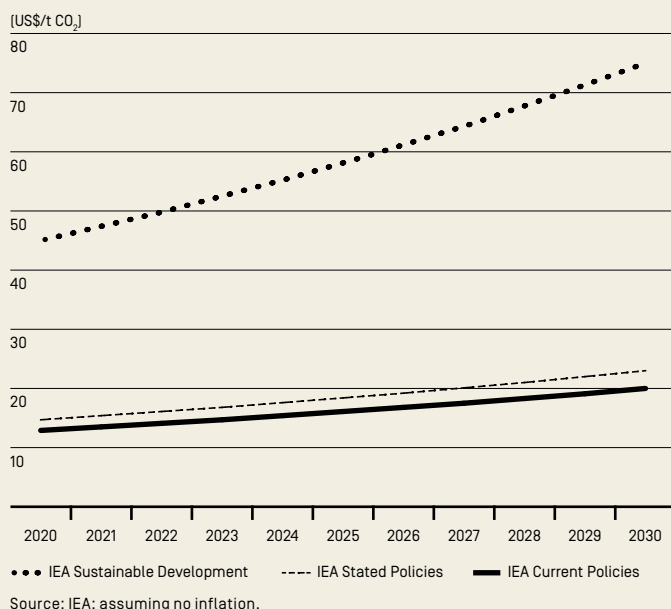
## OUR PRIORITIES

### CLIMATE CHANGE [Continued]

#### [D] IEA carbon price forecasts

Horizon's scenario analysis applies IEA forecast carbon prices associated with each scenario<sup>6,7</sup>.

**FIGURE 2: IEA CHINA CARBON PRICE FORECAST**

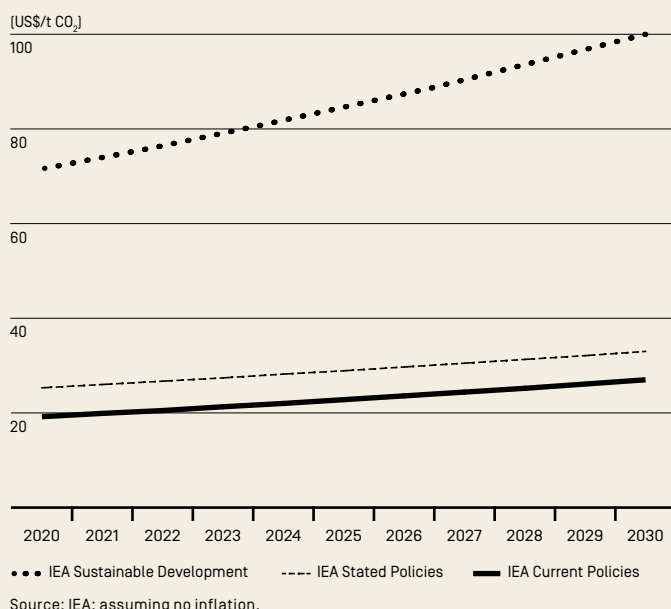


Importantly, Horizon already models carbon pricing in its base case portfolio analysis. Horizon's base case modelling applies a carbon price of NZD 35\$/t CO<sub>2</sub>e inflated at 2% per annum across its producing assets in New Zealand and China. This is based on the assumptions that: (a) New Zealand recently raised carbon pricing under its ETS scheme with a fixed price option lifted to NZD 35\$/t CO<sub>2</sub>e, and (b) that an offset regime applies in China.

#### [E] Limitations of our analysis

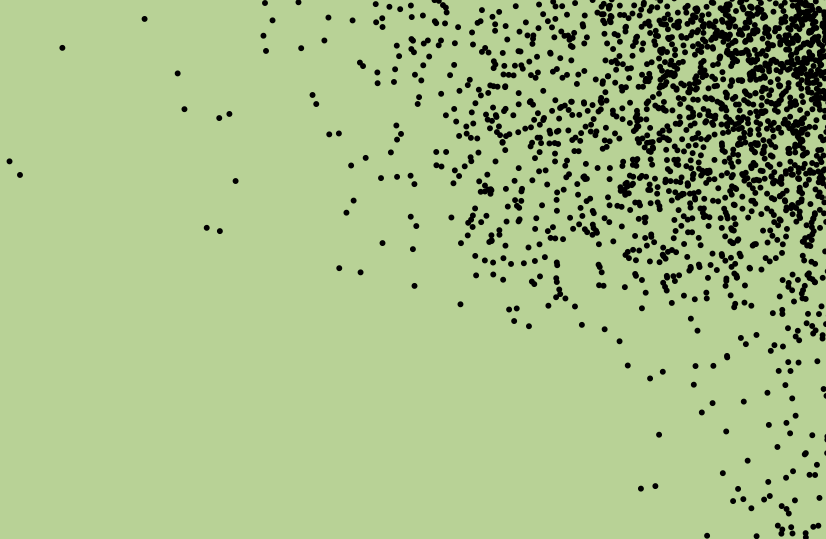
The IEA scenarios are based on reported 2018 data. As a result, the commodity price forecasts do not consider the prices currently being realised in the market, particularly due to the impact of the COVID-19 pandemic. Our current climate scenario analysis also does not include detailed consideration of geopolitical tensions or Gross Domestic Product (GDP) implications that are likely to escalate in cases where decarbonisation is accelerated. Detailed analysis of physical climate risk scenarios is ongoing and will further evolve over future years.

**FIGURE 3: IEA NEW ZEALAND CARBON PRICE FORECAST**




<sup>6</sup> Prices in this figure are based on a linear extrapolation from the CO<sub>2</sub> prices in World Energy Outlook 2019 assuming a China national emissions trading scheme starts from 2020 for the purpose of this report.

<sup>7</sup> Prices in this figure are based on a linear extrapolation from the CO<sub>2</sub> prices in World Energy Outlook 2019.



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