GENESIS ENERGY LIMITED
INTEGRATED REPORT 2023

CONSTANT. CHANGE.

Securing a future of renewable energy

Management commentary
(no financial statements)

CONSTANT.

New Zealanders expect uninterrupted access to energy. As the country develops new renewable sources of electricity, Huntly Power Station ensures power is available when there's not enough sun, wind or water to meet demand.

SEE PAGE 21 >

CHANGE.

We're advancing our investment in solar, wind and geothermal generation to bolster New Zealand's renewable energy portfolio. And we're exploring renewable fuel options such as biomass for Huntly Power Station.

SEE PAGE 20 >

Management commentary
(no financial statements)

Biomass used in our trial at Huntly Power Station.

Management commentary
(no financial statements)

FUTURE.

We recognise that change at our end is not enough. If we're all to benefit from a low carbon future, we need to help our customers use energy more efficiently. EVerywhere is an example of how we're supporting the uptake of electric vehicles.

SEE PAGE 26 >

We're excited to lead by example, creating new sources of electricity to reduce our emissions over time. We also acknowledge our generation has impacts, and partner to help protect and restore nature.

SEE PAGE 28 >

LOW CARBON.

Management commentary
(no financial statements)

Management commentary
(no financial statements)

SUSTAINABLE. BUSINESS.

Positive relationships are crucial to ensure perspectives are considered and needs balanced as we move forward. Through our engagement with shareholders, customers, iwi and stakeholders, we have open conversations that build trust and enable progress.

SEE PAGE 37 >

A well-managed business provides the foundation on which we deliver security of supply, be that of electricity, LPG or gas from the Kupe gas field to fuel Huntly Power Station. We continue to improve our plant's performance and efficiency, and maintain our assets for maximum reliability.

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Management commentary
(no financial statements)

Management commentary
(no financial statements)

MORE EQUAL.

We cannot help New Zealand become more sustainable without our people. To maximise their potential we must be fair. We're working to achieve greater equality of opportunity, and improve their health, safety and wellbeing while being a diverse and inclusive place to work. We encourage new people to enter the energy sector through apprenticeships, and support STEM learning to inspire the next generation.

SEE PAGE 45 >

SOCIETY.

Energy wellbeing continues to be a crucial measure of the sector's ability to serve all New Zealanders. We offer assistance to customers who find themselves in vulnerable circumstances, and support community organisations helping families improve the warmth of their homes.

SEE PAGE 48 >

Management commentary
(no financial statements)

Electrical apprentices Manukura Heta and Jasmine Lowe at Huntly Power Station.

Management commentary
(no financial statements)

Welcome to our 2023 Integrated Report

Genesis has a unique role in New Zealand's transition to a low carbon future. Not only are we playing our part in creating new renewable sources of electricity, but we can also provide the security of supply that gives others confidence to invest, be they other generators, joint venture partners or the government.

With this responsibility comes the need to be transparent – about our opportunities, targets, strategy and progress, and also about our challenges, the impacts we have and how we're addressing those. This report strives to present a balanced view of how we create value over the short, medium and long term. Our Value Creation Model (VCM) on page 16 provides a plan-on-a-page overview.

To ensure rigour in this form of reporting, we have used guidelines from the Global Reporting Initiative (GRI) and the Integrated Reporting Framework (<IR>) to report on our material environmental, social and governance activities. This is in addition to reporting on our climate-related risks and opportunities using the Taskforce on Climate-related Financial Disclosures (TCFD) framework.

In FY23 we established our Sustainability Framework to guide us to 2025 targets. This report is structured to align with the Framework's three pillars – a low carbon future, a sustainable business, and a more equal society – and the goals set under each pillar.

Our Sustainability Framework is in turn aligned to six of the United Nations' Sustainable Development Goals (SDGs). In the Governance section you will find tables noting our contribution to these SDGs, our progress toward our Framework's goals, and our Materiality Assessment – what matters most to us and our stakeholders. You will find comment on all these matters throughout this report.

The other reports which complete our Environmental, Social and Governance (ESG) reporting suite can be found on our website:

FY23 Climate-related Disclosures

FY23 Modern Slavery Statement

FY23 Sustainable Finance Report

FY23 ESG datasheet and GRI Index

We welcome your feedback on this report. Please contact us at media@genesisenergy.co.nz

Management commentary
(no financial statements)

Contents

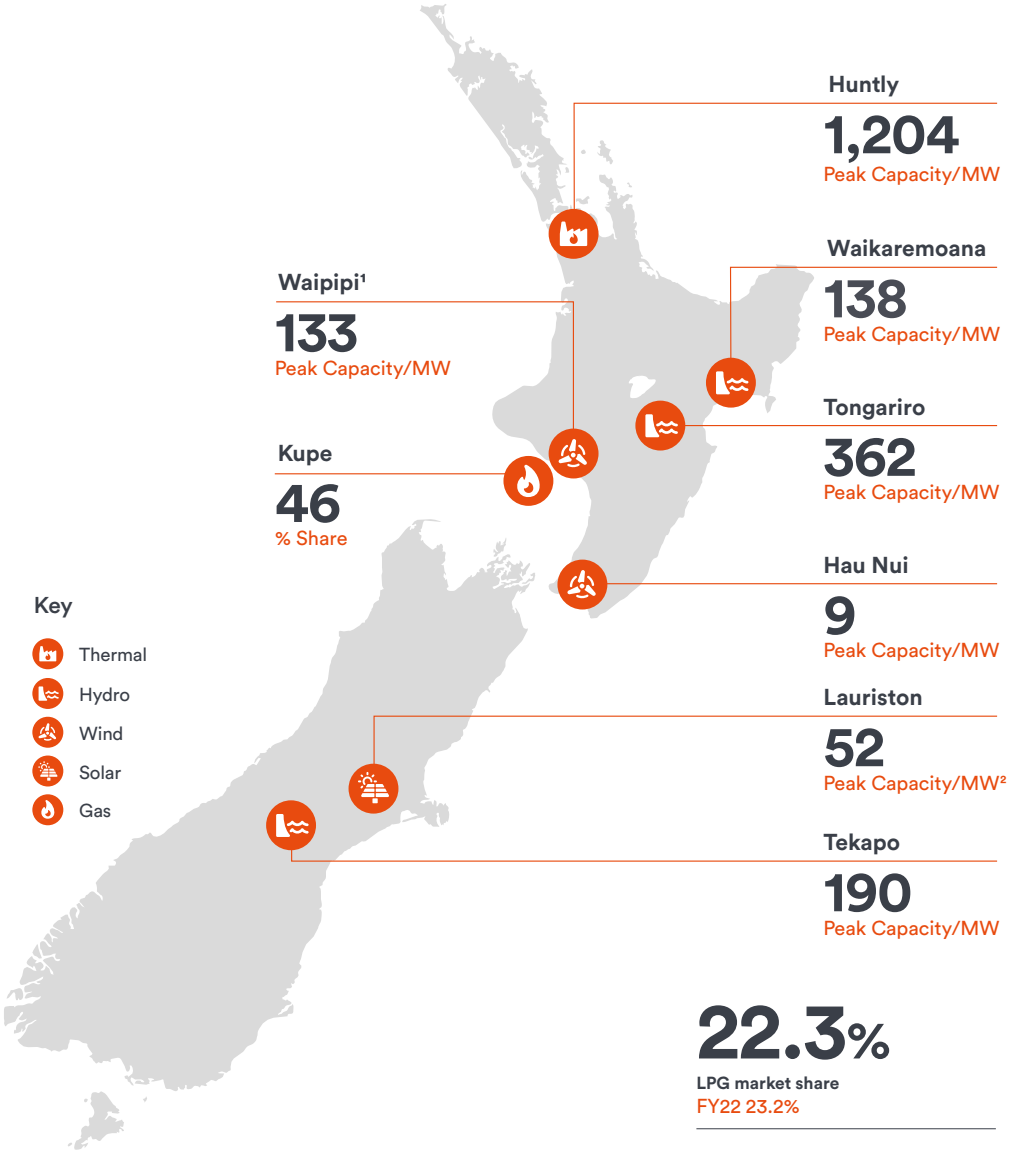
Management commentary
(no financial statements)

Who we are and what we do

Genesis is an energy generator and retailer supplying electricity, natural gas and LPG to more than 480,000 customers. The geographic spread and diverse range of generation assets provide vital support to the country's highly renewable energy sector. This means our business has historically generated consistent earnings. Our vertically integrated gas portfolio, from wellhead to our industrial and residential customers, is a vital part of the country's energy system providing flexibility, security, and price stability.

We choose to participate in markets for the long term to create value for shareholders in a sustainable way, and remain focused on evolving our business model away from pure energy supply to energy management. We achieve this through development of digital and virtual channels customers use to interact with us alongside a suite of market leading products and services providing insights our customers can act on to use energy more efficiently. This work is anchored by our people who are future focused and adaptive, seeking new and innovative ways of engaging our customers, operating our assets, and working smarter.

We understand we need to change some of the things we do to address climate change and are led by science in doing so. We've set Science Based Targets to remove 1.2 million tonnes of carbon by FY25 tied to the international benchmark of limiting global warming to below 1.5C. We acknowledge the impact our business has on the environment and communities around our generation sites, and strive for greater sustainability in the broadest sense of the word – for the environment, for people and for New Zealand.



22.3%
LPG market share
FY22 23.2%

1,268
Full time employees (FTE)
FY22 1,204

483,721
Customers
FY22 471,012

41,751
Shareholders
FY22 42,513

5,858 GWh
Electricity generated
FY22 6,481 GWh

8.4 PJ
Gas from Kupe
FY22 11.1 PJ

30.71%
Natural gas market share
FY22 29.94%

1. Genesis has an electricity offtake agreement for the energy from Waipipi.
2. Subject to final investment decision. Construction due to start late 2023 and be operational by late 2024.

Part of the Tekapo Power Scheme.

Management commentary
(no financial statements)

Letter from the Chair and CE

The past year has been marked by record rainfall in many regions, including our hydro catchments. When we released our interim results in February we updated our full year EBITDAF guidance to $515 million, subject to hydrological conditions, gas availability and the impacts of unforeseeable circumstances. As many of us experienced, the impact of those hydrological conditions and unforeseeable circumstances were considerable.

Malcolm Johns
CHIEF EXECUTIVE

Barbara Chapman CNZM
CHAIR

NIWA reported record rainfall of more than 149% above seasonal norms. While the Genesis team worked tirelessly to responsibly manage hydro lakes within their consented range, we acknowledge that for many communities the excessive rainfall brought challenges and in some places devastation. We are proud of our people at our Waikaremoana Power Scheme, who, with communications and road access cut for several days following Cyclone Gabrielle, worked around the clock with partners such as Transpower to generate electricity for Wairoa, the East Coast and Hawke's Bay when those areas were disconnected from the national grid. With our partners we were able evacuate contractors and get water, food, and other essential supplies into isolated Tuai village for the community and our team.

Our half year EBITDAF of $298 million was a 42% increase on H1FY22. Rainfall in our hydro schemes' catchments enabled us to generate record highs from hydro, and conversely turn down thermal generation to record lows, saving both fuel costs and emissions.

With a wet autumn across most of New Zealand, we continued to make the most of our hydrogeneration assets to meet demand, while continuing our fuel and emissions savings at Huntly Power Station.

As a result, our FY23 EBITDAF of $524 million is 19% higher than FY22.

The Board has declared a full-year dividend of 17.6 cents per share (cps). This represents a total distribution of $186.6 million to shareholders, with $95.7 million going to the Government as our 51% majority shareholder.

$524m

EBITDAF[1]
FY22: $440m

$196m

Net Profit After Tax (NPAT)
FY22: $222m

17.6cps

Total dividend relating to FY23 result
FY22: 17.6cps

1. EBITDAF: Earnings before net finance expense, income tax, depreciation, depletion, amortisation, impairment, unrealised fair value changes, and other gains and losses. Refer to note A1 in the consolidated financial statements on page 77 for reconciliation from EBITDAF to net profit before tax.

Management commentary
(no financial statements)

Supporting our customers and communities

Our financial performance was complemented by our ability to maintain high customer loyalty and support. The launch of a New Zealand first energy roaming product for EV drivers, EVerywhere, exceeded its targets and has been key in differentiating us in the market and acquiring new customers. Overall, customer numbers increased, churn reduced, and we had a fantastic response to our Power Shout gifting campaign, in which customers donated their free hours of power to other customers in need.

This generosity was appreciated given the rising cost of living, and the fact that after two years of holding back price changes during Covid, we passed on a portion of our rising costs to customers. Prices were also affected as we began to phase out the low user fixed charge tariff as required by regulation.

Our Te Tira Manaaki o Kenehi team, established in 2020 to look after our most vulnerable customers, ensured those in real hardship received personalised support and payment options. This year we also introduced Fresh Start, a programme to support an increasing number of customers experiencing some atypical bill payment difficulties due to rising household costs. Fresh Start provides breathing space and practical support including complimentary Power Shout hours, payment plans and more time to get on top of their power bills, helping to support and retain these customers for the long term.

Our new partnership with Habitat for Humanity's Healthy Homes programme in Auckland and Northland, as well as our ongoing support of curtain banks in Wellington and Christchurch, saw us supporting warm homes in more of our communities.

Building a talent pipeline

We remain steadfast in our commitment to encourage young Kiwis to engage with science, technology, engineering and maths (STEM). In addition to our School-gen programme of free resources for schools, the independent Genesis School-gen Trust gave $156,000 worth of STEM equipment to 36 schools across New Zealand, the highest number of recipients to date. This work is enabled by donations from our customers and our people.

Our Ngā Ara Creating Pathways programme, which works with young people in communities near our generation sites, continued to deliver apprenticeships, internships, work experience, scholarships and partnership programmes with community organisations to encourage the next generation to consider a career in the energy sector.

Future-gen progress

The weather events of 2023 underlined the need to move as quickly as we can to a low carbon future while retaining energy security for peaks and dry years. Our Future-gen strategy is our current roadmap to reduce emissions from generation through the displacement of non-renewable baseload generation with new renewable sources.

We were proud to announce our first solar development with our joint venture partner, FRV Australia, at Lauriston in Canterbury. With a capacity of approximately 52 MW we expect this site to begin generating in late 2024. We're on target to build up to 500 MW of grid scale solar, having secured other North Island development sites that will produce around 400 MW collectively.

In addition to our solar progress this year we also applied for a consent extension for a wind farm at Castle Hill in the Wairarapa. We continue to engage with Mercury Energy on their commitment to Genesis to construct the 230 GWh Kaiwaikawe windfarm in Northland, a contract in place when Mercury purchased Tilt Renewables. We also have an offtake agreement for up to 520 GWh annually from Contact Energy's Tauhara geothermal plant near Taupō and look forward to the plant coming on stream in early 2025. Overall, Genesis' proportion of renewable generation is targeted to move to not less than 68% by 2025 and to not less than 81% by 2030.

We were proud to announce our first solar development with our joint venture partner, FRV Australia, at Lauriston in Canterbury. With a capacity of approximately 52 MW we expect this site to begin generating in late 2024. We're on target to build up to 500 MW of grid scale solar, having secured other North Island development sites that will produce around 400 MW collectively.

We also know that the most impactful thing Kiwis can do to mitigate climate change is electrify more of their lives. Confidence in the availability of electricity is critical to businesses and households doing exactly that.

These initiatives support our science-based targets tied to the country's commitment to limit global warming to 1.5°C. Verified by the internationally recognised Science Based Targets initiative (SBTi), our targets will see us remove not less than 1.2 million tonnes of annual carbon emissions by FY25 (from a FY20 base), including reducing generation emissions by 36%.

Our progress toward these targets during FY23 saw a reduction in carbon emissions of 2.5 million tonnes from the FY20 base. While it appears we have exceeded our target, our emissions reduction will not be a straight line but a trend over time. New Zealand's electricity grid is driven by weather and weather has cycles.

We also know that the most impactful thing Kiwis can do to mitigate climate change is electrify more of their lives. Confidence in the availability of electricity is critical to businesses and households doing exactly that. New Zealand will continue to need thermal generation to step in from time to time when the wind doesn't blow, the sun doesn't shine or hydro lake levels are low. Because of this our contribution to grid security means our emissions reduction may fluctuate from year to year, but overall our emissions trend is heading in the right direction.

Lower carbon fuels at Huntly Power Station

Huntly Power Station celebrated its 40th anniversary this year. Originally built to use the nearby coal supply, today most of the station's electricity is generated from gas, around 66% over the past five years and 95% during FY23. Coal is now used only during New Zealand's dry hydro years and very high winter peaks.

As it enters its fifth decade, Huntly Power Station has a new and critical role to play – backing up the expansion of New Zealand's renewable generation system to meet increasing demand as the economy electrifies. Wind and solar farms will form the backbone of the system required to power electric vehicles and industries which are switching from fossil fuels to electricity, but renewable generation is intermittent. Huntly Power Station will continue to play its important role in providing the extra generation needed to hold the electricity system secure and steady as New Zealand moves through our energy transition.

We're working to provide New Zealand's electricity back up using more renewable fuel. In February we successfully trialled running a Rankine on biomass, and are now assessing the viability of a local supply chain which is both sustainable and economic.

It takes 1.5 million tonnes of biomass to generate around 3 TWh of electricity, about the level Huntly Power Station is called on to produce in a normal dry hydro year. We estimate that New Zealand's current dry year energy gap could be economically met with biomass if the right market settings are provided, and believe this is worth some focus by Government.

During the year we also had initial discussions on the possibility of using hydrogen to power Unit 5, the 400 MW combined cycle gas turbine at Huntly Power Station. Unit 5 has the potential to operate on blended natural gas and hydrogen, and to ultimately be configured to run fully on hydrogen in the future. An economic supply of hydrogen at the volume we would require would be a key aspect of any such conversion. We'll continue to explore these possibilities as they potentially become more viable over the coming years.

The financial impact of the forced outage of Unit 5 on 30 June was mitigated by high hydro storage, alternative plant availability and wholesale electricity market conditions. The unit is expected to return to service in late May 2024 once components have been obtained from overseas manufacturers. We are pursuing options to return the unit to service earlier, and have material damage and business interruption insurance cover in place.

Refreshing our strategy

Our claim that 'Genesis is helping to create a low-carbon future, powered by renewable energy' has 80% of customers saying this makes them feel good about being with us.

Also gratifying was an extensive staff survey which found 85% of our people felt positive about the culture at Genesis. Our people care about each other, our customers and our communities, which supports our commitment to deliver for our shareholders. Central to our culture is respect for our people's knowledge and expertise, seen as essential to running our generation portfolio, building and accessing new renewable sources of electricity, helping our customers manage their energy use, and ultimately contribute to New Zealand's journey to net zero by 2050.

We're proud that our customers and our people have trust in us and that makes us even more determined to live up to our purpose of securing a future of renewable energy for New Zealand.

With the support of the Board, our new Chief Executive Malcolm Johns and his executive team are clear that the most impactful thing New Zealand can do around climate change is to electrify how we live and do business. We're working with the electricity sector in how it can facilitate this over the next 10 to 30 years, and are updating our long-term strategy to cement the role of Genesis while delivering enhanced value for our shareholders. We'll be discussing this with shareholders and other stakeholders in Q2 FY24.

The timing is appropriate, with Malcolm now thoroughly immersed in the business and the sector, while retaining a fresh perspective, supported by our experienced Board and talented executive team.

This year we welcomed Warwick Hunt to the Board, and our executive team saw Claire Walker join as Chief People Officer and Stephen England-Hall come on board as Chief Customer Officer. In July 2023 we announced Ed Hyde would take on the role of Chief Transformation & Technology Officer. We're excited to see how Genesis will benefit from their experience, skills and energy.

The Board would also like to recognise and thank Tracey Hickman who stepped up to act as interim Chief Executive until Malcolm arrived in March.

The coming decade will be one of the most dynamic in the history of New Zealand's energy sector. We will continue to engage constructively with regulators to help ensure a workable pathway for new renewable generation, while ensuring security of electricity supply and affordability for households.

Viewing our progress through a triple lens of people, profit and planet, we will maximise the opportunities for Genesis to create additional value for shareholders, build the capability of our people to deliver for our customers and support the communities in which we operate, while continuing to explore and invest in new renewable options to help New Zealand decarbonise.

Our thanks to our investors, our people, our customers, the communities around our sites and all our stakeholders for your support this year.

Barbara Chapman CNZM
CHAIR

Malcolm Johns
CHIEF EXECUTIVE

The coming decade will be one of the most dynamic in the history of New Zealand's energy sector. We will continue to engage constructively with regulators to help ensure a workable pathway for new renewable generation, while ensuring security of electricity supply and affordability for households.

How Genesis creates value while keeping the lights on

A Value Creation Model (VCM) is a tool recommended by the Integrated Reporting Framework <IR>. It's a plan-on-a-page of how a business creates or diminishes value not only for itself but also for its stakeholders and those its operations affect.

The Inputs column notes the human, financial and natural resources that go into our business. The pie diagram in the centre notes our business activities, inside the external environment in which we operate. The External Environment circle notes factors over which we have little if any control, but which we must react to or work within to be successful. The Outputs column lists what we produce, and the Outcomes column summarises the effects we have. Outcomes are listed under the same headings as Inputs, and they are linked in circular fashion, because we need be aware of our effect on those resources if we are to continue to operate and be successful.

Page numbers guide you to more information about each area, and commentary on factors in our External Environment can be found on page 58.

Inputs

Finance
A healthy balance sheet supports our operations and investment in NZ's sustainable future

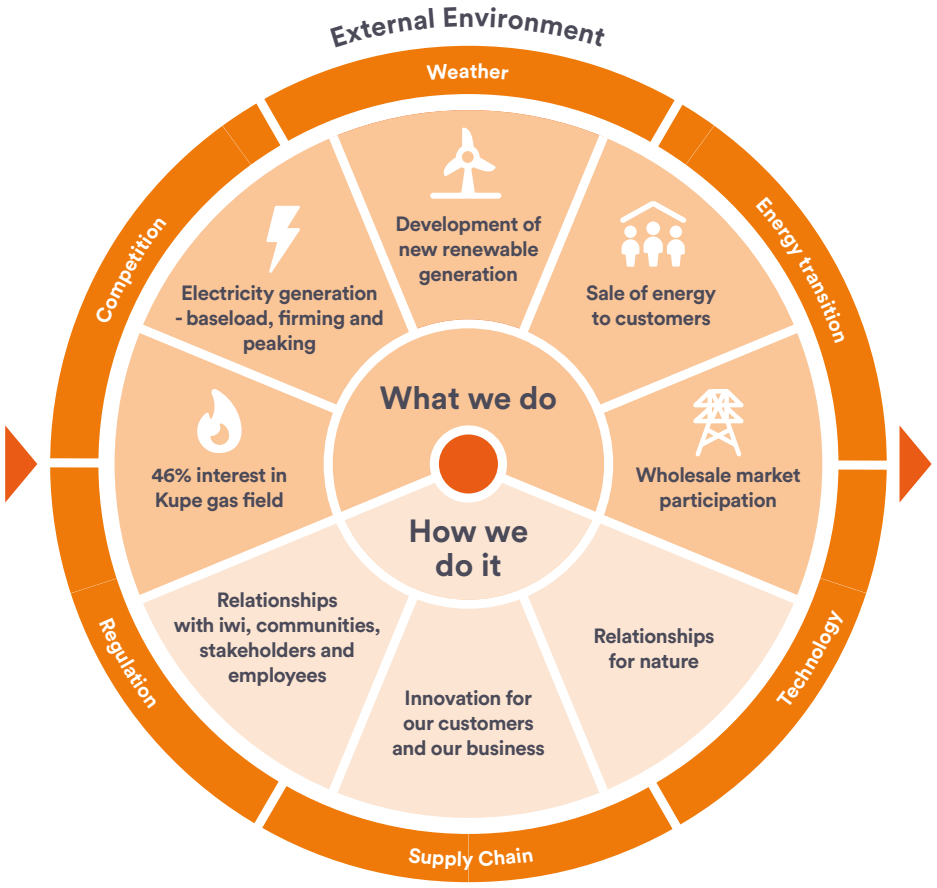
People
Our team's skills, diversity and commitment

Assets
Our power schemes, LPG networks, customers and share in the Kupe gas field

Intelligence
Technology innovations and technical expertise for our customers and our business

Nature
Resources we use and environments in which we generate electricity

Relationships
With iwi, our customers, suppliers, communities and stakeholders.



Outputs

Financial growth and shareholder returns
See page 68

Energy for our customers and the wholesale market
See page 32

Transition of thermal generation
See page 20

Technology for customers and our business
See page 26 and 34

Care of our customers and employees
See page 42

Support of STEM careers and warm homes
See page 42

Support of waterways and biodiversity
See page 28

Outcomes

Finance
Improved value for shareholders
See page 68

Growing and supporting NZ's electricity system
See page 20

People
A safe, healthy and diverse workforce
See page 49

Assets
Sustainable, reliable and economically-run energy supply, and growing customer numbers
See page 32 and 37

Intelligence
Helping customers reduce their carbon footprint and our business thrive
See page 26 and 34

Nature
Reduced emissions, healthy waterways and improved biodiversity
See page 28

Relationships
Support of energy wellbeing, more young people inspired by STEM, and constructive relationships with iwi, communities and stakeholders
See pages 37, 44 and 47

Our purpose: Empowering NZ's sustainable future

Management commentary
(no financial statements)

Results at a glance

$524m
EBITDAF[1]
FY22: $440m

$196m
Net Profit After Tax (NPAT)
FY22: $222m

2,468,855
t/CO_2e Emissions reduced[2]
FY22: 843,953 t/CO_2e

$2.4b
Revenue
FY22: $2.8b

17.6cps[3]
Total dividend relating to FY23 result
FY22: 17.6cps

42:58
Senior leader gender diversity[4]
FY22: 42:58

48
Recordable injuries[5]
FY22: 46

46
Customer interaction NPS[6]
FY22: 51

32
Apprenticeships, internships and work experience opportunities[7]
FY22: 21

$156,000
School-gen Trust STEM/ Solar equipment
FY22: $197k

300,000
Power Shout hours gifted[8]
FY22: 130k

439
Households given curtains through curtain banks[9]
FY22: 237

1. EBITDAF: Earnings before net finance expense, income tax, depreciation, depletion, amortisation, impairment, unrealised fair value changes, and other gains and net profit before tax. Refer to note A1 in the consolidated financial statements on page 77 for reconciliation from EBITDAF to net profit before tax.
2. In comparison to the FY20 base year of 4,495,002 tCO_2e. Excludes CO_2 from combustion of biomass.
3. CPS: Cents per share.
4. 42% women, 58% men. Senior leaders are classified as Tier 1 (CE), Tier 2, and Tier 3 employees.
5. As at 13 July 2023.
6. Net Promoter Score for Genesis brand.
7. Created through Ngā Ara Creating Pathways.
8. See page 48.
9. Households supplied through Genesis finance.

Management commentary
(no financial statements)

We have a unique role in helping New Zealand reach net zero by 2050, offering security of supply to provide confidence to invest in renewable generation while also building new sources of electricity. We're helping our customers use energy more efficiently, and doing our best to protect and restore the natural resources on which we rely.

A LOW CARBON FUTURE.

1.

Management commentary
(no financial statements)

Waipipi wind farm, Taranaki

Goal:

Empower New Zealand's energy transition

Sun rising on solar

Lauriston is a small centre on the Canterbury Plains, an hour's drive south of Christchurch, nestled between Methven and Ashburton. It's here, on a 93 ha site, that Genesis and our solar joint venture partner, FRV Australia, are building our first grid-scale solar farm.

When complete, it will hold approximately 80,000 solar panels and generate around 80 GWh of renewable electricity annually, enough to power around 11,400 houses. The $85 million project is expected to create more than 50 jobs during construction and be operational by late 2024.

Underlining our increasing focus on solar, we're negotiating rights to three other sites in the North Island which could deliver approximately 400 MW of solar power. Subject to consenting and grid connection processes, we're aiming for these locations to be generating electricity from 2026/27. And we're not stopping there.

One of the largest solar developers across the Tasman, FRV Australia brings global development expertise and a proven track record, while Genesis brings deep knowledge of the New Zealand energy sector and navigation of processes such as consenting and offtake agreements. We see this as a long-term partnership that benefits not only Genesis, but also New Zealand's efforts to decarbonise its economy through more renewable electricity generation.

Solar will provide diversity and flexibility to our and the country's generation portfolio. Its appeal is increasing worldwide due to development costs falling and, compared to wind farms, having easier installation and fewer supply chain constraints. Solar can be installed in different locations to hydro, geothermal and wind generation, and can be more easily integrated into landscapes.

That said, there are still challenges. Finding land in proximity to the national grid is competitive, and landowners require confidence from developers that the relationship will be long term. In addition, the huge growth in solar has led to industry skills shortages, competition for investment capital, and a queue for new connections to the national grid.

As more solar comes on-stream, the sector faces the challenge of adding flexibility to the additional generation capacity – how power generated in the middle of the day can be stored and then used at times of higher demand. FRV Australia has global experience in addressing this challenge and we look forward to working with them to adapt a solution to the New Zealand environment.

Lauriston Solar Farm

When complete, it will hold approximately 80,000 solar panels and generate around 80 GWh of renewable electricity annually, enough to power around 11,400 houses.

Our first grid-scale solar farm
bit.ly/3NIz1ab

80,000

solar panels – Operational: 2024

Future-gen strategy update

Our Future-gen strategy is our roadmap to reduce emissions from generation through the displacement of thermal baseload fuelled by coal with new renewable generation.

In addition to our solar progress this year we also applied for a consent extension for a wind farm at Castle Hill in the Wairarapa. We await a financial close decision from Mercury Energy on the construction of the 230 GWh Kaiwaikawe windfarm in Northland, and we look forward to Contact Energy's Tauhara geothermal plant near Taupō coming on stream in early 2025, for which we have an offtake agreement for up to 520 GWh pa. Overall, Genesis' proportion of renewable generation is targeted to move to 68% by FY25 and to 81% by FY30.

These initiatives support our Science Based Targets tied to the country's commitment to limit global warming to 1.5°C. Verified by the internationally recognised Science Based Targets initiative (SBTi), our targets will see us remove more than 1.2 million tonnes of annual carbon emissions by FY25 (from a FY20 base), including reducing generation emissions by 36% and emissions from use of sold products by 21%.

Our progress toward these targets during FY23 saw a reduction in emissions of 2,288,751 tonnes of CO_2e. Broken down, Scope 1 and 2 emissions in FY23 were 60% lower than FY20 which equates to a reduction of 1,614,103 tonnes of CO_2e. Scope 3 emissions from use of sold products were 49% lower than FY20 which equates to a reduction of 674,648 tonnes of CO_2e. You can read more detail on this in our Climate related Disclosures Report.

Renewable generation targets

68%
by FY25

81%
by FY30

The future of Huntly Power Station

The next decade is critical for the country's transition to a low carbon future, and the need for firming, peaking and time-shifting supply to the market will be vital to cover the intermittent nature of renewables. It will be essential for the economy and New Zealanders' confidence in the electricity system that power flows uninterrupted to homes and businesses while new renewable generation is built.

Part of ensuring that security rests with Government to implement the right policies, regulation and market settings to provide generators and other market participants with the certainty and confidence to make large-scale and long-term investments. Huntly Power Station could also continue to play a critical role in providing back-up to the electricity system if it is valued and enabled.

Huntly marked its 40th anniversary in 2023. It was built by the government to provide back-up to the country's renewable hydro system. Even then the risk of low rainfall was seen as a threat to New Zealand's energy security. Huntly, through reliable thermal generation from gas and coal, would provide the extra capacity needed to serve the growing population.

Huntly marked its 40th anniversary in 2023. It was built by the government to provide back-up to the country's renewable hydro system. Even then the risk of low rainfall was seen as a threat to New Zealand's energy security.

As it enters its fifth decade, Huntly has a new and critical role to play – facilitating the growth of New Zealand's renewable generation system to meet increasing demand as the economy electrifies. A proliferation of wind and solar farms is coming to help power electric vehicles and industries which are switching from fossil fuels to electricity as New Zealand decarbonises. But the wind doesn't always blow, the sun doesn't always shine, and inflows to hydro lakes can vary widely from month to month and year to year. Huntly could continue to provide the extra generation needed to hold the system steady and meet demand spikes.

The Auckland floods and the devastation left by Cyclone Gabrielle reinforced that without electricity, many elements of our daily lives and the way we do business come to an abrupt halt.

Electricity is one of those utilities that we take for granted and don't appreciate how central it is to our lives until it's not there. The Auckland floods and the devastation left by Cyclone Gabrielle reinforced that without electricity, many elements of our daily lives and the way we do business come to an abrupt halt.

Since 2017, Genesis has run an annual national survey tapping into the views of Kiwis about the use of coal, gas and renewable generation. This year's survey was done after the Auckland floods but before Cyclone Gabrielle and included this question: Huntly Power Station uses coal and gas to provide back-up generation to ensure there is sufficient power available for homes and industries when the wind doesn't blow and our waterways are low. Do you support or oppose Huntly Power Station being used for back-up generation?

Seventy four percent of the 1,000+ people polled strongly or somewhat supported Huntly providing essential back-up generation knowing it uses gas and coal. Just 14% strongly/somewhat opposed. Furthermore, 57% of respondents supported the use of gas and coal generation to ensure price stability and security of supply, up 6% on 2022 and 12% on 2021. This is the highest level of support since the survey started.

Huntly runs primarily on gas, and only burns coal when New Zealand demand requires it. Over the past five years, gas, which produces half the emissions of coal, has been the primary fuel used 66% of the time and coal 34%. The bulk of that coal use was in the dry years of FY19 and FY21 when hydro lakes were low and gas supply constrained.

While it's reassuring to see a wide understanding and acceptance of the need for Huntly to burn fossil fuels to keep the lights on, we are focused on the need for the plant to generate from a more sustainable fuel.

Over the past five years gas, which produces half the emissions of coal, has been the primary fuel used 66% of the time at Huntly Power Station, and coal 34%.

In FY23 we did a lot of work exploring alternative fuel options. This has included signing a collaboration agreement with Fonterra to look at the viability of a local supply chain for the type of biomass both companies need to move from coal. We completed a successful burn trial of biomass to prove its compatibility with the Rankine units at Huntly, we're examining forms of carbon capture, and noting trials in power plants offshore using hydrogen.

Huntly's location, in the 'golden triangle' between the population centres of Auckland, Hamilton and Tauranga, with direct connection to the national grid and a skilled local workforce, reinforces its strategic importance. It's North Island location provides resilience to the national grid in the event of South Island disruption from an alpine fault or outage of the inter-island HVDC cable. We're excited about the site's potential to transition to a renewable energy centre, perhaps with the addition of emerging technologies and biomass fuel conversion, while continuing to offer security of supply through baseload generation, firming and peaking.

Our biomass trial

When sourced sustainably, biomass is seen as a lower emission alternative to fossil fuels. It is essentially wood compressed into energy-dense pellets. In February 2023, after significant research and supply chain challenges, we successfully conducted a week-long trial at Huntly Power Station using biomass to power a Rankine unit, proving it is technically feasible.

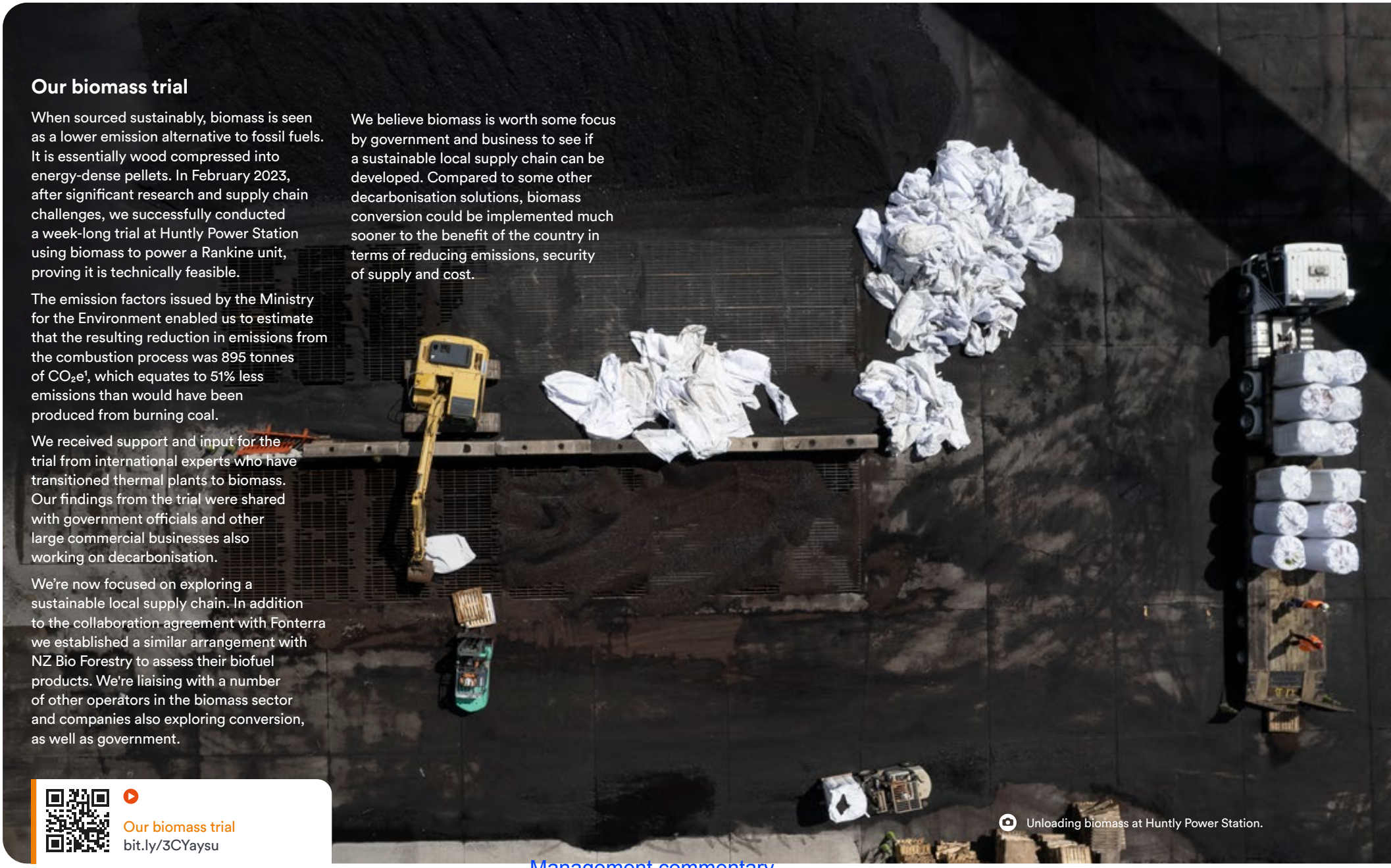
The emission factors issued by the Ministry for the Environment enabled us to estimate that the resulting reduction in emissions from the combustion process was 895 tonnes of CO_2e[1], which equates to 51% less emissions than would have been produced from burning coal.

We received support and input for the trial from international experts who have transitioned thermal plants to biomass. Our findings from the trial were shared with government officials and other large commercial businesses also working on decarbonisation.

We're now focused on exploring a sustainable local supply chain. In addition to the collaboration agreement with Fonterra we established a similar arrangement with NZ Bio Forestry to assess their biofuel products. We're liaising with a number of other operators in the biomass sector and companies also exploring conversion, as well as government.

We believe biomass is worth some focus by government and business to see if a sustainable local supply chain can be developed. Compared to some other decarbonisation solutions, biomass conversion could be implemented much sooner to the benefit of the country in terms of reducing emissions, security of supply and cost.

Our biomass trial
bit.ly/3CYaysu



Unloading biomass at Huntly Power Station.

1. Comparing the tCO_2e produced from generating 1.5GWh of electricity using biomass instead of coal as the fuel source.

Managing our carbon obligations

We have a policy to manage the price risk associated with carbon over the short to medium term. Prices are managed using forward swaps and options. We are also involved in two forestry partnerships, Dryland Carbon and Forest Partners, that help remove carbon from the atmosphere and provide emission units (NZUs) that enable us to meet our obligations under the New Zealand Emissions Trading Scheme (ETS). These units help manage the future costs of thermal generation or can be sold to other emitters.

Dryland Carbon was formed in 2019 and now has 10,300 hectares planted or with planting in progress. In FY23 the fund distributed 16,109 NZUs to Genesis.

Forest Partners was founded in early 2022 and is the process of identifying and purchasing land and preparing to plant.

Genesis is one of four founding partners in both funds. We understand there is increasing concern about the impact of pine forests on local communities and on national biodiversity. These factors are considered when sites are chosen and planting plans made. We contribute capital to marginal farmland, often within existing farms, for long-term afforestation and upkeep. We are committed to rotation forestry and ensure trees are maintained so that high-quality timber is harvested. Responsible rotation forestry, supported by professional pest management, can provide significant, reliable, intergenerational income streams to support farming families.

Tackling our transport emissions

Transport makes up approximately 17%[1] of the country's emissions so electricity, in the form of electric vehicles (EVs) and charging infrastructure, will play a key role in decarbonisation.

We're playing our part. In FY22 Genesis was the first company in the southern hemisphere to add the new, fully electric, Fuso eCanter truck to our commercial fleet to deliver LPG bottles. In FY23 we added three more electric trucks to our LPG depots in Christchurch, Feilding and Hamilton.

This year we finalised an EV rollout plan to transition our fleet to 100% electric between FY24 and FY26. That starts with the replacement of 14 petrol vehicles in FY24. We'll also trial a converted 4WD ute and if successful, will replace our diesel utes with EVs.

To support this programme, we'll install rapid EV chargers at all generation sites and selected LPG depots over the next three financial years. This has required the design of an EV infrastructure roadmap to communicate our charging needs to local network supply companies, and commission charging suppliers and electrical contractors. This will ensure we have chargers waiting for our EVs as they are rolled out to sites across the country.

This year we finalised an EV rollout plan to transition our fleet to 100% electric between FY24 and FY26.

1. https://environment.govt.nz/publications/new-zealands-greenhouse-gas-inventory-1990-2020-snapshot/#figure-3-breakdown-of-new-zealands-emissions-in-million-tonnes-of-carbon-dioxide-equivalent-mt-co2-e-by-sector-in-2020

Goal:

Help customers to transition

Working towards a low-carbon future includes helping households and businesses make smart decisions about how they use energy. We're proud to be empowering customers with the innovative tools and knowledge.

Our discounted EV plan and EVerywhere product support transport decarbonisation and encourage shifting load on the national grid away from peak times, while the Energy IQ app helps households understand and manage their energy use. Our commercial team helps Kiwi businesses use energy more efficiently.

EVerywhere launch for EV drivers

In FY23 we launched EVerywhere, a way for our EV-owning customers to take their at-home electricity rates with them and not worry about charging on the road. A first in the New Zealand market, EVerywhere allows Genesis customers to spend less when using any of ChargeNet's 280 public chargers throughout New Zealand.

Accessed through our Energy IQ app, customers link their Genesis and ChargeNet accounts. When they charge at a ChargeNet station they pay their Genesis Energy EV rate, providing an average cost saving of 70% on public ChargeNet rates.

We launched EVerywhere in September 2022 with a goal of 750 customers subscribed in the first three months. We exceeded this target by nearly 10%.

Importantly, EVerywhere has been a major success in differentiating us in market and acquiring new customers. We saw a 100% increase in EV customers joining Genesis in the month after launch – more than any prior month and reflecting the proposition's appeal to EV drivers.

EVerywhere
bit.ly/3pB1bfg

Customer feedback

"It's the best product in the market today. Others are doing day/night rates too, but this takes Genesis way ahead in the competition".

"EVerywhere was the light-bulb moment."

52%

Of EV plan customers signed up to EVerywhere, exceeding our target of 50%

2,173

Customers using EVerywhere.

Helping households take control of their energy use

The Energy IQ app continues to be a popular tool for our residential customers. Once installed on your phone, it shows your household's energy use breakdown and compares your power use to similar homes. The Eco Tracker shows when generation is high or low carbon at different times of day, encouraging consumers to use electricity at low-carbon times.

In FY23 we introduced Energy IQ 2.0, a fresh new look and structure for the app. We first released the new design for single-property customers, then rolled it out for multi-property customers later in the year.

We also released an extended version of our LPG order tracker. It now provides LPG customers with more information about their order patterns and history, to help them stay on top of their bottle gas orders.

286,887

Residential and SME customers use Energy IQ. 50% of Genesis residential customers engage with energy management tools through Energy IQ.

Heat pump trial advances smart home technology

In the first half of FY23 Genesis conducted a demand side management trial by taking remote control of customers' heat pumps.

We gave 48 customers a wifi-enabled device which allowed us to take control of their heat pump, enabling us to test two scenarios for managing load:

- Turning down the heat pump by one degree for an hour during a morning or evening peak
- Switching off the heat pump for 20 minutes at peak times

The customer group was split in to two cohorts: one group were prompted to act during an event; the other had Genesis control their heat pump on their behalf with a 'set and forget' model.

At the end of the trial the set-and-forget approach was by far the best performing option with customers saying they either hadn't noticed the temperature decrease or weren't bothered by it. There was also small cost saving to be realised for each event.

"We see it as part of a bigger ecosystem for the future in terms of demand side management for the benefit of customers and the national grid."

The trial proved that by taking remote control of a customer's heat pump we could help them reduce cost, reduce load on the grid and ultimately make running their heat pump a whole lot more convenient.

Head of Energy Services Gareth Coffey says Genesis will look into combining heat pump management with electric vehicle charging and hot water control to≈create an ecosystem of devices where usage could be made flexible.

"We see it as part of a bigger ecosystem for the future in terms of demand side management for the benefit of customers and the national grid."

Supporting energy efficiency in Kiwi business

Our business customers are also working hard to decarbonise their operations – and we're here to help. We provide energy management services, including Energy Insights monitoring to identify ways to reduce usage, and work with them to design comprehensive Decarbonisation Roadmaps.

In many cases, this involves assessing the conversion of fossil fuelled consumption to renewable sources, as well as options for making their operations more energy efficient.

32%

Of our large business customers use an energy management service.

20%

The typical energy cost reduction identified after a Genesis energy audit.

Management commentary
(no financial statements)

Goal:

Protect and restore nature

Our commitment to nature

Our Nature Position Statement sets out Genesis' commitment to the natural world. In New Zealand, 36% of GDP is dependent on biodiversity and ecosystem services – and our generation activities have a range of environmental and cultural impacts in relation to biodiversity.

Genesis supports the 2050 vision of the United Nation's Kunming-Montreal Global Biodiversity Framework and the implementation of the Aotearoa New Zealand Biodiversity Strategy | Te Mana o te Taiao for the protection, restoration and sustainable use of biodiversity. Genesis will play our part and our approach aims to:

- **Have a positive impact in the key locations in which we operate**
- **Create opportunities to connect and engage**
- **Develop authentic and effective approaches for how we value and support nature**

Read our full Nature Position Statement here.

Our commitment to water

Water is central to Genesis' role as one of the largest generators of electricity for New Zealand, and our Water Position Statement details our commitment to healthy waterways. Hydro electricity generation has a range of environmental effects, stemming from the damming and diversion of flows from their natural water courses.

Examples of our work include jointly funding Project River Recovery in the Upper Waitaki Basin, and partnering with the Department of Conservation (DOC) on the national Whio Forever programme since 2011.

Genesis will maintain strong relationships to address adverse effects of our power schemes, while meeting the renewable electricity needs of New Zealand as we progress toward a low carbon future.

Read our full Water Position Statement here.

Supporting habitat restoration along the Waikato River

Our Huntly generation site is an iconic sight along the Waikato River, so it's important we help look after the surrounding environment and communities.

After extreme weather events battered the Waikato region in early 2023, we provided funding to the Waikato RiverCare catchment group to support the post-cyclone clean-up.

With help from staff from the Waikato Regional Council, our donation allowed Waikato RiverCare to quickly engage contractors and whānau to remove flood debris from fences, erect temporary fencing around planting projects and start the work to establish new permanent fencing around slips and flood-damaged fences at projects.

We have also supported Waikato RiverCare in its habitat restoration efforts throughout the year.

Project River Recovery expands

Since 2010, we've been working with DOC and Meridian Energy to support a landscape-scale ecosystem restoration programme in the Upper Waitaki Basin, the location of our Tekapo Power Scheme and Meridian's Waitaki Power Scheme. The Waitaki River Catchment is a nationally important braided river ecosystem that's home to a range of threatened or at-risk native birds, insects and fish.

This year we have committed to renewing the partnership, which will see a boost in funding and an extension of existing work programmes in the Tekapo, Pūkaki, Ōhau and Lower Waitaki catchments. The agreement will see Genesis contribute $287,500 each year, for an anticipated 35 years, to be invested in workstreams including weed and predator control, braided river habitat restoration, island creation for birds and other species and wetland enhancement. The programme comes into effect in 2025.

23k ha

Of natural braided river habitat currently maintained by targeted weed removal thanks to Project River Recovery

Management commentary
(no financial statements)

A tough year for whio

Since 2011, Genesis has partnered with DOC on Whio Forever, a joint conservation programme to secure the future of native blue ducks in the wild. Our goal is a year-on-year increase in the number of breeding pairs, however, this is a huge challenge with climate change, extreme weather, and cost increases all making it tough to achieve strong results.

The decrease in whio numbers this year can be linked to flood damage to predator trapping lines which has made it difficult for people to get access to clear and reset traps. Bad weather has also limited surveying work to count whio pairs.

Whio Awareness Month in March brought attention to whio, attracting volunteers and donations for the cause.

The breed and release programme included the release of 13 juvenile whio in Arthur's Pass National Park. They were helicoptered to their new home in January 2023; eight ducks are now living in the Edwards River and five in the Poulter River.

97%

Increase in breeding pairs since 2011, when the Whio Forever project launched

587

Breeding pairs of whio measured in FY23

15%

Decrease in the number of breeding pairs compared to the previous year

1,631km

Riverbank managed with predator traps in FY23

Whio in the wild
bit.ly/3CYSCxM

Moawhango willow control

As we worked on renewing consents for the Tongariro Power Scheme, we and the Moawhango community identified reduced water flows in the Moawhango River may have exacerbated the growth of willows. Willow encroachment was restricting water flow and leading to log jams, causing water quality issues as willow debris decomposed.

Resource consents granted in 2004 committed Genesis to undertaking 7km of willow control in the Moawhango by 2039. We have already exceeded that requirement, with 18km now controlled under the Moawhango Willow Management Plan, developed in consultation with the Moawhango community. Most of the main river stem is now clear of willows and the project is in maintenance phase to control reinvasion.

The work has resulted in noticeably improved river health, and log jams have become a rarity.

Management commentary
(no financial statements)

For a business to be sustainable it must maintain and future-proof its assets, and observe a duty of care for the people essential to its operation. In our case that's our employees, customers, iwi and communities around our generation sites, and stakeholders in government and the energy sector.

A SUSTAINABLE BUSINESS. 2.

Management commentary
(no financial statements)

Penstocks taking water to Tekapo B Power Station in Lake Pukaki.

Management commentary
(no financial statements)

Goal:

A well-managed business

Our hydro schemes ran hard this year, together achieving a record 3,669 GWh of generation. This was 936 GWh more than FY22, providing enough extra renewable power for approximately 134,000 households.

In turn, Huntly Power Station's output was reduced to a record low of 2,177 GWh, saving fuel costs and significantly reducing scope 1 carbon emissions by 1.1 million tonnes compared to FY22, a 52% reduction.

Hydro conditions won't always be as favourable as this year, but these results highlight the value of our fuel diversity and thermal plant flexibility.

Improving performance and efficiency

Each of our generation sites underwent maintenance and upgrades this financial year. Our team at **Waikaremoana Power Scheme** also had to deal with the impact of Cyclone Gabrielle. Communications and road access were cut for several days, but our people worked around the clock to generate electricity for Wairoa, the East Coast and Hawke's Bay despite these constraints. In partnership with MB Century we were able to evacuate some contractors and get water, food, and other essential supplies into the isolated Tuai village for the community and our team.

Waikaremoana

As things returned to normal work continued on two big projects. The second of three new generators arrived from Spain and was trucked to Tuai station, installed and commissioned in June 2023. The third 90-year-old generator is due for replacement in FY24, completing a seven-year, $33.7 million project that will potentially boost Tuai's capacity by 6 MW[1], enough to power an extra 1000 homes.

Nearby, Piripaua station completed its own $8.2 million overhaul of its two generators, which were first commissioned in 1943. The work will increase their efficiency by up to 3.2% and increase their output by an extra 4.2 GWh per year, enough to power 600 households.

1. Due to station constraints the full impact of the efficiency gain is only achievable when the station is operating below the maximum output of 60 MW.

Waikaremoana
bit.ly/3OG98rY

Huntly

At Huntly Power Station, Unit 4 Rankine underwent its eight-yearly 'cold survey', a huge project involving stripping the turbine, undertaking repairs and improvements and putting it back together again.

The job took 174 days, 59,620 working hours, involved 30 different contacting companies and cost $8.8 million. It will improve efficiency of the unit by between 0.6% to 1.1%, and decrease auxiliary power requirements by up to 0.9 MW. This will have significant commercial and sustainability benefits, including fuel cost savings and a reduction of 2,900 to 13,100 tonnes of CO_2 emissions between FY23 and FY26.

Huntly Power Station
bit.ly/3NYSg0p

Management commentary
(no financial statements)

Tongariro

At the Tongariro Power Scheme, the Poutu Intake on the Tongariro River underwent its first major refurbishment since the intake was commissioned more than 50 years ago. A vital structure in the scheme, the Poutu Intake feeds water from the Tongariro River to Tokaanu Power Station. Its refurbishment included civil and structural repairs, involved multiple contracting companies and cost $4.4 million. It required comprehensive safety oversight in an outdoor environment subject to rapidly changing weather and river conditions.

Following the successful trial of an underwater Remotely Operated Vehicle (ROV) to complete a 3km tunnel inspection in FY22, an ROV was again deployed to inspect a 6.1km tunnel in the Tongariro Power Scheme. The 500kg machine attached to a tether travelled the length of the 6.3m wide tunnel taking photos and 3D sonar recordings, mapping the tunnel's interior and gathering detailed data. The use of ROVs is a step change in safety and operations: tunnels do not have to be drained before inspection and our people do not have to travel through them, resulting in reduced inspection time and plant resuming generation of electricity for New Zealanders sooner.

Rangipo Power Station, located 63m underground near Turangi, benefitted from an upgrade of its original 40-year-old gas insulated switchgear equipment. The equipment ensures electricity safely flows from the power station to the national grid. The installation of the equipment took 12 weeks, costing $4.2 million, and required complex planning with multiple companies to retrofit the new equipment into the existing power station and national grid components. The new equipment is expected to have an asset life of over 30 years and remove leakage of historic SF_6 gas, a greenhouse gas.

Tongariro Power Scheme
bit.ly/3Dv0APp

Tekapo

The future-proofing of the Tekapo Power Scheme continued in FY23 with a further $1.3 million worth of upgrades. Other significant works costing more than $42 million took place during the previous three years, including a new intake gate at Lake Tekapo to safeguard against the risk of seismic activity.

The FY23 works included new circuit breakers and switch gear at the sub-station next to the Tekapo B power station on the shore of Lake Pūkaki, to make the switchyard more automated, reliable and safer. This will be completed in FY24

Tekapo Power Scheme
bit.ly/3Q3lInF

Digital transformation

Customer technology is developing rapidly, and this year we completed the process to identify technology and vendor options to modernise our customer platforms, including billing, sales, service and pricing. We expect to be able to confirm our vendor and solution decisions by the end of 2023 and move toward implementation and full business and customer service transformation.

This will enable us to lower our cost base, improve internal efficiencies and employee and customer experience, and increase the speed at which we can bring to market new value-add products and propositions. We expect to start seeing the benefits of our digital transformation in 2025.

LPG delivery goes the extra mile

In a year of extraordinary challenges it was enormously satisfying to pick up the 2023 Canstar Blue award for most satisfied customers for natural gas and bottled gas. We were the only energy company to earn a 5-Star rating.

Cyclone Gabrielle and weather events in Auckland and Northland saw our teams go above and beyond in delivering gas to customers, liaising with Civil Defence to access properties along damaged roads. We proactively contacted customers and worked with them until they could get back in their homes, and have their bottles removed or replaced safely.

Driver recruitment was a challenge in FY22 due to labour market demands, and at the beginning of FY23 team members from other parts of the country commuted to Auckland to undertake weekend deliveries. As we end the year, a remuneraton review, repositioning of job advertisements and fine-tuning our selection processes see our depots almost fully staffed.

Communications with customers have improved thanks to the Energy IQ app enabling them to see their order history, order replacement bottles and see expected delivery dates.

We improved safety compliance at our depots, and stepped up driver education regarding site safety. Customers receive clear communication if their site requires improvement to enable the safe delivery of bottles.

In FY22 we used in-house expertise to redesign our LPG trollies, improving their stability, ergonomics, control, and reducing the weight-loading on the user by approximately 40%. The trollies went into production in FY23 and are now being rolled out to depots.

We've armed our drivers with lone worker devices, which activate, or can be activated if there's an emergency when they're alone at a depot or on the road.

And our LPG fleet is doing its bit for the environment too. In FY22 we were the first company in the southern hemisphere to add the new, fully electric, Fuso eCanter truck to our commercial fleet to deliver LPG bottles. In FY23 we added three more electric trucks to our LPG depots in Christchurch, Feilding and Hamilton.

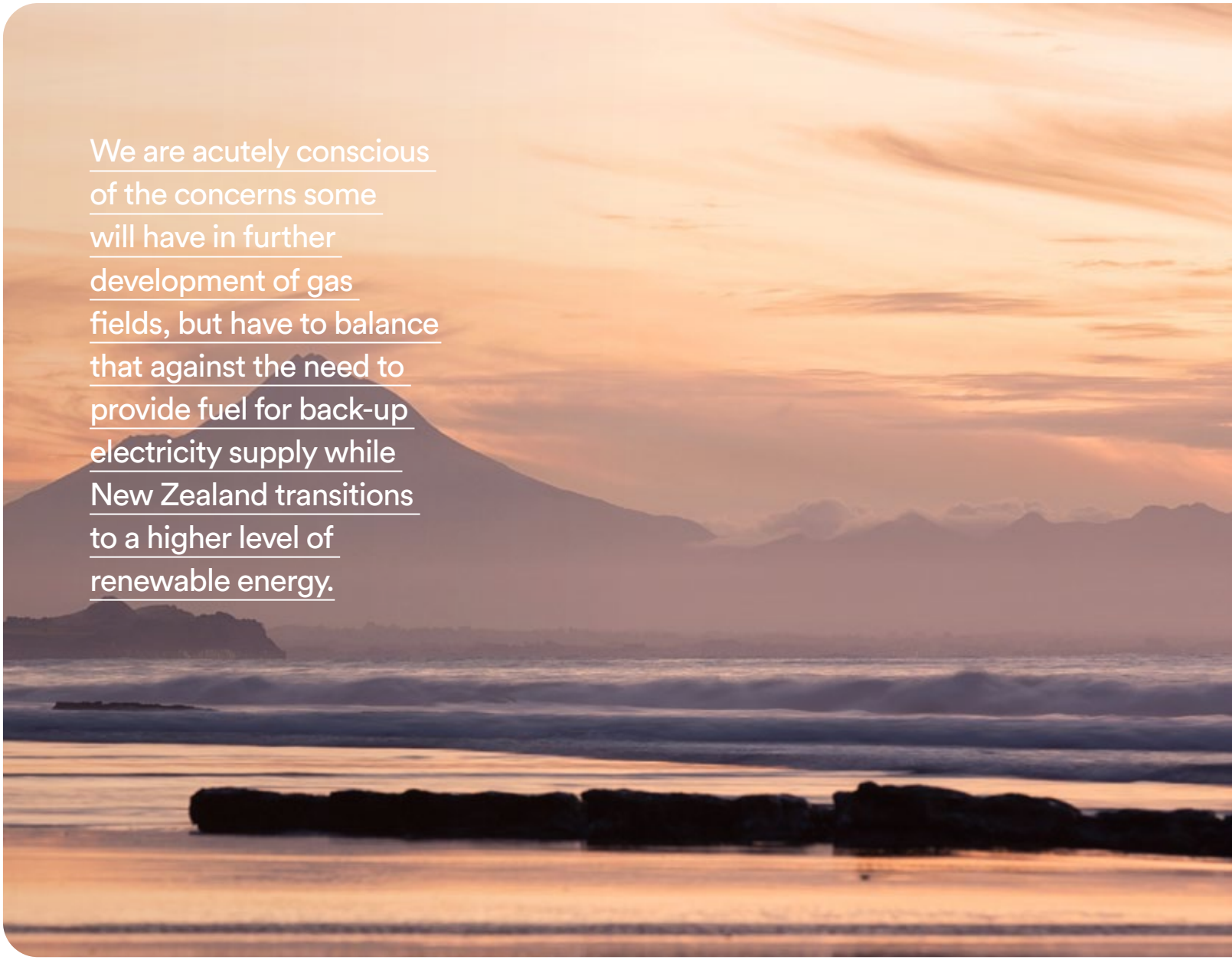
LPG trollies
bit.ly/3ORh62A

Maximising Kupe

Genesis owns 46% of the Kupe gas operation off Taranaki as a joint venture with NZ Oil & Gas and field operator Beach Energy. The gas and LPG we receive from Kupe is used by Huntly Power Station and sold to our customers. To maximise production from this asset, the joint venture applied for and was granted approval by the Environmental Protection Authority to drill a new development well within the existing permit area.

We are acutely conscious of the concerns some will have in further development of gas fields, but have to balance that against the need to provide fuel for back-up electricity supply while New Zealand transitions to a higher level of renewable energy. Further, we expect the additional gas from KS-9 will enable Huntly Power Station to run less on coal and therefore lead to a net reduction in carbon emissions as New Zealand moves through the energy transition.

Our investment in Kupe follows the successful inlet compression project at the production station near New Plymouth in FY22. Gas from the new well, KS-9, is expected early in 2024.



Waste management

We are working hard to reduce our Auckland and Hamilton office waste with a goal to significantly minimise waste going to landfill and single-use products that fall under co-mingle recycling.

For a number of years, we have used the well-recognised Method Bin system at our four corporate offices to separate our waste going to landfill: glass, cans and plastics; cardboard and paper; and organic waste. This year we improved our waste-sorting communications to help educate team members on how to use the bins more effectively and further reduce our waste.

We can now measure and monitor our waste in each category, providing a baseline against which we can measure our reduction interventions.

Rising costs

Like all businesses, we have seen cost increases in a number of areas during FY23, largely in line with inflation. The main areas were in insurance, software and Kupe operating costs. Staff numbers rose, particularly in customer facing roles, and contributed to an increase in operating expenditure.

Transport cost increases were largely driven by fuel, and service costs were driven by scarcity and competition for resource. To address these, we engaged in detailed conversations with suppliers to minimise increases, and in many cases have been able to rely on existing contractual positions such as limitations on price increases linked to the Consumer Price Index, and most favoured nations clauses.

One area in which cost declined was in coal imports. Our last shipment of imported coal arrived in July 2022 and we have no plans for further purchases.

We can now measure and monitor our waste in each category, providing a baseline against which we can measure our reduction interventions.

A sustainable solution for ash

When Huntly Power Station generates power from coal, it produces large quantities of ash as a byproduct.

This year we teamed up with Fletcher Building to prevent pond ash going into landfill. Instead, it is used by Golden Bay as a raw material in its cement – creating a lower-carbon cement product and contributing to a circular economy. This initiative builds on our earlier work, which sends the fly ash from Huntly to Golden Bay to be used in concrete. The arrangement with Golden Bay includes the recycling of all available fly ash and up to 20,000 tonnes of pond ash annually.

"Contributing to waste reduction at a large scale for the benefit of all New Zealanders is incredibly exciting," says Gian Raffainer, General Manager at Golden Bay. "It is a win-win for the environment and for Kiwis who want to use more environmentally friendly products."

Genesis' Chief Operations Officer Rebecca Larking said it was rewarding to see a by-product from creating energy become a raw material in the construction sector. "Finding circular solutions with companies like Golden Bay is a vital part of Genesis' focus on sustainability."

Management commentary
(no financial statements)

Goal:

Positive relationships and open conversations

Our sustainability framework acknowledges that working with iwi and stakeholders such as customers, community groups, investors, the Government, NGO's and our people is key to creating shared success.

This year we've refreshed the Genesis brand and attracted attention and market share with our no- frills Frank offer. We've engaged with our local communities, creating job opportunities as well as learning experiences. We have also brought our views, knowledge and experience to the Government's efforts around New Zealand's goal to reduce emissions and transition to a low carbon economy.

Relevant and relatable

What's in a name? Quite a lot, when your brand has been around since 1999, so it's important to stay relevant for new generations of consumers.

Our new brand platform, based around a family and fronted by its youngest member, George, is helping Kiwis engage with how we're empowering New Zealand's sustainable energy future. It's a family big on technology, but also in character, able to connect with consumers.

Already George's personality has seen Genesis placed in New Zealand's top 10 TV ads and feature on Best Ads, a global listing of international ads with universal appeal.

George has introduced Genesis' unique offering of EVerywhere energy roaming, which enables EV owners to fast charge on the road and pay like they're at home. We are now considered market leaders in meeting the needs of EV owners. Awareness of our support for EV uptake has shifted from 4% in October 2022, to 18%.

We also doubled awareness levels of our Energy IQ app in a campaign aimed at non-customers. Our Power Shout customer reward is now the most well-known and flexible offer in the market.

This year 28% of consumers agreed Genesis is helping move New Zealand towards a more sustainable future, up by 6%.

Awareness that we offer advice to make better choices and to keep energy costs down has also risen by 10% to 29%.

Our claim that 'Genesis is helping to create a low-carbon future, powered by renewable energy', has tested strongly with the market and customers, with 80% of customers saying the campaign makes them feel good about being a Genesis customer.

Results like these have contributed to further improvement in our churn rate this year which at 12.1% is lower than 12.8% in FY22 and well below our target rate of 15.8%. In a competitive market we're proud to have increased our customer numbers by 2.7% to 483,721 by the end of FY23.

George and family

Management commentary
(no financial statements)

20.5m

hours shouted since launch in 2018. This year we've shouted 5.7m hours of power.

Something to shout about

Power Shout, launched in 2018, enabled customers to book pre-selected hours during specific weeks chosen by us, then call us to redeem their booked hours.

Today they have full control of their free hours through our Energy IQ app and can redeem them any time, on any day.

This flexibility is unmatched in the market and handy if relatives are visiting, a renovation job is scheduled, or a new baby is due. We now also offer Power Shouts through a range of customer interactions including joining Genesis, moving house, or re-contracting their supply.

We've shouted 20.5 million hours since 2018, awarding 5.7 million hours in FY23 alone.

A gift wrapped in a complaint

Complaints mean unhappy customers but to Genesis, they also represent the gift of an opportunity to dig deep, find the root cause and prevent a recurrence.

Our investigate and resolve framework ensures a consistent approach - investigate and resolve, rank and prioritise, act to fix the root cause. What we learn supports us in resolving future problems. This year we escalated some 1,200 complaints from Genesis customers – around the same as in FY22.

In a typical day, our customer care representatives take part in 2,000-3,000 interactions through phone calls, emails, online chat and social media messages. They resolve around 86% immediately. To support their performance, we continually invest in our skills programme where new team members receive four weeks of training. What we teach draws on what we learn through treating complaints as a gift.

An important learning is to treat customers as we want to be treated ourselves. If LPG deliveries are running behind, we let those affected know why. Our team leaders stay on alert for incidences when smart meters fail to transmit real time consumption data. Because a subsequent bill will reflect the difference between estimated and actual consumption, we aim to advise customers in advance to prevent bill shock and to offer payment solutions including discounts.

Problems with meters are also monitored and the smart meter team advised when older technology needs upgrades or connections to transmission networks are unreliable.

While we encourage all customers to monitor their consumption through our digital tools, not all do and if we see it rising more than 20% above usual, we'll attempt to contact them.

Complaints are a gift, but we attempt to minimise them by ensuring the customer's voice is heard and considered, right through our operations.

Privacy

Our approach to Privacy has been reset through the last year. We anticipate that this is an area where customers will become increasingly conscious of how their information is used and have high expectations that we not only protect their data but utilise it appropriately.

Our new Privacy Officer has established a Privacy Office to lift our maturity and deal directly with customer requests and concerns. A full audit has been undertaken to provide assurance of our approach and inform future roadmaps. Our capability build is being measured against the ISO27701 (Privacy) standard.

Our Privacy Office is also actively involved in development of our data ethics framework in anticipation of customer expectations.

Perfectly Frank

Our straight-talking energy retailer has won over energy consumers. Frank Energy, launched in 2022, earned a Consumer NZ People's Choice Award after gaining a 94% satisfaction rating in the consumer watchdog's survey.

Achieving the award just 18 months after launch tells us the market was ready for a no-contract, no-frills and no gimmicks approach and strong sales growth to date confirms our instincts were right. Customers now number around 95,000 and churn reduced from 20.2% in FY22 to 17.9% in FY23.

The People's Choice award is given to companies that rate highly for customer satisfaction and meet other performance criteria in surveys Consumer sends to members or a representative sample of the New Zealand population.

Customers also ranked Frank highly on competitive pricing, problem resolution, customer support and value for money.

Frank's approach reinforces that while the energy sector can be complex, keeping things simple and well-priced is a winning combination.

Frank Energy's success
bit.ly/3KE8Nor

Close together, staying connected

There's a whakatauki (proverb) which best describes Genesis' approach to our relationships with mana whenua and communities closest to our power schemes; waiho i te toipoto, kaua i te toiroa – let us keep close together, not wide apart.

In March we established our new Customer Hub at our Tokaanu Power Station, providing 12 full-time jobs for Tūrangi locals. We saw the new hub as an ideal opportunity to engage the local community around one of our key sites, while also providing new employment options.

The Hub's establishment illustrates how we interpret our purpose of empowering New Zealand's sustainable future. This is not just about environmental sustainability and reducing our carbon footprint, but also about the empowerment and sustainability of people and communities.

The new team of 12 are part of Genesis' wider Customer Operations team based in Hamilton; they joined 40 generation staff already working at the station.

Ngāti Tūwharetoa kaumātua Te Ngaehe Wanikau said at the opening ceremony, "As Tūrangi whānau we give our full support to the Team of 12; as Tūrangi community we congratulate and thank Genesis Energy for this very meaningful act of corporate-community reciprocity."

waiho i te toipoto, kaua i te toiroa

Tokaanu Customer Hub
bit.ly/3E6TCAt

Management commentary
(no financial statements)

At Tekapo, our community open day saw 83 locals join bus tours to the Tekapo A Power Station, and along the Tekapo Canal to Tekapo B Station.

Investing in causes and opening our doors

As pandemic pressures eased, FY23 saw us able to open our doors again to our local communities, welcoming them as guests as well as working alongside them in local initiatives.

We engage with local iwi and communities regularly and proactively within the areas in which we operate. We acknowledge the impacts of electricity generation and the associated cultural, social and environmental effects. We work hard to mitigate and compensate for these, striving for strong and meaningful relationships with mana whenua, communities and other stakeholders affected by our power schemes.

At Tekapo, our community open day saw 83 locals join bus tours to the Tekapo A Power Station, and along the Tekapo Canal to Tekapo B Station. Dozens of others engaged with us at our Genesis base in Tekapo's town square, browsing through photos of the scheme's construction and learning from Fish and Game about their activities in the region.

Further north at the Tongariro Power Scheme, our 14 -year Kiwi Forever partnership with Ngāti Rangi saw the return of the week-long leadership in conservation programme centered around Mātauranga Māori after a Covid-induced hiatus. Based at Tirorangi Marae, 16 rangatahi from local secondary schools are engaged in hands-on conservation activities including exploring pest control, plant monitoring and the protection of kiwi and whio.

This year our Community Investment Fund also supported a range of worthwhile causes in communities local to our power schemes. Highlights included:

- Donations to flood relief funds in Auckland and Wairoa
- Donations to the Huntly Volunteer Fire Brigade to support the preparation of resources to allow faster response times in serious weather-related events
- Support for an acknowledgement dinner for the volunteers of St John and Fire and Emergency Tekapo
- The installation of heat pumps in the wharenui of Te Kuha Tārewa marae in Waikaremoana, and Te Kohanga Reo o Waikaremoana
- Continued support of Genesis' 23-year community partnership with Duffy Books in Homes

Constructive engagement with Government

With our diverse portfolio of generation assets and our purpose of empowering New Zealand's sustainable future, we understand the importance of New Zealand's transition to net zero carbon. We are committed to working collaboratively and positively with the Government, so they have a better appreciation of generator and customer concerns and perspectives as they develop and implement policy and regulations.

This year we contributed to several Government work programmes including its first Emissions Reduction Plan. We encouraged it to move away from the target of 100% renewable electricity by 2030 in favour of an overall renewable *energy* target recognising the ongoing important role of natural gas through the transition. This was reflected in the final plan.

Our submissions also advocated the benefits of replacing fossil fuels with biomass, drawing on our successful trial of the fuel at Huntly Power Station. Our advocacy is supported by insights gained through our collaboration with NZ Bio Forestry, and agreement with Fonterra to explore the viability of a local biomass supply chain.

Huntly biomass trial

We also encouraged the Government to address barriers to renewable energy builds in the reform of the Resource Management Act. The reform has not concluded but Government recognises the need for any new regime to be permissive of renewable electricity development.

We provided feedback to the Electricity Authority on inefficient price discrimination in large contracts[1]. Amendments made to the Electricity Industry Participation Code 2010 post consultation were in line with our feedback. These included that the materially large contracts regime does not hinder or delay legitimate commercial transactions or investment in new renewable generation and that the information disclosure obligations imposed are limited, specific and consistent with the intent of the regime.

We contributed to EECA's planning for developing regulations for electric vehicle charging with feedback on opportunities and potential barriers.

We also responded to the Electricity Authority's work on driving efficient solutions to promote consumer interests through winter 2023.

Powering Change

To support New Zealand's transition to a low carbon future, Genesis is part of the Powering Change initiative, a collective of New Zealand companies dedicated to driving impactful change for a more sustainable tomorrow. Members include a broad cross-section of electricity and gas companies, as well as industry bodies, who have pledged to help reduce emissions and help achieve New Zealand's goal of net zero carbon by 2050.

Through the Powering Change platform, we are working collectively to find better ways to generate, store and use energy, and unlock the potential of technology to get more out of our infrastructure. Powering Change is guided by six key principles – choice, innovation, affordability, reliability, collaboration and care for the environment.

The poweringchange.nz platform provides consumers with accessible, easy-to-understand information about the energy sector's contribution to New Zealand's progress toward net zero.

poweringchange.nz

Provides consumers with accessible, easy-to-understand information about the energy sector's contribution to New Zealand's progress toward net zero.

1. These include power purchase agreements and derivative contracts which exceed than 150MW.

Management commentary
(no financial statements)

What's important to you? That's a question we regularly ask our stakeholders. In our regular materiality assessments – the formal term for asking, 'what's important?' – our stakeholders consistently place community and mana whenua high on the priorities list. It's about building strong, authentic and enduring relationships with mana whenua, being a good neighbour and playing an active part in creating value for the whole community.

A MORE EQUAL SOCIETY.

3.

Management commentary
(no financial statements)

Students at Te Waka Unua School in Christchurch learning with equipment donated by the Genesis School-gen Trust.

Management commentary
(no financial statements)

Goal:

Pathways for the future of work

Our commitment to community and mana whenua not only extends to what we can do today, but also to the value we can create in the future. We have a special focus on the future of work for rangatahi and nurturing the interests, skills and capabilities which will open so many doors for them.

Science, technology, engineering and maths are the anchor points for many diverse and enriching careers and touch all aspects of life, from the health of the environment and people to our goals for a more equitable future. It makes sense to support them.

But we're also mindful of community needs today. In employment, our community partnerships are providing worthwhile opportunities and the chance to learn new skills. In these tighter times, we are also supporting community efforts to help families achieve warmer homes, and we're providing support to those in vulnerable circumstances.

Powering up learning and the teachers who deliver it

You're never too young to get excited by science and we're inspiring the next generation through learning opportunities in STEM (science, technology, engineering and maths).

For 17 years our School-gen initiative has provided free energy-related STEM resources for teachers and tamariki to support STEM learning. Downloadable resources, activities and online games engage and inspire kids, helping them develop their critical thinking and problem-solving skills during the important years of early childhood.

Teachers provide the true inspiration, but primary teachers have expressed low levels of confidence in teaching STEM. In 2021 Genesis partnered with Nanogirl Labs founded by nanotechnologist and engineer Dr Michelle Dickinson (MNZM) to bring STEMSTARS to schools across Aotearoa. This resource offers STEM lessons that combine storytelling, practical experiments and clear learning outcomes. Under the partnership model, schools with stretched resources can still access the benefits by applying for a gifted set through a buy-one, gift-one model.

We're refreshing our School-gen resources to ensure they're aligned with the New Zealand curriculum and also developing materials integrating Mātauranga Māori and te reo Māori to overcome the lack of culturally inclusive teaching resources.

FY23 saw 2,595 downloads of School-gen resources by schools and the uptake of 63 STEMSTARS kits through the buy one-gift one model, plus 26 kits gifted to schools by Genesis. This brings total School-gen downloads to 7,830 since FY21, with 149 STEMSTARS kits now in use.

> **"STEMSTARS is super easy to use. You can do it yourself, no matter what your teaching experience or background."**
>
> **Sam**, Teacher
> Wesley Primary School

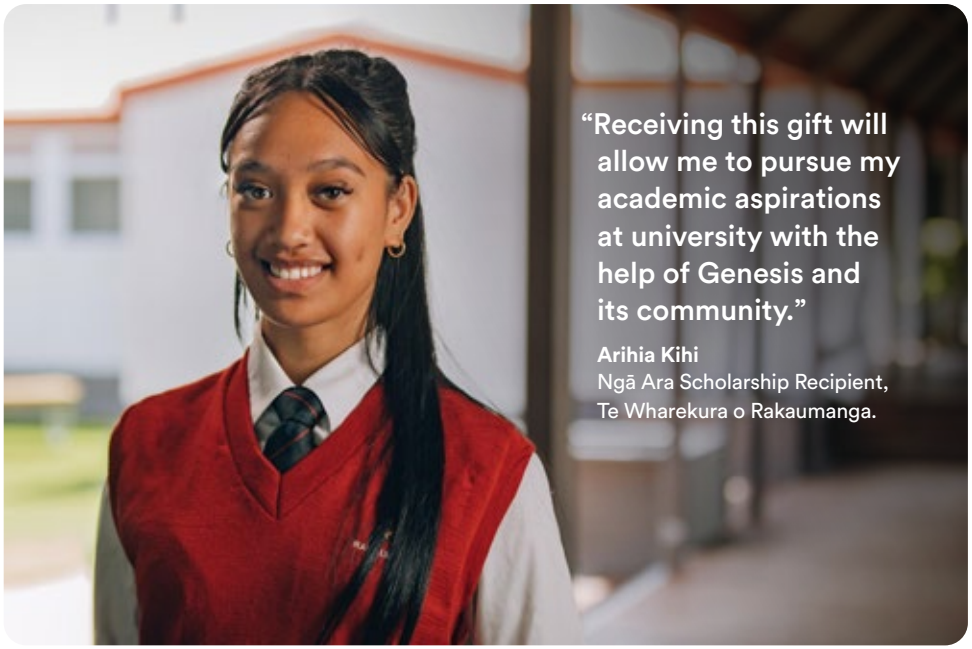
Crucial support for critical thinking

Scientists, mathematicians and engineers are recognised problem-solvers. The Genesis School-gen Trust provides crucial support for schools to grow the next generation.

The independent, charitable Trust provides STEM equipment to grow students' understanding in science, technology, engineering and maths, as well as renewable energy. STEM is an approach to learning that integrates areas of these subjects to develop students' critical thinking and problem-solving skills. The equipment provided fosters hands-on experience in coding, robotics, design and engineering, and when solar equipment is also involved, it enhances their understanding of renewable energy and how it can contribute to a low carbon future.

In FY23 the Trust gifted STEM equipment to 36 schools, the highest number of recipients to date. The resources were worth $156,000. Since its inception in 2019, it has donated more than $530,000 worth of equipment to 93 schools.

The Trust enables our customers and our people to join us by donating $2, $5, or $10 through their monthly energy bill. In the coming year we hope to encourage large Genesis business customers to become sponsors.



Talent pipeline supports a sustainable future

When your purpose is empowering New Zealand's sustainable future, ensuring a sustainable talent pipeline is vital.

Hence our encouragement of young Kiwis to engage with science, technology, engineering and maths (STEM).

Our Ngā Ara Creating Pathways programme engages rangatahi in the communities closest to our power schemes in STEM learning and its diverse career pathways. Since 2020, Ngā Ara has delivered apprenticeships, internships, work experience, scholarships and partnership programmes with community organisations.

Underpinned by best-practice research and evidence for developing this pipeline, Ngā Ara initiatives have involved close collaboration, co-design and partnership with our multi-faceted stakeholder communities, including students, their whānau, teachers and leaders from secondary schools and local iwi and hapū.

By 2025 we're aiming to provide 96 Ngā Ara opportunities for work experience, internships and apprenticeships. In FY23, we had eight apprentices, nine interns and 15 students gaining work experience for up to 10 days beside our power scheme teams.

Ngā Ara scholarships worth nearly $44,000 were awarded to 76 students who were nominated by teachers in partnering schools. Recipients selected bundles of technology equipment, such as laptops and headphones, to enable their continued STEM learning.

Genesis School-gen Trust
bit.ly/3O2802D

Genesis apprenticeships
bit.ly/453gzzS

Case Study

Encouragement, attitude and a new career pathway

Tyriqk Heta-Te Tomo is a young person proving you can overcome any obstacle and forge the future you want. The Huntly College student was in an alternative education class, having become disengaged from 'normal school'.

Tyriqk was encouraged by his teacher Matua Hiki West to apply for a Genesis work experience opportunity at Huntly Power Station. Tyriqk displayed a strong work ethic and willingness to learn during his 10 days on site.

At the school's end-of-year prizegiving Tyriqk was awarded a Ngā Ara Creating Pathways scholarship for outstanding engagement in learning. This included a laptop and headphones to support his learning, and he said, "At the moment I have no device to get in contact with family or to do work from home so a laptop will really come in handy."

Our Genesis team were impressed by Tyriqk's commitment and wanted to support his progress. In the summer holidays, Tyriqk was offered a paid opportunity in a maintenance outage programme at Huntly Power Station. Again, his work ethic shone and secured him a boiler maker apprenticeship with a Genesis contractor.

Matua Hiki West said he was very proud of his former student.

"Doing well at work experience led to a full time position and secured Tyriqk a bright future."

The stake in the ground spreads its roots

A pou is a physical and metaphorical stake in the ground, a symbol of support, especially for an important cause or place such as Raahui Pookeka Huntly.

It's the inspiration behind POU Limited and its kaupapa of increasing local employment. Since 2019 it has begun spreading its roots from Raahui Pookeka Huntly through the Waikato while bringing more diversity to our Genesis workforce.

POU Limited is a partnership between Genesis, the five Waikato marae forming the Raahui Pookeka collective and the Waahi Whanui Trust.

The first year saw 40 locals employed in providing facilities management services at Huntly Power Station. From there, worker numbers have grown to 47 by FY23. POU also expanded into providing cleaning services at our Hamilton office.

POU and Genesis encourage workers into apprenticeships. In late 2022 the first, Ngatoko Sowerby, completed his electrical apprenticeship with POU and has now joined POU permanently as an electrician on site at Huntly. Two mechanical apprentices are due to complete their training in two years.

Donelle Hughes POU Operations Manager

A new scaffolding training pathway through a partnership between Genesis, Oho Mauri and POU begins next year. This will provide broader opportunities to recruit, train and retain young, local people in skilled and in-demand work.

POU has also generated opportunities and work experience by providing temporary staff for Genesis. An example is the 10 Waikato engineering students and 10 locally sourced staff provided to support the Unit 4 Cold Survey, a six-month planned maintenance outage of the #4 Rankine unit at Huntly Power Station.

Management commentary
(no financial statements)

Goal:

Supporting energy wellbeing

STEM + M

Genesis supports adding a second M to STEMM, recognising mātauranga Māori as a rich knowledge system, strengthened by kaupapa and tikanga Māori.

In developing Ngā Ara we recognised the need and opportunity to increase the diversity of students engaging in STEM subjects and careers – this is one of the reasons we partner with Pūhoro STEMM Academy.

Pūhoro provides rangatahi Māori with weekly mentoring in STEM subjects, students attend wānanga at tertiary campuses supported by Genesis staff and are also offered internships and work experience.

In FY23, Genesis supported the programme's launch in Huntly College and Te Kura Kaupapa Māori o Ngāti Kahungunu o Te Wairoa. Programmes continued into their third year at Wairoa College and Ruapehu College. Almost 100 students are directly supported.

Supporting the supporters

Ngā Ara also helps those who support students taking STEM subjects. We offer teachers, careers advisors and senior school leaders the opportunity to visit our sites to better progress their understanding of the pathways open to students.

We also support our partner schools as they cope with disruptions to learning caused by COVID and weather-related events. This year we gifted $10,000 of STEM equipment to Te Kura Kaupapa Māori o Ngāti Kahungunu o Te Wairoa in the wake of Cyclone Gabrielle.

It is important to Genesis that access to energy is available and affordable for all New Zealanders.

After two years of absorbing costs, our pricing changes effective in March 2023 and the phase out of the low user fixed charge meant our customer care teams were supporting customers more than usual as New Zealanders experienced higher overall living costs.

There are always customers in vulnerable circumstances, but this year those numbers rose to include some customers who have previously paid on time but have for the first time experienced financial hardship. That challenged us to come up with solutions best suited to help them. We also supported an industry pilot looking at providing a lifeline to customers who cannot get connected due to an adverse credit rating.

Our customers share our concerns about those who need more support and this year they've used our free Power Shout rewards programme to gift a record number of hours to others.

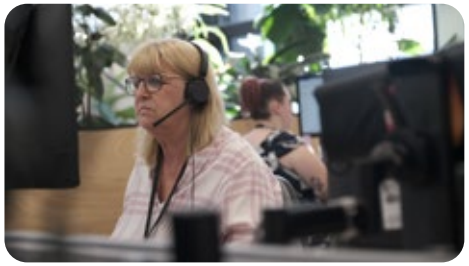
We also expanded our support for community organisations helping families improve the warmth of their homes and manage energy costs (see page 48).

Empowering customers in vulnerable circumstances

Energy is a daily necessity, but for some customers it sadly also represents a source of worry and even shame. That's why Te Tira Manaaki o Kenehi (our Genesis caring team) offers a lifeline, and this year attempted to reach 4,760 customers to offer personalised support when there were signs of financial hardship.

Invariably customers are relieved to be contacted proactively by someone who can sympathetically talk through different payment options, discuss the right price plans and provide free Power Shout hours or referrals for support from agencies such as EnergyMate and WINZ if needed. The former visits family homes to advise on power use management and budgeting. This year we helped 2,314 customers access these services.

This year signs of hardship among usually good paying customers led to the launch of Fresh Start. The programme looks at root causes and practical solutions to prevent the customer's debt from mounting. The causes and solutions were as individual as the customers, but were often connected to one-off events, like reduced working hours, lost jobs, family illness or a relationship breakdown. Each event meant tough decisions such as paying for power or buying food. These customers were also embarrassed at the potential for being disconnected but worried about asking for help.



Fresh Start provides valuable breathing space and practical support including free Power Shouts hours, payments plans and more time to pay. A referral option was also piloted with St Vincent de Paul, where people using the foodbank and identified as Genesis customers were offered an opportunity to talk about whether they needed support from us.

We joined with other major retailers in the Energy Retailers Association pilot ConnectMe trial with 102 new Genesis customers who would normally be unable to open an account due to a poor credit score. This tested the theory that a poor score in the past does not necessarily indicate you cannot become a good paying customer, given the right support.

Genesis also worked with Mercury to research hidden hardship in New Zealand and the reluctance of people in need to trust or engage with "big business." We spent the year working to understand the depth and cause of this problem and its impact on the most vulnerable. Through three hui, we've co-designed potential solutions with community providers. The initial phase was completed in July 2023, and we continue to work collaboratively with the industry to address this challenging area.

Fresh Start programme
bit.ly/43UgxJM

A shout out to generous customers

Is it better to give than receive? A generous 28,847 Genesis customers said 'give' in FY23, passing on a whopping 144,235 Power Shout hours to help others in need.

Our customers' generosity more than doubled the 62,132 of free power hours gifted in FY22. With our own contribution of 155,765, a total of 300,000 hours of power were gifted to Genesis customers in financial hardship in FY23. In addition, the percentage of customers eligible to receive Power Shout hours who then chose to gift them rose from 22.8% in FY22 to 25.2%

Customers who received the gifted Power Shout hours were identified by our Manaaki Kenehi team using vulnerability criteria including a low credit rating or a balance in arrears. Around 3,060 customers either had 120 hours deposited into their EnergyIQ account or, for those not digitally engaged, had evening hours allocated as free Power Shout hours for a month.

This year we hoped to increase the number of residential customers contributing to social sustainability causes, such as Power Shout gifting and our School-gen programme. We set a 10% target – ambitious given 4.9% of customers contributed last year – and achieved 8.6%, a great result and a reflection of the generosity of our customers given the rising cost of living.

"I had a couple of months off work, then lost my job due to heart problems. Being in and out of hospital, and unable to hang out washing, it was great to come home to a warm home knowing I could turn on the dryer."

Stan, Power Shout gift recipient

Keeping in precious heat

In an insulated home, up to 45% of your heat can escape through windows. It's small comfort to know this reduces to 30% in an uninsulated home – but only because the warm air also escapes through the ceiling, walls and floor.

Energy wellbeing is important to us and through our partnerships with three curtain banks, we're helping Kiwis in need keep their homes warmer and healthier.

Since 2010 we have supported Wellington's Sustainability Trust and Christchurch's Community Energy Action curtain banks and in December 2022, partnered with Habitat for Humanity Northern to expand the coverage.

Curtain banks take donated second-hand curtains from a variety of sources, from hotels refurbishing their décor to families who have redecorated. The banks also take fabrics which can be used to make curtains and replace linings. All donations are cleaned, repaired and relined if needed and customised to ensure the best fit to retain heat in a recipient's home.

Curtain banks are a valuable source of advice on achieving warmer homes. The three curtain banks also offer home assessments as part of their healthy homes programmes.

Our aim is to increase the number of households supported. Over the past four financial years we have supported the fitting of insulated curtains into 1,295 households.

Habitat for Humanity Northern
bit.ly/3PMDefB

Goal:

A safe, healthy and diverse workforce

A culture of caring – about each other and the environment

When you work at Genesis, you're part of a culture of caring – and one that values knowledge and expertise.

Those were two of the main findings from a research project we undertook this year to help us understand our workplace culture. With help from independent agency Jenner & Co, we ran surveys and focus groups, seeking feedback from around 1,000 participants.

Taking pride in the work we do

"My purpose is the legacy we leave here," one respondent told us. "I want to be able to look back and know that I made a difference to decarbonisation in New Zealand."

Across all our different sites and types of projects, and across employee demographics, the feedback was overwhelmingly positive. Respondents used phrases like 'inspiring', 'adding value' and 'exciting' to describe how they felt about their work at Genesis.

Embracing expertise

A second major strength of the Genesis culture is appreciation for our in-house knowledge and expertise. Respondents were proud to be working with so many smart people who were applying their intelligence to resolve complex problems.

"There are very clever people working here," said one respondent. "At its best, we see people achieving great outcomes and being recognised."

Ready for a clear unifying strategy

Our research also identified challenges. The primary challenge came from ongoing changes: executive personnel changes, scattered working from home, and interim leadership. Constant change can be stressful, so participants told us they were keen to see a unifying strategy and a clear, common purpose across the business.

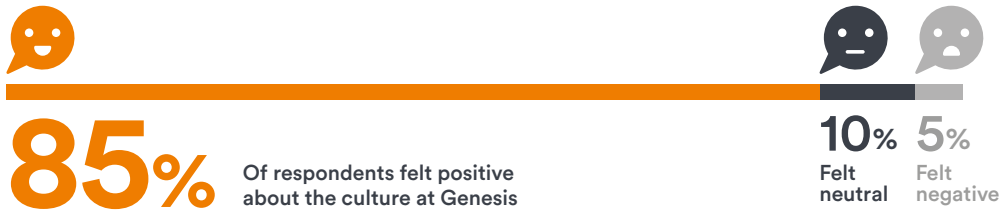
Because Genesis is a portfolio organisation, silos can form between sites or teams. Staff shortages have also been a challenge.

Creating a bold vision for the future

Knowing the challenges faced by our workforce, and which strengths we can lean on, the leadership team is now working on a company-wide vision. We will be addressing areas for improvement, streamlining systems and processes, and aiming to clarify our values and mission.

"We're creating the foundations for the future," as one participant said. "We get to lean into the tricky stuff – it's hard, it's challenging, but if you get it right it's really an achievement."

Huntly Power Station team members Te Toka Edwards (left) and Manukura Heta.



Safety and wellness

Genesis has a focus on both physical and mental wellbeing. During Mental Health Awareness Week in 2022, Genesis launched the next evolution of our wellbeing programme: Me We Us – Ahau Mātou Tātou. The programme takes a layered approach to mental and physical wellbeing and has been designed with the help of external experts to drive a sustained capability across Genesis.

External agency Glia ran wellbeing focus groups and an anonymous survey to understand Genesis' psychosocial risk. Reports with recommendations were prepared for the organisation and individual business units. Leadership teams reviewed these and agreed actions to support our people's mental wellbeing. Each business unit will next develop a Wellbeing Plan.

Physical and mental wellbeing is supported through access to resources in the new Me We Us – Ahau Mātou Tātou Wellbeing Hub on the internal Connect site. In FY23 we also updated our drug and alcohol programme, safety inductions, health monitoring, and injury management.

Across Genesis, most of our safety and wellbeing metrics are showing positive trends, and our performance in reducing the number and severity of injuries is something we're particularly proud of. This decrease is likely due to a combination of:

- increased hazard awareness
- continued focus on rejecting unsafe LPG delivery locations
- safety leadership training
- early injury notification and intervention
- preventative physio and massage programmes

By continuing this work, we are hoping to see injury rates fall even further over time.

57%

Decrease in lost time or restricted work days due to injuries

Recruiting and retaining the best employees

Like many employers across many sectors, we're experiencing a tight talent market that makes the attraction and retention of employees challenging. We're addressing this with a range of initiatives, including formal career development and remuneration progression for several areas of the business to provide visibility of career pathways, improving our succession documentation and talent planning conversations to protect critical, core and scarce roles, and supporting LPG truck drivers to become certified in the required class.

Our Tokaanu Customer Hub (see page 39) is an example of thinking outside the box to recruit people for our customer service team. A custom-built hub at Tokaanu Power Station provided jobs for 12 locals from Tūrangi and enabled us to hire capable people to bring a customer focus to the site's generation team.

Genesis is a Living Wage Accredited Employer, we received the Rainbow Tick in FY22, and received reaccreditation for the YWCA GenderTick in FY23.

34%

Internal recruitment in FY23

Leadership development

Our Adaptive Leaders Programme builds leaders who are adaptive, empowered, and accountable, who in turn can empower, nurture, and inspire those around them. In FY23 we further developed this programme to ensure our people are equipped with the relevant skills for the future.

Our Safety Leadership programme has continued through 2023. This is a safety-forward programme designed for leaders working in areas where field- or generation site-related health and safety risks are present, principally in the wholesale operations and LPG areas of our business.

We also ran a series of online workshops called Empowering Leaders designed to inspire our leaders with relevant content.

We launched a new Leadership Development site, providing on-demand content aligned to our leadership programmes and available for all leaders.

In FY24 we plan to launch a new leaders' programme designed to support first time or new leaders to Genesis.

50

Team members completed the Safety Leadership programme in FY23

277

Team members completed the Adaptive Leaders Programme (ALP) since inception

45%

Of those who completed the ALP were women

Participants in our Adaptive Leaders Programme appreciate meeting people from across the business.

Women in leadership

Genesis has been committed to eliminating the gender pay gap since 2017, and our Gender Gap Statement sets out our intentions and actions to help achieve this target. Three factors make up our Gender Gap Statement:

- Pay Equity Gap
- Senior Leader Gender Diversity
- Gender Pay Gap

Our Pay Equity Gap, which measures equity of pay for men and women doing equal value work, increased this year from 1.3% to 1.7%. We'll continue to focus on this important area to close the gap over time.

Increasing our Senior Leader Gender Diversity has been a challenge in FY23. Although our Executive team has a 50:50 gender split, our Senior Leader Gender Diversity remained static this year at 42:58.

Our target across the business is to maintain a 40:40:20 gender balance; it is currently 44:56 in favour of men, partly due to the predominance of male candidates for roles in wholesale operations. Our recruitment policy requires hiring managers of Tier 2, 3 and 4 roles to include at least one woman candidate on their shortlist.

We continued our existing internal initiatives such as a Women's Leadership series and Women and Finance. We maintained focus on gender equity through our YWCA GenderTick Accreditation and Mind the Gap programme.

36.2%

Gender Pay Gap
FY22 37.4%

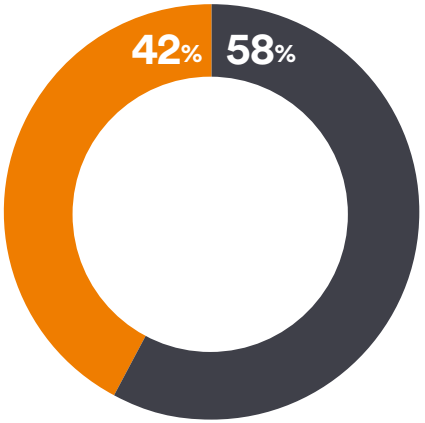
1.7%

Pay Equity Gap
FY22 1.3%

50:50

Executive Gender Diversity
FY22 50:50

Senior Leader Gender Diversity*
FY22 ● 42% ● 58%



Senior leader roles
Female ● Male ●

* Senior leaders are classified as Tier 1 (CE), Tier 2, and Tier 3 employees.

We continued our existing internal initiatives such as a Women's Leadership series and Women and Finance. We maintained focus on gender equity through our YWCA Gender Tick Accreditation and Mind the Gap programme

Management commentary
(no financial statements)

Diversity and inclusion

Everyone shares responsibility to continuously improve the inclusivity of our culture and contribute to a working environment that is free from all forms of discrimination and harassment, where all team members are treated with respect and empathy. We are proud of attaining Rainbow Tick accreditation in FY22, and in FY23 held a Pride celebration.

We also hosted events to mark Matariki, Diwali, Chinese New Year and International Women's Day.

71%

Of our people identify with at least one ethnicity

Celebrating Diwali
Auckland

Volunteering

One of the most valuable ways we can give back to the communities in which we work is by giving our time. That's why we support everyone at Genesis to volunteer for a cause they're passionate about, or through organised activities. Our new partnership with Habitat for Humanity Northern (see page 48) enabled our people to volunteer by preparing Winter Warmer packs and delivering them to households in need.

Other activities included volunteering at the Christmas Joy Store, providing Christmas presents to families to need in Auckland, helping maintain Waahi Marae in Huntly, and helping at a school library.

1,145

Volunteer hours donated in FY23

Our leadership sets and implements our strategic direction within the external environment in which we operate, noting what matters most to our stakeholders and providing robust reporting.

GOVERNANCE.

Management commentary
(no financial statements)

Tekapo B Power Station in Lake Pukaki.

Management commentary
(no financial statements)

Leadership

Our Board

Genesis' Board of Directors set the company's strategic direction, creating long-term value for shareholders while balancing the needs of our customers, stakeholders and the environments in which we operate.

Full profiles of our Directors can be found here

CHAIR

Barbara Chapman
CNZM, BCom, CMInstD

Catherine Drayton
BCom, LLB, FCA, CFInstD

Warwick Hunt
MNZM, BAcc (Hons), FCA, FKCL

Tim Miles
BA

James Moulder
BA, BCA

Hinerangi Raumati-Tu'ua
BMS, MMS, FCA, MNZM

Paul Zealand
BSc Mech. Eng (Hons), MBA

Our Executive Team

Our Executive Team executes strategy approved by the Board and provides directors with accurate and timely information on company operations, performance, legal obligations and reputation.

Full profiles of our Executive team can be found here

Malcolm Johns
CHIEF EXECUTIVE
BMS

Tracey Hickman
CHIEF COMMERCIAL OFFICER
MA (Hons), AMP (Harvard)

James Spence
CHIEF FINANCIAL OFFICER
BSc, CA

Matthew Osborne
CHIEF CORPORATE AFFAIRS OFFICER
BCom, LLB

Ed Hyde
CHIEF TRANSFORMATION & TECHNOLOGY OFFICER
BSc

Rebecca Larking
CHIEF OPERATIONS OFFICER
MSc, Dip Business Admin

Pauline Martin
CHIEF TRADING OFFICER
Bachelor of Electrical and Electronic Engineering (University College Cork, Ireland)

Claire Walker
CHIEF PEOPLE OFFICER
BA, Dip Business Admin

Stephen England-Hall
CHIEF CUSTOMER OFFICER
MBA

External environment

Our planning and operations are influenced by the external environment in which we operate. During FY23, that environment included extreme weather events which impacted supply-chains, associated high rainfall which elevated levels in hydro lakes, and heightened competition for resources and capital to develop more renewable generation.

Weather

Like farmers, electricity generators watch the weather closely, with generation from water, wind and sun all dependent, to some extent, on weather conditions. Our diverse portfolio of generation assets enables us to flexibly manage weather trends to ensure we maximise market conditions and are available to provide the security of supply New Zealand expects.

The year saw near-record rainfall and higher than normal temperatures nationwide. This meant higher hydro lakes in our Waikaremoana, Tongariro and Tekapo schemes, enabling us to generate a record 3,669 GWh. In turn, this meant we could turn down Huntly Power Station to generate a record low of 2,177 GWh, saving fuel costs and significantly reducing Scope 1 carbon emissions by 1.1 million tonnes compared to FY22, a 52% reduction.

Weather also played a more destructive role this year. Cyclone Gabrielle caused significant damage to parts of the North Island, in particular Hawke's Bay and Tairāwhiti/East Coast. Our Waikaremoana team worked around the clock to help restore electricity to the stricken region, and our LPG teams went above and beyond to replace or remove bottles from impacted households (read more on page 34).

Energy transition

While Genesis has a key role in enabling the electrification of the economy by providing security of supply, we're just one member of an eco-system comprised of industry, Government, sources of capital, consumers and other parties that will help drive the energy transition.

The transition is gathering pace which, while positive in reflecting a will to move to a low carbon future, has also thrown up challenges. We're seeing increased scarcity of some critical resources needed to deliver more renewable energy, such as suitable land for wind or solar development, skilled labour and expertise to build new renewable capacity, and reliable supply chains. In addition, gaining consents for new development remains more difficult than it could be, and the queue for getting new capacity connected to the national grid is growing.

We're committed to helping address these challenges through liaison with other energy sector participants, Government and consumers, as well as innovating our own business.

Competition

New Zealand has a relatively small, dispersed population living upon spectacular but challenging topography, blessed with plenty of rivers, lakes, and thermal activity. This unique set of characteristics has shaped the structure of our energy market.

There is some competition at retail level, as seen in the success of new and innovative energy brands like Frank Energy alongside the larger generator-retailers. However, we believe the most competitive aspect of the energy market is access to sufficient investment capital to grow new renewable generation. As demand intensifies among those wanting to build wind and solar capacity, we're seeing access to investment capital become more challenging.

Competition is also being experienced in areas where resources are scarce. Suitable land for developing new wind and solar energy is sought after by a number of developers. In a low unemployment market, the competition for talent is intensifying, particularly where rapid growth in demand, for example in solar, has led to industry skills shortages.

Regulation

New Zealand's regulatory and policy environment sets the framework within which we operate. The sector is currently undergoing a significant renewable transition, which has led to key policy decisions resulting in new or amended regulatory settings or proposed changes to those settings. These changes range from positive impacts, including a growing renewable energy system and improvement in energy equity measures for consumers, to negative impacts, such as uncertainty relating to the New Zealand Emissions Trading Scheme, which affects confidence to invest in the renewable transition.

We foresee greater clarity over the next year when key policies and regulatory settings regarding the strategic direction of the sector, such as a National Energy Strategy and a Gas Transition Plan, will be deliberated or released for consultation.

Supply Chain

Since the pandemic we've worked hard to 'Covid-proof' our supply chains. This has meant planning for longer lead times and developing a more diverse and resilient supplier base.

While that work has been successful, this year our supply chain was influenced more by local factors such as extreme weather events and the increased scarcity of skilled labour, local supplier availability or critical resources.

This has meant some instances when it's been hard to get contractors out to difficult-to-access sites, and supply-chain disruption when communications or roading infrastructure has been cut-off by flooding or landslides. We worked with authorities and our partners to find solutions, and built longer timeframes into our schedules.

As we move ahead with our new renewable energy projects such as our first solar build, we're carefully managing our supply chain to ensure reliable and sustainable supply of the people, materials and resources we need. Examples of building sustainability into those supply chains include considering suppliers close to delivery points to avoid distance travel, and sourcing as many different products as possible from each supplier.

Technology

A significant third-party data centre outage impacted Genesis in November 2022. As a result, we strengthened our approach to system resilience across our critical applications and systems.

We reinforced our security posture by lifting our capability against the globally recognised ISO27001 standard and the Generation specific VCSS-CSO standard. An internal cyber awareness programme saw excellent engagement, providing best in class results across our monthly cyber awareness metrics. We are accelerating execution of our cloud strategy moving to our new modern cloud environment, enabling our business to innovate at pace while inheriting the benefits of a secure architecture.

Customer technology is developing rapidly, and this year we have completed the process to identify technology and vendor options to modernise our customer platforms, including billing, sales, service and pricing. We expect to confirm our vendor and solution decisions by the end of 2023 and move toward implementation and full business and customer service transformation.

We believe the most competitive aspect of the energy market is access to sufficient investment capital to grow new renewable generation.

Sustainability Framework progress and SDG contribution

Progress toward targets and our contribution to UN Sustainable Development Goals (SDGs). For more on our Sustainability Framework, visit https://www.genesisenergy.co.nz/about/sustainability

SUSTAINABILITY PILLAR	2025 TARGETS	FY23 PROGRESS	PROGRESS AGAINST 2025 TARGET
A low carbon future See page 18 **GOALS** • Empower NZ's energy transition • Help customers & communities to transition • Protect & restore nature **SUSTAINABLE DEVELOPMENT GOALS:**  SDG Targets:[1] 13.1, 13.3, 15.1, 15.5	Achieve 1.5°C-aligned Science Based Targets by reducing our annual emissions by more than 1.2 million tonnes of CO_2e by FY25 (from a FY20 baseline)	FY23 total tCO_2e was 2,026,147 (excluding CO_2 from biomass, 1,624,902 lower than FY22) Record levels of hydro generation through a wet year Successful Biomass trial at Huntly	Scope 1, 2 and scope 3 emissions from use of sold products in FY23 were 2,288,751 lower than FY20
	Empower our customers to reduce their carbon footprint	Introduced Energy IQ for business In FY23 there were 14.5 million interactions with Energy IQ features Launched EVerywhere initiative	36 million interactions with Energy IQ features since the start of FY21
	Positive outcomes for nature through partnering on conservation and restoration	Continued Whio Forever Programme (partnership with DOC) and our 14-year Kiwi Forever partnership with Ngāti Rangi Project River Recovery in upper Waitaki Basin Produced first water position statement, first nature position statement, and increased disclosure on our water use	Whio numbers have increased 97% since the 2011 launch of the Whio Forever project, from 298 pairs to 587 pairs
A more equal society See page 42 **GOALS** • Pathways for the future of work • Support energy wellbeing • A safe, healthy and diverse workforce **SUSTAINABLE DEVELOPMENT GOALS:**  SDG Targets:[1] 7.1, 8.3, 8.6, 17.18	15,000 educators use STEM learning resources or equipment offered by the School-gen programme (FY21-FY25 inclusive)	In FY23, 36 schools were gifted STEM equipment packages by the School-gen Trust. In total, 2,724 educators used STEM learning resources or equipment offered by the School-gen programme	8,052 educators have used STEM learning resources or equipment offered by the School-gen programme since the start of FY21
	Provide a total of 96 apprenticeship, internship and work experience opportunities through Ngā Ara Creating Pathways (FY22-FY25)	In FY23 32 apprenticeships, internships and work experience opportunities were provided through Ngā Ara Creating Pathways Ngā Ara scholarships awarded to 76 students nominated by teachers in partnering schools	53 apprenticeships, internships, and work experience opportunities were provided through Ngā Ara Creating Pathways since the start of FY22
	Support community organisations to help families improve the warmth of their homes and partner with others to enable fair access to energy for New Zealanders in need	Extended our support of curtain bank services for families in need through a new partnership with Habitat for Humanity Northern	Helped 1,295 households keep warm and dry through the fitting of well insulated curtains since the start of FY20
	Support our customers in vulnerable circumstances by working with others	Customers gifted a record number of Power Shout hours to others in need Launched Fresh Start programme to help customers in financial difficulty	430,000 Power Shout hours gifted to customers in need since the start of FY22

SUSTAINABILITY PILLAR	2025 TARGETS	FY23 PROGRESS	PROGRESS AGAINST 2025 TARGET
A more equal society (continued)	Integrate Te Ao Māori worldview into Genesis' culture and the way we do business and improve cultural capability of Genesis	In FY23 commenced a staged approach to our Te Ao Māori journey, approving a Rangatira ki Rangatira relationship model between the Board, Executive team and Iwi	In FY23 we engaged with our Māori kaimahi through our 'Hearing from Genesis' research to better understand how we might integrate Te Ao Māori into our culture and business
	Improve the health and wellbeing of our people, through our Me We Us – Ahau Mātou Tātou wellbeing programme	Physical and mental wellbeing supported via resources in the new Me We Us – Ahau Mātou Tātou Wellbeing Hub Updated drug and alcohol programme, safety inductions, health monitoring, and injury management	57% decrease in lost time or restricted work days due to injuries in FY23 50 Team members completed the Safety Leadership programme in FY23
	40:40:20 workforce gender split (40% male, 40% female, 20% any gender identity), 50% female senior leaders	Undertook research to understand our workplace culture Maintained focus on gender equity through YWCA Gender Tick Accreditation and Mind the Gap programme Received Rainbow Tick accreditation in FY22	In FY23 our workforce comprised 56% men, 44% women Women in leadership roles: 42%
A sustainable business See page 30 **GOALS** • A well-managed business • Robust governance & transparent reporting • Positive relationships & open conversations **SUSTAINABLE DEVELOPMENT GOALS:**  SDG Targets:[1] 8.1, 8.2, 8.6, 8.7, 10.2, 10.3	A well-managed business	Each of our generation sites underwent maintenance and upgrades in FY23 Process underway to modernise customer platforms (billing, sales, service, pricing). Managing price increases Refreshed Genesis brand and no- frills Frank offer	See page 30 for more on a sustainable business.
	Robust governance & transparent reporting	Continued to develop our reporting, using the Integrated Reporting Framework (<IR>) and released our first ESG Datasheet for improved transparency in FY23	For full reporting suite, visit https://www.genesisenergy.co.nz/investor/results-and-reports
	Positive relationships & open conversations	Engaged with our local communities, creating jobs, and learning experiences Shared views, knowledge and experience to contribute to New Zealand's goal to reduce emissions and transition to a low carbon economy	For more detail see page 37

1. SDG targets - 7: https://sdgs.un.org/goals/goal7, 8: https://sdgs.un.org/goals/goal8, 10: https://sdgs.un.org/goals/goal10, 13: https://sdgs.un.org/goals/goal13, 15: https://sdgs.un.org/goals/goal15, 17: https://sdgs.un.org/goals/goal17

What matters most

Issues that matter to Genesis and our stakeholders in FY23

We are committed to creating shared value – for our customers, our shareholders, our people, and our communities. We do this through our core business, which is focused on providing reliable energy to our customers, and more widely by generating positive economic, social, and environmental outcomes for Aotearoa New Zealand. We manage our approach to sustainable business through a suite of principles, policies, and statements.

Our stakeholders inform our approach to sustainability, and we regularly engage with them to understand what's important to them in the short, medium and long-term.

Identifying material sustainability issues

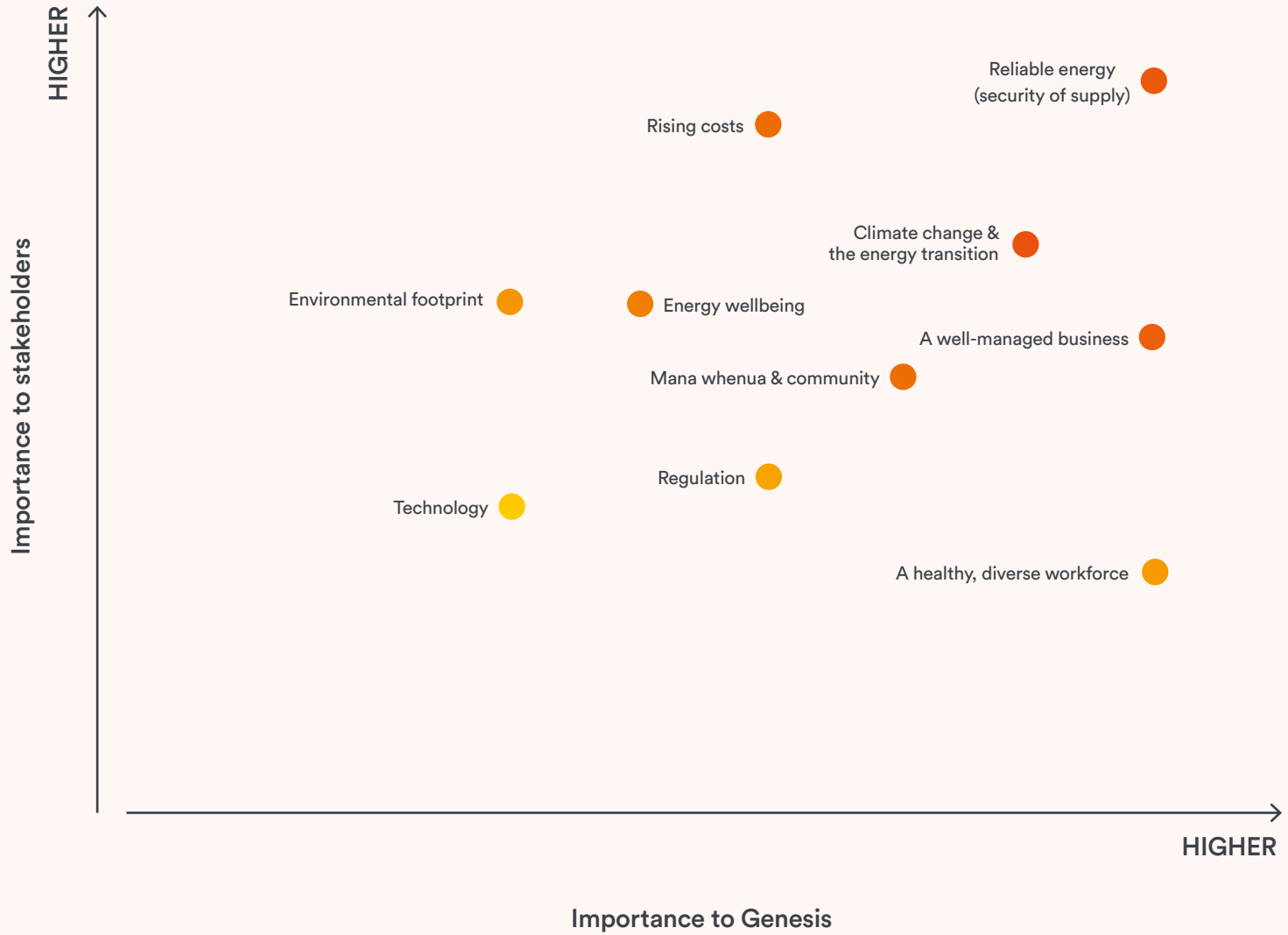
We have identified a range of current and emerging risks and opportunities that may impact our stakeholders and business. As part of our annual reporting materiality process, we interviewed Genesis executives and senior leaders to gain insights into material risks and opportunities.

This feedback, together with an assessment of industry trends, internal reports, external research and conversations with stakeholders feeds into Genesis' assessment of material topics, informing our strategic approach and guiding our reporting in line with internationally recognised sustainability standards and principles, including the Global Reporting Initiative.

STAKEHOLDER (ALPHABETICAL)	TOPICS OF IMPORTANCE
Communities	Long-term collaborative relationships to support and empower local communities and demonstrate a duty of care towards the environment.
Customers	Access to reliable, affordable, sustainable energy. Positive, personal engagement with our services and tools. Rising costs.
Employees	To be part of a diverse, inclusive workforce that cares for its people and other stakeholders. To be compensated fairly, feel safe and empowered and have opportunities to grow capability. Conscious of energy reliability, rising costs and energy wellbeing.
Government	Participation in formal submissions and advocacy on issues such as energy affordability, security of supply and renewable energy uptake.
Investors	Confidence in governance and leadership. Robust policies and processes to manage business opportunities and risks, including climate-related risks. Efficient capital management now and for the future.
Iwi	A partner that listens and engages proactively and demonstrates a duty of care towards people and the environment.
Media	Reliable energy to provide security for households and business, from both a consumer and economic perspective. Energy wellbeing for consumers mainly in terms of affordability. The sector's role in addressing climate change through decarbonisation of itself and other sectors, and the construction of new renewable generation.
Partners and suppliers	Long-term relationships with clearly stated shared objectives. Partners that can provide resources to deliver outcomes and engagement. Proactive management of rising costs.
Regulator	Delivery of reliable, affordable, sustainable energy. Compliance with regulation.

FY23 Materiality Assessment

This graph shows FY23 material topics mapped by importance to all our stakeholders and to Genesis.



Management commentary
(no financial statements)

Genesis FY23 Material Sustainability Issues (in alphabetical order)

The table below maps our response to the material topics arising from our analysis. References are provided to further information on each topic.
For metrics related to our material topics, see our ESG Datasheet and GRI Index.

TOPIC	DESCRIPTION OF ISSUE	HOW WE'RE RESPONDING
A safe, well, diverse workforce	Recruiting and retaining the best employees with relevant industry skills. Helping our people build resilience and take care of their overall wellbeing (mental and physical). Providing a safe, welcoming, and supportive environment for our people to succeed. Fair remuneration and opportunities to grow.	We maintain a robust health and safety management system, aligned to ISO45001. In FY23 we improved safety compliance at our LPG depots and increased driver education regarding site safety. All our people can access $100 a year for wellbeing support. For more on how we're responding, see page 49
A well-managed business	Strong leadership, clear governance practices, active management of risk, commitment to compliance, and fair remuneration in our operations, supplier, and partner relationships. Maintaining a healthy financial performance and strong balance sheet. Focussing on improving corporate culture and outcomes for customers. Open and transparent reporting and investor communications.	Genesis' Corporate Governance Statement and Code of Conduct is available online and updated annually. The company's Risk Management Framework (available online) is part of the induction process for all employees and is overseen by the Board. Our Supplier Code of Conduct can be viewed here. For more on how we're responding, see page 30
Climate change and the energy transition	Managing the risks and opportunities of climate change, reducing carbon emissions across our value chain, and supporting collaborative efforts to limit global warming. Empowering the transition to a low carbon future for ourselves, our customers and New Zealand.	Committed to the Climate Leaders Coalition's 2022 Statement, to develop science-based emissions reduction targets. Reporting, and managing our climate-related financial risks. Green star rated offices, leased EVs for company carpool, employee subsidy for public transport. For more on how we're responding, see page 18
Energy wellbeing	Supporting our customers, employees and communities in times of energy hardship.	For more on how we're responding, see page 47
Environmental footprint	Reducing the impact our operations have on the surrounding environment through best practice environmental controls and ongoing monitoring of our environmental performance.	For more on how we're responding, see page 36

TOPIC	DESCRIPTION OF ISSUE	HOW WE'RE RESPONDING
Mana whenua and community	Building strong and enduring relationships with mana whenua, being a good neighbour and playing an active part in creating value for the whole community.	We regularly and proactively engage with local communities regarding our operations. As part of the reconsenting of the Tekapo Power Scheme, we have engaged with mana whenua and stakeholders within the Waitaki Catchment to understand the ongoing effects of our operations to ensure these can be appropriately managed into the future. For more on how we're responding, see page 42
Regulation	Regulatory interventions which impact the energy sector.	We engage in formal consultation processes on many regulatory proposals and changes that are material to our business. Our submissions can be viewed here. We also input our views into collective advocacy through industry groups including the Climate Leaders Coalition, Sustainable Business Council, Business Energy Council and Electricity Retailers Association NZ. For more on how we're responding, see page 41
Reliable energy (security of supply)	Energy is available when you need it.	For more on how we're responding, see page 21
Rising costs *New in FY23*	Inflation, supply constraints and costs to Genesis and its customers	For more on how we're responding, see pages 36 and 47
Technology *Was previously named cyber security & customer data in FY22*	Processes and controls to protect systems, networks, programmes, devices, and data from cyber-attacks, which can compromise customer and business information. Digital tools to help customers better understand and manage their energy use. A modern customer service and billing platform.	For more on how we're responding, see pages 26, 38 and 59

Key sustainability data

For more information on our sustainability indicators refer to our FY23 ESG datasheet and GRI Index.

A SUSTAINABLE BUSINESS		FY23	FY22	FY21	FY20
Financial	EBITDAF ($m)	$524	$440	$355	$356
	NPAT ($m)	$196	$222	$32	$46
Sustainable finance	Sustainability linked loan facilities ($m)	$250[1]	$250[1]	–	–
	Green bonds ($m)[2]	$410	$410	–	–
	Sustainable finance as a percentage of total borrowings[3] excluding lease liabilities	32%	29%	–	–
Customer	Number of retail customers	483,721	471,012	474,325	484,687
	Change in customer complaints from prior year[4] (%)	1%	11%	15%	(53%)
	Net Promoter Score (iNPS)	46	51	N/A[5]	N/A[5]
Supply chain	Total supply chain spend ($m)	$1,899	$2,646	N/A[6]	N/A[6]
Employees	Employees (headcount)[7]	1,291	1,224	1,172	1,108
	Employees (FTE)[7]	1,268	1,204	1,149	1,076
	Total recordable injuries[8]	48	46	31	22
	Injury severity (lost/restricted days)[8]	776	1,792	1,923	626
	Women as a % of workforce	44%	43%	42%	43%
	Gender pay gap	36.2%	37.4%	35.5%	37.2%
	Pay equity gap	1.7%	1.3%	1.7%	1.9%
	Exec gender diversity (% female)	50%	50%	29%	25%
	Senior leader gender diversity[9]	42:58	42:58	45:55	50:50

1. Sustainability linked revolving credit facilities available to be drawn down of which nil was drawn down at 30 June 2022 and 30 June 2023.
2. Excludes fair value interest rate risk adjustments, capitalised issue costs and accrued interest. Subsequent to year end, on the 10th July 2023, $240 million of Green Capital Bonds were issued, replacing existing Capital Bonds which were not green. This bond issue increases the percentage of sustainable finance to 51% of total borrowings excluding leases.
3. The calculation is based on drawn debt at year end and excludes fair value interest rate risk adjustments, capitalised issue costs and accrued interest.
4. For Genesis brand. Refer to the ESG datasheet and GRI index for information on Frank Energy.
5. FY20 and FY21 has not been disclosed as iNPS scores prior to July 2021 are not directly comparable due to changes in the types of responses included in the calculation.
6. Total supply chain expenditure was not reported prior to FY22.
7. Permanent, fixed term and casual.
8. The severity and classification of injuries are subject to change based on medical assessment and acceptance by ACC. Where injuries are reclassified after a reporting period, the historical results are restated. This information is as at 13 July 2023.
9. Percentage of female to male. Measures the progress we are making in advancing females into senior leadership roles. Leaders are classified as Tier 1, Tier 2, and Tier 3 employees. Refer to our Gender Gap Statement on our website for more information.

Management commentary
(no financial statements)

Key sustainability data (continued)

For more information on our sustainability indicators refer to our FY23 ESG datasheet and GRI Index.

A LOW CARBON FUTURE FOR ALL		FY23	FY22	FY21	FY20
Empowering NZ's energy transition	Scope 1 and 2 emissions (tCO_2e)	1,076,150[10]	2,223,343	3,940,325	2,690,253
	Scope 3 emissions from use of sold products (tCO_2e)	692,204	994,686	1,269,957	1,366,852
	Total scope 1, 2 and 3 emissions (tCO_2e)	2,026,147	3,651,049	5,672,805	4,495,002
	Decrease/(increase) in scope 1 and 2 emissions compared to FY20 base year (SBT[11]: 36% reduction)	60%	17%	(46%)	N/A base year
	Decrease in scope 3 emissions from use of sold products compared to FY20 base year (SBT[11]: 21% reduction)	49%	27%	7%	N/A base year
	Thermal generation as a % of total generation	37%	58%	69%	66%
Supporting customers to transition to a low carbon economy	Residential customers engaging with energy management tools through Energy IQ	50%	45%	40%	21%
Protecting and restoring nature	Whio breeding pairs (showing improvement to quality of water and pest reduction in targeted areas)	587	694	863	748
A MORE EQUAL SOCIETY					
Supporting local communities	Total community investment spend ($m)	$2.4	$1.7	$1.5	$1.2
Supporting energy wellbeing	Households supplied curtains to keep warm and dry through our sponsorship of curtain banks[12]	439	237	331	288
	'Power Shout' hours gifted to customers in need[13]	300,000	130,000	N/A	N/A
Creating pathways for the future of work	Apprenticeships, internships and work experience opportunities created through Ngā Ara Creating Pathways	32	21[14]	25	N/A[15]
	STEM scholarships provided to students through Ngā Ara Creating Pathways	76	57	4	N/A[15]
	Schools receiving STEM equipment via School-gen Trust	36	33	–[16]	16
	STEM learning resources or equipment offered by the School-gen programme used by educators	2,724	2,215	3,113	N/A[17]

10. Excludes 857 tCO_2e of CO_2 associated with the combustion of biomass as this is required to be reported separately from scope 1 emissions under the GHG protocol.
11. Science Based Target.
12. Data is based on the financial year of each curtain bank which does not always align with Genesis' financial year.
13. Power Shout gifting was launched in FY22. In FY23 28,847 customers gifted 144,235 Power Shout hours and Genesis contributed 155,765 hours (FY22: 15,533 customers gifted 62,132 Power Shout hours and Genesis contributed 67,868 hours).
14. There were five additional work experience opportunities created in FY22 which were unable to be completed due to the nationwide lockdown and restrictions applied by COVID-19. As these opportunities were only partially completed they have not been included in the reported number.
15. Genesis has supported internships, apprenticeships and scholarships for a number of years, however the programme was formalised under the Ngā Ara Creating Pathways programme in FY21 and FY22.
16. FY21 funding was not completed until July 2021 (FY22), so no equipment was gifted in FY21.
17. This metric was not reported in FY20.

GENESIS ENERGY LIMITED
CLIMATE-RELATED DISCLOSURES
FOR THE REPORTING PERIOD
1 JULY 2022 TO 30 JUNE 2023

23 AUGUST 2023

Empowering New Zealand's sustainable future

Management commentary
(no financial statements)

Contents

Management commentary
(no financial statements)

1. Message from the Chair and Chief Executive

While New Zealand's gross emissions contribute about 0.17% of gross emissions globally, it is important that all countries play their part to limit and reduce emissions. Enabling the country's transition to a low carbon future and reducing our emissions to help address climate change are integral to our purpose: empowering New Zealand's sustainable future. Decarbonising our activities and helping our customers do the same is central to our business strategy.

Malcolm Johns
CHIEF EXECUTIVE

Barbara Chapman CNZM
CHAIR

This year we have experienced increased variability in weather events causing flooding and disruption to our customers and business operations. Our understanding of the risk and impact of climate change, and ways to respond and prepare, have expanded in responding to these events. We have also worked to ensure that our responses to the events have helped our communities and customers through difficulty and ensured our generation sites continue to supply available generation. And we understand the need to ensure climate change impacts are routinely considered in our business decision making processes.

Genesis plays an important role in New Zealand's transition to a low carbon future. Through our Future-gen strategy we are reducing emissions from our own generation portfolio through renewable generation. We are focused on doing our bit, however a successful transition is dependent on how the Government and the whole industry responds. We know that the electrification of New Zealander's lifestyles and our economy are among the most meaningful actions we can take to address climate change. As the amount of renewable energy supply grows, Genesis' Huntly Power Station will play a unique and critical role in ensuring the uninterrupted availability of electricity. Reliable and affordable access to electricity is important in growing people's confidence to continue to electrify more of their lives and businesses.

Just as the development of a long-term emissions reduction target has generated robust discussion on how we will operate as a business, modelling different climate change scenarios has tested our foresight. The ability to stress-test our strategy against these scenarios, and the supporting approaches that will smooth our transition, has been a valuable exercise for our Executive Leadership Team.

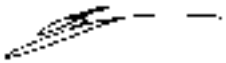
We know that certainty and transparency are important to our investors, insurers, and others in our value chain. The evolving legislative climate context continues to drive greater transparency and we want to ensure we are positioned to meet regulatory requirements of climate-related disclosures.

Management commentary
(no financial statements)

As a long-standing member of the Climate Leaders Coalition (CLC), we are committed to meaningful science-based emission reductions. Over time the CLC has contributed to Government policy and has taken a visible role leading New Zealand businesses in the transition to a low carbon economy. As a result, businesses are making inroads into emission reductions and are investing in low carbon solutions. The commitments for signatories of the CLC have also evolved over time – the bar has been raised to require independent verification of short and long-term targets, and signatories need to demonstrate that customers and suppliers are being encouraged to understand their own climate risks and take action.

We encourage this unified voice of business leaders to amplify its advocacy in the coming years to ensure there are no backwards steps. It is only through working together to tackle the next frontier of climate action that we will be best positioned to share the benefits of our low carbon future.

As a key enabler of New Zealand's transition, with assets that provide security of supply as generation becomes increasingly renewable and intermittent, we welcome the opportunity to share our analysis of climate risks and opportunities, and how our strategy is responding to these risks and opportunities.



Barbara Chapman
Chair

Malcolm Johns
Chief Executive

2. About this report

Reporting entity

This report includes climate-related disclosures for Genesis Energy Limited, its subsidiaries, controlled entities (together, "Genesis" or "the Group") and the Group's interests in associates and joint arrangements where relevant. The scope of the reporting entity aligns with that used for Genesis Energy Limited's FY23 Consolidated Financial Statements.

Basis of preparation

This report has been prepared using the Task Force on Climate-related Financial Disclosures framework (TCFD). In addition, we have been working towards aligning our disclosures with the requirements outlined in the External Reporting Board's (XRB) Climate-related Disclosures Standards. We are on track to comply with these standards in FY24.

Date published

This report was published on 23 August 2023.

Reporting period

This report covers the period from 1 July 2022 to 30 June 2023.

Materiality

We have followed the guidance set out in the XRB's Climate-related Disclosures Standard NZ CS-3 in relation to the application of materiality. NZ CS-3 states that "information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that primary users make on the basis of an entity's climate-related disclosures". The primary users of this report are our existing and potential investors, lenders and other creditors.

When disclosing actual impacts, we apply the same materiality as applied by our auditors for the Consolidated Financial Statements (refer to Deloitte's Audit Report in the FY23 Integrated Report). The quantitative threshold used for our Consolidated Financial Statements is not considered appropriate when determining which climate-related risks and opportunities should be disclosed given: (i) we are considering the potential impact over multiple years out to 2100; (ii) the size of our balance sheet; and (iii) the complexity of our operations. We use our risk matrix to determine what climate-related risks and opportunities to disclose. The matrix considers not only the financial impact but also the impact on operations, reputation, compliance, the environment and our people.

Disclaimer

This report contains forward-looking statements, such as potential impacts, climate scenarios, targets, forecasts and statements of our current intentions. Forward-looking statements are statements that are based on historical experience and various other factors that are reasonable under the circumstances. They are statements regarding our intent, belief or current expectations with regard to our business and operations and other climate and sustainability related commitments, targets, projections, scenarios, risk and opportunity assessments, pathways, forecasts, metrics and other proxy data.

Words such as 'will', 'may', 'expect', 'intend', 'seek', 'would', 'continue', 'plan', 'estimate', 'potential', 'anticipate', 'believe', 'risk', 'aim', 'forecast', 'assumption', 'projection', 'target', 'goal', 'guidance' or other similar words, are used to identify forward-looking statements. These statements reflect our current views on future events and are subject to change due to certain known and unknown risks, uncertainties, assumptions and other factors which are, in many instances, beyond our control, and have been made based on management's expectations or beliefs concerning climate change and the potential impact on Genesis.

This report uses relatively long time frames and plausible scenarios to assess potential impacts. Statements in this report use a greater number of assumptions and estimates than our Consolidated Financial Statements. These assumptions and estimates are subject to change over time, and, when coupled with the longer time frames used in these disclosures, make any assessment of materiality inherently uncertain. In addition, our climate risk and impact assessment capabilities and our strategic plan remain under development, and the data underlying these and market practice in relation to these disclosures also remain subject to evolution and change over time.

The information in this report includes non-financial metrics, estimates or other information that are subject to significant uncertainties, which may include the collection of data, and methodologies to analyse the data, which involves various estimates and assumptions, and/or underlying data that is obtained from third parties, some of which cannot be independently verified. As a result, we expect that certain disclosures made in this report may be amended, updated, recalculated, and restated in the future as the quality and completeness of our data and methodologies continue to improve. For clarity, Genesis makes no commitment to update the information in this report.

The forward-looking statements made in this report are not guarantees or predictions of future performance and there is a risk that estimates, judgements, assumptions, views, scenarios or projections may turn out to be incorrect and that these risks may cause actual outcomes to differ materially from those expressed or implied in this report. In particular, there is inherent uncertainty around future climate-related and sustainability-related policy and legislation and limits in the current scientific understanding of climate change and its impacts. Accordingly, Genesis gives no representation, warranty or assurance (including as to the quality, accuracy or completeness of any forward-looking statements set out in this report), that the occurrence of the events expressed or implied in any forward-looking statement made in this report will occur.

Enquiries

If you have any questions or comments regarding this report, please contact investor.relations@genesisenergy.co.nz.

3. Our progress

Hydro generation increased by

34%

Compared to FY22, driven by exceptionally high hydro inflows

FY22: 9% lower than FY21

Successful biomass trial resulted in

895[2] less tCO_2e

From the combustion of biomass compared to the combustion of coal

Sustainable finance

32%[3]

Of drawn debt at 30 June 23 was green debt, a further $240m of non-green debt was repaid and issued as green debt on 10 July 2023 increasing the percentage to 51%. The proceeds were not applied directly to fund new renewable generation development.

Engagement with energy management

50%

Of residential customers

FY22: 45%

Coal burn reduced by

90%

Compared to FY22, driven by lower thermal generation and therefore more gas available

FY22: 67% lower than FY21

2025 Science Based Target

60%

Lower scope 1 & 2 emissions for FY23 compared to FY20 base year

Target = 36% annual reduction from FY20 base year by FY25

Growing renewables

Lauriston solar

First solar project with FRV Australia[4], designed to deliver ~52 MW

Engagement with energy management

37%

Of large business electricity customers[6]

Carbon emissions reduced by

1,625 kt CO_2e

45% decrease in scope 1, 2 and 3 emissions compared to FY22[1]

FY22: 2,022 kt CO_2e lower than FY21

2025 Science Based Target

49%

Lower scope 3 emissions on use of sold products for FY23 compared to FY20 base year

Target = 21% annual reduction from FY20 base year by FY25

Completed feasibility studies and secured land rights[5] for

~400 MW

Of solar capacity across 3 North Island sites

1. The decrease is mainly due to higher hydro generation and therefore lower thermal generation and lower coal burn. Hydro generation is driven by hydro inflows and therefore can fluctuates year on year.
2. Based on emission factors issued by the Ministry for the Environment (including CO_2 which is reported separately under the GHG protocol). This was calculated by comparing the tCO_2e produced from generating 1.5GWh of electricity using biomass instead of coal as the fuel source.
3. The calculation is based on drawn debt at year end excluding lease liabilities. It excludes fair value interest rate risk adjustments, capitalised issue costs and accrued interest.
4. Subject to Overseas Investment Office approval and therefore the Final Investment Decision.
5. Signing for one of these sites occurred after year end.
6. Energy IQ for business platform was launched in July 2022.

Management commentary
(no financial statements)

4. About Genesis

4.1 Our purpose and vision

Empowering New Zealand's sustainable future

Genesis generates electricity from a diverse portfolio of assets in New Zealand, including hydropower, wind, and thermal generation, and sells gas and electricity to commercial and domestic customers.

Our purpose is "empowering New Zealand's sustainable future" and we are looking to fulfil this in all aspects of our business, from the way we generate and supply energy, care for the environment in which we operate, and the way we interact with our customers, our people, iwi and wider communities.

Addressing climate-related risks are central to our business and our strategy

We recognise the impact of climate change and support meaningful, economy-wide planning to reduce emissions and transition New Zealand to a low carbon future. Climate challenges will drive New Zealand's and global decisions on how we live and work in the years to come. We expect that the scale of change will be significant and Genesis has a role to play as a key enabler in achieving a successful transition in New Zealand. We are taking action to reduce emissions while balancing climate change considerations, managing increasing energy demand, and ensuring our customers have reliable and cost-effective energy.

We understand the importance of our role in New Zealand's transition to a low carbon future. Decarbonising our activities and helping our customers do the same will contribute to a successful low carbon transition. This means meeting the needs of the present, without compromising the needs of future generations.

Embedding sustainability into how we do business

Our purpose is underpinned by ambitious Science Based Targets (SBT), which aim to remove 1.2 million tonnes of annual carbon emissions by FY25 (from a FY20 base), in line with the ambition to limit global warming to no more than a 1.5°c temperature rise. These SBT targets ensure we can measure our progress and hold ourselves accountable.

We seek to identify social, economic, and environmental risks and opportunities as part of our strategic decision-making processes. Through our evolving sustainability strategy, we have made significant progress in the areas that we believe matter the most to, and have the greatest impact on our mana whenua and others such as investors, customers, and community groups (for more information refer to our FY23 Integrated Report).

We understand that an 'equitable transition' is vital to a successful low carbon future and that for the communities connected to our assets, community support with investment in new energy, new industries and new jobs is important.

We have embedded further accountability and transparency with our Sustainable Finance Framework (Framework). Through the Framework, we aim to hold ourselves accountable for reducing our carbon emissions, increasing our renewable generation capability and creating education and employment opportunities for young people living in the communities that surround our generation sites. The Framework provides a mechanism for investors to contribute capital to projects that support more sustainable outcomes.

Management commentary
(no financial statements)

4.2 Our business model

Genesis is a vertically integrated energy business. Our operations include generation and wholesale procurement of energy through to the sale of energy to residential, business and wholesale customers. We supply electricity, LPG and natural gas to 483,721 customers in New Zealand through two retail brands (Genesis and Frank*Energy) and we own a 46% share of the Kupe Joint Venture, which owns the Kupe gas field[7].

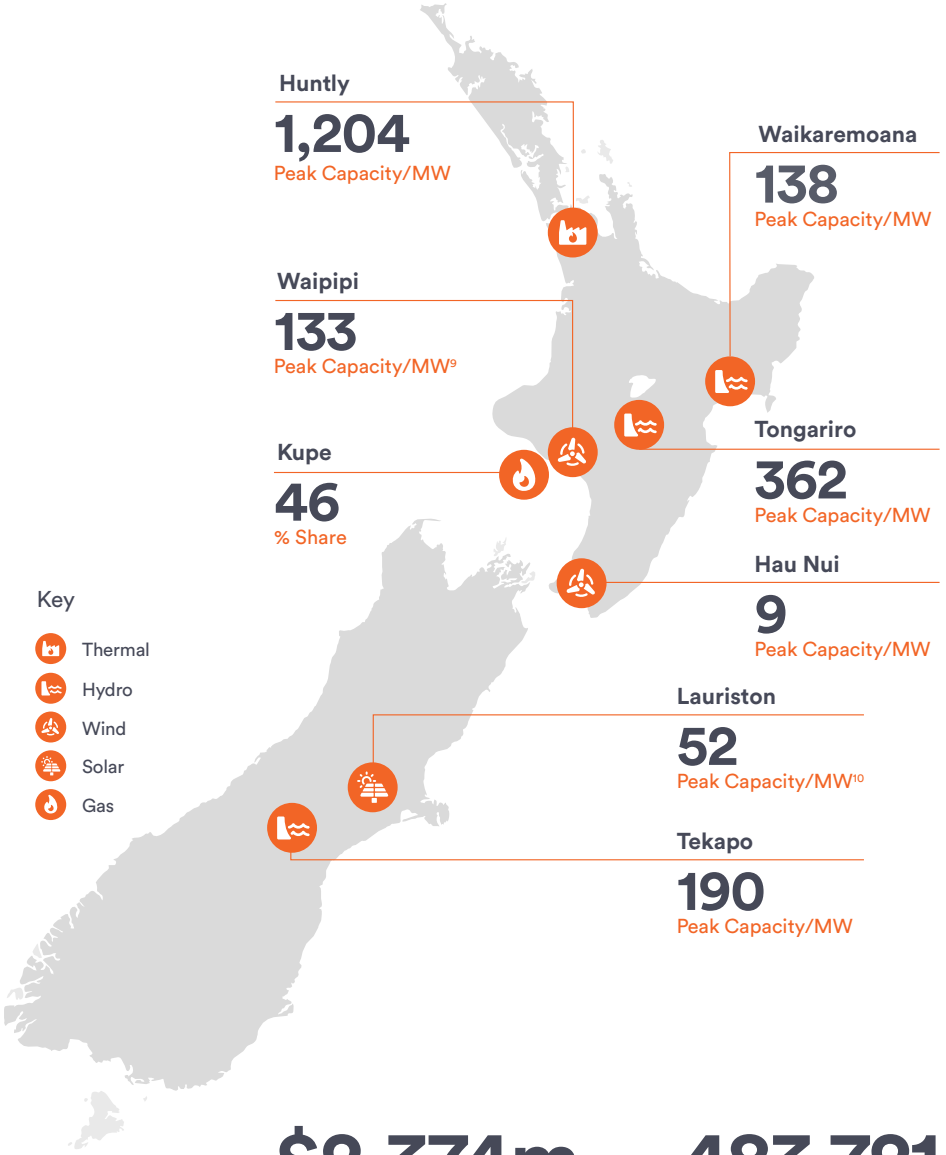
We operate a range of renewable and thermal generation sites across the country[8]. The geographic spread and diversity of our generation assets provides vital support to the country's electricity sector. Genesis sits at the intersection of supply and demand for several energy sources as well as providing back-up generation for New Zealand's electricity supply when renewable sources are unable to meet demand. This means our business is resilient to supply shocks and has historically generated consistent earnings.

Our vertically integrated gas portfolio provides flexibility, security, and price stability for our customers. Kupe gas field is also a vital part of New Zealand's energy system.

We remain focused on evolving our business model away from pure energy supply to energy management. This is being achieved by (i) continuing to develop the channels our customers use to interact with us, and (ii) developing a suite of products and services that provide knowledge and insights that our customers can act on, to manage their energy usage.

Genesis is a mixed ownership model company, listed on the New Zealand Stock Exchange and the Australian Securities Exchange and is majority owned by the Crown (51%). For further information about Genesis, refer to our FY23 Integrated Report.

7. Refer to Appendix IV for a description of Kupe Joint Venture's physical assets and contractual arrangements.
8. Huntly Power Station, Tongariro, Waikaremoana and Tekapo Power Schemes and Hau Nui Windfarm. Refer to Appendix IV for a description of our physical assets and refer to our website for further information on our generation sites.
9. Genesis has an electricity offtake agreement for the energy from Waipipi.
10. Subject to Final Investment Decision. Construction is expected to start late 2023 and be operational by late 2014.



5,858 GWh
Electricity generated
FY22 6,481 GWh

8.4 PJ
Gas from Kupe
FY22 11.1 PJ

30.71%
Natural gas market share
FY22 29.94%

22.3%
LPG market share
FY22 23.2%

$2,374m
Revenue
FY22 $2,842m (restated)

483,721
Customers
FY22 471,012

1,268
Full time employees (FTE)
FY22 1,204

Management commentary
(no financial statements)

4.3 How we create and capture value

Inputs

Finance
A healthy balance sheet supports our operations and investment in NZ's sustainable future

People
Our team's skills, diversity and commitment

Assets
Our power schemes, LPG networks, customers and share in the Kupe gas field

Intelligence
Technology innovations and technical expertise for our customers and our business

Nature
Resources we use and environments in which we generate electricity

Relationships
With iwi, our customers, suppliers, communities and stakeholders.

Outputs

Financial growth and shareholder returns

Energy for our customers and the wholesale market

Transition of thermal generation

Technology for customers and our business

Care of our customers and employees

Support of STEM careers and warm homes

Support of waterways and biodiversity

Outcomes

Finance
Improved value for shareholders

Growing and supporting NZ's electricity system

People
A safe, healthy and diverse workforce

Assets
Sustainable, reliable and economically-run energy supply, and growing customer numbers

Intelligence
Helping customers reduce their carbon footprint and our business thrive

Nature
Reduced emissions, healthy waterways and improved biodiversity

Relationships
Support of energy wellbeing, more young people inspired by STEM, and constructive relationships with iwi, communities and stakeholders

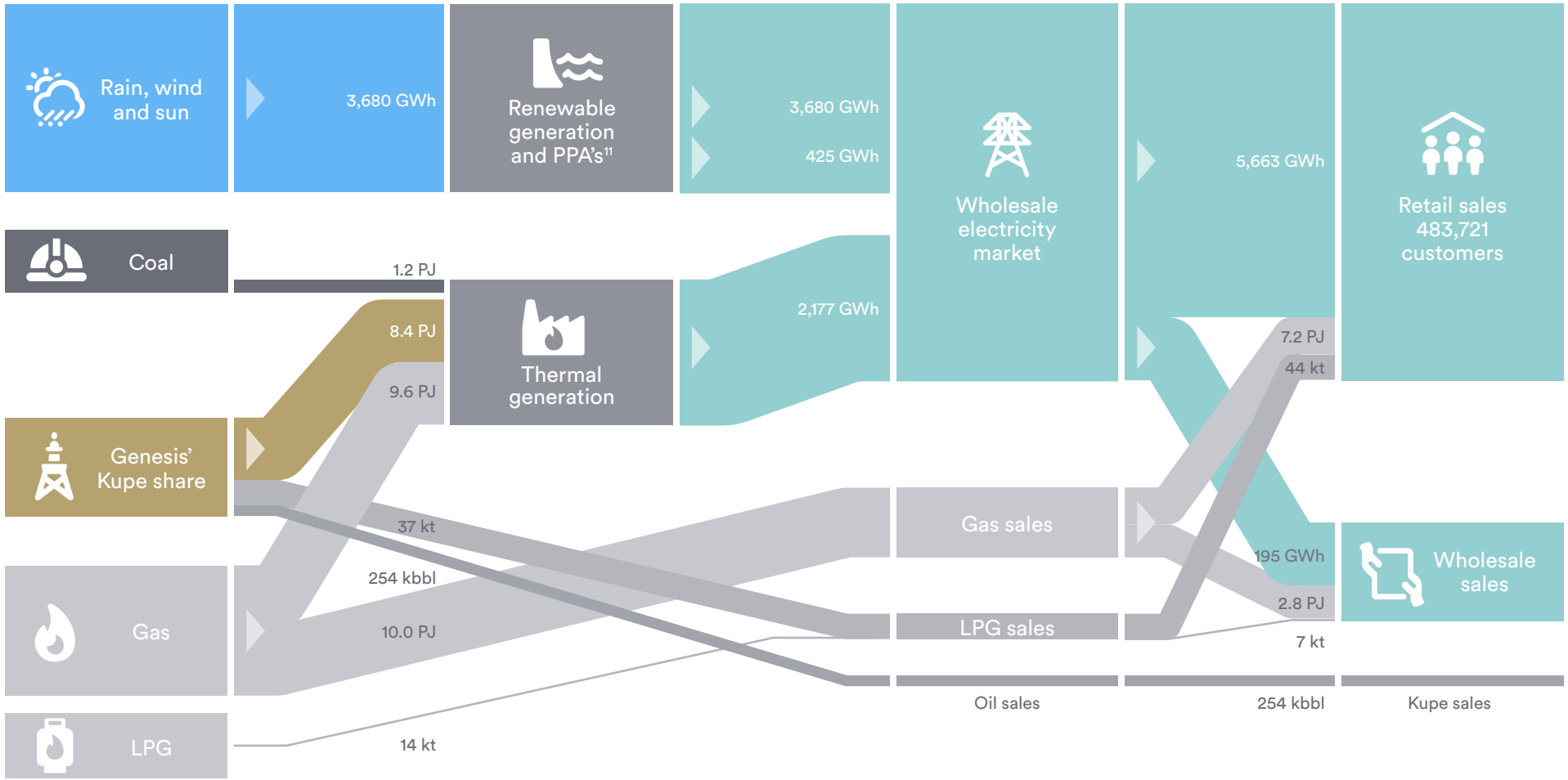
Our purpose: Empowering NZ's sustainable future

See our FY23 Integrated Report for more information

Management commentary
(no financial statements)

4.4 Key inputs and outputs for FY23

The diagram below provides an overview of the physical inputs and outputs of our business. The inputs are shown on the left-hand side, the process and markets we operate in are shown in the middle and the outputs and customer segments on the right-hand side. Refer to Appendix IV for a description of our physical assets.



11. Power purchase agreements

Management commentary
(no financial statements)

5. Governance

5.1 The role of the Board

The Board of Directors (Board) is responsible for the long-term stewardship of the Company, including the management of climate change risks and opportunities. Climate-related risks are an important consideration in long-term value creation. The members of the Board are outlined on page 56 of the FY23 Integrated Report and their profiles can be accessed on our website. The Board and the Executive Leadership Team oversight of climate-related risks and opportunities is supported by embedding climate within our established governance structures and operating rhythm. The diagram to the right sets out the key responsibilities for each body which are discussed in more detail in the following sections.

Board

Responsible for:

- Establishing the purpose and overall strategic direction of Genesis including the strategy for managing climate change;
- Overseeing and approving the risk management strategy, policies, and the risk appetite;
- Setting and monitoring progress against climate-related targets; and
- Monitoring climate-related risks and opportunities through the ARC and approval of climate-related disclosures.

Audit and Risk Committee (ARC)

Assists the Board in the oversight and control of climate-related matters through its review of:

- The Risk Management Policy, Framework and Risk Appetite Statement;
- Risk reports; and
- Climate-related risks and opportunities, climate scenarios, results of scenario analysis and climate-related reporting.

The ARC reports its findings and recommendations to the Board for approval.

Executive Leadership Team (ELT)

Responsible for monitoring and managing climate-related risks and opportunities. The ELT has overall accountability for actions and commitments to embed climate change into risk management, business strategy, planning and budgeting processes and frameworks.

Climate working group

Responsible for overseeing the company-wide monitoring and review of climate-related risks and opportunities, scenarios, scenario analysis and the preparation and publication of climate-related reports.

Sustainability committee

Responsible for overseeing the delivery of the Sustainability Framework including climate-related goals.

Risk and strategy teams

Responsible for monitoring and reporting risks to the ELT and the ARC and ensuring climate-related risks are integrated into our strategy.

Individual business units

Responsible for day-to-day monitoring, management and reporting on climate-related risks and opportunities.

TCFD

5.1 The role of the Board (cont'd)

Governance process and frequency

The Audit and Risk Committee (ARC), a subcommittee of the Board, is responsible for monitoring and oversight of climate-related risks and opportunities and reviewing, assessing and reporting this information to the Board.

Climate-related risks and opportunities, climate scenarios and results from scenario analysis are presented to the ARC annually. The ARC reviews and recommends these documents to the Board for approval.

Other documents associated with climate-related matters are provided to the Board for review and approval as appropriate, such as strategy and strategic initiative updates associated with our transition to a low carbon future, our Sustainability Framework, consideration of long-term decarbonisation commitments and climate-related legal matters.

Board skills and competencies

The Board continues to expand its climate-related knowledge through education sessions. The Board received the following updates during the year:

- In February 2023, the Board attended a training session on the XRB's Climate-related Disclosures Standards and was briefed on the results of the climate-related disclosures gap analysis completed by a climate reporting expert. This involved comparing the FY22 Climate-related Disclosures with the XRB Climate-related Disclosures Standards, which we are required to adopt in FY24; and
- In April 2023, industry experts joined the Board's strategy workshop to provide an overview of macro risks and opportunities, market trends, possible future market scenarios and uncertainties, and the implications of these on our strategic direction.

In FY23 the skills matrix has been updated to include sustainability which includes climate-related skills.
Refer to the FY23 Integrated Report for further information.

Integration of climate change into strategy

Given the nature of our business model, climate-related risks and opportunities are fundamental when reviewing and approving strategic direction. Subject matter experts participate in the strategy setting workshops, and the Board receives regular updates on key aspects of the strategy as the results of detailed analysis becomes available and work is completed on developing a long-term decarbonisation goal.

Monitoring progress against targets

The Board sets the tone and direction for targets through the strategy setting process and the review of risks and opportunities.

Management analyses and recommends specific targets to the ELT and Board for approval. Progress against these targets is incorporated into the reports to the Board. As targets relate to specific initiatives, the frequency of reporting on these depends on the specific initiative it is attached to. For example, progress on achievement of Science Based Targets is reported to the Board annually. It is also considered and reported on in the development and approval of the five-year operating plan and considered as part of the strategic planning process.

Incentivisation and remuneration

The Human Resources and Remuneration Committee, a subcommittee of the Board, oversees the ELT remuneration. In FY23, each Executive had a sustainability related objective representing 12% of their overall short-term incentive. We have also introduced a climate-related metric into the Long-Term Incentive (LTI) scheme. The metric represents 20% of the LTI and relates to the achievement of the FY25 Science Based Targets.


Waipipi wind farm, Taranaki

5.2 The role of Management

Executive Leadership Team

The ELT has overall accountability for actions and commitments to embed climate change into risk management, business strategy, planning and budgeting processes and frameworks. This includes:

- Ensuring the risks and opportunities in each business area are identified, understood, managed and monitored and escalated appropriately;
- Ensuring risk mitigation strategies approved by the ARC or Board are implemented;
- Monitoring emerging and developing risks. This is primarily performed by our strategy and risk teams, who report to the Chief Financial Officer and the regulatory team who report to the Chief Corporate Affairs Officer;
- Reviewing and presenting risk reports to the ARC. These reports include action taken to mitigate risks previously identified;
- Reviewing information provided by the climate working group on climate-related risks and opportunities, scenarios, scenario analysis and the climate-related disclosures; and
- Reviewing updates on the Company's progress against its sustainability goals.

The ELT also monitors and manages risks and opportunities through the strategy and operating plan setting process, attendance on the Future-gen Governance Group, Retail Performance and Strategy Oversight Committee and Wholesale Performance meetings, and through their engagement with individual business units.

The frequency of meetings and reporting depends on the nature of the risk or opportunity and how quickly it could manifest. For example, the ELT receives a monthly update on Future-gen initiatives, whereas reporting on Science Based Targets is provided annually.

The members of the ELT are outlined on page 57 of the FY23 Integrated Report and their profiles can be accessed on our website.

The Chief Executive and other members of the ELT engage with the Board monthly and with the ARC quarterly.

Climate working group

The climate working group is responsible for overseeing the review and updating of climate-related risks and opportunities, scenarios, scenario analysis and the preparation and publication of climate-related reporting. The working group consists of the Group Treasurer and Risk, the Group Manager Strategy, General Manager Financial Control and Assurance, General Manager of Sustainability and other members of the risk, strategy, and financial control teams. The working group regularly engages with the ELT on the work completed during the year.

Sustainability Committee

The Sustainability Committee is responsible for overseeing implementation of the Sustainability Framework, which includes climate-related goals, developing the Sustainability Framework and associated targets beyond 2025, and identifying and executing initiatives to improve integration, engagement, and education on sustainability related matters.

Risk and strategy teams

The risk team is responsible for keeping up to date with emerging risks and providing day-to-day guidance to business units on how best to identify or manage risks. They are also responsible for monitoring and reporting risks to the ELT and the ARC each quarter.

The strategy team is responsible for ensuring climate-related risks and opportunities are considered within our strategy, and that the results of scenario analysis are considered in the strategy setting process and integrated into the operating plan.

Individual business units

The management of climate-related risks is dispersed throughout our business. Individual business units are responsible for day-to-day monitoring, management, and reporting on climate-related risks through to the risk team as well as the ELT. For example, the wholesale operations team are assigned responsibility for managing the health of the generation assets. The wholesale operations team monitor and report on this to the ELT monthly.

6. Risk management

6.1 Processes for identifying, assessing, and managing climate-related risks

Risk identification

We are cognisant of the developing effects of climate change, along with the associated environmental impacts, and operational, regulatory, and financial risks. We use the following processes, tools and methods to identify climate-related risks and opportunities:

1. Stakeholder engagement;
2. Trend analysis;
3. Exposure analysis; and
4. Scenario analysis.

The insights gained from these tools and processes are used by the risk team in their assessment, monitoring and reporting of risks, by the strategy team when developing the strategy and by the climate working group when overseeing the review and updating of climate-related risks and opportunities and climate-related scenarios.

Risk assessment

Climate-related risks are assessed and prioritised using the same risk management framework as used for other risks. The matrix considers the likelihood of occurrence and the severity of the consequence, which allows us to determine the appropriate level of response for each risk.

One key difference between climate-related risk and other risks is the 'likelihood' aspect which is difficult to accurately quantify over the long-term periods associated with climate risks. Accordingly greater weighting is placed on the 'consequence' aspect of the matrix, than the 'likelihood'.

As part of the ranking process, Management also considers vulnerability. If an asset is considered highly vulnerable to the risk, the impact rating is increased. If there are no controls in place to manage the risk, then the likelihood rating is increased. This ensures the correct level of emphasis is placed on mitigating the risks ahead of time. Climate risk assessments are incorporated into our risk management systems and processes.

Frequency of risk assessment

A formal process to review and update climate-related risks is completed annually. This is led by the climate working group. The risks and opportunity analysis are provided to the ELT and ARC for review and approval on an annual basis.

Climate-related risks can also be identified outside this process (i.e., identified as part of operational or strategic planning). Where new risks arise or should changes to existing risks be identified outside the annual process, these are considered by the risk team and where relevant reported to the ARC through the quarterly risk updates.

Process of risk management

Climate-related risks are managed through our Risk Management Policy and Framework and are managed throughout the business. The management response applied to each risk depends on the characteristics and impact of the risk. Management chooses to either accept, accommodate, protect or share the risk.

The frequency of risk reporting depends on the nature of the risk and how quickly it is likely to manifest. Operational and market risks are reported quarterly, key business risks are reported half yearly and strategic and climate-related risks are reported annually to the ARC.

Time horizons

The time horizons used for risk management are the same as those used for scenario analysis as outlined in section 7.1. The only exception to this is the length of time considered for long-term risks. The impact of long-term physical risks is considered through to 2100 to align with the useful lives of our generation assets.

Value chain exclusions

No significant parts of the value chain have been excluded from the analysis.

TCFD

Risk identification tools

1. Stakeholder engagement

The risk and strategy teams work with subject matter experts across the business to identify and assess climate-related risks across our value chain (both upstream from suppliers and supply chains, and downstream for customers).

A series of climate-related training sessions were run by a climate reporting expert to increase awareness and understanding of climate-related issues. The training was completed by the risk and strategy teams, subject matter experts, the climate working group, ELT and the Board.

2. Trend analysis

Trend analysis is undertaken by risk and strategy specialists to monitor our risk landscape and identify current and emerging risks within the industry, the wider economy, and across international markets. STEEP (Social, Technological, Economical, Environmental and Political) analysis is used within the scenario analysis to identify driving forces and critical uncertainties.

3. Exposure analysis

We have engaged an external consultant to undertake exposure analysis to identify physical risks for generation assets and Kupe onshore oil and gas assets. The analysis will use multiple scenarios and time horizons.

4. Scenario analysis

The climate working group work with subject matter experts (both internally and externally) to identify, review and assess the impact of climate-related risks using three scenarios over three time horizons. The scenario analysis process is described further in section 7.1.

7. Strategy

7.1 Scenario analysis undertaken

We perform scenario analysis to (i) help identify climate-related risks and opportunities over the short, medium and long-term, (ii) aid in the development of our strategic direction and (iii) test the resilience of our strategy.

Scenario development process

In undertaking scenario analysis, we followed a robust process to identify climate-related risks and opportunities and understand strategy resilience.

1.	Key internal stakeholders from across the business were brought together to identify and prioritise climate-related risks and opportunities.
2.	The focal question and scope were defined. How could climate change plausibly affect our business, what should we do and when?
3.	Driving forces and critical uncertainties were identified using the STEEP framework (used to identify current and emerging risks). Driving forces were prioritised according to their influence and uncertainty.
4.	Three scenarios were developed and structured on an axis of physical versus transition risk. These scenarios included a 1.5°c climate-related scenario, a 2.0°c climate-related scenario and a 3°c climate-related scenario.
5.	The implications of different pathways with different warming outcomes were explored and prescribed to each scenario (refer to Appendix I for a list of source data used to construct each scenario).
6.	The scenarios were reviewed by climate experts and business stakeholders to ensure coherency, plausibility and that they present a challenge to the organisation.
7.	The scenarios were reviewed by the ELT and the ARC who then recommended them to the Board for review and approval.

7.1 Scenario analysis undertaken (cont'd)

Overview of our three scenarios

	Green tape	Energy transformation	Hot house
Key assumption	Transformation driven by government legislation and more sustainable choices by consumers	Transformation driven by private sector innovation and consumer pressure. Government responds but lags	Greenhouse gas emissions continue to increase. Government response based on adaptation, not mitigation
Policy ambition	1.5°c	2.0°c	>3.0°c
Pathways	RCP[12] 2.6 SSP[13] 1 Orderly (Net Zero 2050)	RCP 4.5 SSP 2 Disorderly (Delayed transition)	RCP 8.5 SSP 5 Hot house (Current policies)
Policy reaction	Immediate and smooth	Delayed to 2030's	None
Access to financial services (eg. some forms of capital and insurance)	Easily accessible for those with sustainability credentials, no access for others	Available for most at a higher cost	Still available to those that exploit natural resources
Demand change	Fast	Moderate	Slow/Moderate
Technology change	Fast - mid 2020's	Moderate - early 2030's	Slow - not focused on climate
Customer preference change	Fast	Moderate - early 2030's	Slow - not front of mind
Physical risk severity	Moderate	Moderate	Extreme
Transition risk severity	Moderate	High	Low[12]

12. Representative Concentration Pathway
13. Shared Socio-economic Pathway

Green tape

A series of extreme environmental events raises climate risk awareness and spurs global agreement on climate action, limiting temperature rise to 1.5°c (Paris Agreement). This requires stringent government legislation as well as more sustainable choices by consumers.

Swift and stringent mitigation has restricted carbon emissions and ensured a minimal temperature increase. Adaptation is carried out strategically to achieve long term goals, improve resilience, and prosperity. By 2050, New Zealand has reached net zero emissions and is using 90 percent renewable energy. Energy is accessible, affordable and has supported an equitable transition to a low-carbon economy. Energy supply is secure, reliable, resilient and includes distributed alternative generation.

Consumers prefer sustainable options, supported by government incentives. This includes greater uptake of public transport, cycling and electric scootering, leading to less private car ownership.

From the mid-2020's, the focus shifts towards technology that reduces emissions, mandated by government restrictions, which results in acceleration of industry electrification. As a result, the total demand for electricity increases rapidly (to 60,000 GWh by 2050) and new generation and transmission must be built.

Strong investment in innovation and energy storage drive technology improvements that reduce costs and increase efficiency, resulting in increased demand for skilled employees. Fossil fuels are almost phased out and renewables dominate, but stranded assets are minimised through careful government policy.

New Zealand meets much of its own energy needs, with a good uptake of low emissions fuels, such as biofuels and green hydrogen. By 2050, biomass makes up 15% of the country's total primary energy.

Severe weather events including rainfall increase but less than in other scenarios. Most severe impacts are mitigated. The South Island experiences higher levels of rainfall, particularly on the West Coast. The North Island experiences less precipitation, but more severe weather around the North and East coasts. Snowfall declines, but at a slower rate than globally. Communities are impacted, leaving some cut-off in severe storms. Increased reliance on battery power storage and higher network resilience is expected.

By 2050, New Zealand has reached net zero emissions and is using 90 percent renewable energy.

Energy transformation

Increasingly severe weather events and a lack of government action led to a loss of faith in political leaders. Private sector-driven technology advances and consumer choices succeed in keeping climate change within the 2.0°c goal of the Paris agreement (with overshoot). Innovation takes off in the 2030's including: electric vehicle adoption, distributed solar and batteries, and demand response. Commercial propositions and business models enable new choices for consumers and paths to energy sector decarbonisation. There is less government mandated or subsidised action taken to restrict carbon emissions.

Around 2030, weather events cause significant property damage and fatalities across New Zealand, resulting in political tension and a loss of faith in government to take effective action on climate change. Behavioural change, while slow up until this point, is spurred by international action and expectations. A delayed transition means consumers help to drive rapid change. The private sector responds to consumer wants and needs and leads the transition through innovative technology uptake. The government responds with supportive policy post-2030, but it is not the driver of the transition. Delays in effective policy implementation result in a more inequitable and expensive transition.

Up to the 2030's, recent historical global trends continue, followed by rapid technology and behaviour change, spurred by worsening climate change impacting communities. The cost-of-living increases, putting economic and social pressure on people for a time, due to operational costs increasing from uptake of new technology.

Post 2030 there is high uptake of public transport, cycling and electric scootering, leading to reduced private car ownership.

High rates of innovation in the energy sector include electrification of end-use sectors; electric vehicle adoption; distributed solar and batteries; utilisation and storage, including removing CO_2 from the atmosphere; the use of low carbon gases such as hydrogen and demand response. Global coal demand falls rapidly during the 2030's and halves between 2018-2040 for the Asia-Pacific region. New commercial propositions enable new choices for consumers and new paths to decarbonise the energy sector.

Rain increases by up to 30% over a year but falls on fewer days with heavier rain and less snow (snow days per year reduce by 30 days). These heavier intense rainfall days are frequent in winter. This increases the likelihood of rivers flooding and flash flooding. Although precipitation increases, there are more dry days.

Increases in mean temperature and longer summers (higher temperatures and lower rainfall over a longer time period) means increased water demand. Droughts intensify and become more frequent over time. The number of hot days doubles by the end of the century. River flows are lower in summer and higher in winter. Lower river flows in summer raises water temperatures and aggravates water quality problems.

Global coal demand falls rapidly during the 2030's and halves between 2018-2040 for the Asia-Pacific region.

Hot house

Economic and social development is paired with the continued exploitation of fossil fuel resources and the continuation of resource and energy intensive lifestyles around the world. Restricting carbon emissions becomes a lower priority for both the government and public leading to severe physical climate change impacts and a global temperature rise of >3°c by 2100.

Global climate policy ambition dwindles during the mid-2020's. Fossil fuel use and resource exploitation continues, with weak, reactive and localised adaptation to avoid near-term costs. By 2050 the economy has experienced strong growth but with increasing emissions and worsening physical climate impacts.

Scaled action on climate change is traded for robust economic growth, driven by reliance on fossil fuels. Sustainability is still valued by consumers; however, this is not always reflected in purchasing decisions or consumption patterns. Population wellbeing decreases.

Technology continues to evolve but is not focused on climate solutions. Countries and sectors fail to coordinate in this scenario, leading to a lack of reduction in emissions and geopolitical tension. Despite electrification of some areas, and further uptake of electric vehicles, reliance on fossil fuels continues. Coal demand for energy generation remains flat. For the Asia-Pacific region, coal demand increases from 2018-2040 by 10%.

Extreme events occur (precipitation of up to 1 metre of rainfall in 48 hours localised to one area in the country). The largest changes in precipitation occur on the West Coast in winter season, with an average increase up to 40% by 2090. Snow days per year reduce by 30 days or more by 2090. Flooding occurs in many areas across the country, creating landslides and disrupting transportation and communications.

Average wind speeds increase, common (monthly) wind events see 22–27 knots. Most significant increases occur in the southern half of the North Island, and throughout the South Island. 'Extreme' wind events present the capability to damage/disrupt infrastructure. Tropical cyclones become more intense and common and push south, often causing flooding in the North Island. The South Island is pummelled by the extratropical storm track.

Coal demand for energy generation remains flat. For the Asia-Pacific region, coal demand increases from 2018-2040 by 10%.

7.1 Scenario analysis undertaken (cont'd)

Why these scenarios?

The Green tape (1.5°c) and the Hot house (>3°c) scenarios were chosen as they align with the requirements of the XRB's Climate-related Disclosures Standard. The Energy transformation (2.0°c) scenario is considered the most challenging and plausible scenario for our business because it has high transition risks and moderate physical risks. In comparison the Green tape scenario focuses on transitional risks and the Hot house scenario focuses on physical risks. The Energy transformation scenario is considered relevant, as it aligns with International Energy Agency (IEA) reference scenarios. By utilising these three scenarios, we tested the resilience of our business strategy with a broad range of climate-related risks and opportunities.

Time horizons

The scenarios, scenario analysis and risks were considered over the following time horizons:

Term	Period	Rationale
Short	1-5 years (2028)	Aligns with the time horizon used for Genesis' operating plan
Medium	6-15 years (2038)	Aligns with the time horizon used for Genesis' corporate strategy
Long	16-27 years (2050)	Aligns with the Intergovernmental Panel on Climate Change (IPCC) findings that to limit the temperature increase to 1.5°c above pre-industrial levels, emissions would have to peak now and reduce by around half by 2030, and globally net zero emissions need to be attained by 2050.

Capital deployment plans can be short, medium or long-term depending on the nature of the project, the expected return on investment period and the expected useful life of any assets that are created. Some capital deployment plans such as our investment in solar generation assets use slightly longer time periods (35 years rather than 27 years). In addition, the expected useful lives of our hydro generation assets have much longer time horizons than used in our scenarios analysis. While this is the case the physical impact of climate change on these assets has been considered out to 2100 using the three Representative Concentration Pathways used in our scenarios (refer to section 6.1).

Scenario analysis process

The resilience of our business model and strategy was tested against the three climate scenarios. We engaged PwC and West Nine Consulting Limited to guide and support the development of the scenarios and the scenario analysis. The results of the testing were reviewed by the ELT, the ARC and the Board.

Scenario analysis was completed through the development of risks and opportunities, risk mapping and qualitative analysis. No quantitative modelling was undertaken.

This year the scenario analysis process was completed as a standalone process due to the timing of the work being undertaken. Management is working to integrate this work into the annual strategy review process going forward.

7.2 Material climate-related risks and opportunities

The table below outlines the most significant climate-related transition and physical risks, and opportunities that could impact our business over the short, medium and long term. These climate-related risks and opportunities have been identified and assessed using the processes discussed in section 6.1 and section 7.1. The risks and opportunities have been grouped based on the scenario which is considered to result in the highest impact on our business model and strategy. It is likely that the risk and opportunities below will manifest in more than one scenario. The classification represents our current assessment of the risk landscape. The risks and opportunities are discussed in more detail on pages 19-27. Given the future is unknown actual results may differ from those noted on pages 19-27.

Scenario	Risks	Opportunities	Time horizon
Green tape	1. Shift in customer preferences 2. Retail's transition to a low carbon future 3. Speed of wholesale transition to a low carbon future	5. Development of solar generation 6. Electrification increases electricity demand	Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)
	4. Restricted ability to sell LPG and gas		Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)
Energy transformation	7. Blackout and/or supply resilience risk 8. Supply constraints impacting the transition to a low carbon future 9. Changes to the Emissions Trading Scheme (ETS) 10. Gas storage for dry year events	12. Technological developments create new customer propositions 13. Development of onshore wind generation	Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)
	11. Ability to access some forms of capital		Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)
		14. Improved alignment of hydro inflows and electricity demand	Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)
Hot house	15. Ability to access insurance		Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)
	16. Weather events impacting gas supply		Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)
	17. Warmer temperatures and longer dry spells impacting hydro generation 18. Intense rain and floods impacting hydro generation		Short (0 – 5 Years) Medium (6 – 15 Years) Long (16+ Years)

Green tape risks

1. Shift in customer preferences

R Transition risk – Products and services

Potential impact

Increased consumer awareness of carbon intensive businesses as well as mitigations such as green products (i.e. green energy certificates) increases the risk that customers migrate to other retailers.

Actual impact[14]

No material events occurred during the reporting period.

Business unit / asset impacted

Retail business unit – reduced customer numbers impacting earnings.

Time horizon

Strategy to manage risk

This risk is managed through our decarbonisation transition plan Future-gen, adoption of Science Based Targets and brand diversification (Ecotricity).

2. Retail's transition to a low carbon future

R Transition risk – Products and services

Potential impact

The strategy to adopt and deploy new technology, emerging services and products to support customers to decarbonise and transition to a low carbon economy could either increase or decrease market share, revenue, and if not executed successfully could result in the loss of multi-fuel customers.

Actual impact

No material events occurred during the reporting period.

Business unit / asset impacted

Retail business unit – reduced multi-fuel customers numbers impacting earnings.

Time horizon

Strategy to manage risk

This risk is managed through dedicated teams focused on identifying emerging customer and market needs, developing the technology and partnerships required to deploy future products and services to market and development of strategic initiatives focused on decarbonisation.

14. Actual impact refers to the impact identified in the current reporting period (1 July 2022 to 30 June 2023).

Green tape risks (cont'd)

3. Speed of wholesale transition to a low carbon future

R **Transition risk – Adaptation and mitigation activities**

Potential impact

The speed of transition to a low carbon future and achievement of the Future-gen strategy is impacted by:

- Competitors and new market entrants adopting new technologies and developing new generation earlier than us;
- Unavailability of Power Purchase Agreements (PPAs) with renewable developers due to heightened competition or reluctance to transact with us and delays to developers' projects caused by challenges with consenting, network connections and other project development requirements; and
- The approval of the Lake Onslow project which could impact the return on investment of renewable asset investments.

How the strategy is executed could either increase or decrease financial performance.

Actual impact

The work on our Future-gen strategy is progressing. No new PPAs were entered into in FY23. Competition in the renewable space remains strong with many of the larger renewable projects in the development stage. The construction of some commercially feasible renewable projects in New Zealand in the near term has been delayed as a result of supply chain constraints, rising material costs and ability to access to local civil and electrical contractors as a result of flood remediation work. Renewable projects have also been impacted by delays in network connection applications due to the volume of proposed projects being submitted.

Business unit / asset impacted

Wholesale business unit – reduced earnings from new renewable generation / increased exposure to wholesale electricity prices.

Time horizon

Strategy to manage risk

To manage this risk, we (i) have partnered with FRV Australia, a leading utility-scale solar farm developer; (ii) continue to develop a pipeline of development and contractual options which is more than the target we are trying to achieve; and (iii) manage delay risks through contractual terms.

TCFD

4. Restricted ability to sell LPG and gas

R **Transition risk – Products and services**

Potential impact

If the Government prohibited the sale of gas and LPG, we would be unable to sell these products which would have a negative impact on financial performance.

Actual impact

The Climate Change Commission is consulting on draft advice on the development of the next emissions reduction plan. The Commission is consulting on a recommendation to prohibit the installation of gas in buildings where there are viable and affordable alternatives. The Government is not obliged to adopt the Commission's recommendations (although they may be persuasive towards further action). The recommendations are to be finalised at the end of 2023.

The Government is developing a gas transition plan which is expected to be completed by the end of 2023. This will feed into the national energy strategy currently under development for introduction at the end of 2024.

Business unit / asset impacted

Retail business unit – reduced customer numbers and earnings / carrying value of LPG assets (fixed and intangible assets).

Kupe business unit – reduced earnings / carrying value of Kupe assets (oil and gas assets and intangible assets associated with customer contracts and relationships).

Wholesale business unit – reduced earnings.

Time horizon

Strategy to manage risk

We are actively working to develop products and tools to help customers manage and reduce their reliance on these products.

Green tape opportunities

5. Development of solar generation

Opportunity – Adaptation and mitigation activities

Potential impact

Technology advancements are decreasing the cost of renewable technologies making it more viable to invest in these assets and transition away from thermal generation. Investment in renewable assets will replace thermal generation revenue and reduce operating costs.

Actual impact

During FY23 we:

- Announced the first joint solar development project with FRV Australia for approximately 52 MW. The project is expected to be operational in late 2024;
- Completed feasibility studies for three solar project sites across the North Island with approximately 400 MW of capacity and secured land rights for two of these sites prior to year-end and one after year-end. We are now focused on consenting and connection development activities for these projects;
- Continued to assess a range of development opportunities as part of a growing pipeline of generation development options; and
- Lodged two applications in relation to the resource consent for Castle Hill. One was to reduce the size of the windfarm (this was approved in April 2023). The other application was to extend the consent for a further 8 years. No decision has been made for the development of this site.

Business unit / asset impacted

Wholesale business unit – increased investment in new renewable generation / reduced operating costs.

Time horizon

Strategy to manage risk

This is managed as part of our Future-gen strategy.

6. Electrification increases electricity demand

Opportunity – Products and services

Potential impact

Increased electrification of industry, transport and heating, including use of incentive schemes (i.e., electric car subsidy) creates an opportunity to provide new services to customers and increases demand and load on the grid, leading to increased retail and wholesale revenue.

Actual impact

Significant focus in FY23 has been to drive electric vehicle uptake through our first-in-market plan. Our EV Plan has grown by 158% to 4,153 customers and 2,173 customers have subscribed to our EVerywhere offer. We have also focused on increasing residential customer engagement with energy management tools in Energy IQ.

Business unit / asset impacted

Retail and wholesale business units – increased earnings / carrying value of generation assets.

Time horizon

Strategy to manage risk

This opportunity is managed through dedicated teams focused on identifying emerging customer and market needs, developing the technology and partnerships required to deploy future products and services to market and development of strategic initiatives focused on decarbonisation.

Energy transformation risks

7. Blackout and/or supply resilience risk

R Transition risk – Operations

Potential impact

Blackouts and/or threats to supply resilience could result in government intervention which has the potential to:

- Impact the Group structure, assets held or contracts entered into;
- Require us to maintain and run thermal assets, despite a potential costs imposition and reduced profitability or increased electricity prices for consumers; and
- Compromise New Zealand's and our climate change mitigation goals.

Actual impact

The Electricity Authority is introducing a suite of amendments to the Electricity Industry Participation Code to manage risks to electricity supply during peak demand periods in winter 2023. The options seek to improve market information and incentives, consistent with the Authority's statutory objectives. These changes did not impact our financial performance. Further, more impactful changes are expected ahead of winter 2024.

Business unit / asset impacted

Group structure or the Wholesale business unit depending on the level of government intervention – changes could impact earnings / carrying value[15] of thermal generation assets.

Time horizon

Short	Medium	Long
0 – 5 Years	6 – 15 Years	16+ Years

Strategy to manage risk

We actively engage with regulators and industry groups to support the sector to align on the direction and effective regulations that will help the country move quickly and safely towards a sustainable future.

15. Generation assets are recorded at fair value in the balance sheet. The valuation is based on a discounted cash flow model. Refer to note B1 of the Consolidated Financial Statements for more information.

8. Supply constraints impacting the transition to a low carbon future

R Transition risk – Adaptation and mitigation activities

Potential impact

Increased global demand for key minerals used in the manufacture of renewable technologies or land for solar and capacity issues in relation to connecting new generation to local and national grids is expected to result in supply chain constraints. This creates a risk that we will not achieve our Future-gen strategy, or the cost of the transition will increase.

Actual impact

During the reporting period we experienced difficulties sourcing biomass for the biomass trial which resulted in the trial being delayed until February 2023.

Supply chain constraints (sourcing turbines and civil work delays due to resources being diverted to flood repair work) has delayed the construction of one of the wind farms that we have a signed PPA for.

Business unit / asset impacted

Wholesale business unit – reduced earnings from new renewable generation / increased exposure to wholesale electricity prices.

Time horizon

Short	Medium	Long
0 – 5 Years	6 – 15 Years	16+ Years

Strategy to manage risk

To manage supply constraints we have partnered with FRV Australia, a leading utility-scale solar farm developer who has established supply chain networks and we continue to develop a pipeline of development options in different locations, with different land uses, connections and consenting risks.

Energy transformation risks (cont'd)

9. Changes to the Emissions Trading Scheme (ETS)

R Transition risk – Supply chain and/or value chain

Potential impact

Regulatory intervention or the inclusion of NZ Emissions-Intensive Trade Exposed industries (EITE's) in the ETS would increase demand for carbon units (driving up prices) and increase the risk of industrial load decline which could impact retail sales.

Actual impact

The spot price of carbon decreased significantly during the year and has not fully recovered after the carbon auction in March 2023 failed to reach its reserve price. The change in price did not have a material impact on our financial performance for the year as we hedge our operational exposure to carbon price risk, it did however, impact the carrying value of emission units held for trading and the margin made on trading these units.

On 25 July 2023 the Government announced an increase to the floor and reserve prices for quarterly carbon unit auctions with effect from the 6 December 2023 auction and a change to the overall limit of carbon units available over 2023-2028.

The ETS is currently being reviewed by government officials. The outcome of the review is not expected to be known until the end of 2023. Any changes will be effective in FY24.

Business unit / asset impacted

Wholesale business unit – increased operating costs / carrying value of thermal generation assets.

Retail business unit – reduced earnings.

Time horizon

Strategy to manage risk

We hedge our exposure to carbon price increases primarily through forward contracts and our forestry investments.

10. Gas storage for dry year events

R Transition risk – Adaptation and mitigation activities

Potential impact

Constraints on the development of oil and gas projects discourages investment in gas storage, thereby, reducing alternatives to replacing coal for electricity generation. This has the potential to impact the strategy and solutions to address dry year risk.

Actual impact

No material events occurred during the reporting period.

Business unit / asset impacted

Wholesale business unit – reduced earnings / carrying value of thermal generation assets.

Time horizon

Strategy to manage risk

We continue to work actively to secure gas storage, as well as potential alternatives (biomass and batteries).

Energy transformation risks and opportunities (cont'd)

11. Ability to access some forms of capital

R **Transition risk – Access to capital**

Potential impact

Shifting investor preferences has the potential to reduce access to some forms of capital and/or funding options or increase the cost of capital.

Actual impact

No material events occurred during the reporting period.

Business unit / asset impacted

Corporate business unit – increased finance expense / reduced ability to fund new projects.

Time horizon

Strategy to manage risk

We manage this risk through our decarbonisation transition plan Future-gen, adoption of Science Based Targets, active engagement with investors and our Sustainable Finance Framework.

12. Technological developments create new customer propositions

O **Opportunity – Products and services**

Potential impact

Technology advancements and products create new opportunities for integrating into the electricity system. These include: distributed solar, virtual power plants and batteries. Electric vehicle and other smart and connected devices also enable new customer propositions which have the potential to increase Retail revenue.

Actual impact

No material events occurred during the reporting period.

Business unit / asset impacted

Retail business unit – increased earnings.

Time horizon

Strategy to manage risk

This opportunity is managed through dedicated teams focused on identifying emerging customer and market needs, developing the technology and partnerships required to deploy future products and services to market and development of strategic initiatives focused on decarbonisation.

Energy transformation opportunities (cont'd)

13. Development of onshore wind generation

Opportunity – Adaptation and mitigation activities

Potential impact

Generation of electricity using onshore wind turbines. Investment in renewable assets is expected to replace thermal generation revenue and reduce operating costs.

Actual impact

No material events occurred during the reporting period.

Business unit / asset impacted

Wholesale business unit – increased investment in new renewable generation / increased earnings and reduced operating costs.

Time horizon

Strategy to manage risk

This opportunity is managed as part of our Future-gen strategy.

14. Improved alignment of hydro inflows and electricity demand

Opportunity – Operations

Potential impact

As weather patterns shift, warmer temperatures and longer dry spells become more likely. This is expected to alter catchment inflows (i.e. less snowpack and more irregular and intense rainfall) creating more volatile hydrology. This is a risk as well as an opportunity as hydro flows may better align with electricity demand which could increase generation revenue.

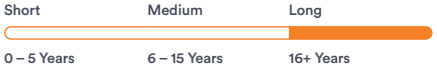
Actual impact

Severe weather events in FY23 resulted in increased hydro generation (refer to risk 18 in the Hot house section for more information). No other material events occurred during the reporting period.

Business unit / asset impacted

Wholesale business unit – increased or decreased earnings depending on outcome.

Time horizon



Strategy to manage risk

Our strategy is to maintain a diverse and flexible portfolio of renewable generation through our Future-gen strategy. We continue to track and forecast the impacts of climate change on our generation assets, and where necessary make generation decisions based on these impacts.

Hot house risks

15. Ability to access insurance

R Transition risk – Supply chain and/or value chain

Potential impact

The number of entities willing to insure thermal generation and oil and gas assets is expected to reduce and the cost of insurance is expected to increase over the medium term as more insurers adopt ESG objectives.

Actual impact

No material events occurred during the reporting period.

Business unit / asset impacted

Wholesale and Kupe business units – increased insurance costs.

Time horizon

Strategy to manage risk

We manage this risk through our decarbonisation transition plan Future-gen, adoption of Science Based Targets, and active engagement with insurers.

16. Weather events impacting gas supply

R Physical risk – Supply chain and/or value chain

Potential impact

Storms and stronger sea currents have the potential to impact Kupe's umbilical cord or access to the platform. Intense rain could result in landslides impacting the gas pipeline used to transport gas from Taranaki to Huntly and other gas distribution networks. These weather events have the potential to impact thermal generation and gas supply to retail and wholesale customers, thereby reduce revenue and increase operating costs.

Actual impact

The severe weather during the reporting period did not have a significant impact on gas supply.

Business unit / asset impacted

Kupe business unit – reduced earnings / carrying value of oil and gas assets.

Wholesale business unit – reduced earnings / carrying value of thermal generation assets / increased operating costs.

Retail business unit – reduced earnings.

Time horizon

Strategy to manage risk

We manage the risk to thermal generation by actively pursuing a diverse fuel portfolio, keeping options for multiple fuel options, and by investing in a diverse generation portfolio. Current forecasts see Kupe depleted in the medium term and will therefore not be exposed to long-term weather related risks.

Hot house risks (cont'd)

17. Warmer temperatures and longer dry spells impacting hydro generation

R Physical risk – Operations

Potential impact

As weather patterns shift, warmer temperatures and longer dry spells may become more frequent. This could:

- Alter catchment inflows (i.e., less snowpack and more irregular and intense rainfall) creating more volatile hydrology. This is a risk as well as an opportunity as hydro flows may better align with electricity demand;
- Create water restrictions and therefore impact water flowing into our catchments (water may be required for other uses such as agricultural irrigation). This would reduce hydro generation and therefore wholesale revenue; and
- Elevate weed proliferation which would increase maintenance costs and could reduce generation capacity if not well maintained.

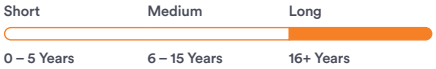
Actual impact

Overall temperatures and rainfall were well above average in FY23 particularly in the North Island which enabled a 34% increase in hydro generation and a 42% decrease in thermal generation compared to FY22. Our GHG emissions also reduced by 52% compared to FY22 as a result of lower thermal generation and the ability to reduce coal burn (90% lower than FY22). Refer to section 8.1 for more information.

Business unit / asset impacted

Wholesale business unit – reduced / increased earnings and carrying value of thermal generation assets depending on the outcome / increased operating costs.

Time horizon



Strategy to manage risk

Our strategy is to maintain a diverse and flexible portfolio of renewable generation through our Future-gen strategy. We continue to track and forecast the impacts of climate change on our generation assets, and where necessary make generation decisions based on these impacts.

18. Intense rain and floods impacting hydro generation

R Physical risk – Operations

Potential impact

Intense rain and floods have the potential to cause:

- Loss of civil integrity of generation and ancillary infrastructure (e.g., dams, spillways, storage ponds) resulting in loss of generation revenue;
- Increased sediment load in rivers and storage lakes, increased sediment removal activities and therefore operating costs; and
- Damage to electricity transmission lines, communication networks or road access which could impact generation revenue and increase operating and capex costs.

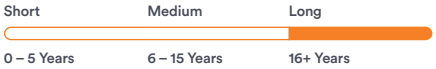
Actual impact

The severe weather events in FY23 resulted in more hydro generation being dispatched and higher storage levels than anticipated. Hydro generation for the third quarter in FY23 was 202 GWh higher than the third quarter in FY22. While hydro generation volumes increased quarter on quarter, the average wholesale price received was down $37 a MWh for the same period. The severe weather events in FY23 caused minor delays to some projects but did not have a material impact on our hydro generation operations.

Business unit / asset impacted

Wholesale business unit – reduced earnings as a result of increased operating or capex costs and reduced revenue / carrying value of hydro generation assets.

Time horizon



Strategy to manage risk

Our strategy is to maintain a diverse and flexible portfolio of renewable generation that is geographically spread, thereby reducing the risk that all sites are impacted at the same time. We continually assess our infrastructure for improvements and actively review and update our asset management plans which are prepared in accordance with best practice.

7.3 Transition aspects of our strategy

In this section we discuss how we are:

1. Transitioning our thermal generation portfolio;
2. Managing our exposure to carbon prices;
3. Helping our customers manage their own transition;
4. Engaging with industry and regulators;
5. Managing our assets; and
6. Managing our debt through our Sustainable Finance Framework.

1. Transitioning our thermal generation portfolio

Our Future-gen strategy identifies renewable opportunities to transition away from baseload thermal generation at our Huntly Power Station, while seeking to ensure a reliable and affordable supply of electricity is maintained to support other sectors to decarbonise through electrification. Our Future-gen strategy aims to reduce emissions through to 2030, on a pathway consistent with limiting global warming to 1.5°c.

Our Future-gen strategy has three areas of focus

Growing renewables

- Contract for new renewable generation
- Partner to build a pipeline of solar options

Creating value from flexibility and reliability

- Contract for fuel flexibility
- DrylandCarbon and Forest Partners partnerships
- Sell contracts that support market reliability (Market Security Options)

Transitioning Huntly Power Station

- Trial biofuels as a fuel option for Huntly
- Plan for emerging technologies (batteries)

7.3 Transition aspects of our strategy (cont'd)

Growing renewables

The economics of renewable baseload electricity generation have now reached the tipping point where it has become cost-effective to build geothermal, wind and solar, which economically displaces baseload thermal generation.

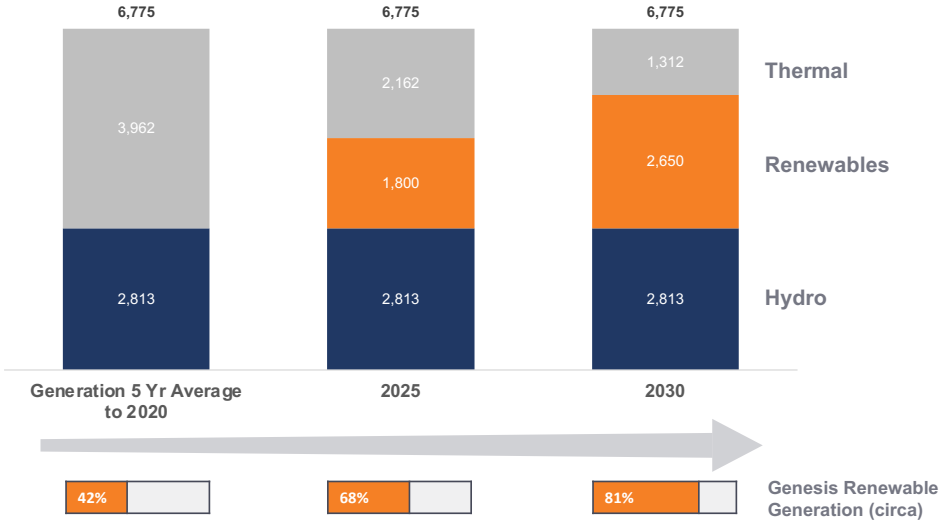
We are aiming to secure 2,650 GWh a year of renewable electricity generation by FY30, with 1,800 GWh of that by FY25. To date we have signed power purchase agreements for 1,200 GWh of new renewable generation and are actively working with our solar joint venture partner to deliver a further 740 GWh of utility-scale solar farms.

In February we announced the solar joint venture with FRV Australia had secured a fully consented, 93-hectare site near Lauriston on the Canterbury Plains. The site will hold approximately 80,000 solar panels with a capacity of approximately 52 MW and generate around 80 GWh of renewable electricity annually – enough to power nearly 11,400 houses. First generation is expected in late 2024.

Solar is uniquely suited to our flexible generation portfolio and will support the transition towards a decarbonised future. Refer to section 8.7 for progress against our goal.

Future-gen strategy will displace baseload thermal

Portfolio changes assuming flat demand



Creating value from flexibility and reliability

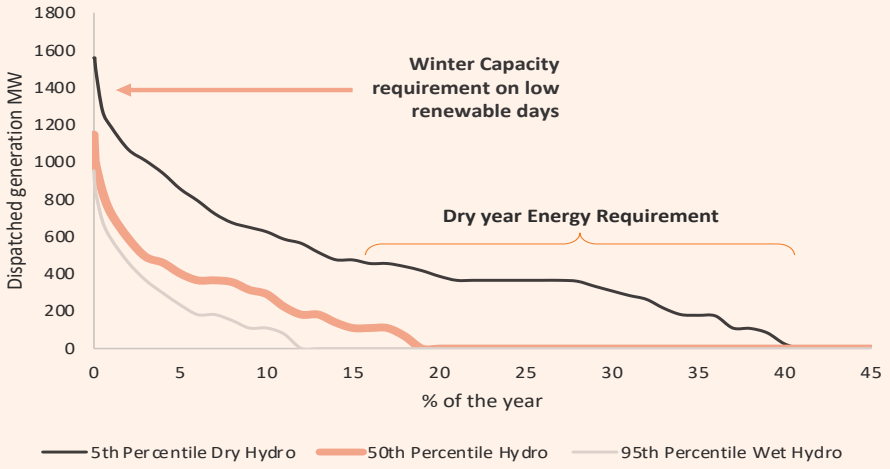
The wholesale electricity market will become increasingly tested as the country becomes more reliant on renewable generation. The pressure on the wholesale market is likely to increase as seasonal and intra-day weather patterns change with climate change.

Currently, there are limited commercially feasible zero-carbon options to manage the challenges posed by seasonal demand variability and hydro variability (dry-year risk) in New Zealand.

Thermal generation will need to be used to fill the shortfall from time to time until zero-carbon options become economically viable. The Rankine units will continue to be critical to the country's electricity system in the short-term. We are committed to continuing to explore more renewable fuel options such as biomass.

The diversity of our generation assets and our position at the intersection of the electricity and gas markets, positions us well to coordinate energy deals and fuel supply to help manage security of supply.

A highly renewable grid draws on backup generation to cover infrequent peak capacity needs and dry-year firming



- More than 750MW of peaking capacity is required in less than 1% of hours in typical hydrology (50th percentile) to maintain security of supply.
- 1,650GWh of energy storage is drawn on 40% of the time in dry-years (5th percentile) compared with 700GWh in normal years (50th percentile).

TCFD

7.3 Transition aspects of our strategy (cont'd)

Transitioning Huntly Power Station

Emissions from Huntly Power Station are expected to continue to decrease through this decade.

While the future is focused on renewable generation, the country continues the search for storage alternatives to offset dry-year risk. New Zealand faces the challenge of needing about 7,000 GWh of energy storage to meet seasonal shifts in demand. Existing hydro lakes provide about 4,000 GWh of energy storage. Huntly Power Station fills the gap of 3,000 GWh.

This seasonal risk is unique to New Zealand and alternative solutions to fossil fuels that could form part of the solution to the dry-year risk / seasonal demand challenge are currently being investigated.

We successfully completed a biomass burn trial at Huntly Power Station on 14 February, a significant step in our search for alternative fuel options for the Rankine units. Biomass is seen internationally as a viable alternative to fossil fuels, in manufacturing and some industrial processes.

We believe that using renewable biomass in the Rankine units could potentially form part of a portfolio of options that stand as a viable alternative to the Government's proposed 'pumped storage' hydro scheme at Lake Onslow.

We have signed:

- An agreement with Fonterra to work together in exploring the viability of a sustainable local supply chain of biomass; and
- A Memorandum of Understanding with NZ Bio Forestry to investigate the technical and economic viability of bio-fuels and bio-pellets as alternative fuel options for Huntly Power Station.

Kupe gas field, providing fuel through the transition

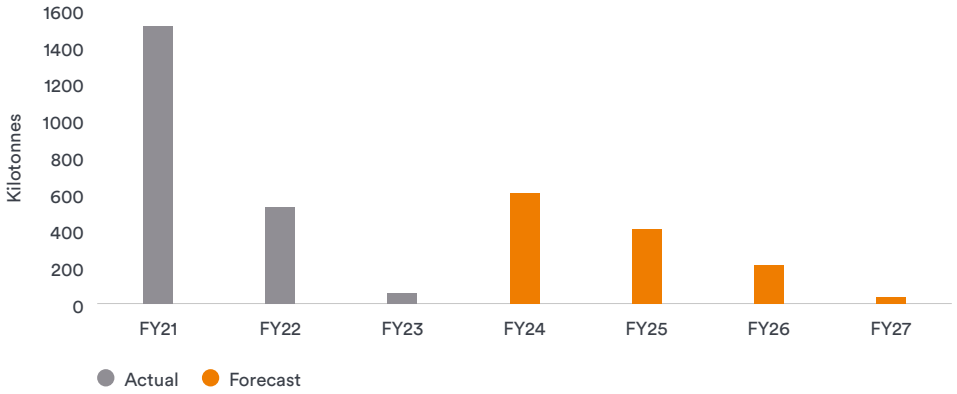
We have confirmed our investment into a well development programme at the Kupe gas field (KS-9). Gas is expected to continue to play a role through the energy transition in providing both back-up generation for dry periods and support for increased intermittent wind and solar generation. Without this additional gas, it is expected that emissions would be higher due to a greater need for coal generation.

Kupe gas field remains an important asset in New Zealand's energy transition. While production is anticipated to reduce (in line with our Science Based Targets) as Kupe gas field approaches end of life in the 2030's, a secure supply of gas is currently required to support the energy needs of New Zealand businesses and homes. We are mindful of balancing our decarbonisation efforts with the need to ensure our customers have reliable and cost-effective energy.

2. Managing our exposure to carbon prices

We have a policy to manage the price risk associated with carbon over the short to medium term. Prices are managed using forward swaps and options. We are also involved in two forestry partnerships that help remove carbon from the atmosphere and provide emission units that enable us to meet our obligations under the ETS. These units help manage the future costs of thermal generation or can be sold to other emitters.

Coal consumption forecast[16]



16. The forecast uses 90 years of historical hydro inflow data to calculate the average thermal generation forecasted to occur and assumes expected plant and gas availability as at 30 June 2023 (this includes Unit 5 outage through to May 2024). Actual thermal generation may differ to this.

7.3 Transition aspects of our strategy (cont'd)

3. Helping our customers manage their own transition

While New Zealand's net zero goal points towards a world without fossil fuel in homes and businesses, we recognise these fuels are a necessary choice for many of our customers. Significant improvements to technologies and importantly the cost-profile of changing fuels is required before it will be practical for many New Zealanders to transition away from gas and LPG to renewable options.

We see this transition as an opportunity to support our customers towards more sustainable choices in homes and businesses. Our retail strategy has been developed to mitigate transition risks.

Helping our residential customers manage their energy

Empowering New Zealand's sustainable future includes providing tools and insights to help customers make informed decisions to reduce their carbon footprint. We do this through Energy IQ, electric vehicle charging technology and the Climate Change Hub (refer to our FY23 Integrated Report: A low carbon future for more information).

Reducing transport emissions is a focus for the country. We have developed unique offerings for the growing population of electric vehicle owners that provides flexibility and simplicity when charging their vehicles at home and on the road. More than 4,153 customers have taken up our EV Plan and we have plans to continue evolving this offering. Our customers can also access data on their charging, costs and savings, even whether they are charging during a low carbon generation period through our Energy IQ platform.

Helping our business customers reduce emissions

We continue to investigate emerging technology options that can help our customers transition to lower carbon options. Through this effort, we are positioning ourselves to identify early opportunities which might be ready to scale into offerings that are appealing to a broad customer base in the near term. To support our business customers, we have:

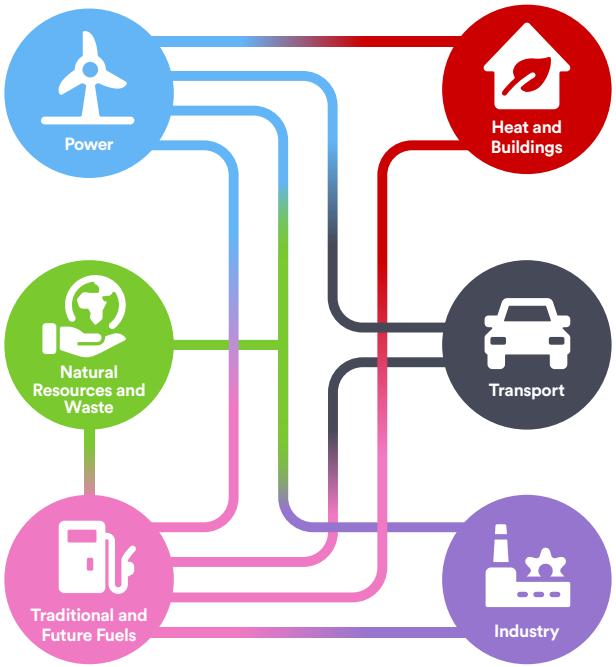
- Delivered energy management services to our commercial and industrial customers to support decarbonisation through energy audits, energy monitoring and decarbonisation roadmaps;
- Provided free decarbonisation workshops for Government agencies; and
- Launched a new digital platform for our large industrial and commercial customers to measure energy consumption, costs, and emissions from electricity usage. We can then work with them to help them achieve the actions they want to take to reduce emissions.

4. Engaging with industry and regulators

We sit at the intersection of supply and demand for several energy sources as well as providing back-up generation for New Zealand's electricity supply when renewable sources are unable to meet demand. This places us in a unique position to see the interdependencies, opportunities and risks that lie ahead for the country, our customers, and our business. It helps us to understand the transition from non-renewable fuels that will enable New Zealand to meet its Nationally Determined Contribution (NDC) to the Paris Agreement, and its first three emissions budgets, without creating negative economic consequences.

With one of the most renewable electricity systems in the OECD, New Zealand has an opportunity to lead the world in electrification. However, this transition is subject to its own climate-related risks. For example, poor regulatory or policy settings could disincentivise electrification through a higher-cost and less reliable electricity system.

We work with regulators and industry groups to support the sector to align on the direction and effective regulations that will help the country move quickly and safely towards a sustainable future. Refer to the FY23 Integrated report: A sustainable business for a summary of submissions made in FY23.



7.3 Transition aspects of our strategy (cont'd)

5. Managing our assets

As New Zealand transitions to a low carbon future the way in which some electricity generation assets are required to operate will change. The intermittent nature of renewable generation will require existing electricity generation assets to be more flexible to fill the gaps. These assets will also operate in a more physically challenging environment where they could potentially be exposed to periods of intense rain and flooding, changing weather patterns impacting catchment inflows and river temperatures, or damage from storms and cyclones. How we prepare and manage our assets for these changes is critical.

Our asset management process, which is based on the principles of ISO 55000, includes lifecycle management and strategies to manage and track performance over time.

Regular monitoring and inspections are completed to understand the health and performance. Asset health, criticality, risks, and improvement opportunities are all considered when making decisions for the ongoing safe and reliable operation of these assets.

We incorporate relevant industry best practice and guidance to assess our portfolio against various performance criteria including natural hazards such as flooding, as well as considerations of future changes to these hazards.

When developing asset management plans we consider the existing asset specifications, the current and anticipated efficiency, flexibility, capacity, and reliability of the asset and future resilience requirements.

Huntly Power Station, Huntly

6. Managing our debt through our Sustainable Finance Framework

In November 2021 we developed a Sustainable Finance Framework (Framework) to recognise our commitment and investment in climate change and more broadly sustainability. The Framework sets out the process by which we intend to issue and manage bonds and loans on an ongoing basis to support our sustainability objectives, to contribute towards the Sustainable Development Goals, and to create positive environmental and social outcomes.

Our sustainable finance programme includes $410 million of green bonds and $250 million of sustainability-linked loan facilities (linked to achievement of our sustainability targets). The sustainability targets include annual targets to encourage us to deliver on our Science Based Targets, increase our renewable generation capability (either through PPAs or investment in new generation) and create education and employment opportunities for young people living in the communities that surround our generation sites. We pay a lower interest rate and availability fee on the loans if we achieve our sustainability targets but we pay a higher interest rate and availability fee if we don't. Refer to our FY23 Sustainable Finance Report for more information.

Subsequent to year end, on the 10th July 2023, $240 million of Green Capital Bonds were issued, replacing existing Capital Bonds which were not green. For the avoidance of doubt, the net proceeds will not be applied directly to fund new renewable generation development. This bond issue increases the percentage of sustainable finance to 51% of total borrowings[17].

The Framework and the green bonds both align to the Green Bond Principles 2021 and the Climate Transition Finance Handbook, as issued by the International Capital Markets Association. Through this Framework, we aim to support the industry's response to helping New Zealand achieve its net zero emissions goals, address social challenges, and provide a mechanism for investors to contribute capital to achieve their sustainability goals.

17. Based on drawn debt at year end. It excludes fair value interest rate risk adjustments, capitalised issue costs and accrued interest.

8. Metrics and targets

8.1 Our GHG emissions

Total scope 1 and 2 greenhouse gas (GHG) emissions[18] for the year ended 30 June 2023 were 1,076,150 tCO_2e. This is 52% less than FY22. The decrease is mainly driven by lower thermal generation (42% lower than FY22) as a result of exceptionally high hydro inflows which enabled a decrease in the volume of coal burnt (90% lower than FY22). We estimate that scope 1 emissions could have been between 1,200,000 and 1,300,000 tCO_2e higher had hydro inflows been more in line with the historical average and had the fuel blend been more in line with the last five years.

Scope 3 emissions for the year ended 30 June 2023 were 949,997 tCO_2e. This is 33% less than FY22. The decrease is mainly driven by the decrease in wholesale gas sales (62% lower than FY22) and lower fuel and energy related emissions as a result in the reduction of thermal generation (42% lower than FY22). Emissions in FY21 were higher than all the other years due to increased thermal generation as a result of below average hydro inflows.

Scope	Category	FY23 tCO_2e	FY22 tCO_2e	FY21 tCO_2e	FY20 tCO_2e
Direct emissions (Scope 1)	Attributable to customers	1,072,507	1,934,978	3,132,879	2,539,863
	Attributable to supply contracts (swaptions)	–	286,398	805,398	149,491
	Stationary combustion attributable to thermal generation	**1,072,507**	**2,221,376**	**3,938,277**	**2,689,354**
	Mobile combustion	1,738	1,733	1,624	579
	Fugitive emissions	1,745	17	162	80
	Total scope 1	**1,075,990**	**2,223,126**	**3,940,063**	**2,690,013**
Indirect emissions (Scope 2)	Electricity consumption	160	217	262	240
	Total scope 2	**160**	**217**	**262**	**240**
Indirect emissions (Scope 3)	Purchased goods and services	16,480	15,492	14,898	15,348
	Fuel and energy related activities (upstream emissions)	234,351	410,177	438,837	412,475
	Waste generated in operations	16	21	26	19
	Business travel	409	146	215	1,975
	Employee commuting^	1,748	–	–	–
	Use of sold products	692,204	994,686	1,269,957	1,366,852
	Investments	4,789	7,184	8,547	8,080
	Total scope 3	**949,997**	**1,427,706**	**1,732,480**	**1,804,749**
	Total scope 1, 2 & 3	**2,026,147**	**3,651,049**	**5,672,805**	**4,495,002**

Items excluded from scope 1-3 in accordance with the GHG protocol

Biomass – CO_2	Stationary combustion of biomass attributable to thermal generation	**857**	–	–	–

^ FY23 is the first year that employee commuting has been disclosed. The comparative periods have not been restated for this change.

18. Throughout this document `emissions' means greenhouse gas emissions.

8.1 Our GHG emissions (cont'd)

How we calculate our GHG emissions

Our GHG emissions have been calculated in accordance with the Greenhouse Gas Protocol: *A Corporate Accounting and Reporting Standard (revised edition)* and the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard*. We use the operational control consolidated approach. The Ministry for the Environment's (MFE) 2023 Greenhouse Gas Reporting factors are used for all scopes and categories except for scope 3 purchased goods and services which uses the Department for Environment Food and Rural Affairs (DEFRA) lifecycle emission factors and scope 3 fuel and energy related activities which uses Agrilink lifecycle emission factors. The MFE emission factors are based on 100-year global warming potential values from the IPCC's Fifth Assessment Report (AR5) and Agrilink emission factors are based on 100-year global warming potential values from the IPCC's Fourth Assessment Report (AR4). Refer to Appendix II for a summary of the significant uncertainties, Appendix II, Table 2 for a summary of scope 3 items which have been excluded from the GHG inventory and Appendix II, Table 3 for the methods and assumptions applied.

Assurance of GHG emissions

EY has provided an unqualified limited assurance opinion on the FY23 GHG inventory (refer to Appendix III). Limited assurance opinions were issued on the FY20, FY21, and FY22 GHG inventories. New scope 3 categories were however added in FY22[19]. The comparatives for the new scope 3 categories were restated back to FY20 but were not subject to limited assurance.

GHG emissions intensity	FY23	FY22	FY21	FY20
Generation emissions intensity				
Thermal generation (GWh)	2,177	3,736	5,501	4,461
Thermal generation emissions intensity (tCO_2e* / GWh of thermal generation)	493	595	716	603
Total generation (GWh)	5,858	6,481	8,027	6,805
Total generation emissions intensity (tCO_2e* / GWh of total generation)	183	342	491	395
Retail emissions intensity				
Retail revenue ($m)	1,656	1,565	1,575	1,558
Retail emissions ($ktCO_2e$)^	962	1,192	1,207	1,218
Emissions intensity of retail revenue (kg of CO_2e/ $ of net revenue)	0.58	0.76	0.77	0.78

* Scope 1 stationary combustion attributable to thermal generation.

^ Emissions from electricity purchases is based on factors published by the Ministry for the Environment (MFE) so that the metric is comparable with other entities.

The emissions intensity of thermal generation is influenced by the mix of fuels used. Gas produces half the emissions of coal. Thermal generation intensity was higher in FY21 due to higher use of coal (54%) whereas almost all the thermal generation was from gas (95%) in FY23. Total generation intensity is also significantly down in FY23 due to the reason noted previously and higher-than-normal hydro generation as a result of exceptionally high hydro inflows.

Retail emission intensity continues to trend down. The significant decrease in FY23 is largely due to a decrease in the MFE emission factor for electricity. Had we used the 2022 MFE factor the retail carbon intensity would have been 0.73.

19. Three new categories (purchased goods and services, fuels and energy related activities and investments) were added to the FY22 GHG inventory. The FY21 and FY20 GHG inventories were restated to include these. These categories were not included in the FY20 and FY21 limited assurance reviews undertaken at that time.

8.2 Transition risk metrics

Thermal generation assets

The Rankine units and Unit 5 are carried at fair value, calculated using a discounted cash flow model based on a finite period (FY23: 7 years for the Rankine units and 9 years for Unit 5). The change in fair value is mainly driven by changes in the wholesale electricity price path, discount rate and the passage of time given these assets have finite lives. The FY23 valuation of Unit 5 has been impacted by an unexpected outage on 30 June 2023. The unit is anticipated to be unavailable until May 2024. This impacts the valuation of the Rankine units as additional volume is forecasted to be generated through these units because of the outage.

Kupe

Kupe assets are carried at historic cost and most of the assets are depleted on a units of use basis using proved remaining reserves (1P). The carrying value of the assets have declined over the last four years due to annual depletion and amortisation charges. The carrying value is expected to increase in FY24 because of the new well development programme (KS-9) and then continue to decline in line with field depletion. Kupe's end of life is expected to be in the 2030's.

LPG

LPG assets are carried at historic cost and depreciated over their useful lives. This balance includes LPG depots, reticulated networks and customer installs. The carrying value of these assets have declined due to annual depreciation and amortisation charges. This trend is expected to continue.

Emission units held for trading

The fair value of emission units held for trading is impacted by the spot price of carbon and the volume of units held.

Assets vulnerable to transition risk*	FY23	FY22	FY21	FY20
Carrying value net of deferred tax*				
Thermal generation assets (fair value)				
Rankine units (gas and coal fired) ($m)	78.1	44.2	40.8	24.1
Unit 5 (gas fired) ($m)	272.4	464.6	295.5	335.6
Thermal generation assets as a % of total generation fixed assets	15%	20%	14%	16%
Kupe assets				
Oil and gas and intangible assets ($m)	207.1	222.3	228.9	240.1
Retail & wholesale assets				
LPG ($m)	74.2	77.3	80.9	82.1
Emission units held for trading (fair value) ($m)	7.3	14.2	10.4	5.0
Total carrying value of assets vulnerable to transition risks net of deferred tax ($m)*	**639.1**	**822.6**	**656.5**	**686.9**

* Assets vulnerable to transition risks are defined as assets that have the potential to become stranded or where their carrying value could be materially impacted (either through reduction in fair value or impairment) because of the transition risks outlined in section 7.2. Deferred tax includes the movement associated with a change in fair value or impairment but excludes the impact arising from disposal of assets.

8.2 Transition risk metrics (cont'd)

Thermal generation

Thermal generation was lower in FY23 due to lower wholesale electricity prices, primarily due to higher hydro inflows. The percentage of retail purchases covered by thermal generation is decreasing mainly due to declining retail volumes relative to hydro generation and the notional purchase of renewable electricity under the Waipipi PPA from November 2020.

Kupe

Kupe sales and EBITDAF have declined due to field decline, reduced gas demand in FY23 and changes in selling prices.

Gas

Retail gas sale volumes have remained relatively consistent year on year. Wholesale gas sales have declined due to our strategy to move away from long term wholesale gas sale contracts. The gas gross margin has increased over time mainly due our focus on selling gas into higher value retail channels.

LPG

Retail LPG sale volumes have remained relatively consistent year on year. Wholesale LPG sales increased in FY21 and FY22 due to the Wholesale segment acquiring and on-selling more LPG from Kupe. The decrease in FY23 was mainly due to the decrease in Kupe's production as noted above. LPG gross margin has grown over time due to increased sale volumes and improved retail pricing. The reduction in FY23 is mainly due to reduced sale volumes and an increase in LPG and transportation costs.

Retail customers

The increase in customers numbers in FY23 was due to improved product offerings and successful marketing campaigns.

Earnings vulnerable to transition risk*	FY23	FY22	FY21	FY20
Thermal generation				
Thermal generation (GWh)	2,177	3,736	5,501	4,461
Thermal generation as a % of total generation	37%	58%	69%	66%
Percentage of retail purchases covered by thermal generation^	31%	48%	58%	64%
Kupe				
Gas sales (PJ)	8.4	11.1	10.6	10.7
Oil sales (kbbl)	254	292	306	366
LPG sales (T)	36,520	47,413	45,798	46,751
Kupe EBITDAF ($m)	66.6	77.4	87.4	93.8
Retail and Wholesale				
Retail gas sales (PJ)	7.2	7.4	8.0	7.8
Wholesale gas sales (PJ)	2.8	7.4	11.9	14.1
Gas gross margin ($m)~	47.3	38.4	(6.7)	(23.0)
Retail LPG sales (T)	43,874	44,341	43,542	42,347
Wholesale LPG sales (T)	7,262	17,094	15,458	5,360
LPG gross margin ($m)~	45.7	54.0	45.4	38.6
Retail customers (count)	483,721	471,012	474,325	484,687
Gas only	2%	3%	3%	3%
LPG only	7%	7%	7%	7%
Multi fuel	30%	28%	27%	25%

* Earnings vulnerable to transition risks are defined as earnings from business activities that have the potential to be materially impacted by the transition risks outlined in section 7.2.

^ Wholesale electricity generation is usually higher than retail electricity purchases (i.e., long). As we are disclosing the vulnerable portion of retail electricity purchases to spot prices, we have calculated the thermal portion as being the difference between total retail electricity purchases and renewable electricity generation including PPA's divided by total retail electricity purchases.

~ Gross margin is the lowest level of earnings reported for gas and LPG.

8.2 Transition risk metrics (cont'd)

Emission units held for trading

Active trading of emission units is impacted by the spot price of carbon and the volume of units sold. The loss in FY23 is primarily driven by the decrease in the spot price since March 2023.

Carbon hedging

The duration of carbon hedging is impacted by median hydrology, expected gas conditions and renewable development.

Cost of capital

The weighted average interest rate has increased in line with floating interest rates.

Earnings vulnerable to transition risk*	FY23	FY22	FY21	FY20
Emission units held for trading				
Gain / (loss) on emission units held for trading+	(12.0)	13.6	5.0	4.7
Carbon hedging				
Forecast number of full years of carbon hedging in place at year end	6^	5	4	7
Cost of capital				
Weighted average interest rate	5.2%	4.2%	4.5%	5.5%

* Earnings vulnerable to transition risks are defined as earnings from business activities that have the potential to be materially impacted by the transition risks outlined in section 7.2.

\+ This includes realised and unrealised gains and losses.

^ The forecast uses 90 years of historical hydro inflow data to calculate the average thermal generation forecasted to occur and assumes expected plant and gas availability as at 30 June 2023. Actual thermal generation may differ to this.

8.3 Physical risk metrics

Hydro generation assets

Hydro generation assets are carried at fair value, calculated using a discounted cash flow model. The fair value is mainly impacted by long-term wholesale electricity prices and discount rates.

FY23 had higher hydro generation due to increased inflows.

Assets and earnings vulnerable to physical risk	FY23	FY22	FY21	FY20
Carrying value net of deferred tax*				
Hydro generation assets (fair value) ($m)	2,040.4	2,028.2	2,016.4	1,925.3
Earnings vulnerable to physical risks^				
Hydro generation (GWh)	3,669	2,733	2,507	2,321
Hydro generation as a % of total generation	63%	42%	31%	34%

* Assets vulnerable to transition risks are defined as assets that have the potential to become stranded or where their carrying value could be materially impacted (either through reduction in fair value or impairment) because of the physical risks outlined in section 7.2. The main reason that hydro generation assets have been included here is because they are carried at fair value in the Consolidated Financial Statements. Hydro generation assets are unlikely to become stranded or written off as a result of the physical risks however the earnings from these assets could be impacted, which would in turn impact their fair value. For this reason, they have been disclosed as assets vulnerable to physical risks. Refer to section 8.2 for Kupe asset values. Deferred tax includes the movement associated with a change in fair value or impairment but excludes the impact arising from disposal of assets.

^ Earnings vulnerable to physical risks are defined as earnings from business activities that have the potential to be materially impacted by the physical risks outlined in section 7.2. Refer to section 8.2 for Kupe earnings.

8.4 Climate-related opportunity metrics

Electricity consumption and generation

National electricity consumption and Genesis' share have remained relatively constant. National electricity generated from hydro's dipped in FY21 due to below average hydro inflows. Genesis' share of hydro generation has remained relatively consistent. We continue to invest in hydro assets to improve efficiencies.

Customer offerings

Our EV plans have had a strong uptake in FY23, as national EV sales increased and we have improved product offerings. Energy management services uptake continues to increase as customers look for solutions to mitigate rising energy costs and carbon prices. The Energy IQ for business platform was launched in July 2022.

	FY23	FY22	FY21	FY20
Electricity consumption				
New Zealand electricity sales (consumption) (GWh)~	<	39,126	39,842	39,852
Genesis retail electricity sales (GWh)	5,663	5,806	6,241	6,244
Genesis % share of New Zealand electricity sales	<	15%	16%	16%
Electricity generation				
New Zealand electricity generation from hydro (GWh)~	<	24,683	23,179	24,693
New Zealand hydro generation as a % of total electricity sales (consumption)	<	63%	58%	62%
Genesis % share of New Zealand hydro generation	<	11%	11%	9%
Cumulative increase in renewable energy generation from plant efficiencies (GWh)+	29	27	+	+
Products or services that support a low carbon future				
Number of customers on an EV plan at 30 June	4,153	1,610	332	–
Large business customers using an energy management service	32%	29%	20%	6%
Increase engagement with energy				
Residential customers engaging with energy management tools through Energy IQ	50%	45%	40%	21%
Large business electricity customers engaged with Energy IQ for business	37%	>	>	>

~ As published by the Ministry of Business, Innovation and Employment (electricity.xlsx (live.com)).

< FY23 quarter four information for New Zealand electricity sales (consumption) and hydro generation had not been released by MBIE at the time of writing this report, as a result Genesis % share is unable to be disclosed.

+ From an FY20 base year. Comparatives for FY20 and FY21 are unable to be reported as efficiencies from capital work were not reported for these years. In addition to the GWh efficiencies reported for FY22 and FY23, work has also been completed which increased the individual capacity of two generators at Tuai by 2 MW each with the third generator to be upgraded in FY24. The total GWh efficiency gained depends on whether all three generators are run at the same time. Due to constraints on the station the full impact of the efficiency is only gained when the station is operating below the maximum output of 60 MW. For this reason, this efficiency gain has not been included in the FY22 and FY23 numbers.

> The Energy IQ for business platform was launched in July 2022.

8.5 Capital deployment metrics

Genesis entered into a partnership with FRV Australia in FY22 to establish up to 500 MW of solar generation and has also invested in two forestry entities. Genesis also investigated the viability of biomass at Huntly in FY23. Capital commitments on unit upgrades to improve efficiencies have declined as projects have been completed. A significant program of unit upgrades at Tuai, Piripaua and Tekapo were undertaken over the last four years. Refer to our FY23 Integrated Report for more information.

	FY23	FY22	FY21	FY20
Capital committed to climate-related initiatives at 30 June*				
Solar joint venture ($m)	1.9	–	–	–
Forestry partnerships ($m)	48.4	71.7	14.1	24.4
Unit upgrades and efficiencies ($m)	3.8	7.0	8.1	7.3
Capital contributions/expenditure on climate-related initiatives during the year				
Solar joint venture ($m)	2.8	–	–	–
Forestry partnerships ($m)	23.3	17.4	10.3	5.7
Unit upgrades and efficiencies ($m)	11.6	16.4	2.8	6.6
Research and development on climate related initiatives during the year ($m)	1.8	1.7	–	–
Investments held at 30 June				
Solar joint ventures and partnerships ($m)	1.9	–	–	–
Forestry partnerships ($m)	53.7	32.0	15.1	5.3

* This represents the amount of funding committed to joint ventures, partnerships or projects but not yet spent at 30 June. This is a broader definition than the commitments in our Consolidated Financial Statements which are based on the contractual commitments of each of our associates or joint ventures in accordance with New Zealand Equivalents to International Accounting Standard 16.

8.6 Remuneration metrics

Sustainability metrics were introduced into the short-term incentives in FY21 and achievement of Science Base Targets was incorporated into the long-term incentives in FY23.

	FY23	FY22	FY21	FY20
Short-term incentives linked to sustainability objectives	12%	18%–36%	12%	–
Long-term incentives linked to Science Based Targets	20%	–	–	–

8.7 Our targets to decarbonise

Science Based Targets (SBT)

We have set ambitious emission reduction targets aligned with limiting global warming to 1.5°c above pre-industrial levels to support New Zealand's commitments under the Paris Agreement. The targets have been verified by the internationally recognised Science Based Targets initiative (SBTi). The targets do not rely on the use of offsets.

We have committed to (i) reduce absolute scope 1 and 2 emissions by 36% by FY25 from a FY20 base year and (ii) reduce absolute scope 3 emissions from use of sold products by 21% by FY25 from a FY20 base year. Through our Science Based Targets we have committed to reduce our annual emissions by more than 1.2 million tonnes by FY25.

Scope 1 and 2 emissions in FY23 were 60% lower than FY20 (base year) which equates to a reduction of 1,614,103 tonnes of CO_2e. As noted in section 8.1 the reduction in scope 1 and 2 emissions is mainly driven by lower thermal generation (51% lower than FY20) as a result of exceptionally high hydro inflows which enabled a decrease in the volume of coal burnt (93% lower than FY20). Scope 3 emissions from use of sold products were 49% lower than FY20 (base year) which equates to a reduction of 674,648 tonnes of CO_2e.

Growing renewables

We are aiming to secure an additional 2,650 GWh a year of renewable electricity generation from a FY20 base year[20] by FY30, with 1,800 GWh of that by FY25.

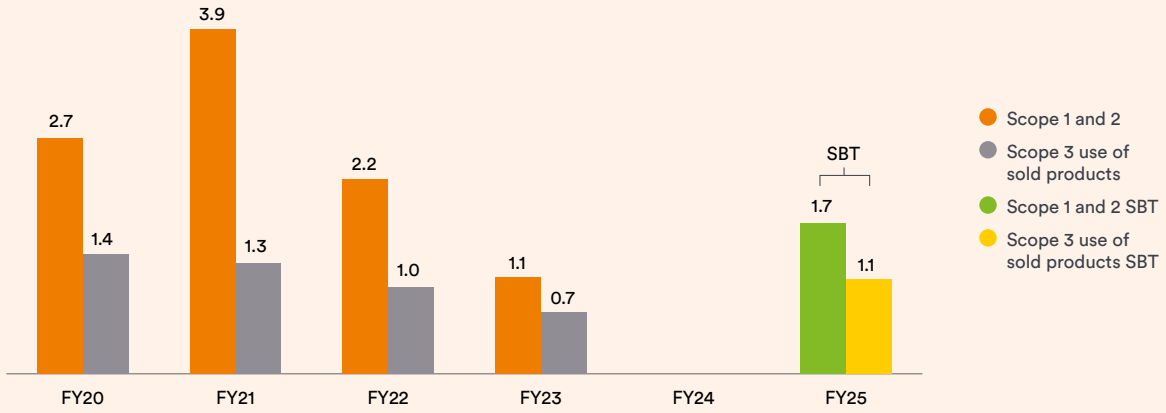
To date we have signed power purchase agreements for approximately 1,200 GWh[21] of new renewable generation. As noted in section 7.2 supply chain constraints (sourcing turbines and civil work delays due to resources being diverted to flood repair work) has delayed the construction of one of the wind farms that we have a signed PPA for. The site is projected to be operational by mid 2025. No new PPA's were entered into in FY23.

We are actively working with our solar joint venture partner to deliver 500 MW (740 GWh) of utility-scale solar farms. During the year we:

- Announced our first joint solar development project with FRV Australia for approximately 52 MW (approximately 80 GWh) which is expected to be operational in late 2024. This is subject to Final Investment Decision and approval by the Overseas Investment Office; and
- Completed feasibility studies for three solar project sites across the North Island with approximately 400 MW of capacity and secured land rights for two of these sites prior to year-end and one after year-end. We are now focused on consenting and connection development activities for these projects.

Progress towards the 1,800 GWh in the first target year is likely to be delayed due to extenuating circumstances impacting the development of renewable generation in New Zealand. International events have resulted in a significant increase in interest in building renewable generation globally and as a result, supply chain constraints and access to materials have contributed to increasing development costs. New Zealand has been significantly impacted by natural disasters (flooding) which has increased the demand for and cost of local civil and electrical contractors. Renewable projects have also been impacted by delays in network connection applications due to the volume of proposed projects being submitted. The combination of the aforementioned impacts has resulted in a delay in commercially feasible renewable projects being built in New Zealand in the near term.

Performance compared to Science Based Targets ($MtCO_2e$)



20. The target includes 450 GWh for Waipipi PPA which was signed in FY19 but was operational in FY21.
21. Refer to Appendix IV for a list of PPAs and their estimated commencement dates. The Waipipi PPA (450 GWh) was signed in FY19 prior to the base year however it is included in the results because the target included this contract.

Appendix I: Climate scenario data and reference models

This Appendix outlines the data and reference material used to construct each scenario.

Climate Change Commission. (2021). *Scenarios Dataset Final Advice*.

Coal in Net Zero Transitions (2022). *Global Energy and Climate Model*.

Intergovernmental Panel on Climate Change. *(2021). Sixth Climate Change Assessment Report.*

International Energy Agency. (2022). *Global Energy and Climate Model.*

Ministry for the Environment. (2018). *Climate change projections for New Zealand.*

Ministry for the Environment. (2022). *Emissions reduction plan.*

Ministry for the Environment. (2022). *Interim guidance on the use of new sea-level rise projections.*

Ministry of Business, Innovation and Employment. (2022). *Carbon capture and storage.*

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Ministry of Business, Innovation and Employment. (2016). *Shared-climate Policy Assumptions for New Zealand in Exploring Options for New Zealand under Different Global Climates. Synthesis Report RA5. Climate Changes, Impacts and Implications.*

International Energy Agency/Net Zero by 2050 (2022). *Climate Change Commission. (2021). Scenarios Dataset Final Advice: Global Energy and Climate Model.*

International Institute for Applied Systems Analysis. (2018). *SSP Database (Shared Socioeconomic Pathways) Scenario Explorer.*

StatsNZ. (2022). *National Population Projections 2022 (base)-2073.*

Treasury New Zealand. (2022). *CBAx Tool User Guidance.*

XRB (External Reporting Board). (2022). *Climate-related disclosure. NZ CS1: Guidance for all sectors.*

Management commentary
(no financial statements)

Appendix II: GHG inventory methods, assumptions and uncertainties

Purpose

The GHG inventory has been prepared in accordance with the requirements of the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (revised edition)* and the *Corporate Value Chain (Scope 3) Accounting and Reporting Standard* (GHG Protocol) which is an internationally recognised framework for carbon reporting. Using a recognised and widely adopted framework ensures transparency, robustness and consistency in approach across the energy sector.

Organisational boundaries

Organisational boundaries determine the parameters for emissions reporting and ensure consistency when determining which factors to include. Genesis' boundaries have been set in accordance with the methodology outlined in the GHG Protocol.

The GHG Protocol allows two distinct approaches to consolidate emissions: the equity share approach or the control approach (control can be defined in either financial or operational terms).

Genesis has applied the **operational control consolidation approach**, which ensures we focus on those emission sources that we have control over and therefore the ability to manage. Operational control is defined in the GHG Protocol as having the full authority to introduce and implement operating policies at the operation under consideration. Under the operational control approach, an entity accounts for 100% of emissions from operations over which it or one of its subsidiaries has operational control.

The organisation boundary includes Genesis and all its subsidiaries (refer to our FY23 Integrated Report for a list of subsidiaries).

Business units excluded

All of Genesis' joint ventures, joint operations and associates are excluded from scope 1 and 2 emissions on the basis that Genesis does not have operational control of these entities. Refer to our FY23 Integrated Report for a list of entities.

Kupe Venture Limited sells its 46% share of gas and LPG produced from Kupe Joint Venture to Genesis. These products are either used in the generation of electricity or sold to customers, as a result these products are included in either scope 1 or scope 3 depending on how they were used. The sale of oil produced by the Kupe Joint Venture is managed by the Operator, Beach Energy, and as a result has not been included in scope 3 emissions on the basis that Genesis does not have operational control.

Operational boundaries

The emission sources included in this report were identified with reference to the methodology outlined in the GHG Protocol.

Scope 1 – Direct emissions

Scope 1 includes emissions from sources that are owned or controlled by Genesis. This includes electricity generation, fuel used in vehicles owned or leased by Genesis and any fugitive emissions released.

During the year we successfully completed a biomass burn trial at Huntly Power Station. The CO_2 from combustion of the biomass has been excluded from scope 1 emissions and has been reported separately in accordance with the GHG Protocol.

Scope 2 – Indirect emissions, electricity

Scope 2 includes emissions from purchased electricity consumed by Genesis and therefore brought into our organisational boundary. It includes electricity that is consumed at LPG branches and depots, corporate offices and office buildings at generation sites where the electricity is drawn from the grid. It excludes electricity consumed at generation sites where the electricity was not drawn from the grid.

Scope 2 emissions have been calculated using location-based emissions factors.

Scope 3 – Other indirect emissions

Scope 3 emissions are a consequence of Genesis' activities but occur from sources not owned or controlled by us. Reporting on these emissions is optional under the GHG Protocol.

The Corporate Value Chain (Scope 3) Accounting and Reporting Standard (a supplement to the GHG Protocol) categorises scope 3 emissions into 15 distinct categories. Genesis has determined which scope 3 categories are relevant using the following criteria:

(a) relevance to our operations;

(b) a significant contributor to overall emissions;

(c) availability of data; and

(d) able to be influenced/reduced.

Table 1 details which categories have been included and the boundary applied and **Table 2** details which categories have been excluded and why.

Table 1: Scope 3 inclusions

Category	Boundary applied
Purchased goods and services	This category includes goods and services purchased in the financial year and that are not disclosed in another category noted below.
Fuel and energy related activities	This category includes upstream emissions on fuels purchased for use in the generation of electricity as well as fuels sold to customers. Upstream emissions on coal and LPG are accounted for when the fuel is purchased rather than when it is burnt or sold to customers. Coal purchases in transit at year end are recognised as purchases in the financial year the coal is recorded on the coal stockpile.
Waste generated in operations	This category includes waste for Auckland, Hamilton, and Christchurch corporate offices. Waste from operational sites is not included in the reported numbers. The main source of operational waste is the ash produced from burning coal to generate electricity. The ash produced each year is either recycled or held onsite until it can be disposed of. Disposal to landfill ceased in FY20. We are working on developing a methodology to calculate the emissions on recycled ash. Refer to our ESG datasheet and GRI Index for information on the volume of ash generated and recycled. General waste produced at operational sites is not currently measured. Given the nature of operations, emissions from general waste are not expected to be material.
Business travel	This category includes air travel, accommodation and taxi services used during the financial year.
Employee commuting	This category includes emissions associated with employee's transportation to and from work and working from home.
Use of sold product	This category includes gas and LPG sold to customers during the financial year. The sale of oil produced by the Kupe Joint Venture is excluded because this process is managed by the Operator, Beach Energy, and therefore is outside Genesis' operational control.
Investments	This category includes 46% of Kupe Joint Venture's scope 1 and 2 emissions relating to the production of oil. The 46% share of Kupe Joint Venture's scope 1 and 2 emissions relating to the production of gas and LPG have been included in scope 3 fuel and energy related activities category. The 46% share of Kupe Joint Venture's scope 3 emissions have been excluded because this information is not currently reported by the joint venture. The GHG protocol does not require scope 3 emissions from investments to be included in this category. Emissions from the DrylandCarbon One Limited Partnership, the Forest Partners Limited Partnership and the Ecotricity Limited Partnership have been excluded as emissions reporting is not currently completed by these entities. Given the nature of these entities, the scope 1 and 2 emissions from these activities are not expected to be material.

Table 2: Scope 3 exclusions

Category	Justification for excluding
Capital goods	Based on initial screening this category is not considered material. Further work will be undertaken to verify the initial screening results with the aim of reporting this category in the future.
Upstream transportation and distribution	Emissions on transportation are included in scope 3 fuel and energy related activities or scope 1.
Upstream leased assets	Emissions from upstream leased assets are included in scope 1 and 2.
Downstream transportation and distribution	There is no transportation or distribution of products after the point of sale.
Processing of sold products	Genesis does not sell intermediate products therefore there is no processing of sold products.
End of life treatment of sold products	Sold products are consumed by customers therefore there are no end-of-life emissions to account for.
Downstream leased assets	Emissions from downstream leased vehicles are included in the fuels and energy related activities category and emissions associated with leased LPG bottles and tanks are included in use of products sold category.
Franchises	Genesis does not have anything that falls within this category.

Base year

The base year is 1 July 2019 to 30 June 2020 (FY20), which is consistent with the base year used for our Science Based Targets. Total scope 1 and 2 emissions for FY20 were 2,690,253 tCO_2e and scope 3 were 1,804,749 tCO_2e.

Methodologies

This GHG inventory has been calculated using activity data multiplied by emission factors. We have used emission factors published by the Ministry for the Environment (MFE)[22] for all scopes and categories except for scope 3 purchased goods and services which uses the Department for Environment Food and Rural Affairs (DEFRA) lifecycle emission factors, and scope 3 fuel and energy related activities which uses Agrilink[23] lifecycle emission factors. The MFE emission factors are based on 100-year global warming potential values from the IPCC's Fifth Assessment Report (AR5) and Agrilink emission factors are based on 100-year global warming potential values from the IPCC's Fourth Assessment Report (AR4).

Uncertainties

Quantification of emissions is subject to inherent uncertainty because the scientific knowledge and methodologies used to determine the emission factors and processes to calculate and estimate quantities of emissions are still evolving. As a result, the GHG inventory is subject to more inherent limitations and uncertainties than financial information.

All material emission calculations are prepared by our financial reporting system using data collated for financial reporting purposes. There are however inherent limitations when using published emission factors as they:

- are not specific to individual entities, they are based on industry averages;
- are often inferred using data collated for other purposes and assumptions are required where scientific data is incomplete; and
- are based on data collected in previous years, countries or use studies performed a number of years ago. This particularly impacts the Agrilink and DEFRA lifecycle emission factors which is discussed further in the significant uncertainties section.

These inherent limitations mean that the GHG inventory represents our best estimate of our emissions using the best data available at the time the information is reported. It is possible disclosures made in this report may be amended, updated, recalculated, and restated in the future if the scientific knowledge and methodologies used to determine emission factors are found to materially change previously reported numbers. The methods, data sources and assessment of their reliability are shown in **Table 3**.

Significant uncertainties

Certain scope 3 emission categories are required to be measured using lifecycle analysis (LCA) methodology. There are currently a limited number of New Zealand specific lifecycle emission factors available mainly due to the ability to access information and the process involved in calculating the emission factors, as a result lifecycle emissions factors are often based on data collected in previous years, countries or use studies performed a number of years ago.

As outlined in **Table 3**, the calculation of scope 3:

- purchased goods and services are calculated using DEFRA lifecycle emission factors which are based on 2011 data. Purchased goods and services makes up less than 1% of our emissions; and
- fuel and energy related activities (upstream emissions) relating to thermal generation and use of sold products are calculated using Agrilink lifecycle emission factors which are based on 2010 data published by the Ministry of Economic Development. These subcategories make up approximately 11% of our emissions.

The application of these emission factors creates a significant uncertainty in relation to the calculation of scope 3 emissions as they may be out of date. A reasonableness test was performed on the Agrilink emission factors in FY22 using data from other sources. Based on this testing we determined that Agrilink emission factors were the most representative lifecycle emission factors to use given the activities they were being applied to.

22. Measuring emissions: A guide for organisations: 2023 detailed guide and the 2023 Emission Factors workbook have been used to calculate the FY23 emissions.
23. New Zealand fuel and electricity total primary energy and life cycle greenhouse gas emission factors 2022.

Table 3: Summary of emissions source inclusions

	Category	Emission source	Calculation method	Emission factor source	Data source	Reliability of data
Scope 1	Stationary combustion	Fuel used for electricity generation (includes gas, coal, LPG and diesel)	Average-data method[24]	MFE	Fuel records used for financial and Emissions Trading Scheme (ETS) reporting	Data quality is good. Reliable due to use of financial records.
	Mobile combustion	Fuel used in plant vehicles and distance travelled for all other vehicles (owned and leased vehicles)	Average-data method	MFE	Fuel or kilometre usage from financial records and/or fleet manager	Data quality is good. Does not account for missing information such as when an employee does not make a claim. Estimations are necessary where information is missing.
	Fugitive emissions	Fugitive emissions of Sulphur Hexafluoride (SF6)	Average-data method	MFE	Maintenance reporting system	Calculated at sites where reliable information available. Fugitive emissions excludes any potential emissions from Genesis' LPG business based on immateriality of the emissions from this source.
Scope 2	Electricity	Electricity consumed at LPG branches and depots, corporate offices and office buildings at generation sites where the electricity is drawn from the grid	Average-data method	MFE	Records from billing system	ICP points were used to measure consumption at various sites. Where auxiliary power is consumed it is excluded as it has not yet gone to the grid.
Scope 3	Purchased goods and services	Extraction, production, and transportation of goods and services acquired but not included in the other categories	Spend-based method[25]	DEFRA[26]	Purchased goods and services from financial records	Data quality is good. Susceptible to accounting treatment.
	Fuel and energy related activities	Extraction, production, and transportation of fuel and energy acquired and consumed in the generation of electricity or sold to customers	Average-data method	Agrilink for activities associated with generation and use of sold products and MFE for transmission and distribution and net retail electricity purchases	Fuel records used for financial and ETS reporting	Data quality is good. Reliable due to use of financial records.
	Waste generated in operations	Disposal and treatment of waste	Waste type specific method[27]	MFE	Waste data as measured by our waste company	Data quality is good. Reliant on accuracy of waste company.

24. The average-data method estimates emissions by collecting data on the quantity (e.g., kilograms, gigajoules, litres) of product used multiplied by an appropriate emission factor.
25. The spend-based method estimates emissions by collecting data on the cost of goods and services purchased multiplied by an appropriate emission factor.
26. The DEFRA emission factors have been adjusted for inflation and converted to NZD using the foreign currency conversion rate as at 30 June 2023.
27. The waste type specific method estimates emissions by collecting data on the quantity of waste produced multiplied by emission factors for specific waste types and waste treatment methods.

Table 3: Summary of emissions source inclusions (cont'd)

	Category	Emission source	Calculation method	Emission factor source	Data source	Reliability of data
Scope 3	Business travel	Employees travelling nationally and internationally for business purposes	Distance based method[28] for air travel, spend-based method for taxis and ubers and average-data method for accommodation	MFE	Air travel, hotel stays, and rental cars from our corporate travel manager	Data quality is good. Reliant on accuracy of travel manager record system.
	Employee commuting	Employees travelling to and from work and working from home	Distance-based method for travel and average-data method for working from home	MFE	Employee surveys	Data quality is impacted by how employees interpret and respond to survey questions and by the number of responses received.
	Use of sold products	Usage of LPG and gas sold to customers	Direct use-phase method[29]	MFE	LPG and gas sales data from financial records	Data quality is good.
	Investments	Scope 1 and 2 information for Kupe Joint Venture	Investment-specific method[30]	Field specific factors for scope 1 and MFE for scope 2	Information submitted under ETS requirements and electricity consumption from financial records	Data quality is good. Reliable due to use of financial records.
Excluded items	Biomass	Biomass used for electricity generation	Average-data method	MFE	Fuel records used for financial reporting	Data quality is good. Reliable due to use of financial records.

28. The distance-based method estimates emissions by collecting data from service providers and employees on the volume, distance and mode of transport used multiplied by an appropriate emission factor.
29. The direct use-phase method estimates emissions by collecting data on the products sold to customers multiplied by an appropriate emission factor.
30. The investment-specific method estimates emissions by collecting scope 1 and scope 2 emissions from the investee company and allocating the emissions based upon Genesis share of the investment.

GHG inventory summary

Table 4: GHG inventory

Scope	Category	FY23 tCO_2e	FY22 tCO_2e	FY21 tCO_2e	FY20 tCO_2e
Direct emissions (Scope 1)	Attributable to customers	1,072,507	1,934,978	3,132,879	2,539,863
	Attributable to supply contracts (swaptions)	–	286,398	805,398	149,491
	Stationary combustion attributable to thermal generation	**1,072,507**	**2,221,376**	**3,938,277**	**2,689,354**
	Mobile combustion	1,738	1,733	1,624	579
	Fugitive emissions	1,745	17	162	80
	Total scope 1	**1,075,990**	**2,223,126**	**3,940,063**	**2,690,013**
Indirect emissions (Scope 2)	Electricity consumption	160	217	262	240
	Total scope 2	**160**	**217**	**262**	**240**
	Total scope 1 & 2	**1,076,150**	**2,223,343**	**3,940,325**	**2,690,253**
Indirect emissions (Scope 3)	Purchased goods and services	16,480	15,492	14,898	15,348
	Fuel and energy related activities (upstream emissions)				
	– Related to thermal generation	139,479	286,017	279,781	239,840
	– Related to sold products	86,759	124,140	159,031	172,611
	– Transmission and distribution losses on electricity purchases	19	20	25	24
	– Net retail electricity purchases (after deducting generation)	8,094	–	–	–
	Waste generated in operations	16	21	26	19
	Business travel	409	146	215	1,975
	Employee commuting^	1,748	–	–	–
	Use of sold products				
	– LPG Retail	129,230	130,372	128,665	121,802
	– LPG Wholesale	21,578	51,773	46,838	52,820
	– Gas Retail	390,937	406,308	441,033	429,893
	– Gas Wholesale	150,459	406,233	653,421	762,337
	Investments	4,789	7,184	8,547	8,080
	Total scope 3	**949,997**	**1,427,706**	**1,732,480**	**1,804,749**
	Total scope 1, 2 & 3	**2,026,147**	**3,651,049**	**5,672,805**	**4,495,002**

Items excluded from scope 1-3 in accordance with the GHG protocol

Biomass – CO_2	Stationary combustion of biomass attributable to thermal generation	**857**	**–**	**–**	**–**

^ FY23 is the first year that employee commuting has been disclosed. The comparative periods have not been restated for this change.

Management commentary
(no financial statements)

Table 5: Emissions by gas component

Component gas	Scope 1 tCO_2e	Scope 2 tCO_2e	Scope 3 tCO_2e	Total tCO_2e
CO_2	1,072,530	156	700,474	1,773,160
CH_4	790	4	1,859	2,653
N_2O	925	–	367	1,292
SF_6	1,745	–	4,512	6,257
Unknown*	–	–	242,785	242,785
Total tCO_2e	**1,075,990**	**160**	**949,997**	**2,026,147**

* The breakdown by gas component is not published for cradle to gate lifecycle emission factors and therefore this information is unable to be disclosed by gas component for some scope 3 emissions.

Preparation and approval

Prepared by: Aileen Garnett, Senior Manager – Financial Control

Reviewed by: Jacki Farman, General Manager Financial Control and Assurance

Approved by: James Spence, Chief Financial Officer

Management commentary
(no financial statements)

Appendix III: GHG inventory assurance report

Building a better working world

Independent Limited Assurance Statement to the Management and Directors of Genesis Energy Limited

Assurance Conclusion

Based on our procedures and the evidence obtained, we are not aware of any material modifications that should be made to total greenhouse gas emissions inventory including scope 1, scope 2 and scope 3 emissions for the year ended 30 June 2023, disclosed in the Genesis FY23 Climate Related Disclosures Report, in order for it to be in accordance with the Criteria.

Emphasis of Matter

We draw attention to the section on page 44 titled Uncertainties within Genesis's FY23 Climate Related Disclosures Report. In this section, Genesis describes the significant uncertainties in the calculation methodology for the material scope 3 emissions, specifically in relation to the application of the Agrilink and DEFRA emission factors. Our conclusion is not modified in respect to this matter.

Scope

We have undertaken a limited assurance engagement of the accompanying GHG statement of Genesis Energy Limited ("Genesis") as of 1 July 2022 to 30 June 2023 (the "Report"), comprising GHG emissions inventory for the year ending 30 June 2023 (the "Subject Matter") included in the Report.

Criteria

In preparing GHG emissions inventory for the year ending 30 June 2023, Genesis' applied the Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, and the Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard ("Criteria). Where appropriate, emissions factors from the New Zealand Ministry for the Environment, Measuring Emissions: A Guide for Organisations (2023) ("MfE") were applied. Emissions factors from Department for Environment, Food and Rural Affairs and AgriLink were used where MfE factors were not available.

Subject Matter	Criteria
Genesis' total greenhouse gas emissions inventory including scope 1, scope 2 and scope 3 emissions for the year ended 30 June 2023, disclosed in Genesis' FY23 Climate Related Disclosures Report.	Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Accounting and Reporting Standard Emissions factors sourced from: ► New Zealand Ministry for the Environment's guidance for voluntary corporate greenhouse gas reporting 2023 ► UK Department for Environment, Food & Rural Affairs - Indirect emissions from the supply chain 2007-2011 ► AgriLink's New Zealand fuel and electricity total primary energy and life cycle greenhouse gas emission factors 2022

Genesis's responsibilities

Genesis management ("management") is responsible for selecting the Criteria, and for presenting the GHG emissions inventory for the year ending 30 June 2023 in accordance with that Criteria, in all material respects. This responsibility includes establishing and maintaining internal controls, maintaining adequate records and making estimates that are relevant to the preparation of the GHG statement, such that it is free from material misstatement, whether due to fraud or error.

EY's responsibilities

Our responsibility is to express a conclusion on the presentation of the Subject Matter based on the evidence we have obtained.

Our engagement was conducted in accordance with the *International Standard on Assurance Engagements ISAE (NZ) 3000: Assurance Engagements Other than Audits or Reviews of Historical Financial Information* and *ISAE (NZ) 3410 Assurance Engagements on Greenhouse Gas Statements* and the terms of reference for this engagement as agreed with Genesis on 12 May 2023.

Those standards require that we plan and perform our engagement to obtain limited assurance about whether, in all material respects, the Subject Matter is presented in accordance with the Criteria, and to issue a report. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risk of material misstatement, whether due to fraud or error.

We believe that the evidence obtained is sufficient and appropriate to provide a basis for our limited assurance conclusion.

Our Independence and Quality Control

We have maintained our independence and confirm that we have met the requirements of the *Code of Ethics for Professional Accountants* issued by the International Ethics Standards Board for Accountants, and have the required competencies and experience to conduct this assurance review.

EY also applies *International Standard on Quality Control 1, Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements*, and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Description of procedures performed

Procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed. Our procedures were designed to obtain a limited level of assurance on which to base our conclusion and do not provide all the evidence that would be required to provide a reasonable level of assurance.

Although we considered the effectiveness of management's internal controls when determining the nature and extent of our procedures, our assurance engagement was not designed to provide assurance on internal controls. Our procedures did not include testing controls or performing procedures relating to checking aggregation or calculation of data within IT systems.

Management commentary
(no financial statements)

Independent Limited Assurance Statement to the Management and Directors of Genesis Energy Limited

Building a better working world

The GHG quantification process is subject to scientific uncertainty, which arises because of incomplete scientific knowledge about the measurement of GHGs. Additionally, GHG procedures are subject to estimation (or measurement) uncertainty resulting from the measurement and calculation processes used to quantify emissions within the bounds of existing scientific knowledge.

The engagement consists of making enquiries, primarily of persons responsible for preparing the GHG emissions inventory for the year ending 30 June 2023 and related information, and applying analytical and other relevant procedures.

Our procedures included, but were not limited to:

- Conducting interviews with personnel to understand the business and reporting process
- Checking that the flow of information from site metering or monitoring through to calculation spreadsheets is accurate
- Identifying and testing assumptions supporting the calculations
- Comparing year on year activity-based greenhouse gas and energy data
- Checking organisational and operational boundaries to test completeness of greenhouse gas emissions sources
- Tests of calculation, aggregation and controls
- Checking that emissions factors and methodologies have been correctly applied as per the criteria
- Reviewing the appropriateness of the presentation of disclosures.

Conclusion

Based on our procedures and the evidence obtained, we are not aware of any material modifications that should be made to Genesis's GHG emissions inventory, including scope 1, scope 2 and scope 3 emissions for the period 1 July 2022 to 30 June 2023 in order for it to be in accordance with the Criteria.

Restricted use

This report is intended solely for the information and use of Genesis and is not intended to be and should not be used by anyone other than those specified parties.

Ernst & Young Limited
New Zealand
21 August 2023

Management commentary
(no financial statements)

Appendix IV: Description of physical assets

Asset	Description
Kupe	We have a 46% interest in the Kupe Joint Venture, which owns the Kupe gas field situated off the south Taranaki coast. Kupe's assets comprise three wellheads, an unmanned offshore platform, a 30 km pipeline and subsea utilities umbilical cable to an onshore production station near Hawera, oil storage facilities at New Plymouth, and an onshore gas pipeline. Reflecting our interest in the JV, we receive 46% of the natural gas produced. We have also entered long-term contracts with the other JV partners to purchase the remainder of the current natural gas produced and have rights in respect of all future production from the field. LPG and oil are secondary products of the field. We receive 46% of the LPG and oil produced by the JV.
LPG depots and networks	We own and operate a network of LPG distribution hubs across New Zealand and two reticulated LPG networks (piped LPG) in the South Island: Dunedin and the Faringdon development.
Huntly Power Station	Huntly (Raahui Pookeka) is on the banks of the Waikato River and is close to both Auckland and Hamilton. Several types of thermal generation operate at the site. **Rankine Units** Three Rankine cycle units are the original plant, built to be able to operate on either natural gas or coal. Each unit has a nominal capacity of 250 MW. Water cooling for the units from the Waikato River is limited at higher river temperatures, however cooling towers enable one of the Rankine Units to operate even when river temperatures are approaching limits. **Unit 5** This Combined Cycle Gas Turbine (CCGT) is the most efficient gas generator in New Zealand and has a capacity of up to 403 MW. **Unit 6** This is a 50.8 MW open cycle gas turbine, which can burn 100% gas or diesel to generate electricity.

Asset	Description
Waikaremoana Hydro scheme	The Waikaremoana Power Scheme is a hydro-electric power development in northern Hawke's Bay and consists of three power stations fed from Lake Waikaremoana. The scheme is located between Te Urewera and Wairoa, along the upper 7 km of the Waikaretaheke River. The 138 MW hydro scheme comprises three power stations – Kaitawa (36 MW), Tuai (60 MW) and Piripaua (42 MW).
Tongariro Hydro scheme	The Tongariro Power Scheme comprises three hydro power stations – Rangipo (120 MW, underground), Tokaanu (240 MW) and Mangaio (1.8 MW) and has a catchment area of more than 2,600 km^2 in the North Island's central volcanic plateau.
Tekapo Hydro scheme	The Tekapo Power Scheme is at the head of the Waitaki Valley in the Mackenzie District of the South Island. It has been owned and operated by us since June 2011 and has a generation capacity of 190 MW and uses water from the glacial-fed Lake Tekapo/Takapō to generate electricity through two power stations – Tekapo A and Tekapo B. Tekapo B sits in the bed of Lake Pūkaki.
Hau Nui Wind farm	Hau Nui Wind Farm is in the hills south of Martinborough in the Wairarapa. Its 15 turbines have a combined capacity of 8.65 MW.
Power Purchase Agreements	**Waipipi** We have a 20-year electricity offtake agreement for the energy from Waipipi's 31 wind-turbines. The generation capacity of the site is 133.3 MW and it produces approximately 450 GWh per year. Waipipi commenced operations in November 2020. **Tauhara** We have a 15-year electricity offtake agreement which starts at 62.5 MW of the energy generated from the Tauhara geothermal project. The contract is anticipated to provide up to 520 GWh per year commencing on 1 January 2025. **Kaiwaikawe** We have a 20-year electricity offtake agreement for the energy from Kaiwaikawe wind farm. The proposed generating capacity of the site is 72 MW which is anticipated to produce approximately 230 GWh per year. The site is projected to be operational mid 2025.

Management commentary
(no financial statements)

Management commentary
(no financial statements)

Consolidated financial statements

For the year ended 30 June 2023

Consolidated financial statements

Notes to the consolidated financial statements

Consolidated comprehensive income statement

For the year ended 30 June 2023

	Note	2023 $ million	Restated* 2022 $ million
Revenue	A1, A2	**2,374.2**	2,842.1
Expenses	A1	**(1,860.2)**	(2,408.7)
Depreciation, depletion and amortisation	A3	**(254.8)**	(215.8)
Impairment of non-current assets	B1, B3	**(4.0)**	(4.3)
Revaluation of generation assets	B1	**46.3**	9.6
Change in fair value of financial instruments	F5	**65.5**	131.2
Share of associates and joint ventures		**(2.2)**	(3.9)
Other gains (losses)	A4	**(13.1)**	23.6
Profit before net finance expense and income tax		**351.7**	373.8
Finance revenue		**2.0**	0.8
Finance expense	E6	**(81.5)**	(64.4)
Profit before income tax		**272.2**	310.2
Income tax expense	A5	**(76.5)**	(88.3)
Net profit for the year		**195.7**	221.9

Earnings per share (EPS) from operations attributable to shareholders		**Cents**	Cents
Basic and diluted EPS		**18.52**	21.24

	Note	2023 $ million	Restated* 2022 $ million
Net profit for the year		**195.7**	221.9
Other comprehensive income			
Change in cash flow hedge reserve	F5	**77.8**	39.8
Income tax expense relating to items above		**(21.8)**	(11.1)
Total items that may be reclassified to profit or loss		**56.0**	28.7
Change in asset revaluation reserve	B1	**(111.3)**	344.1
Income tax expense relating to items above		**31.2**	(96.3)
Total items that will not be reclassified to profit or loss		**(80.1)**	247.8
Total other comprehensive income for the year		**(24.1)**	276.5
Total comprehensive income for the year		**171.6**	498.4

The above statement should be read in conjunction with the accompanying notes.

* The comparative information has been restated to reflect a change to the presentation of realised gains/(losses) from non-hedge accounted financial instruments and carbon trading gains/(losses). Refer to the 'General information and significant matters' section in the notes for a reconciliation to the previously reported information.

Consolidated statement of changes in equity

For the year ended 30 June 2023

	Note	Share capital $ million	Share-based payments reserve $ million	Asset revaluation reserve $ million	Cash flow hedge reserve $ million	Retained earnings $ million	Total $ million
Balance as at 1 July 2021		**652.2**	**2.2**	**1,508.5**	**(50.3)**	**(66.1)**	**2,046.5**
Net profit for the year		-	-	-	-	221.9	221.9
Other comprehensive income							
Change in cash flow hedge reserve	F5	-	-	-	39.8	-	39.8
Change in asset revaluation reserve	B1	-	-	344.1	-	-	344.1
Income tax expense relating to other comprehensive income		-	-	(96.3)	(11.1)	-	(107.4)
Total comprehensive income for the year		**-**	**-**	**247.8**	**28.7**	**221.9**	**498.4**
Hedging gains and losses transferred to the cost of assets	F5	-	-	-	(1.9)	-	(1.9)
Income tax on hedging gains and losses transferred to the cost of assets		-	-	-	0.5	-	0.5
Changes associated with share-based payments		0.6	-	-	-	0.2	0.8
Shares issued under dividend reinvestment plan	E2	17.7	-	-	-	-	17.7
Dividends	E4	-	-	-	-	(182.5)	(182.5)
Balance as at 30 June 2022		**670.5**	**2.2**	**1,756.3**	**(23.0)**	**(26.5)**	**2,379.5**
Net profit for the year		-	-	-	-	195.7	195.7
Other comprehensive income							
Change in cash flow hedge reserve	F5	-	-	-	77.8	-	77.8
Change in asset revaluation reserve	B1	-	-	(111.3)	-	-	(111.3)
Income tax expense relating to other comprehensive income		-	-	31.2	(21.8)	-	9.4
Total comprehensive income for the year		**-**	**-**	**(80.1)**	**56.0**	**195.7**	**171.6**
Revaluation reserve reclassified to retained earnings on disposal of assets		-	-	(0.9)	-	0.9	-
Hedging gains and losses transferred to the cost of assets	F5	-	-	-	0.4	-	0.4
Income tax on hedging gains and losses transferred to the cost of assets		-	-	-	(0.1)	-	(0.1)
Changes associated with share-based payments		(0.5)	(0.1)	-	-	0.7	0.1
Shares issued under dividend reinvestment plan	E2	40.9	-	-	-	-	40.9
Dividends	E4	-	-	-	-	(186.4)	(186.4)
Balance as at 30 June 2023		**710.9**	**2.1**	**1,675.3**	**33.3**	**(15.6)**	**2,406.0**

The above statement should be read in conjunction with the accompanying notes.

Consolidated balance sheet

As at 30 June 2023

	Note	2023 $ million	2022 $ million
Cash and cash equivalents		**60.1**	105.6
Receivables and prepayments	C1	**246.6**	243.1
Inventories	C2	**143.0**	202.9
Intangible assets	B3	**63.6**	49.3
Tax receivable		**-**	8.0
Derivatives	F1	**81.1**	122.7
Total current assets		**594.4**	731.6
Receivables and prepayments	C1	**1.7**	3.6
Inventories	C2	**57.2**	-
Property, plant and equipment	B1	**3,573.5**	3,738.7
Oil and gas assets	B2	**267.6**	286.9
Intangible assets	B3	**311.4**	327.3
Investments in associates and joint ventures	D3	**56.0**	35.8
Derivatives	F1	**228.2**	148.5
Total non-current assets		**4,495.6**	4,540.8
Total assets		**5,090.0**	5,272.4

	Note	2023 $ million	2022 $ million
Payables and accruals	C3	**237.3**	248.3
Tax payable		**27.7**	-
Borrowings	E5	**446.8**	292.0
Provisions	C4	**13.4**	10.3
Derivatives	F1	**64.7**	144.1
Total current liabilities		**789.9**	694.7
Payables and accruals	C3	**1.4**	3.8
Borrowings	E5	**919.9**	1,201.3
Provisions	C4	**187.9**	176.9
Deferred tax	A5	**724.1**	750.9
Derivatives	F1	**60.8**	65.3
Total non-current liabilities		**1,894.1**	2,198.2
Total liabilities		**2,684.0**	2,892.9
Share capital	E2	**710.9**	670.5
Reserves		**1,695.1**	1,709.0
Total equity		**2,406.0**	2,379.5
Total equity and liabilities		**5,090.0**	5,272.4

The above statement should be read in conjunction with the accompanying notes.

The Directors of Genesis Energy Limited authorise these consolidated financial statements for issue on behalf of the Board.

Barbara Chapman
Chairman of the Board

Date: 23 August 2023

Catherine Drayton
Chairman of the Audit and Risk Committee

Date: 23 August 2023

Consolidated cash flow statement

For the year ended 30 June 2023

	Note	2023 $ million	2022 $ million
Receipts from customers		**2,374.0**	2,878.4
Interest received		**2.0**	0.8
Payments to suppliers and related parties		**(1,761.1)**	(2,430.3)
Payments to employees		**(134.3)**	(130.9)
Tax paid		**(58.0)**	(56.3)
Operating cash flows		**422.6**	261.7
Proceeds from disposal of property, plant and equipment		**0.5**	0.4
Proceeds from assets under finance lease		**6.5**	0.8
Payments to associates and joint ventures		**(23.5)**	(18.5)
Purchase of assets under finance lease		**(1.3)**	(9.1)
Purchase of property, plant and equipment		**(61.4)**	(58.2)
Purchase of oil and gas assets		**(16.2)**	(11.9)
Purchase of intangibles (excluding emission units and deferred customer acquisition costs)		**(9.2)**	(14.1)
Investing cash flows		**(104.6)**	(110.6)
Proceeds from sale of treasury shares	E2	**-**	1.2
Proceeds from borrowings	E5	**-**	510.0
Repayment of borrowings	E5	**(143.7)**	(431.9)
Interest paid and other finance charges		**(73.5)**	(63.3)
Dividends	E4	**(145.5)**	(164.8)
Acquisition of treasury shares	E2	**(0.8)**	(1.0)
Financing cash flows		**(363.5)**	(149.8)
Net increase (decrease) in cash and cash equivalents		**(45.5)**	1.3
Cash and cash equivalents at 1 July		**105.6**	104.3
Cash and cash equivalents at 30 June		**60.1**	105.6

Reconciliation of net profit to operating cash flows	Note	2023 $ million	2022 $ million
Net profit for the year		**195.7**	221.9
Net (gain) loss on disposal of property, plant and equipment		**1.0**	2.0
Net (gain) loss on disposal of intangibles (excluding emission units)		**-**	0.1
Finance expense excluding time value of money adjustments on provisions		**75.1**	60.0
Change in advances to associates and joint ventures receivable and change in lease receivable		**(5.8)**	5.9
Change in rehabilitation and contractual arrangement provisions		**(9.5)**	(18.6)
Items classified as investing/financing activities		**60.8**	49.4
Depreciation, depletion and amortisation expense	A3	**254.8**	215.8
Revaluation of generation assets	B1	**(46.3)**	(9.6)
Impairment of non-current assets	B1, B3	**4.0**	4.3
Unrealised change in fair value of financial instruments		**(52.2)**	(139.2)
Deferred tax expense	A5	**(17.5)**	24.5
Change in capital expenditure accruals		**3.0**	1.4
Share of associates and joint ventures		**2.2**	3.9
Other non-cash items		**(4.4)**	7.8
Total non-cash items		**143.6**	108.9
Change in receivables and prepayments		**(1.6)**	98.7
Change in inventories		**2.7**	(109.7)
Change in emission units on hand		**(14.3)**	6.1
Change in deferred customer acquisition costs		**(0.7)**	1.0
Change in payables and accruals		**(13.4)**	(142.7)
Change in tax receivable/payable		**35.7**	7.1
Change in provisions		**14.1**	21.0
Movements in working capital		**22.5**	(118.5)
Net cash inflow from operating activities		**422.6**	261.7

The above statement should be read in conjunction with the accompanying notes.

Notes to the consolidated financial statements

For the year ended 30 June 2023

General information and significant matters

General information

These consolidated financial statements comprise Genesis Energy Limited ('Genesis'), its subsidiaries, controlled entities and the Group's interests in associates and joint arrangements (together, the 'Group'). Refer to section D for more information on the Group structure.

Genesis is registered under the Companies Act 1993. It is a mixed ownership model company, majority owned by the 'Crown', bound by the requirements of the Public Finance Act 1989. Genesis is listed on the New Zealand Stock Exchange (NZX) and the Australian Securities Exchange (ASX) and has bonds listed on the NZX debt market. Genesis is an FMC reporting entity under the Financial Markets Conduct Act 2013.

The core business of the Group and activities carried out by each segment is disclosed in note A1.

Basis of preparation

These financial statements have been prepared:

- In accordance with New Zealand generally accepted accounting practice ('GAAP') and comply with International Financial Reporting Standards ('IFRS') and New Zealand equivalents ('NZ IFRS'), as appropriate for profit-oriented entities;
- In accordance with the Financial Markets Conduct Act 2013, the Financial Reporting Act 2013 and the Companies Act 1993;
- Using the historical cost convention, modified by the revaluation of derivatives, emission units held for trading and generation assets;
- In New Zealand dollars rounded to the nearest 100,000;
- On a Goods and Services Tax ('GST') exclusive basis with the exception of receivables and payables, which include GST where GST has been invoiced;
- Using the accounting policies set out in the notes to the financial statements. The impact of adopting new and revised accounting standards, interpretations and amendments is disclosed below.

Estimates and judgements

In the process of preparing the financial statements Management makes a number of estimates and judgements based on historical experience and various other factors that are reasonable under the circumstances. The table lists the key estimates and judgements.

Key estimates and judgements	Note	Page
Fair value of generation assets	B1	81
Depletion of oil and gas producing assets	B2	84
Valuation of rehabilitation and restoration provisions	C4	89
Valuation of electricity derivatives	F8	101

Estimates are also used in determining other items such as the expected credit loss provision (note C1), the useful lives of property, plant and equipment and software (notes B1 and B3), and whether assets with indefinite useful lives are impaired (note B3). Judgements are further used in determining whether an event gives rise to a provision or a contingent liability (note G5).

Impairment of assets

Assets that have indefinite useful lives are tested annually for impairment. Assets that are subject to depletion, depreciation or amortisation are reviewed for impairment annually or whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If an asset's carrying value exceeds its recoverable amount, the difference is recognised as an impairment loss in the income statement, except where the asset is carried at a revalued amount then it is treated as a revaluation decrease up to the amount previously recognised in the revaluation reserve.

Restatement of comparative

During the period there has been a change to the presentation of realised gains and losses on non-hedge accounted electricity derivatives. The change has been made in response to a clarification to the application of IFRS 9: *Financial Instruments* provided by an agenda decision of the IFRS Interpretations Committee. This decision clarifies that gains and losses on the physical settlement of contracts to buy or sell a non-financial item that are not hedge accounted should not be reclassified into revenue once realised. These realised gains and losses have previously been reflected within electricity revenue, in line with the presentation adopted by other New Zealand electricity gentailers. This presentation reflected the impact of economic hedging undertaken for risk management purposes, by disclosing it in the same place in the income statement as the risk being economically hedged.

As a result of this change, realised gains and losses on non-hedge accounted energy derivatives have been reclassified from revenue into change in fair value of financial instruments within the income statement, and comparative information has been restated. This change has not been reflected within the segment note, as this note reflects the information that the Chief Operating Decision Makers use to make resource allocation decisions across the business. The impact of the risk management (economic hedging) decisions made are reflected against the relevant segment income lines for internal reporting purposes.

In addition, during the period there has been a change to the presentation of cost of sales of emission units held for trading in the income statement. Previously the cost of sales was presented at the weighted average cost of the units sold. This has now been amended to reflect the fair value of the units sold in accordance with NZ IAS 2 *Inventories*, with a corresponding change in other gains and losses which includes gains and losses on emission units held for trading. Comparative information has been restated. This change has not been reflected within the segment note, as this note reflects the information that the Chief Operating Decision Makers use to make resource allocation decisions across the business.

Comprehensive income statement For the year ended 30 June 2022	As originally presented $ million	Adjustment $ million	Restated $ million
Revenue	2,834.1	8.0	2,842.1
Expenses	(2,393.8)	(14.9)	(2,408.7)
Change in fair value of financial instruments	139.2	(8.0)	131.2
Other gains (losses)	8.7	14.9	23.6
Profit before net finance expense and income tax	373.8	-	373.8

General information and significant matters (continued)

Adoption of new and revised accounting standards, interpretations and amendments

Amendment to NZ IFRS 9, NZ IAS 39 and NZ IFRS 7 - Interest rate benchmark reform

IBOR Reform

A fundamental reform of major interest rate benchmarks is being undertaken globally, including the replacement of some interbank offered rates (IBORs) with alternative nearly risk-free rates (referred to as 'IBOR reform'). In the case of USD LIBOR, certain tenors will no longer be published after 30 June 2023. There is still uncertainty around transition to alternative rates, for example when existing rates will no longer be representative and the need for a liquid market.

The International Accounting Standards Board launched a project split in two phases. Phase 1 deals with issues affecting financial reporting before the replacement of the existing benchmark rates and Phase 2 deals with issues affecting financial reporting after the replacement of the benchmark rate.

Approach to IBOR Reform

The Group adopted the Phase 1 amendments of the Interest Rate Benchmark Reform in FY21 and continues to apply the relief provisions meaning there is no need to de-designate the hedge relationship during this period of uncertainty.

The Group adopted Phase 2 from 1 June 2023 and transitioned from LIBOR to Secured Overnight Financing Rate ('SOFR') (the replacement rate). The change does not have a material impact on its hedge relationship components, nor the overall fair value of the CCIRS.

Accounting standards, interpretations and amendments not yet effective

In December 2022 New Zealand's External Reporting Board ('XRB') published Climate Standards to support mandatory reporting on climate risks. Three Climate Standards were issued that set requirements for: Climate-related Disclosures; First-time adoption; and General Requirements for Disclosures. The disclosure areas are in line with the International Task Force on Climate-related Disclosures ('TCFD'), being Governance, Strategy, Risk Management and Metrics & Targets.

Genesis' first climate statement required under these new standards will be as at 30 June 2024, with mandatory assurance required on the Greenhouse Gas emissions included in the 2025 financial year climate statement.

For the 2023 financial year the group has prepared separate voluntary Climate-related Financial Disclosures that follow the principles outlined in the TCFD. This does not form part of the consolidated financial statements.

Climate change and environmental policies established by the New Zealand Government have an impact throughout the New Zealand energy sector and impact the strategy of the business and therefore is reflected in the financial statements in the following ways:

- The generation assets and energy derivatives are revalued to fair value at each period-end, with the wholesale electricity price path being the key driver of changes in the valuations. The wholesale electricity price path reflects the impact of the New Zealand Government's climate change policy which could have an impact on future prices. Refer to note B1.
- The useful lives of the Group's thermal assets are estimated to be up to 9 years. The useful lives of all assets are reviewed annually to determine whether there have been any changes due to operational or external factors, including climate change considerations, and updated as appropriate. Refer to note B1.
- The Group assess goodwill of the Retail group of cash-generating units (CGU) and the Kupe CGU annually for impairment. Impairment tests are based on estimated discounted cash flow analysis on a value in use basis. In completing the impairment assessments climate change risks and opportunities are taken into consideration. Refer to note B3.
- The Group has provided for its share of the costs of decommissioning the Kupe production facility at the end of life of this asset. The provision assumes the subsea pipeline will be left in situ. Refer to note C4.
- The investment and participation in renewable generation schemes including: a joint venture agreement for the development of solar generation. Refer to note D2.
- Launched in the 2022 financial year, the Group's Sustainable Finance Programme includes the issue of green bonds and the establishment of sustainability linked facilities that have variable payments linked to performance against the Group's sustainability targets. Refer to note E5.
- During the 2023 financial year New Zealand experienced severe weather events (Auckland Floods and Cyclone Gabrielle) which may be associated with climate change. These events resulted in more hydro generation being dispatched and higher storage levels than anticipated. The increase in hydro generation was largely offset by a decrease in the wholesale electricity spot price. The severe weather events in the 2023 financial year caused minor delays to some projects but did not have a material impact on hydro generation operations.

A. Financial performance

A1. Segment reporting

The Group reports activities under four operating segments as follows:

Segment	Activity
Retail	Supply of energy (electricity, gas and LPG) and related services to end users being Residential customers, Small & Medium Enterprises, Large Businesses and customers of Frank Energy.
Wholesale	Supply of electricity to the wholesale electricity market, supply of gas and LPG to wholesale customers and the Retail segment and the sale and purchase of derivatives to fix the price of electricity.
Kupe	Exploration, development and production of gas, oil and LPG. Supply of gas and LPG to the Wholesale segment and supply of light oil.
Corporate	Head office functions, including human resources, finance, corporate relations, property management, legal, corporate governance and strategy.

Segmentation

The segments are based on the different products and services offered by the Group. All segments operate in New Zealand. No operating segments have been aggregated. The Group has no individual customers that account for 10.0 per cent or more of the Group's external revenue (2022: none).

Intersegment revenue

Sales between segments is based on transfer prices developed in the context of long-term contracts. The electricity transfer price per MWh charged between Wholesale and Retail was $124.73 (2022: $106.56).

Non-GAAP performance measures

Earnings before net finance expense, income tax, depreciation, depletion, amortisation, impairment, unrealised fair value changes and other gains and losses (EBITDAF) is a performance measure used internally to provide insight into the operating performance of the Group. This measure is considered to be a non-GAAP performance measure. This should not be viewed in isolation nor considered a substitute for measures reported in accordance with New Zealand Equivalents to International Financial Reporting Standards ('NZ IFRS'). EBITDAF is used by many companies; however, because this measure is not defined by NZ IFRS it might not be uniformly defined or calculated by all companies. Accordingly, this measure might not be comparable.

A1. Segment reporting (continued)

	Year ended 30 June 2023					Year ended 30 June 2022				
	Retail $ million	Wholesale $ million	Kupe $ million	Corporate $ million	Total $ million	Retail $ million	Wholesale $ million	Kupe $ million	Corporate $ million	Total $ million
Electricity	1,346.4	603.6	-	-	1,950.0	1,290.0	1,041.0	-	-	2,331.0
Gas	211.0	22.2	-	-	233.2	188.3	79.7	-	-	268.0
LPG	96.8	7.8	-	-	104.6	86.3	20.1	-	-	106.4
Oil	-	-	25.6	-	25.6	-	-	25.1	-	25.1
Emissions on fuel sales and electricity contracts	1.5	8.0	-	-	9.5	0.7	42.6	-	-	43.3
Emission unit revenue from trading	-	59.9	-	-	59.9	-	55.9	-	-	55.9
Other revenue	1.8	1.2	0.6	1.1	4.7	2.0	0.4	0.9	1.1	4.4
Total external revenue^	**1,657.5**	**702.7**	**26.2**	**1.1**	**2,387.5**	**1,567.3**	**1,239.7**	**26.0**	**1.1**	**2,834.1**
Intersegment revenue *	-	885.9	99.4	-	985.3	-	770.6	112.3	-	882.9
Total segment revenue	**1,657.5**	**1,588.6**	**125.6**	**1.1**	**3,372.8**	**1,567.3**	**2,010.3**	**138.3**	**1.1**	**3,717.0**
Electricity purchases	-	(540.1)	-	-	(540.1)	-	(944.9)	-	-	(944.9)
Electricity network, transmission, levies and meters	(521.9)	(13.8)	-	-	(535.7)	(506.2)	(14.6)	-	-	(520.8)
Fuel consumed in electricity generation	-	(115.5)	-	-	(115.5)	-	(227.6)	-	-	(227.6)
Gas purchases	(0.3)	(92.1)	-	-	(92.4)	(0.2)	(148.6)	-	-	(148.8)
Gas network, transmission, levies and meters	(75.3)	(4.8)	-	-	(80.1)	(67.8)	(10.5)	-	-	(78.3)
LPG purchases, inventory changes and transportation costs	(17.0)	(13.0)	-	-	(30.0)	(15.4)	(12.7)	(0.1)	-	(28.2)
Oil inventory changes, storage and transportation costs	-	-	(2.2)	-	(2.2)	-	-	(0.9)	-	(0.9)
Emissions associated with electricity generation	-	(19.4)	-	-	(19.4)	-	(43.0)	-	-	(43.0)
Emissions associated with fuel sales	-	(22.0)	(22.1)	-	(44.1)	-	(24.0)	(23.7)	-	(47.7)
Emission unit expenses from trading	-	(63.7)	-	-	(63.7)	-	(41.0)	-	-	(41.0)
Other costs	(0.7)	-	(9.9)	-	(10.6)	(0.5)	-	(13.4)	-	(13.9)
Total external costs	**(615.2)**	**(884.4)**	**(34.2)**	**-**	**(1,533.8)**	**(590.1)**	**(1,466.9)**	**(38.1)**	**-**	**(2,095.1)**
Intersegment costs *	(885.9)	(99.4)	-	-	(985.3)	(770.6)	(112.3)	-	-	(882.9)
Total segment costs	**(1,501.1)**	**(983.8)**	**(34.2)**	**-**	**(2,519.1)**	**(1,360.7)**	**(1,579.2)**	**(38.1)**	**-**	**(2,978.0)**
Gross margin	**156.4**	**604.8**	**91.4**	**1.1**	**853.7**	**206.6**	**431.1**	**100.2**	**1.1**	**739.0**
Employee benefits	(69.7)	(34.9)	-	(31.2)	(135.8)	(66.9)	(33.3)	-	(31.1)	(131.3)
Other operating expenses	(97.7)	(50.3)	(24.8)	(21.6)	(194.4)	(84.0)	(44.3)	(22.8)	(16.3)	(167.4)
EBITDAF	**(11.0)**	**519.6**	**66.6**	**(51.7)**	**523.5**	**55.7**	**353.5**	**77.4**	**(46.3)**	**440.3**

^ The reconciliation of external revenue to the income statement has been provided on the next page. * The intersegment revenue and expenses have been split out in full on the next page.

Other segment information										
Capital expenditure excluding leased assets	16.0	46.6	18.0	0.6	81.2	21.4	44.8	10.3	1.9	78.4

A1. Segment reporting (continued)

Intersegment analysis	Year ended 30 June 2023 Retail $ million	Wholesale $ million	Kupe $ million	Corporate $ million	Total $ million	Year ended 30 June 2022 Retail $ million	Wholesale $ million	Kupe $ million	Corporate $ million	Total $ million
Electricity - intersegment	-	744.4	-	-	744.4	-	651.9	-	-	651.9
Gas - intersegment	-	112.3	63.9	-	176.2	-	90.6	78.8	-	169.4
LPG - intersegment	-	29.2	25.8	-	55.0	-	28.1	21.3	-	49.4
Emissions on fuel sales - intersegment	-	-	9.7	-	9.7	-	-	12.2	-	12.2
Intersegment revenue	**-**	**885.9**	**99.4**	**-**	**985.3**	**-**	**770.6**	**112.3**	**-**	**882.9**
Electricity purchases - intersegment	(744.4)	-	-	-	(744.4)	(651.9)	-	-	-	(651.9)
Fuel consumed in electricity generation - intersegment	-	(63.9)	-	-	(63.9)	-	(78.8)	-	-	(78.8)
Gas purchases - intersegment	(112.3)	-	-	-	(112.3)	(90.6)	-	-	-	(90.6)
LPG purchases, inventory changes and transportation costs - intersegment	(29.2)	(25.8)	-	-	(55.0)	(28.1)	(21.3)	-	-	(49.4)
Emission costs - intersegment	-	(9.7)	-	-	(9.7)	-	(12.2)	-	-	(12.2)
Intersegment costs	**(885.9)**	**(99.4)**	**-**	**-**	**(985.3)**	**(770.6)**	**(112.3)**	**-**	**-**	**(882.9)**

Reconciliation of revenue	2023 $ million	2022 $ million
Total external revenue per segment reporting	**2,387.5**	2,834.1
Realised (gains)/losses on non-hedge accounted electricity derivatives	**(13.3)**	8.0
Total revenue per Income statement	**2,374.2**	2.842.1

Reconciliation of expenses	2023 $ million	2022 $ million
Total external costs per segment reporting	**(1,533.8)**	(2,095.1)
Employee benefits per segment reporting	**(135.8)**	(131.3)
Other operating expenses per segment reporting	**(194.4)**	(167.4)
Reallocation of carbon trading (gains)/losses	**3.8**	(14.9)
Total expenses per income statement	**(1,860.2)**	(2,408.7)

Reconciliation of EBITDAF to profit before income tax	2023 $ million	2022 $ million
EBITDAF	**523.5**	440.3
Realised (gains)/losses on non-hedge accounted electricity derivatives from revenue	**(13.3)**	8.0
Reallocation of carbon trading (gains)/losses from expenses	**3.8**	(14.9)
	514.0	433.4
Depreciation, depletion and amortisation	**(254.8)**	(215.8)
Impairment of non-current assets	**(4.0)**	(4.3)
Revaluation of generation assets	**46.3**	9.6
Change in fair value of financial instruments	**65.5**	131.2
Share of associates and joint ventures	**(2.2)**	(3.9)
Other gains (losses)	**(13.1)**	23.6
Finance revenue	**2.0**	0.8
Finance expense	**(81.5)**	(64.4)
Profit before income tax	**272.2**	310.2

A2. Revenue

The accounting policies applied to material revenue streams are disclosed below and the quantum of each revenue stream is disclosed in note A1. Emissions on fuel sales and electricity contracts is not a separate performance obligation under the revenue standard. It has been reported separately as it provides useful information to the financial statement users.

Revenue stream	Contract term	Nature of goods or services and revenue recognition	Payment terms
Electricity (retail), gas and LPG (including emissions)	0-36 months	Daily supply of electricity, gas or metered LPG over the contract period. Revenue is recognised over time at the end of each day when the consumption is known. The amount of revenue recognised is based on the amount the Group has the right to invoice. Individual supply of bottled LPG. Revenue is recognised when the bottle is delivered to the customer.	Customers are invoiced monthly and payment is due between two weeks to one month after invoice.
Electricity (wholesale)	No term	Half hourly supply of electricity. Revenue is recognised over time when each trading period is concluded and the electricity generation is known.	The clearing manager calculates and invoices the revenue. Payment is received on the 20th of the following month.
Emission unit revenue from trading	No term	Sale of emission units. Revenue is recognised at the point in time that the emission unit is confirmed as being transferred into the acquirer's emission unit account.	Payment is due within five business days of the units being transferred.
Oil	12 months	Individual oil shipments. Revenue is recognised on the bill of lading date.	Payment is due no later than 30 days from the bill of lading date.

Judgement used in determining revenue

Where customer meters are unbilled at balance date the Group uses judgement to determine the volume of the unbilled revenue. The Group estimates the unbilled volume using historical consumption information. Unbilled revenue is disclosed in note C1. Where a discount is offered, revenue is initially recognised net of the estimated discount.

A3. Depreciation, depletion and amortisation

	Note	2023 $ million	2022 $ million
Property, plant and equipment	B1	**197.2**	153.7
Oil and gas assets	B2	**32.5**	37.4
Intangibles (excluding amortisation of deferred customer acquisition costs)	B3	**25.1**	24.7
Total		**254.8**	215.8

A4. Other gains (losses)

Other gains (losses) includes a $12.1 million loss (2022: $13.7 million gain) in relation to the emission units held for trading. When emission units held for trading are sold the fair value of the units is recorded in operating expenses and any gain / loss as a result of a change in fair value is recognised in other gains (losses).

A5. Income tax

	2023 $ million	2022 $ million
Current tax	**94.0**	63.8
Deferred tax	**(17.5)**	24.5
Income tax expense	**76.5**	88.3

Reconciliation of pre-tax accounting profit to income tax expense	2023 $ million	2022 $ million
Profit before income tax	**272.2**	310.2
Income tax at 28%	**76.2**	86.9
Tax effect of adjustments:		
Over provided in prior periods	**(0.2)**	-
Non-deductible expenditure and other adjustments	**0.5**	1.4
Income tax expense	**76.5**	88.3

Income tax

Income tax is recognised in the income statement unless it relates to other comprehensive income.

Current tax

Current tax is the expected tax payable on taxable income for the year, using tax rates enacted or substantively enacted at the end of the reporting period, together with any unpaid tax or adjustment to tax payable in respect of previous years.

Deferred tax

Deferred tax reflects the differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. The amount of deferred tax provided is based on the expected manner of realisation or settlement of the carrying amounts of assets and liabilities, using tax rates enacted or substantively enacted at the end of the reporting period.

Deferred tax	Depreciable capital property* $ million	Oil and gas assets $ million	Provisions $ million	Intangible contractual arrangements $ million	Derivatives $ million	Other $ million	Total $ million
Balance as at 1 July 2021	650.9	65.7	(45.5)	15.9	(40.7)	(26.8)	619.5
Recognised in the income statement	(19.6)	(0.6)	(6.8)	(2.1)	38.0	15.6	24.5
Recognised in other comprehensive income	96.3	-	-	-	10.6	-	106.9
Balance as at 30 June 2022	**727.6**	**65.1**	**(52.3)**	**13.8**	**7.9**	**(11.2)**	**750.9**
Recognised in the income statement	(13.9)	(7.9)	(3.7)	(1.8)	15.2	(5.4)	(17.5)
Recognised in other comprehensive income	(31.2)	-	-	-	21.9	-	(9.3)
Balance as at 30 June 2023	**682.5**	**57.2**	**(56.0)**	**12.0**	**45.0**	**(16.6)**	**724.1**

* Includes property, plant, equipment and software

B. Operating assets

B1. Property, plant and equipment

	Note	Generation assets $ million	Other property, plant and equipment $ million	Capital work in progress $ million	Leased assets $ million	Total $ million
Carrying value at 1 July 2021		3,273.2	90.0	53.1	69.1	3,485.4
Additions		-	-	54.9	3.9	58.8
Revaluation of generation assets						
Increase taken to revaluation reserve		344.1	-	-	-	344.1
Increase taken to the income statement		9.6	-	-	-	9.6
Change in rehabilitation and contractual arrangement assets		-	-	0.8	-	0.8
Transfer between asset categories		44.4	5.6	(50.0)	-	-
Transfer to intangible assets	B3	-	-	(0.9)	-	(0.9)
Disposals		(1.8)	(0.6)	-	-	(2.4)
Impairment		-	-	(1.8)	-	(1.8)
Depreciation expense recognised in inventories		-	-	-	(1.2)	(1.2)
Depreciation expense	A3	(138.3)	(9.4)	-	(6.0)	(153.7)
Carrying value at 30 June 2022		**3,531.2**	**85.6**	**56.1**	**65.8**	**3,738.7**
Additions		-	-	55.0	30.0	85.0
Revaluation of generation assets						
Decrease taken to revaluation reserve		(111.3)	-	-	-	(111.3)
Increase taken to the income statement		46.3	-	-	-	46.3
Change in rehabilitation and contractual arrangement assets		-	-	17.4	-	17.4
Transfer between asset categories		34.5	19.8	(54.3)	-	-
Transfer to intangible assets	B3	-	-	(0.4)	-	(0.4)
Disposals		(0.5)	(1.0)	-	-	(1.5)
Impairment		-	-	(3.4)	-	(3.4)
Depreciation expense recognised in inventories		-	-	-	(0.1)	(0.1)
Depreciation expense	A3	(176.6)	(10.8)	-	(9.8)	(197.2)
Carrying value at 30 June 2023		**3,323.6**	**93.6**	**70.4**	**85.9**	**3,573.5**

Summary of cost and accumulated depreciation and impairment

Fair value or cost	3,531.2	170.4	59.2	145.0	3,905.8
Accumulated depreciation and impairment	-	(84.8)	(3.1)	(79.2)	(167.1)
Carrying value at 30 June 2022	**3,531.2**	**85.6**	**56.1**	**65.8**	**3,738.7**
Fair value or cost	3.323.6	188.8	71.6	175.0	3,759.0
Accumulated depreciation and impairment	-	(95.2)	(1.2)	(89.1)	(185.5)
Carrying value at 30 June 2023	**3,323.6**	**93.6**	**70.4**	**85.9**	**3,573.5**

B1. Property, plant and equipment (continued)

Generation assets

Generation assets include land, buildings, and plant and equipment associated with generation assets. Generation assets are recognised in the balance sheet at fair value at the date of the valuation, less any subsequent accumulated depreciation and impairment losses. The underlying assumptions used in the valuation are reviewed at each reporting date. Revaluations are performed with sufficient regularity to ensure the carrying amount does not materially differ from the estimated fair value at balance date.

Any increase in the valuation is recognised in other comprehensive income, unless it reverses a revaluation decrease for the same asset previously recognised in the income statement, in which case it is recognised in the income statement to the extent it reverses a decrease previously recognised. A decrease in carrying amount arising on revaluation is recognised in the income statement to the extent that it exceeds the balance, if any, held in the asset revaluation reserve for that asset. Accumulated depreciation at the date of the revaluation is eliminated against the gross carrying value so that the gross carrying amount equals the revalued amount.

Subsequent additions to generation assets are recognised at cost. Cost includes the consideration given to acquire the asset plus any other costs incurred in bringing the asset to the location and condition necessary for its intended use, including major inspection costs, resource consent, relationship agreement costs and financing costs where appropriate.

Generation assets were revalued at 30 June 2023 to $3,323.6 million (2022: $3,531.2 million) resulting in a net loss on revaluation of $65.0 million (2022: $353.7 million gain). The revaluation decrease was principally driven by an increase in the Weighted Average Cost of Capital, one less year of the remaining life of the thermal assets and the impact of the Huntly Unit 5 outage to May 2024, partially offset by an increase in the wholesale electricity prices reflecting the long run cost of new renewable build. The revaluation increase recognised in the income statement relates to the Huntly Rankine units. The valuation does not take into account any insurance proceeds for the Huntly Unit 5 outage.

The valuation is based on a discounted cash flow model prepared by Management, calculated by generating scheme, except for the Huntly site where it is calculated by type of unit (Rankine units, unit 5 and unit 6). As the key inputs into the valuation are based on unobservable market data, the valuation is classified as level three in the fair value hierarchy. It requires significant judgement, and therefore there is a range of reasonably possible assumptions that could be used in estimating the fair value. Refer to note F8 for an overview of the fair value hierarchy.

Key estimates and judgements

Wholesale electricity price path

The wholesale electricity price path is the key driver of changes in the valuation. The price path is an average of the internally generated price path and price paths published by two independent third parties, and as a result reflects the uncertainty surrounding Tiwai Point smelter operating beyond 2025 and the impact of the New Zealand Government's climate change policy, both of which could have an impact on future prices.

Internally generated price path

The internally generated price path assumes wholesale electricity demand will continue to grow based on the latest available industry analysis and Genesis' view of future economic growth. As the internally generated price path is underpinned by 90 years of historical hydrological inflow data, the impact of climate change on hydrology over this period has been reflected in the internally generated price path. New and retiring generation plant assumptions are based on publicly available information and Genesis' view on wholesale electricity prices required to support the plant. The internally generated price path assumes that Tiwai Point smelter will continue to operate beyond 2025 or be replaced by equivalent new industrial demand.

Price paths published by independent third parties

Independent third party price path assumptions on the future of Tiwai Point smelter range from Tiwai Point smelter exiting in 2025 through to operating beyond 2025. Overall the average price path reflects the high likelihood of Tiwai Point remaining open or being replaced with new industrial demand, which correlates with the wider market view as it is reflected in the ASX energy futures pricing.

Other key assumptions

The valuation also includes assumptions around market fuel and electricity supply and demand. The longer term demand assumption increases from industrial electrification and electric vehicle fleet growth in response to climate change. Changes in these interrelated factors will impact the wholesale electricity price path and generation volumes. The valuation also considers the cost of carbon at 30 June 2023 with an assumption that the existing Emissions Trading Scheme will continue or is replaced with a scheme that has a similar economic impact. These factors are reviewed for reasonableness by senior management personnel who are responsible for the price path used by the business.

Significant unobservable inputs in the valuation model were:

Significant unobservable inputs	Method used to determine input	Sensitivity range	Increase/ (decrease) in fair value of generation assets	Inter-relationships between unobservable inputs
Wholesale electricity price path (nominal)	The average annual wholesale electricity price ranged between $122 per MWh and $153 per MWh referenced to the Otahuhu 220KV locational node from July 2023 to June 2043.	+10% - 10%	$550 million ($550) million	Hydrological inflows affect generation volumes, as well as wholesale electricity prices.
Generation volumes	In-house modelling of the wholesale electricity market has been used to determine the generation volumes required to meet energy demand both on a wholesale market and asset level basis; plant availability is factored in so the current Huntly Unit 5 outage has been reflected. The generation volumes used in the valuation range between 2,758 GWh and 6,068 GWh per annum. The low end of the range relates to periods where there is no thermal generation.	+10% - 10%	$444 million ($444) million	Wholesale electricity prices affect the amount of generation.
Discount rate	Pre-tax equivalent discount rate of 10.8%	+1 ppt - 1 ppt	($279) million $343 million	Discount rate is independent of wholesale electricity prices and generation volumes.

B1. Property, plant and equipment (continued)

Historical cost

If generation assets were carried at historical cost less accumulated depreciation and accumulated impairment, the carrying amount would be approximately $1,480.7 million (2022: $1,496.6 million).

Leased assets

Leased assets include right of use assets recognised in relation to office buildings, land for generation sites and LPG depot leases. The cost of leased assets comprises the amount of the corresponding initial lease liability, lease payments made at or before the commencement date, initial direct costs and restoration costs. The leased asset is subsequently measured at cost less accumulated depreciation and impairment losses. The leased asset is depreciated over the lease term.

All other categories of property, plant and equipment

All other categories of property, plant and equipment, with the exception of land and capital work in progress, are recognised at cost less accumulated depreciation and any accumulated impairment losses. Land and capital work in progress are not depreciated.

Depreciation

Depreciation is calculated on a straight line basis. The estimated useful lives are reviewed annually to determine whether there have been any changes due to operational or external factors, including climate change considerations, and updated as appropriate. An asset's carrying amount is written down immediately to its recoverable amount if the carrying amount is greater than its estimated recoverable amount.

Asset category	Estimated useful lives
Generation assets	
Thermal	up to 9 years
Renewable	up to 85 years
Other property, plant and equipment	3 to 50 years
Leased assets	2 to 38 years

B2. Oil and gas assets

	Note	Exploration, evaluation and development expenditure $ million	Oil and gas producing assets $ million	Other oil and gas assets $ million	Capital work in progress $ million	Total $ million
Carrying value at 1 July 2021		44.4	231.2	14.9	3.4	293.9
Additions		2.2	4.2	0.1	3.8	10.3
Transfer between asset categories		(37.8)	39.6	1.0	(2.8)	-
Change in rehabilitation asset		-	20.1	-	-	20.1
Depreciation and depletion expense	A3	-	(36.2)	(1.2)	-	(37.4)
Carrying value at 30 June 2022		**8.8**	**258.9**	**14.8**	**4.4**	**286.9**
Additions		10.0	1.2	0.6	6.1	17.9
Transfer between asset categories		-	2.6	0.2	(2.8)	-
Change in rehabilitation asset		-	(4.7)	-	-	(4.7)
Depreciation and depletion expense	A3	-	(31.1)	(1.4)	-	(32.5)
Carrying value at 30 June 2023		**18.8**	**226.9**	**14.2**	**7.7**	**267.6**

Summary of cost and accumulated depreciation, depletion and impairment

Cost		27.3	836.5	26.7	4.4	894.9
Accumulated depreciation, depletion and impairment		(18.5)	(577.6)	(11.9)	-	(608.0)
Carrying value at 30 June 2022		**8.8**	**258.9**	**14.8**	**4.4**	**286.9**
Cost		37.3	835.7	27.6	7.7	908.3
Accumulated depreciation, depletion and impairment		(18.5)	(608.8)	(13.4)	-	(640.7)
Carrying value at 30 June 2023		**18.8**	**226.9**	**14.2**	**7.7**	**267.6**

Exploration, evaluation and development expenditure

All exploration and evaluation costs, including directly attributable overheads and general permit activity, are expensed as incurred except for the costs of drilling exploration wells, compression work and the costs of acquiring new interests. The costs of drilling exploration wells and compression work is initially capitalised pending the determination of the success of the wells or compression work. Costs are expensed immediately where the work does not result in a successful discovery. Costs incurred before the Group has obtained the legal rights to explore an area are expensed as incurred.

Exploration, evaluation and development expenditure assets are not amortised; instead, they are assessed annually for indicators of impairment. Any impairment is recognised in the income statement. Once development of a project has been completed, the accumulated expenditure in relation to the project is transferred to oil and gas producing assets.

Oil and gas producing assets

Oil and gas producing assets include costs associated with the production station, platform and pipeline transferred from exploration, evaluation and development expenditure, mining licences and major inspection costs. Depletion of oil and gas producing assets, excluding major inspection costs, is calculated on a unit-of-production basis using proved remaining reserves ('1P') estimated to be obtained from, or processed by, the specific asset. Major inspection costs are depreciated on a straight line basis over the period up to the next major inspection. Major inspections occur every two to ten years depending on the nature of the work undertaken.

B2. Oil and gas assets (continued)

Key estimates and judgements

Proved reserves ('1P') are the estimated quantities of oil and gas that geological and engineering data demonstrates with reasonable certainty to be recoverable in future years from known reservoirs, under existing economic and operating conditions. Proved reserves ('1P') are defined as those that have a 90 per cent likelihood of being delivered. Because the geology of the Kupe oil and gas field subsurface cannot be examined directly, an indirect technique, known as volumetrics, has been used to estimate the size and recoverability of the reserve. There are high levels of uncertainty in terms of accessibility of reserves through sealing faults and pressure support.

In the prior year the Joint Venture Operator performed a review of Kupe's reserves. Genesis engaged Gaffney Cline, an independent expert, to review and verify the Operator's reserve estimate, which resulted in an increase in remaining reserves for proved reserves ('1P') and a decrease in remaining reserves for proved and probable reserves ('2P'). No change in reserves was considered necessary for the current year. A reduction of 10 per cent in these reserves would increase depletion charges going forward by approximately $3.1 million per annum at current production rates. The table below presents the remaining Kupe oil and gas field reserves in Peta joule equivalents ('PJe') of which the Group has a 46.0 per cent interest (2022: 46.0 per cent).

	Proved reserves ('1P')		Proved and probable reserves ('2P')	
	2023 PJe	2022 PJe	2023 PJe	2022 PJe
Opening remaining field reserves at 1 July	**208.6**	218.3	**250.4**	308.8
Change in reserve estimate	**-**	22.9	**-**	(25.8)
Production	**(24.6)**	(32.6)	**(24.6)**	(32.6)
Closing remaining field reserves at 30 June	**184.0**	208.6	**225.8**	250.4
Developed	**162.5**	187.1	**193.6**	218.2
Undeveloped	**21.5**	21.5	**32.2**	32.2
Closing remaining field reserves at 30 June	**184.0**	208.6	**225.8**	250.4

An additional development well, KS-9, will be drilled in the year ending 30 June 2024 to access undeveloped field reserves.

Other oil and gas assets

Other oil and gas assets include land, buildings, storage facilities, sales pipeline and motor vehicles. The cost of other oil and gas assets, less any estimated residual value, is depreciated on a straight line basis.

Asset category	Estimated useful lives
Buildings	50 years
Storage facilities	25 years
Sales pipeline	25 years
Motor vehicles	5 years

B3. Intangible assets

	Note	Goodwill $ million	Software $ million	Emission units held for own use $ million	Contractual arrangements $ million	Deferred customer acquisition costs $ million	Total $ million
Carrying value at 1 July 2021		228.4	50.9	55.4	56.7	4.4	395.8
Additions		-	13.2	112.2	1.1	2.2	128.7
Transfer from property, plant and equipment	B1	-	0.9	-	-	-	0.9
Disposal or surrender		-	(0.1)	(118.3)	-	-	(118.4)
Impairment		-	(2.5)	-	-	-	(2.5)
Amortisation expense	A3	-	(16.3)	-	(8.4)	-	(24.7)
Amortisation expense included in other operating expenditure		-	-	-	-	(3.2)	(3.2)
Carrying value at 30 June 2022		**228.4**	**46.1**	**49.3**	**49.4**	**3.4**	**376.6**
Additions		-	8.3	97.4	0.4	3.7	109.8
Transfer from property, plant and equipment	B1	-	0.4	-	-	-	0.4
Disposal or surrender		-	-	(83.1)	-	-	(83.1)
Impairment		-	(0.6)	-	-	-	(0.6)
Amortisation expense	A3	-	(18.7)	-	(6.4)	-	(25.1)
Amortisation expense included in other operating expenditure		-	-	-	-	(3.0)	(3.0)
Carrying value at 30 June 2023		**228.4**	**35.5**	**63.6**	**43.4**	**4.1**	**375.0**

Summary of cost and accumulated amortisation and impairment

Cost	228.4	190.6	49.3	90.0	7.2	565.5
Accumulated amortisation and impairment	-	(144.5)	-	(40.6)	(3.8)	(188.9)
Carrying value at 30 June 2022	**228.4**	**46.1**	**49.3**	**49.4**	**3.4**	**376.6**
Cost	228.4	198.4	63.6	87.9	7.3	585.6
Accumulated amortisation and impairment	-	(162.9)	-	(44.5)	(3.2)	(210.6)
Carrying value at 30 June 2023	**228.4**	**35.5**	**63.6**	**43.4**	**4.1**	**375.0**

The current portion of intangible assets disclosed in the balance sheet relates to emission units held for own use. The remaining $311.4 million (2022: $327.3 million) of intangible assets are non-current.

Goodwill

Goodwill represents the excess of the cost of a business acquisition over the fair value of the Group's share of the net identifiable assets, liabilities and contingent liabilities at the date of acquisition. Goodwill is assessed as having an indefinite useful life and is not amortised but is subject to impairment testing at each reporting date or whenever there are indications of impairment. During the period a new retail operating model was implemented with a focus on end to end customer value streams rather than energy type. Following this change the Group has changed the level at which goodwill is allocated and assessed for impairment. Previously, the goodwill was allocated to the LPG fuel cash-generating unit ('CGU'), and to the electricity and gas CGU. Following the change in operating model goodwill has been allocated to a group of CGU's being retail (electricity, gas and LPG) and goodwill impairment testing is performed at the retail business level. For the purpose of impairment testing, goodwill has been allocated to the following CGU:

Goodwill by CGU	2023 $ million	2022 $ million
Retail	**215.2**	215.2
Kupe	**13.2**	13.2
Total goodwill	**228.4**	228.4

B3. Intangible assets (continued)

Retail

The goodwill associated with Retail mainly relates to the acquisition of NGC electricity and gas business ($102.6m) in 2002 and 2003 and the LPG business from Nova Energy ($112.6m) on 1 June 2017. The impairment test is based on an estimated discounted cash flow analysis (value in use). Estimated future cash flow projections are based on the Group's five-year business plan for the CGU which takes into consideration short term climate related risks and opportunities. Cash flows beyond the five-year business plan are extrapolated using a 2.0 per cent year-on-year growth rate. The estimated future cash flow projections are discounted using a pre-tax equivalent discount rate of 10.8 per cent.

In completing the impairment assessment, the Group has considered the medium to long term risk and opportunities in relation to climate change on the Retail business. The risks of Government policy prohibiting the sale of LPG and gas along with shifting customer preferences is partially offset by the opportunities around increased electricity demand from LPG and gas switching along with other electrification initiatives.

Any reasonably possible change in key assumptions on which the recoverable amount is based is not expected to cause the carrying value of the goodwill to exceed its recoverable amount. Comparative information on assumptions is not disclosed due to the testing of goodwill at the retail level. As each of these CGU's used different assumptions the prior year information is not directly comparable.

Kupe

The goodwill associated with Kupe relates to the acquisition of the Kupe subsidiaries from New Zealand Oil and Gas Limited ('NZOG') on 1 January 2017. The impairment test is based on an estimated discounted cash flow analysis (value in use). The estimated future cash flow projections are based on proved and probable reserves ('2P'), as disclosed in note B2. In completing the impairment assessment, the Group has considered the risk and opportunities in relation to climate change on the Kupe business (in particular, the risk Government policy prohibits the sale of gas and LPG and the ability to access insurance). The pre-tax equivalent discount rate was 13.9 per cent (2022: 13.3 per cent).
A reasonable change to the key assumptions on which the recoverable amount is based does not cause the carrying value of the goodwill to exceed its recoverable amount.

Software

Software are assets with finite lives. These assets are recognised at cost less accumulated amortisation and impairment losses. Amortisation is recognised in the income statement on a straight line basis over the estimated useful life of the asset from the date it is available for use. The estimated useful life is between one and ten years.

Emission units held for own use

Emission units held for own use are used to settle the Group's emission obligation. The units are initially recognised at fair value and are not revalued.

Contractual arrangements

Contractual arrangements include customer contracts and relationships acquired through business acquisitions, and sponsorship contracts.

Customer contracts and relationships

Customer contracts and relationships are assets with finite lives. These assets are recognised at cost less accumulated amortisation and impairment losses.

Amortisation of customer contracts and relationships related to Kupe are recognised in the income statement on a units-of-use basis, using proved remaining reserves ('1P') expected to be obtained over the contract period. Remaining reserves used in the calculations range from 62.8 to 184.0 PJe (2022: 87.4 to 208.6 PJe). Refer to note B2 for further information on the reserves estimate.

Amortisation of customer relationships related to the Nova acquisition are recognised in the income statement on a diminishing value basis over the estimated life of the relationship to reflect the likely churn of customers. The remaining useful lives of these assets at 30 June 2023 is 27 years.

Sponsorship contracts

Sponsorship contracts are assets with finite lives. These assets are recognised at cost less accumulated amortisation and impairment losses. Amortisation is recognised in the income statement on a straight line basis over the estimated useful life of the asset from the date it is available for use. The useful life is based on the contract period, which ranges between one and three years.

Deferred customer acquisition costs

Customer acquisition costs that are directly attributable to securing a particular customer contract are capitalised and amortised over the expected customer tenure (30 months). Amortisation of these costs is included within operating expenditure.

C. Working capital and provisions

C1. Receivables and prepayments

	2023 $ million	2022 $ million
Trade receivables	**121.0**	97.6
Accrued revenue	**109.3**	103.8
Expected credit loss provision	**(5.4)**	(5.2)
Deferred customer account credits	**4.1**	3.9
Total	**229.0**	200.1
Advances to associates and joint ventures	**0.8**	0.6
Lease receivable	**4.3**	9.9
Emission units receivable	**1.7**	20.5
Other receivables	**5.1**	10.2
Prepayments	**7.4**	5.4
Total	**248.3**	246.7
Current	**246.6**	243.1
Non-current	**1.7**	3.6
Total	**248.3**	246.7

Trade receivables and accruals

Trade receivables and accruals are initially recognised at fair value and are subsequently measured at amortised cost. Trade receivables and accrued revenue that are known to be uncollectable are written off. Total bad debts written off during the year were $4.4 million (2022: $2.9 million).

Lease receivable

The Group enters into lease agreements as a lessor in respect of some of its property leases and vehicles.

Where the Group is a head lessor, the leases have been classified as finance leases as the lease transfers substantially all of the risks and rewards incidental to ownership of the underlying asset. Where the Group is an intermediate lessor, the head lease and the sublease are accounted for as two separate contracts. Subleases that transfer substantially all of the risks and rewards of ownership to the lessee are classified as finance leases, all other subleases are classified as operating leases. The assessment is based on the right-of-use asset arising from the head lease.

Amounts due from lessees under finance leases are recognised as lease receivables. Finance lease income is allocated to individual periods based on a constant periodic rate of return. Rental income from operating leases is recognised on a straight line basis over the term of the lease.

Amounts receivable under finance leases:	2023 $ million	2022 $ million
Less than 1 year	**3.0**	6.6
1 to 2 years	**0.5**	2.9
2 to 5 years	**0.7**	0.6
More than 5 years	**0.7**	-
Undiscounted lease payments	**4.9**	10.1
Less: unearned finance income	**(0.6)**	(0.2)
Lease receivable	**4.3**	9.9

Expected credit loss provision

The expected credit loss provision is calculated using the simplified approach, which takes into account the lifetime expected credit loss on trade receivables and accrued revenue. The allowance for expected credit losses is calculated using a provision matrix, which is based on historic write-offs. Where possible the percentages are adjusted for foreseeable future economic conditions which may impact the collectability of trade receivables and accrued revenue.

Expected credit loss	Residential	Business
0-30 days overdue	0.40%	0.13%
30-60 days overdue	3.44%	0.54%
60-90 days overdue	9.83%	4.97%
90+ days overdue	16.83%	4.38%
Debt at collection agency	72%	46%
Unoccupier debt	100%	100%

Deferred customer account credits

Account credits given to customers are included in the measurement of revenue. The account credit is spread over the term of the customer contract.

C2. Inventories

	2023 $ million	2022 $ million
Fuel	**157.5**	150.5
Petroleum products	**0.9**	2.4
Consumables and spare parts	**31.7**	30.3
Emission units held for trading	**10.1**	19.7
Total	**200.2**	202.9
Current	**143.0**	202.9
Non-current	**57.2**	-
Total	**200.2**	202.9

Emission units held for trading

Emission units held for trading are measured at fair value. Changes in the fair value are recognised in the income statement within other gains (losses). The fair value is determined using CommTrade's forward curve. As the fair value is calculated using inputs that are not quoted prices, the units are classified as level two in the fair value hierarchy. Refer to note F8 for an overview of the fair value hierarchy.

Fuel, petroleum, consumables and spare parts

Fuel, petroleum, consumables and spare parts are recognised at the lower of cost and net realisable value. Cost is determined using the weighted average cost basis which includes expenditure incurred in bringing the inventories to their present location and condition, including shipping and handling. Net realisable value is the estimated selling price in the ordinary course of business less the estimated costs necessary to make the sale.

Fuel inventories mainly consist of coal used in electricity production. Fuel inventories (excluding natural gas) expensed during the year amounted to $9.4 million (2022: $86.4 million).

Petroleum products consist of LPG and light crude oil held for resale produced from the Kupe production facility. Petroleum products expensed during the year amounted to $21.4 million (2022: $22.1 million).

Consumables and spare parts are held to service or repair generating assets. Consumables and spare parts relating to Huntly unit 6 are impaired when incurred as the fair value of this unit is nil.

C3. Payables and accruals

	2023 $ million	2022 $ million
Trade payables and accruals	**188.5**	182.8
Employee benefits	**16.7**	16.1
Emission obligations	**33.5**	53.2
Total	**238.7**	252.1
Current	**237.3**	248.3
Non-current	**1.4**	3.8
Total	**238.7**	252.1

Trade payables and accruals

Trade payables and accruals are recognised when the Group becomes obligated to make future payments, resulting from the purchase of goods or services, and are subsequently carried at amortised cost.

Employee benefits

A liability for employee benefits (wages and salaries, annual and long service leave, and employee incentives) is recognised when it is probable that settlement will be required and the amount is capable of being measured reliably. Provisions made in respect of employee benefits are measured using the remuneration rate expected to apply at the time of settlement.

Emission obligations

Emission obligations are recognised as a liability when the Group incurs the emission obligation. Emission units payable to third parties are recognised at the average cost of emission units on hand, up to the amount of units on hand at the recognition date. Where the emission obligation exceeds the level of units on hand, the excess obligation is measured at the contract price where forward contracts exist or the market price for any obligation not covered by units on hand or forward contracts.

C4. Provisions

	Note	Contractual arrangements $ million	Rehabilitation and restoration $ million	Other provisions $ million	Total $ million
Balance at 1 July 2021		45.0	120.4	0.8	166.2
Created		2.0	21.3	-	23.3
Released		(0.1)	(3.2)	-	(3.3)
Used		(3.4)	-	-	(3.4)
Time value of money adjustment	E6	1.1	3.3	-	4.4
Balance at 30 June 2022		**44.6**	**141.8**	**0.8**	**187.2**
Created		17.9	5.2	-	23.1
Released		(0.2)	(10.7)	-	(10.9)
Used		(3.6)	(0.9)	-	(4.5)
Time value of money adjustment	E6	1.4	5.0	-	6.4
Balance at 30 June 2023		**60.1**	**140.4**	**0.8**	**201.3**
Current		5.2	5.1	-	10.3
Non-current		39.4	136.7	0.8	176.9
As at 30 June 2022		**44.6**	**141.8**	**0.8**	**187.2**
Current		11.8	1.4	0.2	13.4
Non-current		48.3	139.0	0.6	187.9
As at 30 June 2023		**60.1**	**140.4**	**0.8**	**201.3**

Contractual arrangements

Contractual arrangements provisions relate to sponsorship and relationship agreements with various parties. The provisions represent the present value of the best estimate of cash flows required to settle the Group's obligations under the agreements. The timing of the outflows is expected to occur over the next 35 years.

Rehabilitation and restoration

The majority of this provision relates to the remediation of the Huntly ash ponds and the Kupe production facility. The provision represents the present value of the Group's best estimate of future expenditure to be incurred to remediate the sites at balance date. Key assumptions include: an estimate of when the rehabilitation and restoration is likely to take place, the possible remediation alternatives available, the expected expenditures attached to each alternative and the foreign currency exchange rate.

There is no provision for the remediation of the Huntly generation site because the Group has the right to lease the site in perpetuity, there is no fixed or planned termination date for the Huntly lease and the site remains a key electricity generation site for the Group. The lease of the site is independent of decisions around the retirement of Huntly Rankine units, which are planned to be available to the electricity market until such time they are uneconomic to run. There may be costs and recoveries associated with retiring Huntly Rankine units but these cannot be reliably estimated at this time.

Key estimates and judgements

The key assumptions that could have a material impact on the Kupe production facility rehabilitation estimate relate to: the level of remediation required; foreign exchange rates; mobilisation and demobilisation costs for rig and offshore supply vessel; and regulatory requirements in relation to the removal of the subsea pipeline. The majority of costs are based in United States dollars, and therefore are sensitive to fluctuations in foreign exchange rates. If the foreign exchange rate were to decrease by 10 per cent the provision would increase by $10.2 million. Given the equipment required to complete the rehabilitation comes from overseas, the mobilisation and demobilisation costs can fluctuate significantly depending on the volume of work the contractor has nearby at the time the rehabilitation is required to be completed. The full cost of mobilisation and demobilisation has been provided for, given the uncertainty around the ability to share these costs with other entities. If the costs could be shared with other entities the provision would decrease by up to $11.1 million. The provision is based on the removal of the shore section of the subsea pipeline. The remaining pipeline will be flushed and left in situ. If all of the pipeline needed to be removed, the cost would increase the provision by $19.9 million. The rehabilitation is estimated to be completed in approximately 13 years.

D. Group structure

D1. Subsidiaries and controlled entities

The consolidated financial statements include Genesis, its subsidiaries and controlled entities listed below. The Trust has been consolidated into the Group on the basis that Genesis determined how the Trust was designed and how it operates; Genesis controls the financing and investing activities of the Trust and the Trust is dependent on funding from Genesis.

Name of entity	Principal activity	Place of incorporation	Interest held 2023 %	Interest held 2022 %
Kupe Venture Limited	Joint venture holding company	New Zealand	**100**	100
Genesis Energy Insurance Pte Limited	Captive insurance company	Singapore	**100**	100
Frank Energy Limited (formerly Energy Online Limited)	Holding company	New Zealand	**100**	100
Genesis Energy Talent Retention Plan Trust	Trust	New Zealand	**-**	-

All entities have 30 June balance dates.

D2. Joint operations

The Group has a 46.0 per cent interest in the Kupe production facility and Petroleum Mining Permit 38146 held by the Kupe Joint Venture (2022: 46.0 per cent) through its wholly owned subsidiary Kupe Venture Limited. The principal activity of the Kupe Joint Venture is petroleum production and sales. The Joint Venture is unincorporated and operates in New Zealand. The Group is considered to share joint control based on the contractual arrangements between the Group and other joint operators that state unanimous decision-making is required for relevant activities that most significantly impact the returns of the joint operation.

Kupe Venture Limited is a party to a Deed of Cross Charge ('Deed'). The Deed was entered into pursuant to the Kupe Joint Venture Operating Agreement ('JVOA') for the purpose of securing the joint venture parties payment obligations under the JVOA. Each joint venture party has granted a security interest in its participating interest in the joint venture (together with certain related assets e.g. its petroleum derived from operations under the JVOA), in favour of the other joint venture parties. If a joint venture party defaults in the performance of an obligation to pay an amount due and payable under the JVOA, the appointed agent may enforce on behalf of the non-defaulting joint venture parties, the security interests created by the Deed.

The Group has a 60.0 per cent interest in a Joint Venture Arrangement for the development of solar generation (2022: 60.0 per cent). The principal activity of the Solar Joint Venture is the development of up to 500MW of solar capacity over the next five years. The Solar Joint Venture is unincorporated and operates in New Zealand. The Group is considered to share joint control based on the contractual arrangements between the Group and other joint operators that state unanimous decision-making is required for relevant activities that most significantly impact the returns of the joint operation.

The Kupe Joint Venture and Solar Joint Venture are classified as joint operations under NZ IFRS 11 Joint Arrangements. The Group's share of revenue, expenditure, assets and liabilities is included in the Group financial statements on a proportionate line-by-line basis. The operating results of the Kupe Joint Venture are included in the Kupe segment and the operating results of the Solar Joint Venture are included in the Wholesale segment in note A1 and the Group's share of capital expenditure commitments for both joint ventures is disclosed in note G4.

D3. Investments in associates and joint ventures

The Group has interests in the following arrangements, which are accounted for as either associates or joint ventures using the equity method.

Name of entity	Principal activity	Place of incorporation	Interest held 2023 %	Interest held 2022 %	Carrying amount 2023 $ million	Carrying amount 2022 $ million
DrylandCarbon One Limited Partnership	Investment in forestry	New Zealand	**25.2**	25.2	**28.4**	29.0
Ecotricity Limited Partnership and Ecotricity GP Limited	Electricity retailer	New Zealand	**70.0**	70.0	**2.3**	3.8
Forest Partners Limited Partnership	Investment in forestry	New Zealand	**28.0**	28.0	**25.3**	3.0
Total share in associates					**56.0**	35.8
Total share in associates and joint ventures					**56.0**	35.8

The $2.2 million share of associates and joint ventures loss (2022: $3.9 million loss) recorded in the income statement is made up of a $2.2 million loss relating to associates and nil relating to joint ventures (2022: $3.6 million loss and $0.3 million loss respectively).

E. Funding

E1. Capital management

The Group manages its capital to ensure that each entity in the Group will be able to continue as a going concern while maximising the return to shareholders through the appropriate balance of debt and equity. This is achieved by ensuring that the level and timing of its capital investment programmes, equity raisings and dividend distributions are consistent with the Group's capital structure strategy. This strategy remains unchanged from previous years. The capital structure of the Group consists of debt, which includes the borrowings disclosed in note E5, cash and cash equivalents and equity attributable to the shareholders of Genesis, comprising issued capital, reserves and retained earnings, as disclosed in the balance sheet.

Under the Group's debt funding facilities, the Group has given undertakings that the ratio of debt to equity will not exceed a prescribed level and the interest cover will not be below a prescribed level. For the purpose of these undertakings the capital bonds and related interest costs are treated as 50 per cent equity. The covenants are monitored on a regular basis to ensure they are complied with. There were no breaches in covenants during the year (2022: none).

E2. Share capital

	Note	2023 No. of shares million	2023 $ million	2022 No. of shares million	2022 $ million
Balance as at 1 July		**1,049.5**	**670.5**	1,042.7	652.2
Shares acquired for TRP plan		**(0.3)**	**(0.8)**	(0.3)	(1.0)
Treasury shares sold		**-**	**-**	0.5	1.2
Shares issued to LTI and TRP participants		**0.1**	**0.3**	0.2	0.4
Shares issued under dividend reinvestment plan	E4	**15.3**	**40.9**	6.4	17.7
Balance as at 30 June		**1,064.6**	**710.9**	1,049.5	670.5
Issued capital		**1,065.3**	**712.9**	1,050.0	672.0
Treasury shares		**(0.7)**	**(2.0)**	(0.5)	(1.5)
Total share capital		**1,064.6**	**710.9**	1,049.5	670.5

All shares are ordinary authorised, issued and fully paid shares. They all have equal voting rights and share equally in dividends and any surplus on winding up. Treasury shares relate to shares held in trust for the employee Talent Retention Plan ('TRP') (refer to notes G1 and G2).

E3. Earnings per share

	2023	2022
Net profit for the year attributable to shareholders ($ million)	**195.7**	221.9
Weighted average number of ordinary shares (million units)	**1,057.4**	1,045.2
Less weighted average number of Treasury shares (million units)	**(0.6)**	(0.7)
Weighted average number of shares used in EPS calculation (million units)	**1,056.8**	1,044.5
	Cents	Cents
Basic and diluted EPS	**18.52**	21.24

E4. Dividends

	Note	2023 Cents per share	2023 $ million	2022 Cents per share	2022 $ million
Dividends declared and paid during the year					
Prior year final dividend		**8.90**	**93.5**	8.80	91.8
Current year interim dividend		**8.80**	**92.9**	8.70	90.7
		17.70	**186.4**	17.50	182.5
Less shares issued under the dividend reinvestment plan	E2		**(40.9)**		(17.7)
Cash dividend paid			**145.5**		164.8
Dividends declared subsequent to balance date					
Final dividend		8.80	93.7	8.90	93.5

The current year interim dividend was imputed at 100% and the proposed final dividend will be imputed at 100%, all other dividends noted above were imputed at 80%.

Imputation credits

There were no imputation credits as at 30 June 2023 (2022: nil). Future tax payments will cover the imputation of dividends.

E5. Borrowings

		2023								2022							
		Borrowings by year of expiry:								Borrowings by year of expiry:							
$ million	Weighted average effective interest rate %	Less than 1 year	1 to 2 years	2 to 5 years	More than 5 years	Fair value interest rate risk adjustment	Capitalised issue costs	Accrued interest	Carrying amount	Less than 1 year	1 to 2 years	2 to 5 years	More than 5 years	Fair value interest rate risk adjustment	Capitalised issue costs	Accrued interest	Carrying amount
Sustainable financing																	
Green bonds	4.2%	-	-	125.0	-	(3.4)	(0.4)	1.5	122.7	-	-	-	125.0	(2.4)	(0.5)	1.5	123.6
Green capital bonds	5.9%	-	-	-	285.0	(10.7)	(2.8)	1.0	272.5	-	-	-	285.0	(1.5)	(3.6)	1.0	280.9
Other financing																	
Revolving credit facility	Floating	-	-	-	-	-	-	-	-	20.0	-	-	-	-	-	-	20.0
Term loan facility	Floating	30.0	-	-	-	-	-	-	30.0	-	30.0	-	-	-	-	-	30.0
Money market	Floating	-	-	-	-	-	-	-	-	5.5	-	-	-	-	-	-	5.5
Commercial paper	5.7%	154.2	-	-	-	-	-	-	154.2	144.5	-	-	-	-	-	-	144.5
Wholesale term notes	4.4%	-	100.0	-	100.0	-	(0.2)	1.3	201.1	120.0	-	100.0	100.0	-	(0.3)	2.9	322.6
Capital bonds	4.9%	240.0	-	-	-	(0.4)	-	2.3	241.9	-	-	-	240.0	(3.1)	(0.7)	2.3	238.5
United States Private Placement ('USPP')	7.4%	-	-	244.9	-	(14.3)	(0.3)	3.2	233.5	-	-	240.3	-	(4.5)	(0.4)	3.2	238.6
		424.2	**100.0**	**369.9**	**385.0**	**(28.8)**	**(3.7)**	**9.3**	**1,255.9**	**290.0**	**30.0**	**340.3**	**750.0**	**(11.5)**	**(5.5)**	**10.9**	**1,404.2**
Lease liability	5.3%								110.8								89.1
Total									**1,366.7**								**1,493.3**
Current									446.8								292.0
Non-current									919.9								1,201.3
Total									**1,366.7**								**1,493.3**

Borrowings

Borrowings are initially recognised at fair value, net of transaction costs incurred and are subsequently measured at amortised cost using the effective interest rate method. Borrowings designated in a fair value hedge relationship are carried at amortised cost adjusted for the change in the fair value of the hedged risk. Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the balance date.

E5. Borrowings (continued)

Capital bonds

The FY49 capital bonds have a principal value of $240.0 million. On 30 June 2023 the Group exercised its right to redeem $240.0 million of fixed rate subordinated capital bonds with an original maturity date of 17 July 2048. The capital bonds, redeemed in July 2023, were replaced by $240.0 million unsubordinated green capital bonds with a maturity date of 10 July 2053. This issue pays a quarterly coupon of 6.50 per cent per annum. On the first reset date and every five years thereafter, the interest rate will reset to be the sum of the five-year swap rate on the relevant reset date plus the margin of 1.95 per cent per annum plus the step-up margin of 0.25 per cent per annum. The next interest rate reset date is July 2028. Issue costs are amortised over five years to the first reset date. Interest rate swaps have been used to manage the fair value risk of the bonds.

The FY52 green capital bonds have a principal value of $285.0 million. The interest rate on the capital bonds resets every five years, the next interest rate reset is June 2027.

The net proceeds of the green capital bonds are notionally allocated to refinance eligible assets consistent with the Green Bond Principles issued by the International Capital Market Association.

USPP

During the 2015 financial year the Group issued $150.0 million United States dollar-denominated unsecured notes to United States-based institutional investors. Cross currency interest rate swaps ('CCIRS') have been used to manage foreign exchange and interest rate risks on the notes (refer to note F4 for further information on CCIRS).

While the New Zealand dollar amount required to repay the USPP is fixed as a result of the CCIRS, the USPP is required to be translated to New Zealand dollars at the spot rate at the reporting date. Any revaluation of the USPP as a result of this translation is offset by the change in the fair value of the CCIRS.

Lease liability

On initial recognition the lease liability comprises the present value of the lease payments that are not paid at the commencement date. This includes fixed payments less any lease incentives receivable and variable lease payments that are based on an index or rate. The lease payments are discounted using the incremental borrowing rate, being the rate that the Group would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions.

The lease liability is subsequently measured by increasing the carrying amount to reflect interest on the lease liability (using the effective interest method) and reducing the carrying amount to reflect the lease payments made. The Group remeasures the lease liability (and makes a corresponding adjustment to the related lease asset) whenever the lease term changes, the lease payments change due to changes in an index or rate or a lease contract is modified and the lease modification is not accounted for as a separate lease. Lease payments on short term leases where the lease term is 12 months or less and leases of low value assets are recognised in operating expenses as incurred.

Commercial paper

In the 2021 financial year a commercial paper programme was established and the first tranche of notes was issued in October 2020. Notes issued to wholesale investors under the programme are short-term money market instruments, unsecured and unsubordinated.

Security

All of the Group's borrowings are unsecured. The Group borrows under a negative pledge arrangement, which does not permit the Group to grant any security interest over its assets, unless it is an exception permitted within the negative pledge.

Reconciliation of change in liabilities arising from financing activities

	Note	2023 $ million	2022 $ million
Opening balance		**1,493.3**	1,427.8
Proceeds from borrowings		**-**	510.0
Repayment of borrowings (excluding leases)		**(135.7)**	(424.9)
Repayment of lease liability		**(8.0)**	(7.0)
Non-cash changes			
Lease liability additions and adjustments	B1	**30.0**	3.9
Change in foreign exchange on USPP		**4.6**	25.5
Change in fair value interest rate risk adjustment		**(17.3)**	(38.3)
Amortisation of capitalised issue costs		**1.8**	(2.6)
Change in accrued interest		**(1.6)**	1.0
Other non-cash changes		**(0.4)**	(2.1)
Closing balance		**1,366.7**	1,493.3

Revolving credit facilities

	2023 $ million	2022 $ million
Sustainable Financing		
Expiring FY24	**-**	140.0
Expiring FY25	**120.0**	30.0
Expiring FY26	**80.0**	30.0
Expiring FY27	**50.0**	50.0
Other Financing		
Expiring FY23	**-**	150.0
Expiring FY24	**-**	75.0
Expiring FY25	**200.0**	-
Expiring FY26	**25.0**	50.0
Total available revolving credit facilities	**475.0**	525.0
Revolving credit drawn down	**-**	20.0
Total undrawn revolving credit facilities	**475.0**	505.0

In the 2022 financial year the Group launched its Sustainable Finance Programme. The Sustainable Finance facilities have variable payments that are linked to performance against the Group's sustainability targets.

The undrawn revolving credit facilities ensure the Group will have sufficient funds to meet its liabilities when due, including the repayment of any commercial paper, under both normal and stressed conditions.

E5. Borrowings (continued)

Fair value of borrowings held at amortised cost

	2023 Carrying value $ million	2023 Fair value $ million	2022 Carrying value $ million	2022 Fair value $ million
Level one				
Green bonds	**122.7**	**118.5**	123.6	120.5
Green capital bonds	**272.5**	**271.2**	280.9	283.2
Capital bonds	**241.9**	**242.0**	238.5	240.4
Level two				
Term loan facility	**30.0**	**30.1**	30.0	30.1
Wholesale term notes	**201.1**	**189.4**	322.6	314.6
USPP	**233.5**	**240.2**	238.6	241.7

The valuation of the term loan facility and the wholesale term notes is based on estimated discounted cash flow analyses, using applicable market yield curves adjusted for the Group's credit rating. The credit-adjusted market yield curves at balance date used in the valuation ranged from 5.8 per cent to 7.2 per cent (2022: 2.8 per cent to 5.3 per cent).

The valuation of USPP is based on estimated discounted cash flow analyses, using applicable United States market yield curves adjusted for the Group's credit rating. The credit-adjusted market yield at balance date used in the valuation was 4.8 per cent (2022: 3.8 per cent).

The carrying value of all other borrowings approximate their fair values.

E6. Finance expense

	Note	2023 $ million	2022 $ million
Interest on borrowings (excluding capital bonds and lease liability)		**39.5**	30.2
Interest on capital bonds		**28.7**	25.7
Interest on lease liability		**6.4**	3.5
Total interest on borrowings		**74.6**	59.4
Other interest and finance charges		**0.9**	1.4
Time value of money adjustments on provisions	C4	**6.4**	4.4
Capitalised finance expenses		**(0.4)**	(0.8)
Total		**81.5**	64.4
Weighted average capitalisation rate		**4.9%**	4.2%

Interest on borrowings, bank and facility fees, and transaction costs are recognised in the income statement over the period of the borrowings, using the effective interest rate method, unless such costs relate to funding capital work in progress. Time value of money adjustments on provisions are recognised in the income statement up to the point the provision is used or released.

Finance expense on capital work in progress (qualifying assets) is capitalised during the construction period. The capitalisation rate used to determine the amount of finance expense to be capitalised is based on the weighted average finance expenses incurred by the Group.

F. Risk management

The Group's activities expose it to a variety of financial risks, including market risk (price risk, interest rate risk and foreign exchange risk), credit risk and liquidity risk. The Board has established policies that provide an overall risk management framework, as well as policies covering specific areas, such as electricity, oil and coal price risk, interest rate risk, foreign exchange risk, credit risk, liquidity risk and the use of derivatives. Compliance with policies is monitored by the middle office function.

The Group uses the following derivatives to hedge its financial risk exposures:

- Electricity swaps and options and electricity power purchase agreements ('PPA');
- Oil price swaps;
- Coal price swaps;
- Forward purchase agreements for emission units;
- Foreign exchange contracts;
- CCIRS;
- Interest rate swaps.

A summary of the financial risks that impact the Group, how they arise and how they are managed is presented in this section:

Market risk

Nature and exposure to the Group	Note	How the risk is managed
Price risk The Group is exposed to movements in the spot price of electricity arising through the sale and purchase of electricity to and from the market, movements in the spot price of light crude oil arising from oil sales, movements in the spot price of coal arising from coal purchases and movements in the spot price of emission units, movements in the global methanol price arising for methanol index linked gas purchases.	F2	The Group aims to hedge price risk on electricity sales and forecast generation volume, oil sales, coal purchases and emission unit purchases under the New Zealand Emissions Trading Scheme (ETS). Electricity price risk is managed with electricity derivative contracts, including but not limited to swaps, futures, options and PPAs. Oil and coal are hedged using over the counter and exchange traded products. Emission units are hedged with forward and spot purchases, as well as direct arrangements with forestry entities. The Trading Limits and Thresholds Standard sets overall levels for hedge positions across electricity, coal and ETS obligations. Electricity hedging focuses on the Group's net exposure to electricity prices over a four to five-year period. Coal hedging manages forecast import price risk over a three-year period. Carbon hedging focuses on managing price risk in the short and medium term. The Treasury Policy requires that oil sales are fixed within certain policy bands over a three-year period. The level of exposure to methanol is monitored.
Interest rate risk The Group is exposed to interest rate risk because Genesis borrows funds at both fixed and floating interest rates. Changes in market interest rates expose the Group to changes in: • Future interest payments on borrowings subject to floating interest rates (cash flow risk); • The fair value of borrowings subject to fixed interest rates (fair value risk).	F3	The Group uses interest rate swaps to manage interest rate risk in line with the Group's Treasury policy. The Treasury policy requires that 50-100 per cent of projected debt is fixed for a period of up to one year. The range decreases as the age profile increases to a maximum of 20 per cent for debt due in 10 to 15 years.
Foreign exchange risk The Group is exposed to foreign currency risk as a result of capital and operational transactions and borrowings denominated in a currency other than the Group's functional currency.	F4	**Capital and operating transactions** The Group uses foreign exchange contracts to manage foreign exchange risk on capital and operational transactions (including maintenance of capital equipment, fuel purchases and oil sales) in accordance with the Group's Treasury policy. Foreign exchange spot, forwards, deposits and options can be used to hedge the value back to NZDs. **Overseas borrowings** The Group uses CCIRS to manage foreign exchange risk on foreign currency borrowings. All interest and principal repayments are hedged. The combination of the foreign-denominated debt and CCIRS results in a net exposure to New Zealand dollar floating interest rates and a fixed New Zealand dollar-denominated principal repayment. The New Zealand dollar floating interest rate risk is managed using the process described in the interest rate risk section above.

F. Risk management (continued)

Other risks

Nature and exposure to the Group	Note	How the risk is managed
Liquidity risk Liquidity risk is the risk that the Group will not be able to meet its financial obligations as they fall due. The Group's approach to managing liquidity risk is to ensure that it will always have sufficient funds to meet its liabilities when due, under both normal and stressed conditions.	F7	The Group has a policy that requires the debt facilities to be maintained with a minimum headroom amount above the projected peak debt levels over the next 12 months. Liquidity risk is monitored by continuously forecasting cash flows and matching the maturity profiles of financial assets and liabilities. The Group's ability to attract cost-effective funding is largely driven by its credit standing (Standard & Poor's = BBB+). Prudent liquidity risk management implies maintaining sufficient cash and marketable securities, the availability of funding through an adequate amount of committed credit facilities and the spreading of debt maturities.
Credit risk Credit risk is the risk that a counterparty will default on its contractual obligations, resulting in financial loss to the Group. The Group has no significant concentrations of credit risk and the carrying amounts of cash and cash equivalents, receivables and derivative assets in the balance sheet represent the Group's maximum exposure to credit risk at balance date.	C1	**Wholesale electricity sales** The Group purchases wholesale electricity for its retail customer base, therefore the credit risk is limited to the net amount receivable after deducting purchases. Market participants are required to provide financial collateral to the market-clearing agent (NZX Limited), which would be called upon should any market participant default.
	C1	**Retail electricity sales, gas, LPG and oil sales** The Group minimises its exposure to credit risk by applying credit limits, obtaining collateral where appropriate and applying credit-management practices, such as monitoring the size and nature of exposures and mitigating the risk deemed to be above acceptable levels. The credit risk is mitigated by the Group's large customer base and the diverse range of industries customers operate in.
	BS, F1	**Cash and cash equivalents and derivative contracts** Credit risk is managed by using high-credit quality financial institutions and other organisations. The Group's exposure and the credit ratings of its counterparties are continuously monitored to ensure the risk is spread among approved counterparties.

F1. Derivatives

	2023 $ million	2022 $ million
Electricity swaps and options and PPAs	108.0	(4.1)
Oil price swaps	2.7	(11.6)
Interest rate swaps	34.4	34.3
CCIRS	36.1	40.6
Foreign exchange contracts	0.1	(0.3)
Other derivatives	2.5	2.9
Total	183.8	61.8
Current assets	81.1	122.7
Non-current assets	228.2	148.5
Current liabilities	(64.7)	(144.1)
Non-current liabilities	(60.8)	(65.3)
Total	183.8	61.8

Derivatives

Derivatives are initially recognised at fair value on the date the contract is entered into and subsequently remeasured to fair value. The gain or loss on remeasurement is recognised in the income statement, unless the derivative is designated into an effective hedge relationship as a hedging instrument, in which case the timing of recognition in the income statement depends on the nature of the designated hedge relationship. The Group may designate derivatives as either cash flow hedges or fair value hedges.

For cash flow hedges the derivative is used to manage the variability in cash flows relating to recognised liabilities or highly probable forecast transactions.

The effective portion of changes in the fair value of cash flow hedges are recognised in other comprehensive income and accumulate in the cash flow hedge reserve. The ineffective portion of changes in the fair value of cash flow hedges is recognised immediately in the income statement in the change in fair value of financial instruments line.

Amounts accumulated in other comprehensive income are reclassified to the income statement in the period when the hedged item is recognised in the income statement. However, when the forecast transaction that is hedged results in the recognition of a non-financial asset (for example, inventory) or liability, the gains and losses previously deferred in the cash flow hedge reserve are reclassified from the cash flow hedge reserve and included in the initial measurement of the cost of the asset or liability.

Once hedge accounting is discontinued the cumulative gain or loss remains in the cash flow hedge reserve and is reclassified to the income statement either when the transaction occurs or if the forecast transaction is no longer expected to occur, it is reclassified immediately.

For fair value hedges the derivative is used to manage the variability in the fair value of recognised assets and liabilities.

Changes in the fair value of derivatives that are designated and qualify as fair value hedges are recorded in the income statement, together with any changes in the fair value of the hedged asset or liability that are attributable to the hedged risk.

Once hedge accounting is discontinued the fair value adjustments to the carrying amount of the hedged item arising from the hedged risk is amortised to the income statement from that date through to maturity of the hedged item.

Hedge accounting is discontinued when the hedge instrument expires or is sold, terminated, exercised or no longer qualifies for hedge accounting.

The Group's policy is to designate derivatives in hedge relationships on inception when their fair value is zero, applying a hedge ratio of 1:1. The Group determines the existence of an economic relationship between the hedging instrument and the hedged item based on the amount and timing of their respective cash flows, reference rates, pricing dates, maturities, and notional amounts. The Group assesses whether the derivative designated in each hedging relationship is expected to be, and has been effective in, offsetting the changes in cash flows of the hedged item.

Derivatives that do not qualify for hedge accounting

This category includes derivatives that economically hedge financial risks but have not been designated in hedge relationships for accounting purposes. In these cases changes in the fair value are recognised immediately in the income statement within the change in fair value of financial instruments line (refer to note F5).

Certain electricity derivatives, electricity future contracts and PPAs cannot be hedge accounted under NZ IFRS 9. These are principally: swap and option contracts that provide dry year cover for counterparties; electricity futures offered to the market to enable other counterparties to hedge their electricity risks ('market making'); derivatives held for proprietary trading activities where trades are entered into speculatively for the purpose of making profits in their own right ('proprietary trading'); and PPAs with renewable energy suppliers. The variable nature of renewable energy makes it difficult to demonstrate that the PPA is highly effective as required by NZ IFRS 9, despite the fact the PPA is an effective economic hedge.

Forward purchase and forward sale agreements for emission units are entered into for both 'own use' and 'held for trading'. Agreements to purchase emission units for the Group's own use are not recognised in the financial statements until the units are delivered. Forward purchase and forward sale agreements held for trading do not meet the 'own use' exemption and are accounted for as derivatives. These contracts are measured at fair value and any gain or loss on remeasurement is recognised immediately in the income statement.

The effects of the Group's application of hedge accounting in respect of derivatives used to manage financial risks are shown in notes F2 to F5.

F2. Price risk

Hedge accounted derivatives

	Electricity swaps		Oil price swaps	
	2023 $ million	2022 $ million	2023 $ million	2022 $ million
Nominal amount at balance date	**602.4**	718.2	**USD 18.3**	USD 29.2
Carrying value of asset at balance date	**41.3**	63.4	**3.0**	0.7
Carrying value of liability at balance date	**(45.5)**	(125.6)	**(0.3)**	(9.2)
Recognised in other comprehensive income during the year	**86.5**	(49.5)	**20.7**	(1.7)
Reclassified to the income statement during the year	**(28.5)**	37.9	**(9.6)**	(3.6)

Electricity swaps are entered into to manage the variability of cash flows from electricity purchases and sales. Oil and coal price swaps are entered into to manage the variability of cash flows from oil sales and coal purchases. Cash flow hedge accounting is applied.

The Group does not hold any coal price swaps at 30 June 2023 (2022: nil).

	Coal price swaps	
	2023 $ million	2022 $ million
Recognised in other comprehensive income during the year	**-**	(2.2)
Reclassified to the income statement during the year	**-**	0.8

Realised gains and losses reclassified to the income statement during the year on electricity swaps are recognised in electricity revenue where they are hedge accounted and realised gains and losses on oil price swaps are recognised in oil revenue where hedge accounted. Realised gains and losses on coal price swaps are recognised in inventory where they are hedge accounted and other gains and losses where hedge accounting is not applied.

The main source of ineffectiveness for electricity swaps relates to the difference between the market price and the strike price at inception of the contracts. For oil and coal price swaps ineffectiveness arises primarily due to discounts on oil sales and coal purchases (the hedged item) that are not present in the hedging instrument.

Non-hedge accounted derivatives

Carrying value of asset (liability) at balance date	2023 $ million	2022 $ million
Electricity swaps and options and PPAs	**106.8**	57.1
Electricity future options	**(1.1)**	-
Held for market making and proprietary trading	**6.5**	1.0
Oil price swaps	**-**	(3.1)

The nominal value at balance date of non-hedge accounted electricity swaps and options and PPAs was $2,041.8 million, coal price swaps was nil and oil price swaps was nil (2022: $1,929.7 million, nil and USD8.7 million respectively).

F3. Interest rate risk

	Cash flow hedge (receive float, pay fixed)		Fair value hedge (receive fixed, pay float)	
	2023 $ million	2022 $ million	2023 $ million	2022 $ million
Nominal amount at balance date	**525.0**	525.0	**815.0**	575.0
Carrying value of asset at balance date	**48.8**	42.9	**-**	-
Carrying value of liability at balance date	**-**	(1.8)	**(14.4)**	(6.8)
Recognised in other comprehensive income during the year	**9.3**	57.9	**N/A**	N/A
Reclassified to the income statement during the year	**(1.5)**	2.0	**N/A**	N/A
Maturity	**0-8 years**	1-9 years	**0-5 years**	1-6 years
Weighted average rate	**3.0%**	3.0%	**3.7%**	3.3%

Interest rate swaps are entered into to manage interest rate risk on borrowings.

Realised gains and losses on interest rate swaps designated as cash flow hedges reclassified to the income statement are recognised in finance expenses.

The fair value hedge adjustment is recognised in finance expenses in the income statement.

F4. Foreign exchange risk

	CCIRS (cash flow and fair value hedge)		Foreign exchange contracts (cash flow hedge)	
	2023 $ million	2022 $ million	2023 $ million	2022 $ million
Nominal amount at balance date	**193.2**	193.2	**(11.6)**	22.5
Carrying value of asset at balance date	**36.1**	40.6	**2.2**	2.4
Carrying value of liability at balance date	**-**	-	**(2.1)**	(2.7)
Recognised in other comprehensive income during the year	**7.8**	23.7	**1.5**	(12.2)
Reclassified to the income statement during the year	**(7.1)**	(22.2)	**(1.3)**	8.9
Reclassified to the cost of assets	**-**	-	**0.4**	(1.9)

The Group enters into foreign exchange contracts to hedge highly probable forecast transactions denominated in foreign currencies. Cash flow hedge accounting is applied. The amount and maturity of the derivative and forecast transactions are aligned to ensure the hedge relationship remains effective.

The Group uses CCIRS to manage foreign exchange risk on the USPP. All interest and principal repayments are hedged. The combination of the foreign-denominated debt and CCIRS results in a net exposure to New Zealand dollar floating interest rates and a fixed New Zealand dollar-denominated principal repayment.

The principal, basis and margin components of the CCIRS are designated as a cash flow hedge and the benchmark component of the CCIRS is designated as a fair value hedge of the USPP notes. The change in fair value relating to the foreign currency basis spread component of the CCIRS is excluded from the hedge relationship. The change is recognised in other comprehensive income in a separate Cost of Hedging Reserve.

Realised gains and losses on foreign exchange contracts reclassified to the income statement are recognised in operating expenses and oil revenue. Realised gains and losses reclassified to the income statement on CCIRS are recognised in finance expenses.

F5. Impact of derivatives on the income statement and equity

The tables below provide a breakdown of the change in fair value of financial instruments recognised in the income statement and a reconciliation of movements in the cash flow hedge reserve.

Change in fair value of financial instruments	2023 $ million	2022^ $ million
CCIRS	**(9.9)**	(22.4)
Interest rate swaps	**(7.6)**	(15.6)
Fair value interest rate risk adjustment on borrowings	**17.3**	38.3
Fair value hedges – gain (loss)	**(0.2)**	0.3
Electricity swaps and options and PPAs	**63.7**	134.9
Other derivatives	**2.0**	(4.0)
Derivatives not designated as hedges – gain (loss)	**65.7**	130.9
Total change in fair value of financial instruments	**65.5**	131.2

^ Certain comparatives have been restated to conform to current year presentation

The change in fair value of electricity swaps and options and PPA derivatives noted above includes an unrealised net gain of $5.5 million (2022: $13.7 million net gain) in relation to derivatives held for market making and proprietary gain.

Reconciliation of movements in the cash flow hedge reserve	2023 $ million	2022 $ million
Opening balance	**(23.0)**	(50.3)
Total reclassified from the cash flow hedge reserve to the income statement	**(48.0)**	23.8
Effective gain (loss) on cash flow hedges recognised directly in the cash flow hedge reserve	**125.8**	16.0
Total recognised in other comprehensive income	**77.8**	39.8
Total reclassified from the cash flow hedge reserve to the cost of assets	**0.4**	(1.9)
Income tax on change in cash flow hedge reserve	**(21.9)**	(10.6)
Closing balance	**33.3**	(23.0)

The amount accumulated in the cost of hedging reserve at 30 June 2023 was $1.5 million (2022: $1.3 million).

F6. Sensitivity analysis for each type of market risk

The table below represents the effect on the income statement and the cash flow hedge reserve at balance date if various market rates had been higher or lower with all other variables held constant. A positive number in the table below represents an increase in profit or the cash flow hedge reserve.

	Post-tax impact on the income statement		Post-tax impact on cash flow hedge reserve (equity)	
	2023 $ million	2022 $ million	2023 $ million	2022 $ million
Electricity prices				
+10%	**63.3**	63.0	**(4.8)**	(12.9)
-10%	**(57.9)**	(55.7)	**4.8**	12.9
Oil prices				
+10%	**(0.2)**	(0.2)	**(1.7)**	(3.7)
-10%	**0.1**	0.1	**1.8**	3.7
Foreign exchange rates				
+10% (NZD appreciation)	**-**	-	**(0.8)**	1.4
-10% (NZD depreciation)	**-**	-	**1.0**	(1.7)
Interest rates				
+100 bps	**0.7**	0.8	**11.3**	14.2
-100 bps	**(0.7)**	(0.8)	**(12.0)**	(15.2)

F7. Liquidity risk

The following table details the Group's liquidity analysis for its financial liabilities and derivatives. Where the amount payable or receivable is not fixed, the amount disclosed has been determined by reference to the internally generated forward price curves existing at balance date. As the amounts included in the table are contractual undiscounted cash flows, these amounts will not reconcile to the amounts disclosed in the balance sheet.

As at 30 June 2023	Less than 1 year $ million	1 to 2 years $ million	2 to 5 years $ million	More than 5 years $ million	Total contractual cash flows $ million
Trade and other payables	(204.3)	(3.6)	(5.1)	-	(213.0)
Borrowings (excluding lease liability)	(467.3)	(139.0)	(459.1)	(844.7)	(1,910.1)
Lease liability	(13.5)	(12.9)	(39.1)	(83.6)	(149.1)
Total non-derivative financial liabilities	**(685.1)**	**(155.5)**	**(503.3)**	**(928.3)**	**(2,272.2)**
Inflows	89.9	31.6	266.2	-	387.7
Outflows	(95.5)	(35.7)	(216.3)	-	(347.5)
Gross-settled derivatives	**(5.6)**	**(4.1)**	**49.9**	**-**	**40.2**
Net-settled derivatives	**30.7**	**41.2**	**96.9**	**139.3**	**308.1**
Total non-derivative financial liabilities and derivatives	**(660.0)**	**(118.4)**	**(356.5)**	**(789.0)**	**(1,923.9)**

As at 30 June 2022	Less than 1 year $ million	1 to 2 years $ million	2 to 5 years $ million	More than 5 years $ million	Total contractual cash flows $ million
Trade and other payables	(195.5)	(4.9)	(7.7)	-	(208.1)
Borrowings (excluding lease liability)	(340.4)	(83.6)	(486.3)	(1,473.0)	(2,383.3)
Lease liability	(11.1)	(10.0)	(28.4)	(63.3)	(112.8)
Total non-derivative financial liabilities	**(547.0)**	**(98.5)**	**(522.4)**	**(1,536.3)**	**(2,704.2)**
Inflows	52.2	35.7	273.1	-	361.0
Outflows	(52.6)	(39.7)	(229.9)	-	(322.2)
Gross-settled derivatives	(0.4)	(4.0)	43.2	-	38.8
Net-settled derivatives	(16.0)	3.0	44.8	43.6	75.4
Total non-derivative financial liabilities and derivatives	**(563.4)**	**(99.5)**	**(434.4)**	**(1,492.7)**	**(2,590.0)**

F8. Fair value measurement

Fair value hierarchy

Generation assets disclosed in note B1, emission units held for trading disclosed in note C2 and derivatives disclosed in note F1 are the only assets and liabilities carried at fair value in the balance sheet. While borrowings are initially recognised at fair value, net of transaction costs, they are subsequently measured at amortised cost in the balance sheet. The fair value of borrowings is required to be disclosed (refer to note E5). The nature of the inputs into the fair value calculation determines the level applied in the fair value hierarchy. Each level is outlined below:

Level one – the fair value is determined using unadjusted quoted prices from an active market for identical assets and liabilities. A market is regarded as active if quoted prices are readily and regularly available from an exchange, a dealer, a broker, an industry group, a pricing service or a regulatory agency and those prices represent actual and regularly occurring market transactions on an arm's length basis.

Level two – the fair value is derived from inputs other than quoted prices included within level one that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices). Financial instruments in this level include interest rate swaps, foreign exchange contracts, oil and coal price swaps, CCIRS and electricity derivatives valued using the ASX forward price curve.

Level three – the fair value is derived from inputs that are not based on observable market data. Financial instruments included in this level are electricity derivatives and PPAs valued using the wholesale electricity price path.

The Group's policy is to recognise transfers into and out of fair value hierarchy levels at the date the change in circumstances occurred. Refer to the reconciliation of level three electricity swaps and options and PPAs table for transfers between levels.

All derivatives disclosed in F1 other than electricity swaps and options and PPAs are considered level two. The $108.0 million electricity swap and option and PPAs net asset comprises a $12.2 million asset classified as level two and a $95.8 million asset classified as level three (2022: $2.2 million asset and $6.3 million liability respectively).

Valuation of level two derivatives

The fair values of level two derivatives are determined using discounted cash flow models. The key inputs in the valuation models were:

Item	Valuation input
Interest rate swaps	Forward interest rate price curve
Foreign exchange contracts	Forward foreign exchange rate curves
Oil price swaps	Forward oil price and foreign exchange rate curves
Electricity swaps and options	ASX forward price curve
CCIRS	Forward interest rate price curve and foreign exchange rate curves
Coal price swaps	Forward coal price curve

Valuation of level three derivatives

Valuation process

The team that carries out the valuations reports directly to the Chief Financial Officer. The results and key drivers of changes in the valuations are reviewed at least six monthly for generation assets and monthly for derivatives. The Chief Financial Officer reports key changes in fair value to the Board. Any changes to the valuation methodology are reported to the Audit and Risk Committee.

Valuation of electricity swaps and options and PPAs

The valuation is based on a discounted cash flow model. The key inputs and assumptions are: the callable volumes, strike price and option fees outlined in the agreement, the wholesale electricity price path ('price path'), the probability of the underlying plant construction proceeding, the most likely operations commencement date, 'day one' gains and losses and the discount rate. The options are deemed to be called when the price path is higher than the strike prices after taking into account obligations relating to the specific terms of each contract. The price path is the significant unobservable input in the valuation model. Refer to B1 for information in relation to the method and judgements used to determine the price path.

	2023	2022
Price path (nominal)	$122 per MWh to $162 per MWh over the period from 1 July 2023 to 31 August 2045.	$98 per MWh to $191 per MWh over the period from 1 July 2022 to 28 February 2045.
Impact of increase/ decrease in price path on fair value	A 10% increase would increase the asset by $93.3 million. A 10% decrease would decrease the asset by $85.8 million.	A 10% increase would decrease the liability by $67.5 million. A 10% decrease would increase the liability by $57.4 million.
Discount rate	6.0% - 8.44%	2.8% - 8.45%

F8. Fair value measurement (continued)

Reconciliation of level three electricity swaps and options and PPAs	2023 $ million	2022^ $ million
Balance as at 1 July	**(6.3)**	(129.1)
Electricity revenue	**25.1**	58.6
Change in fair value of financial instruments	**61.6**	126.4
Total gain (loss) in the income statement	**86.7**	185.0
Total gain (loss) recognised in other comprehensive income	**58.0**	(49.5)
Settlements	**(25.1)**	13.5
Sales	**(17.5)**	(26.2)
Balance as at 30 June	**95.8**	(6.3)

^ Certain comparatives have been restated to conform to current year presentation

The change in fair value of financial instruments includes an unrealised net gain of $42.0 million (2022: $136.2 million gain) that is attributable to financial instruments held at 30 June 2023.

Deferred 'day one' gains (losses)

There is a presumption that when derivative contracts are entered into on an arm's length basis, and no payment is received or paid on day one, the fair value at inception would be nil. The contract price of non-exchange traded electricity derivative contracts and PPAs are agreed on a bilateral basis, the pricing for which may differ from the prevailing derived market price for a variety of reasons. In these circumstances an adjustment is made to bring the initial fair value of the contract to zero at inception. The adjustment is called a 'day one' gain (loss) and it is deferred and amortised, based on expected volumes over the term of the contract. The following table details the movements and amounts of deferred 'day one' gains (losses) included in the fair value of level three electricity swaps and options and PPAs:

	2023 $ million	2022 $ million
Balance as at 1 July	**103.3**	100.7
New derivatives	**7.6**	24.4
Amortisation of existing derivatives	**(17.7)**	(21.8)
Balance as at 30 June	**93.2**	103.3

G. Other

G1. Share-based payments

During the year, the Group operated two share-based payment plans (Performance Share Rights Plan ('PSR') and Talent Retention Plan ('TRP')) to enable staff to share in the ownership of Genesis.

The cost of the plans is recognised over the period in which the performance and/or service conditions are fulfilled. The total amount expensed is based on the Group's best estimate of the number of equity instruments that will ultimately vest, taking into consideration the likelihood that service conditions will be met, multiplied by the initial fair value of each share.

	Note	2023 $ million	2022 $ million
PSR	G2	**0.5**	0.4
TRP		**0.6**	0.4
Total expense for the year		**1.1**	0.8

G2. Related party transactions

Majority shareholder and entities controlled by, and related to, the majority shareholder

The majority shareholder of Genesis is the Crown. The Group transacts with Crown-controlled and related entities independently for the following goods and services: royalties, emission obligations, scientific consultancy services, electricity transmission, postal services, rail services and energy-related products (including electricity derivatives).

During the year, the Crown received $95.5 million in dividends (2022: $93.6 million) of which $74.6 million was paid in cash (2022: $84.5 million) and $20.9 million was paid in shares (2022: $9.1 million). The Group is also subject to the Emission Trading Scheme (ETS) which requires the Group to acquire and surrender emission units either directly to the Crown or to third parties who ultimately remit the units to the Crown. Refer to notes A1 and C3 for information on the amount expensed and payable in relation to the ETS. There were no other individually significant transactions with the Crown (2022: nil).

The Group has five significant electricity swap and option contracts with Meridian Energy, a Crown-controlled entity. The electricity swap and option contracts profile and period vary between the range of 12.5MW and 150MW, from the period 1 January 2011 to 31 December 2025. Additionally, the Group has two significant power purchase agreements with Mercury NZ, a Crown-controlled entity. The agreements are for variable volumes based on the production of the related site, with the latest expiry date being August 2045.

Approximately 13.1 per cent of the value of electricity derivative assets and approximately 12.4 per cent of the value of electricity derivative liabilities at year end are held with Crown-controlled and related entities (2022: 25.7 per cent and 38.2 per cent respectively). The contracts expire at various times; the latest expiry date is August 2045.

G2. Related party transactions (continued)

Key management personnel compensation

Key management personnel of the Group consists of the Directors and the Executive Management team.

	Note	2023 $ million	2022 $ million
Short-term benefits		**8.5**	8.1
Post-employment benefits		**0.3**	0.3
Share-based payments (LTI and PSR)	G1	**0.5**	0.4
Total key management personnel compensation		**9.3**	8.8

Included in short-term benefits are directors' fees of $0.9 million (2022: $0.9 million).

PSR

The PSR plan commenced in the 2020 financial year. Under the PSR senior executives are granted performance share rights. Vesting of the rights is dependent on continued employment throughout the vesting period and achievement of certain performance targets (a relative TSR hurdle compared against industry peers, an absolute TSR hurdle compared against the cost of equity and for FY23 onwards performance against the Groups science based targets). Each performance share right that vests entitles the participant to one ordinary share in Genesis for no consideration and 'dividend equivalents' that would have been earned on the share over the vesting period. No share rights will vest if the performance targets are not met or if the participant ceases to be employed by the Group other than for qualifying reasons, unless the Board exercises its discretion to allow some or all of the shares to vest.

Grant date	Performance period
FY21	1 July 2020 - 30 June 2023
FY22	1 July 2021 - 30 June 2024
FY23	1 July 2022 - 30 June 2025

Other transactions with key management personnel or entities related to them

Key management personnel and their families may purchase gas, electricity and LPG from the Group and may purchase shares in Genesis. During the year, key management personnel also participated in the PSR plan discussed above. The total number of shares held by key management personnel as at 30 June 2023 was 200,163 (2022: 524,147). During the year, dividends paid to key management personnel and their families was $46,488 (2022: $203,908). No other transactions took place between key management personnel and the Group (2022: nil). As at 30 June 2023 there were no balances payable to key management personnel (2022: nil).

G3. Auditor's remuneration

Audit fees comprise $0.1 million for the review of the interim financial statements, $0.6 million for the audit of the annual financial statements (2022: $0.1 million and $0.6 million respectively, and an additional $0.1 million charged in 2022 in respect of the 2021 financial statement audit). In addition to the audit, Deloitte provided the following services during the year: provision of non-assurance services for the Corporate Taxpayer Group (of which Genesis is a member), trustee reporting, future CFOs training programme and sustainability training (2022: provision of non-assurance services for the Corporate Taxpayer Group (of which Genesis is a member), trustee reporting and financial modelling training). Total fees relating to other services was $0.03 million (2022: $0.036 million).

G4. Capital commitments

	2023 $ million	2022 $ million
Less than one year	**27.2**	11.1
One to five years	**6.4**	11.0
Total	**33.6**	22.1

The Group's share of capital commitments in relation to Kupe Joint Venture was $7.8 million, Solar Joint Venture was $1.9 million, DrylandCarbon One Limited Partnership was nil and Forest Partners Limited Partnership was $9.2 million as at 30 June 2023 (2022: $0.7 million, nil, $3.0 million and nil respectively).

G5. Contingent assets and liabilities

The Group had contingent liabilities at 30 June 2023 in respect of:

Land claims, law suits and other claims

Genesis acquired interests in land and leases from Electricity Corporation of New Zealand Limited ('ECNZ') on 1 April 1999. These interests in land and leases may be subject to resumption claims to the Waitangi Tribunal and in certain cases may be subject to binding orders by the Waitangi Tribunal that the Crown resumes the land for the purposes of addressing a well-founded Treaty of Waitangi claim. Genesis notes that it would not have any standing to be heard in any Waitangi Tribunal hearing nor does the Tribunal have to have regard to any changes to improvements that have taken place since the transfer to ECNZ. Should the Waitangi Tribunal make an order for resumption Genesis would expect to negotiate with the new Māori owners for occupancy and usage rights of any sites resumed by the Crown. Certain claims have been brought to, or are pending against, ECNZ and the Crown under the Treaty of Waitangi Act 1975. Some of these claims may affect land and leases purchased from ECNZ. In the event that land is resumed by the Crown, the resumption would be effected by the Crown under the Public Works Act 1981 and compensation would be payable. The Board cannot reasonably estimate the adverse effect (if any) of the claims and cannot provide any assurance that should a claim be raised it would not have a material adverse effect on the Group's business, financial condition or results of operations.

There are no other known material contingent assets or liabilities (2022: nil).

G6. Subsequent events

The following events occurred subsequent to balance date:

- $93.7 million of dividends were declared on 23 August 2023 (refer to note E4)
- In July, the Group redeemed its $240.0 million capital bond and issued a new $240.0 million green capital bond at a fixed rate of 6.50% which expires in July 2053.

Deloitte.

Independent auditor's report

Te Pūrongo A Te Kaitātari Kaute Motuhake

To The Shareholders Of Genesis Energy Limited

Auditor General

The Auditor-General is the auditor of Genesis Energy Limited and its subsidiaries ('the Group'). The Auditor-General has appointed me, Bryce Henderson, using the staff and resources of Deloitte Limited, to carry out the audit of the consolidated financial statements of the Group on his behalf.

Opinion

We have audited the consolidated financial statements of the Group on pages 69 to 103 that comprise the consolidated balance sheet as at 30 June 2023, the consolidated comprehensive income statement, consolidated statement of changes in equity and consolidated cash flow statement for the year ended on that date, and the notes to the consolidated financial statements that include accounting policies and other explanatory information.

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at 30 June 2023, and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with New Zealand Equivalents to International Financial Reporting Standards and International Financial Reporting Standards.

Basis for opinion

We conducted our audit in accordance with the Auditor-General's Auditing Standards, which incorporate the Professional and Ethical Standards and the International Standards on Auditing (New Zealand) issued by the New Zealand Auditing and Assurance Standards Board. Our responsibilities under those standards are further described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of our report. We are independent of the Group in accordance with the Auditor-General's Auditing Standards, which incorporate Professional and Ethical Standard 1: *International Code of Ethics for Assurance Practitioners (including International Independence Standards) (New Zealand)* issued by the New Zealand Auditing and Assurance Standards Board, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

In addition to the audit we have carried out assurance assignments in the areas of trustee reporting and review of the interim report, and non-assurance services to the Corporate Taxpayer Group, sustainability and future CFO training programmes which are compatible with those independence requirements. These services have not impaired our independence as auditor of the Group.

In addition to these assignments, principals and employees of our firm deal with the Group on normal terms within the ordinary course of trading activities of the Group. Other than the audit and these assignments and trading activities, we have no relationship with, or interests in the Group.

Audit Materiality

We consider materiality primarily in terms of the magnitude of misstatement in the consolidated financial statements of the Group, that in our judgement would make it probable that the economic decisions of a reasonably knowledgeable person would be changed or influenced (the 'quantitative' materiality). In addition, we also assess whether other matters that come to our attention during the audit would in our judgement change or influence the decisions of such a person (the 'qualitative' materiality). We use materiality both in planning the scope of our audit work and in evaluating the results of our work.

We determined the quantitative materiality for the consolidated financial statements as a whole to be $17.5 million.

Key Audit Matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters	How our audit addressed the key audit matters and results
Valuation of Generation Assets Generation assets are measured at fair value as set out in note B1 of the consolidated financial statements. The carrying amount at 30 June 2023 is $3,323.6 million. The fair value of generation assets is estimated using an internally generated discounted cash flow model. The significant inputs used to assess the fair value of the generation assets are the wholesale electricity price path, generation volumes, and the discount rate. The wholesale electricity price path is estimated by Genesis Energy as described in note B1 of the consolidated financial statements and reflects uncertainty surrounding Tiwai Point smelter and the impact this could have on future prices. The valuation also reflects demand assumptions which include that arising from climate change. The estimate of the wholesale electricity price path is the most significant input in estimating the fair values determined for the generation assets and affects the estimated generation volumes which are also used in the fair value calculation. Changes to the forecast of the wholesale electricity price path could significantly change the estimated fair value of the generation assets. The treatment of the loss on revaluation estimated by Genesis Energy is described in note B1 of the consolidated financial statements. We included the valuation of generation assets as a key audit matter due to the level of judgement required in forecasting the wholesale electricity price path.	Our audit procedures included assessing the key inputs to the model used to estimate the fair value of the generation assets. Our procedures, which included the use of our internal valuation experts, were primarily focused on evaluating the process undertaken by Genesis Energy in forecasting the wholesale electricity price path and challenging whether the forecast was consistent with internal and external data. We assessed the professional competence of the Genesis Energy valuers involved in the forecasting of the electricity price path and valuation of the generation assets. We also compared budgeted performance information from prior periods to actual data to assess the accuracy of the forecasting process. We have evaluated Genesis Energy's methodology in constructing the forward electricity price path including the aggregation of internal and independent third-party data. We also evaluated the assumptions used in forecasting the electricity price path to determine whether they were consistent with assumptions used across the business, including management budgets and valuations of other assets including certain electricity derivatives. We have also considered other key assumptions used within the valuation, as described in note B1 of the consolidated financial statements. We performed sensitivity analysis on the key assumptions applied in determining the fair value of the generation assets and considered the adequacy of the Group's disclosures. We have found the assumptions and resulting valuation to be reasonable.
Valuation of Electricity Derivatives The Group's activities expose it to a number of market risks, including electricity, oil and coal price risk, currency risk and interest rate risk, which are managed using derivative financial instruments. At 30 June 2023, derivative assets were $309.3 million and derivative liabilities were $125.5 million as set out in note F1 of the consolidated financial statements. Many of the Group's derivatives are valued using standard valuation techniques based primarily on observable inputs. However, some electricity swaps, options and Power Purchase Agreements are valued using inputs that are not based on observable market data, such as the wholesale electricity price path forecast which is prepared by Genesis Energy valuers. As explained in the 'Valuation of Generation Assets' section above, the wholesale electricity price path forecast requires significant judgement. Valuations that reflect significant unobservable inputs are considered to be 'level three' valuations as described in note F8 of the consolidated financial statements. At 30 June 2023, the Group had a net $95.8 million asset of electricity derivatives considered to be within level three. We included the valuation of level three electricity derivatives as a key audit matter due to the judgement involved in evaluating the inputs to the valuation models.	We tested the design and operating effectiveness of key controls related to the recording and valuation of the level three electricity derivative transactions. We challenged key assumptions applied by management and agreed underlying data to the contract terms on a sample basis. We have independently recalculated the fair value of a sample of electricity derivatives. Our internal valuation experts have evaluated the appropriateness of the methodology applied in valuation models for the level three electricity derivatives. We also performed audit work on the wholesale electricity price path as explained above under the section entitled 'Valuation of Generation Assets'. We have found the assumptions and resulting valuation to be reasonable.

Other Information

The Directors are responsible on behalf of the Group for the other information. The other information comprises the information included in the Integrated Report, but does not include the consolidated financial statements and our auditor's report thereon.

Our opinion on the consolidated financial statements does not cover the other information and we do not express any form of audit opinion or assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Directors' responsibilities for the consolidated financial statements

The Directors are responsible on behalf of the Group for the preparation and fair presentation of the consolidated financial statements in accordance with New Zealand equivalents to International Financial Reporting Standards and International Financial Reporting Standards, and for such internal control as the Directors determine is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, the Directors are responsible on behalf of the Group for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Directors either intend to liquidate the Group or to cease operations, or have no realistic alternative but to do so.

The Directors' responsibilities arise from the Financial Markets Conduct Act 2013.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Auditor-General's Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of shareholders taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the Auditor-General's Auditing Standards, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of the use of the going concern basis of accounting by the directors and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the Directors regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the Directors with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the Directors, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

Our responsibilities arise from the Public Audit Act 2001.

Bryce Henderson
Deloitte Limited
On behalf of the Auditor-General
Auckland, New Zealand
23 August 2023

Corporate governance

Corporate governance information

This section of the Annual Report provides information on Directors' independence, committees, fees and diversity and inclusion, Executive remuneration and other activities.

Genesis' governance framework is guided by the principles and recommendations described in the NZX Corporate Governance Code. Genesis considers it has followed these recommendations in all material respects during FY23 and as at 30 June 2023[1]. Genesis has reported in detail against the NZX Corporate Governance Code in its separately published Corporate Governance Statement, which, together with other detailed information on Genesis' Board of Directors, Executive Team and corporate governance policies (including those in the table on this page), practices and processes, can be viewed on the Genesis Governance section on the Genesis website (www.genesisenergy.co.nz/investor/corporate-governance).

Director independence

Details of the current directors are set out on page 56. The Board has assessed the independence of each of the Directors in accordance with the NZX Listing Rules and has concluded that none of the Directors has a 'disqualifying relationship' as that term is defined in the NZX Listing Rules. All of the Directors are therefore currently considered to be independent Directors as none of them are executives of the Company or have any direct or indirect interests or relationships that could reasonably influence, or could reasonably be perceived to influence, in a material way, their decisions in relation to the Company. See the Corporate Governance Statement for more detail on Director independence.

Diversity and Inclusion Policy and gender composition

Genesis' Diversity and Inclusion Policy records the Company's commitment to an inclusive workplace that embraces and promotes diversity through a number of initiatives, including a focus on equal opportunity. Genesis has sought to establish measurable objectives for achieving diversity, including gender diversity, as part of its annual assessment of its diversity objectives for FY23. During FY22 the Company was awarded the "Rainbow Tick" accreditation.

The Board is comfortable with the Company's FY23 performance with respect to its Diversity and Inclusion Policy and objectives.

In accordance with NZX Listing Rule 3.8.1 (c), as at 30 June 2023:

- Three out of seven Genesis Directors were women (FY22: three out of seven).
- Four out of eight officers[2] were women (FY22: four out of eight).

Board Skillsets

During the year, the Board refreshed Genesis' skills matrix, which sets out the skills necessary for the Company's success, and assessed the skills held by the Directors against the required skills. The skills matrix, which is set out on the following page, shows a good spread of expertise and secondary skills among Directors. All Directors held at least a basic level of expertise in relation to all of the required skillsets.

Corporate governance documentation

- Genesis' Constitution
- Board Charter
- Audit and Risk Committee Charter
- Human Resources and Remuneration Committee Charter
- Nominations Committee Charter
- Corporate Governance Statement
- Code of Conduct
- Diversity and Inclusion Policy
- Trading in Company Securities Policy
- Market Disclosure Policy
- Audit Independence Policy
- Investor Communication Policy
- Supplier Code of Conduct
- Risk Management Statement
- Director Remuneration Policy
- Disclosure of Non GAAP Performance Measures Policy
- Information about Genesis' Ordinary Shares

1 During the year the Company has not complied with Recommendation 3.6 (takeover protocols) of the Code due to the Crown's share ownership in the Company making it practically impossible for a takeover offer to be made. The Company has also not previously published standalone remuneration policies for its Directors and Executives. See the Corporate Governance Statement for more detail.

2 The term 'Officer' is defined in the NZX Listing Rules as a person, however designated, who is concerned or takes part in the management of the public issuer's business and reports to the Board or to a person who reports to the Board. At Genesis our Officers are the Chief Executive and the Chief Executive's direct reports.

Genesis Director Skills Matrix

Strategic Focus	Director Expertise	Governance Capabilities
Business strategy and leadership experience		A proven record of developing and executing business strategy
Listed company governance experience		Experience in listed company governance and driving and assessing the effectiveness of the executive
Regulated industry knowledge and experience		Electricity sector experience or experience in a similarly regulated industry
Government, stakeholder and iwi relationship experience		A proven record of successfully engaging and managing key external stakeholder relationships
Finance / Accounting / Audit Committee experience		Experience in financial accounting, reporting and internal financial controls
Corporate finance / capital markets / transactional / wholesale markets experience		Experience in corporate finance related transactions – such as capital raising and/or mergers and acquisitions
Large industry operational (capital) project management experience		Experience within the electricity sector or similar large scale industrial business
Health and safety, risk experience		Deep understanding of excellence in Health & Safety in strategic and operational context and applicable legislative framework
Sustainability experience		Deep understanding of sustainability in strategic and operational context
Customer insight, data, marketing and brand experience		Experience in consumer retail and execution of marketing and brand strategies to deliver growth
Technology / innovation / digitalisation and data experience		Detailed understanding of the role of technology and innovation in delivering a superior customer experience
People / culture / reputation management		Deep understanding of the strategic importance of people, values, behaviours and management style as drivers of organisational culture and reputation

 Primary  Secondary

Board and committee meetings and attendances

Director[1]	Appointed	Board Meetings[2]	Audit and Risk Committee[3]	Human Resources and Remuneration Committee[3]	Nominations Committee[3]
Total Meetings held		**11**	**4**	**4**	**1**
Barbara Chapman (Chairman)	1 May 2018	**11**	-	3	1
Catherine Drayton	14 Mar 2019	**11**	4	-	-
Warwick Hunt[4]	22 Sep 2022	**8**	3	-	-
Tim Miles	21 Nov 2016	**11**	-	4	1
James Moulder	10 Oct 2018	**11**	4	-	-
Doug McKay[5]	24 June 2014	**5**	-	1	-
Paul Zealand	19 Oct 2016	**9**	-	2	-
Hinerangi Raumati-Tu'ua	7 March 2022	**11**	**4**	-	-

1. All Directors are independent Directors.
2. In addition, Directors participated in a number of stakeholder and investor meetings throughout FY23.
3. The above numbers do not include attendances at Committee meetings by non-member Directors. The Chairman is an ex-officio member of the Audit and Risk Committee and attends all meetings, and was appointed to the Human Resources and Remuneration Committee in December 2022.
4. Warwick Hunt was appointed to the Board on 22 September 2022.
5. Doug McKay retired from the Board on 30 September 2022.

Management commentary
(no financial statements)

Executive remuneration

This following Remuneration Report sets out Genesis Energy's approach to remuneration for the Chief Executive and the Executive Team and remuneration information for the year ending 30 June 2023.

Role of the Human Resources and Remuneration Committee

The Human Resources and Remuneration Committee assists the Board in the discharge of the Board's responsibilities and oversight relative to the Company's human resource's strategy and policy, the Company's Diversity and Inclusion Policy, and the remuneration and performance of the Company's Chief Executive and senior executives.

The Committee is authorised by the Board to obtain such outside information and advice including market surveys and reports, and to consult with such management and executive search consultants and other outside advisers with relevant experience and expertise, as it deems necessary for carrying out its responsibilities.

Remuneration Framework

Genesis' remuneration strategy aims to attract, motivate and retain talented employees at all levels of the Company and seeks to align the interests of its shareholders and employees, whilst driving performance and growth in shareholder value and return.

Genesis' remuneration policy for the Executive Team, including the Chief Executive, is designed to have them remunerated with competitive salaries, a wide range of benefits and use of performance incentives to achieve outstanding performance and alignment with our shareholders' interests. The Human Resources and Remuneration Committee regularly reviews the Company's remuneration policy.

For the Executive Team, the policy provides the opportunity to achieve, where performance has been outstanding, a total remuneration package in the upper quartile for equivalent market matched roles. Each year the Committee reviews and approves the performance and remuneration appraisals of the Executive Team, with the Board approving the Chief Executive's remuneration.

Employee remuneration is also discussed in the Company's Corporate Governance Statement which can be viewed at www.genesisenergy.co.nz/ investors/governance/documents.

Remuneration Elements

Total remuneration for the Executive Team is made up of fixed remuneration, short-term incentives, long-term incentives and in some instances, retention based incentives*. These elements are designed to balance attraction and retention, and motivate and reward the Executive Team for the achievement of key tactical and strategic outcomes together with shareholder value creation.

Remuneration Element	Element Structure	Role of the element
Fixed Remuneration:		
Base Salary and benefits including KiwiSaver, and insurances such as medical and life.	Set based on capability, behaviours, performance and industry benchmarks.	Key element to attract and retain key talent to deliver short term results and long term strategies.
Variable Remuneration – At Risk Remuneration		
Short Term Incentive		
Annual cash based short term incentive	STI is set annually as a percentage of the Executive's fixed remuneration to target the third quartile of the comparator group. In FY23 60% of the STI was linked to Company Performance targets and 40% was linked to Individual performance targets. In FY24, 80% will be linked to Company Performance targets and 20% linked to Individual performance targets.	A pay for performance component designed to attract and retain high calibre executives and motivate and reward performance in a single financial year using a combination of Company and individual performance measures linked to core strategic and tactical priorities.
Long Term Incentive		
Performance share rights Long Term Incentive scheme with a three-year vesting period	LTI is set annually as a percentage of the Executive's fixed remuneration to target the third quartile of the comparator group. Rights vest after three years, subject to meeting the performance hurdles set at the time of grant.	A pay for performance component designed to attract and retain high calibre executives and to align remuneration outcomes with shareholder value over a three-year period.

* Retention based incentives may be provided to selected executives in the form of share rights that vest two and three years from grant date.

Remuneration Review The Chief Executive recommends performance outcomes and changes to the Executive Team's remuneration. The Committee reviews and approves the performance and remuneration appraisals of the Executive Team, with the Board approving the Chief Executive's remuneration.

Fixed remuneration consists of base salary and benefits. For the Executive Team, Fixed remuneration is targeted to be in the third quartile of the market benchmarked to a comparator group of companies with a comparable scale of revenues and market capitalisation value to Genesis. The comparator group companies are broadly evenly weighted between larger and smaller companies relative to Genesis Energy. The Human Resources and Remuneration Committee reviews the comparator group from time to time and external benchmarking is commissioned by the Committee to be carried out independently by PricewaterhouseCoopers.

Short Term incentives (STIs) are 'a pay for performance' component designed to motivate and reward individual and Company performance. The target value of an STI is set annually as a percentage of the Executive's fixed remuneration. For FY23 the targets for the Chief Executives were 50% for Marc England and 45% for Tracey Hickman and Malcolm Johns, and for other Executives was between 30 per cent and 45 per cent. The performance measures to achieve the STI are then set across Company KPIs for EBITDAF, Customer growth and/or satisfaction, Health and Safety, Sustainability, Strategic project delivery and individual KPIs. Within each measure, there are three performance levels, 'threshold', 'on target' and 'outstanding'. On appraisal at the end of each year an Executive will be awarded an STI payment for each objective based on their performance between a range of zero per cent for below threshold performance, to 150 per cent for outstanding performance.

FY23 STI Scorecard Structure

Safety Performance and Financial Performance: 40% of the Company KPIs are based on the achievement of financial performance and increasing health and safety outcomes across the business. This approach allows the Board to overlay subjective and objective measures of Health and Safety and Wellness outcomes against the objective financial performance. The weighting of 40% ensures the Executive Team's focus on these important outcomes.

Customer Performance: 20% of the Company KPIs are based on key customer outcomes. These will vary depending on the annual priorities of the business, but could include metrics such as Customer Satisfaction, Customer Growth and management of Customer Churn. For FY23, the focus was on residential electricity growth and residential EV customer growth to support our purpose of "building New Zealand's sustainable future" and to capitalise on the investment made in previous years to enable customer growth.

Build for the Future: 20% of the Company KPIs are focused on the achievement of initiatives that will drive future value for Genesis Energy. For FY23, this measure was focused on the replacement of our core retail technological platform.

Strategy and Sustainability: 20% of the Company KPIs are focused on the achievement of strategy and sustainability initiatives. In FY23, this was to develop an updated group strategy with an emphasis on sustainability and the longer-term carbon reduction plan beyond 2025.

Individual Objectives: Each Executive will also have individual objectives that make up 40% of the STI goals. These will be set by the Human Resources and Remuneration Committee for the Chief Executive and by the Chief Executive for all other Executives. Typically, each Executive will have three goals, a financial target, an operational target linked to a clear measurable end of year deliverable, and a strategic target linked to a new capability that we want to put into place to drive future year outcomes.

The Board retains some discretion over the final STI outcome.

Changes to the STI

The FY24 Scorecard structure has been revised to meet the key deliverables for the coming year. An updated long-term strategy was well advanced at the end of FY23, with implementation planned for FY24.

Safety Performance and Financial Performance: 40% of the Company KPIs will continue to be based on the achievement of financial performance and increasing health, safety and wellness outcomes across the business.

T***echnology:*** 20% of the Company KPIs will be based on the delivery of key technology plans to address legacy technology issues, including the replacement of our core retail technological platform.

Long term strategy on Decarbonisation: 40% of the Company KPIs will be focused on the development and agreement of long term strategies in four key pillars: Huntly strategy, Customer strategy, FutureGen pipeline, and Beyond FY25 Decarbonisation target.

Scorecard weighting used for FY24 will change for the Executive Team to foster a greater sense of unity and collaboration. From FY24, 80% will be linked to Company Performance targets and 20% linked to Individual performance targets.

The Long Term incentives (LTI) are also 'a pay for performance' component designed to align rewards for the Executive with shareholder value over a three year period. Only the Executive are eligible to participate in the LTI. Genesis Energy's LTI scheme was reviewed, and a new performance share rights plan established in FY20 to ensure Genesis Energy continues to attract, retain and motivate high calibre Executive members to drive outstanding outcomes for our customers and our shareholders.

Under the LTI plan, Executives are granted a number of share rights determined by dividing the gross value of the grant by the value of one Genesis share at the beginning of the vesting period. The Executive may also receive additional share rights representing the estimated value of dividends to be paid over the vesting period.

The vesting of share rights is subject to meeting performance hurdles (set at the time of grant), at which point each share right is converted to one ordinary share. The assessment of the performance hurdles occurs as soon as reasonably practicable following the assessment date – usually 30 June – and approval by the Board of the Company's financial statements relevant to the LTI plan. Any performance rights that do not vest on the assessment date will automatically lapse. The Executive is liable for tax on any shares received.

Under the LTI plan, grants are made annually with performance measured over a three-year period. The Board retains discretion over the final outcome.

In FY23, LTI grants were made to the Executive Team and the value of the grants was set at a percentage of fixed remuneration between a range of 25 per cent to 45 per cent.
The performance hurdles set for the FY23 grant are set out on the following page:

Absolute Total Shareholder Return (ATSR) cost of equity hurdle applying to 40% of Performance Rights		Relative Total Shareholder Return (RTSR) applying to 40% of Performance Rights		Sustainability hurdle applying to 20% of Performance Rights	
Genesis ATSR Performance	**% Performance Rights that vest**	**Genesis RTSR result**	**% Performance Rights that vest**	**Company Science Based Target**	**% Performance Rights that vest**
Equal to or below 8.5%	0%	Equal to or less than the lowest ranked Peer Companies	0%	Scope 1 and 2, or scope 3 greenhouse gas emission reduction targets not met	0%
Between 8.5% and 9.0%	1% to 49%	Between the lowest and the highest ranked Peer Companies	1% - 99%	Total scope 1 and 2 greenhouse gas emissions in FY25 must be at least 36% less than in FY20; and Total scope 3 greenhouse gas emissions in FY25 must be at least 21% less than in FY20	100%
Equal to 9.0%	50%	Equal to or above the highest ranked TSR of the Peer Companies	100%		
Between 9.0% and 9.5%	51% to 99%				
Equal to or greater than 9.5%	100%				

Total Remuneration earned by, or paid to the CEO for FY22 and FY23 is as follows

		Fixed Remuneration			Pay for Performance $			Total Remuneration
Period	**Chief Executive**	**Base Salary**	**Benefits**	**Subtotal**	**STI**	**LTI**	**Subtotal**	
FY23 (From March 2022)	Malcolm Johns	343,292	22,059	365,351	208,174		208,174	573,525
FY23 (October 2022 to March 2023)	Tracey Hickman	349,420	13,634	363,053	203,923		203,923	566,976
FY23 (July 2022 to October 2022)	Marc England	534,088	30,221	564,309	189,583	95,380	284,963	847,998
FY22	Marc England	1,346,170	89,441	1,435,611	889,850	-	889,850	2,325,461

The Base Salary is inclusive of holiday pay paid as per New Zealand legislation. Benefits are employer contributions towards KiwiSaver on the base salary, short term incentives (STI) and long term incentives (LTI). The LTI value reflects the number of rights that have vested from the FY21 issue (35,066 of 280,521) at the 10 day volume weighted average price at closing on the 30 June 2023 ($2.72).

Breakdown of Chief Executive Pay for Performance for FY23

Short Term Incentive Summary

Chief Executive	Target STI	Company / Individual Split	Company Percent Achieved	Individual Percent Achieved	Total Percent Achieved
Malcolm Johns	45%	60% based on Company shared KPIs 40% based on individual KPIs	128%	125%	127%
Tracey Hickman	45%		128%	130%	129%
Marc England	50%		100%	100%	100%

The above STI payments for FY23 were paid in FY24.

Long Term Incentive

Chief Executive	Grant date	Plan Summary	Performance Period	Performance measure	Company Percent Achieved	Individual Percent Achieved	Total Percent Achieved
Marc England	FY21	280,521 performance rights were granted under the` Long Term Incentive Plan set at 60% of fixed remuneration	1 July 2020 to 30 June 2023	50% relative TSR measured against the Peer Gentailer Group	25%	35,066	$ 95,380
				50% absolute TSR measured against Genesis Cost of Equity	0%	-	$-
Total					12.5%	35,066	$95,380

The following LTI Plan was granted to the CE in FY23, for vesting in FY25 (30 June 2025)

Grant Year	Chief Executive	Basis of Award	Face Value of award	Performance Period	Performance Measure
FY23	Malcolm Johns	45% of Fixed Remuneration (Base Salary + Benefits)	**$492,525 in the form of 245,601 ordinary shares**	July 2022 - June 2025	40% relative TSR measured against the Peer Gentailer Group 40% absolute TSR measured against Genesis Cost of Equity 20% based on achievement of the science based emission target

Chief Executive Short Term Incentive Outcome Detail

Company Outcomes

	Weighting	Outcome	Comment
Financial			
Deliver EBITDAF while improving safety and engagement.	40%	150%	Genesis achieved EBITDAF of $524 million against a plan of $457 million. Good progress has also been seen on Safety and Wellness culture and process improvement, and an independent culture review indicated that 85% of our employees feel positive about the culture at Genesis.
Customer			
Growth in residential electricity customer numbers (ICP Growth).	10%	125%	Genesis focused on growing its share of the Residential electricity market. This was achieved through a refreshed Frank brand and targeted customer acquisition combined with ongoing improvements in Power Shout loyalty program. This has delivered growth ahead of the market and achieved 125% of operating plan target.
Growth in Genesis residential EV customers (ICPs with EV Growth).	10%	116%	Genesis sees the EV market as a strategic growth opportunity in the electricity market which is critical to driving NZ's sustainable future. In FY23 we released a new EV energy plan and a market leading energy roaming product 'EVerwhere' which supported us in achieving 116% of our target growth.
Build for the Future			
Deliver material progress on Retail Digital Transformation.	20%	90%	Genesis is in the process of conducting a multi-year programme of work to modernise its key Customer platforms. A Strategic Partnership alliance has been established with vendors and a target integrated product suite identified to meet requirements. Work has progressed to support contractual negotiations, a business case and implementation.
Sustainability/ Strategy			
Develop a group strategy and recommend a plan to reduce carbon post 2025.	20%	130%	A short term strategy (operating plan) was delivered in June together with a process for updating long term strategy and long-term decarbonisation ambitions to be delivered in August.
Sub total	**100%**	**128%**	

Individual Performance Measures

Malcolm Johns	Weighting	Outcome	Comment
Completion of short term Operating Plan, identifying short term initiatives that might enhance EBITDAF from current BAU activity.	50%	125%	The FY24 Operating plan contains a number of earnings enhancement activities. These enhancements are included in the FY24-26 forward budgets.
Completion of the long-term strategy update for Genesis Energy that enhances culture, ESG and long-term shareholder outcomes.	50%	125%	Development of an updated long-term strategy was well advanced at year end.
Sub total		**125%**	
Total		**127%**	

Management commentary
(no financial statements)

Individual Performance Measures

Tracey Hickman	Weighting	Outcome	Comment
Progress on significant opportunities and strategic initiatives.	40%	125%	Significant progress on or completion of key and highest value or highest risk strategic initiatives with key milestones achieved and clear plans/strategies in place for handover to incoming CE.
Ensure smooth transition, robust onboarding and fast start for incoming Chief Executive.	20%	150%	The incoming CE was supported with key introductions, knowledge and information, a robust onboarding and induction programme and a fast and positive start at Genesis.
Executive Team well supported and led to ensure strong momentum continued.	20%	125%	Executive Team performed strongly, working together extremely well during the interim 6 months including through difficult events such as Auckland floods and Cyclone Gabrielle. A strong financial result was achieved, and together with the delivery of a number of important initiatives.
People and Culture Team supported and key initiatives progressed.	20%	125%	Supported the P&C team to maintain momentum and alignment with the Executive and Business and recruited and onboarded an experienced Interim CPO to help navigate some Executive and business challenges and support the incoming permanent CPO.
Sub total		**130%**	
Total		**129%**	

Marc England	Weighting	Outcome	Comment
Evidence of positive and constructive leadership including the ongoing development and stabilisation of Executive; good progress on the process to replace Chief of Human Resources and interim HR plans in place.	33%	100%	Significant progress on or completion of key and highest value or highest risk strategic initiatives with key milestones achieved and clear plans/strategies in place for handover to incoming CE.
Progress on significant opportunities and strategic initiatives.	33%	100%	
Continuation of good reputation management, messaging and engagement with key external stakeholders.	33%	100%	
Sub total		**100%**	
Total		**100%**	

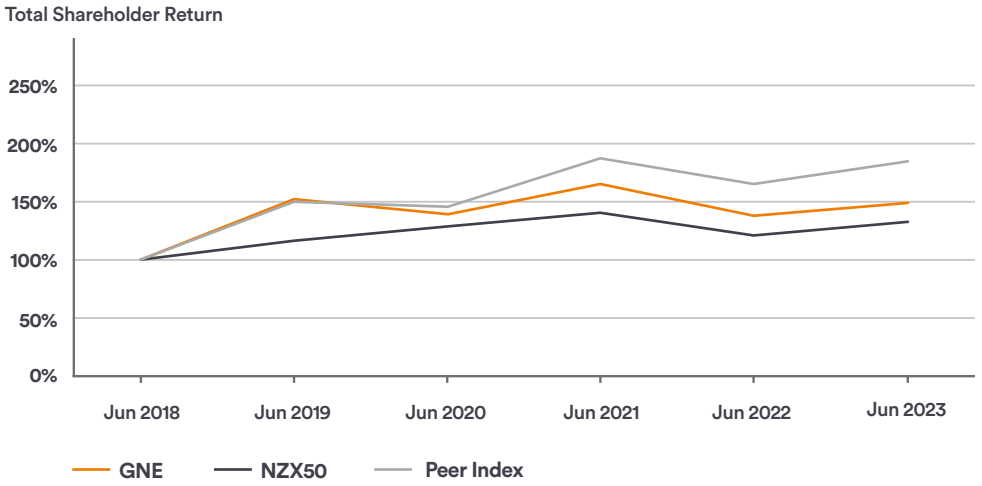
Five Year summary - Chief Executive Remuneration

Chief Executive	Period	Total Remuneration	Percentage STI against maximum %	Percentage vested LTI against maximum	Span of LTI Performance Period
Malcolm Johns	FY23 (From March 2023)	$573,525	85%		N/A
Tracey Hickman	FY23 (October 2022 to March 2023)	$566,976	86%		N/A
Marc England	FY23 (July 2022 to October 2022)	$847,998	67%	12.5%	July 2020 to June 2023
Marc England	FY22	$2,325,461	91%	0%	July 2019 to June 2022
Marc England	FY21	$2,357,414	89%	50%	July 2018 to June 2021
Marc England	FY20	$2,071,613	57%	50%	July 2017 to June 2020
Marc England	FY19	$2,351,631	85%	100%	July 2016 to June 2019

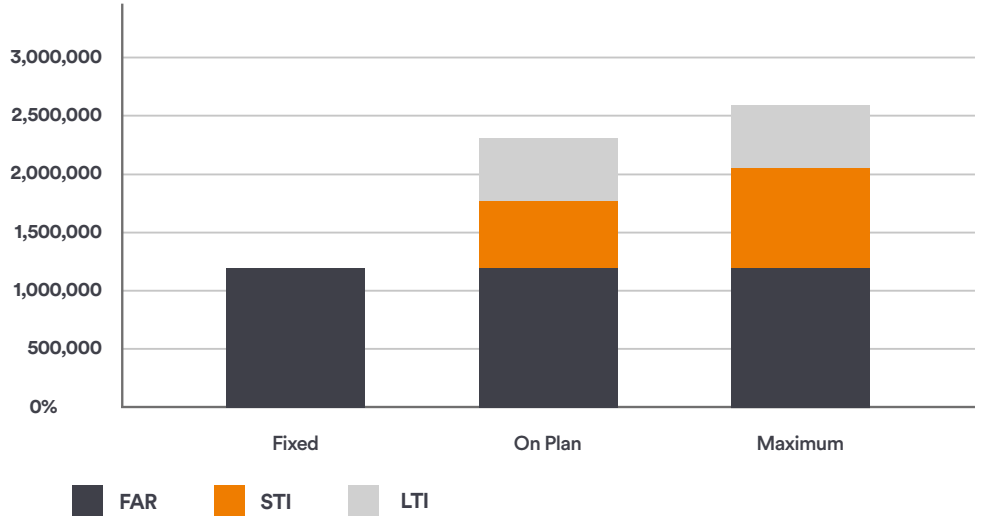
Total remuneration including Salary, Benefits, and STI and LTI earned in the year but paid in the following year.

Total Remuneration earned by, or paid to the CEO for FY22 and FY23 is as follows

Five year summary – TSR Performance



Chief Executive remuneration performance pay for FY24



Remuneration of employees earning over $100,000 in the year ending 30 June 2023

There were 544 Genesis and subsidiary employees (or former employees) who received remuneration and benefits in excess of $100,000 (not including Directors) in their capacity as employees during the year ended 30 June 2023, as set out below.

Remuneration of employees

Remuneration	Employees	Remuneration	Employees	Remuneration	Employees
$1,480,000 - $1,490,000*	1	$350,000 - $360,000	1	$210,000 - $220,000	14
$1,290,000 - $1,300,000	1	$340,000 - $350,000	2	$200,000 - $210,000	10
$980,000 - $990,000	1	$320,000 - $330,000	3	$190,000 - $200,000	6
$910,000 - $920,000	1	$310,000 - $320,000	5	$180,000 - $190,000	23
$660,000 - $670000	1	$290,000 - $300,000	3	$170,000 - $180,000	24
$550000 - $560,000	1	$280,000 - $290,000	2	$160,000 - $170,000	42
$500,000 - $510,000	1	$270,000 - $280,000	7	$150,000 - $160,000	36
$460,000 - $470,000	1	$260,000 - $270,000	1	$140,000 - $150,000	56
$410,000 - $420,000	2	$250,000 - $260,000	2	$130,000 - $140,000	70
$400,000 - $410,000	2	$240,000 - $250,000	3	$120,000 - $130,000	75
$390,000 - $400,000	1	$230,000 - $240,000	4	$110,000 - $120,000	60
$380,000 - $390,000	1	$220,000 - $230,000	6	$100,000 - $110,000	75
Total employees earning $100,000+					544
Employees who are included but who are no longer at Genesis Energy as at 30 June 2023					42

Remuneration includes base salary, employer KiwiSaver contributions, vested shares from employee share schemes, short-term performance payments, settlement payments and redundancy payments for all permanent employees received during FY23. Short-term performance payments are paid in arrears; therefore the table above includes the STI earned in FY22.

* The remuneration paid during the year is higher than the remuneration earned on page 93 as it includes the payment of the FY22 STI. The FY23 STI will be paid in FY24.

Management commentary
(no financial statements)

Director remuneration

Directors' fees

Directors' remuneration is in the form of Directors' fees for non-executive Directors, approved by shareholders.

The Chairman receives a higher level of fees to reflect the additional time and responsibilities that this position involves but does not receive any fees for committee membership or attendances.

Directors' fees were last approved by shareholders at the Company's 2021 Annual Shareholder Meeting. Shareholders approved an increase in the total annual pool for Directors' remuneration of

$132,950, from the $940,000 pool approved at the 2016 Annual Shareholder meeting, to $1,072,950, with the increase taking effect from 1 November 2021. Table 1 sets out how the approved pool has been allocated.

No Director is entitled to any remuneration from the Company other than by way of Directors fees and the reimbursement of reasonable travelling, accommodation and other expenses incurred in performing their duties as Directors.

Table 2 sets out the remuneration paid to Directors during the year to 30 June 2023.

Director remuneration is also discussed in the Company's Corporate Governance Statement which can be viewed at www.genesisenergy.co.nz/investor/corporate-governance/governance-documents.

Directors received no remuneration or other benefits during the period in relation to duties as Directors of a subsidiary.

Details of Directors of subsidiary entities forming part of the Genesis Group are set out in the Statutory Disclosures on page 119.

All Directors (and, for completeness, all the Executives) received the benefit of an indemnity from Genesis and the benefit of Directors and Officers liability insurance cover.

The cover extends to liabilities to persons (other than the Company and its subsidiaries or related bodies corporate) that arise out of the performance of their duties as Directors, unless the liability is prohibited from being insured against by law or relates to fraudulent conduct.

Remuneration of Company employees, including those acting as Directors of subsidiary companies, is disclosed in the relevant banding on page 116.

Table 1 – Approved Directors' fees

	Position	Fees per annum	Total
Board of Directors[1]	Chairman	200 ,000	200,000
	Member (x7)[1]	100,000	700,000
Audit and Risk Committee	Chairman	26,000	26,000
	Member (x3)	15,650	46,950
Human Resources and Remuneration Committee	Chairman	20,000	20,000
	Member (x3)	10,000	30,000
Nominations Committee[2]	Chairman	-	-
	Member (x3)	5,000	15,000
Pool for additional work or attendances[3]		35,000	35,000
Total approved pool			**$1,072,950**

1. The shareholders have approved the above fees based on a Board of eight Directors, including the Chairman. During the year the Board consisted of seven Directors including the Chairman.
2. The Chairman of the Board is the chairman of the Committee and does not receive any fees for Committee membership.
3. At the 2021 Annual Shareholder Meeting, shareholders approved a pool of $35,000 for additional work by Directors. No payments were made out this pool during FY23.

Table 2 – Directors' fees paid during FY23

Director	Board fees	Audit & Risk Committee	HR & Rem Committee	Nominations Committee	Total[1]
Barbara Chapman	200,000				200,000
Catherine Drayton	100,000	26,000			126,000
Doug McKay[3]	25,000		5,000	1,250	31,250
Tim Miles	100,000		20,000	5,000	125,000
James Moulder	100,000	15,650			115,650
Hinerangi Raumati-Tu'ua	100,000	15,650			115,650
Paul Zealand	100,000		10,000	5,000	115,000
Warwick Hunt[2]	77,466	12,123			89,589
Total					**$918,139**

1. Directors fees exclude GST and reimbursed costs directly associated with carrying out their duties.
2. Warwick Hunt was appointed to the Board on 22 September 2022.
3. Doug McKay retired from the Board on 30 September 2022.

Management commentary
(no financial statements)

Statutory disclosures

Interests register entries

Dir.	Position	Company
Barbara Chapman (Chairman)	Director	Bank of New Zealand Group
	Director	Fletcher Building Limited
	Deputy Chair	The New Zealand Initiative
	Chair	NZME Limited
	Patron	New Zealand Rainbow Tick Excellence Awards
Catherine Drayton	Chair	Guardians of New Zealand Superannuation
	Chair	Christchurch International Airport Limited
	Director	Southern Cross Medical Care Society
	Trustee	Southern Cross Medical Care Society
	Director	Southern Cross Healthcare Limited
	Director	Southern Cross Benefits Limited[2]
	Trustee	Southern Cross Health Trust
	Chair	Mint Innovation Limited
	Director	IAG New Zealand Limited and IAG (NZ) Holdings Limited[1]
	Chair	Connexa Limited (and director of its two holding companies, Samco Holdings Limited and Frodoco Holdings Limited)[1]

Dir.	Position	Company
Hinerangi Raumati-Tu'ua	Executive Committee Member	Te Whakahitenga o Waikato Inc. Society[1]
	Director	Reserve Bank of New Zealand[1]
	Director	Pouara Farm GP Limited[1]
	Director	Pouara Farms LP[1]
	Chair	Tainui Group Holdings Limited
	Chair	Te Pou Herenga Pakihi Limited
	Chair	Te Kiwai Maui o Ngaruahine Limited[2]
	Chair	Maruehi Fisheries Limited[1]
	Chair	Ngaruahine Fisheries Limited[2]
	Chair	Turangawaewae Trust Board
	Director	Watercare Services Limited
	Director	Te Puia Tapapa GP Limited
	Director	Te Rere o Kapuni Limited[2]
	Director	Taranaki Iwi Holdings Management Limited
	Director	Taranaki Iwi Fisheries Limited

Dir.	Position	Company
Doug McKay	Director	Fletcher Building Limited
	Chair	Eden Park Trust Board
	Chair	Bank of New Zealand Group
	Director	IAG New Zealand Limited
	Director	Wymac Consulting Limited
	Director	National Australia Bank
Tim Miles	Director	oOh!media Limited
	Director	Nyriad Limited
	Chair	Gut Cancer Foundation
	Director	Khandallah Trust Limited
	Chair	Mahi Tahi Towers Limited[1]
Warwick Hunt	Chair	Advisory Council: Business Schools Kings College London[2]
	Executive Fellow	Kings College London
	Director	Bank of New Zealand Group[1]
	Senior Advisor	PwC Middle East Group[1]
	Member	External Advisory Council - PWC Middle East[1]

Dir.	Position	Company
James Moulder	Director	Cybele Capital Limited
	Director	Motupipi Holdings Limited
	Director	Motupipi Offshore Investments
	Director	Lycaon Advisory Limited
	Director	Tasman Environmental Markets Pty Limited
	Director	Tasman Environmental Markets Limited Partnership
	Director	TEM Financial Services Limited
	Director	TEM Asia Pacific Limited
	Director	Climate Positive Pty Limited
	Trustee	Moulder Family Trust
Paul Zealand	Director	Lochard Energy
	Director	Channel Infrastructure Limited
	Director	Zoenergy Limited
	Chair	Port Nelson Limited
	Director	IHL (Infrastructure Holdings Limited)

1. Entries added by notices given by Directors during the year ended 30 June 2023
2. Entries removed by notices given by Directors during the year ended 30 June 2023

Management commentary
(no financial statements)

Directors of companies

As at 30 June 2023:

- The Chief Financial Officer of Genesis, James Spence[1], and Chief Corporate Affairs Officer of Genesis, Matthew Osborne, were Directors of Kupe Venture Limited.
- Matthew Osborne, Senior Regulatory Counsel and Group Insurance Manager Warwick Williams, and Nisala Weerasooriya (resident Singapore based Director employed by the Genesis captive manager Marsh Management Services Singapore Pte Ltd) were Directors of Genesis' captive insurance company incorporated in Singapore, Genesis Insurance Pte Limited.
- Matthew Osborne and Chief Customer Officer Tracey Hickman[2], were Directors of Frank Energy Limited (formerly known as Energy Online Limited).
- Tracey Hickman[3], Senior Manager Shaun Rees[4], Alistair Yates and Mark Yates, minority owners and Stephanie Loveday were Directors of Ecotricity GP Limited.

1. Appointed 13 October 2022, 2. Appointed 14 April 2023, 3. Appointed 14 April 2023, 4. Appointed 14 April 2023.

Disclosures of Directors' interests in share transactions

During FY23, in relation to the Company's Directors, the following disclosures were made in the Interests Register by Directors as to the acquisition of relevant interests in Company shares under section 148 of the Companies Act 1993:

The acquisition of ordinary shares in the Company pursuant to the Company's Dividend Reinvestment Plan:

- Barbara Chapman 681 shares.
- Catherine Drayton 643 shares.

Directors' interests in shares

Directors disclosed the following relevant interests in Genesis shares as at 30 June 2023:

Director	Shares
Barbara Chapman	11,857
Catherine Drayton	11,198
Tim Miles	40,410
James Moulder	15,000
Paul Zealand	Nil
Hinerangi Raumati-Tu'ua	Nil
Warwick Hunt	Nil

Use of Company information

No notices have been received by the Board of Genesis under section 145 of the Companies Act 1993 with regard to the use of Company information received by Directors in their capacities as Directors of the Company or its subsidiary companies.

Chief Executive share ownership

The Chief Executive's ownership of shares in Genesis at 30 June 2023 is as follows (excluding performance share rights held under the FY23 Long Term Incentive Plan): nil shares.

Donations

In accordance with section 211 (1) (h) of the Companies Act 1993, Genesis records that it made donations of $537,846 during the year ended 30 June 2023. Genesis policy prohibits the making of political donations. Genesis subsidiaries did not make any donations.

Credit rating

As at the date of this Annual Report Standard & Poor's long-term credit rating for Genesis was BBB+ Stable.

Exercise of NZX disciplinary powers

The NZX did not exercise any of its powers under NZX Listing Rule 9.9.3 in relation to Genesis during FY23.

Appointment of Auditor

Under the Public Audit Act 2001, the Controller and Auditor-General (Auditor-General) is the independent auditor of Genesis, and the Auditor-General appoints the independent auditor and ensures that the Key Audit Partner is changed at least every five years.

Auditor's fees

Deloitte, on behalf of the Auditor-General, has continued to act as auditor for the Company. Audit fees (including half year review fees) and non-audit fees in FY23, are disclosed in note G3 to the Financial Statements on page 103.

Stock exchange listings

Genesis' ordinary shares are listed and quoted on the NZX Main Board (NZSX) and the Australian Securities Exchange (ASX) under the company code 'GNE'. Genesis has three issues of retail bonds listed and quoted on the NZX Debt Market (NZDX) under company codes 'GNE060', 'GNE070' and 'GNE080'.

Genesis' listing on the ASX is as a Foreign Exempt Listing. For the purposes of ASX listing rule 1.15.3, Genesis confirms that it continues to comply with NZX Listing Rules.

Shareholding restrictions

The Public Finance Act 1989 includes restrictions on the ownership of certain types of securities issued by each "mixed ownership -model company (including Genesis) and the consequences of breaching those restrictions. Genesis' constitution incorporates these restrictions and mechanisms for monitoring and enforcing them.

A summary of the restrictions on the ownership of shares under the Public Finance Act and the constitution is set out in the separately published document "Information about Genesis Ordinary Shares" which can be viewed at www.genesisenergy.co.nz/investor/corporate-governance/governance-documents.

Genesis has a 'non-standard' (NS) designation on the NZX Main Board due to particular provisions of the company's constitution, including the requirements that regulate the ownership and transfer of Genesis securities.

Twenty largest registered shareholders as at 30 June 23*

Name	Units at 30 June 2023	% of Units
The Sovereign in right of New Zealand acting by and through his minister of finance and minister for SOEs	545,759,588	51.23
Custodial Services Limited	41,410,183	3.88
Forsyth Barr Custodians Limited	24,383,908	2.28
HSBC Nominees (New Zealand) Limited A/C State Street	22,747,633	2.13
BNP Paribas Nominees (NZ) Limited	19,118,695	1.79
HSBC Nominees (New Zealand) Limited	18,194,351	1.70
JBWere (NZ) Nominees Limited	18,044,442	1.69
New Zealand Depository Nominee Limited	15,768,612	1.48
JP Morgan Chase Bank NA NZ Branch-Segregated Clients Acct	13,707,685	1.28
Citibank Nominees (New Zealand) Limited	12,356,103	1.15
FNZ Custodians Limited	11,629,217	1.09
Accident Compensation Corporation	10,505,179	0.98
JP Morgan Nominees Australia Limited	9,055,964	0.85
ANZ Wholesale Australasian Share Fund	7,642,672	0.71
ANZ Custodial Services New Zealand Limited	4,225,580	0.39
Public Trust Class 10 Nominees Limited	4,090,885	0.38
Forsyth Barr Custodians Limited	4,025,139	0.37
Tea Custodians Limited Client Property Trust Account	3,748,499	0.35
Clyde Parker Holland & Rena Holland	3,450,000	0.32
BNP Paribas Nominees (NZ) Limited	3,203,396	0.30
Totals: Top 20 holders of Ordinary Shares	**793,067,731**	**74.35**

* In the above table the shareholding of New Zealand Central Securities Depository Limited (NZSCD) has been allocated to the applicable members of NZSCD.

Substantial security holders

The following information is given pursuant to section 293 of the Financial Markets Conduct Act 2013 (FMCA). According to notice given to the Company pursuant to section 280 (1) (b) of the FMCA, the substantial security holder in the Company and its relevant interests as at the date of the notice are noted below. The total number of voting shares on issue as at 30 June 2023 was 1,065,271,963.

	Date of substantial security notice	Relevant interest in the number of shares date of notice	% of Shares held at date of notice
The Sovereign in right of New Zealand	6 July 2015	**519,723,781**	**51.97**

Genesis Energy Limited (GNE050)

Top Holders As Of 30/06/2023

4.65% Bonds 16/07/2048 (Total)

Composition: G005

Rank	Name	Units	% Units
1	Forsyth Barr Custodians Limited	61,328,000	25.55
2	Custodial Services Limited	54,238,000	22.60
3	JBWere (NZ) Nominees Limited	23,085,000	9.62
4	Hobson Wealth Custodian Limited	13,565,000	5.65
5	FNZ Custodians Limited	8,670,000	3.61
6	Forsyth Barr Custodians Limited	5,447,000	2.27
7	Commonwealth Bank of Australia	4,928,000	2.05
8	Bank Of New Zealand - Treasury Support	4,221,000	1.76
9	Public Trust	4,000,000	1.67
10	Investment Custodial Services Limited	2,323,000	0.97
11	Forsyth Barr Custodians Limited	2,076,000	0.87
12	Westpac Banking Corporate NZ Financial Markets Group	1,823,000	0.76
13	CML Shares Limited	1,820,000	0.76
14	Wharetukura Limited	1,400,000	0.58
15	Alistair Wyatt White & Elisabeth Anne-Marie White	700,000	0.29
16	ANZ Bank New Zealand Limited	625,000	0.26
17	BNP Paribas Nominees (NZ) Limited	525,000	0.22
18	FNZ Custodians Limited	510,000	0.21
19	JML Capital Limited	500,000	0.21
20	Sports Car World Limited	462,000	0.19
Totals: Top 20 holders of 4.65% Bonds 16/07/2048 (Total)		**192,246,000**	**80.10**
Total Remaining Holders Balance		**47,754,000**	**19.90**

Genesis Energy Limited (GNE060)

4.17% Bonds 17/03/2028 (Total)

Top Holders As Of 30/06/2023

Composition: G006

Rank	Name	Units	% Units
1	Custodial Services Limited	37,918,000	30.33
2	Forsyth Barr Custodians Limited	14,033,000	11.23
3	National Nominees Limited	12,083,000	9.67
4	FNZ Custodians Limited	9,426,000	7.54
5	JBWere (NZ) Nominees Limited	8,837,000	7.07
6	HSBC Nominees (New Zealand) Limited	6,175,000	4.94
7	BNP Paribas Nominees (NZ) Limited	5,735,000	4.59
8	Citibank Nominees (New Zealand) Limited	5,235,000	4.19
9	ANZ Fixed Interest Fund	4,500,000	3.60
10	BNP Paribas Nominees (NZ) Limited	2,990,000	2.39
11	Forsyth Barr Custodians Limited	1,750,000	1.40
12	Investment Custodial Services Limited	1,474,000	1.18
13	Hobson Wealth Custodian Limited	1,181,000	0.94
14	Mt Nominees Limited	1,030,000	0.82
15	University Of Otago Foundation Trust	500,000	0.40
16	Lode Roger Jan Missiaen	450,000	0.36
17	Anthony Eugene Smith & Carolyn Jean Smith & David Kenneth Brown	255,000	0.20
18	Hugh McCracken Ensor	253,000	0.20
19	BGLIR Trustee Limited	205,000	0.16
20	FNZ Custodians Limited Non Resident Account	203,000	0.16
Totals: Top 20 holders of 4.17% Bonds 17/03/2028 (Total)		**114,233,000**	**91.37**
Total Remaining Holders Balance		**10,767,000**	**8.63**

Genesis Energy Limited (GNE070)

5.66% Bonds 09/06/2052 (Total)

Top Holders As Of 30/06/2023

Composition: G007

Rank	Name	Units	% Units
1	Forsyth Barr Custodians Limited	69,670,000	24.45
2	National Nominees Limited	53,792,000	18.87
3	JBWere (NZ) Nominees Limited	32,004,000	11.23
4	Custodial Services Limited	29,426,000	10.32
5	Hobson Wealth Custodian Limited	17,037,000	5.98
6	Generate Kiwisaver Public Trust Nominees Limited	13,503,000	4.74
7	CML Shares Limited	9,572,000	3.36
8	FNZ Custodians Limited	7,305,000	2.56
9	Investment Custodial Services Limited	5,168,000	1.81
10	Forsyth Barr Custodians Limited	3,387,000	1.19
11	PONZ Capital Limited	3,146,000	1.10
12	Adminis Custodial Nominees Limited	2,074,000	0.73
13	Tea Custodians Limited Client Property Trust Account	1,749,000	0.61
14	Masfen Securities Limited	1,670,000	0.59
15	Forsyth Barr Custodians Limited	970,000	0.34
16	ANZ Custodial Services New Zealand Limited	907,000	0.32
17	Sterling Holdings Limited	800,000	0.28
18	Pathfinder Caresaver	691,000	0.24
19	Hobson Wealth Custodian Limited	507,000	0.18
20	Hugh McCracken Ensor	428,000	0.15
Totals: Top 20 holders of 5.66% Bonds 09/06/2052 (Total)		**253,806,000**	**89.05**
Total Remaining Holders Balance		**31,194,000**	**10.95**

Distribution of ordinary shares and shareholdings as at 30 June 2023

Holding Range	Holder Count	% Holder Count	Holding Quantity	% Holding Quantity
1 to 999	4,771	11.43	2,798,847	0.26
1,000 – 4,999	28,344	67.87	67,665,707	6.35
5,000 – 9,999	3,693	8.85	25,189,762	2.36
10,000 – 49,999	4,315	10.34	83,839,192	7.87
50,000 – 99,999	399	0.96	25,967,166	2.44
100,000 and over	229	0.55	859,811,289	80.72
Totals	41,751	100.00	1,065,271,963	100.00

Debt listings

Genesis Energy's subordinated, unsecured capital bonds are listed on the New Zealand Debt Market Exchange.

Distribution of holders of quoted securities

Investor ranges: 30 June 2023

Security Code: GNE050

Holding Range	Holder Count	% Holder Count	Holding Quantity	% Holding Quantity
5,000 to 9,999	106	7.60	601,000	0.25
10,000 – 49,999	991	71.10	20,665,000	8.61
50,000 – 99,999	186	13.34	10,612,000	4.42
100,000 and over	111	7.96	208,122,000	86.72
Totals	1,394	100.00	240,000,000	100.00

Investor ranges: 30 June 2023

Security Code: GNE060

Holding Range	Holder Count	% Holder Count	Holding Quantity	% Holding Quantity
5,000 to 9,999	102	23.34	619,000	0.50
10,000 – 49,999	270	61.78	5,142,000	4.11
50,000 – 99,999	29	6.64	1,845,000	1.48
100,000 and over	36	8.24	117,394,000	93.91
Totals	437	100.00	125,000,000	100.00

Investor ranges: 30 June 2023

Security Code: GNE070

Holding Range	Holder Count	% Holder Count	Holding Quantity	% Holding Quantity
5,000 to 9,999	88	10.10	506,000	0.18
10,000 – 49,999	578	66.36	12,208,000	4.28
50,000 – 99,999	126	14.47	7,440,000	2.61
100,000 and over	79	9.07	264,846,000	92.93
Totals	871	100.00	285,000,000	100.00

GENESIS ENERGY LIMITED
Integrated Report 2023

Office locations

Head/Registered Office
Genesis Energy
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Wynyard Quarter
Auckland 1010

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Tokaanu Power Station
State Highway 47, Tokaanu

Waikaremoana Power Station
Main Road, Tuai RD5, Wairoa 4195

Tekapo Power Station
167 Tekapo Power House Road, Tekapo 7999

Management commentary
(no financial statements)