



# CLIMATE ACTION PLAN FY24.





Tiakina te anamata, mā te tūhono i ngā tāngata me ngā wāhi o te inamata.  
Taking care of tomorrow: connecting people and place today.





## ABOUT THIS PLAN.

This Climate Action Plan (Plan) represents Mercury's commitment to a low-emissions, climate-resilient future, and describes the measures and targets that we have set and the actions that we are taking to reduce our emissions.

This is the second year that we have published this document. A notable difference this year is that we have included information on Mercury's approach to transition planning within Mercury's Climate Statement, rather than in this Plan. While there will be a degree of repetition between these two disclosures, this Plan is intended to be a standalone document containing core aspects of the 2023 Climate Transition Action Plan, namely the emissions reduction targets that Mercury has set, the actions that we are taking to reduce our emissions, and the risks to executing our actions.

The other key change between our 2023 Climate Transition Action Plan and this Plan is our decision to disclose certain financial commitments, demonstrating our commitment to emissions reduction actions.

While we have made all reasonable efforts to provide accurate information as of 20 August 2024, this Plan contains forward-looking statements including climate-related metrics, climate scenarios, estimated climate projections, targets, assumptions, forecasts, and statements of Mercury's future intentions which are inherently uncertain due to the evolving nature of the subject matter. There are many factors that could cause Mercury's actual results, performance or achievement of climate-related metrics (including targets) to differ materially from that described, including those risks, assumptions and uncertainties described more fully on page 16.

Mercury's strategy and this Plan are expected to evolve further as we adapt to future circumstances. This Plan outlines ambitious targets and strategies for reducing greenhouse gas emissions and enhancing our resilience to climate change. However, our actual emissions reductions and the actual impacts and financial implications of climate change may differ from estimated figures due to various factors beyond our control, such as climatic and market conditions.

Terms used in this Plan are defined in the glossary on page 18.



## EXECUTIVE SUMMARY.

This is Mercury's Climate Action Plan, replacing our Climate Transition Action Plan and further building out our plan to support Aotearoa New Zealand's energy transition, with ambitious measures and targets that commit to achieving emissions reductions across our business.

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We generate electricity from 100% renewable sources: hydro, geothermal and wind. We are committed to leveraging our renewable energy portfolio to support our customers through the transition to a net-zero future.

The New Zealand energy sector plays a crucial role in New Zealand achieving net-zero carbon by 2050. Mercury is expanding its renewable generation capacity and working to support the electrification of New Zealand. We currently have renewable energy projects under construction, such as the second stage of our Kaiwera Downs wind farm near Gore and a fifth generating unit at our Ngā Tamariki geothermal station, with more in the pipeline that are already consented.

We also focus on how we can optimise broader benefits of decarbonisation. This includes sharing the opportunities created by renewable electricity

projects in ways that contribute to the well-being and resilience of communities and rohe in which we operate. For example, by getting involved in school programmes, providing scholarships, sponsorships and supporting community led initiatives.

Our commitment extends beyond generation assets to the electrification of transport. We aim to convert our fleet to 100% electric vehicles by 2030, implement off-peak charging practices, and partner on projects like Big Street Bikers' LockyDocks.



RENEWABLE  
ENERGY  
FOR A  
SUSTAINABLE  
FUTURE.





# WE ARE BUILDING THE PATH TO NET-ZERO EMISSIONS.

Our updated Plan builds on Mercury's ongoing aim to achieve net-zero emissions by 2040. We detail key aspects of our current actions and strategy, how we plan to further support the energy transition, and the continued engagement we will need from Government, customers, and other key stakeholders.

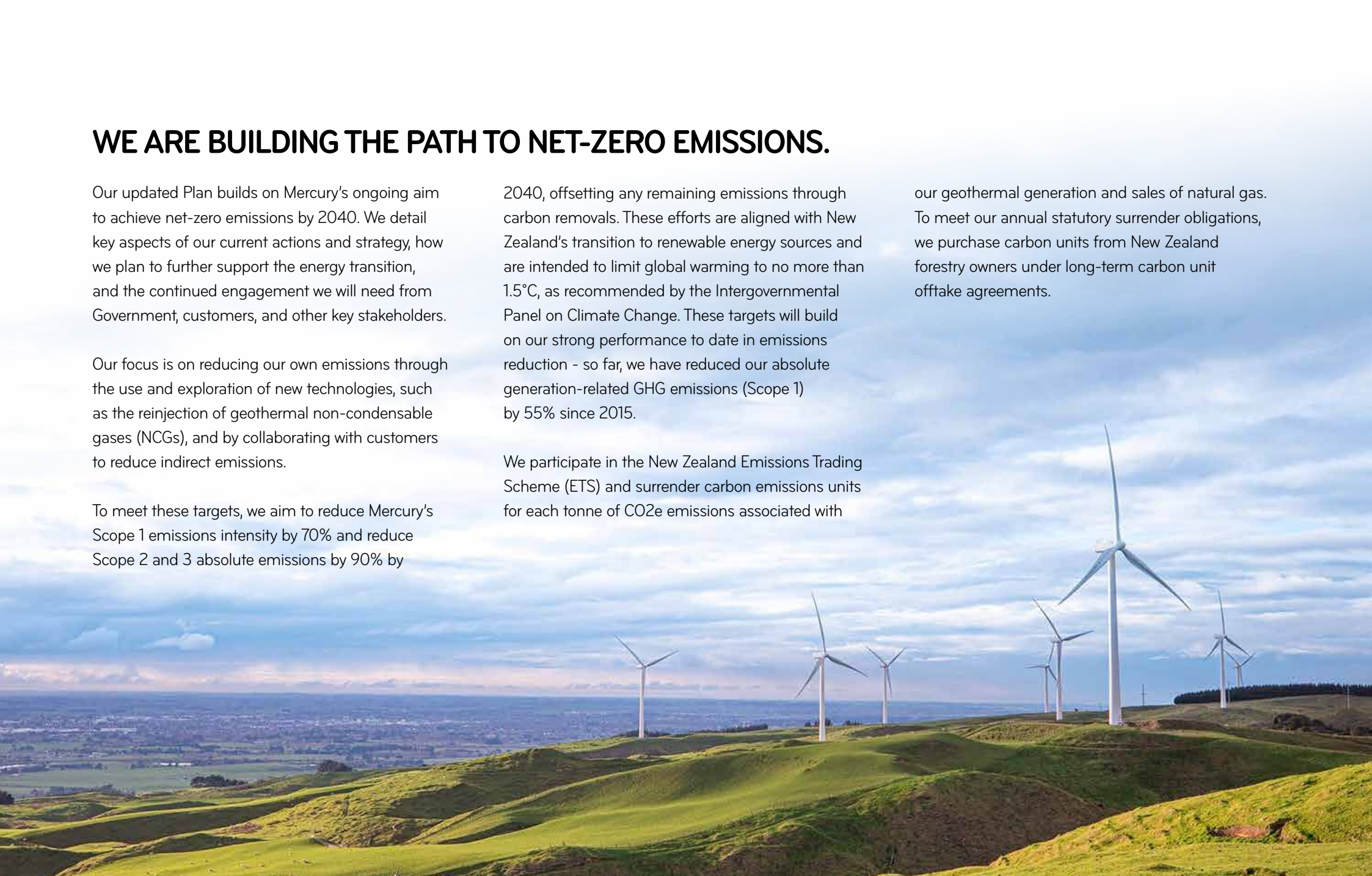
Our focus is on reducing our own emissions through the use and exploration of new technologies, such as the reinjection of geothermal non-condensable gases (NCGs), and by collaborating with customers to reduce indirect emissions.

To meet these targets, we aim to reduce Mercury's Scope 1 emissions intensity by 70% and reduce Scope 2 and 3 absolute emissions by 90% by

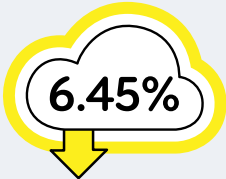
2040, offsetting any remaining emissions through carbon removals. These efforts are aligned with New Zealand's transition to renewable energy sources and are intended to limit global warming to no more than 1.5°C, as recommended by the Intergovernmental Panel on Climate Change. These targets will build on our strong performance to date in emissions reduction - so far, we have reduced our absolute generation-related GHG emissions (Scope 1) by 55% since 2015.

We participate in the New Zealand Emissions Trading Scheme (ETS) and surrender carbon emissions units for each tonne of CO<sub>2</sub>e emissions associated with

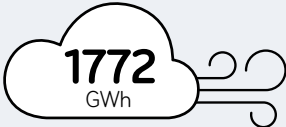
our geothermal generation and sales of natural gas. To meet our annual statutory surrender obligations, we purchase carbon units from New Zealand forestry owners under long-term carbon unit offtake agreements.



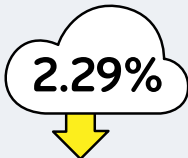
# OUR PROGRESS.



Scope 1 Emissions Intensity reduction from our FY22 base year.



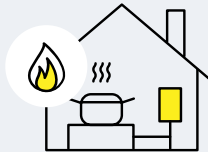
Wind generation development projects with a combined annual output of 1772GWh are consented.



Scope 3 gas sales emissions reduction from our FY22 base year.



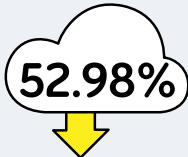
Investment in construction of new renewable generation in FY24. This is planned to add 201MW.



Engaged with our gas customers about our path to a low-emissions future.



NCG reinjection in FY24 resulted in a ~20% reduction in the emissions at our Ngā Tamariki geothermal station. We are expanding this to other sites.



Scope 2 emissions reduction from our FY22 base year.



We are actively exploring biogas opportunities.





# THE CHANGING CLIMATE AND THE ENERGY TRANSITION.

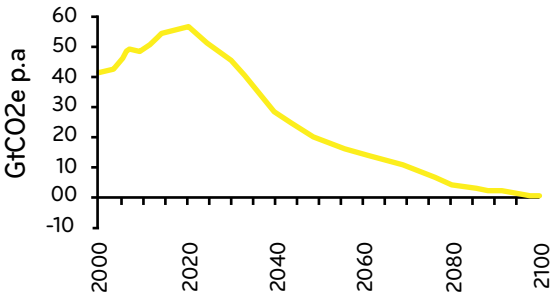
## THE URGENT CLIMATE CHANGE CHALLENGE.

Climate change is a threat to human well-being and planetary health and there is a rapidly closing window of opportunity to secure a liveable and sustainable future for all. Widespread and rapid changes in the atmosphere have already occurred with human-caused climate change affecting many weather and climate extremes in every region across the globe. All global modelled pathways that limit warming to 1.5°C involve deep and, in most cases, immediate greenhouse gas emissions reductions in all sectors.<sup>1</sup>

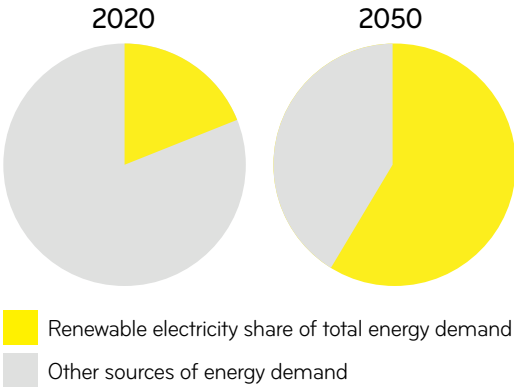
## RENEWABLE ELECTRICITY IS A KEY ENABLER.

Electrifying transport and process heat, and increasing renewable electricity generation, will be the most significant contributors to New Zealand achieving net-zero carbon by 2050. Increased electrification and renewable energy are forecast to deliver 70%<sup>2</sup> of the gross emissions reductions required to achieve New Zealand's net-zero carbon target.

**Net Global Greenhouse Gas Emissions Pathway**  
(to Limit Global Warming to 1.5°C)



**Projected Total Energy Demand**



<sup>1</sup> [www.ipcc.ch/report/ar6/syr/](https://www.ipcc.ch/report/ar6/syr/)

<sup>2</sup> [www.bcg.com/publications/2022/climate-change-in-new-zealand](https://www.bcg.com/publications/2022/climate-change-in-new-zealand) - note that this report was commissioned by Mercury and other New Zealand companies, while being completed in a manner to preserve BCG's independence.





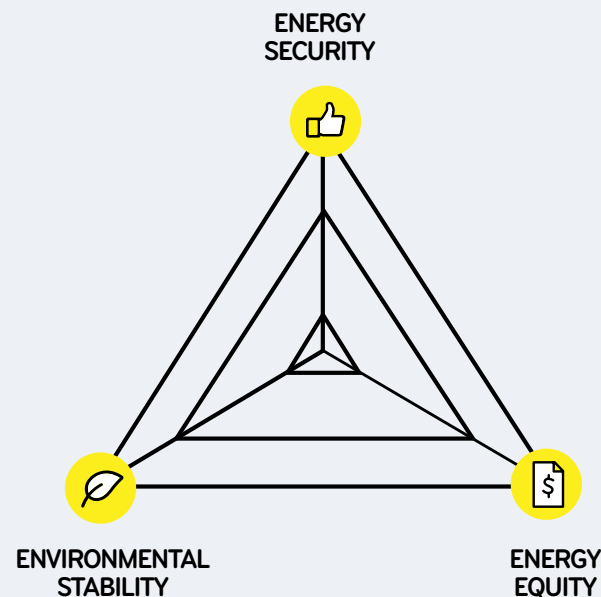
## BALANCING THE TRILEMMA.

The large-scale energy transition required for decarbonisation necessitates finding the right balance in achieving emissions reduction, while balancing the three aspects of the energy trilemma: energy security, environmental sustainability and energy equity. We are committed to collaborating with our customers, regulators, iwi and other stakeholders to embrace innovative technologies to manage grid stability, resilience and efficiency.

Implementation of the transition needs to happen in ways that deliver affordable, clean energy for everyone. Adoption of new technologies and continuous innovation will provide consumers with product and service options enabling the flexible demand management crucial for driving energy efficiency and an equitable energy transition.

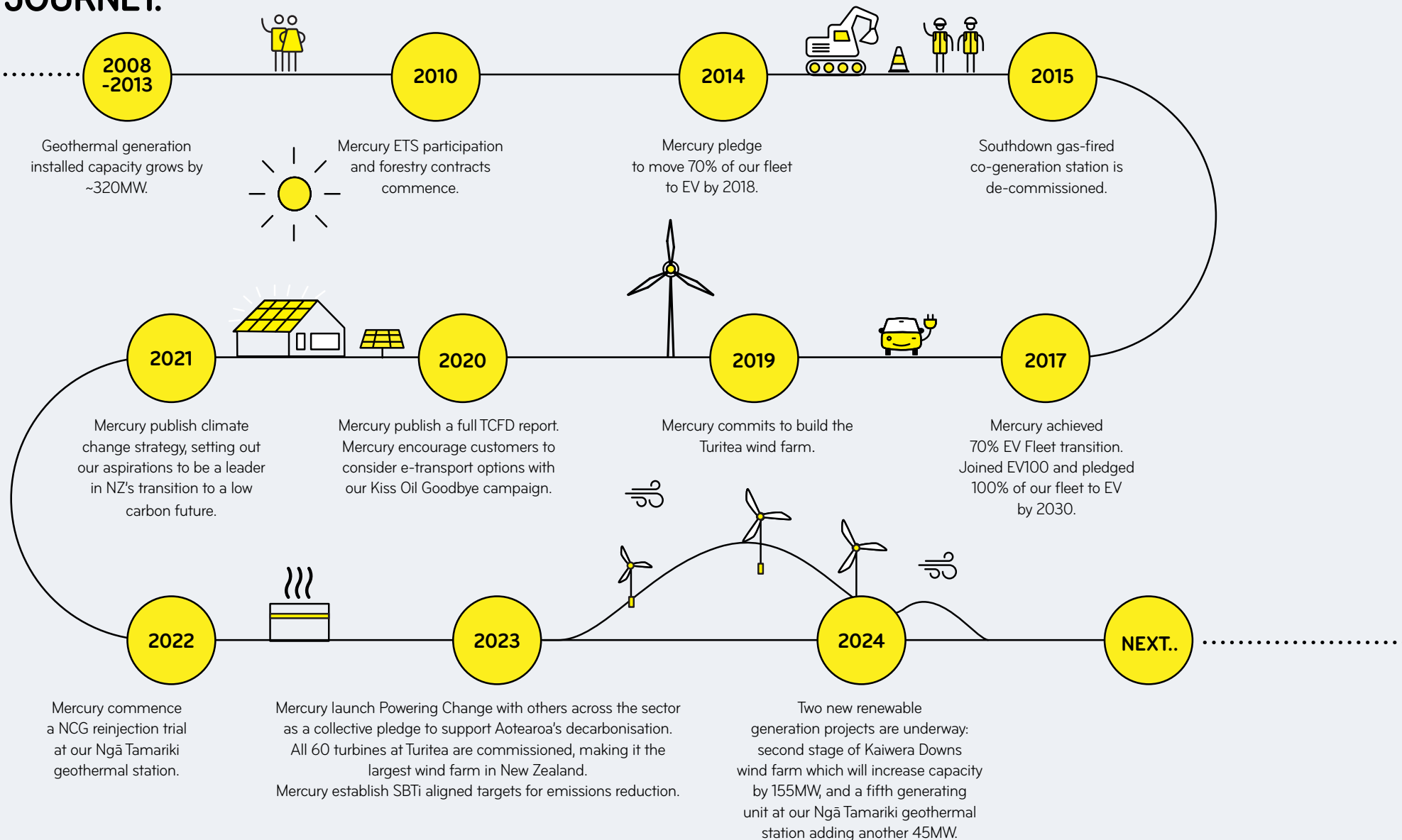
## THE ENERGY TRILEMMA.

We believe energy freedom can only be achieved if these three key elements are always considered together.





# OUR JOURNEY.



# TYPES OF EMISSIONS.

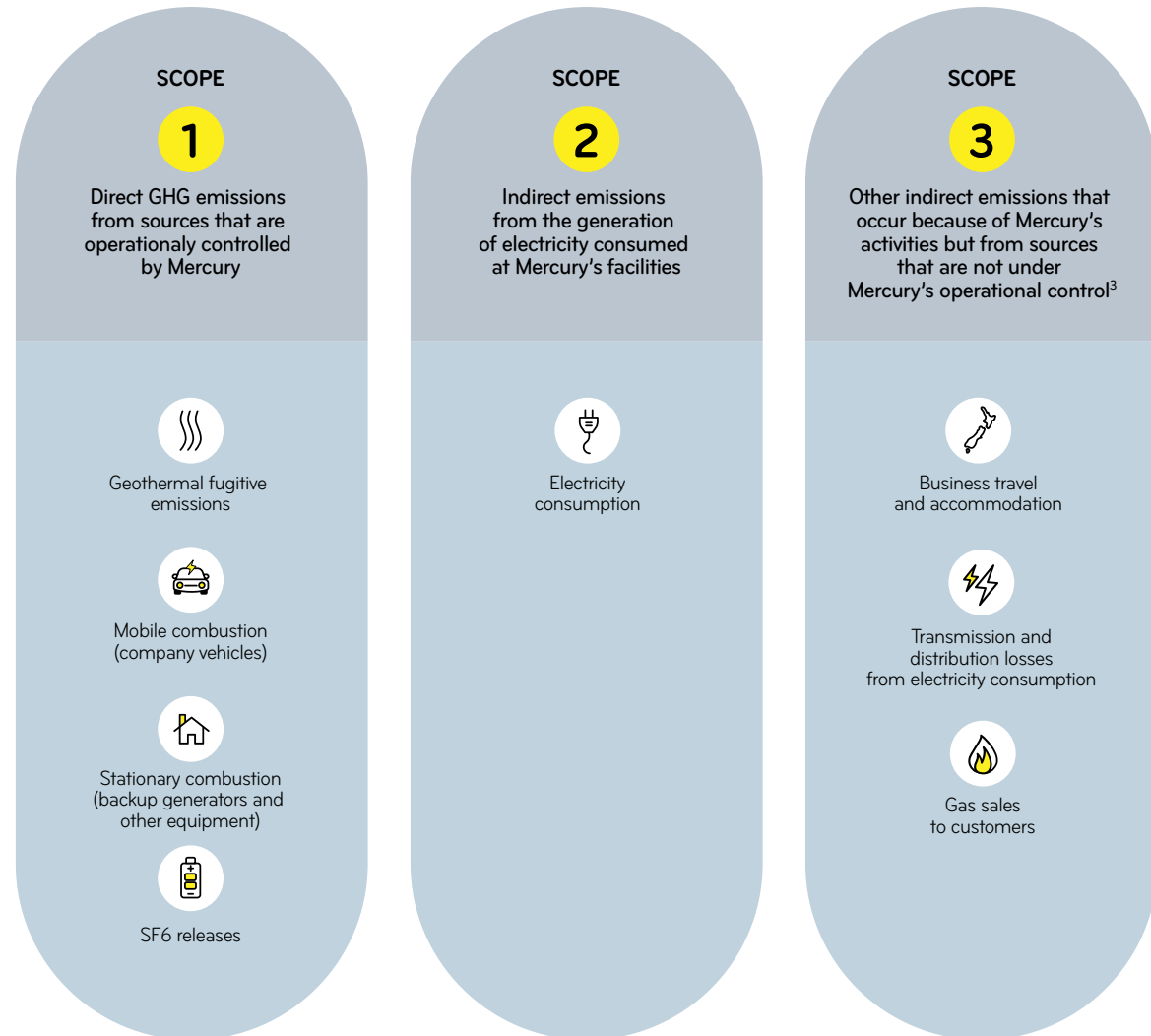
## HOW DO YOU MEASURE GREENHOUSE GAS EMISSIONS?

The following three emissions scopes are internationally recognised categories for measuring the different kinds of greenhouse gas emissions a company produces in its operations and value chain.

It includes the following gases measured as carbon dioxide equivalent (CO<sub>2</sub>e):

- Carbon dioxide (CO<sub>2</sub>),
- Methane (CH<sub>4</sub>)
- Nitrous oxide (N<sub>2</sub>O)
- Sulphur hexafluoride (SF<sub>6</sub>)

Mercury's emissions profile under these three scopes is:



<sup>3</sup>The GHG Protocol specifies 15 sub-categories for Scope 3 emissions. Mercury assesses the materiality of emissions under all Scope 3 sub-categories and discloses emissions under those deemed material as shown above.





# OUR TARGETS.

At Mercury, we recognise our leading role in reducing New Zealand's emissions. Mercury has committed to set near-term and long-term company-wide emission reductions targets in line with the Corporate Net-Zero Standard and Corporate Near-Term Criteria established by the SBTi. These targets have been developed in accordance with SBTi guidance and will be submitted for SBTi validation in due course. Our near-term and long-term company-wide emission reduction targets drive us to innovate and collaborate for a greener future, ensuring our actions are impactful.

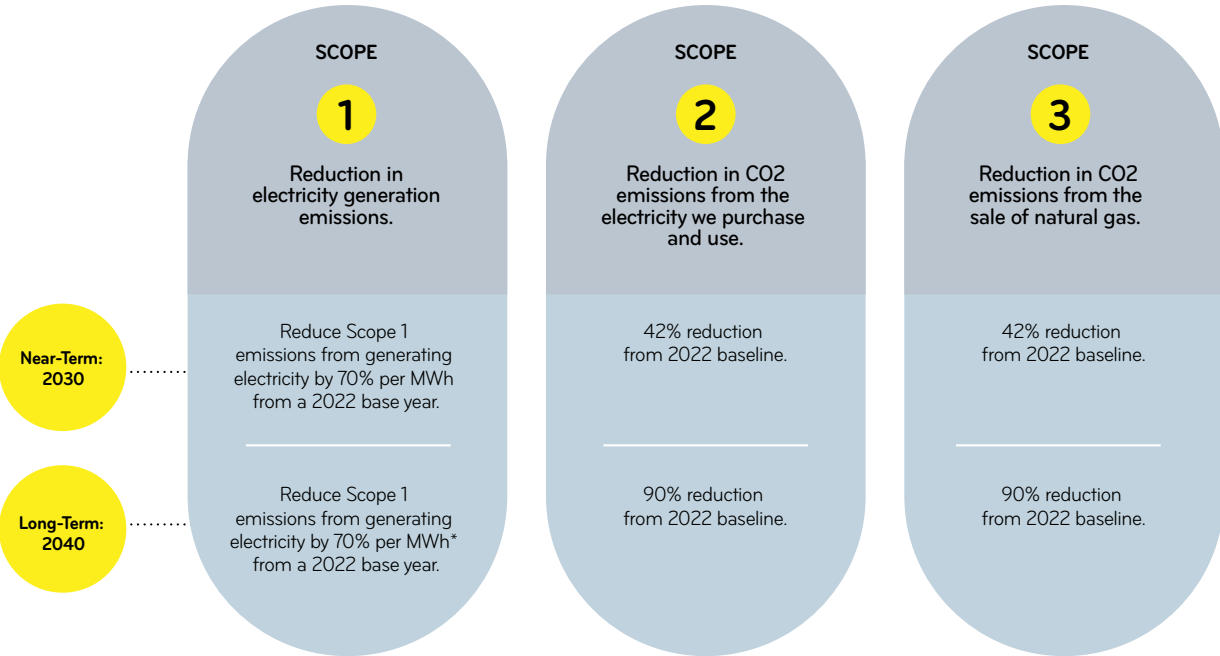
These targets include a 70% decrease in Scope 1 emissions intensity (measured in kgCO2e/kWh) and a 42% reduction in absolute Scope 3 emissions by 2030, from our 2022 baseline.

By 2040, we are targeting a maintained 70% reduction in Scope 1 emissions intensity (in line with the SBTi power sector emissions intensity requirements) and to achieve a 90% reduction in Scope 3 emissions related to natural gas sales.

We use our Greenhouse Gas Emissions Inventory report to measure our progress against these

targets. Our fixed base year for these targets is FY22, serving as a consistent historical reference point for comparing current emissions. We regularly assess for any material changes in our organisation since our FY22 base year and we may choose to undergo a base year recalculation in the Greenhouse Gas Emissions Inventory report to facilitate meaningful comparisons over

time. In FY24, we recalculated our FY22 base year emissions from the sale of natural gas to include emissions from a full twelve months of Trustpower gas sales. The existing FY22 base year only included two months of Trustpower gas sales following the acquisition finalisation in May 2022. This recalculation approach follows the Greenhouse Gas Protocol guidance.



\*Mercury's 2040 Scope 1 emissions intensity target is equivalent to our 2030 Scope 1 emissions intensity target as the targeted 2030 emissions reduction will already reduce Mercury's Scope 1 emissions intensity to the level required by the SBTi for our 2040 target.



# COLLABORATING WITH STAKEHOLDERS TO DELIVER ENHANCED CLIMATE OUTCOMES.

## HOW ARE WE PLANNING TO ACHIEVE NET-ZERO EMISSIONS BY 2040?

### REDUCING OUR DIRECT EMISSIONS:

- Building renewable generation.
- Following a successful trial, expanding re-injection of our geothermal emissions back to the geothermal reservoirs, alongside geothermal steam and fluid.
- Converting to 100% electric vehicle fleet by 2030.

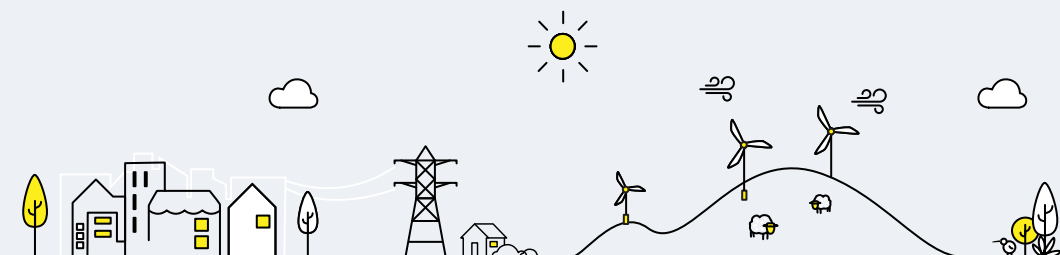
### REDUCING OUR INDIRECT EMISSIONS:

- Communicating with our customers to support switching from natural gas to electricity.
- Investigating biofuels and other gas alternatives.
- Helping our large customers to decarbonise through direct power purchase agreements for renewable electricity.
- Working with staff to reduce commuting emissions.

### WORKING TOGETHER:

We are working with others to promote decarbonisation within and outside our company – our advocacy and activity includes:

- Accelerating the use of renewable technologies, particularly to help decarbonise users of electricity.
- Supporting the development of smart system technologies to help efficient development and upgrade of our networks and grid.
- Public carbon pricing policies – such as strengthening the New Zealand Emissions Trading Scheme.
- Working with others across the electricity system to establish ways to work collectively to support Aotearoa's transition.
- Sharing the opportunities created by renewable electricity projects in ways that contribute to the well-being and resilience of communities and rohe in which we operate.
- Actively supporting the electrification of e-transport. This includes initiatives such as converting our fleet to 100% electric vehicles by 2030, implementing off-peak charging practices, and supporting projects like Big Street Bikers' next 100 LockyDocks.





# ADVANCING NZ'S RENEWABLE ENERGY ADVANTAGE TO SUPPORT NZ'S LOW-CARBON FUTURE.

## BUILDING RENEWABLE GENERATION.

The Climate Change Commission acknowledged New Zealand's low-emission electricity sector as one of the world's most sustainable. This recognition coincides with a period of significant growth in renewable energy. At Mercury, we are committed to expanding our renewable generation capacity and leading the electrification of key sectors in Aotearoa New Zealand, reducing our reliance on fossil fuels.

The energy sector's efforts are crucial for achieving New Zealand's 2050 emission reduction targets, with the potential to deliver up to 70% of the required reductions. To support this, we have made substantial investments in renewable generation development. Mercury has committed over \$700 million to new renewables in FY24. This is made up of a \$220 million fifth generating unit at our Ngā Tamariki geothermal station, adding another net 46MW with construction beginning back in March 2024.

In June, we confirmed we will proceed with the expansion of the Kaiwera Downs wind farm near Gore. This is a \$486 million project, and once completed, it will add an additional 155MW, bringing the total capacity of the Kaiwera Downs wind farm to 198MW—the second largest in New Zealand.



## NEW DEVELOPMENT PIPELINE.

Between FY13 and FY23, Mercury invested \$1 billion in upgrades to its wind, hydro and geothermal facilities. In FY24, we focused on committing more than \$700 million investment in generation development projects over the next three years.

Mercury's pipeline includes a diverse range of opportunities, with a strong focus on onshore wind and geothermal development, and capacity projects such as batteries.

The projects outlined on the right demonstrate our dedication to expanding our renewable energy portfolio and our commitment to electrifying Aotearoa with renewable electricity.

This growing pipeline represents approximately ~2,500MW and ~8,000GWh, positioning Mercury at the forefront of renewable energy development in New Zealand.

We are also investing in our existing hydro and geothermal power stations. We are approximately halfway through our 25 year reinvestment program to modernise and upgrade our hydro stations that extends out to 2040.

The ~\$90 million upgrade project at the Karāpiro station started in 2022 and once complete, planned to be in 2025, will increase the overall station output by 15% and add 32GWh of annual generation capacity. We have nine dam structures on the Waikato hydro system aged 60 to 95 years. About \$350 million is projected to be spent on upgrading these dams over the next 15 years.

As well as extending the life of our assets, we expect that renewable generation for Aotearoa will increase by about 75GWh across our Ātiamuri, Maraetai and Ohakuri station upgrades.

### PROJECTS IN CONSTRUCTION.

201MW / 915GWh

**WIND** 155MW/525GWh  
**GEOTHERMAL** 46MW/390GWh

### PROJECTS CONSENTED.

440MW / 1,772GWh

**WIND** 440MW/1,772GWh

### PROJECTS BEING ACTIVELY CONSENTED AND SECURED.

1,820MW / 5,039GWh

**WIND** 1,330MW / 4,299GWh  
**GEOTHERMAL** 90MW / 740GWh  
**FLEX / CAPACITY** 400MW





# TAKING ACTION TO REDUCE OUR OWN CLIMATE CHANGE IMPACTS AND THOSE OF THE COUNTRY.

## RE-INJECTION OF GEOTHERMAL EMISSIONS.

Currently, ~98% of our Scope 1 emissions are attributed to fugitive emissions arising from geothermal generation. These emissions primarily result from the release of non-condensable gases (NCGs) inherent in the geothermal process.

We continue to invest in technologies and processes designed to reinject these NCGs back into the geothermal reservoirs. By doing so, we aim to mitigate our emissions and contribute to a more sustainable energy future.

Our Ngā Tamariki geothermal station has been successfully trialling reinjection technology since 2022. The current reinjection rate is ~20% of the station's emissions, which translates to approximately 7,100 tCO<sub>2</sub>e per year.

We are conducting ongoing research to evaluate the effects of our current NCG reinjection on the reservoir and we have initiated trials to assess how our wells respond when the pressure in the wells reaches a level where NCG starts to separate from the geothermal fluid.

Over the next 5 years we plan to expand reinjection to two more geothermal plants of a similar type beginning with Rotokawa and then Mokai. We are also exploring potential reinjection strategies for flash plant technology at our Kawerau station.

## REDUCING EMISSIONS FROM THE PRODUCTS WE SELL ENABLING OUR CUSTOMERS TO DECARBONISE.

Mercury is dedicated to leading decarbonisation efforts and we have set targets for reducing scope 3 emissions from our retail gas sales to customers. Recognising the need for collaboration, we are actively engaging with stakeholders on both the demand and supply sides of the industry. Our efforts to reduce emissions include initiatives focused on the products we sell:

- We have initiated a communication strategy with customers regarding the gas transition, educating them on the evolving landscape and potential alternatives.
- We are collaborating with partners like Samsung, exploring solutions to enable customers to transition away from gas appliances.

- We are intensifying our efforts to decarbonise our gas offerings, including actively exploring biogas opportunities.
- We are actively engaging in discussions with the Government and broader industry on the role of gas as the energy transition in New Zealand progresses.

These efforts reflect our commitment to reducing emissions, facilitating customer decarbonisation, and actively contributing to New Zealand's transition to a sustainable energy future.



# POSITIONING OURSELVES FOR CLIMATE RELATED OPPORTUNITIES AND RISKS.

Our journey to achieve our targets is subject to assumptions, uncertainties and risks that could cause actual outcomes to be different to those included in this Plan to 2040.

Mercury is committed to balancing environmental sustainability with energy affordability and security of supply, and this will influence our decisions on strategy and progress towards our targets. We anticipate that our proposed and actual pathway towards our targets and ambitions will evolve over time as we navigate the transition to a low-carbon energy sector.

## **RISKS, ASSUMPTIONS AND UNCERTAINTIES WHICH MAY IMPACT OUR ABILITY TO ACHIEVE OUR TARGETS AND AMBITIONS INCLUDE, BUT ARE NOT LIMITED TO:**

### **TECHNOLOGY DEVELOPMENT AND COST.**

Technology viability, pace of development and cost – particularly the speed and cost of technological advancement, including developments relating to batteries, virtual power plants and biogas at a viable scale may impact our progress towards our targets. Development and advancement by competitors within the market may also impact our targets and timelines.

Reinjection of geothermal emissions – the technical ability to reinject geothermal emissions is still being tested. There could be impacts on reservoir health, underground infrastructure or above ground pipeline and station infrastructure. There may also be a limit on the overall capacity of each reservoir for reinjection. The technical solution for reinjection for geothermal stations that use flash plant technology (used at our Kawerau and Ngā Awa Pūrua stations) is currently unknown and needs to be developed within the industry. Even if technically feasible, the costs involved with reinjection may be prohibitive. If reinjection is not feasible for any reason, we anticipate that as part of our decision-making we will consider the pros and cons of geothermal generation as part of New Zealand's electricity mix.

### **POLICY AND REGULATION.**

Policy and regulation – climate-related and energy sector regulation and policy is currently evolving and may be inconsistent or impact the timing of key decisions or actions. We will also be dependent on the ability to secure the consents and approvals needed to progress our new renewable generation developments or reconsent existing developments.

### **MARKET VOLATILITY AND SECURITY OF SUPPLY.**

There could be volatility within the energy market affecting pricing and security of supply as New Zealand moves through the energy transition. Our decisions will be influenced by the need to balance sustainability, affordability, and reliability. Geopolitical factors could also impact volatility within the market.

New generation development – we anticipate that we will look at opportunities for increased geothermal generation that could increase geothermal emissions. We anticipate taking the emissions impacts into account as part of the overall decision-making for these projects, along with a consideration of how such development (particularly as baseload generation) could support New Zealand's decarbonisation.



## DATA QUALITY, CHANGING METHODOLOGIES AND STANDARDS.

We have relied on a range of inputs to arrive at our targets and the pathway to achieving them. Issues such as lack of reliable emissions data and other important data might affect our path. In addition, the data and methods for setting and measuring performance against climate targets, including carbon accounting, scenario analysis, modelling, and climate and ESG disclosure standards are likely to continue to evolve and impact the way we set and report against targets.

## AVAILABILITY OF CRITICAL SKILLS AND RESOURCES.

We may have difficulties accessing the skills and resources we need to progress towards our goals. This may include constraints in our workforce and our supply chain which may be beyond our control.

## CUSTOMER PREFERENCES.

Preferences and demands from consumers may change along with changing responses to demands by competitors.

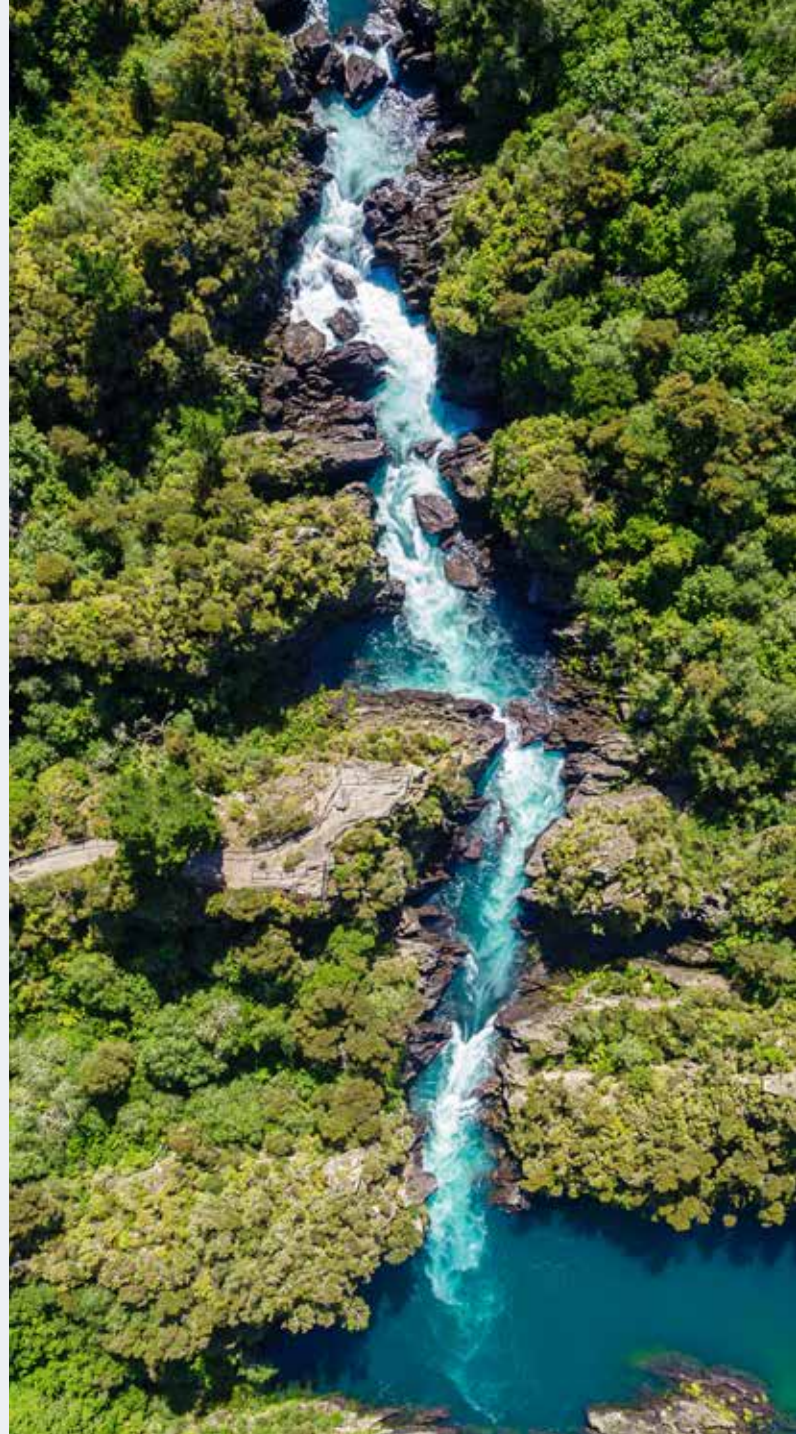
## PARTNERSHIPS.

Realising the technology, policy and market settings that will enable us to reach our goals will require continued engagement from our partners: others in the sector, Government, suppliers, customers, and other stakeholders.

We will continue to review these risks, uncertainties, and assumptions to consider changes in the external environment and our internal operations. Our approach to managing them is outlined in our [Climate Statement](#).

## GOVERNANCE.

Mercury's governance approach, responsibilities, and remuneration are outlined in our Climate Statement.





# GLOSSARY.

## **Biogas**

Biogas is a mixture of methane, carbon dioxide, and other gases produced through anaerobic digestion of organic matter.

## **Carbon dioxide equivalent (CO2-e)**

The universal unit of measurement to indicate the global warming potential (GWP) of each greenhouse gas, expressed in terms of the GWP of one unit of carbon dioxide. It is used to evaluate releasing (or avoiding releasing) dioxide. It is used to evaluate releasing (or avoiding releasing) different greenhouse gases against a common basis.

## **ETS**

Emissions Trading Scheme.

## **Fugitive emissions**

Direct discharges of greenhouse gases that occur during geothermal electricity generation processes.

## **GHG**

Greenhouse gas.

## **GWh**

Gigawatt-hour.

## **kgCO2e/kWh**

Kilograms of carbon dioxide equivalent per kilowatt hour.

## **MW**

Megawatt.

## **NCG**

Non-condensable gas.

## **Net-Zero**

Reducing GHG emissions to as close to zero as possible and then implementing methods to absorb the remaining emissions from the atmosphere.

## **Paris Agreement**

Legally binding international treaty on climate change adopted by parties under the United Nations Framework Convention on Climate Change on 12 December 2015. It entered into force on 4 November 2016.

## **Plan**

Climate Action Plan.

## **SBTi**

The Science Based Targets initiative is an independent body made up of representatives (from the World Resources Institute, the CDP, the World Wildlife Fund and the UN Global Compact), who have created an approach to setting targets that is aligned to what the latest climate science identifies is necessary to achieve the Paris Agreement targets.

## **Scope 1 emissions**

GHG emissions released to the atmosphere as a direct result of our activity. These are sometimes referred to as direct emissions; examples include emissions from geothermal fugitive sources and fossil fuels consumed in company vehicles.

## **Scope 2 emissions**

GHG emissions resulting from purchased electricity we consume to power our offices and operating sites.

## **Scope 3 emissions**

Indirect GHG emissions, other than Scope 2, relating to our value chain from sources that we do not own or control including the use of our sold products such as natural gas and LPG.

## **tCO2e**

One metric tonne of carbon dioxide equivalent.



