



TRANSPOWER

Empowering our energy future

Nau mai Welcome

We empower the energy future for New Zealand.
From generation sites around the country, to industry,
cities, towns and rural communities, we provide the
connections that power our economy.

Pictured on following page:

Jordan Witehira, Engineer – Lines (bottom left)

Jack Clifford, Risk and Assurance Advisor, and Tharirah Jalal,
Analytics Practice Manager (top right)



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About this Integrated Report

This year Transpower has adopted the <IR> framework and is delivering its first Integrated Report that addresses our statutory reporting requirements as a State-owned Enterprise and as an NZX listed entity.

It includes a detailed explanation of the materiality assessment used to inform our planning, how we are creating value while taking into account the expectations set by the recent World Business Council for Sustainable Development (WBCSD) [SDG Roadmap for the electricity utilities sector \(March 2021\)](#); the progress we have made with our *Sustainability Strategy* and our three-year pathway for the adoption of Taskforce on Climate-related Financial Disclosures (TCFD) reporting standards. We continue to report on our annual Greenhouse Gas (GHG) emissions, reduction targets and the progress we are making towards meeting them. Finally, this year we are disclosing a wider range of environmental, social and economic measures that provide a clearer picture of the impact Transpower has on its communities and Aotearoa.

This work has been driven by our eight-member strong Board of Directors who take collective responsibility for this report and have championed the increasing level of outcome reporting that Transpower has adopted. They have set us a target of being in the top quartile of peer companies undertaking annual ESG reporting by June 2022. This Integrated Report was tabled and approved at the 29 September 2021 Board meeting. The Board also takes collective responsibility for Transpower's *Sustainability Strategy* and work programme, the updated plan being presented and approved at the 20 May 2021 Board meeting.

In 2019, the Sustainable Business Council reviewed our annual reporting and provided detailed feedback as to how we are progressing against the WBCSD Reporting Matters framework. In 2020 we sought independent verification against the same framework. Our overall score for FY20 was 55.6%. Transpower's GHG emissions inventory and basis of preparation document was assured by EY in accordance with the International Standard on Assurance Engagements (New Zealand) 3000 Assurance Engagements other than Audits or Reviews of Historical Financial Information and 3410 Assurance Engagements on Greenhouse Gas Statements issued by the External Reporting Board.



Pictured above: Scott Radka, Market Analyst, Angela Houston, Outage Planning Manager, and Karen Sinclair, Real Time Systems Operations Manager

Who we are

Our Purpose: Whakamana i te mauri hiko tū mai Aotearoa – empowering the energy future for New Zealand.

Transpower is a central figure in New Zealand's energy sector and a significant player in the Government's portfolio of State-owned Enterprises.

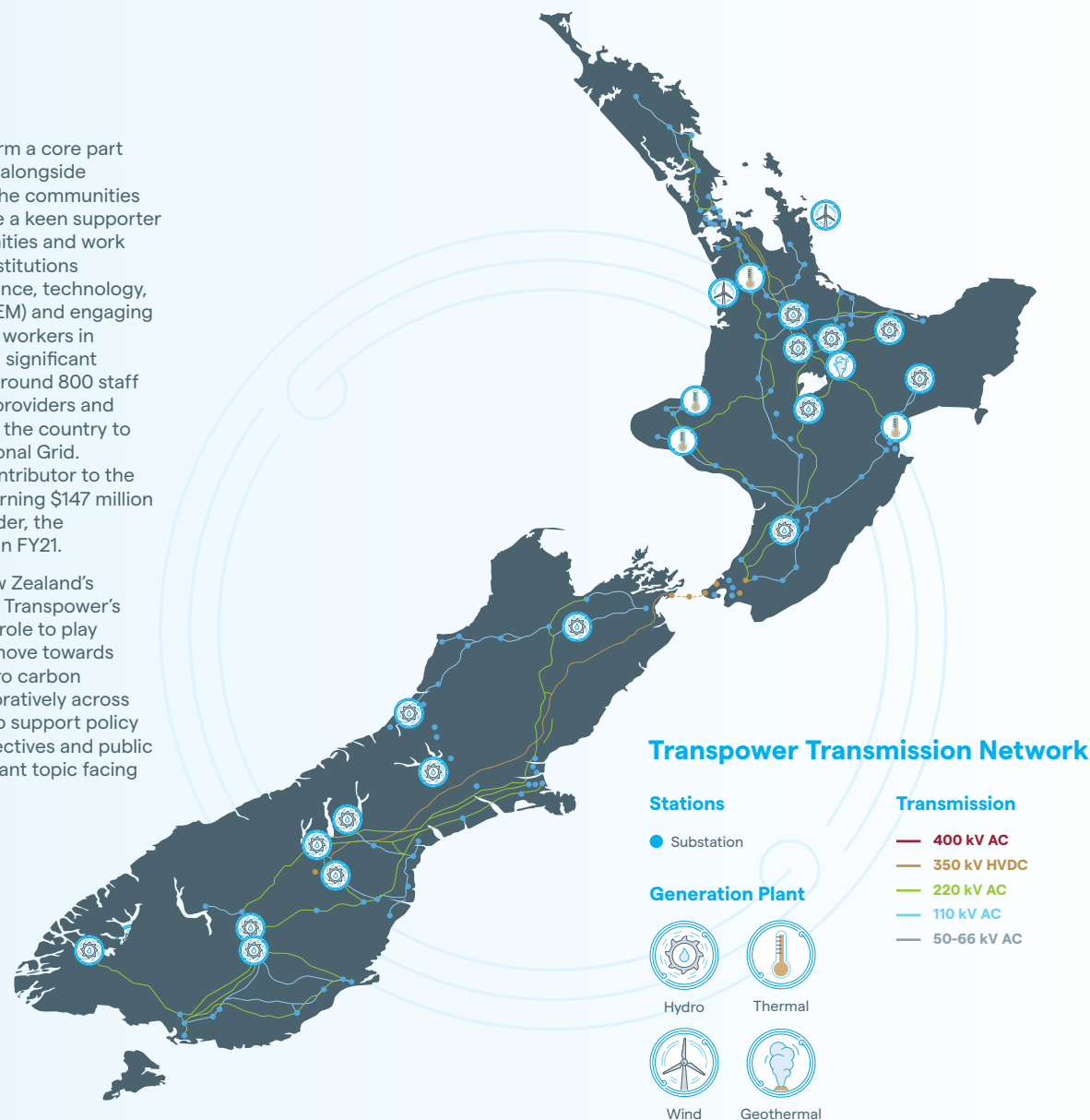
As the owner and operator of New Zealand's national electricity transmission system, Transpower holds a unique position in the energy sector. We do not generate or sell electricity but provide the infrastructure and market system that connects electricity generators to major electricity users and the distribution networks that deliver electricity to homes and businesses.

We are committed to delivering a safe, secure and reliable supply of electricity and running an efficient and sustainable business on behalf of everyone we impact.

Transpower has more than \$5 billion in assets that run the length and breadth of the country and are positioned across some 30,000 properties on both public and private land. We own and operate 170 substations, 25,000 transmission towers and more than 11,000 kilometres of lines. We operate the electricity market system in real time, via our two National Control Centres, and manage the operation of our infrastructure from our two National Grid Operating Centres.

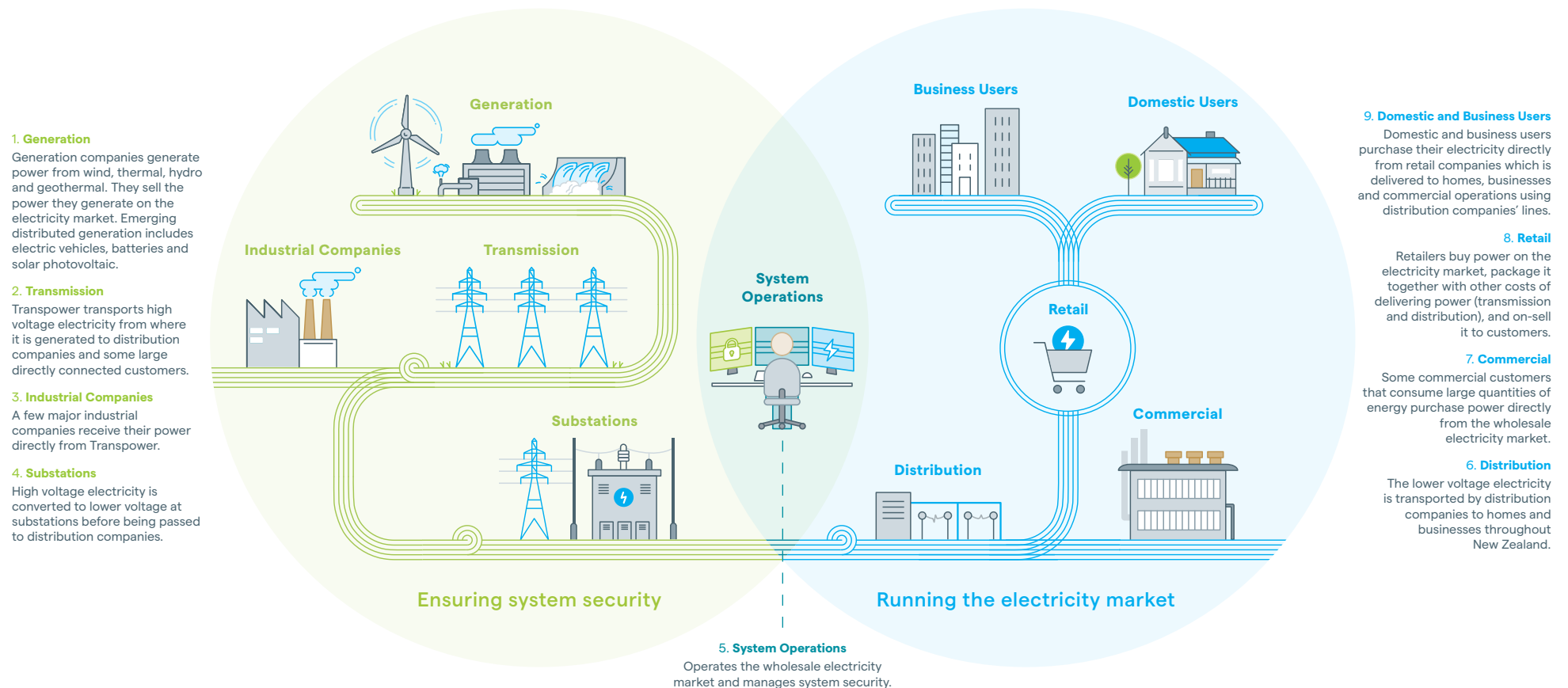
People and relationships form a core part of our business as we work alongside landowners, iwi, hapū and the communities that host our assets. We are a keen supporter of initiatives in our communities and work with schools and tertiary institutions encouraging careers in science, technology, engineering and maths (STEM) and engaging with the next generation of workers in the energy sector. We are a significant employer, both directly of around 800 staff and indirectly with service providers and contractors working across the country to build and maintain the National Grid. We are also a significant contributor to the New Zealand economy returning \$147 million in dividend to our Shareholder, the New Zealand Government, in FY21.

The decarbonisation of New Zealand's economy sits at the core of Transpower's strategy. We have a critical role to play in enabling New Zealand's move towards electrification and a net-zero carbon future, and we work collaboratively across Government and industry to support policy development, business objectives and public engagement on this important topic facing New Zealand.



Where we fit in

We own and operate New Zealand's national electricity transmission network and run the electricity market system in real time as System Operator.



Chair report

On behalf of the Transpower Board of Directors, I am pleased to bring you this Integrated Report and to share some of our achievements from the past year.

As a Board, we acknowledge the importance of integrated reporting and the expectation of stakeholders that Transpower maintains levels of accountability and transparency commensurate with its position as a State-owned Enterprise and company with securities listed on the NZX. To that end, the Board has set Management the goal of improving its ESG reporting standards while continuing to report annually on Greenhouse Gas emissions and meet the expectations of the Taskforce on Climate-related Financial Disclosures (TCFD). You will find all this information within this report.

At the time of writing, our regulator the Electricity Authority, the Ministry of Business, Innovation and Employment, and Transpower itself, have all commenced investigations into the Grid Emergency of 9 August 2021. While the event falls outside the reporting period for this report, it is a matter subsequent to balance date that the Board considers should be acknowledged.

We apologised at an industry conference on 10 August for the errors we made in managing the Grid Emergency, and formally on 13 August to our Shareholding Ministers and the Minister of Energy and Resources for not meeting

their expectations under the “no surprises” policy. We sincerely regret these errors and that some customers were disconnected from their electricity supply due to errors on our part, particularly on such a cold evening. We are confident that with the urgent measures Transpower put in place, and the work underway with other industry parties, we are doing everything in our power to ensure these events won’t happen again.

In 2020, we entered our third regulatory control period (RCP3), as defined by our other regulator the Commerce Commission. RCP3 operates through until 2025 and the regulated rate of return (Weighted Average Cost of Capital - WACC) on our grid investments is set at 4.57%.

The momentum generated during Transpower’s successful delivery of the RCP2 capital programme has been carried through into this year – we remain strongly focused on delivery for the benefit of our Shareholder and customers while simultaneously meeting our quality standards, lifting our organisational effectiveness and maintaining our social licence to operate, and preparing for an electrified future.

Notwithstanding the global and local impacts of COVID-19, we have kept our projects moving and delivered \$354 million through our capital expenditure programme. We remain poised, through our staff and service providers, to maintain operations in the event of further pandemic disruptions.

However, the year’s successes are overshadowed by the tragic death of a subcontractor working for one of our service providers on our site in Fiordland, and the high potential incident involving a tower painter.

Safety has always been a number one priority for our business and we are committed to delivering a zero-harm workplace for everyone working with us and alongside us.

These two events have reminded us how high-risk our work is. We continue to work closely with Worksafe and our service providers in investigating these incidents and are conducting our own internal investigations. We will take whatever steps we can to prevent similar incidents and are committed to a safety standard that avoids all preventable fatalities or permanent injuries. Our condolences remain with the families of those affected.

A solid financial performance

Transpower has delivered a solid financial performance over the past year given the drop in our WACC, continuing to deliver projects and maintenance on the Grid while responding to changes in the sector and commencing a new RCP from 1 April 2020.

Net profit after tax was \$157.5 million, down 31.8% compared to the previous period’s result of \$231.1 million. Operating revenue declined 7.2% to \$916.2 million (2020: \$986.9 million) impacted by the lower WACC from the RCP reset.

Operating expenses at \$296.8 million were materially in line with the previous period (2020: \$291.6 million).

Capital expenditure was \$354.3 million, down 8.5% from the same time last year (2020: \$387.4 million) and in line with Transpower’s approved capital programme.



We remain poised, through our staff and service providers, to maintain operations in the event of further pandemic disruptions.

A final dividend of 6 cents/share or \$72 million has been declared, representing 100 per cent of the expected full-year dividend forecast in Transpower's 2020/21 Statement of Corporate Intent.

Our financial statements can be found starting on page 118.

Sustainability

The Board acknowledges its key role in ensuring the company holds the principles of sustainability at the heart of its operations. We are one of the many businesses to have signed the 2019 Climate Change Statement being a member of both the Climate Leaders' Coalition and the Sustainable Business Council.

This year the Board approved new sustainability targets that address the feedback received by our stakeholders over the year. The targets and supporting initiatives will ensure Transpower delivers on its low-carbon commitments while also meeting the expectations of the communities we impact.

Transpower has considered the expectations set by the World Business Council for Sustainable Development (WBCSD) in its Sustainable Development Goals (SDG) Roadmap for the electric utilities sector (March 2021). Transpower has used the roadmap to focus its strategic approach to the SDGs and help make informed decisions as to where we can have the greatest impact. Many of these are reflected in our updated *Sustainability Strategy* which will be the mechanism by which we report on progress in addressing these SDGs in our day-to-day activities. Read more on page 62.

Of particular note is the subject of cybersecurity – raised by our stakeholders as a key sustainability issue facing the business and brought even more sharply into focus this year due to breaches in other sectors. Just as others across the economy are seeing increased activity, so too is Transpower. The Board has maintained a heightened focus on this subject given the criticality of the services Transpower delivers, with management reporting monthly. Transpower is well connected into New Zealand's intelligence community, Control Systems Security Information Exchange (CSSIE) and international entities ensuring our ability to learn from others. Read more on page 55.

System Operator and Transmission Pricing Methodology

Last year, the Board established two new sub-committees recognising the criticality of these areas within the business. The System Operator sub-committee was formed to oversee and provide guidance on all business activities related to Transpower's role as System Operator and reporting requirements to the Electricity Authority (the Authority). It was a particularly busy year for the System Operator as dry conditions and gas constraints raised significant concern across the industry of the potential for a security of supply event. Through April and May we increased our monitoring, reporting and stakeholder engagement which enabled the industry to respond successfully and hydrology conditions improved. We are working closely with the Authority to review the event and regulatory framework in which we operate. Read more on page 60.

The Transmission Pricing Methodology (TPM) sub-committee was established late in FY20 to provide governance to the development of the new TPM for the Authority. This is a significant piece of work that impacts all our customers. Transmission pricing has been under review for many years and with the Authority finalising guidelines Transpower had just 12 months to convert policy into practice. We successfully met the deliverable of a draft TPM proposal provided to the Authority by the year end. This work will remain a significant focus in the year ahead as we support the Authority in its consultation with industry and make the required changes within our business to deliver a new pricing mechanism.

Acknowledgements

This year we bid farewell to Directors Ilze Gotelli in April and Sheridan Broadbent in July. The Board and I would like to acknowledge Ilze and Sheridan for their contributions over their two- and three-year tenures respectively.

I would like to acknowledge Director Kathy Meads who has accepted a term extension of nine months, providing much needed continuity for the business. I am proud to have been given the opportunity to serve as Chair for a further year.

I would like to thank my fellow directors, Chief Executive Alison Andrew and every member of the team at Transpower for their commitment and contributions to this business.

Transpower is in a good position to meet the challenges and opportunities that await the sector and we look forward to the year ahead.



Pip Dunphy
Chair

Chief Executive report

This past year has been one of the most challenging for me as Chief Executive.

We experienced the death of a subcontractor to one of our service providers who was working on access to our lines in Fiordland.

We also lost two of our whānau in tragic circumstances that were not work related. The fatality of one of your people is the hardest thing a Chief Executive can experience. I am grateful for the way the people of Transpower and our service provider community responded and the support we have been able to provide to grieving families.

Ours is an international workforce, all of whom have been directly affected in some way by the ongoing COVID-19 pandemic as we shift our practices to accommodate Alert Level changes and remain physically disconnected from the rest of the world. I am very proud of the resilience shown by our people despite the experiences and am hopeful of a change ahead as we enter a new financial year.

Delivering on expectations

Regardless of tragedy, it has been a successful year with the business achieving 18 of our 21 company targets as set down in the Statement of Corporate Intent. See page 78 for our full suite of targets and measures.

We have continued to enable industry discussion and dialogue over New Zealand's

energy future with the publication of our *Electrification Roadmap*, and through regular engagement with those who are shaping the net-zero carbon future such as the Climate Change Commission, Ministry of Business, Innovation and Employment and the Ministry for the Environment.

It has been our best ever year for grid performance with interruptions to transmission continuing to trend down. We have also seen a significant increase in the number of connection enquiries received as the industry looks to increase investment to decarbonise.

It is rewarding to see that company engagement remains high at 8.1 out of a possible 10 particularly following the ongoing disruption that COVID-19 has brought to our people. In February 2020 we introduced a new continuous listening tool and quarterly engagement surveys. The tool has enabled us to focus on those areas that matter most to our people and our results place us in the top 25% of energy and utilities businesses internationally, in terms of engagement scores.

Our programme of work to further support and encourage diversity across the business has seen us introduce new flexible work and family violence policies, work to close the gender pay gap (17.5% in June 2021 vs 18% in November 2019), and support for our employee community groups such as Rainbow Community, Young Professionals, our Muslim Community, Women at Transpower, Whanaungatanga, Climate Community and Kia Ora NZ (for staff new to New Zealand). This past year was a busy one of celebration as we recognised Diwali, Eid-ul-Fitr, Chinese New Year and Matariki celebrations, and Champions

of Change partnerships. We have now had more than 100 staff participate in our noho marae experience since we began in 2018.

Unfortunately, we have been unable to progress our goal of achieving a 40/40/20 gender split. Last year we had 33% women and this year we have 32%. I am deeply committed to establishing greater diversity within our industry – we simply cannot meet the needs of the future if we do not reflect the communities in which we operate. There is no quick fix and an industry-wide approach is needed. I am heartened by the conversations I have been party to this year but am under no illusion that the shift will occur without significant combined effort. We are engaged with the Champions of Change group to lead this change.

As part of our commitment to diversity across the industry, and to support the engagement of children in Science, Technology, Engineering and Maths (STEM) subjects, this year Transpower co-designed and is sponsoring Engineering New Zealand's latest Wonder Project – the Power Challenge. This will be a fun, hands-on way for young people to learn how we can use different energy sources to create electricity and deliver power to our homes and communities.

More importantly, it's part of our responsibility to empower New Zealand's energy future. We're going to need thousands more highly skilled people in the energy sector as we work to create a low-carbon future. Getting young people from all walks of life interested in STEM careers is an important step.



It has been our best ever year for grid performance with interruptions to transmission continuing to trend down.

The final area where we have not met our targets is in the area of safety. While our high potential incident frequency came in below target at 2.04 (against target <3) our total recordable injury rate was 7.5 against a target of <6 and we experienced a fatality.

These results do not reflect our effort or our expertise. This business puts Health and Safety top of the priority list – the commitment from everyone on the ground is unquestioned. However, ours is a high-risk business and we cannot afford to lose focus for a moment.

A big achievement this year was the conclusion of our Health and Safety Management System after two years of development and this year's Safety Thanks and Recognition (STAR) awards event was a highlight for everyone who participated. The opportunity to learn from one another and highlight the excellent practice that does exist across the industry is invaluable.

Enabling a net-zero carbon economy

Transpower's strategic priorities are reflected in our work to support New Zealand progress toward the energy future outlined in our *Whakamana i Te Mauri Hiko* publication and our Net Zero Grid Pathways (NZGP) programme. We need to be ready to enable the significant increase in electricity required for New Zealand to meet its decarbonisation goals while maintaining the reliable and secure operation of the grid and market system.

In addition to our base regulated funding, we expect there will be around \$1.9 billion invested by us and other parties over the next 15 years to facilitate New Zealand's transition to a net-zero carbon economy.

These investments include \$750 million of new connection investments for electrification of load and renewable generation and \$1.1 billion of interconnection investments in the core transmission grid.

The first of these interconnection investments, the Clutha Upper Waitaki Lines Project (CUWLP) began in earnest this year as we opted to tackle head on, the uncertainty of the future of the New Zealand Aluminium Smelter at Tiwai Point. We expect to complete the work in May 2022. It follows the recently completed connections to the 133 MW Waipipi and 222 MW Turitea wind farms. We have also commenced work on connections for the 152 MW Tauhara geothermal power plant and the 176 MW Harapaki wind farm. It is very rewarding to work alongside our customers and see the progress taking place as we electrify our economy.

Even still, uncertainty remains the biggest challenge we face when decisions are to be made today with an eye to the Government's 2050 climate change targets. Continuing to engage effectively with our regulators, Crown agencies, customers and market participants is the only way we can achieve a least-regrets approach to grid investment while working within our existing, and reforming, regulatory framework. Through our NZGP, we are looking at what grid we will need short-term (tactical upgrades), medium-term to 2030 and long-term to 2050.

This past year we received Commerce Commission approval for our Major Capital Proposal (MCP): the Waikato and Upper North Island voltage management project (WUNIVM).

We are now working on the first phase of the project installing a grid stability device at our Hamilton substation, with a commissioning date of winter 2023. We also gained approval for the Bombay MCP enabling the procurement, installation and commissioning of two 150 MVA 220/110 kV transformers at our Bombay substation.

We commissioned several projects under the Auckland strategy ensuring our infrastructure supports the expected growth in the region. This included commissioning the second of two 220 kV cable sections through Flat Bush, a suburb that is expected to be home to 40,000 people by 2025 (a huge increase on its current population of 18,000).

Consultation is now underway for the next phase of NZGP investment out to 2035 including the long list of options for the Central North Island, increasing the HVDC capacity, and options for non-transmission alternatives.

Looking ahead

While we continue to manage the impact of COVID-19 on our people and practices, the year ahead promises to be both challenging and rewarding. We will continue to advance our NZGP work to develop our grid assets while identifying the needs of the electricity system amidst much contextual change.

In July, I accepted the resignation of our Chief Financial Officer Gordon Davidson who will be making a move to Taranaki in October. I wish to thank Gordon for his contribution these past two years.

I wish to thank our Chair Pip Dunphy and the Board for their support and the General Management Team for all their efforts. Finally, to the rest of the Transpower team, thank you for your ongoing commitment and dedication to our business through what has been a year of challenge.



Alison Andrew
Chief Executive

The year in numbers

✓ 31.8%

\$157.5m

NET PROFIT AFTER TAX

✓ 7.2%

\$916m

REVENUE

✓ 8.5%

\$354.3m

CAPITAL EXPENDITURE

\$147m

DIVIDENDS PAID OUT
TO THE CROWN

\$35.1m

TAX PAID

\$692m

RAISED IN
BOND ISSUES

\$470m

MAINTENANCE,
REPLACEMENT
AND ENHANCEMENT
EXPENDITURE

\$5b

WORTH OF
ASSETS MANAGED

900

STUDENTS INVOLVED
IN STEM WONDER
PROJECT

\$670,105

COMMUNITYCARE
FUNDS GRANTED

29,000

LANDOWNER
INTERACTIONS

1,903

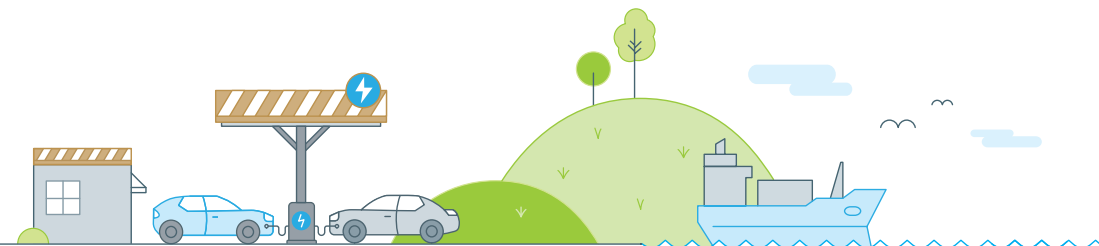
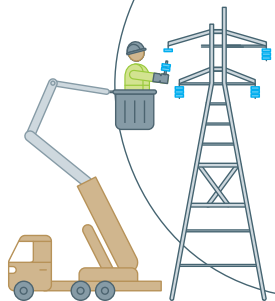
GRID SKILLS TRAINING
PARTICIPANTS

133 MW

NEW RENEWABLE
GENERATION
CONNECTED

900km

WIRE REQUIRED FOR
THE CLUTHA UPPER
WAITAKI LINES PROJECT





Pictured: Chantelle Tomon,
System Coordinator

A global movement to decarbonise

Transpower operates at the centre of the New Zealand economy, connecting businesses and communities to the electricity needed to power their way of life. We are fundamental to empowering the energy future of New Zealand – a future that is destined to deliver a net-zero carbon economy.

Although Transpower is internationally unique in structure as a State-owned Enterprise with dual roles as Grid Owner and System Operator, it is not unique in the challenges faced nor the context it operates in. The challenge of adapting to, and mitigating the effects of, climate change while reducing dependence on fossil fuels, has been accepted globally.

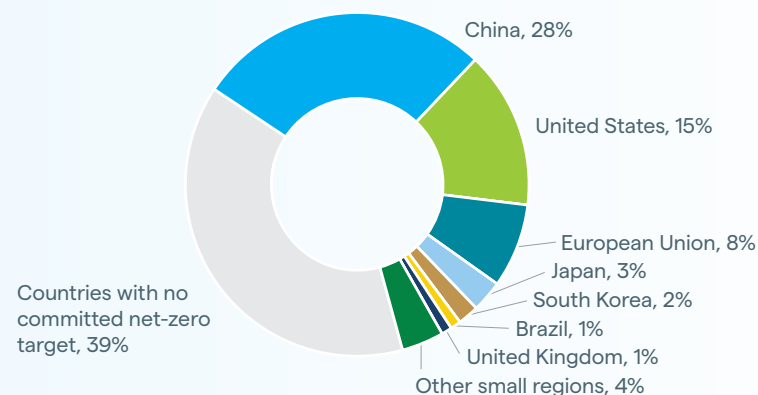
In 2015, New Zealand joined 195 other parties in adopting the Paris Agreement, committing to reducing emissions by 30% below 2005 levels by 2030. The agreement has sparked low-carbon solutions and new markets, while many nations have now announced net-zero carbon targets for 2050 and have developed long-term plans to decarbonise their economies.

Of the major emitters, the United States of America re-joined the Paris Agreement in 2021, while China has announced a target of carbon neutrality by 2060. The past year has also seen commitments from major banks increasingly looking to lend against projects that improve sustainability outcomes. Globally, we have seen school-aged children marching the streets and demanding more action, demonstrating how the focus on this issue will only grow with time.

A 2021 report from the International Energy Agency (IEA) shows that global renewable energy experienced record-breaking growth figures in 2020 despite the COVID-19 pandemic and led to significant revisions to their forecasts. *Renew Economy* writes “Between 2019 and 2020, the annual addition of renewable capacity increased by 45% to 280 gigawatts, the highest year-on-year increase since 1999... Wind rose 90% between 2019 and 2020, and solar rose 23%...”¹

Countries representing over half of global emissions have committed to net-zero carbon targets

Emissions by countries with committed net-zero carbon targets



Source: Our World in Data, Energy & Climate Intelligence

In November 2021, the UN Climate Change Conference will be held in Scotland. The COP26 summit will bring parties together to accelerate action towards the goals of the Paris Agreement and the UN Framework Convention on Climate Change. The momentum of change is expected to continue building.

Here in New Zealand, the Climate Change Response (Zero Carbon) Amendment Act 2019 came into force in November 2019 providing a framework for achieving net-zero carbon by 2050. In late 2020 the New Zealand Government declared a climate emergency. Since then it has made a series

of climate-related announcements, including a strengthened Emissions Trading Scheme (ETS), an intent for a carbon neutral public sector by 2025 together with a \$200 million State Sector Decarbonisation Fund, a \$70 million Government Investment to Decarbonise Industry fund, the banning of new low and medium temperature coal-fired boilers, a Clean Car Import Standard, a Clean Car Discount and a biofuels mandate.

1. Joshi, Ketan. "IEA upgrades wind and solar forecasts again, as record 2020 becomes new normal"; 12 May 2021 reneweconomy.com.au

Industry are increasingly onboard, demonstrating renewed commitments to the decarbonisation of their operations. Several large process heat users have already made, or are in the process of making, the switch to electricity, including Open Country Dairy's Awarua site using the Southern Hemisphere's largest electrode boiler to generate steam for milk drying. The boiler produces 4,650 metric tonnes less annual CO₂ emissions than a coal boiler and will be powered by predominantly renewable sources. McCain Foods Timaru has slashed coal consumption used in potato processing by installing 'Pulsed Electric Field Technology', a New Zealand first. Meridian has announced the first three projects of its process heat electrification programme, targeting an initial 15,000 tonnes of annual emissions in total.

There have also been a number of renewable generation developments in FY21 that will push the proportion of renewable electricity on the electricity grid further towards 90% in time. This includes the full commissioning of Tilt Renewable's 133 MW Waipipi Wind Farm, the continued construction of Mercury Energy's 222 MW Turitea Wind Farm, and the announcement of financial close for Contact Energy's 152 MW Tauhara Geothermal Power Plant and Meridian Energy's 176 MW Harapaki Wind Farm.

Other fuels are also playing a part in decarbonising process heat. DB Breweries' Timaru plant is transitioning away from coal to biomass which will decrease DB's total carbon footprint by 28%. Fonterra is moving away from coal at its Te Awamutu milk processing plant and reducing its national coal consumption by 10%.

New Zealand's 2019 Climate Change legislation also included the establishment of an independent Climate Change Commission (CCC). The Commission formally released its first draft carbon budgets and accompanying advice to Government in February 2021 before finalising its advice in May. These budgets chart a course to New Zealand becoming carbon neutral by 2050 and to reducing biogenic methane emissions by 24-47% over the same period.

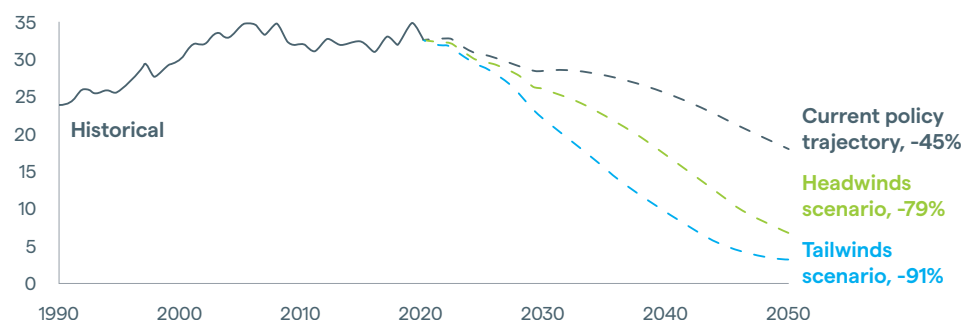
In its advice to Government, the CCC recommends that New Zealand "maximise the use of electricity as a low emissions fuel" and that "wider electrification of energy use is an essential part of the transition and will require a major expansion of the electricity system."

This is the same message that Transpower has been sharing since 2018 when we first released *Te Mauri Hiko – Energy Futures* outlining the potential energy supply and demand scenarios considered most likely to shape New Zealand's energy future. In 2019 we signed the Climate Leaders Coalition statement, committing to the Paris Agreement target to limit the temperature increase to 1.5°C.

In 2020, we updated our thinking and published *Whakamana i Te Mauri Hiko – Empowering our Energy Future*. The work further considered international trends and national responses, and identified key conditions of success, to ensure that electrification and renewable generation play an important part in New Zealand's net-zero carbon future.

Current policies will reduce energy emissions over time but not to the levels we need

Climate Change Commission energy emissions forecasts (Mt CO₂-e, 1990-2050)



\$200m

State Sector
Decarbonisation Fund

\$70m

Government Investment to
Decarbonise Industry Fund

24-47%

Biogenic methane
emissions reduction target

<1.5°C

Paris Agreement global
warming target

Also in 2020, a revised [Sustainability Strategy](#) became embedded within our overall business strategy and purpose. Sustainability is central to what we do across our operations and we have a responsibility to cut our emissions, reduce waste and enhance biodiversity and limit our environmental and community impact.

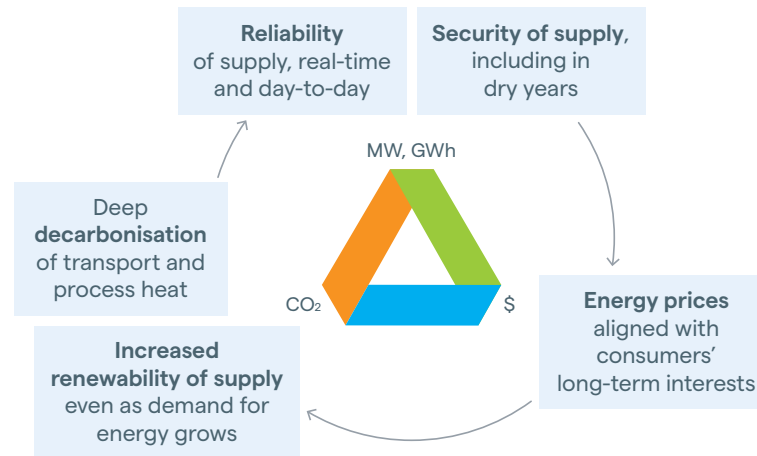
Then in March 2021, we released the [Electrification Roadmap](#) to identify the opportunities and barriers to the electrification of transport and process heat. It outlines that electrification and renewable generation could provide over 60% of the non-forestry emissions reductions required to meet the 2050 net-zero carbon target.

We envisage a future where declining technology costs, strong policy leadership from government, increasing climate change concern from investors and the public, and decisive action by business, leads to widespread electrification. We also know this must happen in a sustainable manner. It is this future we are driving toward – one that provides significant opportunities for a highly-skilled and diverse workforce.

We need to ensure that decarbonisation is grounded in the context of the energy trilemma – that a reliable and secure supply of renewable and sustainable energy is affordable for consumers in the long term.

Decarbonisation needs to be grounded in the context of the energy trilemma

Energy Trilemma



Source: Whakamana i Te Mauri Hiko



What the global movement to decarbonise means for Transpower

Transpower has three key roles to enable the electrification load and renewable generation required to meet New Zealand's climate change commitments. These are:

1. To connect new electrification load and renewable generation to the Grid.
2. To ensure that the core, interconnected grid (including non-network alternatives) stays ahead of the game to ensure that these new connections can be accommodated.
3. To operate a highly renewable and more distributed power system in real-time.

We forecast that these three roles will become increasingly important as electricity demand ramps up significantly in the coming years, notwithstanding the uncertainty that remains around the potential departure of New Zealand's Aluminium Smelter at Tiwai Point. Our forecasts indicate that the grid needs to provide for a 55-70% increase in demand for electricity by 2050 to enable this decarbonisation. Our modelling is consistent with work carried out by the CCC and the Ministry of Business, Innovation and Employment (MBIE) demonstrating a growing consensus of what is needed to address climate change.

Alongside the demand growth needed to electrify transport and process heat, and meet the growth of the New Zealand economy, several parties are also proposing data centres, hydrogen production, or accelerated process heat conversion to potentially replace the Smelter's demand.

The level of investment in new renewable generation, grid connections and capacity, process heat installations, electric vehicle infrastructure and for the deployment of distributed renewables and storage, such as domestic scale photovoltaics and batteries, will represent a sustained level of energy infrastructure development on a scale that New Zealand has probably not seen before.

By 2035 we estimate we will need to provide 25-30 new or upgraded demand-side grid connections for distribution businesses or major users alongside a similar number of new or upgraded connections to new grid-scale power plants. We will also need to move this power from where it is generated to where it is used which we estimate will require 10-15 grid upgrade projects.

For Transpower, the anticipated increase in demand from electrification and supply from renewable generation is forecast to result in increased capital investment of \$1.9 billion over 15 years. Already, we are experiencing a significant increase in enquiries from generation developers wishing to build new renewable projects.

Transpower has an active role to play in helping enable a sustainable future that boosts New Zealand's economy and the people who live here, by unlocking electrification and new renewable generation. Alongside advocating for change, Transpower's commitment is to ensure New Zealand's grid and market system is ready to connect and deliver a low-carbon economy for New Zealand; an economy that benefits consumers, communities and our natural environment.

We need to continue working on the 10 industry areas of change outlined in *Whakamana i Te Mauri Hiko*



For the latest commentary on the global and national context, please read Transpower's [Whakamana i Te Mauri Hiko](#) monitoring reports.

The perspective of our stakeholders

As both System Operator and Grid Owner, Transpower's range of stakeholders is diverse and far reaching. Each has a unique perspective on the industry at large and Transpower's role and activities within it. The following outlines our key stakeholder groups and how we engage with them.

Service providers

Under our direction, work in the field is undertaken by our service provider workforce primarily through high-voltage electrical specialists Electrix, ElectraNet, Northpower and Ventia. We also work closely with a range of different service providers supporting our civil works, information services and technology programmes, and specialist services such as High Voltage Direct Current engineers and tower painters.

Interaction with service providers occurs daily as project work is planned and delivered. Engagement on health and safety occurs via the Alignment Forum which meets once a month, and every three months when the Transpower Chief Executive meets with her counterparts as part of the Central Safety Leadership Team.

Training of service providers and on-site contractors to work on Transpower assets occurs through the dedicated Grid Skills training programmes. See sidebar.

In the year ahead, we will award new grid service provider contracts. The new contracts will have a 10-year term to ensure appropriate certainty for service providers to invest in personnel, plant, systems and relationships. Collectively the contracts are worth an estimated \$1-2 billion and will provide employment for around 900 transmission workers with highly specialised and internationally sought-after skills.



Grid Skills

Transpower Grid Skills is a registered Private Training Establishment (PTE) providing training to support the development and ongoing currency of service provider staff in undertaking work for Transpower.

In FY21, 1903 people participated in training from 90 different organisations completing work on Transpower assets or sites. Participation was 14% higher than the previous year, due to the impact of COVID-19 in the late stages of the previous year. When compared to pre-COVID-19 levels, trades training has increased 9%. Approximately 70% of courses delivered last year were compliance based and the remaining 30% focused on transmission trades development.

Transpower has this year been approved by NZQA to award the Certificate in Electricity Supply (Substation Maintenance) Level 4 qualification to learners who successfully complete the Grid Skills' Substation Maintainer Core training programme. This is the first qualification Transpower has been approved to award and marks our move away from relying on external organisations for providing these. Transpower will continue working towards gaining NZQA approval to award other qualifications registered on the New Zealand Qualification Framework relating to the transmission sector field workforce.

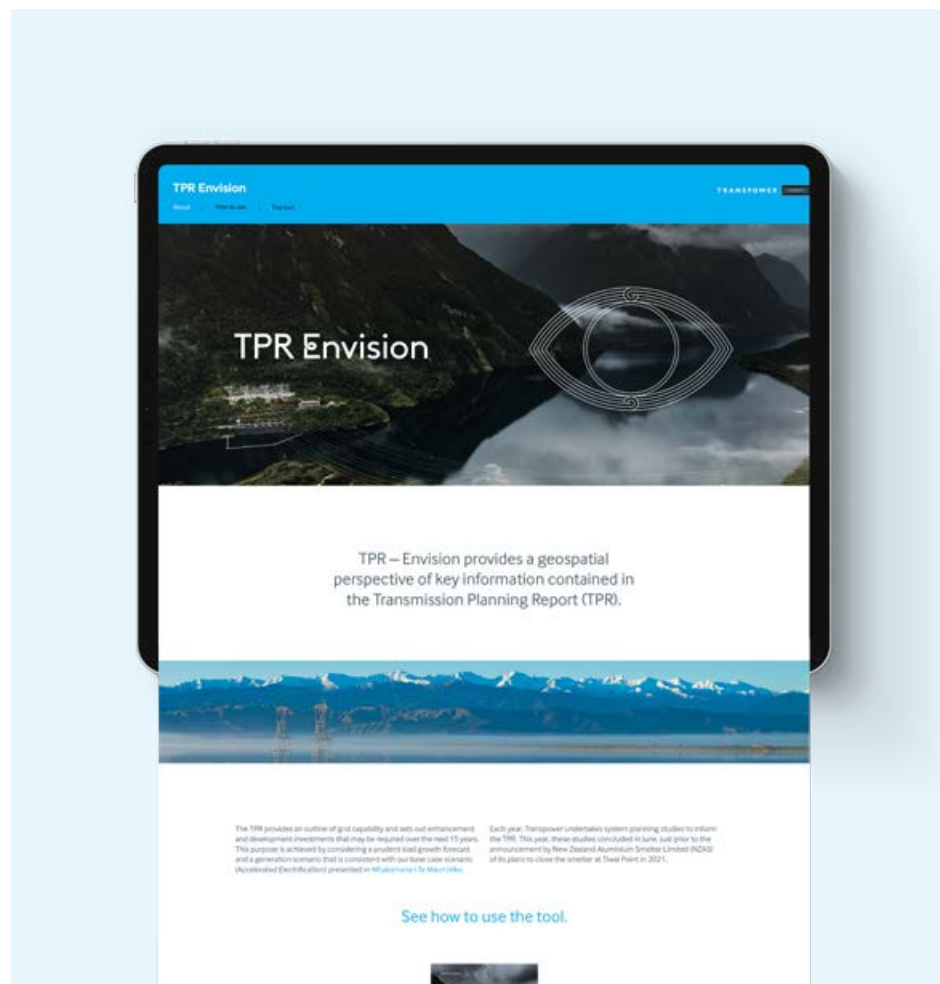
Customers

Our customers are those companies directly connected to the National Grid. We have **44 customers**: 27 Electricity Distribution Businesses (EDB), 10 directly connected major electricity users and seven generators. Each has a dedicated Customer Relationship Manager and individual engagement plan, but touch points exist across the entire Transpower business.

In July 2019, we ran a Customer Engagement Survey to support the development of our RCP3 Customer Engagement Plan. Results varied significantly across the customer base but indicated areas for improvement including gaining a greater understanding of our customers' businesses, providing greater explanation of Transpower's decision-making frameworks and for greater levels of engagement.

Transpower's *Customer Engagement Plan* for RCP3, published in November 2020, outlines how we will engage with customers in the years ahead including our expected Major Capital Expenditure Proposals, our approach to the RCP4 reset and issues of strategic importance.

Transpower continues to enhance access to its suite of documents that make up the Integrated Transmission Plan through tools such as *Transmission Planning Report (TPR) Envision* – a geospatial tool to help customers visualise how we plan to develop the network over the coming 15 years.



Since our Transpower key account manager was on board, there has been a lot of improvements on coordination and interactions between Transpower and us; my team deals with many different Transpower business units, from strategic planning, tactical delivery, performance integration and system operation. It is very important to have someone overseeing the customer needs and providing coordination within Transpower on our behalf."

CUSTOMER ENGAGEMENT SURVEY
JULY 2020

"Transpower needs to improve its engagement to be targeted to reach win-win solutions rather than explain barriers to progress. It is disappointing that Transpower has over-reached the Distribution Network Operator to discuss with distribution connected customers demand response requirements when the distribution company could address this issue simply by changing an open point on the distribution network. This frustrates the distribution business and creates a distrust in Transpower to engage and operate transparently and in good faith."

CUSTOMER ENGAGEMENT SURVEY
JULY 2020

Industry

While not directly connected to the Grid, there are a significant number of industry players including electricity retailers, market participants, large industrials and sector interest groups, who all take an active interest in our work and are affected by the decisions we make. Touch points exist across the business into various levels of the different industry companies.

We engage closely with industry bodies who represent the interests of these parties including the Major Energy Users group (MEUG), Gas Industry Council (GIC), Electricity Networks Association (ENA) and Electricity

Retailers Association of New Zealand (ERANZ). Our industry newsletter, *News from Transpower*, is issued once a month, shared on our website and available to anyone to subscribe to. We also maintain continuous disclosure through the NZX and the publishing of Customer Advisory Notices which reach all market participants.

Transpower acts as the electricity industry representative for electricity on the Lifeline Utilities agency group which reports directly into the National Emergency Management Centre in times of National Emergency. In this past financial year, this has included

representation during the COVID-19 pandemic response and during the Canterbury Floods in June.

We are paid members of the Aotearoa Circle, Business Energy Council, Business New Zealand, Champions for Change, Chartered Accountants Association, CIGRE Australia (a global community for the creation and sharing of power system expertise), Climate Leaders Coalition, Electricity Engineers Association, Engineering New Zealand, Infrastructure New Zealand, Global Women, the New Zealand Law Society and the Sustainable Business Council.

Transpower in its role as System Operator

In our role as System Operator, we produce a range of publications to support our commitment to our customers. One of which is the annual Education and Engagement Plan which outlines our intention and commitment to the delivery of forums and workshops, training and digital resources for market participants.

Each year we survey market participants to gain feedback on our performance and identify where we can make changes. In FY21 we had around double the number of survey respondents as the year before providing extremely valuable feedback. In terms of rating the service of the System Operator, 84% rated the service as good or very good with only 6% rating it as poor.

We also ask the question of whether we add value in terms of our innovation, communications and responsiveness as these are areas industry Chief Executives have identified as being important to them. The percent of respondents who said yes was 72%, 84% and 80% respectively which gives us confidence we were meeting most of their needs and a direction for where we can improve.



Landowners

Our assets are present on the properties of around 12,000 landowners, of which the Department of Conservation (DOC) is the largest, and our lines span many more properties, bringing our total landowner number to around 30,000. Our landowner relations team works closely with the landowner liaison officers from each of the service providers as they conduct work on our behalf. In the past financial year, more than 29,000 landowner interactions were recorded in our database.

Each year we host a Landowner Liaison Conference in Wellington, where service providers and suppliers join with Transpower staff to continue their learning of how to work effectively with landowners.

Knowledge is shared through case study presentations, updates on relevant policy and regulatory changes, and discussion on how to address the challenges faced.

Every second year, a Landowner Satisfaction Survey is undertaken. Results from FY20 saw around 90% of respondents reporting being either satisfied or very satisfied across four measures of engagement – having advance warning of access being required, taking their needs into account, notifying them in the most effective way and that having a visit took little or no effort on their part.

In FY21, a survey completed following significant work showed that 98% of respondents agreed “if I had any issues,

you’ve sorted them” and “I received all the information I needed” while 74% of respondents fed back that we delivered above expectations.

Transpower has two long-standing partnerships arrangements with DOC – the first has been in place for four years and supports the restoration of Ohakune Lakes, while the second is into its fifth year and supports DOC’s work on weed and invasive species control and threatened species monitoring in the Grebe Valley in Fiordland National Park. In both instances, Transpower’s transmission lines cross these areas and our access tracks and the movement of people enable weeds and pests to also enter.



91%
Landowners satisfied
or very satisfied

LANDOWNER SATISFACTION SURVEY FY20

98%
"If I had any issues,
you've sorted them"

74%
Transpower delivered
above expectations

LANDOWNER FEEDBACK SURVEY FY21

Iwi

Like other landowners, our assets are located on, or cross over, land owned or of significance to iwi. We have a responsibility to work closely with affected iwi, hapū and mana whenua as we deliver our business activities.

Each year we complete three noho marae for staff and are steadily building our own cultural competency. This past year, the appointment of a Kaiārahi Tikanga and the revision of our Iwi Relations programme are channels through which we are advancing our knowledge and action.

Transpower is continuing to develop its relationships with mana whenua in areas where its assets and offices are. In all cases we seek to find areas of congruence to partner on such as projects in the area of sustainability or employment, and in some instances, we have formal relationship agreements in place. We continue to build our toolkit of options to meet iwi needs.



Pictured above: Transpower and Ngā Kaitiaki o Ngāti Kauwhata Inc representatives at the signing of the Ngāti Kauwhata agreement formalising the relationship between them: Aorangi Marae, Feilding.

Regulators

We are regulated by both the Commerce Commission, representing the rights of consumers, and the Electricity Authority in its administration of the Electricity Industry Act 1992. Engagement occurs throughout the year with a quarterly meeting of Chairs and Chief Executives of both organisations.

The Commerce Commission sets its expectations of Transpower for each Regulatory Control Period including expenditure and service measures. This information can be found on our [website](#).

The Electricity Authority (the Authority) contracts Transpower to deliver specific services including to act as the System Operator. It also regulates the method used to allocate the Grid Owner's regulated revenue to transmission customers through the Transmission Pricing Methodology (TPM). This past year, Transpower (as the Grid Owner) has been required to deliver a proposed new TPM in accordance with new TPM Guidelines set by the Authority following its long-running review of transmission pricing.

Transpower in its role as the System Operator completes an annual Education and Engagement plan for the Authority, outlining how it will engage with market participants and delivers monthly and quarterly performance reports and an [annual self-review](#).

All the information pertaining to Transpower's performance as System Operator can be found on the Electricity Authority's [website](#) including monthly and quarterly reports, and annual reviews and assessments.



Overall, we consider that the System Operator continued to perform at a high level over the review period. The system operator's role requires excellence in a breadth of disciplines applied across a long and diverse list of activities that collectively deliver a nationally critical service. Our review concludes that New Zealanders should feel assured that Transpower is fulfilling the system operator role to a high standard and is striving to improve."

ELECTRICITY AUTHORITY ANNUAL REVIEW OF SYSTEM OPERATOR FOR FY20

Central and local government

As a State-owned Enterprise and the owner and operator of major national infrastructure, our work impacts both central and local government entities. We engage regularly with ministers, officials and Members of Parliament and of local government as our project work dictates. Transpower provides our Shareholding Ministers with quarterly performance reports.

Transpower is active in providing expert advice, thought leadership and formal submissions to government agencies to support the development of policy and regulation. Our Te Mauri Hiko programme of work is one example, however over the past year we have engaged extensively with the Climate Change Commission and Infrastructure Commission on their programmes of work; with the Ministry for the Environment, and Ministry of Business, Innovation and Employment over the Resource Management Act reform; the Ministry of Education over tertiary sector reform and with the Ministry of Business, Innovation and Employment on several programmes of work.

Transpower is a member of the New Zealand Parliamentary Business Trust.

Investors

Transpower is listed on the NZX and has numerous investors who hold debt securities. This past year we ran three investor roadshows in support of our bond issues that raised \$692 million. In addition, we update investors with presentations following the full year and interim results announcements.

Transpower manages credit metrics to maintain a strong investment grade credit rating (AA, stable, Standard & Poor's) and has policies in place for managing and developing environmental, social and governance

considerations consistent with good practice. In addition, Transpower is active in engaging with the industry to help enable a lower carbon future.

Increasingly, investors are integrating environmental, social and governance factors into their investment decisions and are seeking evidence of strong policies to manage all ESG considerations. Transpower will continue to ensure it is meeting the expectations of its investors.



We have ascribed a green score to Transpower. In short, Transpower provides evidence of strong policies to manage all key ESG considerations. We like that you have identified where you have the largest direct impact, insulation, and have identified strategies to mitigate impact. But we also like that your actions go further than thinking about your direct impact as a transmissions business and are engaging with the industry to help enable a lower carbon future.”

HARBOUR ASSET MANAGEMENT, JULY 2021

Consumers

All electricity consumers are affected by our work to bring electricity to communities. Transpower primarily uses digital channels to engage with customers, sharing stories of our work and our people.

We use paid advertising where appropriate to advertise upcoming grid maintenance activities, and tap into traditional media to help consumers understand our role and our work. We work alongside our customers to deliver communications to consumers when we have planned outages. Our social media channels are the primary way we are able to reach people when there is an unplanned outage.

Our CommunityCare Fund is a grants programme and our way of contributing towards local projects that are important to a community in areas where our assets are located. Established in 2013, the CommunityCare Fund helps fund community projects all around the country that have wide-reaching and lasting benefits to that community. Each year around \$600,000 is allocated – see the table of recipients for FY21 on page 25.

Our Consumer Advisory Panel provides a voice for consumers and the connection between Transpower and the wider community. The eight-member panel meets four times a year and is made up of representatives from business and consumer advocacy groups. Newsletters and meeting minutes are published on our website.

Our monthly industry newsletter is shared on our website and is available to anyone to subscribe to.



Pictured above: Roy Noble, Clutha Upper Waitaki Lines Project Director, presents a CommunityCare Fund grant to Rhys Smith, Cromwell Youth Trust Manager and Lead Youth Worker funding bikes, helmets, and a bike trailer for the Hangout Youth Centre.



Pictured above: Cromwell Hangout Youth Centre visitors enjoy a Central Otago bike trail.

CommunityCare Fund

\$670,105

allocated to 32
community groups

Consumer Advisory Panel Members

- Age Concern
- Business Energy Council
- Community Networks Aotearoa
- Consumer NZ
- Economic Development Agencies New Zealand
- Generation Zero
- Independent voice for Māori
- Rural Women

CommunityCare Fund recipients

Winter 2020 funding round

Onehunga Business Association	Auckland	Onehunga Wall Murals Project	\$10,000
Te Aroha Pā Marae	Auckland	Te Aroha Pā Marae Development – stage two: new wharekai	\$25,000
Ridgeview School	Auckland	Repairs to school pool	\$40,000
The Cause Collective	Auckland	Marae-led regenerative approach to the urban food system in Mangere	\$36,500
Otara Rugby League and Sports Club	Auckland	Ngati Otara Sports Complex Project	\$30,000
Te Miro Settlers Hall Incorporated	Waipa	Community drinking fountain	\$8,000
Te Pae Tata – Ruapehu Community Learning and Tech Hub	Ruapehu	Installation of a new fire alarm system	\$30,301
Parkwood Retirement Village	Kāpiti Coast	Shade sails and awnings	\$13,415
Māoriland Charitable Trust	Kāpiti Coast	Māoriland Kai Collective & Market – establish a kitchen in a shipping container	\$32,000
Horowhenua SuperGrans Incorporated	Horowhenua	Second hand electric vehicle	\$15,000
Boulcott School	Lower Hutt	Replacement shade sail for sun protection	\$2,980
Pareraho Forest Trust	Lower Hutt	Traps for Predator Free Pareraho	\$13,500
Kaipoi Gray Raven Scout Group	Waimakariri	Repairs to scout den	\$21,908
The Wildlife Hospital	Dunedin	Critical care equipment for wildlife	\$24,000
			\$302,605

Total funds paid in FY21 of \$724,000 include additional payments awarded in FY20 but paid in FY21.

Summer 2021 funding round

Ruakaka Recreation Centre Inc	Whangarei	Fire doors and landings to meet fire safety standards	\$43,545
Dawson Primary School	Auckland	Play space for students	\$40,000
Te Karanga Charitable Trust	Auckland	Transport vehicles for operations	\$19,950
Manukau Beautification Charitable Trust	Auckland	Gardening tools and resource library for the community	\$7,500
Barnardos New Zealand	Auckland	Community garden at the Otara Early Learning Centre	\$25,000
Puketaha School	Waikato	Pool cover and lane ropes	\$14,214
Waikato District Council	Waikato	Refurbishment of Huntly Sports Complex grandstand	\$50,000
Onewhero Society of Performing Arts	Waikato	Theatre air conditioning	\$9,700
Freyberg High School	Palmerston North	Refurbishment of Freyberg High School Community Library	\$15,593
Titahi Bay Surf Life Saving Club	Porirua	Replacement engine for inflatable rescue boat	\$7,217
Predator Free Horokiwi	Wellington	Predator traps	\$5,000
Common Unity Project Aotearoa	Lower Hutt	Equipment for large scale community-owned urban farm	\$19,880
Te Rūnanga a Rangitāne o Wairau Trust	Marlborough	Tuamātene Wharekai maintenance and upgrade	\$17,400
The Brook Waimarama Sanctuary Trust	Nelson	Fibre installation to outdoor classroom	\$10,000
Leslie Groves Society of St Johns Roslyn	Dunedin	Tovertafel projector and games for dementia care	\$15,000
Lake Roxburgh Village Hall	Central Otago	Recladding of the community hall	\$15,000
Oturehua Community	Central Otago	New shed over the community pool	\$37,112
Cromwell Youth Trust	Central Otago	Bikes and helmets for 'Back on Track' project	\$15,388
			\$367,500

What matters most to our stakeholders?

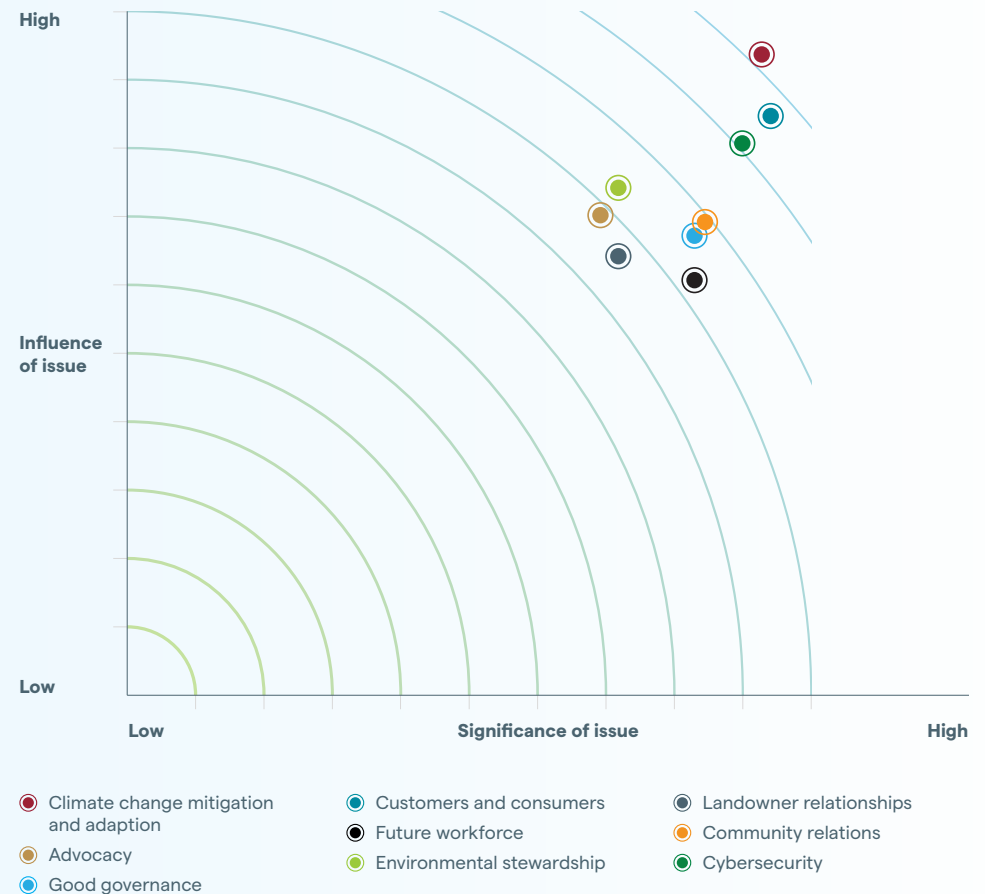
During FY20 Transpower commissioned independent consultancy Proxima to explore the perspectives of our stakeholders in more detail.

We selected around 20 stakeholders representing a wide range of viewpoints and conducted in-depth interviews to gather insights into what they believed to be the most important issues facing Transpower, their expectations for our work, views on current performance and ideas for potential initiatives Transpower should consider in the future. A survey was also issued to Transpower's General Management Team; a sample of staff and to the eight-member Consumer Advisory Panel.

The exercise revealed a high degree of alignment across stakeholder groups and Transpower's strategic plans, and provided a baseline from which to measure our influence and significance across the issues that stakeholders believe to be most salient.

Insights from these interviews and Transpower's materiality assessment have featured prominently in our activities during this past financial year and continue to do so into the future. Our business strategy *Transmission Tomorrow* outlines our five strategic priorities which address each of these material concerns. Our *Sustainability Strategy* has four key themes – Climate Change; Environmental Stewardship; Sustainable Business and Our Communities – and activities outlined in the strategy address eight of the nine areas of concern for stakeholders. The ninth is well addressed by our regular cybersecurity activity.

Materiality Matrix



The top three

Three issues dominated as influences on Transpower's activities and significance to the industry as a whole:

- climate change mitigation and adaptation;
- customers and consumers; and
- community and landowner relationships.

Climate change mitigation and adaptation

This leading issue remained Transpower's top priority in our planning and activities. Stakeholders see Transpower as a critical and central player in the New Zealand energy sector, and an enabler of progress on the big challenges facing our country as it transitions to a net-zero carbon economy. They believe Transpower can play an important role as researcher and enabler, stimulating conversations about technology options while allowing the market to ultimately make the decision on the final solutions.

Customers and consumers

Meeting customers' and consumers' needs and providing secure and stable supply and value for money remains a high priority for Transpower particularly as the electrification of our economy evolves and new connections are sought. Both audiences are central to our business plans and strategic priorities today and out to 2050.

Community and landowner relationships

Our stakeholders report they consider Transpower to have done a great job at building and maintaining positive relationships with landowners and community groups around New Zealand. This is something that Transpower has made a concerted effort to

foster. Most of our transmission lines are on, or cross, private land and we acknowledge the impact these can have on landowners and communities (particularly visually). Landowners are vital in helping us achieve our goals and objectives for New Zealand's transmission system and we continue to manage our relationships with this stakeholder group and their wider communities carefully.

Other areas of concern

Cybersecurity

Discussions with stakeholders revealed cybersecurity to be a growing area of concern. Transpower is acutely aware of security with our position as owner of the Grid and System Operator and we have robust measures in place to protect our critical infrastructure. Our protocols and measures stood up to the test during the various COVID-19 regional alert level changes during the past year

which saw most of our people working from home presenting different security risks. Our systems and teams showed agility without compromising the control environment.

Good governance

A cornerstone of sustainable business reporting, Transpower's stakeholders have high expectations for our governance, particularly in relation to financial and non-financial disclosures. Sustainable and ethical procurement is expected across the business with evidence of full life-cycle, cradle-to-grave planning for infrastructure and measurement of the achievement of sustainable outcomes using a recognised framework.

Future workforce

Transpower is a champion of the next generation of energy professionals and fosters a culture of positive health, safety

and wellbeing for our existing and future workforce. Our stakeholders recognise our role in developing workforce capabilities and skills to address future needs in the industry.

Environmental stewardship

Transpower's activities undoubtedly have an impact on the natural and physical environment and our stakeholders expect us to acknowledge our role and be proactive, moving beyond simply complying with environmental legislation to making regenerative practices business-as-usual.

Advocacy

Stakeholders see Transpower as an objective provider of evidence-based research, innovation and advocacy to inform industry and political discussions on the future of the energy sector.



Material issues by stakeholder group



Customers, generators, major users, electricity industry

- Addressing climate change risks by decarbonising the electricity supply
- Enabling more renewable connections and managing the costs of transition
- Secure supply/resilient network
- Affordability and reliability of supply
- Transparency about electricity pricing and grid investment
- Financial efficiency and reducing transmission costs
- Cyber risks to grid integrity
- Timely and open communication with generators/retailers to support consumer relationships
- Operational practices – fleet, supply chain, waste, working conditions, carbon management



Central government, Board and investors

- Consumer focus – reliable and affordable supply with lowest possible cost for transition to 100% renewables
- Good stewardship, efficiency and right-sizing of grid infrastructure to ensure ongoing financial viability in face of changing demands
- Future-fit grid – being the objective expert at whole-of-system level and providing information to enable others' decisions and investments for the benefit of NZ Inc.
- Accelerating / enabling / incentivising renewable energy generation. Clear market signals and transparent information about pricing implications
- Transition to 100% renewables
- Collaboration with generators and distributors
- Increasing transmission capacity of grid
- Good environmental stewardship practices
- Ethical and responsible supply chain
- Climate change risks / liabilities
- Good governance
- Having the right talent to address future challenges



Regulators and consumer interests

- Affordable, reliable and financially just transition to renewables
- Decarbonisation of electricity supply (beyond Transpower's own footprint)
- Asset management and resilience
- Lifecycle sustainability of infrastructure
- Consumer-centric approach to everything
- Independent and objective research / advocacy
- Ensure confidence to enable investment
- Good governance and transparent decision-making that reflects long-term interests of consumers
- Pricing to incentivise renewables and that sees largest users paying the most
- Safety
- Sustainability performance reporting



Service providers and delivery partners

- Leverage scale of organisation to have maximum impact
- Bring suppliers and partners along on the sustainability journey
- Diverse and skilled workforce
- Support talent development and training of suppliers
- Ethical and responsible supply chain
- Health, safety and wellbeing
- Good sustainability reporting

Landowners and community

- Respect and understanding of landowner rights
- Respect for archaeological sites
- Biosecurity
- Environmental management and fire risk
- Health, safety and wellbeing around lines



The challenges faced

As with all businesses, Transpower faces a number of different challenges in its work to deliver for everyone in New Zealand – many of which are beyond Transpower's ability to control.

However, with a focus from the Board and executive team, careful planning and management and deliberate attention to the challenges faced, Transpower continues to make progress in achieving its objectives.

Please also see Transpower's Risk Management Reporting, starting on page 14.

COVID-19

Like everyone, Transpower was impacted by the global emergence of COVID-19, experiencing disruption to our international supply chains, to our works programme, our access to international experts, our ability to recruit and to the ways that we are able to carry out our work.

We now have an effective and well-rehearsed COVID-19 crisis management plan and escalation protocol, and continue to build resilience into our global supply chain. We have considered the impact of COVID-19 on our future workplan and believe that we are well prepared to continue delivering on our plans as New Zealand and the world emerge from the crisis. This analysis is factored into the input assumptions of our business planning exercise and is reflected in the forecasts that we present in this document.

However, the closure of New Zealand's borders continues to create challenges both from a delivery perspective and for our staff wellbeing. Transpower is a diverse organisation with many specialist staff who call other countries home. While New Zealand has emerged from the pandemic relatively unscathed, many of our people have friends and family overseas making their experiences of the pandemic far more difficult. We continue to focus heavily on staff wellbeing and are continually reassessing our policies and practices in light of our international workforce.

Workforce development and retention

A major expansion of the electricity system assumes that a qualified workforce is available to execute on the build required from generation and storage through to new forms of electrified connected customers. The competition for qualified people for near-term projects, and the exponential demand expected for electricity industry construction comes at a time when skill shortages in the industry are at an all-time high, and the unemployment rate in New Zealand is very low. This means the industry will need to import skilled people necessary to progress these complex projects and invest in training and development to a greater extent than in the recent past.

High voltage electricity transmission is a specialist international field of work – unfortunately New Zealand's population and the size of our industry do not enable the depth and breadth of technical skills required to be sourced or sustained through local employment alone. Several of the skill sets we require are not common in New Zealand.

Our current immigration settings do not support a skill importation model for Transpower, or the industry more broadly. With a similar state of growth existing across Australia and internationally, and the opening up of travel, the ability to attract people with the right skills is limited and the threat of losing critical people is significant.

It is critical that we ensure the bright future of this industry is kept front and centre of conversations with our current and emerging workforce.

Read our case study on how we are inspiring a new generation of engineers on page 57.

Uncertainty

While not unique to Transpower, the challenge of uncertainty is a significant one for our business to overcome. As a regulated monopoly, our plans for investment must be balanced against the cost to consumers. Invest too soon, and consumers will be paying for unutilised assets. Invest too late, and the reliability of service could be compromised. Uncertainty within the market is an ever-present challenge. This past year, Transpower commenced a significant project in the Clutha Upper-Waitaki region to enable the transmission of electricity that would be released when the New Zealand Aluminium Smelter at Tiwai Point closed. We are on a fast-track to completion in early 2022. Several studies are also underway to understand how the power system might respond in the event the Smelter closes and different scenarios come to pass. The Smelter has announced it holds an electricity supply contract until at least 2024 and its potential closure remains uncertain. Gaining as much certainty as possible on where and when new supply will appear and new demand will arise is the driving force behind our customer and industry engagement efforts.

Regulatory reform

There is a significant programme of regulatory reform underway across the New Zealand Government and regulators. Many of these programmes will have a long-term impact on infrastructure and workforce development, and they require the involvement of subject matter experts that can only come from the electricity industry. Being absent from the discussion risks negative impacts from proposed changes.

Transpower is making its subject matter experts available to contribute to the discussion and is taking an active role in the various reform consultation processes as they progress.

Asset health management

Management of our transmission lines, conductors and structures is our biggest asset lifecycle challenge. Most of our network was built between the 1950s and the 1980s. This is reflected in the age of our conductors, 10% of which were installed before 1950 and more than 60% installed between the 1950s and 1980.

For conductors, early indications were that more than half of the North Island and approximately one third of South Island lines may reach end-of-life and might require replacing in the next 30 years. However, more comprehensive assessment and testing has brought those numbers down. Replacement is expected to peak around 2030-2035.

In time, if significant volumes of reconductoring is needed that would have a material impact on network availability, capital investment, resourcing needs and transmission prices. This potentially coincides with a period where there is significant demand growth, but also an increasing ability for customers to better manage the resilience of their supply through remote storage.

As with conductors, our 24,000 towers were installed progressively over time with peaks in the 1930s and between the 1950s and 1980s. As towers age, the original tower galvanising deteriorates due to corrosion. In turn we are facing a large and increasing investment to maintain these towers.

Read our case study on page 76.





Transmission Pricing Methodology (TPM)

In June 2020, the Electricity Authority released its decision and guidelines for a new TPM. This year we developed a proposed new TPM conforming with these guidelines and submitted it to the Authority on 30 June 2021.

The guidelines present a fundamental change for the industry to a benefits-based TPM, in contrast to the current approach which socialises much of the cost of the National Grid across all users. This change is likely to result in significant value transfers between consumers of transmission services while creating potential connection risks for parties promoting new generation. This is likely to raise the risk of litigation regarding interpretation of the guidelines and the application of the TPM more broadly. Transpower will likely be at the heart of resolving these risks if they arise.

We are concerned that pricing outcomes based on uncertain multi-decade forecasts could prove contentious and so significantly impede our ability to make investment decisions, including for major new investments requiring project-specific approval from the Commerce Commission. In particular, this risk may be realised where investment is in anticipation of future generation and electrification demand that is uncertain.

In the months ahead, the Authority expects to complete consultation on the proposed TPM and has signalled its final decision on the new TPM for March 2022, with the expectation it will take effect in prices from April 2023.

Read our case study on the development of the TPM page 77.

Landowner relations

Despite achieving a 91% satisfaction rating from our landowners, it is inevitable that there will remain ongoing challenges in some areas. Our infrastructure runs the length of New Zealand and crosses some 30,000 properties. Just as positive relationships can endure, so too does negative sentiment and solutions to long-held grievances are not always straightforward.

Transpower is currently seeking leave to appeal a decision by the Tauranga High Court which earlier this year found in favour of an appeal by the Maungatapu Marae Trust Board, regarding planned work adjacent to the Maungatapu marae. This quashed the consents given by the Tauranga City Council and Bay of Plenty Regional Council in 2018 and upheld in the Environment Court in 2020. The work is required to ensure security of supply to the Tauranga region. At the time of writing, the outcome of court action is unknown but the need for further conversation with the Marae Trust Board, iwi and members of the community is ongoing.

We continue to monitor conductor noise in urban areas where new conductor has been installed. We are also increasing our focus on the issue of contaminated land through our *Sustainability Strategy*, to ensure we can better understand the extent of these emerging issues from our historical activities and develop a targeted contamination land programme.

Price-quality standards

For every year of our regulatory control period the Commerce Commission sets price quality measures – a range of upper and lower performance targets within which we are expected to perform. Targets are also set for availability of assets and for asset health, with financial incentives and penalties possible should the availability standards be exceeded or breached. (Unlike previous years, the asset health standards are no longer linked to incentives or penalties).

Our RCP3 availability standards were set by the Commission taking into account difficulties we experienced in RCP2, discussed in our 2020 Annual Review. The standards now mean that certain events (such as natural disasters and malicious damage) beyond our control are no longer counted against the availability targets. However, we consider the definition of such events that are beyond our control to be unexpectedly restrictive. We have therefore treated two events in the past financial year as ones to which the definition applies despite not being specifically excluded by the standards.

The two events are the outages needed to deliver our Clutha and Upper Waitaki Lines Project which was not foreseen when the RCP3 standards were set, and to repair a damaged 220 kV cable south of Auckland (delayed due to an inability to access international expertise following COVID-19 supplier constraints). We advised the Commission we did not intend to count the two events for the availability performance targets. Taking this approach, our asset availability measures are within the limits set by the Commission for the year.

We continue to work closely with the Commerce Commission to manage expectations and delivery.

Pictured right: Anjana Madurapperuma, Engineer and Tony Neighbours, Senior Business and Information Specialist.



Outcomes we will achieve

Our approach to managing performance is focused on what creates value for our customers, our stakeholders and our business.

We measure, monitor and manage performance across six outcome areas which ensure we drive long-term value for Transpower and our stakeholders. When objectives across these performance areas are met, we create safe, economic and sustainable outcomes for our stakeholders.

Our performance areas are underpinned by performance drivers that are measurable and are designed to enable better decision making.



Safety

The safe operation of our assets and the protection of everyone near them.



People

Diversity in our approach and excellence in our operation. Ensuring we maintain an engaged workforce supports business performance.



Relationships

Working with fairness and respect while we ensure stakeholder needs are met and relationships are enduring.



Sustainability

Addressing climate change, being environmental stewards and supporting our communities.



Customers

Ensuring a secure and reliable supply for all connected parties which enables them to remain commercially competitive.



Financial

Delivering results that meet stakeholder expectations and create a sustainable business.



Sustainable Development Goals

As a member of the Sustainable Business Council and New Zealand's Climate Leaders Coalition, Transpower has taken into account the expectations set by the recent [WBCSD Sustainable Development Goals Sector Roadmap for the electric utilities sector](#) (March 2021), developed by the World Business Council for Sustainable Development. Transpower has used the Roadmap to help inform where we can have the greatest impact.

The Roadmap identifies the following key opportunities for impact across four main themes of climate and energy, people and communities, nature and circular economy:



Climate and energy

1. Decarbonise electricity generation in line with limiting global warming to 1.5°C.
2. Enhance electricity system flexibility, resilience and efficiency.



People and communities

3. Ensure access to affordable, reliable, sustainable and modern electricity services for all.
4. Attract and retain a diverse and inclusive workforce.
5. Leave no one behind in the energy transition and respect human rights.



Nature

6. Protect, restore and promote sustainable use of ecosystems and drive net biodiversity gains.



Circular economy

7. Accelerate the transition to a circular electric utility sector.

United Nations Sustainable Development Goals

This guidance has been used to re-set our *Sustainability Strategy* key performance indicators and work programme for the coming financial year and beyond to 2030. Our work contributes directly to four of the [Sustainable Development Goals](#) and indirectly to a further five along with the seven key impact opportunity areas. Those areas where impact is less direct are an outcome of the work we do despite not being explicitly targeted through our *Sustainability Strategy* work programme.

Direct impact

Goal 07

Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 09

Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.

Goal 13

Take urgent action to combat climate change and its impacts.

Goal 15

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat deforestation, and halt and reverse land degradation and halt biodiversity loss.

Indirect impact

Goal 05

Achieve gender equality and empower all women and girls.

Goal 06

Ensure availability and sustainable management of water and sanitation for all.

Goal 08

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Goal 11

Make cities and human settlements inclusive, safe, resilient and sustainable.

Goal 12

Ensure sustainable consumption and production patterns.

Mahere rautaki

Our strategic framework

Our strategic framework provides the steps through which we link the attainment of our long-term goal to enable the decarbonisation of the New Zealand economy, to the work our staff and partners do every day.

Pictured on following page:

Mao Reyes, Grid Compliance Manager and
Cijina Kunnath, Senior Engineer (bottom left)

Jordan Witehira, Engineer – Lines, and
Charlotte Edwards, Corporate Counsel (top right)



Responding to Aotearoa's needs

Transpower's view of the future, as outlined in *Whakamana i Te Mauri Hiko*, and shaped by both the global and local environment, provides the context within which *Transmission Tomorrow – Our Strategy* is defined. The views of our stakeholders, both nationally and internationally, provide further clarity on the direction that Transpower must take.

We have identified the need to evolve planning of the Grid and the market system for a net-zero carbon future, streamline our connection processes, improve the quality of information we share with customers and support regulation that will enable infrastructure for decarbonisation. We must prepare our business, our processes and systems, our workforce and the rest of industry for a vastly different future that includes the adoption of digital technologies and innovation. We must work collaboratively with industry to support their decarbonisation and ensure our workforce capacity and capability is matched to future need.

In addition, Transpower has an enterprise-wide focus on health, safety and wellness. It is critical not only for ensuring our culture and practices are such that our workforce is safe, healthy and well both in the office and in the field, but also for sustaining our licence to operate. The management and delivery of our health and safety workplan is a supporting initiative to our specified company focus areas.

Our strategic approach and business planning ensure that we are focused on the key initiatives needed to deliver on our strategy. We have five strategic priorities and each year we assign two key initiatives to each strategic priority. This results in 10 key initiatives that the business will focus on delivering.

OUR STRATEGIC PRIORITIES	OUR KEY INITIATIVES
 Evolve our services to meet customers' needs	1 Deliver customer connection process quick wins 2 Develop Customer Engagement Plan (CEP)
 Play an active role in enabling New Zealand's energy future	3 Position Te Mauri Hiko discussion in a COVID-19 context to support policy agenda for net-zero carbon 4 Commence Net Zero Grid Pathways development
 Sustain our social licence to operate	5 Complete refreshed sustainability strategy and develop implementation plan 6 Develop and implement Supply Chain Resilience Roadmap
 Match our infrastructure to need over time	7 Implement best practice end-to-end works delivery process 8 Develop Asset Management and Network Risk Improvement Roadmap
 Accelerate our organisational effectiveness	9 Deliver investments in data and analytics 10 Refresh our purpose to align to Te Mauri Hiko

How we create value

Inputs → Our Business → Our Outputs → Outcomes →

OUR PURPOSE **Whakamana i te mauri hiko tū mai Aotearoa** Empowering the energy future for New Zealand



Manufactured Capital
Our physical assets, our offices, technology and grid infrastructure



Human Capital
Our employees and Service Providers; their knowledge, skills and diversity



Intellectual Capital
Our knowledge translated into service specifications, standards, policies and procedures, how we innovate and teach



Natural Capital
The natural resources we use and the natural and cultural characteristics of where our assets are located



Social Capital
Our relationships with all stakeholders and our give backs to communities



Financial Capital
Income from our regulated and unregulated activities

803
STAFF

\$470m
MAINTENANCE, REPLACEMENT AND ENHANCEMENT EXPENDITURE

10,000
PLANNED OUTAGES

Our Strategic Priorities



Evolve our services to meet customers' needs



Play an active role in enabling New Zealand's energy future



Sustain our social licence to operate



Match our infrastructure to need over time



Accelerate our organisational effectiveness

Our Delivery

Enhanced customer connections and engagement

Thought leadership and Net Zero Grid Pathways

Sustainability strategy and Supply Chain Resilience Roadmap

Asset Management and Network Risk Improvement Roadmap and best practice grid works

Refreshed purpose and enhanced data and analytics capability

\$916.2m
REVENUE

\$147m
DIVIDENDS PAID OUT TO THE CROWN

98%
HVDC/HVAC AVAILABILITY



Safety
The safe operation of our assets and the protection of everyone near them



People
Diversity in our approach and excellence in our operation



Relationships
Stakeholder needs are met and relationships are enduring



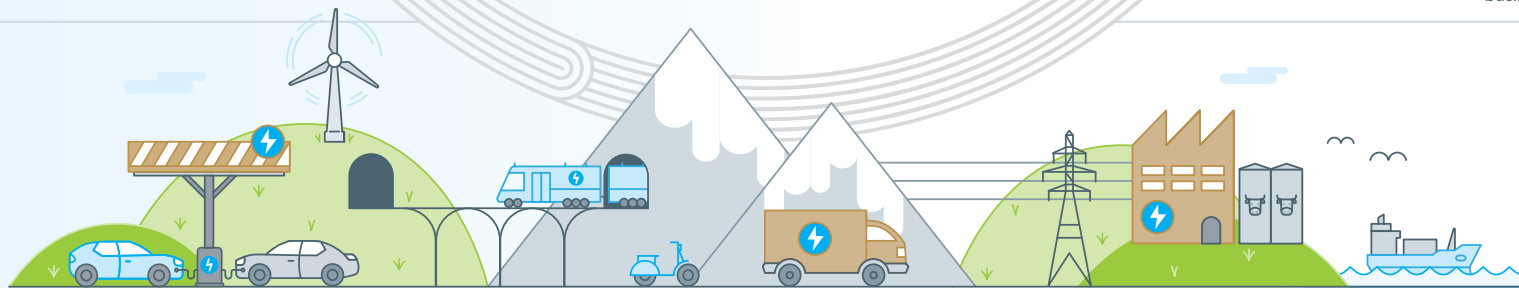
Sustainability
Addressing climate change, being environmental stewards and supporting our communities



Customers
Ensuring a secure and reliable supply for all connected parties



Financial
Delivering results that meet expectations and create a sustainable business





Evolve our services to meet customers' needs

Focus areas for the year:

- Deliver customer connections process quick wins
- Develop customer engagement plan

Material issues addressed

- Customers and consumers
- Future workforce
- Good governance, including cybersecurity

SDGs targeted

Goal 07: Affordable and clean energy

Goal 09: Industry, innovation and infrastructure

Goal 13: Climate action

Outcomes



Safety



Relationships



Sustainability



Customers

Impact



Climate and energy



People and communities



Circular economy

Whakamana i Te Mauri Hiko envisages a future with a much higher volume of customer work being delivered for existing and new customers with traditional and new technologies. This will be a step change from what our business has provided in the recent past. This year, in line with these expectations, we experienced a significant increase in new connection enquiries of roughly 10 times the historical average.

We have worked to ensure the information and services we offer provide a full end-to-end connection package for all Grid connection related items as part of our process improvements roadmap. Our aim is to decrease complexity for those seeking to electrify or connect new generation.

We have also responded to a need identified by the Commerce Commission to improve our customer engagement around our regulatory control period submissions, network investments and network outages. Our Customer Engagement Plan for RCP3 was delivered to the Commerce Commission in November, and our principles of engagement and customer service excellence programme are now core to how we work with our customers.

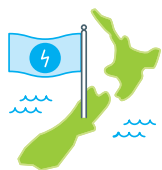
Our System Operator service is similarly evolving to enable customers to add more distributed energy resources, intermittent generation resources and flexible demand. We will also consider how we can improve our forecasting of demand and embedded technologies to improve the efficiency

of market operations and reliability and resilience.

In the year ahead we will:

- Improve our customer engagement by developing Individual Engagement Plans that seek to provide co-developed, annually updated plans and scorecards for our engagement with each customer.
- Deliver Year Two of the customer connection process improvements roadmap which includes embedding Year One process improvements, streamlining connections for larger distributed energy resources that are embedded in distribution networks and updating connections process metrics and targets.





Play an active role in enabling New Zealand's energy future

Focus areas for the year:

- Position Te Mauri Hiko discussion in a COVID-19 context to support policy for Net Zero Carbon
- Commence Net Zero Grid Pathways development

Material issues addressed

- Climate change, adaptation and linked advocacy
- Customers and consumers

SDGs targeted

Goal 07: Affordable and clean energy

Goal 09: Industry, innovation and infrastructure

Goal 13: Climate action

Outcomes



Safety



People



Relationships



Sustainability



Customers



Financial

Impact



Climate and energy



People and communities



Circular economy

Whakamana i Te Mauri Hiko has helped to outline what needs to be done to unlock electrification and renewable generation to contribute to a net-zero carbon future. Much of this future is beyond our direct control (e.g. policy, workforce) and we rely on the efforts of other stakeholders. We will continue to play an active part in providing thought leadership and help drive the discussion across industry to support action.

Over the past year we have continued to present our views on the economic rebuild and sector reform including the Government's Renewable Energy Strategy, proposed reform of the Resource Management Act, and the Climate Change Commission's carbon budgets. We published the Electrification Roadmap to support discussion on how to achieve New Zealand's electrification commitments and we have continued to engage with Government, policy makers, regulators, industry, and customers to convey our position while listening, understanding and incorporating the views of others.

Our *Whakamana i Te Mauri Hiko* work outlined the need for a long-term transmission grid roadmap that clearly identifies key enabling projects for decarbonisation. Our aim is for all key stakeholders to have a shared

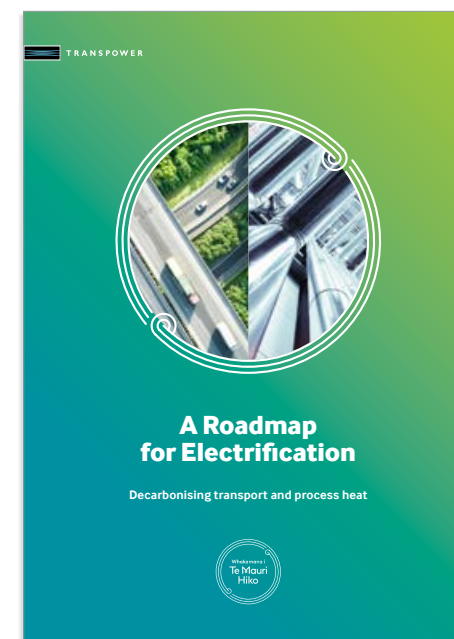
understanding of what is required to achieve electrification. This is our Net Zero Grid Pathways (NZGP) programme and it will outline future development options for the Grid under different supply and demand scenarios.

We began this work with a panel of experts exploring current supply and demand assumptions before embarking on consultation around the Energy Demand and Generation Scenarios from December 2020 to February 2021. In April 2021, we explored our 'least regrets tactical investments' and plans for the immediate future of the Grid with industry.

In the year ahead we will:

- Continue to engage and provide insights to the policy agenda and update *Transmission Tomorrow – Our Strategy* to ensure it is reflective of the changing environment.
- Continue to work with the Energy Efficiency and Conservation Authority (EECA) and the Electricity Distribution Businesses (EDBs) to develop a national fossil fuel boiler database that identifies each boiler owner's plans for decarbonisation to inform process heat electrification demand.
- Complete Phase One of NZGP before moving to Phase Two. Through this work we expect to achieve a higher level of shared understanding of the future Grid, gain pre-approval of Major Capital Expenditure Projects (MCP) and consequently, commence delivery. Our programme of work will include:

- A Wairakei reactor business case
- A HVDC, Central North Island and Wairakei Ring investigation
- The acceleration of the Waikato Upper-North Island Voltage Management project, including initiating a process to seek interest for a non-network solution, including the possibility of batteries, at Otahuhu.





Sustain our social licence to operate

Focus areas for the year:

- Complete refreshed *Sustainability Strategy* and develop implementation plan
- Develop and implement supply chain resilience roadmap

Material issues addressed

- Climate change, adaptation and linked advocacy
- Customers and consumers
- Future workforce
- Good governance, including cybersecurity
- Community and landowner relationships
- Environmental stewardship

SDGs targeted

Goal 07: Affordable and clean energy

Goal 13: Climate action

Goal 15: Life on land

Outcomes



Safety



People



Relationships



Sustainability



Customers

Impact



Climate and energy



People and communities



Nature

While we must deliver the work outlined in *Whakamana i Te Mauri Hiko*, it is critical that we retain acceptance from all consumers. Without it, we will not achieve the required physical build and all that enables our energy future.

Worker and public safety continues to be a top priority, along with continuing to deliver grid security and reliability. This year we increased our focus on our own environmental sustainability and decarbonisation seeking to reduce our Greenhouse Gases, building climate change resilience, managing our environmental impacts and protecting heritage and culture.

Transpower has been reporting its [Greenhouse Gas emissions](#) since the 2016 financial year. Last year we began reporting against the [Taskforce on Climate-related Financial Disclosures \(TCFD\) standards](#). Today we are ambitious in our sustainability goals committing to measures that address climate change, create a sustainable business, provide environmental stewardship and deliver value to our communities.

Our [Sustainability Strategy](#) provides a vision and targets, over the medium and long term, to ensure that our commitment to sustainability is translated into tangible action. A new set of key performance indicators were developed for the FY21 financial year.

Our System Operator service seeks to deliver a secure and reliable power system and the platform for a competitive electricity market. It is essential that we continue to sustain confidence in our ability to achieve an appropriate balance between these two outcomes. This is reflected in our commitment to continuously improve our delivery of the system operator service, particularly our role around information provision to enable effective decision making.

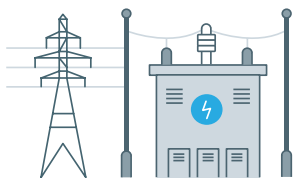
This year we had a targeted focus on developing and implementing a supply chain resilience roadmap to ensure that we could receive the goods and services needed to develop the Grid and provide System Operator services. COVID-19 caused significant disruption to global supply chains in 2020/21 and this initiative ensured that we had the critical spares and necessary equipment required to undertake our work and deliver our capital works programme.

The Transmission Pricing Methodology (TPM) and Real Time Pricing (RTP) projects are high profile, high impact projects that the Electricity Authority has identified will improve the efficiency of the electricity market. Both have been under development over the past year with a TPM proposal delivered to the Authority at the end of June, and RTP moving into the implementation phase.

Delivering these projects on schedule will require significant engagement with industry to ensure that the transition to the new systems is both seamless and can unlock the market efficiency benefits.

In the year ahead we will:

- Implement Year One of our *Sustainability Strategy*, ensuring we 'walk the talk' on *Whakamana i Te Mauri Hiko*. We will set targets, undertake pilots and, in particular, progress our level of reporting against the TCFD standards.
- Support the Authority to complete the final stages towards final consideration of the new TPM later this year, and prepare to administer it when it comes into effect, expected for prices taking effect from April 2023.
- Deliver Real Time Pricing for the Authority.



Match our infrastructure to need over time

Focus areas for the year:

- Develop Asset Management and Network Risk Improvement Roadmap
- Implement best practice end-to-end works delivery process

Material issues addressed

- Customers and consumers
- Community and landowner relationships
- Good governance

SDGs targeted

Goal 07: Affordable and clean energy

Goal 09: Industry, innovation and infrastructure

Outcomes



Relationships



Customers



Financial

Impact



Climate and energy



People and communities

The vision laid out in *Whakamana i Te Mauri Hiko*, of strong demand growth over coming decades alongside changing generation, creates new challenges for matching our infrastructure to need over time. We need to balance the risk of delivering work too early, and increased consumer costs earlier than necessary, against the risk of delivering work too late which can lead to reliability impacts and delayed decarbonisation. We also need to ensure that our investments in the Grid are well targeted to provide value while remaining affordable.

Achieving this balance requires strong forecasting and planning of both what we intend to build and of our workforce to deliver to this plan.

This past year we have focused on growing our asset management and network risk capability so we can best target investments to where they will most improve the reliability of our transmission service. This also ensures our decisions provide the best value to New Zealand and appropriately balance reliability with affordability. The reliability of the power transmission system is steadily improving. We recorded just 40 unplanned interruptions for the RCP3 points of service during the year, a result that reflects our enhanced assessment management and network risk practices.

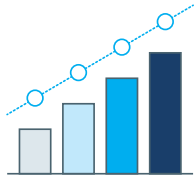
We have developed an Asset Management and Network Risk Improvement Roadmap outlining how we can make further improvements to our Asset Health and Criticality models and can better link the value of our investments directly to customer benefits. Building this capability within the organisation is a key part of planning for the future.

Our end-to-end works delivery programme aims to ensure that our delivery processes align with global best practice. This year we implemented Year One of the end-to-end works delivery programme focused on improved works planning and key performance indicators to increase our pace of delivery, manage costs more effectively, and sustain our commitment to continuously improving safety. By the end of the FY21 year we had delivered more work than planned but spent only what was budgeted.

In FY22 our focus shifts to implementing the new service provider reset. Effective relationships with our service providers ensure that we are delivering the needs of today while building the capability that will be required for tomorrow. Our service provider reset secures our ability to translate these plans into action. It will deliver significant value for money and the capacity to complete work while ensuring that our service providers have a view of the future that allows them to invest confidently in future capability for the sector.

In the year ahead we will:

- Implement the service provider reset and integrate outcomes into the end-to-end works delivery process. This will provide greater ability to gear up for future work and increase efficiency through optimisation of our work programme.
- Implement Year One of the Asset Management and Network Risk Improvement Roadmap to deliver improved investment decision making during RCP3 and a higher quality, data driven RCP4 submission.



Accelerate our organisational effectiveness

Focus areas for the year:

- Deliver investments in data and analytics
- Refresh our purpose to align to Te Mauri Hiko

Material issues addressed

- Climate change, adaptation and linked advocacy
- Customers and consumers
- Future workforce
- Good governance, including cybersecurity

SDGs targeted

Goal 09: Industry, innovation and infrastructure

Goal 13: Climate action

Outcomes



Safety



People



Relationships



Sustainability



Customers

Impact



Climate and energy



People and communities



Nature



Circular economy

Whakamana i Te Mauri Hiko describes a future that will demand a different set of skills and capabilities from those we have today. With our breadth of reach and connection in the industry, we have a role to play in fostering and preparing capability and capacity to support New Zealand's energy future. At the same time, we need to continue to focus on cost-effectiveness, enable our continued transformation and accelerate our organisational effectiveness.

We continue our work to improve diversity and inclusion. A diverse and inclusive workforce underpins our performance effectiveness. Our work is focused on engaging our people in the need for greater diversity, building leadership capability to support an inclusive work environment and supporting our diverse communities.

Improving how we manage innovation is an important enabler given changes in our sector, the scale of future reinvestment pressures, and the potential for digital technologies to improve our business. We have focused existing major innovation programmes on

finding opportunities to better manage two programmes of large forecast spend – conductor corrosion and tower painting. We have conducted innovation sprints to identify new ways of approaching these challenges and have partnered with external organisations to draw on outside experience. The innovation work has identified that significant savings are possible for both these programmes.

Delivering investments in data and analytics is a key enabler to unlocking the potential of our people, providing them with timely and complete information to aid their decision making. A new Data and Analytics operating model will be established which has the potential to lead to significant productivity improvements and enhanced decision making.

This is also a key enabler of growing our Asset Management and Network Risk capabilities and will help us to further improve and optimise the decisions that we make for the Grid.

Whakamana i Te Mauri Hiko identified that we have a key role to play in enabling the transition to a net-zero carbon future. In 2020/21 we refreshed our purpose to align to this future. The updated purpose *Whakamana i te mauri hiko tū mai Aotearoa – Empowering the energy future for New Zealand* further aligns our purpose to our strategy and will be important for driving the change in organisational culture and capability needed to deliver on this future.

In the year ahead we will:

- Implement data and analytics operating model to deliver improved decision making, enable new models of work and increase our efficiency.
- Reposition our People Strategy in a *Whakamana i Te Mauri Hiko* context, to define the future workforce capabilities and capacity needed to deliver our work. This will also identify the critical skills required and potential improvements to ways of working to enable delivery of a ramp up in activity driven by electrification and new renewable generation.



Achieving our outcomes and meeting the challenges

Over the past year we have achieved an impressive amount of work, reached major milestones, engaged with industry and stakeholders and worked to overcome challenges facing the energy sector.



Safety

Achieving positive outcomes:

New Health, Safety and Wellbeing Management System part of Transpower culture

Transpower marked a milestone this year with the completion of a two-year programme of work updating our Health, Safety and Wellbeing Management System (HSMS) to cover all areas of our enterprise. Our HSMS ensures Transpower discharges our duties as set out in the Health and Safety at Work Act (2015) and related electricity sector standards, guidelines and regulations, and ensures that we take a risk-based approach to managing health and safety.

In accordance with the Health and Safety at Work Act (2015), Transpower is a Person Conducting a Business or Undertaking (PCBU) which means we have a duty to ensure the health, safety and wellbeing of workers while they are at work (either in one of our offices or on site), the health, safety and wellbeing of our suppliers working with us and others affected by our work.

Our health and safety management system is now structured to ensure we meet our obligations as a PCBU or our partnerships with other PCBUs (i.e. outsourced activities).

In developing the HSMS, Transpower's team went through more than 20 policies, standards and procedures, updating, refreshing, and in some cases rewriting the documents to ensure that they were simple to understand and use, whilst also ensuring we met our legal obligations and duties. The comprehensive process which began in 2019, has been applied across the business and our operational partners.

To ensure that the information is easily accessible, the team completed an overhaul of our health and safety information on our intranet, The Volt, and internal team pages. Staff and contractors now have easy access to the full range of procedures, systems and tools in one place to help keep themselves and others safe. Regular updates are also provided in team meetings and intranet news pages.

Pictured left: Minister of Energy and Resources
Hon. Megan Woods visits Haywards substation.



Celebrating success: Safety Thanks And Recognition (STAR) Awards

Our 2021 STAR Awards was an evening to remember, with two venues, co-MCs Three Newshub broadcaster Mike McRoberts (Auckland) and Transpower General Counsel and Company Secretary David Knight (Wellington), and an online audience joining to celebrate those in our industry demonstrating excellence and leadership in the health and safety space. Congratulations to the winners:

Safety Innovation Award	Ventia: Conductor Catcher
Hauora Wellbeing Initiative Award	Downer: Te Ara Whanake
Future of Safety Award	Lucy Bain (Electronet) Vili Hansen (Ventia)
Frontline Leadership Award	Simon Norton (Ventia)
Thought Leadership Award	Matt Iorangi (Northpower)
Team Safety Award	Ventia: Rangitata River Event Response
The STAR Supreme Award	Matt Iorangi (Northpower)





The STAR Supreme Award – Matt Iorangi (Northpower) with judge and former Transpower director, Sheridan Broadbent



Future of Safety Award –
Lucy Bain (Electronet)



Future of Safety Award –
Vili Hansen (Ventia)



Safety Innovation Award – Conductor Catcher (Ventia)
accepted by Tim Drake



Frontline Leadership Award – Simon Norton (Ventia)



Hauora Wellbeing Initiative Award – Te Ara Whanake (Downer). Pictured left to right: Jarrod Telford, Max Zhang, Ashley Thomas, and Jessica Polglase.



Achieving positive outcomes:

Collaboration crucial to agile health, safety and wellbeing in the field

Health, safety and wellbeing is dynamic, and businesses need to be flexible in addressing evolving situations and protecting staff. Transpower's Clutha, Upper-Waitaki Lines Project (CUWLP) is an example of agile health, safety and wellbeing planning and execution.

Commencing in February 2021, the CUWLP covers a vast area of the South Island, with thousands of kilometres of transmission line being rewired with hurdle structures built, extensive foundation work requiring earthworks, and tower strengthening. Ultimately, the upgrade will increase northward transmission capacity from the lower South Island from around 600 MW at present, to 1000 MW.

It is a very large project and one that has involved extensive planning across all operational areas. Health, safety and wellbeing has been at the fore of planning how the project is delivered, and the team has taken a risk-based approach to assessing, prioritising and addressing health and safety management.

While the project itself is immense, the crew is relatively small and tightknit. Around 80 crew from Transpower and service providers Electrix, Ventia and Electronet moved to Central Otago for 18 months to deliver the project.

Collaboration has been essential from the outset. Each team member attended a full induction programme where they had the opportunity to get to know each other,

learn about the project, the locations, what they could expect during the project, and understand the health, safety and wellbeing processes and practices.

Dynamic weather conditions were factored into the project plan and timetable with major external activities taking place in spring, summer and autumn, and indoor engineering, wiring, procurement and planning taking place over winter, minimising risk to crew. Transpower also made the decision to limit the distance travelled by employees at any one time to one hour to manage fatigue and to ensure help would be readily available whilst travelling through the more remote areas of the South Island.

Wellbeing has been high on the agenda with Transpower committed to ensuring teams remain fresh and engaged in the project. Fostering this approach, Transpower, Electrix and Ventia developed a roster system with crews working 10 days on, and four days off. Chartered flights and buses are available to take team members back to their hometowns for breaks and time with family and friends.

The scale of the project crosses many local community boards and regions across Otago and Waitaki over several years, and public safety has been a considerable concern addressed in the project's health, safety and wellbeing plan. The project team engaged communities early, speaking at

community board meetings, visiting schools and landowners, and creating a positive environment for feedback. Project managers have continued to attend community board meetings and liaise with communities, particularly on traffic management in remote areas.

The proactive approach to planning and health, safety and wellbeing for all parties has delivered positive feedback from both the crew and the communities we are working in. Transpower has ensured its workforce and the needs of its landowners are well looked after through the duration of the project.







Addressing the challenge:

Staff vie to secure the most sought-after role of the year: the HSW Champion

At its core, health, safety and wellbeing is about improving people's lives in the workplace and beyond. Transpower's team of health, safety and wellbeing champions (HSW Champions) are passionate about their role and have spread their enthusiasm across the enterprise.

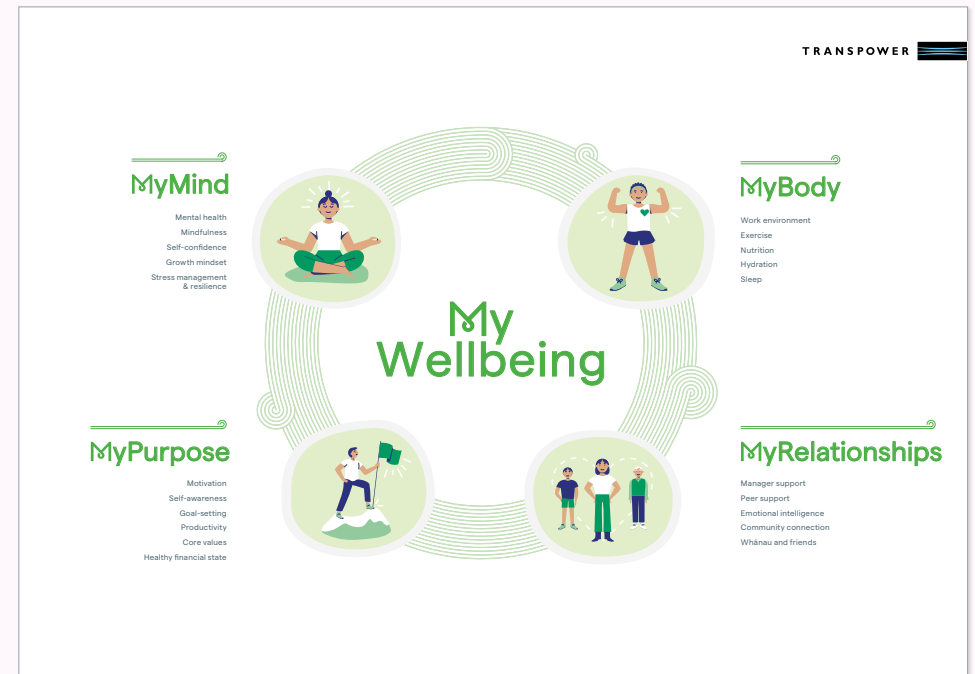
As a Person Conducting a Business or Undertaking (PCBU), Transpower has a legislative requirement to elect health and safety representatives to represent workers who carry out work for that business or undertaking. This year, as part of our programme, the health and safety representative role was reimagined to champion health, safety and wellbeing at Transpower. Nominations for the HSW Champion roles were called for and the response was overwhelming with positions oversubscribed and elections held.

There are now 19 HSW Champions across five regional committees. Their activities are overseen by the national health, safety and wellness committee which meets bi-monthly and has representation from the General Management Team.

Over the past year the HSW Champions have led considerable changes across Transpower including guidance for personal protective equipment (PPE) usage, facilitating first aid training and refresher courses, introducing wellbeing resources (particularly around COVID-19 and flexible working spaces), running initiatives to support mental health, bi-monthly safety inspections, and site-based initiatives to improve health safety.

Their activities have also extended to the wider community with Auckland-based HSW Champions meeting with neighbours to collaboratively and constructively prevent dangerous driving on the roads surrounding Transpower's Auckland office.

Over the past year our HSW Champions have played an active role in creating and maintaining an environment that is focused on the health, safety and wellbeing of our people, and supporting the role of our HSW Team. Over the next year the HSW Team and HSW Champions will support the roll out of a wellbeing programme across Transpower, further raising the profile of the importance of health, safety and wellbeing in the workplace and beyond.





Work to be done:

Improving health, safety and wellbeing in an outsourced environment

As a business with a fully outsourced model, Transpower's health, safety and wellbeing management approach is complex and dynamic.

In addition to our own standards, policies and procedures, we work with four major service providers and numerous smaller companies, all of which have their own systems, practices, policy, programmes and standards.

Our approach to HSW management with our service providers and suppliers is to provide comprehensive and clear expectations so they can plan and use their own systems to implement procedures alongside the programme of work. We acknowledge that our service providers and suppliers are experts in their respective fields of work and we are very conscious about allowing them to deliver the work using their own processes and procedures and not being prescriptive about how they plan their work and manage health and safety in the field. Rather, our role is to provide assurance and oversight in managing critical risks, with our respective HSW cultures blending to create a safe environment for all parties. We also work closely with them to share ideas and coordinate our activities where we have common issues and interests.

Transpower firmly believes that health, safety and wellbeing is the responsibility of everyone, and the new reporting process has improved the level of visibility our leadership team has into how well we are managing risk.

Over the past 18 months, Transpower has developed and implemented robust reporting processes to support this approach. Everyone across the business including the Board has access to the same report – with a suite of leading and lagging performance measures being reported transparently and consistently across health, safety and wellbeing.

Over the coming year Transpower will continue to develop and evolve our HSW programme including refining the management of critical risk (delving deeper into best practice, control management and assurance), our wellbeing programme, safety management system, and online presence (both internally and externally).





People

Achieving positive outcomes:

Pātai streamlines and improves the RMA application process

Transpower is an avid proponent of innovation in the sector and streamlining our approaches to improve the experience for our stakeholders. Over the past year we have implemented several major innovation programmes and have continued our successful partnership with CreativeHQ to draw on outside expertise and explore new approaches to problem solving. These have yielded good results; for example, our aging conductor and tower corrosion work identified significant available savings.

During 2020/21 Transpower tackled our process for receiving and responding to enquiries about subdivision and development near the National Grid which involves a Resource Management Act (RMA) process. In the past, subdivision and development proposals have been received through multiple different avenues including phone calls and personal emails directed to planners, with inconsistent levels of information provided by the enquirer, making it difficult for Transpower to make any assessment without requesting more information and delaying the process. Often the issues were largely technical and not RMA-related. Given the increasing number of enquiries being received, it was essential that the process was streamlined.

Transpower collaborated with software developers Nuwave to create **Pātai**, a new online portal for RMA-related enquiries. Pātai provides a single point of contact for RMA enquiries and tracks the progress of the enquiry right through to Transpower's final response. Since its launch in February 2021, Pātai has significantly improved the processing of enquiries through greater transparency and reduced back-and-forth between the enquirer and Transpower respondent. Pātai also has capacity to grow and be a point of entry for enquiries across various workstreams, enabling a coordinated "all of Transpower" response to enquiries and requests relating to the use of land around National Grid assets.

Feedback has been positive with users reporting it was "much easier" to use than other portals. In the 2021/22 year, Transpower will survey internal and external users to better understand the user experience and Pātai's performance. This feedback will be incorporated into continued development and refinement of the software and, combined with Pātai's reporting metrics, will provide Transpower with comprehensive data on corridor land use.

Pictured right: Michael McCarroll, Programme Manager, and Cijina Kunnath, Senior Engineer – Lines





Achieving positive outcomes:

Navigating the dangers of cybersecurity

In the pandemic environment of the past 18 months we have spent more time online than ever before. While this new virtual approach to working has become business-as-usual it comes with risks attached, including cybersecurity.

As the owner of New Zealand's critical infrastructure Transpower has a responsibility to ensure the security of the National Grid and Electricity Market. We use a risk-based approach to define our security controls and utilise national (Voluntary Cyber Security Standard for Control System Operators) and international frameworks (ISO/IEC 27001:2013 Information Technology). Each month we report to our Board on the status of our cybersecurity controls and risk.

Cybersecurity is an evolving issue and we work closely with the New Zealand Intelligence Community and Control Systems Security Information Exchange (CSSIE) members along with international entities, including the US Cybersecurity and Infrastructure Security Agency (CISA) and US Electricity Information Sharing and Analysis Center, to improve the cybersecurity position of New Zealand's electricity sector.

The landscape changes frequently in terms of the threat environment and the quantity of internet traffic that requires a response. On a monthly basis we block more than 750,000 emails and more than 10 million web connections due to policy, content or reputation.

Every two years Transpower participates in a US-led Grid Exercise (GridEx) that tests organisations' ability to respond to a multi-threat interruption of the electricity sector from cybersecurity and physical attacks. This year GridEx VI, to be held in November 2021, will see an expansion of the exercise with the participation of additional sector participants.





Addressing the challenge:

Culture counts at Transpower

A diverse and inclusive workforce underpins Transpower's performance effectiveness. Our diversity and inclusion programme is focused on engaging our people in the need for greater diversity, building leadership capability to support an inclusive work environment and supporting the communities of Transpower.

Six years ago, when Transpower launched our diversity and inclusion programme our workforce comprised 71.5% men and 28.5% women. Since then our workforce composition has changed dramatically and we are edging closer to our target of 40/40/20 (40% of women and 40% of men, with 20% flexibility).

In FY21² our workforce comprised: 32.3% women, 66.5% men, 0.5% gender diverse (our 'X' community) and 0.72% who have chosen not to state their gender.

Gender composition is just one part of the diversity and inclusion approach to support an equitable and inclusive workplace. Of those who have provided ethnicity information, 82% of staff identify as European, 20% as Asian, 7% as Middle Eastern/Latin American/African, 6% of staff identify as Māori, 2% as Pasifika, and 4% other ethnicities.

Other initiatives and policy changes include culturally inclusive policies, flexible work

policies, a family violence policy and practices to support any staff who may be affected, and working to close the gender pay gap (17.5% in June 2021 compared to 18% in November 2019).

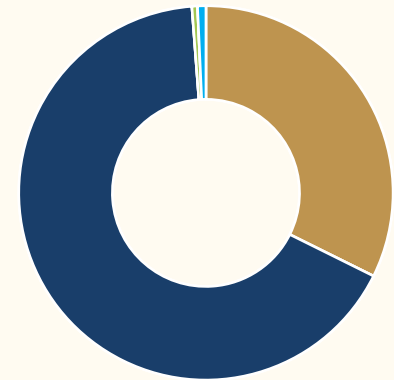
To accelerate the development of an inclusive work environment we have established employee communities. The "Communities of Transpower" champion different groups such as the Rainbow Community, Young Professionals, Women at Transpower, Whanaungatanga, Climate Community, Kia Ora NZ (for staff new to New Zealand) and establishing Raranga, our diversity and inclusion leadership group that champions our communities.

The 2020/21 year saw a busy programme of supporting events, campaigns and activities including marae experiences, Te Reo Māori classes, International Engineering Day, Diwali, Eid-al-Fitr, Chinese New Year and Matariki celebrations, and our Champions of Change partnership.

Our approach to diversity and inclusion is evolving at Transpower and will continue to develop. Feedback from our wider Transpower whānau on our activities has been overwhelmingly positive, with staff reporting they feel welcomed, included and accepted at Transpower.

2. Champions for Change report data: March to March

Pictured left: Joseph Hornell, Corporate Communications Advisor, Charlotte Edwards, Corporate Counsel, Mathy Dorman, Geospatial Manager, Jack Clifford, Risk and Assurance Advisor, Doug McNeill, Kaiārahi Tikanga, and Tharirah Jalal, Analytics Practice Manager.



Gender split of all employees
(Board excluded)

- Female, 32.33%
- Male, 66.47%
- Gender diverse, 0.48%
- Not stated, 0.72%





Work to be done:

Inspiring the next generation of transmission experts

A requirement of achieving our *Whakamana i Te Mauri Hiko* goals is access to a skilled workforce. New Zealand currently faces shortages of engineers, scientists, ICT professionals and other skilled workers across the Science, Technology, Engineering and Maths (STEM) sectors³.

Engineers make up just over 1% of New Zealand's population, and with only 5% of our graduates studying engineering at tertiary level, the pool of potential engineers isn't large. This is in stark contrast to the OECD average where almost 12% of graduates have studied engineering. To date this trend has been offset by a 'brain gain' of scientists and STEM professionals from overseas⁴. However, to ensure a sustainable workforce, New Zealand needs to improve its domestic skillset.

Transpower is taking the lead in an initiative to inspire and encourage New Zealand students about STEM careers. In 2021 we have partnered with Engineering New Zealand for the Wonder Project Power Challenge, an eight-week in-school programme designed to excite 11-13 year olds about a STEM-based career. A pilot of the project began in late July 2021 ahead of the project being rolled out further across New Zealand schools in July 2022.

At the grassroots level, Transpower has assisted individual schools with their STEM promotions in 2021/21 including school careers evenings and field trips. Three female staff from across our strategy, grid works and enterprise information management divisions (one of which was a former student) attended the Porirua's Bishop Viard College Careers Evening, showcasing careers for women in STEM and inspiring students aged 8-18 with Augmented Reality headsets, descriptions of work in the field and memories of school and university.

Further south, Poolburn School spent time on the Clutha Upper-Waitaki Lines Project site providing 'hands on' experience. Transpower Project Manager Neville Cole designed and built a practical wiring model using fencing equipment for the pupils to learn from. The students created a model 50 metre wiring run with temporary electric fencing reels as wiring machines, rope as the conductor, electric fence tape as new duplex conductors and pig-tail fencing stands as towers and learned about tension and weight.

Pictured right: Chief Executive Alison Andrew with students of Kōwhiri Intermediate School.

3. MBIE. 2018. *Research Science and Innovation System Performance Report 2018* (mbie.govt.nz)

4. *Ibid.*





Relationships

Achieving positive outcomes:

Transpower's Auckland Strategy provides an energy blueprint for New Zealand's largest city

Auckland is home to 1.7 million people and this number is expected to swell further to almost 2 million by 2035. The city is investing heavily in infrastructure, particularly roading and rail projects, and Transpower has an important role to play to power these developments and support Auckland's aspirations to be a climate-ready, sustainable city.

Our Auckland Strategy, developed in 2018 and refined in 2021, provides a blueprint of how Transpower can enable the city's energy future through ensuring the Grid remains robust and reliable at all times, supporting the electrification of Auckland's transport fleet, homes and businesses, and pragmatic development in and around the Grid – especially where we might be able to rationalise our assets.

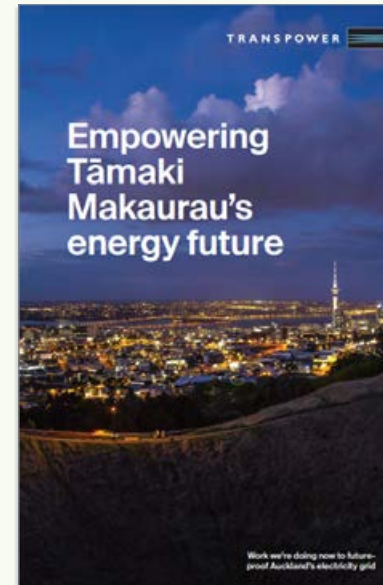
We have commenced a project to remove 17 km of 110 kV transmission lines on the Albany-Henderson A line (involving 49 towers across 174 properties). We also started an extensive maintenance project reconductoring 220 kV lines between Otara and Flatbush which have been impacted by coastal corrosion. Our 220 kV overhead transmission lines are the backbone to Auckland and Northland's electricity network and it is essential these are kept in optimal condition. Work is also underway to upgrade the Bombay substation installing two transformers to meet load increases in South Auckland.

Auckland is expanding rapidly to the north and south with urbanisation and industrialisation, and electrification of rail in these areas. We are part of a bigger picture coordinating with other infrastructure providers for work in Auckland and the past year has seen a lot of collaboration with our Auckland partners including Kāinga Ora – Homes and Communities, Panuku Development Auckland, Vector, Kiwi Rail, Counties Power, Waka Kotahi and housing developers.

Our work with Kāinga Ora and Panuku Development Auckland is exploring ways to support Auckland's urban development with a reduced footprint of transmission lines. Kāinga Ora is developing Waikowhai – a new suburban development unlocking 1128 homes, while Panuku has started a long-term strategy for the Onehunga Wharf development that will see it transformed into a new community with homes, cafes, retail and public spaces.

Our strategy work with Vector, Kiwi Rail, Counties Power, and housing developers has presented opportunities to collaboratively identify project efficiencies across agencies and development options. We have also collaborated with Waka Kotahi to realign some of our transmission lines to enable its new southern motorway improvements, and Auckland Transport to provide solutions for the location of our Otahuhu-Penrose 220 kV cable in relation to its roading development in the area.

At the heart of our work is the need to provide a robust, reliable network for Auckland's homes and businesses that also considers the potential impact on Auckland's distribution networks. We aim to find cost-effective solutions that work for all parties, to better solve issues and enable Auckland's growth, but it is complex and challenging to do so – especially with the current grid configuration.



Our Auckland Strategy... provides a blueprint of how Transpower can enable the city's energy future through ensuring the Grid remains robust and reliable at all times.



Our work with Kāinga Ora and Panuku Development Auckland is exploring ways to support Auckland's urban development with a reduced footprint of transmission lines.



Achieving positive outcomes:

Knowledge is power in the quest to achieve decarbonisation

In producing our *Roadmap for Electrification* in 2020/21 Transpower had the opportunity to consult a range of different companies and businesses around New Zealand, particularly on process heat. It was apparent through our engagement with industry that there was a shortage of high-quality information on decarbonisation plans for fossil-fuelled heat boilers. This information is critical to inform what process heat needs to be electrified and when, and the implications of this for electricity networks.

In September 2020 Transpower partnered with Electricity Ashburton, the Energy Efficiency and Conservation Authority (EECA) and DETA Consulting on a pilot information gathering exercise, mapping all the larger (500 kW+) fossil fuel boilers across eight industrial sites in the Ashburton region. Researchers met with staff at each facility and reviewed plans for decarbonisation which combined, would reduce current coal boiler capacity from 35 MW to zero, and diesel and LPG capacity from 5 MW to 2 MW by 2026. This would be achieved through a combination of electrode boilers, high temperature heat pumps and retrofitting coal boilers to work with biomass. Electricity Ashburton now has a comprehensive knowledge base on what electrification measures are required in its network in the near future. It is working closely with its customers to see the plans come to fruition. As a result of the project, one of Electricity Ashburton's customers, ANZCO Foods, is already converting a large proportion of its heating load from coal to electricity.

For Transpower, the exercise also provided valuable information for the region's future supply needs.

This pilot has since been expanded to all Electricity Distribution Businesses (EDB) across the South Island, in which LPG and coal are predominant fossil fuels used in boilers. The project has so far identified ~350 fossil-fuelled boilers in the South Island representing 1.5 GW of capacity. The work is at an advanced stage in identifying the decarbonisation roadmap for these boilers. In early 2021/22 EECA, Transpower, DETA Consulting and the South Island EDBs plan to share high-level findings at an industry forum day. The group is also planning to roll out the model to the North Island, exploring ways fossil-fuel boilers can be electrified or retrofitted for biomass use.

Many of the businesses that the group worked with in the first stages of this programme have gone on to receive funding from the Government Investment in Decarbonising Industry (GIDI) Fund, accelerating progress on their decarbonisation activities.





Addressing the challenge:

Transpower leads response in challenging dry year

Each year Transpower hosts a Security of Supply Workshop with industry to share ideas and plans on strategic security of supply risks in an informal and collaborative atmosphere. Suffice to say, none of the 25 participants at the July 2020 workshop realised how prescient their collective planning would be over FY21.

In December 2020, NIWA declared the 2020/21 summer to be a La Niña event which would affect hydrology. By March it was apparent that the months ahead were going to be challenging with Transpower's Electricity Risk Curves and Simulated Storage Trajectories showing low hydro lakes, limited inflows and restricted gas. This created

significant concern in the sector and we stood up an incident management team to track the situation and plan for critical contingencies, including public relations and marketing activity for launch nationwide if needed. This team provided weekly updates to industry and the Minister of Energy and Resources, held regular webinars, and consulted with experts across the country.

Over April and May the industry was on tenterhooks as the hydro lakes remained low despite moderate inflows and proactive market responses. A significant period of rainfall around the hydro lakes in late May brought relief and with market participants

making critical business decisions to stave off an emergency, as the FY21 financial year ended, New Zealand had avoided a major security of supply incident for winter. Transpower held its final industry update on the situation in late June and as the unusually warm winter progressed, inflows put storage above average by the end of July.

The experience has been immensely valuable in planning for the future. While our work into the electrification of New Zealand's energy sector will assist in mitigating the effects of dry years in the future, as a sector we must be primed to deal with these situations in the short and medium-term.



Over the last month the System Operator has increased the frequency of updating reports on the security of supply situation, added new scenarios to assist participants understand the evolving status and potential outcomes, and held online briefings for the industry so that everybody has access at the same time to the latest information.

While this is a service provider role the System Operator are contracted by the Electricity Authority to provide in such events as the current potentially emerging risk to security of supply, MEUG has been impressed with the frequency and quality of information provided and congratulates the System Operator on how well it has assisted participants."

**MAJOR ELECTRICITY USERS GROUP
MAY 2021 NEWSLETTER**





Work to be done:

Preparing for RMA reforms

As the owner of the National Grid and System Operator, Transpower has extensive experience in resource management processes. Accordingly, we are taking a keen interest in, and actively engaging on, the Government's repeal and replacement of the Resource Management Act (RMA).

Every detailed assessment of New Zealand's potential pathway to net-zero emissions has concluded that expansion in New Zealand's renewable electricity system (including transmission and distribution) is critical.

Our *Whakamana i Te Mauri Hiko* work estimates the need for more than 60 grid connections over the next 15 years including

new sites and upgrades to existing grid assets to enable additional load.

In the current regulatory environment, it would not be possible to implement this scale of activity in time to meet the emissions budgets. Electricity infrastructure is required to be delivered at a scale and pace that is materially different from what we have been doing in recent years.

The Natural and Built Environments Act (NBA), Strategic Planning Act (SPA) and Climate Adaptation Act (CAA) are the three acts proposed to replace the current RMA. It is critical that these Acts protect the Grid and enable operation, maintenance and

development of the Grid, including in sensitive environments (that cannot always be avoided).

Over the past year, we have held a series of internal workshops, consultations and numerous meetings to explore the challenges and opportunities that the reform process poses for both Transpower and the wider sector. Looking beyond the National Grid, we explored 'whole of system' issues including climate change mitigation needs, provision of electricity and linear infrastructure, and increased protection of the natural environment using biophysical limits.

Policy and rules to protect and enable our infrastructure already exist in the National

Policy Statement on Electricity Transmission and National Environmental Standards for Electricity Transmission Activities. The intent of these documents needs to be retained and improved through the reform. As a sector, we need national direction with effective wording that will enable electrification; and we need national direction which is integrated and coherent.

The legislation must avoid statutory frameworks that threaten, constrain or delay both existing or new renewable electrification, transmission and distribution projects. It should provide processes and consenting pathways that actively enable the prompt and flexible consenting of electrification projects, as well as the continued operation, maintenance and upgrading of existing infrastructure (including to respond to technology and other changes).

Transpower has a unique role in New Zealand's electricity sector and our activities will be impacted by all changes made through the reform. Over the coming year we will be working closely with industry and engaging with government to explore the opportunities and challenges that the reforms pose within the new regulatory environment.





Sustainability

Achieving positive outcomes:

Resetting expectations with our Sustainability Strategy

The activities within our *Sustainability Strategy* have become part of our regular business across Transpower. During the 2020/21 year we updated the strategy to better align with the direction set out in *Whakamana i Te Mauri Hiko*, and the core areas of concern for our stakeholders. We have introduced a new suite of key performance indicators and supporting initiatives to ensure we deliver on our low-carbon targets while considering the materiality issues important to our stakeholders. You can find this new strategy on our [website](#).

This re-set of our *Sustainability Strategy* provided a timely opportunity to reconsider the expectations set out in the [Sustainable Development Goals \(SDG\) Sector Roadmap for the electric utilities sector](#) by the World Business Council for Sustainable Development (WBCSD) in March 2021. These identify key opportunities for SDG impact and maximise the potential for positive achievements across our operations and day-to-day activities. We have used the roadmap to focus our own strategic approach to the SDGs and help us make informed decisions as to where

we can have the greatest impact on them. Many of these are reflected in our updated *Sustainability Strategy* which will be the mechanism by which we report on progress in addressing these SDGs in our day-to-day activities.

Progress toward the targets set in the 2019/20 *Sustainability Strategy* are outlined in the following pages. Some targets and supporting initiatives have been carried over into the new strategy which will be reported on as part of our 2021/22 Integrated Annual Report.





2019/20 Sustainability framework and targets

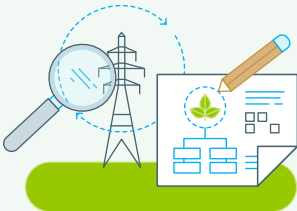
Key: Not achieved Some progress In progress Significant progress Achieved

	Focus	Outcome	Targets	Progress
Climate change				
	Enabling renewable and electrification connections	We integrate new renewable supply and electrification load from process heat and transport	Revise connection process to accommodate the connection of new generation technology by June 2021	
		Advocate for a net-zero emission grid with our customers		
		We enable customer choice by connecting diverse technologies in a timely and cost-effective manner		
	Planning networks	Cost-effective grid in line with Net Zero Grid Pathways	Climate risk scenarios fully integrated into asset planning decision framework and asset health and network risk framework by June 2023	
		We ensure the grid is resilient to climate change, reporting to TCFD framework		
	Carbon footprint	Our carbon footprint is reduced 60% by 2030, on track to achieve a net-zero grid by 2050	Achieve 60% reduction in Greenhouse Gas emissions by 2030 (Controllable Scope 1 & 2 emissions from 2005 baseline)	
			Report carbon impact of grid electricity by December 2020 to inform industry decarbonisation	
Environmental stewardship				
	Natural environment	Using a kaitiakitanga approach we restore the environment, creating a net gain in biodiversity	Completion of biodiversity measurement method and indicators by June 2021	
		Measurable improvement of our pollutants and discharges by 2030		
	Material cycles	The environmental impact of materials is minimised throughout the lifecycle	Completion of waste baselining by June 2021	
		Use resources efficiently, and minimise waste with measurable improvements by 2030		

Table continues on following page



2019/20 Sustainability framework and targets *continued*

	Focus	Outcome	Targets	Progress
Sustainable business				
	Good governance	Decision frameworks consider social and environmental impact through asset lifecycle	Inclusion of carbon and sustainability impacts in core Transpower decision making frameworks by June 2023	
		Transparent reporting of our impacts, aspirations and progress	Develop a sustainability dashboard for 2021 Annual Review by April 2021	
	Our people	Our people are highly engaged, skilled and capable. Our diversity and inclusion is leveraged	Progression towards 40/40/20 diversity target	
		Our people are enabled through development and health and safety		
Our communities				
	Iwi relations	We acknowledge mana whenua's connections to the land and partner to remediate the natural environment, minimising the impact of our work on sites of cultural significance	Review our Māori engagement strategy by June 2021	
			Develop process to identify and manage sites of cultural significance impacted by our work by December 2020	
	Community relations	Connected to our communities and trusted by them	Review our community engagement plan and community funding mechanisms by June 2021	
		Responding to opportunities to minimise our physical presence		
	Landowner relations	We work with landowners to minimise impact on their land and reduce our footprint. Ensure the public are safe around our assets	Achieve 85% landowner satisfaction in 2022 survey results	



Achieving positive outcomes:

Te Kāpehu Hiko, the new interactive tool bringing New Zealand's energy future to life

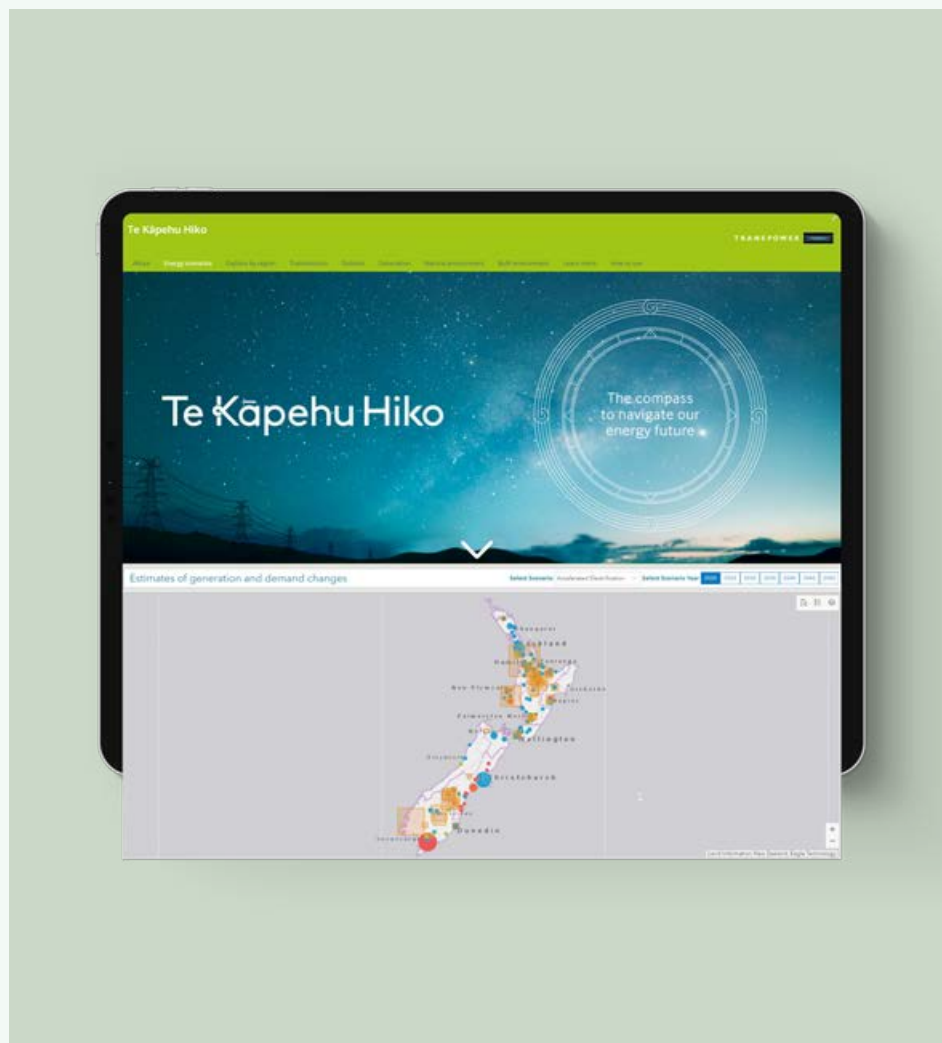
Whakamana i Te Mauri Hiko estimates that a 68% increase in electricity generation is needed by 2050. To achieve this level of accelerated electrification, Transpower will need to drive the development of New Zealand's National Grid to enable the transmission network expansion needed.

With Transpower's new interactive geospatial platform, Te Kāpehu Hiko (meaning the compass of electricity), our decision-makers now have powerful data on hand with which to pilot the future, including geospatial visualisations of grid and network assets over time.

The geospatial tool visualises the five energy future scenarios developed and described in *Whakamana i Te Mauri Hiko* which explains that decarbonising our economy requires its electrification.

Te Kāpehu Hiko combines multiple datasets from Transpower's business systems, commercial team modelling outputs, and external organisations such as council geographic information system (GIS) services. The information-rich web application and inhouse workflows keep it up to date as new data emerges.

With an ability to model the energy scenarios against potent external variables such as expected sea level rises and planned urban development, Te Kāpehu Hiko helps users identify both opportunities and risks along the way.



Addressing the challenges:

Establishing a baseline to quantify Scope 3 emissions

As an organisation, Transpower has a firm handle on our Scope 1 emissions (those that arise from our operations) and Scope 2 emissions (arising from electricity usage and transmission losses) and our annual Greenhouse Gas Emissions Inventory provides these details (see page 67 for information).

When it comes to Scope 3 emissions – those that arise from the supply chain and downstream activities – it becomes more difficult to quantify. It is a challenge that is facing many organisations across New Zealand and internationally. Simple activities such as buying an insulator can be fraught, as we assess where the product was made, how it was made, the carbon emissions at the production stage and then emissions created from transporting the product to New Zealand and to the site where it will be used.

Transpower has a considerable supply chain which contributed to over \$500 million worth of expenditure in the FY21. Some of these suppliers report on carbon emissions for activities undertaken for Transpower; others don't. Until Transpower has an accurate baseline of emissions across all suppliers, it is difficult to establish Scope 3 targets to report against.

Over the year we worked closely with Electricity Distribution Businesses (EDBs) to establish a process for consistent Scope 3 reporting through our supply chain. It is a work in progress, but gains are being made, particularly across our larger suppliers.



Work to be done:

Taking on the challenge of embodied carbon

Reducing embodied carbon – the amount of greenhouse gases required to produce a material – has been identified as a major factor in carbon emission reduction goals. This is particularly a concern for the building and construction sector, with concrete and steel contributing significant amounts of CO₂ emissions.

While construction is not one of Transpower's main activities, we are cognisant of embodied carbon across our activities and work on the grid – now and into the future. Leading by example, the recent refurbishment of our Waikoukou head office in Wellington saved more than 1,800 tonnes of CO₂ over its lifetime through sensible design⁵.

Conductors or electricity transmission wires used across our grid are predominantly made of aluminium alloy – a product that is readily available from a range of international markets. However, depending on where the aluminium is procured from and the manufacturing process involved, it can have up to 10 times the amount of embodied carbon than lower carbon-intensive alternatives, such as copper. Steel and cement are also used extensively across the grid to ensure a safe and reliable electricity network. However, both materials have a high embodied carbon level⁶.

During 2021, Transpower undertook several pilot studies to better understand our embodied carbon opportunities in substation and transmission line upgrade projects. With a major role in enabling New Zealand's net-zero electrification journey in the years ahead, we are keen to ensure we can minimise our own carbon footprint as we deliver an upgraded national grid to support new renewable electricity connections across the country.

Where possible, Transpower applies a Life Cycle Assessment (LCA) across its activities rather than assessing only the purchase price. We are working towards having a 'carbon library' for key components of national grid infrastructure, whereby we can advise our upstream and downstream partners about greenhouse gas potential across each activity.

5. Waikoukou LCA Case study: BRANZ 2018

6. Concrete New Zealand. 2019



Transpower's Greenhouse Gas Emissions

Our carbon footprint

As part of our commitment to a sustainable future, we produce an annual report of our Greenhouse Gas (GHG) emissions according to the international Greenhouse Gas Protocol and ISO 14046. Here we break down our GHG emissions, discuss what we're doing to manage, reduce and report them. We also publish an annual detailed report of our emissions on our website following a third-party assurance process in accordance with the International Standard on Assurance Engagements (New Zealand) issued by the External Reporting Board. We have adopted Taskforce on Climate-related Financial Disclosures (TCFD) standards and we cover our adoption plan further in this Integrated Report from page 108-112.

GHG emissions

Our total emissions for FY21 are estimated to be 256,518 tCO₂-e (tonnes of carbon dioxide equivalent), down 3% from FY20. This year significant effort has gone into refining our emissions reporting framework following major improvements in identifying the sources of our emissions last year. Refinements to our carbon accounting systems and a focused move away from estimated to actual Scope 3 emissions has resulted in a significant decrease in our recorded Scope 3 emissions. This year, they have reduced by 43,426 tCO₂-e (a 48% reduction from FY20). This decrease is primarily driven by more accurate Scope 3 emissions reporting from our service providers. Other factors driving this decrease include a reduced capital expenditure programme across FY21 as well as the application of more up-to-date

New Zealand-specific emissions factors to our GHG inventory.

Our goal is to achieve a 60% reduction of Scope 1 and 2 emissions directly under our control, against a 2005 baseline of 8,710 tCO₂-e, by 2030. This target excludes emissions arising from transmission losses. In FY21, controllable GHG emissions totalled 6,108 tCO₂-e, a 30% decrease compared to our 2005 baseline.

Transmission losses

Of our total reported emissions, 80% are derived from transmission losses, comprising 203,891 tCO₂-e of our total Scope 2 emissions in FY21. This was an increase of 21% in transmission losses from FY19 and was largely driven by more carbon-intensive electricity generation in response to reduced gas supply and lower hydro storage levels across New Zealand through FY20. These losses include grid losses from the AC and DC electricity networks as well as substation loads supplied from the grid. Although these losses are largely outside of Transpower's control, we have taken the position to continue monitoring and reporting them on behalf of the sector as part of our role in enabling New Zealand's net-zero grid pathway. Given transmission losses represent the largest proportion of our emissions reported in any given year, we will continue to investigate options for reducing those elements of transmission losses that Transpower has the ability to control. We foresee that transmission losses will continue to decrease following New Zealand's move to an increasingly renewable electricity network.





Transpower's Greenhouse Gas Emissions continued

Scope 1 – Emissions arising from our operations

Sulphur hexafluoride (SF₆) emissions were 4,928 tCO₂-e (5,037 tCO₂-e in FY20), down 2%. The majority of our SF₆ emissions result from equipment losses during operations. Across our fleet of SF₆-containing equipment the loss rate varies between 0.4-0.8% of the manufacturer-specified nameplate capacity of the switchgear. We have implemented a proactive programme to manage these losses to a target of <0.8% of installed nameplate capacity, and during the FY21 we successfully maintained our SF₆ losses below 0.4% of nameplate capacity which puts us in the leading edge of other international electricity distributors. As part of our long-term SF₆ reduction programme, we also refreshed our equipment upgrade programme to replace lower voltage SF₆ switchgear thus driving our long-term SF₆ emissions reductions. We continue to work with our key equipment manufacturers internationally to explore opportunities for SF₆-free switchgear in higher voltage applications.

Our emissions from fuel use in vehicles and emergency generators were 371 tCO₂-e (355 tCO₂-e in FY20), up 5%. We continue our work programme to switch our vehicle fleet to electric vehicles. In FY20, we increased the number of battery and plug-in hybrid vehicles to 80% of our passenger vehicle fleet, up from 50% in FY19 (a significant increase from 15% of our passenger fleet in FY18). Our target is to convert 100% of our passenger vehicles to battery or plug-in hybrid in FY22.

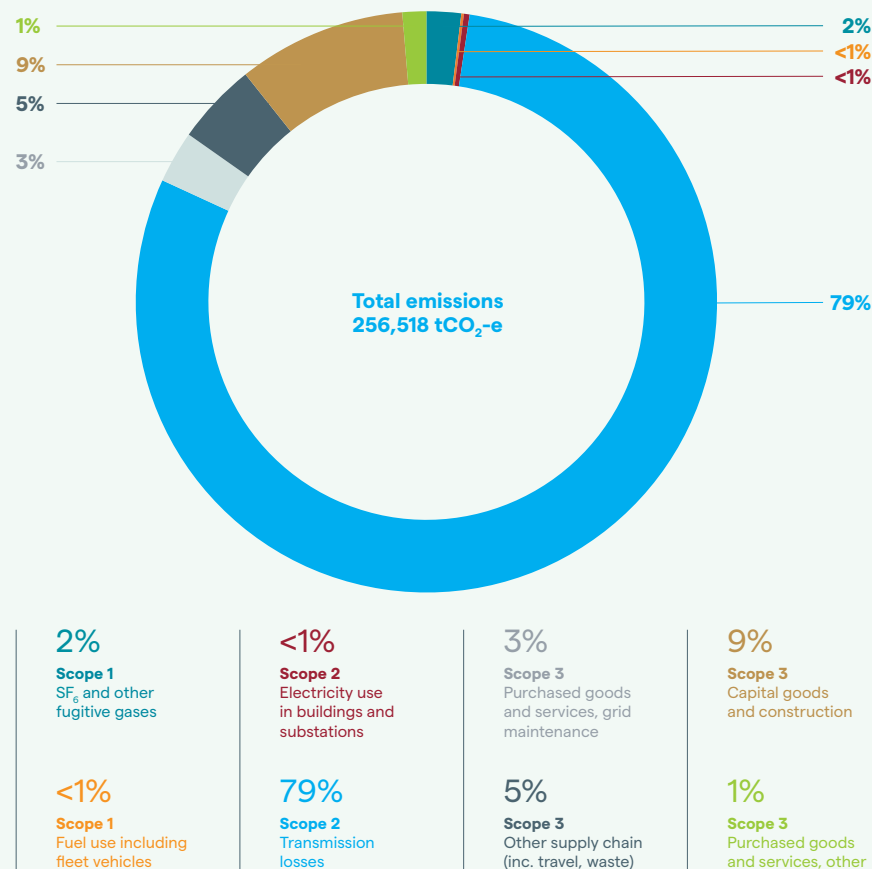
Scope 2 – Emissions arising from electricity usage

While electricity usage across our offices, buildings and substations has reduced our associated emissions from electricity usage have increased to 808 tCO₂-e (448 tCO₂-e in FY20). Some of this increase is associated with an increase in the emissions intensity of the electricity generated. Transmission losses are also affected by the carbon intensity of the electricity generation mix and continue to be the major source of our Scope 2 emissions. These increased to 203,891 tCO₂-e up 21% (168,130 in FY20). Longer-term, transmission losses are predicted to fall as the electricity system continues to decarbonise.

Scope 3 – Emissions arising from the supply chain

We are committed to working across our supply chain to better understand, report and manage Scope 3 emissions which are estimated at 46,519 tCO₂-e this year. This is a decrease of 43,426 tCO₂-e from 89,945 tCO₂-e in FY20 (a 49% reduction). Following a carbon reporting maturity assessment of our more emissions intensive service providers and suppliers in 2020, we have continued to focus on improving the accuracy of our Scope 3 emissions by increasing our reported actual Scope 3 emissions for our supply chain from estimated in FY20. Our annual GHG inventory report published on our website outlines more details on the recording of these Scope 3 emissions.

Please refer to the report of the Environmental, Social and Governance targets Transpower has set starting on page 81 of this report. These targets provide greater detail on what activity and action contributes to our Greenhouse Gas emissions and the targets we set for reduction.



Pictured: Gabriel Cheong, Market Analyst, Rebecca Reedy, Senior Corporate Communications Advisor, Matthew Copland, System Operator Power Systems Group Manager, and Budi Wijaya, Pricing Specialist.





Customers

Achieving positive outcomes:

Best year on record for transmission performance

Interruptions to transmission are trending down year-on-year and the FY21 year saw the best performance in 23 years.

Since 1976, Transpower has been codifying interruptions. Our accessible dataset is from 1998 which includes all unplanned interruptions and the cause of the interruption: environmental, equipment, human error incidents, miscellaneous and unknown. Over the years there have been ebbs and flows of interruptions with 2005/06 a particularly difficult year with 166 unplanned interruptions – most caused by environmental or equipment issues.

Since 2009/10, interruptions have been on a downward trend, especially when accounting for the variability of environmental caused interruptions. The 2020/21 year recorded our lowest ever number of unplanned interruptions – just 40 for the RCP3 points of service. The last time we were this close was 2015/16.

There are several factors behind the underlying trend. Interruptions caused by human error incidents, have been trending down over the long-term and considerable effort has been put towards reducing these in recent years in the areas of maintenance and project delivery. This year saw favourable weather (which is part of the environment category), but this remains highly variable year-to-year. Interruptions caused by equipment failure over the past decade are, on average, nearly half that of

the previous 10 years' average (2001-2010), in part due to improvements to the security of the grid and replacement and maintenance programmes that affect equipment reliability.

Enhancement projects like the Masterton bus protection and Maraetai bus sectionalisation have improved security and reduced the number of interruptions. The maintenance work designed to proactively manage gas leaks on outdoor circuit breakers is another example of how improving asset reliability has led to improved service reliability.

There has been a reduction in the unknown category of interruptions where no definitive cause was found. These interruptions could have been caused by flying debris, vegetation, possums, birds, lightning, etc, however no evidence was found to satisfy a reasonable conclusion. Our ability to locate faults and find evidence has also improved. The miscellaneous category of interruptions is typically due to third-party acts, such as those caused by cranes, excavators or farm equipment.

Unplanned Interruption Count and Cause

Cause Category:

- Environment
- Equipment
- Human Error Incidents
- Misc
- Unknown

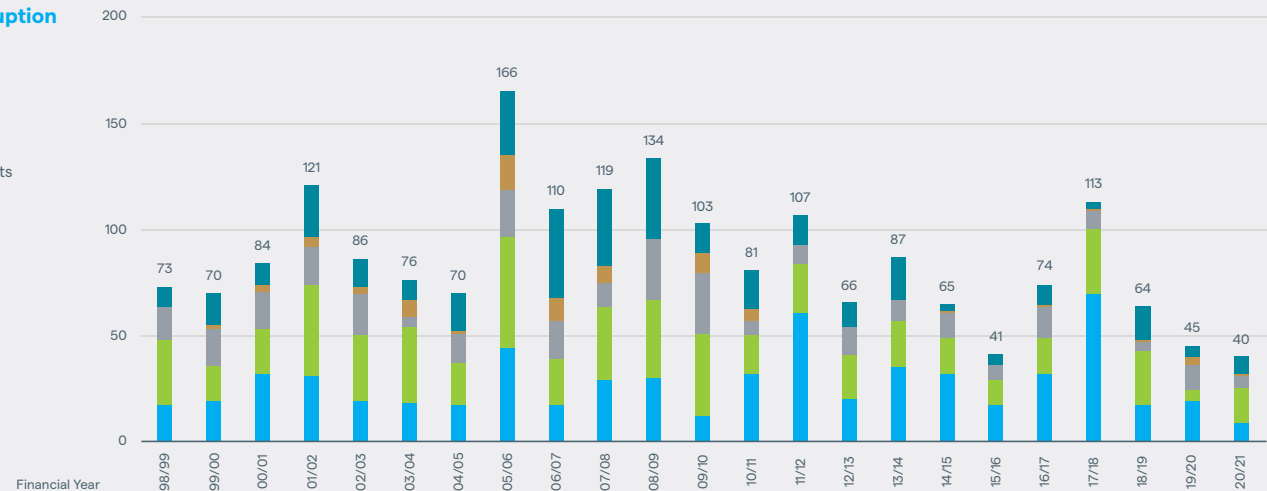


Figure 1: Note the chart excludes interruptions that are customer caused, the result of Automatic Underfrequency Load Shedding (AUFLS), and planned interruptions i.e. where there is at least 24 hours' notice of the interruption.



Achieving positive outcomes:

New connections, new generation: Feeding renewable wind generation into the Grid

With its predominant westerly, Taranaki is one of the windiest regions in New Zealand⁷. Tilt Renewable's Waipipi Wind Farm is therefore ideally placed to harness this wind power. The 31 wind turbines, representing 133 MW, went online in February 2021 providing enough energy to power around 65,000 homes.

The wind farm is connected to the Transpower 110 kV network via 11 km of transmission line to the Waverley substation in South Taranaki. As part of the project, we loaned our 70-tonne mobile substation to Tilt Renewables, providing continual power supply and saving the company from having to use a diesel generator. Feedback from Tilt Renewables' senior management was that working with Transpower to achieve commissioning, "was far easier and [more] straightforward than is the case for their Australian projects, (even with the COVID-19 related shutdown)".

Further south, Transpower has been heavily involved in the construction of Mercury's Turitea Wind Farm in the Tararua Ranges above Palmerston North. Transpower's Linton substation has been overhauled with the installation of a new bay, gantry, primary and secondary protection, revenue metering, and communications networks, ahead of the commissioning of the 60-turbine 222 MW wind farm.

The project includes the introduction of a new 12 km long 220 kV transmission line that will connect the wind farm (via two onsite substations) to the Linton substation, ultimately distributing around 804 GWh annually to the national grid. In future, the new transmission line will also connect Mercury's consented Puketo wind farm to the grid.

Transpower is also working with Meridian on its Harapaki 41-turbine wind farm in the Hawke's Bay. Construction is due to begin the first half of the 2021/22 financial year and, once in commission, will generate 176 MW of renewable energy, enough to power more than 70,000 homes.

Contact Energy's 152 MW Tauhara geothermal power station in Taupō is also an area of interest for Transpower and preparations are underway to connect the power station to the grid by late 2022. The power station is due to be operational by mid-2023 and will generate enough electricity to power one million electric vehicles⁸.

We continue to receive an unprecedented number of new generation connection enquiries.

7. Source: NIWA

8. Contact Energy



Addressing the challenges:

Harnessing the potential of distributed energy resources

New Zealand has an opportunity to transition to a smart grid that uses renewable electricity to meet all our energy needs. This can be achieved by ensuring we extract the full value from the resources we use to generate electricity.

Over the past five years we have seen a considerable increase in the number of solar panels on homes, battery storage, wind generating units and electric vehicles. In 2018, the Electricity Authority reported around 300 New Zealand households were installing solar panels each month. These are all distributed energy resources (DER) – small-scale controllable energy resources that are located within our distribution networks but not connected directly to the Grid, and they have the potential to play an active role in the power system of the future. The volume of DER is expected to increase significantly in the future as technologies drop in price and become more ubiquitous.

In 2020 Transpower commissioned Sapere Research Group to investigate the potential value of DER in a New Zealand context. The report, *Distributed Energy Resources – Understanding the potential* looked at the value of DER to New Zealand, what economic incentives might encourage use of DER and what the current barriers to deployment and transaction costs are.

The research found between 2.5 and 3 GW of DER could be installed by 2035 if the pricing for DER services reflects all the value it can deliver, and a further 1 to 1.5 GW by 2050.

With the report Transpower aims to stimulate a discussion on how the electricity industry and market may need to evolve in order to harness the potential benefits of DER and future proof the sector. Ultimately, this kind of work is one of the ways Transpower can play an active role in enabling New Zealand's energy future and build the most efficient and optimal power system possible. DER has a valuable role to play in enabling New Zealand's decarbonisation path by assisting to smooth peak demand, avoiding the need to build new peaking thermal generation. Transpower is working with local lines companies to investigate the potential of DER to delay or avoid more expensive infrastructure investment in poles and wires. In some cases, a demand-response programme might be a cost-effective complement to other measures such as transformer overload protection schemes.





Work to be done:

Improving the system to avoid black-outs

The Automatic Under Frequency Load Shedding (AUFLS) scheme describes the set of relays in New Zealand that automatically trip blocks of load, following a severe under-frequency event – whereby the electricity supply system falls to less than 49.25 Hz – and restoring the system frequency. Transpower (and the wider sector) relies on these relays to prevent system collapse following under-frequency events that have the potential to cause a system black-out.

Currently, North Island distributors, and Transpower as grid owner in the South Island, must arm two blocks of load for AUFLS provision – totalling at least 16% of the provider's total network demand. A project exploring extended reserves completed in 2013 identified that the scheme could be amended to improve overall performance. This would involve transitioning the North Island AUFLS scheme from two blocks of load to four blocks (two blocks of 10% and two blocks of 6%).

The Electricity Authority consulted on this change and Transpower is now working with the Authority to develop a data portal as a means of better capturing how AUFLS is being provided across the North Island on an annual basis. It is expected the portal will be used for the coming AUFLS data submission period starting in January 2022. Over the latter part of 2020/21 and first quarter for 2021/22 Transpower ran a workshop series with affected North Island distributors providing information and support on the new portal.

There is still a considerable amount of work to be completed before the Electricity Industry Participation Code is changed to allow for the migration to the new four-block AUFLS scheme. Ultimately the change will provide more flexibility and resilience to the New Zealand power system as it evolves.





Financial

Achieving positive outcomes:

Transpower takes a people-first approach during lockdowns

The headwinds of COVID-19 have been ever present through 2020/21 for people and businesses across New Zealand. The ongoing economic effects, global supply chain disruption and several short lockdowns in Auckland have continued to create a challenging environment for our customers and suppliers to navigate.

Transpower is in a unique position to support the financial sustainability of our customers, service providers and suppliers. After the initial lockdown in April 2020, a payment deferral scheme enabled several customers to pass on relief directly to consumers. To assist our service providers and suppliers Transpower continued through 2020/21 to provide cashflow relief through the immediate payment of invoices.

Transpower's supply chain was also significantly affected by the pandemic with extended lead-times for specialist equipment and materials impacting our major capital works. In some cases, project teams were able to source equipment and solutions locally.

Overall, Transpower managed to foster our relationships with stakeholders throughout the difficult pandemic period while maintaining a careful cashflow. We kept major projects moving while continuing to manage through COVID-19, responding to changes in the sector and the new regulatory control period, and ultimately posted a solid result for the 2020/21 year.

Border restrictions a boon for local expertise

While the impact on workforce and supply chain has presented challenges for project planning and delivery to navigate, it has also created opportunities for innovative thinking. In September 2020, a fault was identified in a cable joint bay situated in a quiet suburban Auckland street – the Brownhill-Pakuranga-B cable which is part of the Pakuranga-Whakamaru-2 circuit (a major transmission line with 220 kV underground cables and 13-plus associated substations). Investigations by Transpower and Northpower uncovered a large crack along the side of the joint casing. The excavation of the cable joint bay was a major process involving traffic disruptions, breaking concrete, and using a hydrovac to extract the sand that covers the bay – thankfully, the residents of the street were very understanding of the process.

By October the cable joint had safely been removed and relocated to Northpower's depot where we were able to assess the extent of the damage and remedy the situation. In normal circumstances Transpower and partner LS Cable & System would have recruited expert cable jointers from overseas, however border exemptions, visa requirements, flight schedules and the managed isolation process required in the COVID-19 environment meant this was not feasible. Accordingly, Transpower recruited three New Zealand-based experienced HV cable jointers to repair the cable.

Over December, various teams collaborated on the cable repair working on site under wrapped scaffolding to ensure the area was watertight, and by 23 December the cable joint bay returned to service (and the residents of the street were able to enjoy Christmas in peace).

The collaborative team comprising Transpower, Northpower, Electrix and Ventia members were then able to transition quickly on to another cable repair job in early January fixing a sheath fault in the 220 kV cable that runs across the Auckland Harbour bridge and along the Northern busway (Hobson Street-Wairau Road).





Achieving positive outcomes:

Beyond power: how we contribute to New Zealand

As a State-owned Enterprise, Transpower is run as a commercial entity with our services and activities focused on the benefit of the New Zealand community. We manage more than \$5 billion of transmission assets which generate transmission revenues that yield a regulated rate of return of 4.57%.

In FY21 Transpower generated \$861m from transmission revenue, approximately 94% of total operating revenue. Transpower recovers the costs of transmission activities from generators, lines companies and large industrial users, accounting for around 10% of the average consumer's total power bill.

From this we contribute to the New Zealand economy through tax and dividends, employment, innovation and manufacturing, and community programmes.

As a regulated monopoly, the Commerce Commission sets Transpower's baseline for capital and operating expenditure and service performance targets over five-year regulatory control periods (RCPs). Transpower's current RCP, RCP3, runs to 2025.

In FY21, Transpower spent around \$470m on maintenance, replacement and enhancement of the asset base across the country. Funds that went back into the hands of New Zealanders through wages, service provider contracts, and equipment, among other expenses.

For the year, we paid \$35.1m in tax and \$147m in dividends – funds that go into the Government reserve which in turn go on to benefit New Zealand.





Addressing the challenge:

Transpower improves management of conductors and structures

Transpower manages some 11,000 kilometres of transmission lines and conductors and thousands of towers on private and public land across the length and breadth of the country. Assessing the condition of these assets is an enormous task and one that we have been steadily improving upon year-on-year, embracing innovation and an agile working environment.

Over the past year we have implemented a series of initiatives to better understand the size of the reconducting and maintenance challenges during RCP3, RCP4 and beyond. Drones are increasingly being used over helicopters, to improve the data capture of conductor condition assessments and in 2021/22 these will be the primary assessment tool nationwide.

The 2020/21 year marked the first year of our multi-year inspection and assessment programme of work. This focused on confirming conductor degradation and remaining life of the conductors forecast for intervention in RCP3. All lines initially identified for reconducting during RCP3 were inspected using drones to verify the need for reconducting over the RCP3 period. By the end of 2020/21 we had reviewed 90% of the conductors, deferred over 82 circuit kilometres of reconducting out of RCP3; and started the second stage of the programme to develop our RCP4 plan in more detail. The exercise has allowed us to refine our processes and provide more robust modelling of conductor degradation for RCP5 and RCP6. We will continue to test these models through further site assessment and to provide a more accurate view of the future reconducting challenge we face.

Tower corrosion is another area that we have addressed over the past year, exploring different options for managing our ageing towers. Traditionally, tower painting has been the lowest “whole of life” cost option to manage these assets, however, reductions in the cost of alternatives such as replacing towers with pole structures now means there are viable alternatives in some situations. Our work to date has identified up to a quarter of our towers could be replaced with a pole structure or similar. These towers are generally the smaller, more lightly loaded towers on the network. We are already trialing tower-to-pole conversion to ensure it can be used in RCP4 and beyond, early results indicate this approach could be used for some of our larger towers fleet as well.

Painting towers is a time intensive exercise that involves coordinated outages to carry out the work safely within the Minimum Approach Distances (MAD) and adds to the challenge of catching up on the backlog of deferred tower painting jobs. The backlog of painting within the MAD is created when outages are not available and is not funded for in our RCP3 allowance.

During 2020/21 we rescoped the RCP3 workplan to reflect the reduction in total towers painted and the increase in painting of MAD areas. Overall, the painting work we are intending to undertake during RCP3 will focus on larger more expensive towers compared to our original submission which included a greater proportion of smaller towers which we now plan to replace with poles.

This approach continues into RCP4 and RCP5 and we expect the pole replacement programme instead of painting, to start ramping up from the start of RCP4.



Work to be done:

A new Transmission Pricing Methodology

Transpower generates its income from transmission charges, with a maximum amount set by the Commerce Commission each year. The Transmission Pricing Methodology (TPM) – a system established in 2007 – determines how these charges are allocated to customers on an annual basis.

In 2009 the Electricity Commission (now referred to as the Electricity Authority) identified benefits in changing the methodology, and consultation on proposed changes began in 2011. This consultation process continued for several years, with working papers and models evolving to reflect changes in the sector as a whole and the industry's progress towards electrification and decarbonisation.

In June 2020, the Authority's decision to approve new TPM Guidelines tasked Transpower with developing and proposing a new TPM by 30 June 2021.

Our goal was to develop a TPM proposal that was consistent with the new TPM Guidelines, the Authority's statutory objective and any determination by the Commerce Commission under Part 4 of the Commerce Act 1986. The proposal would endeavour to ensure prices were explainable, including the way they change over time; the methodology would be robust and transparent, limit reliance on undue

discretion or subjective judgement and work constructively alongside the investment test; and the pricing model would be cost effective to administer.

From August 2020 to May 2021 we engaged with customers and industry on various aspects of the TPM. In addition to receiving submissions on each paper, we held a series of workshops with industry and published feedback and answers to questions from interested parties on our website.

On 30 June 2021 we submitted our proposed TPM to the Authority. We now await completion of the Authority's review of our proposal and their consultation process (planned to commence October 2021). Once all submissions are received and considered the Authority's board will make a final decision on whether to incorporate the proposed TPM into the Code; in which case it is expected to take effect for transmission prices payable from April 2023.

Pictured left: Haley Murphy, Programme Coordinator

Targets and outcomes

During FY21 Transpower advanced towards achieving our strategic priorities outlined in our Statement of Corporate Intent and measured across environmental, social and economic targets.

Statement of Corporate Intent

Performance Area	Measure	2020/21	2019/20	Target	Comment
Safety and our people	Number of fatalities or injuries causing permanent disability	1	0	0	Safety performance results at 30 June are rolling 12 months. On 20 April, we experienced a tragic fatality in Fiordland when a subcontractor to one of our service providers lost his life while completing geotechnical rock clearing work on an access track near the Manapouri power station. We are cooperating fully with all investigations to understand what happened and what actions we must take to prevent similar incidents. We are committed to a safety standard that avoids all preventable fatalities or permanent injuries.
	Total recordable injury frequency rate (TRIFR) rolling 12 months	7.50	6.34	≤ 6	All reported injuries were minor in nature. We are continuing to work closely with our service providers to maintain a focus on the contributing low-level incidents and deliver appropriate intervention programmes to address this trend.
	High potential incident frequency rate (HPIFR) rolling 12 months	2.04	2.11	≤ 3	
	Staff engagement	8.1	8.0	≥ 8.0	Our employee engagement score result is in the top 25% of benchmark, global energy and utilities sector organisations. Participation was at 97%.
Sustainability	Deliver Year One milestones according to the Taskforce on Climate-related Financial Disclosures (TCFD) framework	Achieved	-	Meet target	
	Deliver Year One milestones to position Transpower in the upper quartile on Environmental, Social and Corporate Governance (ESG) reporting framework within two years	Achieved	-	Meet target	
Service performance	Grid interruptions:				We set our service measure and targets for 2020/21 aligned to our quality standards set by the Commerce Commission for RCP3. These encompass: Grid unplanned interruptions – targets for frequency (occurrence) GP1 and average duration of interruptions GP2. This includes different targets for the six subcategories under each measure. The target for GP1 and GP2 has been set at Commerce Commission quality standard for RCP3 which is to achieve four or more of the six quality standards under each measure. Not meeting the Commerce Commission quality standards can result in an enforcement process by the Commission which can lead to pecuniary penalties through the High Court. If the target of ≥4 is achieved then the Commerce Commission quality standard is met. If the target is not met in the current year there may not be a breach depending on the performance against the target in previous years. Grid availability – targets for the interisland high-voltage direct current (HVDC) link energy availability (AP1) and for key (i.e. market-sensitive) assets within our high-voltage alternating current (HVAC) (AP2) networks have been set at the Commerce Commission quality standard. 2020/21 AP2 excludes normalisation and outlier events, consistent with our Annual Compliance Statement.
	GP1 Achieve collars for occurrence (unplanned interruptions)	6	-	≥ 4 out of 6	
	GP2 Achieve collars for average unplanned interruption duration	5	-	≥ 4 out of 6	
	Grid availability:				
	AP1 HVDC energy availability	98.67%	88.26%	> 96.75%	
	AP2 Key HVAC assets availability	98.83%	97.40%	> 98.6%	
	Achieve system operation targets	Achieved	Achieved	Meet target	

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Statement of Corporate Intent *continued*

Performance Area	Measure	2020/21	2019/20	Target	Comment
Asset health measures	Power transformers	1.97%	-	≤ 3.22%	The ability to predict time-dependent risk of physical assets is an essential component of asset management. Our Asset Health Framework provides a common AH score approach across asset classes known as the Asset Health Index (AHI). An AHI is an indicator that represents an asset's proximity to the end of its useful life. The end of useful life is the period when an asset will either need replacement or a major refurbishment to extend life occurs. This period is typically hard to predict, but when a combination of information is considered, an AHI can inform the expected time when an asset intervention is likely to be required. We measure and report AHI across six asset classes. Two of these asset classes ('Power transformers' and 'Outdoor circuit breakers') have been set as quality standards by the Commerce Commission for RCP3. We have set our performance targets in alignment to these Commerce Commission quality standards for RCP3.
	Outdoor circuit breakers	1.09%	-	≤ 2.0%	
Financial performance	Free funds from operations (FFO) interest coverage	6.8	3.9	5.9	Below target due to a bond issuance of \$150m in April 2021 to part pre-finance upcoming bond maturities. This has had the effect of lowering the financial metric to below target. However, this is a timing difference and will move back to target post-term debt maturities during Q1 2022.
	FFO / Debt	14.5%	15.7%	15.2%	
	Return on equity	7.4%	10.1%	7.9%	
	Return on capital employed	3.5%	5.6%	4.0%	



Environmental, Social and Economic

Performance Outcomes	Unit	Change	2020/21	2019/20	2018/19	Comment
Sustainability Environmental						
Environmental management						
Significant / severe incidents	Number	—	-	-	-	Significant incidents – Serious Resource Management Act offence and extensive damage to the environment, long-term effects. Extensive damage to an archaeological site while operating without an Archaeological Authority. Significant breach of conditions of a resource consent.
Moderate incidents	Number	^	3	1	0	Moderate incidents – Extensive but reversible damage to the environment. Moderate damage to an archaeological site while operating without an Archaeological Authority. Moderate breach of resource consent conditions.
Minor incidents	Number	^	26	20	5	Minor incidents – Localised environmental impacts, within or beyond Transpower site boundary. Minor damage to an archaeological site while operating without an Archaeological Authority. Minor breach of resource consent conditions.
Carbon emissions						
Scope 1 emissions (emissions arising directly from our operations)	Tonnes CO ₂ e (equivalents)	✓	5,300	5,391	4,261	
Scope 2 emissions (emissions associated with electricity usage, including transmission losses)	Tonnes CO ₂ e (equivalents)	^	204,699	169,609	164,290	Largely driven by more carbon-intensive electricity generation in response to dry conditions and gas supply constraints.
Scope 3 emissions (emissions arising from activities in our supply chain)	Tonnes CO ₂ e (equivalents)	✓	46,519	89,945	65,198	
Total carbon emissions	Tonnes CO ₂ e (equivalents)	✓	256,518	264,945	233,749	
Emission to air						
SF ₆ and other fugitive gases	kg	✓	208.8	240.4	169.9	SF ₆ and other fugitive gases is defined as fugitive gases such as SF ₆ from our switchgear and refrigerant gases from our HVAC systems.
Energy consumption						
Progress towards 2030 GHG emissions reduction target	% reduction achieved	✓	50	55	69	Annual % achieved towards 2030 GHG emissions reduction target (3,484 tCO ₂ -e).
Total gas consumption in non-operation buildings	GJ	✓	740	746	-	Total gas consumption in non-operational buildings is defined as any gas used in our office generators or similar stationary combustion systems.

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Environmental, Social and Economic *continued*

Performance Outcomes	Unit	Change	2020/21	2019/20	2018/19	Comment
Sustainability continued						
Total energy consumption in non-operational buildings	kWh	^	2,468,215	2,426,750	-	Defined as electricity usage at our offices and other non-operational buildings.
Total energy consumption in operational buildings	kWh	—	2,449,331	-	-	Defined as electricity usage at our substations, warehouses, data centres and other operational buildings.
Business travel						
Fuel used in operational plant and vehicles	Litres	^	127,391	118,915	126,730	
Flights – distance travelled	pkm	✓	1,891,059	3,225,306	5,168,468	Passenger kilometres (pkm)
Distance travelled company vehicles	km	—	1,233,514	-	-	
Distance travelled in rental vehicles	km	—	231,704	-	-	
Safety						
Social						
Safety						
High potential incident frequency rate (employees and contractors)	per million hours	✓	2.0	2.1	-	Total number of lost time and medical treatment injuries multiplied by 1,000,000 hours divided by the total number of hours worked in the year.
Total recordable injury frequency rate (employees and contractors)	per million hours	^	7.5	6.3	6	Number of incidents reported where there was potential for serious injury or fatality (Level 1 and Level 2) based on assessment against the Transpower risk assessment matrix. Rate is calculated per million hours worked and reported as a rolling 12-month frequency rate.
Fatal incidents – employees / contractors	Number	^	1	0	0	Number includes fatalities or injuries causing permanent disability for all Transpower's staff and contractors. On 20 April, we experienced a tragic fatality in Fiordland when a subcontractor to one of our service providers lost his life while completing geotechnical rock clearing work on an access track near the Manapouri power station.
People						
Workforce composition						
Total Transpower employees	Number	^	803	799	771	
Median age of employees	Years	—	45	45	45	
Average length of service	Years	^	8.68	8.67	8.75	
Average employee earnings	\$	^	132.9k	129.7k	129.7k	
Gender balance						
Gender identity by role – All	Female/Male/ Diverse or not stated	✓	32/66/1	33/66	33/66	
Gender identity by role – People leaders	Female/Male	✓	27/72	32/66	34/64	
Gender identity by role – General management	Female/Male	—	30/70	30/70	33/67	

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Environmental, Social and Economic *continued*

Performance Outcomes		Unit	Change	2020/21	2019/20	2018/19	Comment
People continued	Gender identity by role – Board	Female/Male	▼	43/57	57/43	63/38	
	Gender pay gap	%	▲	17.5	17	18	
Ethnicity (All)							
	% staff providing ethnicity data	%	▲	62	59	52	
	European (incl. New Zealanders)	%	▲	82	80	87	
	Māori	%	▲	6	4	5	
	Middle Eastern / Latin America / African	%	—	7	7	7	
	Asian	%	▲	20	18	18	
	Pacific	%	—	2	2	2	
	Other ethnicity	%	▼	4	7	5	
Employee engagement							
	Employee engagement survey participation	%	▲	97	93	91	
	Employee engagement survey results – % Peakon quartile for Energy & Utilities sector	%	▼	Top 25%	Top 10%	-	
Workforce stability and wellbeing							
	Total staff turnover	%	▲	14.4	8.8	12.2	Total turnover includes both voluntary and involuntary turnover (redundancies). A constrained ability to attract international labour is putting pressure on the domestic labour market.
	Voluntary turnover	%	▲	12.5	7.5	9	Voluntary turnover includes resignations (including leaving before the end of a fixed-term agreement) and retirement.
	Average number of sick days per employee	Days per employee	▲	4.5	4.2	4.3	
Employees skill and capability							
	Learning and development expenditure (technical training inclusive)	\$	▼	1.6	1.9	1.9	Total internal and external learning and development expenditure.
	Investment in pipeline training (graduate programme)	\$	▼	791	851	649	Total cost of graduate programme, including remuneration and training.
	Internal hires to total hires	%	▲	33.5	30.5	-	
Skill and capability of wider industry							
	Training of industry / service providers	\$	▲	4.0	3.8	4.4	

Table continues on following page

Environmental, Social and Economic *continued*

Performance Outcomes	Unit	Change	2020/21	2019/20	2018/19	Comment
Relationships						
Business ethics						
Speak up contacts made (number contacts to fair call service)	Number	—	nil	-	-	
Notifiable privacy breaches	Number	—	nil	-	-	
Customers						
Community						
Number of voluntary days used	\$	⬆	290	254	231	Staff receive one day per year for volunteering.
Matching gift programme	\$	⬇	14	33	43	Matched charitable donations.
Investments in communities	\$	⬇	724	727	885	CommunityCare Fund.
Stakeholder satisfaction						
Percentage of customers who agree or strongly agree – to the seven customer engagement statements	%	⬆	71.1	57.4	-	Annual customer satisfaction survey sent July 2021.
Satisfaction from customers of System Operator performance	%	⬆	84	92	85	Annual customer satisfaction survey.
Landowner satisfaction – Landowner satisfaction survey	%	—	-	91	-	Survey issued every two years. Result from 2017/18 91%.
Landowner satisfaction – Number of claims against Transpower to utility disputes	Number	—	0	0	0	
Financial						
Economic						
Financial performance						
Net profit after tax (after fair value changes)	\$ million	⬇	157.5	231.1	258.4	The materially lower regulated rate of return from 1 April 2020 (new regulatory control period) has a full year impact on the June 2021 results. Resulting in lower returns and dividends in 2021.
Return on capital employed	%	⬇	3.5	5.6	6.5	
Return on equity	%	⬇	7.4	10.1	11.9	
Dividends paid per year	\$ million	⬇	147	165	165	Below target, due to the decision to dismantle the Albany-Henderson line and unplanned costs in delivering Transmission Pricing Methodology requirements for the Electricity Authority.
Taxation						
Current tax paid	\$ million	⬇	35.1	60.2	64.3	
Capital investment and supply chain						
Total capital expenditure	\$ million	⬇	354	387	329	Defined as capital expenditure and total operating expenses.
Total procurement spend	\$ million	⬇	651	679	626	
Asset value	\$ million	⬆	6,163	6,116	5,932	

Table continues on following page

Environmental, Social and Economic *continued*

Performance Outcomes	Unit	Change	2020/21	2019/20	2018/19	Comment
Financial continued						
Network performance						
Number of loss of supply events greater than 0.05 system minutes	Number	—	12	12	12	
Number of loss of supply events greater than 1 system minute	Number	✓	0	2	1	
Unplanned HVAC circuit unavailability (%)	%	✓	0.13	0.17	0.17	
Unplanned HVDC bi-pole unavailability (%)	%	⬆	0.10	0.04	0.03	
Total impact of interruptions (measured in system minutes)	Number	✓	5.89	11.72	15.36	
Generators (Injection)	GWh	⬆	37,924	37,815	38,122	
GXP-EDBs (offtake)	GWh	⬆	31,000	30,688	30,621	
GXP-direct connects (offtake)	GWh	✓	6,975	7,079	7,329	
HVDC flows north	GWh	✓	2,043	3,160	3,591	
HVDC flows south	GWh	⬆	315	103	109	
HVDC losses	GWh	✓	73	118	135	
AC system losses	GWh	✓	1,218	1,253	1,266	



Board of Directors



Pip Dunphy: Chair

Pip has worked as a non-executive Director for the last 15 years and her experience covers a diverse range of industries and companies. In addition to Transpower Pip is currently on the boards of ANZ Investments, Ultrafast Fibre, and is a Director of DGC Limited. In June 2021 she became a member of the NZ Markets Disciplinary Tribunal.



Dean Carroll: Deputy Chair

Dean has more than 30 years' energy industry experience in New Zealand and internationally. His previous roles included CEO of Lumo Energy Australia and executive roles in energy, generation and trading. He has also held directorships in Infratil Energy Australia, Direct Connect Australia, Energy Retailers Association of Australia, and Energy Online.



Richard Aitken

Richard spent more than 40 years with multi-disciplinary consultancy Beca and eight years as Executive Chairman, stepping down in April 2017. He is widely recognised as a leader in the engineering sector, and is an officer of the New Zealand Order of Merit (ONZM) for services to business and engineering. Richard has served on the Boards of Trustpower, Manukau Wastewater services, Panuku Development Auckland and Hutt Valley Water Services, and is currently the Chair of the Te Pūnaha Matatini Advisory Board.



Dr Roger Blakeley

Dr Blakeley is currently an elected member of the Greater Wellington Regional Council and is Chair of the Council's Transport Committee. Dr Blakeley is also an elected member of the Capital & Coast District Health Board. An independent consultant and qualified civil engineer, his roles have included Chief Executive of the Ministry for the Environment, Department of Internal Affairs, and Porirua City Council. Dr Blakely has a PhD in earthquake engineering and is a Distinguished Fellow of Engineering New Zealand.



Kathy Meads

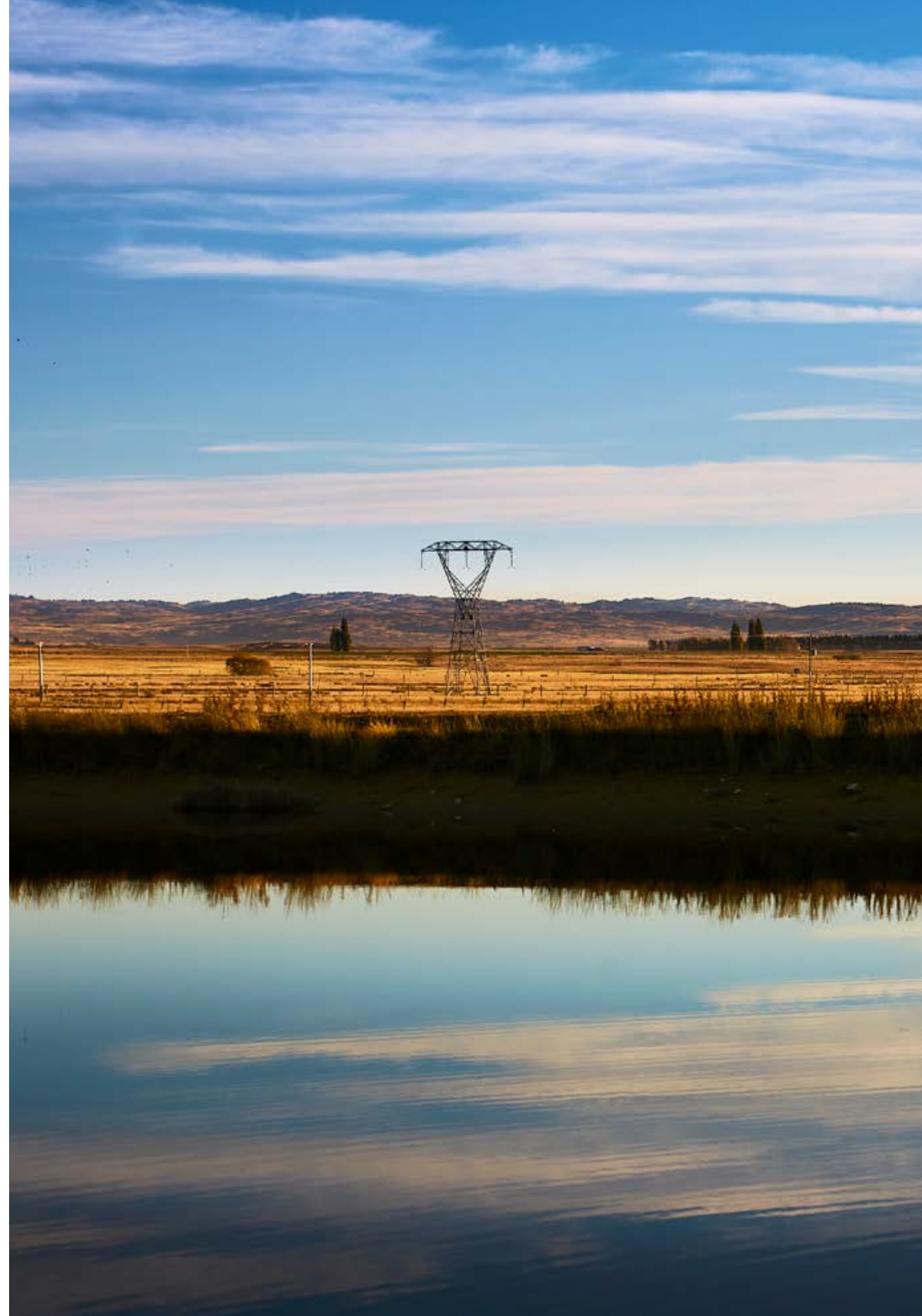
Kathy is a Director for Port Taranaki, NZPM Group, Enable Services, Shipowners Mutual Protect & Indemnity Association, Magic Memories Group, and is Chair of the Audit and Risk/Finance Committees for each of these entities. Kathy is a Fellow Chartered Accountant of Chartered Accountants Australia and New Zealand and serves as a Trustee on the Christchurch Symphony Orchestra.



Bill Osborne

Former All Black, Bill is a professional director. During the year he was Chair of Ports of Auckland and Page Macrae Engineering, Director of Rangitira Services Limited, and President of New Zealand Rugby Union. His recent directorships include Planttech Research, CoreLogic NZ and 2degrees Mobile. He was also CEO of QV and Group Manager – International for NZ Post.

This year we bid farewell to Directors Ilze Gotelli in April 2021 and Sheridan Broadbent in July 2021.



Skills and experience

Transpower's Board of Directors comprises individuals with a broad and diverse set of skills and experience that collectively benefit our company and the electricity sector. The Board is a collective unit directing and guiding Transpower's direction and business activities. Complementing the Board's overarching view of the business, each Board member spends time with our General Management Team, extending their knowledge base in the day-to-day operations and understanding what happens at every layer of the organisation.

Directors skills matrix as at 30 June 2021

Strategic priority	Director skills and experience	Number of Directors
Play an active role in enabling New Zealand's energy future	Industry experience Experience in the electricity industry, ideally in electricity transmission or distribution.	● ●
	Strategic thinking Capable of critical thinking to solve complex problems and plan for the future.	● ● ● ●
Sustain our social licence to operate	Governance Experience in corporate governance, including with listed companies or other government owned companies.	● ● ● ● ○ ○
	Risk Understanding of operational and strategic risk management.	● ● ● ● ○ ○
	Health and safety Understanding of workplace health and safety, including knowledge of legal obligations.	● ● ● ● ○ ○
	Environment and sustainability Experience in delivering sustainability strategies and managing environmental challenges.	● ● ● ● ○ ○

Key:

- High capability
- Moderate capability

Strategic priority	Director skills and experience	Number of Directors
Match our infrastructure to need over time	Finance and capital markets Knowledge of financial business drivers, financial risk management, financial strategy and securities.	● ● ○ ○ ○
	Government and regulation Understanding of regulatory environment and associated challenges for infrastructure.	● ● ○ ○ ○
	Large-scale infrastructure and projects Experience overseeing large-scale infrastructure growth, project investment and maintenance programmes.	● ● ○ ○ ○ ○
Evolve our services to meet customers' needs	Stakeholder management Ability to support stakeholder management and deliver on a customer-centric approach.	● ● ○ ○ ○
	Commercial capability Understanding of commercial alignment, innovation and transformation.	● ● ● ● ●
	Executive leadership Executive experience, including strategic growth, evolving culture, identifying priorities and driving delivery.	● ● ● ● ● ●
Accelerate our organisational effectiveness	Technology and data management Experience of supporting digital capital investments and systems-enabled operational efficiencies.	● ○

Board committees

Transpower has five regular Board committees. Each Board committee has terms of reference that outline the role, rights, responsibilities and membership requirements for that committee.

1. Audit and Finance Committee (Kāhui tātari kaute me te pūtea)

Responsible for monitoring the financial performance and reporting of Transpower and its subsidiaries, emsTradepoint Limited and Risk Reinsurance Limited. It manages the internal audit process for financial matters, including reviewing, monitoring and approving internal audit reviews, annual audit plans and internal audit and management reports. It reviews the appointment of external auditors (subject to the authority of the Auditor-General) and manages the external audit process. The external auditor is subject to the independence rules of the Auditor-General. The Auditor-General has appointed Grant Taylor of (currently called) EY (formerly Ernst & Young) to carry out the audit on his behalf.

Membership: Kathy Meads (Chair); Pip Dunphy; Ilze Gotelli; Bill Osborne

2. People and Performance Committee (Kāhui whakahaere tangata me te mahi)

Performs the functions of a remuneration committee. This committee oversees Transpower's culture and performance and approves recruitment, remuneration, retention and termination decisions and policies and procedures regarding executive management. It reviews and recommends to the Board the Chief Executive's remuneration, terms, annual key performance indicators and performance recommendations.

Membership: Dean Carroll (Chair); Pip Dunphy; Kathy Meads; Bill Osborne

3. Risk Committee (Kāhui tūraru)

Responsible for reviewing health and safety matters on the Board's behalf and is responsible for ensuring that Management has established a risk management framework that includes policy, procedures and assessment methodologies that enable Transpower to effectively manage and monitor organisational risks. The Risk Committee also recommends the appointment of internal auditors and manages the internal audit process, including reviewing, monitoring and approving internal audit reviews, annual audit plans and internal audit and management reports. The Risk Committee will direct internal audit activities or material to either the Audit and Finance Committee or the People and Performance Committee where the subject matter is within the expertise of the respective committee. The primary objective of these internal audits is to assist the Board and executive

team in exercising good governance by providing independent assurance.

Membership: Sheridan Broadbent (Chair); Richard Aitken; Roger Blakeley (appointed 23 September 2020); Dean Carroll; Pip Dunphy

4. System Operator Committee (Kāhui whakamahi pūnaha)

Formed in FY20 to oversee and provide guidance on all business activities related to Transpower's role as System Operator and reporting requirements to the Electricity Authority. During the year the Committee provided recommendations to the business on System Operator business assurance audits, software audits and major project assurance, real-time pricing management and risk, and structure.

Membership: Dean Carroll (Chair); Richard Aitken; Sheridan Broadbent; Pip Dunphy

5. Transmission Pricing Methodology Committee (Kāhui tikanga pūtea whakawhiti)

Formed on 30 June 2020 to oversee and provide guidance on Transpower's activities on the new pricing system which is responsible for 90% of Transpower's revenue. Transpower's proposed TPM was delivered to the Electricity Authority on 30 June 2021.

Membership: Dean Carroll (Chair); Sheridan Broadbent; Pip Dunphy



Meeting attendance

The Audit and Finance Committee terms of reference set out that the Chief Executive and Chief Financial Officer are included as attendees at committee meetings at the request of the Chair of the committee. The People and Performance Committee terms of reference set out that the Chief Executive and General Manager People are included as attendees at committee meetings. The General Counsel & Company Secretary attends all meetings as Secretary.

Director	Commenced	Board		Audit and Finance		People and Performance		Risk		System Operator		TPM	
		Held	Attended	Held	Attended	Held	Attended	Held	Attended	Held	Attended	Held	Attended
Pip Dunphy (Chair)	1-May-15	8	8	3	3	3	3	4	4	3	3	7	7
Dean Carroll (Deputy Chair)	1-Nov-16	8	8			3	3	4	4	3	3	7	7
Bill Osborne	1-May-16	8	7	3	3	3	2						
Sheridan Broadbent	1-May-18	8	8					4	4	3	3	7	7
Kathy Meads	1-Mar-19	8	8	3	3	3	3						
Ilze Gotelli (term ended 30 April 2021)	1-Mar-19	6	6	3	3								
Richard Aitken	1-Nov-19	8	8					4	4	3	3		
Dr Roger Blakeley	1-Jun-20	8	8					3	3				



Directors' interests

Transpower's [Directors' Interests Policy](#) governs how Transpower resolves and manages the way directors' individual interests are disclosed.

No directors hold shares in Transpower, have loans from Transpower or have made any request to use company information received in their capacity as directors that would not otherwise have been available to them.

The following directors have made general disclosures of interest with certain external organisations based on them being a Chair, director, Board member, trustee, council member, member, employee or consultant of those organisations or holding material securities or shares of those organisations.

Pip Dunphy

Chair**	Abano Healthcare Limited
Chair*	ANZ New Zealand Investments Limited
Chair*	Ultrafast Fibre Limited
Director	Fonterra Shareholders Fund
Director**	DGC Limited
Member	NZX Markets Disciplinary Tribunal

Dean Carroll

Nil	Nil
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Richard Aitken

Director	BGCF Trustee Limited
Director	BGL Custodian Limited
Director	Pitt Vincent Limited
Director	BGLIR Trustee Limited
Director**	BGL Management Share Trustee Limited
Director	Albert Pitt Limited
Director	BGS Trustee Limited
Director	Derceto Trustee Limited
Director	John Scotts Investment Limited
Trustee	Beca Indemnity Fund Custodian Trust
Trustee	BGLIR Custodian Trust
Trustee	BGL Custodian Trust
Trustee	BGS Custodian Trust
Chair	Te Pūnaha Matatini Advisory Board

Dr Roger Blakely

Councillor	Greater Wellington Regional Council
Director	Greater Wellington Rail Limited
Director	Capital & Coast District Health Board
Trustee	Harkness Fellowships Trust Board
Trustee	Wesley Community Action Trust

Sheridan Broadbent

Shareholder	Figured Limited
Shareholder	Invivo Wines Limited
Chair*	Business Leaders' Health and Safety Forum
Chair*	Kordia Group limited
Director	Breach Consulting Limited
Director	Spruce Goose Aerospace Limited
Director**	Timberlands Limited
Director*	Cloudsource Holding Limited (trading as 'SaferMe')

Ilze Gotelli**

Employee (Head of Major Developments)	Watercare Services Limited
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Kathy Meads

Director	Shipowners Mutual Protection and Indemnity Association
Director	Enable Services Limited
Director	Enable Networks Limited
Director	Port Taranaki Limited
Director	NZPM Group Limited
Trustee	Christchurch Symphony Orchestra
Director	Magic Memories Group Holdings Ltd

Bill Osborne

Chair	Page Macrae Engineering
Chair*	Ports of Auckland Limited
President	New Zealand Rugby Union Incorporated
Director	Rangitira Services Limited

* Appointed during the year

** Resigned during the year

Remuneration

Remuneration and benefits payable to directors for services as a director are determined by Shareholding Ministers.

Remuneration paid to Transpower's directors during the 2020/21 financial year

Payments to directors of Transpower New Zealand Limited	Date commenced in office	Date ceased in office	2020/21 \$000	2019/20 \$000
Pip Dunphy (Chair from 1 January 2019)	1 May 2015		102	112
Dean Carroll (Deputy Chair from 1 January 2019)	1 November 2016		64	69
Jan Evans-Freeman	1 November 2012	31 October 2019	-	19
Richard Aitken	1 November 2019		51	35
Bill Osborne	1 May 2016		51	54
Sheridan Broadbent	1 May 2018		51	54
Kathy Meads	1 March 2019		51	54
Ilze Gotelli	1 March 2019	30 April 2021	42	54
Tim Densem	1 March 2019	4 October 2019	-	13
Roger Blakeley	1 June 2020		55	-
Total			467	464

Directors agreed to a 20% fee reduction for 4 months of the current year and 2 months of the prior year, reflecting the financial impact of COVID-19.

During FY21, no director of Transpower or the Transpower Group has received or become entitled to receive any benefit other than that disclosed above.

Subsidiary companies

Information on directors of subsidiary companies as at 30 June 2021.

TB and T Limited

Christopher Sutherland
David Knight

Risk Reinsurance Limited

David Knight (Chair)
John Clarke
Gordon Davidson

Halfway Bush Finance Limited

Christopher Sutherland
David Knight

emsTradepoint Limited

David Knight (Chair)
John Clarke
Gordon Davidson



Pictured: Jack Clifford, Risk and Assurance Advisor,
and Clara Mitchell, Sustainability Analyst

General Management Team



Alison Andrew: Chief Executive

Alison joined Transpower in 2014. She has held a number of senior executive roles across various industry sectors, most recently as Global Head of Chemicals for Orica PLC. She is a Director for Port of Tauranga and has been a Director for Genesis Energy.

Prior to these roles, she held a number of senior roles at Fonterra Cooperative Group and across the Fletcher Challenge Group in Energy, Forests and Paper. Alison has an MBA from Warwick University, and studied Engineering (Chemicals and Materials) at Auckland University.



Gordon Davidson: Chief Financial Officer

Gordon was appointed Chief Financial Officer in May 2019, bringing 15 years of experience in similar roles. Prior to joining Transpower, Gordon was Chief Financial Officer at Opus. He has a Master's degree in Business Administration from Edinburgh Business School and is a Chartered Accountant trained with KPMG. Gordon leaves Transpower in October 2021.



John Clarke: General Manager
Grid Development

John was reappointed General Manager Grid Development in 2020, following a period as General Manager Operations which he held from 2014. John was General Manager Grid Development from 2008-2014 and had previously spent 10 years in senior roles within our System Operator division. His earlier career in the New Zealand electricity sector has included roles in distribution and electrical engineering consulting. John holds a BE in Electrical Engineering.



Richard Hobbs: General Manager
Strategy & Customer

Richard joined Transpower in July 2019 to head up the Strategy division. Prior to this role, Richard was based in Sydney where he worked as Investment Manager for Spark Infrastructure. Previously, he held roles at the Boston Consulting Group, Bloomberg New Energy Finance and the Australian Government's Clean Energy Regulator. Richard holds a Master's degree in Business Administration with distinction from the University of Oxford's Saïd Business School.



Stephen Jay: General Manager Operations

Stephen was appointed to this role in 2020, having previously held the role of General Manager Grid Development since 2014. He is a Chartered Electrical Engineer and currently the Chair of the Electricity Engineers' Association. Stephen was previously General Manager with Mitton ElectroNet – an engineering consultancy business. He has had a long and varied career within the electricity industry, including time with the CEEGB, National Power, Nuclear Electric, Midlands Electricity Plc, Parsons Brinckerhoff Power and Meridian Energy. For a short period in 2002 Stephen was an Energy System Coordinator at Transpower.



Brigid Kelly: General Manager People

Brigid joined Transpower in March 2018 and was previously GM People at Tourism New Zealand. Prior to this, she held senior executive and line management positions at Te Papa, Telecom, BNZ and Fletcher Challenge Forests. Brigid brings diverse industry and functional experience across a number of sectors, and has helped transform several organisations to successfully meet their future challenges. She leads the various teams that make up our People Division including HR, Health and Safety, Technical Training, and Facilities.



David Knight: General Counsel and Company Secretary

David was appointed General Counsel and Company Secretary in August 2007. Prior to joining Transpower, David was General Counsel at Telecom NZ. David holds an Honours degree in law from the University of Auckland, and a Master's degree in law from Harvard Law School which he attended as a Fulbright scholar. Prior to his career in law, David was involved in the wine industry, including periods as a winemaker, wine merchant and wine judge.



Raewyn Moss: General Manager External Affairs

Raewyn was appointed GM External Affairs in 2018, having previously headed the Transformation and Auckland Strategy division and the Customers, Stakeholders and Environment division.

Raewyn has a background in environmental, regulatory and relationship management, and has worked in consultancy within industry and for a regulator. She has worked in the electricity sector for 20 years, both at Transpower and Meridian Energy. She holds a BSc from Victoria University and a Diploma in Business from Henley Management College.



Cobus Nel: General Manager Information Services & Technology

Cobus joined Transpower in 2011, and has held senior roles including IST Strategy and Architecture Manager. Prior to joining Transpower Cobus was the Network Solutions Manager at Alcatel-Lucent and the Technical Lead for Transpower's Telecommunications and Networking Programme. As a multi-skilled ICT professional Cobus has experience in defence, enterprise, telecommunications and utilities organisations.

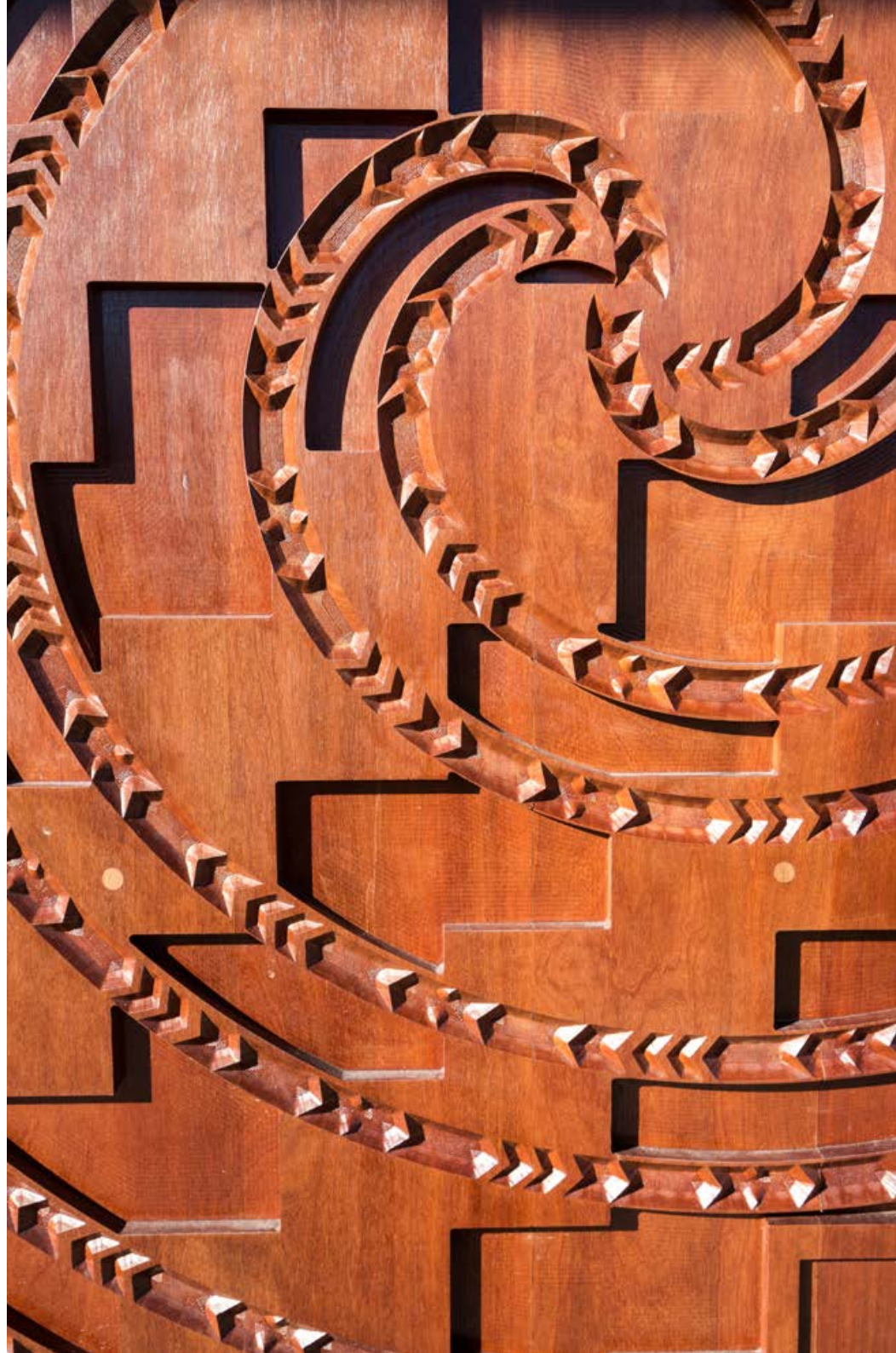
Cobus has a Master's degree in Project Management and Engineering (Electronics) from the University of Pretoria.



Mark Ryall: General Manager Grid Delivery

Mark has been with Transpower since 2006, working in a variety of senior roles, including Regional Service Delivery Manager for the Upper North Island, before moving into general management.

Previously, Mark worked in project management and consultant roles in New Zealand and the United Kingdom. Further to his degree from Lincoln University, Mark completed the University of Virginia Darden School of Business Executive Programme.



Pictured: Jimmy Kershaw-North, Data Analyst,
and Thahirah Jalal, Analytics Practice Manager



Remuneration

Transpower's Remuneration Policy and framework for officers is managed by the People and Performance Committee in line with the [committee's terms of reference](#).

The Chief Executive can earn incentive payments, subject to company and individual targets being met and at the discretion of the Board. Any change to Chief Executive salary is subject to approval by the Board following a review by the People and Performance Committee. As a consequence of COVID-19, the Chief Executive agreed to take a 20% reduction in her salary for a six-month period.

Members of the executive team can earn incentive payments, subject to company and individual targets being met, such payments being at the absolute discretion of the Board. Any changes to executive management salaries are subject to consultation with the Chair and reviewed by the People and Performance Committee annually. Executives have performance objectives with line of sight to the company and Chief Executive objectives. Their salaries are informed by performance assessment by the Chief Executive, and incentives can be 20-25% of their salary. In relation to their 2020/21 objectives, executive management received an average of 95% of their available incentives.

Company objectives

Company component – 70%				
Category	Weighting	Performance driver	Indicator	Target
Safety	15%	Zero fatalities	Number of fatalities or injuries causing permanent disability	Zero
		High potential incident frequency rate (HPIFR)	Number of Level One and Level Two incidents per million hours worked (includes injuries and near misses)	≤ 3.0 (rolling 12-month average)
		Total recordable incident frequency rate (TRIFR)	Number of recordable injuries/illnesses per million hours worked	≤ 6.0 (rolling 12-month average)
People	10%	Engagement	Transpower targeted engagement score	Top 25% percentile score (rolling 12 month average)
		Diversity and inclusion	Increase in the percentage of our permanent staff that are female or male toward 40/40/20	Progression towards 40/40/20
Relationships	5%	Customer Engagement Plan	Complete customer engagement plan to Commerce Commission satisfaction	Complete customer engagement plan to Commerce Commission satisfaction
		Landowner	Landowner Satisfaction Survey	≥ 85%
		Public safety	Delivery of initiatives in Public Safety Annual Plan	Deliver to plan & satisfactory audit of our Public Safety Management System
		Satisfaction from the Electricity Authority	Satisfaction from the Authority and customers of SO customer engagement plan	80% of participants surveyed considered out performance to be good or better
Sustainability	5%	Environment and land	Climate change reporting according to TCFD framework (including carbon foot print)	Deliver Year One milestones to implement TCFD framework
		Environment and land	Environment and heritage-related incidents	< 5 moderate environmental or heritage incidents and zero convictions
		ESG Reporting	ESG Reporting	Deliver Year One milestones to position Transpower in upper quartile on ESG reporting framework (within two years)

Table continues on following page

Company component – 70%

Customers	15%	Service performance	GP1: Achieve collars for occurrence – unplanned interruptions	≥ 4 out of 6
			GP2: Achieve collars for average unplanned interruption duration	≥ 4 out of 6
			AP1 Grid HVAC energy availability	>98.6%
			AP2 Grid HVDC energy availability	>96.75%
			Asset health: Power transformer percentage of assets with an Asset Health Index of 8 or higher	≤ 3.22%
			Asset health: Outdoor circuit breakers percentage of assets with an Asset Health Index of 8 or higher	≤ 2.00%
Financial	20%	Operating profit	EBITDAIF	Achieve plan EBITDAIF (+/-2%)[2]
		Grid works	Deliver 20/21 base capex plan (spend Basis)	Deliver 95% -105% of 20/21 base capex plan (Spend basis)

Chief Executive individual objectives*

Strategic component – 30%

Company focus area	Strategic initiative	Key performance indicators
Play an active role in enabling New Zealand's energy future	Position our Te Mauri Hiko discussion in a COVID-19 context to support the Government's policy agenda for Net Zero Carbon economy	Advance <i>Whakamana i Te Mauri Hiko</i> initiatives in the context of COVID-19 economic recovery opportunities
Leadership	Transpower's role as an industry leader	Continue to enhance the role Transpower plays in advocacy for the industry
Accelerate our organisational effectiveness	Lead the company constructively through COVID-19 pandemic and subsequent economic impact	Accelerate collaborative "ways of working" building on COVID-19 learnings through use of digital platforms and data and analytics capability

* The Board may vary target areas for exceptional circumstances

The details of the Chief Executive remuneration are set out below. Figures include KiwiSaver. Incentives are based on company and individual objectives. The incentive and amount of the incentive relate to that salaried year. The performance incentive is paid during the financial year but relates to the prior years' performance as is paid after balance date.

Year	Base Salary*	Benefits**	Fixed remuneration \$000	Discretionary payment \$000***	Short-term incentive \$000****	Total remuneration	% Incentive achieved
2020/21	944	46	990	42	313	1345	100
2019/20	973	47	1020		292	1312	97
2018/19	970	47	1017		288	1305	97
2017/18	956	46	1002		271	1273	94
2016/17	928	46	974		271	1245	97

The details of the Chief Financial Officer remuneration are set out below. Figures include KiwiSaver. Incentives are based on company and individual objectives. The incentive and amount of the incentive relate to that salaried year.

While the Chief Financial Officer did not get a pay increase last year due to the COVID-19 pandemic, the fixed remuneration has gone up slightly due to an increase in the value of the benefits.

Year	Base Salary	Benefits	Fixed remuneration \$000	Short-term incentive \$000****	Total remuneration	% Incentive achieved	Comments
2020/21	420	25	445	106	551	97	
2019/20	420	25	445		445	–	Gordon Davidson joined on 29 April 2019 so was not eligible for an incentive payment.
2018/19	65	10	75		75	–	Gordon Davidson joined on 29 April 2019.
2018/19	238	11	249	124	373	94	Alex Ball left 17 December 2018.
2017/18	472	18	490	124	614	94	
2016/17	472	18	490	108	598	89	

* The Chief Executive agreed to a 20% reduction in base salary for 4 months of the current year and 2 months of the prior year, reflecting the financial impact of COVID-19.

** Benefits include KiwiSaver, insurances and carpark

*** One off payment of 4% to align the Chief Executive remuneration with market movement, in accordance with the Remuneration Policy.

**** Short-term incentive payment includes KiwiSaver. There is no long-term incentive programme.



Remuneration of Transpower employees including executives

The performance management framework is designed to provide line of sight between the company performance objectives and individual performance objectives. Our remuneration framework ensures we provide market comparable salaries to staff in order to attract, retain and motivate employees.

All employees have fixed remuneration, adjusted each year in accordance with a budget agreed by the Board on recommendation from the People and Performance Committee. Any increase is informed by data from independent remuneration specialists. Employee fixed remuneration is based on a matrix of their performance and how their salary compares to the market of a comparable position.

Aside from the Chief Executive and Chief Financial Officer, Transpower employees who received total remuneration of greater than \$100,000 were in the following bands:

	2020/2021	2019/20
550-559	1	1
540-549	1	1
510-519	1	
460-469	2	
450-459		4
440-449	1	1
410-419	1	
390-399		1
380-389	1	
340-349	1	
330-339	1	
320-329		1
310-319	1	1
300-309	1	2
290-299	1	1
280-289	1	1
270-279	4	2
260-269	6	6*
250-259	8	11
240-249	7	8
230-239	10*	9
220-229	4	8*
210-219	8*	7
200-209	9*	7
190-199	28*	23
180-189	17	13*
170-179	23	19
160-169	44*	39*
150-159	64	67

	2020/2021	2019/20
140-149	83*	84*
130-139	93	74
120-129	77	77
110-119	71*	73
100-109	52*	60*
	624	602

The remuneration bands above include all remuneration paid to or on behalf of employees, including base salary, performance payment, KiwiSaver, medical insurance, death and disability insurance, income protection insurance and severance or redundancy payments.

* The asterisk indicates those remuneration bands that include at least one former employee who received a severance or redundancy payment, without which they would not have been in that band.



Corporate governance

For the year ended 30 June 2021

Pictured on following page:

Katie Galt, Receptionist, and Mark Mundell,
National Delivery Manager (top right)

Cathy Lawless, Senior Commodity Markets Analyst
(bottom left)



Our NZX commitments

Transpower is a limited liability company and a State-owned Enterprise (SOE) with our shares held on behalf of the Crown by the Minister of Finance and the Minister for State-owned Enterprises. Transpower has debt listed with the NZX and is, therefore, required to comply with debt listing obligations.

This corporate governance statement reports our activities against the [NZX Corporate Governance Code](#) (the NZX Code), updated in 2019. The NZX Code is the primary guidance on corporate governance for NZX-listed issuers, describing principles of corporate governance and the recommended action to demonstrate best practice.

There are certain parts of the NZX Code that do not apply to Transpower, such as those clauses related to director appointments, takeovers, directors' remuneration and shareholder rights. As an SOE, these governance arrangements are the responsibility of the Crown and are set out in the State-Owned Enterprises Act 1986 and Transpower's constitution.

Transpower's [Corporate Governance Statement](#) is detailed in full on Transpower's website along with relevant policy documents.

The content below provides a summary of Transpower's approach and outlines where material changes have been made or updates have occurred over the past year.

Transpower considers that, during the reporting period, the company materially complied with the [NZX Code and the Principles](#) contained within it.

Principle 1: Code of ethical behaviour:

"Directors should set high standards of ethical behaviour, model this behaviour and hold management accountable for these standards being followed throughout the organisation."

Principle 2:

Board composition and performance:

"To ensure an effective board, there should be a balance of independence, skills, knowledge, experience and perspectives." See page 86

Principle 3: Board committees:

"The board should use committees where this will enhance its effectiveness in key areas, while still retaining board responsibility." See page 89

Principle 4: Reporting and disclosure:

"The board should demand integrity in financial and non-financial reporting, and in the timeliness and balance of corporate disclosures." See page 78 for financial and non-financial reporting. See our website for information on our [Taskforce on Climate-related Financial Disclosures](#) and our [TCFD Roadmap](#).

Securities listed on the NZX Debt market

As at 30 June 2021 Transpower has securities listed on the NZX Debt Market quoted under the ticker codes TRP030, TRP040, TRP050, TRP060, TRP070 and TRP080. As a listed issuer, Transpower is subject to certain requirements and obligations under the NZSX/NZDX Listing Rules, including a continuous disclosure obligation.

Other disclosures

Based on the register of bondholders, Transpower has at least the following number of bondholders as at 30 June 2021:

	TRP030		TRP040		TRP050		TRP060		TRP070		TRP080	
	No. of bond holders	No. of bonds (000)	No. of bond holders	No. of bonds (000)	No. of bond holders	No. of bonds (000)	No. of bond holders	No. of bonds (000)	No. of bond holders	No. of bonds (000)	No. of bond holders	No. of bonds (000)
1,001 – 5,000	9	45,000	4	20,000	1	5,000	3	15,000	2	10,000	-	-
5,001 – 10,000	28	270,000	19	178,000	17	158,000	4	31,000	19	161,000	1	10,000
10,001 – 100,000	103	3,629,000	44	1,526,000	57	2,094,000	13	523,000	127	5,393,000	5	245,000
>100,001	49	146,056,000	36	98,276,000	30	122,743,000	37	149,431,000	46	444,436,000	21	149,745,000
Total	189	150,000,000	103	100,000,000	105	125,000,000	56	150,000,000	194	450,000,000	27	150,000,000





Top 20 largest listed bondholders	Holdings
BNP Paribas Nominees NZ Limited	156,144,000
Cogent Nominees Limited	151,179,000
Citibank Nominees (NZ) Ltd	101,032,000
Tea Custodians Limited	85,491,000
ASB Bank Limited	82,000,000
HSBC Nominees (New Zealand) Limited	72,522,000
New Zealand Local Government Funding Agency Limited	68,160,000
TSB Bank Ltd	52,400,000
National Nominees New Zealand Limited	47,298,000
FNZ Custodians Limited	34,752,000
JPMORGAN Chase Bank	34,048,000
Forsyth Barr Custodians	32,160,000
Custodial Services Limited	31,647,000
Premier Nominees Ltd	30,585,000
Accident Compensation Corporation	25,000,000
Private Nominees Limited	14,984,000
Investment Custodial Services	14,473,000
Southland Building Society	9,000,000
Pin Twenty Limited	7,400,000
JBWERE (NZ) Nominees Limited	7,256,000

Principle 5: Remuneration:

"The remuneration of directors and executives should be transparent, fair and reasonable." See pages 92 and 98

Principle 6: Risk management:

"Directors should have a sound understanding of the material risks faced by the issuer and how to manage them. The board should regularly verify that the issuer has appropriate processes that identify and manage potential and material risks." See page 114

Principle 7: Auditors:

"The board should ensure the quality and independence of the external audit process."

Principle 8: Shareholder rights and relations:

"The board should respect the rights of shareholders and foster constructive relationships with shareholders that encourage them to engage with the issuer."



The Taskforce on Climate-related Financial Disclosures

Established in FY20, the Taskforce on Climate-related Financial Disclosures (TCFD) created a framework for organisations to manage risks, identify and seize climate-related business opportunities and disclose reliable information about these to investors.

Transpower regards climate-related financial disclosures as important and accepts that the effects of climate change present risks to our assets. We are a signatory to the Climate Leaders Coalition 2019 Statement and have committed to voluntarily measuring and reporting our Greenhouse Gas emissions (GHG), setting a public emissions reduction target and working with our suppliers to reduce their emissions. We are also a reporting organisation under the Climate Change Response (Zero Carbon) Amendment Act 2019. As a debt issuer under the NZX, transparency of reporting and governance responsibility are of growing importance to our bondholders.

We have developed a three-year staged approach for integrating our identification and assessment of climate-related risks and opportunities across the organisation. Our TCFD Roadmap outlines the key steps we will take to manage climate-related transition risks, physical risks and liability risks and opportunities and disclose any material information.

Transpower TCFD Roadmap

Key: ● Complete ● In progress ● Planned

	FY20	FY21	FY22	FY23
Governance	Board approval of TCFD approach Establish a project team to define scope, approach and roadmap for TCFD	Describe Management's role and Board oversight of climate-related risks and opportunities		Review Management's role and Board oversight of climate-related risks and opportunities
Strategy	Conduct initial climate change risk analysis and assessment	Conduct a gap analysis between current disclosures and TCFD recommendations	Review climate metrics and targets	Review results of scenario analysis and management of related risks and opportunities and fully integrate into strategic planning and decision making
		Undertake detailed assessment of climate-related risks, physical risks and liability risks	Develop range of scenarios and assess impact and risks / opportunities associated with selected scenarios using risk bowties	
Risk management	Describe current approach to identifying, assessing and managing climate-related risks	Develop climate change resilience targets to flag potential climate change adaptation	Integrate management of climate-related risks and opportunities into the enterprise risk management framework and associated processes	Principles on how an investment programme for adaptation can operate is developed with input from the regulator
Metrics and targets	Disclose Scope 1-3 GHG emissions Board approval of GHG emission target	Report Scope 1-3 GHG Emissions and target carbon intensity of grid electricity	Report Stage Two baseline and targets for identified metrics	
Assurance		Undertake assurance of GHG emissions	Prepare for assurance over climate-related disclosures	Undertake assurance over climate-related disclosures



TCFD disclosures FY21

This report includes full disclosure against six of the recommended 11 disclosures in the four key areas: Governance, Strategy, Risk Management and Metrics and Targets. Separately, Transpower has included Assurance in its roadmap in recognition of the ongoing importance of external assurance of climate-related risks and opportunities.

Key:

- Complete disclosure
- Partial disclosure
- Planned

Governance

Disclose the organisation's governance around climate-related risk and opportunities.

● Complete disclosure

Describe the Board's oversight of climate-related risks and opportunities

The Transpower Board is committed to responding to the challenges posed by climate change and in May 2021 approved the updated *Sustainability Strategy* which reflects the commitments made in relation to climate change and wider environmental and social matters.

A core function of the Board is to provide oversight of Transpower's enterprise Risk Management Framework, including monitoring Transpower's strategic, external and key operational risks and opportunities. As part of its oversight function, the Board sets Transpower's risk appetite. In November 2020, the Board approved an updated Risk Appetite Statement to guide Management's strategic intent, resource allocation and operational planning, and expresses the Board's appetite for risks related to environment, social responsibility and governance.

Monitoring of risks and controls is performed by Board sub-committees, specifically the Risk Committee.

● Complete disclosure

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

The Chief Executive has overall responsibility for the management of Transpower. Day-to-day management is delegated to respective General Managers who together make up the General Management Team (GMT). Transpower's Chief Financial Officer is the responsible business owner of the framework.

On a quarterly basis GMT reviews all strategic, external and key operational risks. The risk related to the acceleration of climate variability is a key external risk to Transpower. In addition, the impact of a changing climate is reflected in other strategic and external risks such as the risk of serious harm to the environment, the risk of geopolitical instability and the risk of extreme weather events.

Transpower's Sustainability Governance Group, comprising five members of the GMT, meets six times per annum to monitor progress on the *Sustainability Strategy* work programme.





Strategy

Disclose the actual and potential impact of climate-related risks and opportunities on the organisation's business, strategy and financial planning where such information is material.

● Partial disclosure

Describe the climate-related risks and opportunities the organisation has identified over the short-term, medium-term and long-term

Based on the scenarios developed for *Whakamana i Te Mauri Hiko*, we have completed an initial assessment of climate-related risks and opportunities for Transpower.

We combined the detailed asset-related data in our systems with climate-related information to produce regional impact maps for New Zealand. We then applied a materiality test to focus on the key physical, transition and liability risks and opportunities. This content sets out these key risks and opportunities by subcategory.

Key physical risks

Transmission lines: Potential impact on tower and pole foundations from more frequent and intensive flooding; structural integrity of lines threatened and potential impact of falling trees caused by stronger winds; impact of thermal limits on lines associated with higher temperatures; and the increased risk of fire and bushfire on lines in dry and hot areas.

Substations: Increased risk of flooding of lower-lying substations due to sea level rise and/or more intense rainfall; structural integrity of substations threatened; increased corrosion risk due to stronger winds in coastal areas; higher temperatures could drive demand for more cooling of control equipment.

Communication lines and equipment: Potential impact on foundations from more frequent flooding; structural integrity of lines threatened and potential impact of falling trees caused by stronger winds; higher temperatures could drive demand for more cooling of control equipment.

Access ways: Access to Transpower sites and assets could be cut off by flooding in coastal and low-lying areas, by flood water and slips caused by more intense rainfall or by fallen trees due to stronger winds.

Key transition risks

Demand changes

Rising mean and extreme temperatures could drive up demand for electricity, requiring rapid changes to, or expansion of, the Grid; domestic migration patterns could influence changes to the configuration of the Grid; and New Zealand's efforts to decarbonise are likely to further drive electricity demand requiring further investment in the Grid.

Security of supply

Significantly hotter, wetter, windier or dryer weather expected to lead to an increase in weather-related grid outages, longer restoration times and potentially more frequent supply constraints in dry winters.

Workforce

Climate-related diseases (pandemics) could impact the availability and/or mobility of the workforce required to maintain and expand the grid.

Supply chain

Significantly hotter, wetter, windier or dryer climate conditions are expected to drive up material and transport costs; adverse climate conditions could also impact the availability of materials in New Zealand.

Reputational

Consumers could be dissatisfied with a higher frequency of climate change-induced grid-related outages, such as floods, bushfires, slips and erosion; consumers and stakeholders could be dissatisfied with Transpower's response to climate-related impacts on the Grid and/or a slower than expected expansion of the Grid in response to increased electricity demand associated with decarbonisation of the New Zealand economy.

Key liability risks

Regulatory

Transpower could incur increased fines or penalties resulting from increased climate-related electricity supply interruptions.

Litigation

Climate change could result in increased costs for dispute resolution with landowners as grid works are accelerated or delayed; forest fires, flooding and other grid-related events could result in increased costs for damages.

Key opportunities

Efficiency

Climate conditions in some parts of New Zealand could get more favourable, positively impacting repair windows, project construction timeframes, network repair times and potentially reducing wear and tear on our assets.

Demand changes

Climate change could drive a shift in consumer preferences, resulting in development and/or expansion of our products and services.

Work on a detailed assessment of Transpower's climate-related risks and opportunities is ongoing and will include a climate risk assessment against scenarios developed by the Intergovernmental Panel on Climate Change (IPCC), and adapted for New Zealand's climate by the Ministry for the Environment¹¹. We are working towards full disclosure on our climate-related risks and opportunities in FY23.

11. Source: *Climate Change Projections for New Zealand, Atmospheric Projections Based on Simulations Undertaken for the IPCC 5th Assessment – 2nd Edition*, Ministry for the Environment 2018.

● Partial disclosure

Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning

Climate-related risks impact on Transpower in a range of areas. Our financial position could be impacted by write-offs and early retirement of existing assets, additional costs to adopt and deploy new technologies, higher material and transport prices, reduced revenue and fines or penalties for grid interruptions and increased insurance premiums.

We may also see climate-related impacts on our service performance, caused by an increasing number of unplanned grid interruptions and longer network restoration times.

Our reputation might be impacted by public and stakeholder dissatisfaction caused by more frequent and longer grid interruptions, as well as longer restoration times.

Conversely, climate-related opportunities could help reduce our operating costs, increase the value of our fixed assets and increase our revenue through new products and services.

Further work is underway to articulate the impact of climate-related risks on Transpower's business, strategy and financial planning. This will include a detailed assessment of climate-related risks and opportunities against the IPCC's scenarios. Full disclosure is planned for FY23.

● Partial disclosure

Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2-degrees or lower scenario.

Transpower has undertaken an initial climate-related assessment of the resilience of its strategy against the following scenarios developed by the Ministry for the Environment:

- A stringent pathway scenario (RCP2.6¹² - less than 2 degrees warming by 2100)
- A business as usual scenario (RCP8.5 - between 2 and 4.6 degrees warming by 2100).

Under both scenarios, Transpower's strategic agility is considered robust based on its clearly defined purpose, demonstrable customer value proposition and ability to adapt its strategy as circumstances change.

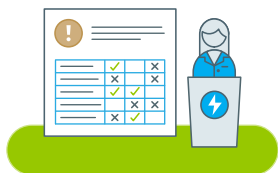
Transpower's business model agility is considered robust under RCP2.6 based on its flexible supply chain, flexible workforce and ability to respond to changes in customer needs. Under the extreme RCP8.5 scenario, in the second half of this century the flexibility of Transpower's supply chain and workforce could be challenged by a combination of

geopolitical tensions exacerbated by climate change. Transpower is considering options to mitigate the impact of supply chain and workforce-related risks.

Transpower's financial flexibility is considered robust under both scenarios, based on its financial flexibility to manage through unexpected downturns and its ability to redirect capital and maintenance expenditure to mitigate any climate-related impacts on assets.

12. RCP = Relative Concentration Pathway, a term used by the IPCC to characterise different climate-change scenarios.





Risk management

Disclose how the organisation identifies, assesses and manages climate-related risks.

● Complete disclosure

Describe the organisation's processes for identifying and assessing climate-related risks

Transpower carries out the identification and assessment process for climate-related risks in accordance with its enterprise-wide Risk Management Framework. In November 2020, the Transpower Board approved the updated Risk Appetite Statement. This document now includes Environment, Social Responsibility and Good Governance as a key exposure category.

Transpower is undertaking bowtie risk analysis and semi-quantitative risk assessment to get a deeper understanding of our climate-related risk.

● Complete disclosure

Describe the organisation's processes for managing climate-related risks

Transpower recognises that risk management is an integral element of good management practice and governance. Risk management is the responsibility of line managers. Managers at each level are responsible for evaluating their risk environment, identifying and assessing risks to the achievement of their objectives and putting controls in place to prevent these risks from occurring or, once they have eventuated, to mitigate the impact.

Risks are assessed against the enterprise risk matrix which is derived from the Board's Risk Appetite Statement. Transpower's risk and assurance function conducts an annual internal audit programme to provide assurance to management and the Board that controls are well designed and working effectively.

● Planned

Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation's overall risk management

Further integration of the identification, assessment and management of climate-related risks and opportunities is scheduled for FY22 as part of the five-yearly review and associated update of Transpower's risk management policy and system.



Metrics and targets

Disclose the metrics and targets used to assess climate-related risks and opportunities where such information is material.

● Complete disclosure

Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process

Climate change metrics in this report include Transpower's Greenhouse Gas (GHG) emissions reporting and our absolute carbon reduction targets to 2030 and 2050. Our *Sustainability Strategy* includes qualitative key performance indicators addressing climate resilience, planning grid networks, enabling renewable and electrification connections and reporting the carbon impact of grid electricity delivered.

Disclosure of our metrics is reported on page 63.

● Complete disclosure

Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 GHG emissions and the related risks.

Transpower's annual Scope 1, 2 and 3¹³ GHG emissions are disclosed according to ISO 14064-1:2018 and the *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (2004)*.

Disclosures of our emissions over FY21 are reported on page 68.

● Partial disclosure

Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

Transpower is targeting a 60% reduction in its carbon footprint below 2005 levels by 2030, on track to achieve a net-zero grid by 2050. This target applies to controllable Scope 1 and 2 emissions.

13. Scope 1 emissions are direct GHG emissions, Scope 2 emissions are indirect GHG emissions from imported energy and Scope 3 emissions are indirect GHG emissions from transportation or from the products an organisation uses.



Risk management

Transpower's risk management covers the enterprise's entire perspective, including strategic, operational, commercial and financial aspects.

The risk management policy is consistent with the internationally recognised standard AS/NZS ISO 31000:2009¹⁴ and reflects the same risk management principles. Transpower's risk management methodologies include bowtie risk analysis and semi-quantitative risk assessment.

Following is a summary of our strategic priorities and the key risks that relate to them.

Risk of a failure of a critical control leading to a serious workplace injury or death at a Transpower site or involving Transpower asset

Related strategic priorities:

- Sustain our social licence to operate

Material issues addressed:

- Customers and consumers
- Community and landowner relationships
- Future workforce
- Good governance, including cybersecurity

Transpower strives to provide a working environment in which there are no fatalities or injuries causing permanent disability. We have sound, documented work processes in place to identify and manage hazards and risks throughout the lifecycle of our assets including project and maintenance work.

We collaborate closely with our service providers in the planning and delivery of field work and support this with robust assurance processes to ensure works are completed to a high standard, without placing the health, safety and wellbeing of our people and members of the public at risk. We continuously seek to learn from others both within and external to our industry sector in order to share knowledge and drive improvements in safety.

In response to the persistent threat of COVID-19 we put additional measures in place to manage the risk of a workplace transmission of the virus. Our COVID-19 Alert Level Response Plan allows us to swiftly respond to any regional or national changes to alert levels, ensuring our work can continue with minimal disruption while safeguarding the health and safety of our employees and partners.

Risk of serious harm to the environment

Related strategic priorities:

- Sustain our social licence to operate

Material issues addressed:

- Environmental stewardship
- Community and landowner relationships

Transpower continues to improve on its environmental management processes and systems with a focus on the management of hazardous substances, contaminated land, noise effects, earthworks, land disturbances and our historic and cultural heritage.

Our *Sustainability Strategy* seeks to enable Transpower to support New Zealand's transition to a sustainable energy future. We do this through our focus on four challenges. The first is on enabling renewable and electrification connections while also reducing our own carbon footprint. The second relates to restoring the natural environment and reducing the impacts of materials and resources used. The third challenge is ensuring that our regulatory, governance and decision frameworks include full consideration of social and environmental impact while our reporting transparently describes our impacts, goals and progress. Lastly, we acknowledge mana whenua's connection to the land and partner with iwi to remediate the natural environment. We also work with landowners to minimise the impact of our work on their land and seek to reduce our footprint.

14. This standard has since been superseded by AS/NZS ISO 31000:2018. Transpower is in the process of aligning its risk policy and framework to the new standard. This will be completed in December 2021.

Risk of significant power supply interruptions

Related strategic priorities:

- Sustain our social licence to operate
- Play an active role in enabling New Zealand's energy future

Material issues addressed:

- Climate change mitigation, adaptation and linked advocacy
- Customers and consumers
- Community and landowner relationships
- Environmental stewardship

A core part of our role is to plan, build, operate and maintain the National Grid to power all New Zealand communities. In the unlikely event that the lights do go off, we need to ensure there is sufficient resilience in the grid to reconnect people to their power supply as soon as possible. Those events could be related to asset failure, operational error or external circumstances, such as severe adverse weather or a national catastrophe.

An important risk-reduction measure is our investment in the replacement and refurbishment of assets as their health and condition deteriorates. Ongoing measures include reliability-informed maintenance reviews, emergency preparedness and a collaborative approach to contingency planning with our customers.

Risks in power system operations

Related strategic priorities:

- Sustain our social licence to operate
- Accelerate our organisational effectiveness
- Play an active role in enabling New Zealand's energy future

Material issues addressed:

- Customers and consumers
- Community and landowner relationships
- Good governance, including cybersecurity

Another core part of our role is that of System Operator, in which we manage and coordinate electricity generation and operation of the electricity market minute by minute, 365 days per year to provide an efficient and reliable power system.

There is a constant risk that an event on the power system could impact our ability to ensure delivery of electricity around the country or maintain operation of the market.

Key risk controls include having the people, systems and processes with which we plan for and manage any event in real-time and having the flexibility to respond and adapt to whatever event arises.

Risk of a cybersecurity breach

Related strategic priorities:

- Sustain our social licence to operate
- Evolve services to meet customers' needs

Material issues addressed:

- Good governance, including cybersecurity

We use several information, communications and technology systems that are critical for the supply of power and for system operations. To protect our systems and information against this sophisticated and ever-changing threat, continuous and systematic work aligned to international best-practice standards is ongoing to ensure information security. To achieve this, we are working closely with other stakeholders in the sector and with national authorities. We are also investing appropriately to increase our capabilities to better understand and respond to cybersecurity events.

We monitor major cybersecurity events that occur domestically and internationally and utilise the events and subsequent learnings to inform our own cybersecurity controls and practices.



Risk of not being able to find the skilled resources we need to effectively deliver our services

Related strategic priorities:

- Accelerate our organisational effectiveness
- Play an active role in enabling New Zealand's energy future

Material issues addressed:

- Future workforce

Engineers (electrical, civil and mechanical) and IT professionals with transmission and/or power systems experience have always been in short supply in New Zealand. This is expected to increase as our population ages and as market demand for skilled people to build and connect generation increases globally, as electric vehicles grow their share for transport and as renewable energy increasingly substitutes for fossil fuels.

Markets for skilled people are internationally connected, and while New Zealand will continue to recruit from a global talent pool, migration to New Zealand has significantly reduced as a result of COVID-19. In addition, New Zealand may become a source of workforce supply for other countries, thus further reducing the skilled workforce required nationally to operate and maintain the Grid.

In response, we are reviewing our People Strategy and are focused on building a diverse and inclusive workforce, having a strong employment brand and employee value proposition that will enable us to attract and retain talent. We continue to build awareness of the sector and the attractiveness of science, technology, engineering and maths (STEM) jobs at a national level. Transpower is engaging with stakeholders in the energy sector to increase domestic training of electricity workers.

Risk of not having the right grid at the right place at the right time

Related strategic priorities:

- Play an active role in enabling the energy future
- Evolve services to meet customers' needs
- Match our infrastructure to need over time

Material issues addressed:

- Climate change mitigation, adaptation and linked advocacy
- Customers and consumers
- Future workforce

Potential changes in electricity consumption, generation and customer response technologies bring with them greater uncertainty about future grid usage.

Our challenge is to sustain a cost-effective transmission service that continues to provide an appropriate level of reliability while adapting to changing demands. We foster dialogue and develop forecasts to help us understand trends that will impact the grid and invest in asset management improvements and innovation so we can anticipate and respond to changes.

In November 2020, Transpower convened its Net Zero Grid Pathways Scenario Development Panel. Net Zero Grid Pathways (NZGP) covers Transpower's investments on the backbone of Aotearoa's transmission grid. These investments will enable the electrification of the economy and assist with meeting New Zealand's decarbonisation targets. This includes ensuring the grid backbone has enough capacity to accommodate new renewable generation and maintain a secure and reliable supply of electricity.

Transpower is planning to take a least-regrets approach to identifying the range of upgrade projects needed on the Grid. To do this we need industry and customer input. Transpower is only one link in the electricity delivery chain and the most efficient pathway will only be achieved if we can assist in creating a 'joined up' view of grid needs with our industry partners.

Reputational risk

Related strategic priorities:

- Sustain our social licence to operate
- Play an active role in enabling New Zealand's energy future
- Match our infrastructure to need over time

Material issues addressed:

- Climate change mitigation, adaptation, and linked advocacy
- Customers and consumers
- Community and landowner relationships

Transpower provides a lifeline utility service for New Zealand and grid reliability is highly valued by our customers and electricity consumers. Our biggest reputational risk is associated with our ability to deliver 24/7, through all seasons and unaffected by weather conditions and other events. Furthermore, through our investments and operations, we have a physical presence throughout the country. This means that we need to continuously seek acceptance for our plans and ongoing activities. To establish and maintain good relations with the outside world, we proactively reach out to communities and stakeholders in our work.

Financial risk

Related strategic priorities:

- Evolve services to meet customers' needs

Material issues addressed:

- Customers and consumers
- Good governance, including cybersecurity

Transpower's activities expose it to a variety of financial risks. We have a strong framework for financial risk management and treasury policies that include guidelines and limits related to liquidity risk, interest rate risk, currency risk, credit risk, commodity risk and insurance risk. Further details for each of these categories is provided in the notes to the financial section of this report.

A specific financial risk relates to the fact that Transpower, as a natural monopoly, is regulated by the Commerce Commission. The Commerce Commission determines what rate of return applies to our assets, as well as the incentives for meeting and exceeding operating expenditure, capital expenditure and meeting certain deliverables and outcome targets.

Supply chain risk

Related strategic priorities:

- Sustain our social licence to operate
- Evolve services to meet customers' needs
- Play an active role in enabling New Zealand's energy future

Material issues addressed:

- Customers and consumers
- Good governance, including cybersecurity

COVID-19 has resulted in significant global supply chain issues which has also impacted New Zealand. We are particularly vulnerable to any events that disrupt the supply of goods and materials and the country has seen ongoing delays for over two months for some products.

Transpower uses domestic and international suppliers for the components and materials it requires to maintain and expand the grid and any supporting information, communication and technology systems.

In response to the emergence of supply chain disruptions, we have increased our stock of spare parts and materials in critical areas and for certain categories. We have advanced the planning of our key upcoming projects; we continue to engage with our international and domestic suppliers and where appropriate we are lining up alternative supply arrangements.



Tauākī pūtea Financial statements

For the year ended 30 June 2021

Pictured on following page:

Jack Clifford, Risk and Assurance Advisor, Joseph Hornell,
Corporate Communications Advisor, Doug McNeill, Kaiārahi
Tikanga, and Charlotte Edwards, Corporate Counsel
(top right)

Clara Mitchell, Sustainability Analyst (bottom right)



Statement of Comprehensive Income

For the year ended 30 June 2021

	Notes	2021 Group (\$M)	2020 Group (\$M)
Operating revenue	2	916.2	986.9
Operating expenses	3	296.8	291.6
Earnings before interest, tax, depreciation, amortisation, asset write-offs, impairment and changes in the fair value of financial instruments	1	619.4	695.3
Depreciation, amortisation, asset write-offs and impairment	5, 6	351.9	284.5
Net interest expenses	4, 6	85.8	159.2
Earnings before changes in the fair value of financial instruments and tax		181.7	251.6
Gain (loss) in the fair value of financial instruments	16	37.2	64.2
Earnings before tax		218.9	315.8
Income tax expense	17	61.4	84.7
Net profit		157.5	231.1
<i>Attributable to:</i>			
Non-controlling interest		1.2	(1.0)
Owners of the parent		156.3	232.1
Other comprehensive income (expense)	16	34.2	(83.2)
<i>Attributable to:</i>			
Non-controlling interest		-	-
Owners of the parent		34.2	(83.2)
Total comprehensive income (expense)		191.7	147.9
<i>Attributable to:</i>			
Non-controlling interest		1.2	(1.0)
Owners of the parent		190.5	148.9

These statements are to be read in conjunction with the accompanying notes.

Statement of Financial Position

As at 30 June 2021

	Notes	2021 Group (\$M)	2020 Group (\$M)
Assets Employed			
Cash and cash equivalents		229.9	13.4
Investments	10	101.5	100.6
Trade receivables and other assets	11	107.5	100.7
Derivatives and hedge commitment in gain	8	240.4	423.1
NZPCL investment	9	90.0	98.1
Property, plant and equipment	5	4,754.7	4,732.2
Intangibles	5	389.2	374.1
Right-of-use asset	6	110.4	122.0
Capital work in progress	5	139.6	151.7
Total assets employed		6,163.2	6,115.9

Funds Employed

Liabilities

Trade and other payables	12	68.1	60.4
Current tax liability		12.2	12.8
Deferred income	2	152.2	166.0
Derivatives and hedge commitment in loss	8	129.5	232.4
Provisions	13	64.6	56.7
Debt	7	3,393.7	3,311.0
NZPCL debt	9	90.8	100.5
Lease liabilities	6	90.7	99.7
Deferred tax	17	493.3	453.0
Total liabilities		4,495.1	4,492.5

	Notes	2021 Group (\$M)	2020 Group (\$M)
Equity			
Capital	14	1,200.0	1,200.0
Retained earnings		472.9	500.0
Cash flow hedge reserve		(4.2)	(74.8)
Non-controlling interest	9	(0.6)	(1.8)
Total equity		1,668.1	1,623.4
Total funds employed		6,163.2	6,115.9

The Board of Directors of Transpower New Zealand Limited authorised these financial statements for issue on 23 August 2021.

For, and on behalf of, the Board

Pip Dunphy
Chair

Kathy Meads
Chair of Audit and Finance Committee

These statements are to be read in conjunction with the accompanying notes.

Statement of Changes in Equity

For the year ended 30 June 2021

2020/21

Group	Notes	Ordinary shares	Retained earnings	Cash flow hedge reserve	Owners of the Parent	Non controlling interest	Total
		(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)
Equity at 1 July 2020		1,200.0	500.0	(74.8)	1,625.2	(1.8)	1,623.4
Profit for the year		-	156.3	-	156.3	1.2	157.5
Other comprehensive income		-	(36.4)	70.6	34.2	-	34.2
Total comprehensive income		-	119.9	70.6	190.5	1.2	191.7
Dividends paid	14	-	(147.0)	-	(147.0)	-	(147.0)
Total equity at 30 June 2021		1,200.0	472.9	(4.2)	1,668.7	(0.6)	1,668.1

2019/20

Group	Notes	Ordinary shares	Retained earnings	Cash flow hedge reserve	Owners of the Parent	Non controlling interest	Total
		(\$M)	(\$M)	(\$M)	(\$M)	(\$M)	(\$M)
Equity at 1 July 2019		1,200.0	441.3	-	1,641.3	(0.8)	1,640.5
Profit for the year		-	232.1	-	232.1	(1.0)	231.1
Other comprehensive income		-	(8.4)	(74.8)	(83.2)	-	(83.2)
Total comprehensive income		-	223.7	(74.8)	148.9	(1.0)	147.9
Dividends paid	14	-	(165.0)	-	(165.0)	-	(165.0)
Total equity at 30 June 2020		1,200.0	500.0	(74.8)	1,625.2	(1.8)	1,623.4

Non controlling interest - refer to Note 9 for detailed description.

These statements are to be read in conjunction with the accompanying notes.

Cash Flow Statement

For the year ended 30 June 2021

	2021	2020
	Group (\$M)	Group (\$M)
Cash flow from operations		
Receipts from customers	894.1	1,025.1
Interest received	4.5	6.0
Payments to suppliers and employees	(301.5)	(303.0)
Tax payments	(35.1)	(60.2)
Interest paid	(85.6)	(184.4)
Net cash inflows from operations	476.4	483.5
Cash flow from investments		
Sale of property, plant and equipment	2.0	2.1
Sale of short-term investments	54.6	61.0
Purchase of property, plant and equipment and intangibles	(351.8)	(425.5)
Purchase of short-term investments	(57.1)	(60.5)
Net cash (outflows) from investments	(352.3)	(422.9)
Cash flow from financing		
Proceeds from bonds, term debt and commercial paper	1,000.9	1,495.5
Dividends paid	(147.0)	(165.0)
Payment of principal portion of lease liabilities	(7.2)	(8.6)
Repayment of bonds, term debt and commercial paper	(754.3)	(1,525.3)
Net cash (outflows) from financing	92.4	(203.4)
Net increase/(decrease) in cash held	216.5	(142.8)
Opening balance brought forward	13.4	156.2
Closing net cash carried forward	229.9	13.4
<i>Closing net cash carried forward comprises:</i>		
Cash and on-call deposits	99.8	13.4
Short-term deposits with original maturity less than three months	130.1	-

These statements are to be read in conjunction with the accompanying notes.

Cash Flow Statement Reconciliation

Reconciliation of net profit (loss) with net cash flow from operations

	2021	2020
	Group (\$M)	Group (\$M)
Net profit	157.5	231.1
Add (deduct) non-cash items:		
Change in the fair value of financial instruments	(37.0)	(63.8)
Depreciation, amortisation and write-offs	351.9	284.5
Deferred tax	26.9	35.7
Capitalised interest	(4.3)	(8.5)
Movements in working capital items:		
(Increase)/decrease in trade and other receivables	(3.8)	(11.1)
(Increase)/decrease in prepayments	(3.2)	21.8
(Decrease)/increase in trade and other payables, interest payable and deferred income	(6.7)	4.8
(Decrease)/increase in taxation payable	(0.6)	(11.2)
(Decrease)/increase in provisions	(4.3)	0.2
Net cash flow from operations	476.4	483.5

1. Transpower Group information

Reporting entity and statutory base

Transpower New Zealand Limited (Transpower) is a state-owned enterprise registered in New Zealand under the Companies Act 1993. The financial statements are in New Zealand dollars which is the Company's functional currency, and comprise of Transpower and its subsidiaries (together the Group).

The Group is the owner and operator of New Zealand's national electricity grid. The Group is a for-profit entity in accordance with XRB A1 Accounting Standards Framework.

Basis of preparation

The financial statements have been presented in accordance with the State-Owned Enterprise Act 1986 and are prepared in accordance with the Financial Markets Conduct Act 2013. The financial statements have been prepared and comply with generally accepted accounting practice (GAAP) in New Zealand and the Financial Reporting Act 2013.

The financial statements comply with New Zealand Equivalents to International Financial Reporting Standards (NZ IFRS). The financial statements comply with International Financial Reporting Standards (IFRS).

The statement of comprehensive income and the cash flow statement are prepared so that all components are stated exclusive of GST. All items in the statement of financial position are stated exclusive of GST with the exception of receivables and payables which include GST.

The financial statements of the Group's subsidiaries are prepared in the functional currency of that entity, being New Zealand dollars. The exception to this is New Zealand Power Cayman 2003-1 Limited which has a functional currency of US dollars and a presentational currency of New Zealand dollars.

Where necessary, certain comparative information has been reclassified to conform to changes in presentation in the current period.

COVID-19 Pandemic

The Directors have considered the effects on business operations and financial statements caused either directly or indirectly by COVID-19. The effect on the overall results is not material due to the majority of Transpower's revenue being regulated, the short period of the lockdowns within this financial year and the continuation of essential services during the year. Global supply chain risks remain elevated with access to strategic stock and specialist capabilities an ongoing challenge. While our project portfolios remain largely on track, mitigation of these risks where possible remains a key management focus.

Measurement basis

The measurement basis adopted in the preparation of these financial statements is historical cost except as modified for certain investments, held for sale assets, financial assets and financial liabilities.

Significant accounting policies

- a) The Group financial statements consolidate the financial statements of subsidiaries as at and for the year ended 30 June 2021. Subsidiaries are those entities controlled, directly or indirectly, by Transpower. All significant intercompany balances and transactions are eliminated on consolidation. The Group discloses a non-controlling interest (NCI) relating to New Zealand Power Cayman 2003-1 Limited. NCI is measured at the NCI's share of net assets.
- b) Accounting policies, and information about judgements that have had a significant effect on the amounts recognised in the financial statements are disclosed in the relevant notes as follows:

i. Operating revenue and deferred income	Note 2
ii. Capital assets and commitments	Note 5
iii. Leases	Note 6
iv. Debt, financial instruments and risk management	Note 7

New standards and interpretations not yet adopted

There are no new accounting standards issued but not yet effective which materially impact Transpower.

Transpower is in the process of completing a review of its software assets in light of the IFRIC agenda decision Configuration or Customisation costs in a Cloud Computing Arrangement (published in April 2021) which will be concluded within its interim reporting for the six months ended 31 December 2021. The implication of this guidance is that an entity would expense SaaS costs (i.e. capitalisation and configuration) as incurred rather than capitalise cost as intangible assets, unless the entity has the power to obtain the future economic benefits and to restrict others' access to those benefits. Based on the review completed to date, no material changes are expected to arise.

New exposure drafts

In January 2021, International Accounting Standards Board (IASB) published the exposure draft (ED) Regulatory Assets and Regulatory Liabilities. This proposes a new accounting model under which the total income recognised in a period under IFRS Standards would align with the total allowed compensation the company is permitted to earn by the rate regulator.

The key proposed changes in the ED will require Transpower to recognise the pre-tax balance of economic value (EV) account onto the balance sheet as regulatory assets and regulatory liabilities. The EV account balance is currently off balance sheet and disclosed under the contingent liability note in the accounts. The proposal also requires the movements in regulatory assets and liabilities to be recognised as regulatory income and expenses in the statement of financial performance.

Transpower has submitted its comments and feedback on the ED to IASB for its consideration in developing the final requirements.

New standards adopted during the year

There were no new or revised standards adopted during the period that had a material impact on the Group's financial statements.

2. Operating revenue and deferred income

	2021	2020
	Group (\$M)	Group (\$M)
Transmission revenue		
HVAC interconnection	603.3	641.4
HVAC connection	107.2	124.6
EV (rebate) charge - HVAC	(22.9)	(8.1)
HVDC	92.9	134.7
EV (rebate) charge - HVDC	(0.8)	(3.0)
Other regulated transmission	4.0	5.3
Customer investment contracts	23.0	30.6
Undergrounding and transmission realignment	52.7	4.3
Other transmission	1.6	2.0
	861.0	931.8
Other revenue		
System operator	42.5	41.9
Other	12.7	13.2
	55.2	55.1
Total operating revenue	916.2	986.9

Description

Transmission revenue

Transmission revenue consists of charges for the transmission of electricity from the point of generation to the point of supply, being high voltage alternating current (HVAC) interconnection, connection and high voltage direct current (HVDC).

Transpower is currently developing a new Transmission Pricing Methodology (TPM) on behalf of the Electricity Authority based on the new guidance published in June 2020. As required by the Guidelines, the new TPM will materially change the way in which Transpower's recoverable revenue is allocated to designated transmission customers through transmission charges. The current HVDC and interconnection charges will be replaced with the benefit-based and residual charges. The new TPM will not affect the way in which Transpower's recoverable revenue is set under Part 4 of the Commerce Act 1986 and the total revenue amounts will not change. The Authority expects the new TPM to apply from the pricing year starting on 1 April 2023.

Customer investment contracts are contracts entered into with customers to build grid connection assets. Transpower recognises this revenue over the life of the asset.

Undergrounding and transmission realignment contracts are contracts entered into with third parties to underground and/or realign certain transmission line assets. The revenue is recognised based on the revenue source.

Other revenue

System operator income relates to payments received to operate the electricity market to dispatch generation to ensure the short-term security of the New Zealand electricity system.

Included in the above numbers is revenue subject to the telecommunications development levy of \$2.4 million in the year to 30 June 2021 (June 2020: \$2.5 million).

Accounting policies

Transmission revenue with customers, excluding customer investment contracts and transmission realignment contracts, are recognised on a monthly basis as Transpower delivers the service and customers consume the benefit. The transmission revenue performance obligation is the provision of access to the network.

The money received from customer investment contracts can be received over different contract periods varying between all up-front to up to 50 years. The assets built for the customers are owned by Transpower, however, Transpower is providing a service to the customers over the life of the asset. The service is the monthly transmission of electricity and the customers' consumption of that benefit. Therefore, the revenue is grossed up for an imputed interest expense and recognised over the estimated life of the related assets. The performance obligation is the provision of access to the network.

Agreements between Transpower and third parties to underground and/or realign certain transmission line assets are recognised based on the revenue source. If the revenue is received from central or local government, or their agencies, then the revenue is recognised according to the government grants standard (NZ IAS 20) with revenue grossed up for an imputed interest expense and recognised over the life of the related transmission assets. If revenue is received from non-government parties, then it is recognised at a point in time, once the transmission assets are commissioned. The decommissioned transmission assets are then immediately written off for the same value. In contracts with non-government customers, the performance obligation is the shifting of the transmission line.

Summary of revenue recognition

	Recognised monthly as customers use service	Recognised over life of relevant asset	Recognised in year of commissioning asset
Transmission revenue	●		
Customer investment contracts		●	
Undergrounding and transmission realignment – Government		●	
Undergrounding and transmission realignment – non-Government			●

Certain transactions relating to the operation of the electricity market, specifically wholesale market-related ancillary services and losses and constraint payments, are passed through and are, therefore, not recorded in profit or loss. This pass-through occurs because Transpower is deemed to act only as an agent. Similarly, Transpower acts as an agent relating to its natural gas and carbon market operations.

Related disclosures

	2021 Group (\$M)	2020 Group (\$M)
Deferred income		
Customer investment contracts	105.0	71.2
Undergrounding and transmission realignment	41.9	90.0
Other	5.3	4.8
Total deferred income	152.2	166.0
Current portion	2.7	34.1
Non-current portion	149.5	131.9
Total deferred income	152.2	166.0

A reconciliation of deferred income as it relates to revenue is shown below for the two major categories:

2021

(\$M)	Customer investment contracts	Undergrounding and transmission realignment
Opening balance 1 July 2020	71.2	90.0
Advance payments received from customers	52.3	1.0
Net revenue recognised in the year from		
Amounts included in the contract liability at the beginning of the year	(0.3)	(48.1)
Advance payments applied to current year	(18.2)	(1.0)
Closing balance 30 June 2021	105.0	41.9

2020

(\$M)	Customer investment contracts	Undergrounding and transmission realignment
Opening balance 1 July 2019	53.2	73.2
Advance payments received from customers	44.6	17.1
Net revenue recognised in the year from		
Amounts included in the contract liability at the beginning of the year	(0.2)	(0.3)
Advance payments applied to current year	(26.4)	-
Closing balance 30 June 2020	71.2	90.0

3. Operating expenses

Group (\$M)	2021	2020
Grid maintenance		
HVAC substations maintenance	46.8	44.4
HVDC substations and cables maintenance	10.8	11.4
HVAC lines maintenance	43.9	41.5
HVDC lines maintenance	1.8	1.9
Transmission-related rates	6.6	6.5
Other	7.6	6.6
	117.5	112.3
IST maintenance and operations		
Support and maintenance	9.4	9.0
Outsourced services	12.2	11.2
Licences	10.7	9.2
Other	2.0	2.5
	34.3	31.9
Other operating expenses		
Investigations	20.9	18.3
Ancillary service costs	2.9	3.2
Employee benefits	119.8	117.0
Capitalised salary costs	(28.9)	(26.7)
Salary transferred to investigations	(8.2)	(6.0)
Contractors and consultants	10.2	11.7
Operating lease and rental costs	0.3	0.3
Industry levies	10.7	10.3
Insurance	5.4	4.8
Travel and vehicle costs	1.9	1.9
Other business support costs	10.0	12.6
	145.0	147.4
Total operating expenses	296.8	291.6

Description

Maintenance includes inspection, servicing and repair costs.

Other grid maintenance expenses include maintenance support, communication systems costs and training for service providers and third parties.

Information Service Technology (IST) maintenance and operations expenses include system and software support, software license fees and service lease charges.

Investigations include work that the Group conducts prior to the commencement of a capital project, updates to maintenance standards and demand response costs.

Other business support costs include such items as lease expenses relating to short-term leases and low-value assets, legal fees, office equipment and communications.

Related disclosures

Auditor's Remuneration

Group (\$000)	2021	2020
Fees to Ernst & Young (New Zealand)		
Fees for auditing the statutory financial statements of the parent covering the group and auditing the statutory financial statements of any controlled entities	484	474
Fees for assurance services that are required by legislation to be provided by the auditors		
Trust deed requirements ¹	11	11
Fees for other assurance and agreed-upon-procedures services under other legislation or contractual arrangements where there is discretion as to whether the service is provided by the auditor or another firm		
Independent review of TPM development ²	97	-
Independent review of economic modelling and demand forecasting	-	64
Independent review of Carbon footprint report	18	18
Independent review of network asset model	8	-
	123	82
Fees for other services		
Training courses	-	49
Remuneration benchmarking report	3	9
	3	58
Total auditor's remuneration	621	625

1. Trust deed requirements include fees to review Directors' certificates in relation to debt held against two trust deeds.
2. This includes the independent review of the Transmission Pricing Methodology (TPM) development which Transpower is developing on behalf of the Electricity Authority for implementation from 1st April 2023 pricing year.

4. Net interest expenses

Group (\$M)	2021	2020
Interest revenue		
Interest received	4.5	6.0
	4.5	6.0
Interest expenses		
Interest expenses and associated fees	83.0	161.5
Capitalised interest	(4.3)	(8.5)
Imputed interest	11.6	12.2
	90.3	165.2
Total net interest expenses	85.8	159.2

Description

Capitalised interest is based on Transpower's forecast weighted average cost of borrowing (2021: 2.94% and 2020: 5.83%).

Imputed interest arises on deferred income, the unwinding of the discount of future cash flows related to provisions, and the interest on lease liabilities.

5. Capital assets and commitments

This note includes property, plant and equipment, intangible assets, non-current assets held for sale, capital work in progress and capital commitments.

Group (\$M)	HVAC transmission lines	HVDC transmission lines	HVAC substations	HVDC substations and submarine cables	Communi- cations	Administration assets	Total property, plant and equipment	Easements and right to access	Software	Total intangible assets	Capital work in progress
At 30 June 2021											
Cost	2,875.8	169.5	2,837.6	895.0	434.3	208.3	7,420.5	310.6	420.7	731.3	139.6
Accumulated depreciation/amortisation	(857.2)	(64.6)	(908.3)	(436.2)	(254.8)	(144.7)	(2,665.8)	(5.9)	(336.2)	(342.1)	-
Net book value/carrying value	2,018.6	104.9	1,929.3	458.8	179.5	63.6	4,754.7	304.7	84.5	389.2	139.6

30 June 2021 reconciliation

Opening net book value/carrying value (1 July 2020)	1,997.1	107.0	1,884.5	478.2	194.6	70.8	4,732.2	305.0	69.1	374.1	151.7
Additions/transfers	114.8	3.0	130.6	19.1	13.6	4.6	285.7	0.3	45.7	46.0	354.3
Disposals/transfers	(1.8)	(0.5)	(7.1)	(0.6)	(0.4)	-	(10.4)	(0.1)	-	(0.1)	(366.4)
Impairment	(2.7)	-	(2.7)	-	-	-	(5.4)	-	-	-	-
Depreciation/amortisation	(88.8)	(4.6)	(76.0)	(37.9)	(28.3)	(11.8)	(247.4)	(0.5)	(30.3)	(30.8)	-
Closing net book value/carrying value	2,018.6	104.9	1,929.3	458.8	179.5	63.6	4,754.7	304.7	84.5	389.2	139.6

At 30 June 2020

Cost	2,768.7	167.3	2,728.5	876.9	429.2	204.8	7,175.4	310.3	376.6	686.9	151.7
Accumulated depreciation/amortisation	(771.6)	(60.3)	(844.0)	(398.7)	(234.6)	(134.0)	(2,443.2)	(5.3)	(307.5)	(312.8)	-
Net book value/carrying value	1,997.1	107.0	1,884.5	478.2	194.6	70.8	4,732.2	305.0	69.1	374.1	151.7

30 June 2020 reconciliation

Opening net book value/carrying value (1 July 2019)	1,981.5	91.8	1,790.3	510.8	175.5	71.9	4,621.8	305.6	67.3	372.9	138.3
Additions/transfers	89.5	19.5	169.4	4.9	48.8	11.8	343.9	-	31.6	31.6	387.4
Disposals/transfers	(3.0)	(0.2)	(3.5)	(0.5)	(0.6)	(0.1)	(7.9)	-	(0.4)	(0.4)	(374.0)
Depreciation/amortisation	(70.9)	(4.1)	(71.7)	(37.0)	(29.1)	(12.8)	(225.6)	(0.6)	(29.4)	(30.0)	-
Closing net book value/carrying value	1,997.1	107.0	1,884.5	478.2	194.6	70.8	4,732.2	305.0	69.1	374.1	151.7

Depreciation, amortisation, write-offs and dismantling

Group (\$M)	2021	2020
Total depreciation	247.4	225.6
Total amortisation	30.8	30.0
Impairment	5.4	(0.9)
Write-offs on disposal	45.0	9.2
Dismantling expense	9.2	9.2
Loss on disposals	4.3	1.3
	342.1	274.4

The 2021 dismantling expense includes an asbestos provision movement of \$(0.4) million (2020: \$4.4 million).

Capital work in progress is split into the following classes:

Group (\$M)	2021	2020
HVAC transmission lines	39.2	51.4
HVAC substations	79.8	78.1
Communications	-	2.0
Other	20.6	20.2
	139.6	151.7

Description

Administration assets include computer hardware, plant, equipment, furniture and motor vehicles.

The most significant right-to-access asset relates to the 2011 purchase of access rights to the Vector Tunnel in Auckland for \$50 million. The Vector Tunnel right-to-access asset is being amortised over the contract life which is 90 years.

Accounting policies

Transpower uses the cost model for all capital assets. Capital work in progress is recorded at cost. Cost is determined by including all costs directly associated with bringing the assets to their location and condition for use. Finance costs incurred during the period of time that is required to complete and prepare the asset for its intended use are capitalised as part of the total cost for capital work in progress.

Assets are transferred from capital work in progress at cost to property, plant and equipment, or intangible assets as they become operational and available for use.

At each reporting date, Transpower reviews the carrying amounts of its tangible and intangible assets and exercises judgement to determine whether there is any indication that those assets have suffered an impairment loss. This is based on allocating the assets to cash generating units. If any such indication exists, the recoverable amount of the asset or cash generating unit is estimated in order to determine the extent of the impairment loss (if any). The recoverable amount for regulated assets is generally equal to the regulatory book value for revenue recovery purposes. In 2021, there has been impairment of \$2.7 million to the regulatory asset base (2020: nil).

For unregulated assets, Transpower tests for indicators of impairment, such as deterioration in the credit worthiness of the customer, and any indicated factors in pricing the future cash flows Transpower expects to derive from the assets are reflected in the calculation of the asset's value in use. In 2021, there was an impairment movement of \$2.7 million (2020: \$(0.9) million).

Depreciation

Depreciation of property, plant and equipment is calculated using the straight line method to write down the cost of property, plant and equipment to its estimated residual value over its estimated useful life.

The estimated weighted average of useful lives by Transpower's asset category is as follows:

HVAC transmission lines	58 years
HVAC transmission high voltage cables	45 years
HVAC transmission lines (tower painting)	15 years
HVAC substations	43 years
HVDC substations (incl submarine cables)	28 years
HVDC transmission lines	55 years
Communication assets	15 years
Administration assets	16 years

Non-current assets held for sale

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of carrying amount and fair value less costs to sell.

Intangibles

The cost of acquiring a finite-life intangible asset is amortised from the date the underlying asset is held ready for use on a straight line basis over the period of its expected benefit which is as follows:

Software	5-8 years
Right-to-access asset	90 years

Easements are deemed to have an indefinite useful life and are tested for impairment annually.

Certain easements have been donated by the Crown. These are recognised at cost (nil) plus any direct cost associated with putting the easement in place.

Key judgements and estimates

Transpower has exercised judgement in the following areas:

1. Determining the useful life of property, plant and equipment and finite-life intangible assets. Transpower uses assistance from independent engineers. For transmission line assets, a determining factor in the life assumption is proximity to the coast.
2. Whether or not an item is capital in nature and the appropriate component level of asset at which to depreciate.
3. Determining the appropriate time to commission an asset and commence depreciation.
4. Whether there are any assets that ought to be impaired.
5. As part of our initial desktop assessment of climate-change risks, we have completed an assessment of our 170 substations for flood risks to identify which sites have credible flood hazards resulting from climate change. This analysis identified 29 substations which have a likelihood of credible flood events, based on a 2-degrees or lower scenario (RCP2.6) and a 4-5 degrees runaway climate change scenario (RCP8.5). Without climate change, it is estimated that 20 flood events will occur "on average" between now and 2090. With climate change, it is estimated 28 flood events will occur on average between now and 2090. We are reviewing the useful lives of these assets in conjunction with considering asset management plans to mitigate these risks which are not regarded as material. Transpower continues to assess other climate-related risks and seeking to fully adopt climate related disclosures by 2023.

Related disclosures

Land and buildings are contained within the above classes and have a net book value of \$258.1 million (2020: \$259.3 million).

Held-for-sale non-current assets are contained within the above classes and have a net book value of \$0.2 million (2020: \$0.2 million).

Capital commitments in respect of contracts for property, plant and equipment:

Group (\$M)	2021	2020
Property, plant and equipment	171.4	103.7
	171.4	103.7

Capital commitments in respect of contracts for intangible assets:

Easements and right-to-access assets	-	-
Software	0.2	-
	0.2	-
Total capital commitments	171.6	103.7

6. Leases

Right-of-use assets

Group (\$M)	Property and IT data centres	Fibre communication network	Group total
30 June 2021 reconciliation			
Opening net book value (1 July 2020)	61.8	60.2	122.0
Additions	0.4	0.2	0.6
Depreciation	(5.0)	(4.8)	(9.8)
Adjustments to existing right-of-use assets	-	(1.9)	(1.9)
Impairment/Retirement	(0.2)	(0.3)	(0.5)
Closing net book value	57.0	53.4	110.4

30 June 2020 reconciliation

Opening net book value (1 July 2019)	-	-	-
Effect of adoption of IFRS 16	67.0	62.1	129.1
Additions	0.2	4.2	4.4
Depreciation	(5.1)	(4.9)	(10.0)
Impairment/Retirement	(0.3)	(1.2)	(1.5)
Closing net book value	61.8	60.2	122.0

Lease liabilities

Group (\$M)	2021	2020
As at 1 July	99.7	-
Effect of adoption of IFRS 16	-	106.1
Additions	4.0	4.0
Accretion of interest	3.1	3.4
Payments	(10.4)	(12.4)
Remeasurement/Write-off	(5.7)	(1.4)
As at 30 June	90.7	99.7
Current	7.3	7.0
Non-current	83.4	92.7

Description

The Group's leases primarily relate to the leasing of fibre optic cables for Transpower's communication network and property leases for office buildings and IT data centres.

Accounting Policies

Lease liabilities

Lease liabilities are recognised based on the present value of the remaining lease payments, including lease renewals that are deemed reasonably certain to be exercised. Transpower uses the incremental borrowing rate at the lease commencement date to calculate the present value of lease payments.

Lease liabilities will decrease over time as lease payments are made and increase with an imputed interest expense being recognised. In addition, the carrying amount of lease liabilities is remeasured if there is a modification, a change in the lease term or a change in the in-substance fixed lease payments.

Right-of-use assets

The Group recognises right-of-use assets at the commencement date of the lease (i.e. the date the underlying asset is available for use). The Group applies the recognition exemptions to its short-term leases with less than 12 months remaining and to low-value leases. Lease payments for these leases are recognised as an expense on a straight-line basis over the lease term.

Right-of-use assets are measured at cost, less any accumulated depreciation and impairment losses, and adjusted for any remeasurements of lease liabilities. The cost of right-of-use assets includes the amount of lease liabilities recognised, adjusted for any prepaid lease payments. The right-of-use assets are depreciated on a straight-line basis over the shorter of their estimated useful life and the lease term. The Group assesses the right-of-use asset for impairment when such indicators exist.

Key judgements

Transpower has exercised judgement in the following areas:

1. Determination of whether or not a lease exists through assessment of contractual arrangements;
2. Where the contract contains options to extend or terminate the lease, consideration of the likelihood of exercising the options based on past practice; and
3. Use of a single discount rate to a portfolio of leases with reasonably similar characteristics.

Related Disclosure

The following are the amounts recognised in profit or loss:

Group (\$M)	2021	2020
Depreciation expense of right-of-use assets	9.8	10.0
Interest expenses on lease liabilities	3.1	3.4
Expense relating to short-term leases (included in operating expenses)	2.4	2.9
Total amount recognised in profit or loss	15.3	16.3

The group had total cash outflow for lease payments of \$10.6 million in 2021 (2020: \$12.1 million).

7. Debt, financial instruments and risk management

a) Summary

The Group is subject to a number of financial risks that arise as a result of its business activities, including having a debt portfolio that is denominated in both NZD and foreign currencies, holding an investment portfolio and from purchases in certain foreign currencies.

Debt is issued by the Group in both New Zealand dollars (NZD) and foreign currencies. Derivatives are used to manage currency risk and interest rate risk by converting foreign borrowings to NZD and by converting floating interest rates to fixed interest rates. The use of derivatives means that Transpower effectively has borrowings denominated in NZD, predominantly at fixed interest rates. As at 30 June 2021, all cash flow hedges are 100% effective.

Debt and associated derivatives are designated as fair value through profit or loss on the basis of preventing an accounting mismatch, unless the derivatives are designated in an effective hedge accounting relationship. For these derivatives that are effectively hedged, the resulting gain or loss is recognised in other comprehensive income. The Group's debt and derivatives are managed as one integrated portfolio.

The Group also uses derivatives (foreign exchange forward contracts) in its purchase of goods and services.

Financial risk management is carried out by a central treasury function which operates under policies approved by the Board of Directors.

Key judgements

The fair values of debt and derivatives are determined by converting currency exposures and discounting cash flows based on the relevant yield curve. The yield curve is adjusted to reflect the credit risk of the counterparty to the transaction or the credit risk of Transpower. These valuations are considered level two in the IFRS three-level valuation hierarchy. There has been no movement between levels during the year.

b) Financial risks

i) Liquidity risk

Liquidity risk is the risk of the Group being unable to access sufficient funds to meet its financial obligations in an orderly manner. This might result from the Group not maintaining adequate funding facilities or being unable to refinance existing debt maturities.

To mitigate exposures to adverse market rate movement and refinancing risk in future periods, the Group's policy is that debt, net of cash, on call and short-term deposits, maturing in any 12-month period is not to exceed NZD750 million or up to NZD1 billion with prior approval of the Board.

The Group's liquidity policy requires the Group to have access to committed funding facilities to cover the sum of all debt that matures over the next six months plus peak cumulative anticipated operating cash flow requirements over the next six months. To meet this policy requirement Transpower has committed standby facilities split into two tranches of NZD250 million each, maturing 7 December 2021 and 7 December 2022 which supports the commercial paper programmes and liquidity. The facilities have been undrawn since inception.

Debt Facilities

The Group has four debt facilities. The aggregate principal amount of the debt outstanding may not exceed the following:

(\$M)	Currency	Foreign Currency Equivalent	NZD	Utilised NZD
Domestic medium term note programme	NZD	-	No set limit	1,275
Australian medium term note programme	AUD	750	806	483
European commercial paper programme (ECP)	USD	500	716	-
Domestic commercial paper programme (CP)	NZD	500	500	50

ii) Interest rate risk

Interest rate risk is the risk of an adverse impact on the present and future finance costs of the Group arising from an increase in interest rates. The Group uses various financial instruments to fix interest rates to mitigate interest rate risk.

The Group generally seeks to fix interest rates with interest rate derivatives to provide certainty of interest rates and costs during Regulatory Control Periods. This means that, prima facie, a decrease in market interest rates will result in the Group sustaining fair value losses, and conversely an increase in market interest rates will result in fair value gains on the hedged portion.

The Group's policy sets minimum and maximum hedging parameters expressed as a percentage of forecast debt. Interest rate swaps and options are used to change the interest rate profile on existing and forecast debt and cross-currency interest rate swaps entered into.

iii) Currency risk

Currency risk on debt is the risk of adverse impact of exchange rate movements which determine the NZD cost of debt (principal and interest) issued in foreign currencies.

Foreign currency borrowings are converted into a NZD-denominated exposure at the time of commitment to drawdown. Currency risk on foreign currency-denominated borrowings is managed using cross-currency interest rate swaps and basis swaps.

Cross-currency interest rate swaps eliminate foreign currency risk on the underlying debt by fixing the NZD equivalent of the interest payments and final principal exchange at the time of entering into the swap.

Basis swaps are used to eliminate currency basis risk when the Group issues bonds in a foreign currency. In a basis swap, the Group receives the offshore currency floating interest rate and pays the NZD floating interest rate.

Currency risk on foreign currency-denominated purchases is the risk of adverse impact of exchange rate movements which determine the NZD cost of foreign currency-denominated purchases. It is the Group's policy to hedge committed foreign currency-denominated payments greater than NZD200,000 (NZD equivalent) by using forward foreign exchange contracts to fix or offset the NZD cost. For committed payments below NZD200,000 the Group has discretion on whether or not to hedge.

Debt and related derivatives - interest rate, currency and liquidity risk

The following tables detail Transpower's debt and associated derivatives. The result after derivatives is that Transpower effectively has a debt portfolio in New Zealand dollars at predominantly fixed interest rates matching Transpower's Regulatory Control Period. The derivatives in the table below are interest rate swaps and cross-currency interest rate swaps that relate directly to the particular debt issue. The effective interest rate on debt including the effect of all derivative financial instruments was 2.6% (2020: 5.4%).

2021

Group	Debt currency	Debt and derivative maturity date	Debt face value (\$M)	Debt fair value NZ (\$M)	Derivative fair value NZ (\$M)	Total debt + derivatives fair value NZ (\$M)
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Domestic Commercial Paper

NZ Issue	NZD	16-Nov-21	50.0	49.9	-	49.9
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Domestic Bonds

Bonds 2022	NZD	30-Jun-22	150.0	155.6	(4.6)	151.0
Bonds 2022	NZD	16-Sep-22	100.0	105.3	(4.3)	101.0
Bonds 2023	NZD	15-Mar-23	50.0	54.7	(3.7)	51.0
Bonds 2024	NZD	14-Mar-24	150.0	157.5	(5.3)	152.2
Bonds 2025	NZD	6-Mar-25	125.0	137.2	(9.5)	127.7
Bonds 2025	NZD	4-Sep-25	450.0	455.7	1.2	456.9
Bonds 2026	NZD	8-Apr-26	150.0	149.3	1.6	150.9
Bonds 2028	NZD	15-Mar-28	100.0	125.7	(19.0)	106.7

Australian Medium Term Notes

AUD MTN 2021	AUD	6-Aug-21	150.0	164.5	1.3	165.8
AUD MTN 2023	AUD	28-Aug-23	300.0	365.1	(12.4)	352.7

Swiss Bonds

CHF EMTN 2027	CHF	16-Dec-27	125.0	193.8	8.9	202.7
CHF EMTN 2029	CHF	16-Mar-29	160.0	247.0	(1.7)	245.3

2021

Group	Debt currency	Debt and derivative maturity date	Debt face value (\$M)	Debt fair value NZ (\$M)	Derivative fair value NZ (\$M)	Total debt + derivatives fair value NZ (\$M)
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US Private Placement

USPP 2021	USD	13-Oct-21	232.0	337.7	(50.4)	287.3
USPP 2022	USD	15-Dec-22	150.0	225.5	(17.8)	207.7
USPP 2023	USD	13-Oct-23	78.0	120.6	(20.2)	100.4
USPP 2026	USD	28-Jun-26	75.0	116.2	0.7	116.9
USPP 2026	USD	13-Oct-26	70.0	114.7	(20.8)	93.9
USPP 2028	USD	28-Jun-28	75.0	117.7	0.6	118.3
				3,393.7	(155.4)	3,238.3

Debt short term 49.9

Current portion of long-term debt 657.8

Debt short term 707.7

Debt long term 2,686.0

Total debt as per statement of financial position 3,393.7

Debt face value (as per above)

New Zealand dollar debt	1,325.0
Foreign debt after adjusting for related cross-currency interest rate swaps	1,834.9
	3,159.9

The notional amount of the cross-currency interest rate swaps is NZD1,834.9 million. Group debt, net of cash, maturing in the 12 month period is \$477.8 million, within the \$750 million policy threshold.

Interest rate swaps (IRS) are used to fix interest payments as per the Group's treasury policy. The table below shows the notional IRS that are not directly related to underlying debt. The table includes forward starting and offsetting IRS. The IRS are net settled. The table below reflects the net cash outflows comprising both IRS assets and liabilities. IRS with unrealised gains are assets and IRS with unrealised losses are liabilities.

(\$M)	Derivative notional value	Derivative fair value
Value of interest rate swaps - liabilities	2,620.0	105.5
Value of interest rate swaps - (assets)	780.0	(61.0)
Total fair value of interest rate swaps		44.5
Total fair value of debt-related derivatives as shown above		(155.4)
Total debt derivatives fair value (assets) / liabilities (refer to note 8 for further derivatives breakdown)		(110.9)

Effective net payable contractual cash flow maturity profile

The effective net cash flows on floating rate payments are determined by applying the applicable swap curve to determine the expected future cash flows.

(\$M)	Within one year	One to two years	Two to three years	Three to four years	Four to five years	Greater than five years	Total
Debt	781.0	430.9	630.1	155.9	729.6	769.2	3,496.7
Debt-related derivatives	(85.2)	(27.8)	2.3	12.5	15.0	13.3	(69.9)
Interest rate swap (portfolio) - liabilities	44.4	30.7	17.6	8.0	6.5	-	107.2
Interest rate swap (portfolio) - assets	(15.8)	(15.1)	(14.0)	(13.7)	(3.9)	-	(62.5)
Trade and other payables	67.7	0.1	0.1	0.1	-	0.1	68.1
Leases	10.2	10.0	9.8	9.9	9.7	64.7	114.3
Total contractual cash flows	802.3	428.8	645.9	172.7	756.9	847.3	3,653.9

These interest rate swaps (portfolio) have an average contracted fixed interest rate of 1.32% (2020: 1.36%).

Reconciliation of liabilities arising from financing activities

(\$M)	Balance 30 June 2020	Cash flows	Fair value changes in P&L	Fair value changes in OCI	Other	Balance 30 June 2021
Short-term borrowing	345.3	(294.8)	(0.7)	0.4	(0.3)	49.9
Long-term borrowing	2,965.8	540.6	(214.5)	50.0	1.9	3,343.8
Total liabilities from financing activities	3,311.0	245.8	(215.2)	50.4	1.6	3,393.7

Fair value changes in the table above include foreign exchange movements.

Debt and related derivatives - interest rate, currency and liquidity risk

The following tables detail Transpower's debt and associated derivatives. The result after derivatives is that Transpower effectively has a debt portfolio in New Zealand dollars at predominantly fixed interest rates matching Transpower's Regulatory Control Period. The derivatives in the table below are interest rate swaps and cross-currency interest rate swaps that relate directly to the particular debt issue. The effective interest rate on debt including the effect of all derivative financial instruments was 5.4% (2019: 6.4%).

2020	Debt currency	Debt and derivative maturity date	Debt face value	Debt fair value	Derivative fair value	Total debt + derivatives fair value
Group			(\$M)	NZ (\$M)	NZ (\$M)	NZ (\$M)
Bank Term						
Bank Term 2021	NZD	17-Jun-21	100.0	100.0	-	100.0
Bank Term 2022	NZD	4-May-22	50.0	50.9	-	50.9
Domestic Commercial Paper						
NZ Issue	NZD	3-Jul-20	13.0	13.0	-	13.0
NZ Issue	NZD	6-Jul-20	24.9	25.0	-	25.0
NZ Issue	NZD	11-Aug-20	32.9	33.0	-	33.0
NZ Issue	NZD	19-Aug-20	25.0	25.0	-	25.0
NZ Issue	NZD	26-Aug-20	25.0	25.0	-	25.0
NZ Issue	NZD	3-Sep-20	30.0	30.0	-	30.0
NZ Issue	NZD	9-Sep-20	30.0	30.0	-	30.0
NZ Issue	NZD	16-Sep-20	35.0	34.9	-	34.9
NZ Issue	NZD	23-Sep-20	30.0	29.9	-	29.9
NZ Issue	NZD	14-Apr-21	98.8	99.5	-	99.5

2020

Group	Debt currency	Debt and derivative maturity date	Debt face value (\$M)	Debt fair value NZ (\$M)	Derivative fair value NZ (\$M)	Total debt + derivatives fair value NZ (\$M)
Domestic Bonds						
Bonds 2022	NZD	30-Jun-22	150.0	161.0	(10.1)	150.9
Bonds 2022	NZD	16-Sep-22	100.0	108.9	(7.6)	101.3
Bonds 2023	NZD	15-Mar-23	50.0	57.2	(6.0)	51.2
Bonds 2024	NZD	14-Mar-24	150.0	161.6	(10.5)	151.1
Bonds 2025	NZD	6-Mar-25	125.0	142.7	(16.5)	126.2
Bonds 2025	NZD	4-Sep-25	150.0	155.7	(5.5)	150.2
Bonds 2028	NZD	15-Mar-28	100.0	134.5	(29.4)	105.1
Australian Medium Term Notes						
AUD MTN 2021	AUD	6-Aug-21	150.0	169.8	(3.1)	166.7
AUD MTN 2023	AUD	28-Aug-23	300.0	376.3	(24.4)	351.9
Swiss Bonds						
CHF MTN 2027	CHF	16-Dec-27	125.0	200.1	(5.0)	195.1
US Private Placement						
USPP 2021	USD	13-Oct-21	232.0	376.3	(84.1)	292.2
USPP 2022	USD	15-Dec-22	150.0	250.2	(39.9)	210.3
USPP 2023	USD	13-Oct-23	78.0	133.6	(33.0)	100.6
USPP 2026	USD	28-Jun-26	75.0	128.4	(13.6)	114.8
USPP 2026	USD	13-Oct-26	70.0	127.8	(35.1)	92.7
USPP 2028	USD	28-Jun-28	75.0	130.7	(15.7)	115.0
			3,311.0	(339.5)		2,971.5
Debt short term						
				345.3		
Current portion of long-term debt				100.0		
Debt short term				445.3		
Debt long term				2,865.7		
Total debt as per statement of financial position				3,311.0		

	Debt face value (\$M)
Debt face value (as per above)	
New Zealand dollar debt	1,319.6
Foreign debt after adjusting for related cross-currency interest rate swaps	1,593.5
	2,913.1

The notional amount of the cross-currency interest rate swaps is NZD1,593.5 million. Group debt, net of cash, maturing in the 12 month period is \$432.6 million, within the \$750 million policy threshold.

Interest rate swaps (IRS) are used to fix interest payments as per the Group's treasury policy. The table below shows the notional IRS that are not directly related to underlying debt. The table includes forward starting and offsetting IRS. The IRS are net settled. The table below reflects the net cash outflows comprising both IRS assets and liabilities. IRS with unrealised gains are assets and IRS with unrealised losses are liabilities.

(\$M)	Derivative notional value	Derivative fair value
Value of interest rate swaps - liabilities	3,140.0	232.1
Value of interest rate swaps - (assets)	660.0	(83.3)
Total fair value of interest rate swaps		148.8
Total fair value of debt-related derivatives as shown above		(339.5)
Total debt derivatives fair value (assets) / liabilities (refer to note 8 for further derivatives breakdown)		(190.7)

Effective net payable contractual cash flow maturity profile

The effective net cash flows on floating rate payments are determined by applying the applicable swap curve to determine the expected future cash flows.

(\$M)	Within one year	One to two years	Two to three years	Three to four years	Four to five years	Greater than five years	Total
Debt	539.1	802.8	442.3	631.3	149.1	834.2	3,398.8
Debt-related derivatives	(53.5)	(120.7)	(62.6)	(25.2)	(7.9)	(48.4)	(318.3)
Interest rate swap (portfolio) - liabilities	44.8	52.5	49.3	43.4	38.2	8.4	236.6
Interest rate swap (portfolio) - assets	(14.7)	(17.5)	(16.9)	(15.4)	(14.6)	(5.9)	(85.0)
Trade and other payables	59.8	0.2	0.1	0.1	0.1	0.1	60.4
Leases	10.3	10.1	9.9	9.7	9.8	75.9	125.7
Total contractual cash flows	585.8	727.4	422.1	643.9	174.7	864.3	3,418.2

These interest rate swaps (portfolio) have an average contracted fixed interest rate of 1.36% (2019: 3.68%).

Reconciliation of liabilities arising from financing activities

(\$M)	Balance 30 June 2019	Cash flows	Fair value changes in P&L	Fair value changes in OCI	Other	Balance 30 June 2020
Short-term borrowing	74.8	270.0	0.7	(0.4)	0.2	345.3
Long-term borrowing	3,152.6	(293.2)	103.1	12.0	(8.8)	2,965.7
Total liabilities from financing activities	3,227.4	(23.2)	103.8	11.6	(8.6)	3,311.0

Fair value changes in the table above include foreign exchange movements.

iv) Credit risk

Credit risk is the risk of adverse impact on the Group through the failure of a counterparty bank, financial institution or customer to meet its financial obligations. Transpower's credit risk arises from financial assets. These include investments, derivatives and accounts receivable.

Transpower has not recognised an expected credit loss impairment on its financial assets. No loss is expected due to Transpower maintaining a high quality credit policy as explained below.

Treasury credit risk

The Group's policy is to buy high quality credit and establish credit limits with counterparties that are either a semi-government, a bank, a financial institution, a special- purpose derivative products company or a New Zealand corporate. These net credit limits are not to exceed 20% of Shareholder Funds of Transpower as shown in the most current audited annual report. In addition, if the counterparty is a New Zealand corporate, the credit limit for investments is not to exceed \$10 million.

Counterparties must have a minimum long-term Standard & Poor's credit rating of A or above (or Fitch or Moody's equivalent). For minimum credit ratings for Risk Reinsurance Limited (RRL) investments, please refer to Note 10 Investment disclosure.

For those counterparties with which the Group has a collateral support agreement (CSA), the counterparty credit limit for derivatives is defined as the maximum exposure threshold dictated by the CSA.

The maximum credit exposure in respect of non-derivative assets is best represented by their carrying value.

The credit risk arising from the use of derivative products is minimised by the netting and set-off provisions contained in the Group's International Swaps and Derivatives Association (ISDA) agreements. Under these agreements, transactions are net settled. Therefore, the maximum credit exposure is best represented by the net mark-to-market valuation by counterparty where the net valuation is positive as follows:

Group (\$M)	2021	2020
Cross-currency interest rate swaps (CCIRS)	111.8	253.9
Interest rate swaps (IRS)	44.2	56.7
Total	156.0	310.6

The net movement in value of CCIRS is primarily driven by a movement lower in both the New Zealand dollar and US interest rates on the CCIRS derivatives used to hedge foreign currency debt.

The breakdown of the CCIRS by counterparty is as follows:

Group (\$M)	2021	2020
ANZ Bank New Zealand Limited	28.0	68.9
Bank of New Zealand	12.4	24.4
Citibank N.A.	17.8	39.9
Commonwealth Bank of Australia	27.4	45.6
Westpac Banking Corporation	26.2	75.1
Total	111.8	253.9

Customer credit risk*Regulated customers*

Transpower recovers the value of its transmission assets over their useful lives in accordance with Commerce Commission input methodology regulations. The effect of these regulations is that for the majority of assets, a customer default would result in Transpower recovering any revenue shortfall from all other transmission customers.

Transpower's customers comprise predominantly electricity generators, distribution companies and some large industrial users. There is a high concentration of credit risk with respect to trade receivables due to the small number of significant customers from which the majority of revenue is received. It is the Group's policy to perform credit evaluations on customers requiring credit, and the Group may, in some circumstances, require collateral. Collateral held at 30 June 2021 was \$0.2 million (2020: \$0.2 million).

The entities below have receivables balances greater than 10% of the total trade receivables of \$90.7 million at 30 June 2021 (2020: \$86.9 million).

Group (\$M)	2021	2020
Vector Limited	17.4	18.6
Powerco Limited	9.5	8.7

Unregulated customers

The Group holds bank guarantees to protect itself in the event private developers are unable to pay any outstanding balances owing on transmission realignment projects performed on their behalf. The bank guarantee may reduce as payments are made by the developers.

There is a specific credit risk in relation to customer default on customer investment contracts where revenue is recovered from individual customers over time for specific assets already in use. Transpower has performed a credit risk assessment on its customers with investment contracts. The assessment is based on the latest financial and non-financial information available from the customer, and Transpower's understanding and experience with the customer. The majority of this credit exposure is to Electricity Lines companies and Electricity Generators, most of whom remain financially stable. Transpower believes the majority of credit risk relates to certain large industrial users. Transpower monitors the creditworthiness of these organisations. The largest credit risk in this category relates to an organisation with future receivables out to 2046 of \$7.6 million on a net present value basis. Transpower has considered the likely default risk based on the latest information available and has provided impairment provision for the customer assets associated with this organisation. (Refer to Note 5)

There have been no customer defaults in 2021 (2020: nil).

v) Sensitivity analysis**Currency risk - debt**

All foreign currency debt is converted back to NZD, eliminating foreign currency exposure. Therefore, no sensitivity analysis has been performed for foreign currency debt.

Interest rate risk

The Group has issued fixed and floating rate debt and is exposed to interest rate risk. The Group manages the exposure through the use of interest rate swaps with the net exposure being predominantly fixed rate and aligned to Regulatory Control Periods. A portion of the portfolio is left at floating interest rates which will result in a reduction to finance costs should interest rates fall and an increase in finance costs should interest rates rise.

Group (\$M)	2021	2021	2020	2020
Yield curve interest rate change and impact on pre-tax profit/(loss)/equity	+100bp	-100bp	+100bp	-100bp
Net interest expenses (annual impact)	(6.6)	6.6	(4.1)	4.1

Fair value risk

The Group is subject to fair value gains or losses. Fair value gains and losses are measured by discounting cash flows on debt and derivatives using market interest rates or yield curves. A move upwards of interest rates and yield curves results in fair value gains and a move downwards results in fair value losses.

A parallel shift in the yield curve by 1% (100 basis points) or the same movement due to a change in credit spreads would create the following fair value movements based on debt, investments and derivatives held at balance date:

Group (\$M)	2021	2021	2020	2020
Yield curve interest rate change and impact on pre-tax profit/(loss)/equity	+100bp	-100bp	+100bp	-100bp
Fair Value	95.0	(98.9)	123.3	(129.6)

vi) Commodity risk

Commodity risk is the risk of an adverse impact in commodity prices such as prices for aluminum and copper. These are some of the raw materials used in the construction of the electricity transmission network. Generally, where Transpower has contracts in place, the commodity risk of these contracts is borne by the supplier.

vii) Insurance risk

Transpower operates a captive insurance company through its subsidiary Risk Reinsurance Limited (RRL) and also has external insurance. RRL maintains an investment portfolio to meet insurance claims.

The more significant insurance policies are outlined in the table below. These policies will next be renewed in September 2021.

Insurance Policy

(\$M)	Amount Insured	Deductible	RRI Retained risk	Externally insured risk	Total Insured
HVDC submarine cables	0-15	-	15.0	-	90.0
	15-40	-	8.7	16.3	-
	40-90	-	6.0	44.0	-
Other grid assets (excluding transmission lines)	0-10	0.1	9.9	-	650.0
	10-650	-	-	640.0	-
Transmission lines	0-10	0.1	9.9	-	10.0

For the HVDC submarine cables above, RRI would pay up to the first \$15 million of any claim and 35% of the layer between \$15-\$40 million, and 12% of the layer between \$40-\$90 million. The remaining claim exposure will be covered by external insurance providers on a pro-rata basis.

The number of insurance claims related to climate-change risks is anticipated to increase which is dependent on the climate-change scenarios that emerge.

viii) Regulatory risk

Transpower is a natural monopoly and is regulated by the Commerce Commission and the Electricity Authority. The Commerce Commission determines what rate of return applies to Transpower's assets and approves large capital projects which can have a profit or loss incentive included. It also determines the incentives that apply to Transpower which covers operating expenditure, capital expenditure, and meeting certain deliverables and outage targets. The Electricity Authority governs the running of the electricity market.

There is a risk that Transpower's rate of return may be set at too low a level to compensate Transpower for undertaking investments in grid assets. There is also a risk that Transpower does not meet some or all of the performance targets set by the Commerce Commission. Financial penalties would apply and The Commerce Commission can further penalise Transpower for failing to meet targets for which quality standards have been set. The network performance incentive is +/- \$11 million per annum. The operating expenditure and base capex incentive is 24% of the overspend or underspend.

There is a risk that significant errors by Transpower managing and operating the grid and power system (if they occurred) could result in changes in regulatory settings including to the Electricity Industry Act 2010 under which Transpower is the system operator.

ix) Climate risk

Under our current regulatory settings, the extent of any underestimation of the frequency, severity and cost of remediating climate-related damage is an additional cost over and above our regulatory allowance for such repairs and will accordingly be covered by Transpower.

8. Derivatives and hedge commitment

This note shows the short-term (ST) and long-term (LT) breakdown of the derivatives and hedge commitments.

2021

Group (\$M)	ST asset	LT asset	Total asset	ST (liability)	LT (liability)	Total (liability)	Net asset (liability)
Debt-related derivatives							
Cross-currency interest rate swaps	50.3	72.9	123.2	(1.3)	(10.2)	(11.5)	111.7
Interest rate swaps	40.4	76.0	116.4	(47.1)	(70.1)	(117.2)	(0.8)
Purchasing related derivatives and hedge commitment							
Foreign exchange forward contracts	0.1	0.2	0.3	(0.5)	-	(0.5)	(0.2)
Commitment on fair value hedges	0.5	-	0.5	(0.1)	(0.2)	(0.3)	0.2
Total derivatives and hedge commitment	91.3	149.1	240.4	(49.0)	(80.5)	(129.5)	110.9

2020

Debt-related derivatives							
Cross-currency interest rate swaps	-	253.9	253.9	-	-	-	253.9
Interest rate swaps	35.2	133.7	168.9	(45.3)	(186.8)	(232.1)	(63.2)
Purchasing related derivatives and hedge commitment							
Foreign exchange forward contracts	0.1	-	0.1	(0.2)	-	(0.2)	(0.1)
Commitment on fair value hedges	0.2	-	0.2	(0.1)	-	(0.1)	0.1
Total derivatives and hedge commitment	35.5	387.6	423.1	(45.6)	(186.8)	(232.4)	190.7

Description

Derivatives are used to manage financial risk. The gain or loss on derivatives represents the unrealised gain or loss at balance date. The Group anticipates that the derivatives will be held until maturity, and it is unlikely that settlement at the reported fair values will occur.

Accounting policies

Derivative financial instruments

The Group uses derivative financial instruments to reduce its exposures to fluctuations in foreign currency exchange rates and interest rates. All derivatives are classified as fair value through profit and loss except for:

- Those derivatives that are designated into cash flow hedge accounting relationships, where the effective portion of the hedge is included in the Cash Flow Hedge Reserve; and
- Those derivatives used to reduce foreign currency exposure on asset purchases, that are designated into fair value hedge accounting relationships. For fair value hedging relationships, gains or losses on hedging instruments are included in profit or loss together with any change in the fair value of the hedged purchase commitments attributable to the foreign currency risk.

The valuation technique and key inputs used to value the derivatives are disclosed in note 7 Debt, financial instruments and risk management.

9. NZPCL debt and investment

Group (\$M)	2021	2020
Investment		
Current	-	-
Non-current	90.0	98.1
	90.0	98.1
Debt		
Current	-	-
Non-current	90.8	100.5
	90.8	100.5
Net investment (debt)	(0.8)	(2.4)
Non-controlling interest net of tax	(0.6)	(1.8)

Description

In November 2009, the Group partially terminated the 2003 cross-border lease in respect of the majority of the HVAC transmission assets in the South Island. As a result of the partial termination, the Group has consolidated a special-purpose vehicle, New Zealand Power Cayman 2003-1 Limited (NZPCL). NZPCL has a USD deposit with a financial institution and a USD loan from another financial institution. The cash flows from the deposit and loan offset. However, the deposit and loan are not offset for accounting purpose as the offsetting requirement are not met. No consideration was transferred. The loan to NZPCL is guaranteed by Transpower.

As Transpower has no legal ownership interest in NZPCL, the net liabilities and any movements in net liabilities are recognised as a non-controlling interest. The substance of the transaction is such that Transpower rather than the non-controlling interest would be responsible for any shortfall between the value of the asset and the liability.

Accounting policies

The loan and the deposit are recognised at fair value in the Group financial statements based on discounted cash flows. These financial instruments are designated as fair value through profit or loss.

The difference between the asset and liability is due to the yield curves that have been applied to the cash flows. These valuations are considered level two in the IFRS three-level valuation hierarchy.

10. Investments

Group (\$M)	2021	2020
Risk Reinsurance Limited investments		
Deposits	28.3	37.1
Corporate bonds	73.2	63.5
	101.5	100.6
Transpower investments		
Deposits	-	-
Total investments	101.5	100.6

Description

Transpower has a captive insurance company called Risk Reinsurance Limited (RRL). RRL invests premiums received from Transpower. RRL reinsures externally and maintains sufficient investments to meet expected claims. RRL does not offer insurance to any external parties.

For RRL cash and bond holdings, the counterparties have maximum limits depending on their ratings. Investments in deposits, floating rate notes and corporate bonds were made in financial instruments issued by organisations with credit ratings of BBB or above. RRL counterparty exposures are limited to \$10 million or less, by individual counterparty, based on their credit ratings, and exposures are monitored on a daily basis.

Accounting policies

Financial asset fair value is established by using discounted cash flow analysis based on the relevant yield curve. The yield curve is adjusted to reflect the credit risk of the counterparty to the transaction. Deposits, floating rate notes and corporate bonds are considered level two in the NZ IFRS 13 three-level valuation hierarchy.

RRL investments are classified as fair value through profit or loss. This classification is on the basis that RRL has an active investment programme (held for trading) and as such investments are classified as current assets.

11. Trade receivables and other assets

Group (\$M)	2021	2020
Current		
Trade receivables	90.7	86.9
Prepayments	8.5	7.9
Inventory	2.5	2.7
	101.7	97.5
Non-current		
Prepayments	5.8	3.2
Total trade and other receivables	107.5	100.7
Ageing of trade receivables		
Current	88.8	85.0
Past 31 days	1.9	1.9
	90.7	86.9

Description

There was no expected credit loss realised during the year (2020: nil).

Accounting policies

Trade receivables are measured initially at fair value and subsequently at amortised cost. The fair value is materially similar to amortised cost. Due to the short-term nature of the receivables, no discounting is applied.

For trade receivables, the Group applies a simplified approach in calculating expected credit loss. Therefore, the Group does not track changes in credit risk, but instead recognises a loss allowance based on lifetime expected credit loss at each reporting date.

12. Trade and other payables

Group (\$M)	2021	2020
Current		
Trade creditors and accruals	54.2	46.8
Employee entitlements	13.5	13.0
	67.7	59.8
Non-current		
Other non-current payables	0.4	0.6
Total trade and other payables	68.1	60.4

Accounting policies

Trade and other payables are measured initially at fair value and subsequently at amortised cost. The fair value is materially similar to amortised cost. Due to the short-term nature of the payables, no discounting is applied.

13. Provisions

Group (\$M)	Contractor provision	Dismantling & environmental hazards	Tower and line safety	Other	Total
Balance at 1 July 2020	3.8	37.0	9.9	6.0	56.7
Provisions made during the year	4.8	9.6	8.2	2.0	24.6
Provisions used during the year	(1.5)	(6.0)	(6.1)	(2.4)	(16.0)
Provisions reversed during the year	-	(0.4)	-	(0.3)	(0.7)
Balance at 30 June 2021	7.1	40.2	12.0	5.3	64.6
Current portion of provisions	3.6	5.5	4.0	3.3	16.4
Non-current portion of provisions	3.5	34.7	8.0	2.0	48.2
Balance at 30 June 2021	7.1	40.2	12.0	5.3	64.6

Description

Contractor provision

Transpower has determined that a future payment to a contractor should be recognised as a provision. Accordingly, the future cash flow has been present-valued and recognised as a provision and also capitalised as property, plant and equipment. The present value is amortised as the interest is incurred and the provision is used each year. The future payment will occur if certain assets are free from defects and have met prescribed service levels.

Dismantling and environmental hazards

Transpower recognises dismantling and environmental hazard costs where it believes a reliably measurable obligation exists. Transpower has estimated these costs based on engineering advice. Actual costs may vary from the figures indicated.

Tower and line safety

Transpower has provided for two work programmes which are to remedy high priority lines underclearance issues and high priority earth potential rise issues on towers. Health and safety obligations have given rise to the need to carry out these work programmes.

Other

This may include provisions such as performance incentive scheme, redundancy, onerous contract provision and regulatory provisions, where the amounts can be reliably estimated.

Accounting policies

Provisions are liabilities of uncertain timing or amount. They are measured at the amounts expected to be paid when the liabilities are settled.

14. Equity

Capital

Transpower has 1,200,000,000 issued and fully paid \$1 ordinary shares. Transpower's authorised capital is \$1,200,000,000 (2020: \$1,200,000,000). The shares confer on the holders the right to vote at any annual general meeting of Transpower. All shares rank equally.

Transpower manages capital to maintain its strong credit rating and to have sufficient capital available to meet its financing and operating requirements. Surplus equity is returned by way of dividends to shareholders.

Credit rating

Transpower's investment grade credit rating is Standard & Poor's AA (2020: AA-) and Moody's Aa3 (2020: Aa3). On 22 February 2021, Standard & Poor has upgraded our corporate rating to AA in line with the government sovereign credit rating upgrade to AAA from AA+.

Net tangible assets per share

Group (\$M)	2021	2020
Net assets (equity)	1,668.1	1,623.4
Less intangibles (note 5)	(389.2)	(374.1)
Total net tangible assets	1,278.9	1,249.3
Net tangible assets per share (\$)	1.07	1.04

Net assets (equity) includes both Right-of-use assets and Lease liabilities.

Dividends

Dividends declared and provided by Transpower are as follows:

	2021	2021	2020	2020
	(\$M)	(cents per share)	(\$M)	(cents per share)
Previous year final dividend paid	99.0	8	99.0	8
Interim dividend paid	48.0	4	66.0	6
	147.0	12	165.0	14
Final dividend declared subsequent to balance date (refer note 20)	72.0	6	99.0	8

Group entities

All subsidiaries are wholly owned, are incorporated in New Zealand (except where specified otherwise) and have a balance date of 30 June 2021.

Transpower has no ownership interest in NZPCL. NZPCL is a special-purpose vehicle registered in the Cayman Islands and is consolidated for financial reporting, indicated by the dotted line in the diagram below. Refer to note 9 NZPCL debt and investment for more detail. Risk Reinsurance Limited is registered and incorporated in the Cayman Islands and was established to provide insurance for the Group.

As at balance date, the Group's entities are as follows:



● Party to a cross-border lease over the majority of the South Island HVAC Assets

15. Segment reporting

The Group has two segments - transmission and system operator.

- **Transmission** - the transmission of electricity from the point of generation to the point of connection.
- **System operator** - operates the electricity market to dispatch generation to ensure the short term security of the New Zealand electricity system

Both segments have external revenue derived from New Zealand customers and assets based in New Zealand. The Group has no other reportable segments. The material portion of **Other** is made up of Risk Reinsurance Limited which was established in 2001 to provide insurance services to the Group.

Segment results are determined based on information provided to the Chief Operating Decision Maker, which include only External revenue and Capex. They are calculated using the avoidable cost allocation methodology (ACAM).

Major customers

External customers that contribute 10% or more of total Group revenue are:

Customer	% of Group Revenue	Segment
Vector Limited	19.5 (2020: 18.8)	Transmission
PowerCo Limited	10.1 (2020: 9.8)	Transmission

Group (\$M)	Transmission		System Operator		Other		Adjustments		Total	
	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020
External revenue	861.6	932.1	42.5	42.1	12.1	12.7	-	-	916.2	986.9
Capex	336.2	355.3	17.1	13.5	-	-	1.0	18.6	354.3	387.4

The adjustment is:

Group (\$M)	2021	2020	Explanation
Capex	1.0	18.6	Financial statements include capital work on a customer funded transmission line undergrounding project

16. Change in fair value of financial instruments

Group (\$M)	2021	2020
Fair Value through profit or loss		
Accounting hedges		
Foreign exchange forward contracts - hedge accounted	(0.2)	0.4
Hedge commitment	0.2	(0.4)
	-	-
Other		
Foreign debt	159.6	(104.9)
Cross-currency interest rate swaps	(141.0)	93.2
NZD interest rate swaps	(37.1)	74.8
Investments	(1.4)	1.6
NZD debt	57.1	(0.5)
	37.2	64.2
Total fair value gain (loss)	37.2	64.2
Fair value through other comprehensive income		
Credit spread on debt		
Foreign debt	(27.3)	(1.7)
NZD debt	(23.1)	(9.9)
Gross fair value gain (loss)	(50.4)	(11.6)
less income tax credit (expense)	14.0	3.2
	(36.4)	(8.4)
Cash flow hedging		
Interest risk	98.0	(103.9)
Gross fair value gain (loss)	98.0	(103.9)
less income tax credit (expense)	(27.4)	29.1
	70.6	(74.8)
Total other comprehensive income (expenses)	34.2	(83.2)

Description

The Group experiences changes in fair value through movements in underlying interest rates, exchange rates and credit spreads on debt and derivatives. The Group generally seeks to fix interest rates to provide certainty of interest rate costs during regulatory control periods. This means that, prima facie, a decrease in market interest rates will result in the Group sustaining fair value losses, and conversely, an increase in market interest rates will result in fair value gains.

The fair value of debt and derivatives is determined by converting currency exposures and discounting cash flows based on the relevant yield curve. The yield curve is adjusted to reflect the credit risk of the counterparty to the transaction or the credit risk of Transpower. These valuations are considered level two in the IFRS three-level valuation hierarchy. There have been no movements between levels during the period.

Changes in fair value of financial instruments are separately disclosed as fair value changes through profit and loss, or through other comprehensive income. The fair value change through other comprehensive income comprises fair value changes resulting from credit spread changes on the Group's issued debt and the effective portion of fair value changes on derivatives designated as cash flow hedges for accounting.

Credit spreads are an estimate of the additional premium over the relevant yield curve that would be required by market participants to compensate them for the perceived credit risk inherent in the counterparty and transaction. For derivative transactions, the impact of credit spreads is substantially lower than for debt and investment transactions due to the offsetting nature of the cash flows.

Cash flow hedges

To mitigate the variability in interest costs, the Group has designated certain interest rate swaps into the cash flow hedge accounting relationships which align interest rate exposures to the Regulatory Control Period (RCP). The Group uses the hypothetical derivative method to measure hedge accounting effectiveness and compares the changes in the fair value of the hedging instruments against the changes in fair value of the hedged item attributable to hedged risk. To the extent these hedges are effective, the change in fair value of the hedging instrument is recognised in other comprehensive income in the Cash Flow Hedge Reserve within Equity, while the change in fair value on the ineffective portion is recognised immediately in the statement of profit or loss. The cash flow hedge reserve is adjusted to the lower of the cumulative gain or loss on the hedging instrument and the cumulative change in fair value of the hedged item. Hedge ineffectiveness in the cash flow hedge accounting relationship can arise from movements in credit risk on hedging instrument counterparties.

Fair values in statement of financial position

For cash and cash equivalents, accounts payables and receivables, fair values are materially similar to their cost due to the short-term nature of these items.

Related disclosures

The following table shows the impact of credit spread movements on fair value:

Group (\$M)	2021	2020
Current year fair value profit/(loss) movement included above		
Fair value movement in debt due to credit spread movement	(50.5)	(11.7)
Fair value movement in asset due to credit spread movement	1.5	(0.2)
Fair value movement in derivatives due to credit spread movement	4.4	(17.1)
Statement of financial position balance - decrease in debt due to credit spread	12.6	63.1
Statement of financial position balance - (decrease) in investment due to credit spread	(1.4)	(2.9)
Statement of financial position balance - (increase)/decrease in derivatives due to credit spread	(2.1)	(6.5)

17. Taxation

Income tax expenses

Group (\$M)	2021	2020
Current tax expense		
Current period	35.6	50.5
Adjustment for prior periods	(1.1)	(1.5)
	34.5	49.0
Deferred tax expense		
Origination and reversal of temporary differences	25.6	33.5
Adjustment for prior periods	1.3	2.2
	26.9	35.7
Total income tax expense (credit)	61.4	84.7
Reconciliation of effective tax		
Operating surplus before tax	218.9	315.8
Income tax at 28%	61.3	88.4
<i>Tax effect of:</i>		
Net non-deductible expenses and non-assessable items	(0.1)	0.7
Under/(over) provided in prior periods	0.2	0.7
Reinstatement of depreciation on buildings	-	(5.1)
Total income tax expense (credit)	61.4	84.7

Description

There are no unrecognised deferred tax balances (2020: nil).

For property, plant and equipment, deferred tax typically arises from the accounting book including capitalised interest, differences in depreciation rates between tax and accounting and the capital contribution rules.

Accounting policies

Deferred tax arises from differences between the accounting and tax values of assets and liabilities, except where the initial recognition exemption applies.

Deferred tax is shown as a net liability for the Group. This disclosure reflects that the deferred tax balances relate to companies in the Transpower Consolidated Tax Group and are in the same jurisdiction, being New Zealand.

Imputation credits

The imputation credit balance at 30 June 2021 is \$45.2 million (2020: \$66.8 million). This balance includes the tax payable outstanding at 30 June 2021.

Deferred tax

Group (\$M)	Balance 1 July 2019	Recognised in profit or loss	Recognised in OCI	Balance 30 June 2020	Recognised in profit or loss	Recognised in OCI	Balance 30 June 2021
Property, plant and equipment temporary differences	512.4	19.1	-	531.5	15.9	-	547.4
Fair value of net debt and derivatives	(41.0)	17.5	(32.3)	(55.8)	10.9	13.4	(31.5)
Revenue deferral	(6.2)	(0.4)	-	(6.6)	3.7	-	(2.9)
Dismantling provision	(6.5)	(1.1)	-	(7.6)	0.5	-	(7.1)
Other	(9.1)	0.6	-	(8.5)	(4.1)	-	(12.6)
Total deferred tax	449.6	35.7	(32.3)	453.0	26.9	13.4	493.3

18. Related parties

Transactions with key management personnel

The Group did not conduct any business with key management personnel aside from the compensation payments below.

Key management personnel compensation

Key management personnel received the following compensation for their services to the Group:

Group (\$M)	2021	2020
Directors' fees	0.5	0.5
Other key management personnel	5.5	5.2
Short-term employee remuneration	6.0	5.7
Defined contribution schemes	0.2	0.2

There were no termination payments to key management personnel in 2021 (2020: nil).

There was no long-term compensation paid to key management personnel in 2021 (2020: nil).

Government-related transactions

Transpower, being a State-owned enterprise, transacts with other government-related entities. The most significant transactions and balances (greater than \$15 million) are as follows:

Group (\$M)	2021	2020
Meridian Energy Limited – revenue	81.1	90.8
Electricity Authority – revenue	43.8	42.4

Meridian Energy Limited (Meridian) is a majority state owned company and is an electricity generator and retailer. Meridian pays Transpower primarily for the transportation of electricity across the national electricity grid.

The Electricity Authority is an independent Crown entity responsible for regulating the New Zealand electricity market. The Electricity Authority pays Transpower a contracted fee for its role as system operator.

Transpower also settles its income and indirect tax obligations with Inland Revenue.

Some Directors of the company may be Directors or officers of other companies or organisations with which Transpower may transact.

All related party transactions are carried out at on an arm's length and independent commercial basis.

19. Contingencies

(i) Guarantees

NZPCL

In November 2009, the Group partially terminated the 2003 cross-border lease in respect of the majority of the HVAC transmission assets in the South Island. As a result of the partial termination, Transpower has consolidated a special-purpose vehicle, NZPCL.

NZPCL has a USD deposit with a financial institution and a USD loan from another financial institution. The cash flows from the deposit and loan offset. No consideration was transferred. The loan to NZPCL is guaranteed by Transpower.

The substance of the transaction is such that Transpower rather than the non-controlling interest would be responsible for any shortfall between the value of the asset and the liability. The likelihood of losses in respect of these matters is considered to be remote.

Debt

Transpower has given a negative pledge covenant to debt holders of Transpower's domestic bonds and bank debt through trust deed arrangements and to holders of Swiss bonds, United States Private Placement and Australian Medium Term notes through respective debt documents. The terms are such that, while any debt issued remains outstanding, we will not, subject to certain exceptions, create or permit to exist, any charge or lien over any of our assets.

(ii) Economic gain (loss) account

Transpower operates its revenue-setting methodology within an economic value (EV) framework that analyses economic gains and losses between those attributable to shareholders and those attributable to customers. Under Commerce Commission regulations, Transpower is required to pass onto, or claim from, customers the customer balance at the end of RCP2 (30 June 2020). These balances are spread evenly over the 5 years of RCP3 from 1 April 2020 to 31 March 2025. The Commerce Commission has set the annual undiscounted amount to be returned by Transpower to its customers in RCP3 to \$18 million based on the forecast closing balance at end of RCP2 which over-returns the actual customer balance by \$7 million (discounted). That over-return will be recovered from customers by RCP4.

(\$M)	HVAC	HVDC	Total
EV balance to be recovered (paid) 1 April 2020 to 31 March 2025	(72.1)	(0.3)	(72.4)

In 2020/21 Transpower expensed \$5 million of operating expenditure to develop a new proposed transmission pricing methodology (TPM) which is now with the Electricity Authority for consideration. The Commerce Commission indicated that it may allow the recovery of these costs (and any related subsequent efficient costs Transpower will incur in the remaining years of RCP3) for which the Commerce Commission did not provide an allowance when it set Transpower's RCP3 revenue in 2019. A Commerce Commission decision is still pending, but it is expected recovery of the TPM costs will be delayed until RCP4 by allowing Transpower to add these costs to the closing EV account balance in RCP3 which will be applied to revenue in RCP4.

(iii) Environmental hazards

Transpower has a programme of identifying, mitigating and removing environmental hazards such as asbestos at its sites. The cost of mitigating and/or removing identified hazards will vary, depending on the particular circumstances at the site. Where a reasonable estimate of the cost of mitigating or removal of a hazard can be made, a provision has been established.

(iv) Various lawsuits, claims and investigations

Various other lawsuits, claims and investigations have been brought or are pending against the Group. The directors of Transpower cannot reasonably estimate the adverse effect (if any) on the Group if any of the foregoing claims are ultimately resolved against the Group's interests.

Transpower is involved in litigation regarding interpretation of the Resource Management Act 1991 (RMA) which creates uncertainty about the interpretation of the statutory tests and considerations to be applied in relation to RMA approvals and the intersection with various Policy and Standard instruments that sit under the RMA. These uncertainties could create consenting and timing risks for Transpower. The current RMA reform process also raises risks, but also opportunities and efficiencies under the RMA.

20. Subsequent events

On 23 August 2021, the Directors approved the payment of a dividend of \$72.0 million. The dividend will be fully imputed and is expected to be paid on 20 September 2021.

On 23 August 2021, the Directors approved the extension of the \$250 million committed standby facility, due to mature 7 December 2021, by a further two years to 7 December 2023.

The Directors are not aware of any other matter or circumstance since the end of the financial year that has significantly or may significantly affect the operations of Transpower or the Group.

INDEPENDENT AUDITOR'S REPORT

TO THE READERS OF TRANSPOWER NEW ZEALAND LIMITED'S GROUP FINANCIAL STATEMENTS FOR THE YEAR ENDED 30 JUNE 2021

The Auditor-General is the auditor of Transpower New Zealand Limited and its subsidiaries (the Group). The Auditor-General has appointed me, Grant Taylor, using the staff and resources of Ernst & Young, 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 120 to 151, that comprise the consolidated statement of financial position as at 30 June 2021, the consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and the notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Group as at 30 June 2021, 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 our 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* 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 assignments in the areas of other assurance services and remuneration benchmarking, which are compatible with those independence requirements. Other than in our capacity as auditor and these assignments, we have no relationship with, or interests in, Transpower New Zealand Limited or any of its subsidiaries.

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.

We have fulfilled the responsibilities described in the *Auditor's responsibilities for the audit of the consolidated financial statements* section of the audit report, including in relation to these matters. Accordingly, our audit included the performance of procedures designed to respond to our assessment of the risks of the material misstatement of the consolidated financial statements. The results of our audit procedures, including the procedures performed to address the matters below, provide the basis for our audit opinion on the accompanying consolidated financial statements.

Regulated assets

Why significant	How our audit addressed the key audit matter
The Group's regulated assets (consisting of property, plant and equipment, intangible assets and associated capital work in progress) represent 86% of total assets at 30 June 2021. Judgements required to be made by management in relation to the accounting for regulated assets include: - Determining what costs ought to be capitalised; - Determining the appropriate time to commission an asset and commence depreciation; - The period over which regulated assets should be depreciated; and - Whether there are any regulated assets that ought to be impaired and if so the amount of that impairment. Transpower reviews regulated assets for indicators of impairment at each reporting date. As described in Note 5 the recoverable amount of regulated assets is generally their regulatory book value. Regulatory book value is the amount Transpower is able to recover from customers through future revenue under the terms of the regulations per Part 4 of the Commerce Act 1986. Transpower allocates its regulated assets between cash generating units and compares the carrying amount against the regulated book value to identify possible indicators of impairment. Disclosures regarding regulated assets are included in Note 5 to the consolidated financial statements.	In obtaining sufficient appropriate audit evidence we: - Assessed the appropriateness of a sample of capitalised costs against the criteria contained in NZ IAS 16 <i>Property, Plant and Equipment</i>. - Tested a sample of assets commissioned in the period to consider whether depreciation was charged from the appropriate date. - Considered a sample of large capital work-in-progress project balances to determine whether they ought to have been commissioned and depreciated as at 30 June 2021. - Considered how Transpower has assessed the assumed asset useful lives that are the basis on which depreciation has been charged. - Assessed cash generating units identified against the requirements of NZ IAS 36 <i>Impairment of Assets</i> and the allocation of regulated assets between cash generating units. - Tested management's identification of differences between the financial statement carrying amounts and regulatory book values at 30 June 2021 and considered the reasons for such differences. - Independently considered the completeness of management's assessment of indicators of impairment with reference to NZ IAS 36 <i>Impairment of Assets</i>. - Assessed whether the Group's disclosures in Note 5 of the consolidated financial statements in relation to regulated assets comply with NZ IAS 16 <i>Property, Plant and Equipment</i> and NZ IAS 36 <i>Impairment of Assets</i>.

Debt and derivatives

Why significant	How our audit addressed the key audit matter
Transpower has significant debt and derivative financial instruments. The total debt and derivative portfolio at 30 June 2021 was a net liability position of \$3.3b and is detailed in Note 7 to the consolidated financial statements. Some, but not all, of Transpower's derivatives used to hedge the Group's interest rate exposure are designated into hedging relationships for accounting purposes. Debt and derivatives are both recorded at fair value. Movements in the fair value of debt and related derivative financial instruments impact profit or loss, or the cash flow hedge reserve where the derivative is in a designated hedge relationship. The valuation of these instruments involves the application of valuation techniques which require the exercise of judgement and the use of estimates as described in Note 7 to the consolidated financial statements.	In obtaining sufficient appropriate audit evidence we: - Obtained counterparty confirmations for all debt and derivatives at 30 June 2021. - Assessed, in conjunction with our valuation specialists, the appropriateness of the valuation models and significant inputs. - Compared observable inputs used against independent sources and externally available market data. - Performed our own independent valuations for a sample of instruments. - Assessed the Group's documentation of hedging relationships against the requirements of NZ IFRS 9 <i>Financial Instruments</i>. - Assessed the Group's analysis of the effectiveness of its hedging relationships in achieving offsetting changes in the fair values of the hedging instrument and the hedged item. - Assessed the appropriateness of accounting adopted for derivative instruments dependent on whether they were designated in hedging relationships or not. - Assessed whether the Group's disclosures in the consolidated financial statements in relation to the valuation of investments comply with NZ IFRS 7 <i>Financial Instruments: Disclosure</i> and NZ IFRS 13 <i>Fair Value Measurement</i>.

Other information

The Directors are responsible on behalf of the Group for the other information. The other information comprises the information included on pages 5 to 117 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.

When we read the Annual Report, if we conclude that there is a material misstatement therein, we are required to communicate the matter to those charged with governance and, if uncorrected, to take appropriate action to bring the matter to the attention of users for whom our auditor's report was prepared.

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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 readers 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

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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, actions taken to eliminate threats or safeguards applied.

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.

Grant Taylor
Ernst & Young
Chartered Accountants
On behalf of the Auditor-General
Wellington, New Zealand
23 August 2021

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Pictured: Michael McCarroll, Programme Manager,
Sujata Roy, System Planning Engineer,
and Cijina Kunnath, Senior Engineer – Lines

Directory

Board of Directors

Pip Dunphy – *Chair*
Dean Carroll – *Deputy Chair*
Bill Osborne
Kathy Meads
Richard Aitken
Dr Roger Blakeley

General Management Team

Alison Andrew
Chief Executive
Gordon Davidson
Chief Financial Officer
John Clarke
General Manager Grid Development
Richard Hobbs
General Manager Strategy & Customer
Stephen Jay
General Manager Operations
Brigid Kelly
General Manager People
David Knight
General Counsel – Company Secretary
Raewyn Moss
General Manager External Affairs
Cobus Nel
General Manager Information Services – Technology
Mark Ryall
General Manager Grid Delivery

Addresses of Offices

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Hamilton 3282
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Palmerston North

220 Broadway Avenue,
PO Box 640,
Palmerston North 4440
T 64 6 357 0919

Christchurch

31 Gilberthorpes Road, Islington
Po Box 21 – 154, Edgeware
Christchurch 8143
T 64 3 590 7000

The background is a solid blue color. On the right side, there are several white curved lines that sweep from the top towards the bottom, creating a sense of motion or a stylized 'C' shape. These lines are of varying thickness and curvature, adding a modern, graphic element to the design.

Ngā mihi
Thank you



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