Climate-related Disclosure Meridian Energy Limited **FY22**

Prepared in accordance with the recommendations of the Taskforce on Climate-related Financial Disclosures and informed by indicative Aotearoa New Zealand Climate Standard 1 requirements, as outlined in Te Kāwai Ārahi Pūrongo Mōwaho/External Reporting Board consultations.

AUGUST 2022





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Disclaimer

Quantifications in this report on the financial impacts of climate change (both risks and opportunities) are estimates only and are not intended to constitute earnings guidance. No representation is made as to their accuracy, completeness or reliability. These risks and opportunities may not eventuate and if they do the actual impacts may differ materially from these estimates.





1. Governance

"As Meridian is Aotearoa's largest generator of renewable energy, the Meridian **Board and Audit and Risk Committee accord** climate-related issues the highest priority in decision-making. Our commitment to actively holding Management to account for these issues is a direct reflection of the culture within our organisation and our purpose of Clean **Energy for a Fairer** and Healthier World."

– Mark Verbiest, Chair



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A message from our Chief Executive

In 2019 Meridian Energy was the first company in Aotearoa to release a Taskforce on Climate-related Financial Disclosures (TCFD) report, laying out the climate-related issues affecting our business, how we assessed them and how we would respond. We recognised that climate change was already affecting our business, and that we had a responsibility to our investors and other affected stakeholders to demonstrate we could manage climate-related risks and take urgent action where necessary.

Today we continue to advance, embedding climate-related issues into our decisions on governance, risk management, strategic direction and financial planning. Increasingly we see evidence of real-world climate-related risks through increasing mineral and commodity prices, chronic heatwaves and more. Unsurprisingly, the number of Kiwi businesses now committed to identifying, reporting on and addressing their climate risks has grown and we welcome the coming Aotearoa Climate Standards.

We also recognise that climate-related issues include opportunities and there is a growing awareness that strong and positive climate action is just good business practice. That's why we're working on multiple fronts from decarbonising Aotearoa's industrial heat to pushing ahead with new renewable-generation projects. We believe the growth of low-emissions products, technologies and services will transform business as we know it today – and it will happen faster than we think.

That's why I'm pleased to share our fourth climate-related disclosure, to demonstrate our progress in identifying the risks and opportunities we currently face and the actions we're taking collectively to ensure we remain adaptive and resilient to the physical impacts of climate change.

– Neal Barclay, Chief Executive





1. Governance continued

Board oversight of climaterelated risks and opportunities

Meridian's Board of Directors is responsible for overseeing the management of risks and opportunities for the organisation, including those related to climate change. Two Board committees support the Board in this function for climate change:

- 1. The Audit and Risk Committee by performing reviews of Meridian's primary business risks and its Risk Management Policy.
- 2. The Safety and Sustainability Committee by performing reviews of Meridian's primary sustainability impacts and performance and its Sustainability Policy.

Both committee's meet on a quarterly basis, where they review progress against goals and targets for addressing climate-related issues. For example, a standing Safety and Sustainability Committee agenda item is the 'Sustainability update', which contains a summary of the Group sustainability initiatives including progress and outcomes per initiative for the quarter to date (with tracking against targets where relevant), and plans for the quarter ahead. Both Committee proceedings are reported back to the Board. Additional Committee and Board disclosures occur for specific issues as required – for example, as climaterelated policy changes.

The Board sets objectives and targets for climate-related issues annually and holds Management accountable for implementing these via:

- policies including annual reviews of Meridian's Risk Management Policy, Sustainability Policy and Remuneration Policy
- strategic objectives and performance incentives that are set in the Executive Scorecard each financial year. Objectives are for both shortand long-term objectives.

The Board accesses climate-related expertise from within Meridian, and externally where specialist advice is required. For example, Meridian seeks independent external climate scientist advice for the purposes of informing short-, medium- and long-term assumptions about the physical impacts of climate change on its operations, such as on hydro inflows.

A number of Meridian Board members are also actively involved in Chapter Zero New Zealand¹ – a global network of board directors committed to taking action on climate change and hosted in Aotearoa by the Institute of Directors.

Management's role in assessing and managing climate-related risks and opportunities

The Board assigns climate-related responsibilities to managementlevel positions using the mechanisms outlined above, such as policy and the shared Executive Scorecard. Management reports quarterly via the Board committees on a range of matters consistent with the committee charters. As an example of how Management tables climate-related issues with the Board, during FY22, Management tabled an implications and choices paper with the Safety and Sustainability Committee on the impacts of policy change (the treatment of exotics in the Emissions Trading Scheme [ETS] permanent forestry category) on Meridian's Forever Forests programme².

Meridian Management is responsible for ensuring the business is identifying, assessing and monitoring climaterelated risks and opportunities. Meridian's annual climate-related disclosure process is prepared by Management with a primary governance pathway via the Audit and Risk Committee to the Board. Management's annual Group-level review and update of material, or potentially material, climate-related risks and opportunities includes a stocktake of any significant context changes that could result in either the identification of new risks and opportunities or changes in the assessment of already captured risks and opportunities, that is, a change in the likelihood and/or consequence of the impact. A cross-business management group is called on to contribute to this process, led by the corporate centre Sustainability and Risk functions.

Outside the annual aggregate Group review of climate-related risks and opportunities, individual and material risks and/or opportunities will have more frequent management action(s) and reporting requirements as assessed as required, including to the Board. For example, this is the case for the advancement of Meridian's climaterelated opportunities such as Hydrogen and Process Heat.

An outline of key climate-related issue responsibilities and processes at both Board and Management level is provided in Figure 1.



² Emission removals from the atmosphere through a permanent forest, adopting an initial mixed exotic/native model, transitioning to 100% natives over time.

1. Governance continued

Figure 1. Governance and management of climate-related issues at Meridian Energy Limited

Board of Directors

- Ensures Meridian has appropriate and effective risk and opportunity management practices in place, including for climate-related issues
- Assigns climate-related-issue goals and targets to Management annually via the setting of an Executive Scorecard and agreed strategic objectives and targets
- Receives reports from the Audit and Risk Committee and Safety and Sustainability Committee
- Has access to risk and sustainability reports from Management
- Approves the Executive Scorecard for performance incentives

Audit and Risk Committee

- Reviews top risk reports and new and escalating risk reports from Management, including Climate Related Disclosure reports
- Ensures risks are managed in accordance with Meridian's Risk Management Policy
- Reviews and updates Meridian's Risk Management Policy (ISO 31000) annually. The policy provides the overarching framework for identifying, assessing, managing and monitoring risks, including those relating to climate change

Safety and Sustainability Committee

- Ensures Meridian has an effective sustainability strategy and appropriate reporting and supporting processes and monitoring Management's execution of that strategy.
- Ensures Meridian's broader sustainability commitments and initiatives are managed in accordance with Meridian's Sustainability Policy
- Reviews and updates Meridian's Sustainability Policy annually

Executive Management

- Responsible for ensuring the business is identifying, assessing and monitoring climate-related risks and opportunities in accordance with Meridian's Risk Management Policy, Sustainability Policy and other relevant targets set in the annual Executive Scorecard
- Implements appropriate risk-mitigation strategies as approved by the Audit and Risk Committee
- Implements sustainability initiatives aligned with performance targets and agreed strategic initiatives
- Reports to the Audit and Risk Committee and Safety and Sustainability Committee on a quarterly basis

Key Management roles reporting to **Executive Management**

- Head of Sustainability responsible for Group climate-related issues processes and disclosure and quarterly assurance reporting to the Safety and Sustainability Committee
- Group Risk and Performance Manager responsible for the Group Risk Management Policy
- Group Strategy Manager accountable for ensuring the Board is engaged on strategic planning and choices, including climate-related issues, and Group scenario analysis and modelling
- The responsibilities for conducting risk assessments and ensuring appropriate management actions are taken on climate-related issues are issue and role specific. For example:
- the Head of Energy Solutions is responsible for advancing and delivering options under opportunity Electrification of transport and process heat
- the Generation Commercial Manager is responsible for reviewing and providing recommendations on the update of the Electricity Hedging Policy relating to risk Power system flexibility.





3 Meridian Australia was part of the Meridian Group and sold in January 2022.

2. Strategy

Meridian's planning horizons

Meridian's climate-related disclosure process entails considering scenario impacts in three main time horizons that align with our business planning, capital allocation and risk management timeframes.

These time horizons are defined as: Short term 1–5 years; Medium term 5-10 years; and Long term 10-30 years. We review the appropriateness of these time horizons in our disclosure process based on emerging and relevant context, including climate science. Each climate-related risk and opportunity disclosed here is aligned with the time horizon that is most likely to have a financial impact on Meridian.

Physical and transitional impacts

Meridian has categorised climaterelated risks and opportunities as being driven by either:

- physical impacts arising from climate impacts such as floods and other climate system changes. Physical impacts can be acute (extreme weather event) or chronic (sea-level rise and other gradual changes), or
- transitional impacts that arise as the economy and people transition to a lower-carbon future, such as changes to policy and customer demand that are primarily motivated by climate interests.

Our business model and strategy

Our purpose, Clean Energy for a Fairer and Healthier World, inherently means it is in our DNA to contribute meaningfully to the transition to a net-zero and climateresilient future. Our business model is anchored in creating short-, medium- and long-term value by generating electricity from renewable energy sources (wind, water and sun) and retailing electricity to customers. We have started to build on our electricity-generation heritage with further generation investment, and provide targeted decarbonisation offers in sectors such as transport and process heat. Meridian Group³ today comprises:

- Meridian New Zealand today with predominantly hydro (7) and wind (5) generation assets and approximately 30% of national electricity generation, and a retail business with two brands (Meridian Energy and Powershop) and approximately 15% of national retail volume (excluding New Zealand's Aluminium Smelter [NZAS])
- Flux a subsidiary company providing highly configurable energy software, operating in three countries (New Zealand, Australia and the United Kingdom)
- Dam Safety Intelligence a subsidiary company providing dam-management expertise to dam owners in New Zealand and internationally.

Meridian's strategy includes delivering value through strategic initiatives and targets under the themes champion, optimise and grow – refer to Figure 2 opposite.

Figure 2. Meridian Energy strategy – summary



Clean energy for a fairer and healthier world







Climate-related impacts and influence on financial planning

Meridian undertakes financial planning annually, taking into consideration Meridian's five-yearly strategic targets, 10-year Wholesale Market Outlook (WMO) scenarios and longer-term climate scenarios that extend to a 30-year outlook. Major investment decisions are typically based on a 30-year time horizon (for example, Meridian's recent investment in the new 176MW Harapaki wind farm – currently under construction).

Climate-related risks and opportunities are factored into financial planning and capital allocation by accounting for climate-related transitional impacts in Meridian's WMO and longerterm climate scenarios. For example, factoring in plausible demand increases over time for electricity that is driven by policy impacts and customer demand for transport electrification. These demand pathways then inform things like the scope of Meridian's renewable energy generation pipeline and our assumptions for the planned allocation of capital over time for future investments. Climate-related risks and opportunities are also factored into funding decisions on a project-by-project basis, for example, where relevant assessing potential flood risks as part of landacquisition due diligence under different climate scenarios.

Transition and adaptation in our strategy

Meridian's contribution to the transition to a net-zero emissions future is a core part of our strategy, by leveraging our renewable energy advantage to fasttrack New Zealand's decarbonisation (Figure 4). Meridian's renewable development pipeline, and associated future investment, investment in the construction of the new Harapaki wind farm and process heat and transport electrification offers are all examples of our delivering against our transition plan.

We have also developed a roadmap to halve our FY21 operational business emissions by FY30 (refer to the Metrics and targets section here for full details). Our Half by 30 is a commitment on which our Board Safety and Sustainability Committee receives quarterly progress updates. Management has established an Executive level Half by 30 Governance Group to ensure the effective prioritisation and allocation of resource against agreed initiatives that contribute to the overall Half by 30 target. More detail on Meridian's Half by 30 roadmap is outlined in the Metrics and targets section.

Our financial plans capture the impacts of our committed and likely transition activities.

Our approach to adaptation is to ensure that our assets and services remain resilient to the physical impacts of climate change by assessing risks in our current operations and putting in place mitigations (refer to the 'More intense extreme rainfall events in hydro catchments' risk in Table 1, for example), and completing due diligence on business growth activities where relevant. Our financial plans and any projectspecific requirements allow for associated assessment and mitigation costs.

Our climate scenarios, methodology and assumptions

Meridian utilises scenario analysis to identify potential climate risks and opportunities and inform our strategic planning more broadly. The time horizon for our scenario analysis extends to 30 years, which we use for making decisions on new investments, such as those for new renewable energy generation.

We have utilised two central scenarios to explore the strategic and operational implications of climate change for our business – Evolution and Revolution. The scenarios assume the same level of temperature increase between now and 2050, as the physical impacts of climate change over that time period (including the availability of water and wind energy) are much the same regardless of the temperature-increase scenario chosen from the Intergovernmental Panel on Climate Change, that is, the 1.5°C-4°C warmer worlds are not significantly different.

However, a 4°C warmer world in 2100 would present significant challenges, in terms of both its potential physical impacts on our dam structures and the uncertainty in how our society would function in those circumstances and what an electricity business would look like as a result. Meridian seeks the advice of an independent climate scientist, at least annually, to ensure that our assumptions on the physical impacts of climate change are current and appropriate. This has informed the assumptions in our core scenarios.

Our scenario modelling uses historical weekly hydro inflow sequences - this historic data represents a distribution of possible hydro inflow profiles for a given year. These hydro inflow distributions are then applied to future years, but with adjustments applied for climate change effects (intensifying seasonality and volatility). The scenarios each use an average hydro inflow profile from the distribution of future climate-change-adjusted hydro inflow sequences. Extreme future climate-change-adjusted hydro inflow sequences may be used for targeted analysis if needed.

Acknowledging the short-, mediumand long-term time horizons adopted for this disclosure, our scenarios are primarily distinguished by assumptions associated with transitional impacts. For example, the market and regulatory contexts and assumptions between scenarios (such as the electric-vehicle demand outlooks) are notably different.

These are outlined opposite.

Evolution: This is an 'adaptive business as usual' scenario in which the world is on track to warm by more than 4°C this century. Under this scenario, no major policy changes have been enacted, no disruptive regulatory constraints have been placed on New Zealand's electricity market, and there have been no significant industry disruptions. It describes moderate improvements in energy efficiency, a moderate increase in demand due to population growth and a moderate increase in demand from the electrification of transport and industrial heat conversion. Key assumptions include the following:

- Familiar economic performance metrics: a steadily expanding economy, a population with a modest but declining birth rate, declining household density and a more efficient use of electricity and energy.
- Climate change impacts: seen in seasonal wind and inflow patterns and increased volatility (e.g. significant rainfall events), increased summer air-conditioning (AC) cooling, reduced winter AC heating, increased summer irrigation pumping load.
- Policy responses and private and corporate attitudes encourage the steady uptake of low-carbon initiatives.
- Energy decarbonisation efforts are steady, adding modestly to electricity demand and to a limited extent offsetting the closure of NZAS in 2025.
- Uptake of distributed solar photovoltaic technology (PV), electric vehicles (EVs) and battery energy-storage systems (BESS) is steady, but has a modest powersystem impact.
- Flexibility is increasingly important and some growth is seen in a new economic demand response, North Island grid BESS deployment, and a modest increase in hydro-system flexibility.
- Significant new grid generation is required, driven by plant retirement and demand growth. Although new generation is primarily renewable, there is still a place for thermal energy.
- Near-term price and availability pressures exist in the gas industry. In the long term, modest thermal fuel prices and carbon costs are recovered in the peaking market.







Revolution: In contrast, our 1.5°C–2°C scenario assumes substantial regulatory intervention to decarbonise transport and process heat rapidly in New Zealand. Under this scenario, demand grows at an unprecedented and potentially disruptive rate, but may be offset by contractions in agriculture and international tourism. Key assumptions include the following:

- Less certain economic performance metrics reflecting the increased challenges of global efforts to decarbonise. Underlying electricity demand growth is low, with more effort dedicated to using energy efficiently.
- Climate change impacts: seen in seasonal wind and inflow patterns and increased volatility (e.g. significant rainfall events), increased summer air-conditioning (AC) cooling, reduced winter AC heating, increased summer irrigation pumping load
- The policy response and private and corporate attitudes are aligned and all are strongly motivated to decarbonise quickly.
- There is significant decarbonisation and electrification in the wider economy, with transport and industrial process conversion contributing strongly to electricity demand, more than compensating for the closure of NZAS in 2025.
- Strong growth in distributed solar PV, EVs and BESS, with growing impacts on the power system.
- Flexibility becomes crucial and strong growth is seen in a new economic demand response, North Island grid BESS deployment and a significant increase in hydro-system flexibility.
- All new generation is renewable, benefiting from research-driven cost reductions. Grid-scale battery storage provides reserve and price arbitrage as thermal plant retire.
- Near-term price and availability pressures in the gas industry exist. In the long term, much higher thermal fuel prices and carbon costs result in existing thermals struggling to recover costs and closing at end of life.

In addition to our two core scenarios we have supporting scenarios that we use as required to test our strategic choices, support the identification of climate-related risks and opportunities, and enable financial quantification where relevant. The scenarios include:

- period)
- impacts of climate change on both supply and demand
- electricity-generation mix.

Meridian is awaiting the first update on global temperature and rainfall projections since 2014, as the Coupled Model Intercomparison Project 6 results start to be released. The National Institute of Water and Atmospheric Research (NIWA) is working on these outputs this year, and the first downscaled temperature and rainfall projections for New Zealand since 2014 are due to be released in early 2023. River-flow projections will follow this, and will be used in our modelling to explore out to 2060.

Meridian notes the encouragement and potential benefits of developing local sector scenarios, and has engaged with potential champions for sector-scenario development in FY22. We will continue to apply our own scenarios, with their application and use already being integrated with our strategic-planning and business-decision processes.

A summary of Meridian's actual and potential climate-related risks and opportunities is provided in Tables 1 and 2.

• lower electricity demand: This version of our Evolution scenario is intended to explore the potential impacts on electricity demand of a significant disruption to industry as a result of physical or transition-related impacts of climate change (for example, the dairy industry phasing out in New Zealand over a 10-year

no climate change: This version of our Evolution scenario removes the physical

thermal counterfactual: This scenario imagines a New Zealand where energy security is prioritised above the other factors, affordability and sustainability, in the energy trilemma. Here gas remains in the electricity generation mix to provide some flexibility and energy security. An underpinning principle is that a 100% renewable electricity target is deprioritised, with a new focus on an economy-wide renewable energy target, allowing gas to remain in the





The resilience of our strategy to climate scenarios

The Meridian Board and Management hold an annual strategy review that includes outside-in and forward-looking strategic planning, taking into account any changes to climate scenarios. Meridian's two core climate scenarios, **Evolution and Revolution (outlined** above), describe plausible and distinct futures with different assumptions of the potential climate-related impacts. The annual strategy review informs choices for Meridian's existing strategic initiatives and targets, and the adoption of any shifts from them. Core to the review is ensuring that the strategy is resilient to plausible futures, including different climate-related impacts.

By and large, Meridian considers climaterelated transitional impacts to be netpositive for our business model and strategy, and that climate-related physical impacts should be managed on an issuespecific basis. For example, we have not identified a climate-related physical issue that materially affects our business model and strategy today, but we do note that we will very likely be affected by the physical impacts of climate change such as changes to inflow profile opportunity outlined in Table 2.

We assess climate-related actual and potential impacts at both the individual risk and opportunity level and an aggregate level, considering impacts on our business model and strategy. At the Meridian Group and aggregate level, we have assessed our business model and strategy to be resilient to the climate scenarios we have assessed, and we have identified mitigating actions to improve resilience at the individual risk/ opportunity level, as outlined in Tables 1 and 2.

Climate-related opportunities and risks

As referenced in the Risk management section of this disclosure. Meridian has an annual review process for its climaterelated disclosures, which is completed via initial group workshops and further risk/opportunity-specific meetings.

For example, during FY22 a group of representatives from across the business were brought together for two workshops in order to apply their knowledge and expertise to this process. The business units represented were: Strategy and Risk, Wholesale, Generation, Development, Retail, and Office of the Chief Executive. The workshop agenda items included: climate-related disclosures refresh: review of the climate risk and opportunity register; external context developments (relevant to identifying new risks/opportunities or the impacts on already identified risks/opportunities); and requests for individual reviews of the likelihood and consequences of potential (or actual) risks and opportunities.

The TCFD framework was applied in these workshops to aid in the identification of relevant context developments and risks and opportunities (refer to Figure 3). Individual reviews were assigned based on subject-matter expertise, and after completion the group re-convened to develop a shared understanding on those items that would be advanced to more detailed assessments. The prioritisation of this was set at any risks/opportunities having initial consequence ratings of serious or higher, or likelihood ratings of unlikely or higher (refer to Figure 4 in the Risk management section).

Transition Risks Policy & Legal Technology Market Reputation **Physical Risks** Acute Chronic Revenues

Expenditures



Figure 3. Climate-related risks, opportunities and financial impacts - TCFD 2021⁴

assessments occurred in the form of targeted meetings with the relevant business representatives to estimate the potential (or actual) financial impact(s) and ensure management actions (for example to mitigate, accept or control risks) were appropriate. The top climate-related risks and opportunities, summarised in Tables 1 and 2, are those confirmed as having potential impacts of sufficient materiality to warrant disclosure here (a final consequence rating of serious or higher, and a likelihood rating of unlikely or higher - refer Figure 4). Revenue impacts relating to generation assets have the potential to impact asset valuation, as noted in our FY22 Annual Report financial statements, which include sensitivity analysis on asset value change with variations to key inputs (climate-related impacts being one potential influence). No risks or opportunities identified are considered to have impacts warranting material changes to our business model or strategy, based on the mitigation actions in place.

Further risk- and opportunity-specific







Table 1. Climate-related risks

Risk	Туре	Assessment Consequence & likelihood	Time horizon	Financial implications	Quantification	Methodology	Management actions
More intense, extreme rainfall events in hydro catchments ⁵	Physical	Serious & possible	Long 10–30 years	Increases in intensity of extreme rainfall events may require the lowering of dam water levels (reducing assets' generating capacity) and/or the strengthening of dam structures. Actual damage to dam structures causing business interruption	-\$7 to -\$11 million (Potential)	Estimated potential financial impact is an annualised figure over a 30-year time horizon of estimated civil construction costs and negative revenue impacts. Damage to dam structures and the cost of business interruption from an extreme event of sufficient scale is not included in the quantification as we consider this risk	Probable maximum flood (PMF) values are reviewed once every 10 years to incorporate climate change. PMF values in the New Zealand Society on Large Dams' Dam Safety Guidelines estimate a hypothetical 'most severe reasonable possible flood' per catchment. Last reviews: 2016 for Waitaki, 2017 for Waiau, both with expert independent review. PMF values inform our approach to ensuring dam safety under extreme flood and seismic loads. Advocacy to independent external consultants responsible for PMF calculations that they take into account the ongoing scientific research into how extreme
				(restriction on generating) is considered extremely unlikely.		very low due to our extensive dam safety- management approach.	rainfall events affect our catchments, and the extent to which climate change will contribute to that going forward. Insurance in place for both physical damage and business interruption after
Power system flexibility ⁶ – increased electricity-spot- price volatility as NZ renewable generation proportion increases	Transitional	Serious & possible	Medium 5–10 years	Increased costs of commodity risk management due to increases in the percentage of grid-connected renewable electricity generation and capital expenditure costs associated with investing in new flexibility options.	-\$20 to -\$80 million (Potential)	Estimated potential financial impact is a high-level estimate of annual costs, and informed by the actual costs of current risk instruments and internal views on the magnitude of potential changes to electricity spot price volatility and investments that may be required to provide flexibility.	 30 days, resulting from damage to generation assets. Mature commodity risk framework in place (Electricity Hedging Policy) that includes specific limits on allowable exposure to spot electricity price risk. Within that framework the cost of mitigation is traded off against the impacts of accepting the risk. Actively investigating new options to provide flexibility in place of that provided by thermal, such as hydrogen and large-scale batteries. Supportive via submissions on the focus to increase renewable energy consumption to 50% by 2035, rather than a 100% renewable electricity-generation target.
Technology and supply chain cost increases	Transitional	Serious & possible	Short 0–5 years	Installed capital cost of solar- and wind-generation technology is expected to fall, informing our modelling assumptions. There is a risk that these savings will not be realised due to increased global demand for materials as supply scales to meet this. Furthermore, this demand surge introduces possible environmental and social standard risks requiring investments in supply-chain transparency, and possible cost premiums from sole sourcing where required to mitigate the risks.	-\$9 to -22 million (Potential)	Annualised over 10 years – a sole sourcing premium applied to an assumed proportion of applicable renewable development pipeline projects. Additionally, the costs associated with a responsible sourcing capability build and due-diligence activity.	Ensure all development contracts are negotiated and ready for execution prior to final investment decisions. Commitment to build procurement capability, advance <i>Modern Slavery</i> <i>Statement</i> actions, invest in supply-chain transparency and take action in mineral re-purposing, recycling and recovery initiatives.

Meridian's 2022 Corporate Government Statement captures the catastrophic events risk, including flooding and current mitigations in place to reduce the impacts of such an event.
 The market supply risk in Meridian's 2022 Corporate Government Statement overall risk faced in moving to 100% renewable electricity, including the eventual increase in electricity spot-price volatility as identified here.





Table 2. Climate-related opportunities

Opportunity	Туре	Assessment Consequence & likelihood	Time horizon	Financial implications	Quantification	Methodology	Management actions
Sustainability leadership and environmental, social and governance (ESG) performance	Transitional	Major & possible	Short 0–5 years	Meridian maintains a valuation premium through its sustainability leadership position.	Potentially major financial impact; however, significant uncertainty associated with any quantification method (actual)	There is extreme uncertainty associated with quantifying ESG performance, so we have opted not to present a specific figure, but rather indicated a potential upper magnitude of financial consequence (relative to other risks and opportunities). The method adopted to assess the relative consequence of this opportunity included an estimation of enterprise value (EV) associated with the estimated value premium for climate- focused sustainability leadership. A comparison of EV/EBITDA across a small number of comparable entities indicates that a value premium exists for sustainability leadership. Applying that premium to earnings, and applying a further percentage weighting applicable to climate-specific leadership, a net EV differential is estimated as an actual financial impact today.	Develop and deliver new climate-focused initiatives such as the renewable development pipeline and the new Harapaki wind farm currently under construction. Deliver and disclose progress again business emission reductions – Half by 30 (refer to Metrics and targets) Maintain wider ESG performance to retain inclusion in the S&P Global Dow Jones Sustainability Index.
Annual and seasonal hydro inflow profiles improving generation and demand alignment	Physical	Serious & possible	Long 10–30 years	Projected changes to inflow profile are likely to align with projected changes in electricity demand.	+\$12 to +\$58 million (Potential)	Estimated potential financial impact is an annualised figure modelled over a 30-year time horizon. This is calculated using an assumed increase in price participation of 2%–10% by 2050 for Meridian generation assets and the relative margin uplift under Revolution and Evolution demand outlooks. The price-participation improvement would be a result of Meridian's electricity supply and demand better aligning during wholesale market trading – largely hydroelectricity assets would be expected to achieve higher returns as a result of the changes to the hydro inflow profile from climate change. There is significant uncertainty in this calculation.	Wholesale market team manages the changing inflow profile using a market- optimisation approach informed by weekly inflow forecasts and analyses of short- to medium-term weather patterns.

Sustainability leadership and environmental, social and governance (ESG) performance	Transitional	Major & possible	Short 0–5 years	Meridian maintains a valuation premium through its sustainability leadership position.	Potentially major financial impact; however, significant uncertainty associated with any quantification method (actual)	There is extreme uncertainty associated with quantifying ESG performance, so we have opted not to present a specific figure, but rather indicated a potential upper magnitude of financial consequence (relative to other risks and opportunities). The method adopted to assess the relative consequence of this opportunity included an estimation of enterprise value (EV) associated with the estimated value premium for climate- focused sustainability leadership. A comparison of EV/EBITDA across a small number of comparable entities indicates that a value premium exists for sustainability leadership. Applying that premium to earnings, and applying a further percentage weighting applicable to climate-specific leadership, a net EV differential is estimated as an actual financial impact today.	Develop and deliver new climate-focused initiatives such as the renewable development pipeline and the new Harapaki wind farm currently under construction. Deliver and disclose progress again business emission reductions – Half by 30 (refer to Metrics and targets) Maintain wider ESG performance to retain inclusion in the S&P Global Dow Jones Sustainability Index.
Annual and seasonal hydro inflow profiles improving generation and demand alignment	Physical	Serious & possible	Long 10–30 years	Projected changes to inflow profile are likely to align with projected changes in electricity demand.	+\$12 to +\$58 million (Potential)	Estimated potential financial impact is an annualised figure modelled over a 30-year time horizon. This is calculated using an assumed increase in price participation of 2%–10% by 2050 for Meridian generation assets and the relative margin uplift under Revolution and Evolution demand outlooks. The price-participation improvement would be a result of Meridian's electricity supply and demand better aligning during wholesale market trading – largely hydroelectricity assets would be expected to achieve higher returns as a result of the changes to the hydro inflow profile from climate change. There is significant uncertainty in this calculation.	Wholesale market team manages the changing inflow profile using a market- optimisation approach informed by weekly inflow forecasts and analyses of short- to medium-term weather patterns.





Opportunity	Туре	Assessment Consequence & likelihood	Time horizon	Financial implications	Quantification	Methodology	Management actions
New markets – green hydrogen. Driven by international demand and hard-to-abate sectors.	Transitional	Serious & possible	Long 10–30 years	Opportunity to redeploy the current NZAS load following possible closure. Green hydrogen to also provide electricity demand response.	+\$95 million (midpoint) (Potential) -\$1 million (Actual)	Assumes 600MW of generation is deployed to a green hydrogen facility, following closure of the Tīwai smelter. Assumes that contract price exceeds current NZAS contract price. Also assumes that demand response is provided by the green hydrogen facility, which reduces a requirement for some hedge contract(s). There is significant uncertainty in this estimate.	Green Hydrogen project progressing ⁷ . Feasibility study, registrations of interest and requests for proposals all completed. Preferred partners selected to advance a commercial proposition. Retain option for any potential investment to provide electricity demand response back to the electricity system during dry years ⁸ .
Electrification of transport and process heat ⁹	Transitional	Serious & possible	Long 20–30 years	Increased electricity demand may enable Meridian to grow our electricity-generation and -retail businesses.	+\$10 to +\$43 million (Potential) Minor or negligible (Actual)	Estimated potential financial impact is an annualised figure modelled over a 30- year time horizon. This is calculated using assumed new electricity demand profiles for these use cases under Evolution and Revolution scenarios and applying a possible margin range. There is significant uncertainty to this calculation. Actual financial impact of process heat electrification over FY22 is negligible with focus on securing new demand. Over the coming financial year, we expect the majority of committed projects (50GWh) to be realising new revenue in the NZ\$2–3 million range. The actual financial impact of transport electrification in FY22 is minor and primarily associated with the delivery of AC chargers to market.	 Pursuing alternative forms of electricity demand across workstreams focused on the electrification of industrial heat and transport. Initiatives of note include: Certified Renewable Energy (CRE) offer and decarbonisation fund Process heat electrification offer Zero EV charging network EV pricing plan offer. Maintain a pipeline of development options, new generation build committed.
Increase demand from agriculture irrigation and summer cooling	Physical	Large & possible	Long 10–30 years	Increased electricity demand may enable Meridian to grow its electricity-generation and -retail businesses.	+\$4 to +\$9 million (Potential)	The estimated potential financial impact is an annualised figure modelled over a 30-year time horizon. This is calculated using the difference between the modelled 'no climate change' scenario and the Evolution scenario. There is significant uncertainty to this calculation.	To respond to the potential requirement for new renewable generation, Meridian maintains a pipeline of development options.

		& likelihood					
New markets – green hydrogen. Driven by international demand and hard-to-abate sectors.	Transitional	Serious & possible	Long 10–30 years	Opportunity to redeploy the current NZAS load following possible closure. Green hydrogen to also provide electricity demand response.	+\$95 million (midpoint) (Potential) -\$1 million (Actual)	Assumes 600MW of generation is deployed to a green hydrogen facility, following closure of the Tīwai smelter. Assumes that contract price exceeds current NZAS contract price. Also assumes that demand response is provided by the green hydrogen facility, which reduces a requirement for some hedge contract(s). There is significant uncertainty in this estimate.	Green Hydrogen project progressing ⁷ . Feasibility study, registrations of interest and requests for proposals all completed. Preferred partners select to advance a commercial proposition. Retain option for any potential investment to provide electricity demand response back to the electricity system during dry years ⁸ .
Electrification of transport and process heat ⁹	Transitional	Serious & possible	Long 20–30 years	Increased electricity demand may enable Meridian to grow our electricity-generation and -retail businesses.	+\$10 to +\$43 million (Potential) Minor or negligible (Actual)	Estimated potential financial impact is an annualised figure modelled over a 30- year time horizon. This is calculated using assumed new electricity demand profiles for these use cases under Evolution and Revolution scenarios and applying a possible margin range. There is significant uncertainty to this calculation. Actual financial impact of process heat electrification over FY22 is negligible with focus on securing new demand. Over the coming financial year, we expect the majority of committed projects (50GWh) to be realising new revenue in the NZ\$2–3 million range. The actual financial impact of transport electrification in FY22 is minor and primarily associated with the delivery of AC chargers to market.	 Pursuing alternative forms of electricity demand across workstreams focus the electrification of industrial heat and transport. Initiatives of note include Certified Renewable Energy (CRE) offer and decarbonisation fund Process heat electrification offer Zero EV charging network EV pricing plan offer. Maintain a pipeline of development options, new generation build comm
Increase demand from agriculture irrigation and summer cooling	Physical	Large & possible	Long 10–30 years	Increased electricity demand may enable Meridian to grow its electricity-generation and -retail businesses.	+\$4 to +\$9 million (Potential)	The estimated potential financial impact is an annualised figure modelled over a 30-year time horizon. This is calculated using the difference between the modelled 'no climate change' scenario and the Evolution scenario. There is significant uncertainty to this calculation.	To respond to the potential requirement for new renewable generation, Meridian maintains a pipeline of development options.

The New Zealand Hydrogen Opportunity, McKinsey & Co. 2021, www.southerngreenhydrogen.co.nz
 As outlined in the adverse hydrological conditions risk in Meridian's 2022 Corporate Government Statement.
 Meridian's 2022 Corporate Government Statement captures the current demand risk, specifically as it relates to the closure of Tīwai Point, and current mitigations in place to reduce the impacts of such an event.





3. Risk Management

Identifying and assessing climate-related risks and opportunities

Meridian staff, including sustainability, strategy, energy modelling and risk specialists, stay up-to-date with climate-related research, conduct relevant risk assessments, ensure that any required mitigating actions are embedded into the business, and perform climate-related scenario analysis and ensure our strategic choices are resilient under these scenarios.

Meridian's climate scenario modelling and analysis uses in-house analytical models and inputs based on expert. independent climate science advice, and applies long-term scenarios of supply-and-demand balance in the New Zealand electricity system. The inputs are used to inform our scenario analysis and modelling, and include projected changes in precipitation, wind, temperature and extreme events. coupled with generation and electricity market data. The outputs allow us to analyse a range of potential futures and explore implications for Meridian's assets, operations, financial plans and strategic choices. Meridian also watches with interest the development of sector scenarios that may add to the set of scenarios considered for the purposes of assessing the resilience of our business model and strategy.

Building on the above foundations, Management has an annual process for identifying and assessing climaterelated risks and opportunities, consisting of a workshop series involving key representatives from across the business. These representatives have the collective knowledge, expertise and portfolio responsibilities to identify potential material climate-related risks and opportunities meaningfully. The annual process is led by the corporate centre Sustainability and Risk functions.

Key components of the annual review include:

- capturing any context change, in particular major assumption changes to transitional and physical impact drivers (such as any climate-related policy changes and/or potential hydro inflow profile changes)
- assessing the impacts of any context change on existing risks and opportunities (assessments of likelihood and/or consequence and/ or management actions required), and aiding in the identification of new risks and opportunities.

All value chain stages are in scope for the identification and assessment of climate-related risks and opportunities, and as a result Meridian has identified items that are customer/demand driven through to their potential impacts in our supply chain.

Meridian applies a likelihood and consequence assessment to each climate-related risk and opportunity, including the relativity between them refer figure 2. A central register is held and maintained by Management for all identified climate-related risks and opportunities, including details such as their alignment with the most relevant time horizon, the date of last review and management actions taken and/or planned.

Meridian's climate-related disclosure process entails considering scenarios across a 30-year time horizon to 2050. We believe this mid-century horizon is appropriately aligned with our long-term business planning and risk-management timeframes, which are defined as: Short term 1–5 years; Medium term 5–10 years; and Long term 10–30 years. We regularly review the appropriateness of these time horizons in our disclosure process based on emerging and relevant context, including climate science.

Outside the annual review process, Management responds to emerging issues, including regulatory issues, based on assigned responsibilities within core roles. For example, any climate-driven policy announcements (such as the recent announcement of an increase in funding under the 2022 Emissions Reduction Plan for the Government Investment in Decarbonising Industry Fund), prompt a review of their impacts and implications within Meridian, which is escalated to the Board if required, outside the annual regular process.



Note: Extreme = Orange, High = Dark Blue, Medium = Blue, Low = Green.



ed Disclosure FY22 Limited Clin Meridian



3. Risk Management continued

Managing climate-related risks and opportunities

Meridian's annual climate-related disclosure process also includes the assessment and recording of any management actions completed and/ or required in response. Outside the annual aggregate Group review of climate-related risks and opportunities, individual and material risks and/or opportunities will have more frequent management action(s) and reporting requirements assessed as required, including to the Board. For example, this is the case for the advancement of Meridian's climate-related opportunities such as Hydrogen and Process Heat, and role-specific objectives and performance incentives will be adopted where assessed as appropriate.

Within the bounds of Meridian's overarching Risk Management Policy, we have relied on recommendations of the TCFD, and the indicative Aotearoa New Zealand Climate Standard 1 (NZ CS 1) requirements, for identifying and assessing climate-related risks and opportunities.

The use of a consequence vs likelihood heat map tool to determine the relative significance of climate-related risks and opportunities is primarily driven by their potential and/or actual impacts on enterprise value. Regarding thresholds, Meridian has adopted a conservative approach for climaterelated disclosures, disclosing on some risks and opportunities that are well below what would be considered material by New Zealand Stock Exchange requirements.

Meridian looks forward to aligning its assessment process and disclosure thresholds with the New Zealand Climate Standards when finalised. Levels of risk are categorised as extreme, high, medium or low (consistent with Meridian's Risk Management Policy). Again, risks are reviewed on at least an annual basis to ensure they reflect material changes in our knowledge, business strategy and operating environment. Decisions to mitigate, transfer, accept or control are made on a risk-specific basis and are informed by:

- viable mitigation and/or control options, including developing an informed view of the effectiveness and resourcing requirements to reduce the likelihood and/or impacts of a risk
- views on the most appropriate entity and/or individual to take mitigation action(s) for any given risk
- materiality and likelihood in the case of accepting a risk

Through the processes described above, we have identified a range of climate-related risks and opportunities. An overview of the most material physical and transitional financial impacts is provided in tables 1 and 2. All additional risks and opportunities are documented and managed within Meridian.

Climate-related risks and integration with Group risk management approach

Meridian's Risk Management Policy provides the overarching framewo assessing, monitoring and managin risks, including climate-related risk The policy meets ISO 31000:2018 Risk management – Guidelines (Second edition). An overview of the policy, which is available on ou website¹⁰, outlines the categories o risk considered, such as safety and wellbeing, financial, environmenta reputational and strategic risks. At operational level, Meridian's Execu Team assesses and monitors climat related risks and opportunities in accordance with the levels of risk assigned through the Risk Manage Policy (risk response categorisation shown in Figure 5). Meridian's clim related risk/opportunity heat map (Figure 4) is structured consistently the Group Risk Management appro and at this stage thresholds associa with each consequence rating have been tailored to suit climate risk assessment purposes. Again, Meridian plans to align assessment thresholds with any final requirements in NZ CS 1.

Further to risk, Management has an assurance function that is performed by the Risk and Assurance team. The programme of assurance work is agreed with the Audit and Risk Committee and includes a consideration of Group responsibilities, such as climate-related disclosures.

Figure 5. Level of risk categorisation and response as determined by Meridian's Risk Management Policy.

	Risk rating	Low	Medium	High	Extreme
y rk for ng	Ownership	Manager or subject- matter expert	General Manager together with their direct report	General Manager	Chief Executive
rs. Ir of	Resourcing	Staff and resources applied based on risk/ reward assessment	General Manager together with their direct report	Priority focus of staff and resources reducing risk and building mitigation in response	High-priority focus with significant organisational effort directed at moving risk out of the Extreme rating
l, an Itive te-	Reporting	Business units oversee and review actions	Risk-review process with GM and their direct reports to ensure adequate assessments of risk and treatments are in place	Biannual formal reporting to Audit and Risk Committee meeting	Monthly reporting to the Board
ement ns are ate- / with oach,	Monitoring	Business units monitor improvement initiatives via quarterly reviews.	Monitoring undertaken by peers or self-monitoring as appropriate	Risk owner (GM) to select most appropriate monitoring (peer or external) to ensure the steps we are taking are necessary and sufficient	Risk owner (CE) needs to consider whether we need independent advic to provide assurance tha the steps being taken ar necessary and sufficient
ated e					







4. Metrics and Targets

In FY21 we evolved our climate-related disclosure journey to assess more systematically the impacts on our business, and ensure our management processes and actions were a match for our evolving context, such as changes in climate-related policy, customer demand and the physical impacts of climate change. We have further matured our processes and capabilities in FY22, and this has included putting a more explicit focus on the metrics and targets that are most relevant to the climate-related issues in our business.

Greenhouse gas emissions

Meridian prepares an annual GHG Inventory, including scope 1, 2 and 3 emissions. Our FY22 GHG Inventory is available on our **website**, and a summary of these emissions is provided in Table 3, of note:

- as a result of the sale of Meridian Australia in January 2022, the seven months of associated emissions in FY22 are included
- one-off construction emissions have increased in FY22 as a result of the Harapaki wind farm development
- a high level comparison of total FY22 emissions to FY21 emissions is provided, greater detail on the underlying emission sources, and emissions from prior years, is available in Meridian's FY22 GHG Inventory.

Meridian's GHG Inventory is stated in accordance with the requirements of International Standard ISO 14064-1:2018: Greenhouse gases – Part 1: Specification with guidance at the organisation level for quantification and reporting of greenhouse gas emissions and removals, the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004) and the Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011). Meridian applies the operational control consolidation approach to our emissions and our GHG Inventory outlines how we have derived our facilities and operations without the boundary. This consolidation approach allows us to focus on those emission sources over which we have control and for which we can therefore implement management actions, consistent with Meridian's corporate responsibility objectives. Meridian's GHG Inventory is subject to independent reasonable assurance by Deloitte Ltd.

Table 3. FY22 GHG emissions

Business activity Operational Energy purchased and on-sold One-time construction

Total Group value chain emissic (S1, 2 & 3 (market based))***

- *** Total emissions are calculated using the market-based methodology for Scope 2 emissions.
- Meridian Australia emissions to sale of business end January 2022

:	Scope	Meridian NZ	Flux NZ	Meridian Australia^	FY22 Total emissions tCO2eq	Offsets**	Remaining tCO2e	FY21 Total emissions tCO2eq
ç	Scope 1	642	1	149	792	792	-	1,376
S	Scope 2 (market based)	1	1	33	35	35	-	14
S	Scope 3 operational	29,381	918	1,582	31,881	31,881	-	31,085
9	Subtotal	30,024	920	1,764	32,708	32,708	-	32,475
ł								
1	New Zealand electricity	-			_	_	-	0
/	Australia electricity and gas			521,642	521,642	521,642	-	881,461
	Subtotal	-		521,642	521,642	521,642	-	881,461
0	Scope 3 one-time construction	8,243		-	8,243	-	8,243	285
	Subtotal	8,243		_	8,243		8,243	285
ons					562,593	554,350	8,243	914,221

Emissions of our retailed electricity using the market-based methodology. In New Zealand we use the annual netting off methodology. In Australia we used the Climate Active Carbon Neutral Standard (Climate Active) administered by the Australian government. ** Offsets include credits cancelled by suppliers against their own emissions, credits purchased to fulfil Australia's Climate Active commitments, and Gold Standard Voluntary Emission Reductions for the balance.





4. Metrics and Targets continued

Meridian has a GHG reduction target of halving FY21 operational emissions¹¹ by FY30 – which includes a 50% scope 1 and 2 reduction, and a 50% scope 3 reduction (excluding all one-time construction emissions from major projects and all activities that are capitalised as part of renewable energy projects).

We were pleased to receive recently approval from the Science Based Targets initiative (SBTi) that our commitment to reduce absolute scope 1 and 2 GHG emissions by 50% by FY30 from a FY21 base year is in line with a 1.5°C trajectory, with our further commitment noted to also reduce absolute scope 3 GHG emissions by 50% within the same timeframe¹².

Meridian has also committed to set long-term emission-reduction targets with the SBTi in line with reaching netzero by 2050, and we are excited to be part of the Business Ambition for 1.5°C campaign.

Meridian publicly discloses on our Half by 30 initiatives, and progress towards this commitment annually. Meridian's Climate Action Plan, which includes our Half by 30 roadmap, is publicly available on our **website**. Meridian's Half by 30 target is also included in the summary Metrics and targets table below.

Key risks that may affect our ability to reduce our business emissions include:

- decoupling business growth from emissions growth. As we look to invest in and build further renewable generation facilities, such as our Harapaki wind farm under construction, we must proactively seek to minimise one-off construction emissions and 'design out' future operational emissions
- addressing the large proportion of our operational emissions (>95%) are in our supply chain. We are committed to addressing these emissions, and are approaching this in a targeted way where our efforts will create impacts that would not yet otherwise occur. There is an inherent risk in addressing supply-chain emissions based on the somewhat independent organisations in our supply chain, and the number and size of the organisations involved
- some emission sources are in the 'hard to abate' sectors, such as those involving air travel and heavy vehicles and machinery.

Meridian does not track a GHG emission-intensity metric. As a generator of 100% renewable energy, the fuel source for the electricity generated has no emissions. Therefore, GHG emission intensity is not the most relevant metric for Meridian to adopt to track emission reductions.





Selected metrics – with no targets

Meridian applies carbon-pricing assumptions in our climate-related scenarios, Evolution and Revolution, which are informed by current New Zealand emissions unit (NZU) pricing and policy assumptions. In FY22, the carbon pricing assumptions applied ranged from \$70/tonne CO2eq in the short term to \$150/tonne CO2eq in the longer term.

We have committed to establishing in FY23 an internal emissions price focused on catalysing delivery against our Half by 30 target. Refer to our Climate Action Plan for further detail.

Selected metrics with targets

Meridian's priority metrics and targets to manage our climate-related risks and opportunities, and performance against those, are outlined in Table 4. As an overarching approach, Meridian adopts bespoke metrics and targets for material climate-related risks and opportunities, including enabling project-specific metrics and targets.







4. Metrics and Targets continued

Table 4: Climate-related metrics and targets summary

Metric	Target	Performance against target	Assumptions & significant sources of uncertainty (if relevant)
GHG gross operational emissions	50% reduction in scope 1, 2 and 3 emissions by FY30 on a FY21 baseline.	After a significant reduction in operational emissions in FY21, emissions rose in FY22. Scope 1 emissions reduced, scope 2 emissions are minimal under the market-based	A number of assumptions are included in our plan to halve operational emissions (refer to our Climate Action Plan). For example, it assumes:
	Scope 3 includes all emission categories excluding all one-time construction emissions	methodology and use of Renewable Energy Certificates (RECs) (public EV charging and a single office not utilising RECs), Scope 3 emissions increased on balance (emissions from electricity distribution and purchased goods and services increased, emissions	 suppliers deliver on stated emission-reduction targets and initiatives (such as fleet electrification targets)
	from major projects and all activities that are capitalised as part of renewable energy projects (where emissions are managed by project -specific targets)	from farms reduced due to improved GHG data from Salmon farms. Refer to our <i>Climate Action Plan</i> for more detail. Headline numbers of operational emissions within the Half by 30 boundary were:	 new commitments from suppliers can be achieved to deliver against key focus areas (such as light fleet electrification across a number of suppliers in horizon 1 [to the end of FY24])
	-specific targets).	 FY21 = 29,507 t CO2eq (scope 1 + 2 = 1,034 t CO2eq of total) 	 some policy influence in targeted areas
		• FY22 = 30,944 t CO2eq (scope 1 + 2 = 645 t CO2eq of total)	 transmission and distribution service suppliers actively reduce sulphur hexafluoride emissions
			 emission literacy and systems development are effective in increasing data quality over time and an increase in the proportion of emission data received from suppliers.
Forever Forests emission removals	Create a supply of high quality emission removals	We took significant ground in FY22 in advancing our Forever Forests programme	Sources of uncertainty include:
A permanent and ultimately 100%	equivalent to Meridian's expected residual operational emissions by FY30 (circa 15,000 tCO2eq), optimising other benefits also such as biodiversity and social outcomes.	with milestones including:	 potential change in Government policy to exclude exotics from the permanent
native carbon sink.		 securing over 55% of the land required 	category of the ETS (relevant to Meridian's initial mixed model approach of exotics/
		 planting 85,000 stems with a further 600,000 ordered to plant in the coming 2022–2023 seasons 	 survival rate of plants
		 receiving a first tranche of credits from our 2020 plantings, with other planting projects now registered with Ministry for Primary Industries (MPI). 	 any significant delays in delivery of seedlings.
Executive Team remuneration A range of climate-related objectives and measures are included in the shared Meridian Executive Scorecard, which informs performance incentives.	 Specific FY22 targets are commercially confidential, but did include measures for: Harapaki wind farm delivery process heat electrification hydrogen project advancement renewable development pipeline and the North Island battery Half by 30 milestones ESG performance Forever Forests delivery. 	When assessing the outcomes of the Executive Scorecard, the Board takes into account climate-related targets (such as new renewable generation and process heat electrification delivered, GHG gross operational emission reductions and the development of renewable generation pipeline options), along with other financial and non-financial targets. Taking into account Executive Team performance against all those targets, the Board has assessed the FY22 outcomes as 'Good', which led to individual performance outcomes in the range of 60-75%.	Assumptions and sources of uncertainty are largely addressed under other metrics, that is, GHG gross operational emissions, renewable generation investment commitments and new markets – hydrogen.
Renewable generation pipeline options	Buildable options – three secured by 2024.	Commitment to invest in a 100MW/200MWh battery and a 75MW+ solar farm announced during FY22.	Sources of uncertainty: • Cost and time to build (materials, shipping, civil works)
-		Wind farm development ~60MW (Mt Munro) in planning to consent.	 Regulatory changes (environmental consents and cost)
		Further development projects under evaluation representing 2.3GW/5,400GWh – of which 1.1GW are secured options and a further 1.2GW under advanced prospecting.	 Ability to connect to transmission network in an timely manner.

4. Metrics and Targets continued

Metric	Target	Performance against target	Assumptions & significant sources of uncertainty (if relevant)
New renewable generation delivery	41 turbines, 176MW capacity and 540GWh/annum available from end FY24.	 Overall, on track for target. Recent milestones include: Harapaki 176MW wind farm announced FY21 (February 21). 	 Sources of uncertainty: Weather affecting remainder of civil works (site is at 730–1,100m elevation).
		 contracts with major suppliers executed. on site works underway August 21. first bulk earthwork season complete. 	 Increases in allowed innation escalators within contracts. Freight and materials – costs and lead times are very high. The extent of any future COVID-19 impacts. Access to experienced staff.
Hydrogen project milestones	Specific FY22 targets commercially confidential, but did include targets related to the completion of a feasibility assessment and clarity on timeframes to execute options.	FY22 completed joint green hydrogen feasibility study and issued calls for registrations of interest that attracted some 80 responses. Request for proposal process commenced and near completion, with two preferred developers announced to advance to detailed proposals by end August 2022. Selection of lead developer to follow soon afterwards.	 Sources of uncertainty: Offtake customer yet to be finalised and subject to further negotiation. Cost and time uncertainties (supply chain constraints, inflationary pressures).
Transport electrification delivery	 Many FY22 targets commercially confidential, but did include: deploying >250 AC EV chargers nationally over three years to end FY23 delivering committed DC EV chargers to some local and regional councils advancing a business EV charging proposition. 	 Overall on track; recent milestones include: 61 EV chargers installed and further committed charges on track to complete in FY23 business EV charging position tested with market, initial positive results. 	 Sources of uncertainty: EV chargers – increasing installation costs, shipping delays for equipment and lower utilisation risk during COVID-19 restrictions.
Commercial-scale solar delivered	Many FY22 targets commercially confidential, but did include a kWp installation target for commercial-scale solar.	A customer commitment announced and other customer commitments made but not yet announced. Further build planning commenced.	No significant sources of uncertainty to note.
Process heat electrification GWh delivered	600GWh agreed by FY23.	300GWh committed demand (representing 110kT CO2eq abatement)	Government Investment in Decarbonising Industry Fund expanded to support further decarbonisation projects over the next four years. This commitment will enable others and us to continue delivering industry emissions abatement.
CRE revenue, and abated emissions	Launched CRE 2.0 and associated decarbonisation fund. FY22 included a commercially confidential GWh CRE contract target.	CRE 2.0 and decarbonisation fund launched. FY23 targets confirmed relating to GWh CRE total contracts and commitment to reinvest approximately \$750,000 into projects reducing emissions (a mix of business- and community-related projects).	 The delivery of the decarbonisation projects will be: informed by preferences of CRE customers, within the framework of the CRE offer dependent on the quality of the project applications received by community-based groups.

