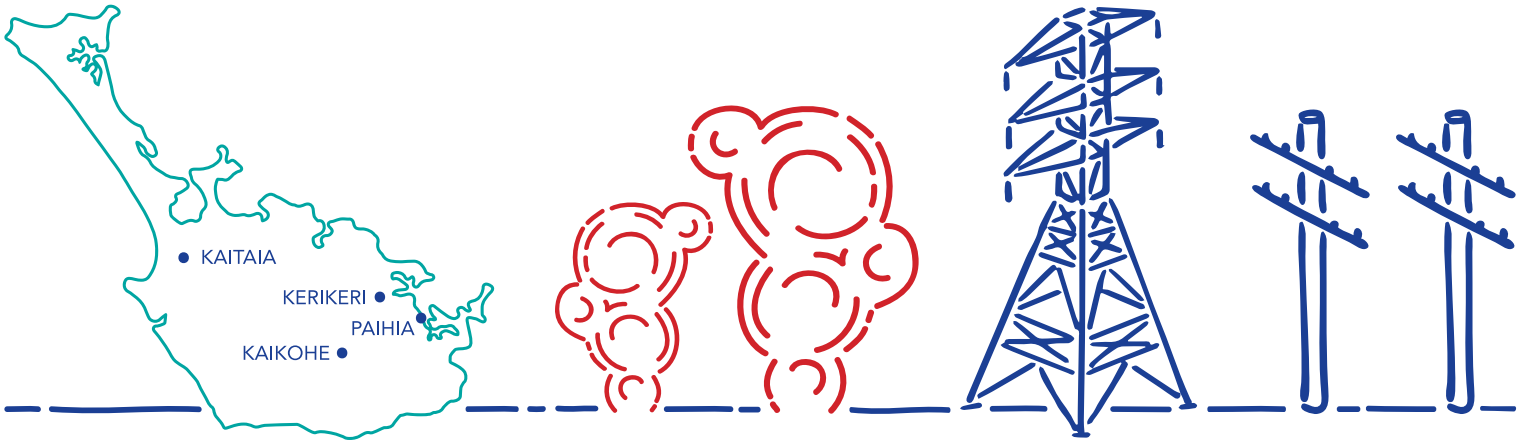
TOP ENERGY®
TePuna Hihiko

SUSTAINABILITY REPORT 2022

ABOUT US

Top Energy is the electricity generation and lines network group which **distributes power to the consumers of the Far North**



OUR **160 EMPLOYEES** SERVICE **33,000 CONSUMERS**, MOST WITH ONLY 1 CONNECTION PER HOUSE OR SMALL BUSINESS

GEOTHERMAL ELECTRICITY **GENERATION** THROUGH OUR 100% OWNED SUBSIDIARY NGĀWHĀ GENERATION

TRANSMISSION AND DISTRIBUTION LINES **NETWORK**

ELECTRICAL RETICULATION **CONTRACTING**

OUR MISSION

Creating long-term value by transforming energy to our consumers and beyond

OUR VISION

Enabling Northland to contribute to the decarbonisation challenge

OUR VALUES

- COMMUNITY
- SAFETY
- INTEGRITY
- TOGETHER
- GROWTH
- EXCELLENCE

Significant investment in the network over the last 12 years gives us the ability to forecast demand growth as the Far North transitions through electrification.

Geothermal energy has several significant characteristics that make it suitable for climate change mitigation. These include: global distribution; indigenous resource; production independent of season; immune from weather effects and climate change impacts; effective for on- and off-grid developments and for provision of base-load power. (Bromley et. al., 2010)

Top Energy is owned by the Top Energy Consumer Trust on behalf of 33,000 consumers connected to the network

WELCOME

From our Chief Executive Russell Shaw

I invite you to read Top Energy's first sustainability report. It communicates the impact of, and our response to, climate change and sustainability at Top Energy, and demonstrates our commitment to the priority SDGs mapped to our Statement of Corporate Intent.

It outlines our focus and priorities for how we will contribute to the decarbonisation challenge facing our country, and the progress we have made to date. Built on work for our 2020/21 Annual Report, it is a continuation of our sustainability journey.

The energy industry is at the heart of New Zealand's journey to carbon zero by 2050.

Our sustainability vision is to manage our emissions, acknowledging our carbon footprint and investing in opportunities to achieve net zero by 2050.

We will use a combined approach. We will reduce activities where practicable and offset where our naturally occurring CO_2 can offset industrial or imported CO_2 in supply chains, thereby improving NZ's net position.

We recognise that as a Trust-owned geothermal generation and electricity lines company, we have obligations to our Far North community now and for generations to come.

With the completion of the Ngāwhā Geothermal Power Station in 2020, the company has secured a reliable, independent and ultimately affordable source of power for our community. This transformative project has been our focus for many years and there continues to be opportunity for future expansion.

While meeting the region's long-term energy needs, we are also committed to operating in an environmentally sustainable manner and to responding to the social needs of our community. This commitment is embedded in our Statement of Corporate Intent and will be realised through our sustainability programme which aligns with the United Nations Sustainable Development Goals.

These goals provide a global framework for our business and establish the issues the world needs to address to become more sustainable.

We have identified 9 priority Sustainable Development Goals, including those related to poverty, inequality, climate change and environmental degradation. These map closely to the objectives of our Statement of Corporate Intent, which are important to us both as an electricity company and a Trust. These are also embodied in our company values of Safety, Community, Together, Integrity, Excellence and Growth.

We acknowledge the challenge that climate change is having on our network. We are investigating the impact of rising sea levels and changing weather patterns on network operations and resilience.

As a company we are devising an innovative long-term energy strategy as we transition to a low-carbon economy and contribute to the wellbeing and prosperity of our community.

Russell Shaw
Chief Executive

GOVERNANCE

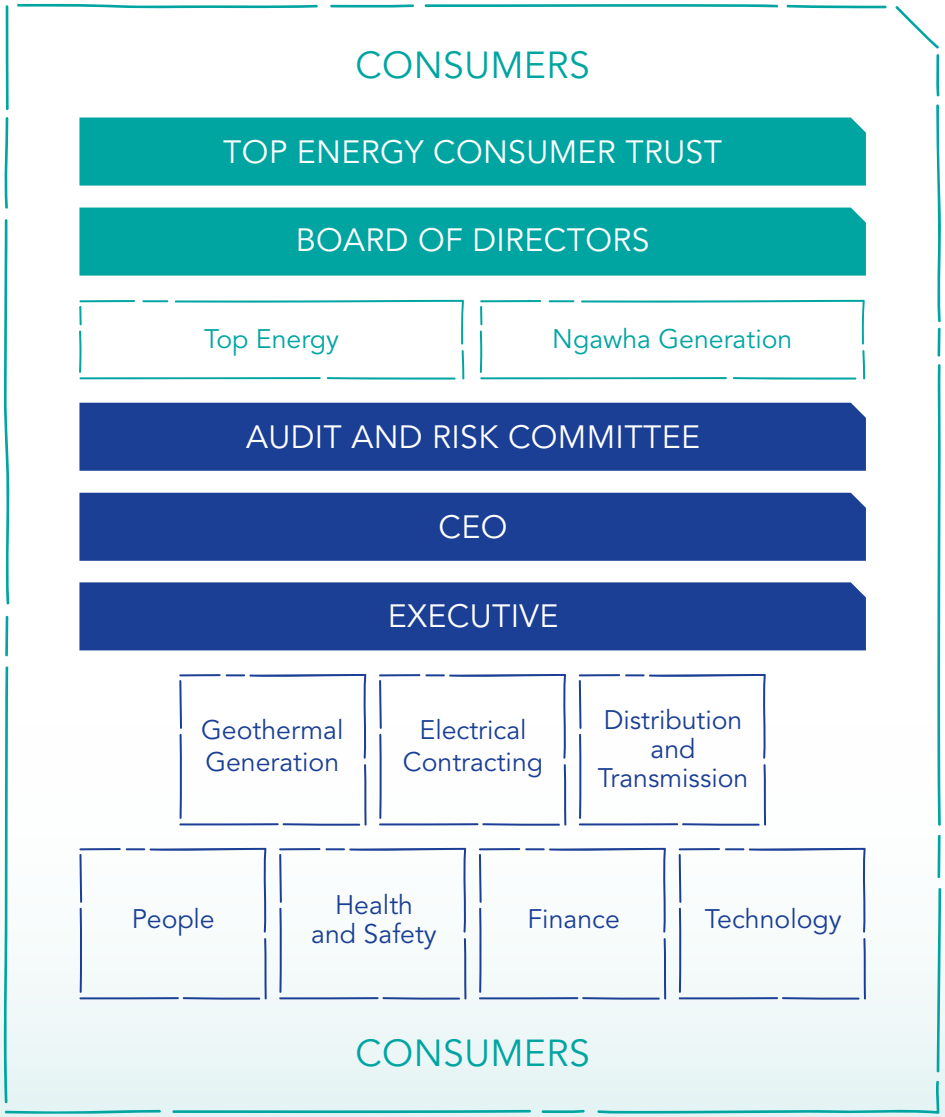
Top Energy's Board of Directors is responsible for the governance of risks, including those related to climate change. The Audit and Risk Committee supports the Board by promoting integrity and transparency in risk management.

The Audit and Risk Committee meets at least 6 times a year with committee proceedings reported back to the Board. The different levels of responsibilities and the supporting Risk Management Policy is outlined below. In addition, a separate Climate Change and Sustainability Policy has been adopted with the commitment to limit the impact on climate change and to carry out all business activities in a sustainable manner.

The Risk Management Policy recognises that risk management is a core business responsibility with the commitment to establish and operate systematic risk management processes consistent with the requirements of AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines, to proactively identify, measure and manage risk. Risk appetites are documented to ensure that risk is managed within Board approved risk parameters.

Top Energy's Statement of Corporate Intent can be viewed at https://topenergy.co.nz/tell-me-about/top-energy-group/publications-and-disclosures and performance is reported in the Annual Report.

CORPORATE GOVERNANCE



STRATEGY

Top Energy is at the beginning of our journey to align with the Task Force on Climate-Related Financial Disclosures (TCFD) recommendations. These were created by the international body, the Financial Stability Board, to help companies provide better information, and are structured around 4 core elements: **governance, strategy, risk management, and metrics and targets**.

The below transitional and physical risks are from our long-term Asset Management Plan (AMP).

PHYSICAL RISKS

Physical climate impacts arise from extreme weather events (e.g. storm, flood, drought) or from the longer-term shifts in climate patterns.

Extreme Weather

Compared to 1995, average temperatures are likely to increase by 0.7ºC to 1.1ºC by 2040, and to increase further beyond that at a rate that will depend on how successful the world is in reducing carbon emissions. This could lead to more frequent droughts, which would lead to water shortages, increased demand for irrigation and increased risk of wildfires.

In future frosts are likely to become extremely rare, which suggests winter peak demand will reduce but electricity consumption over the summer will increase with increased demand for air conditioning and water pumping. Eventually we could have a summer peaking load, as is currently the case throughout mainland Australia. There is expected to be little change in the frequency of storms and cyclones, but the intensity of ex-tropical cyclones is likely to increase and these could cause more damage as a result of heavy rain and strong winds.

Sea Level Rise

New Zealand tide records show an average rise in mean sea level of 1.7mm per year over the 20th century. Globally the rate of rise has increased, and further rise is expected in the future. This will lead to an increase in flooding in low-lying coastal areas. The Taipa substation is located in such an area and will eventually need to be relocated or redeveloped to mitigate this. The Far North District Council and the Northland Regional Council are both monitoring sea level rise.

TRANSITIONAL IMPACTS

Transitional climate impacts refer to risks and opportunities resulting from the policy, legal, technology and market changes occurring in the transition to a low-carbon economy.

Decarbonisation of the Economy

As a local power supplier enabling two-way power consumption, decarbonisation of the economy to decelerate the rate of climate change is likely to have an even greater impact on the development and management of our network. In particular:

- Increased solar connections could create congestion on low voltage lines when there is a sudden drop in output of all adjacent generators when the sun goes behind a cloud. This volatility will trigger an auto-response from the inverters, creating a stability issue. Continuing reduction in the cost of battery systems will mitigate this issue, due to the fast response of battery electronic controls. Other impacts may include wholesale price volatility, but also the opportunity to diversify energy sources in the Far North.
- We have approved 3 applications to install 67MW of solar. The amount of generation we can connect will be limited by the capacity of generation circuits for exporting electricity south and the ability to control the voltage swings caused by volatile generation outputs.
- As electric vehicles increase there is potential for network overloads if vehicles are charged during peak demand periods.
- Decarbonisation means a significant long-term increase in demand, due to the electrification of transport and heat, but we anticipate that any localised network augmentations needed to supply these new block loads would be funded by the developer. This gives us a more resilient network and offers Top Energy the opportunity to provide industry with bespoke alternative energy solutions.
- Appetite for renewable energy may limit profitability as a geothermal generator. This has prompted investigation into whether recycling and sequestering carbon could feed new types of business, such as algae for methane production, agriculture and horticulture, and biochar and the generation of geothermal heat demand.

RISKS

The risks and opportunities detailed are embedded in our AMP and risk management practices

RISK DESCRIPTION	RISK PROFILE	IMPACT	IMPACT DESCRIPTION	TREATMENT AND COMMITMENT
Vegetation growth rates and treefall (Physical)	Medium Term: **Medium** Long Term: **High / Likely**	Minor	Long term, faster growth rates of many vegetation species due to warmer temperatures and changed weather patterns will lead to increased instances of unplanned outages.	We will adapt our vegetation management to growing conditions, monitor the programme and apply changes annually as required.
Severe storms and wind speed (Physical)	Medium Term: **Low** Long Term: **Medium / Likely**	Minor	Overhead lines and poles are most at risk of damage from severe storms and high winds. Rural and coastal customers are increasingly exposed to this risk. Medium term the frequency will increase.	We are improving network communication and remote switching for faster restoration. We will continue maintenance such as pole replacement to increase resilience to storm and wind speed. We will assess design specifications against future storm predictions as part of our continuous improvement.
Fire conditions (Physical)	Medium Term: **Low** Long Term: **Low / Unlikely**	Minor	Drier conditions pose an additional fire risk to the network with vegetation near our overhead lines.	We will talk to commercial entities about vegetation clear zone agreements. We will campaign for removal of encroaching bamboo shelter belts. Through our risk-based asset inspection programme we actively replace pole conductors, insulators and crossarms as one-off maintenance jobs and as larger capital projects.
Sea level rise (Physical)	Medium Term: **Low** Long Term: **Medium / Likely**	Minor	Sea level rise over the next 50 years is likely to increase the water table level in the Far North, particularly in coastal areas, which affects cable installation work and may increase the frequency of cable faults in the network.	We have completed remediation at substations where there is potential flood risk. We are quantifying assets affected by sea-level rise and river flooding, over 0 to 50 and 50 to 100 year impacts. New coastal assets are assessed against sea level rise and flood projections from FNDC to minimise risk.

RISK DESCRIPTION	RISK PROFILE	IMPACT	IMPACT DESCRIPTION	TREATMENT AND COMMITMENT
New technology (Transitional)	Medium and Long Term: **Medium / Likely**	Minor	New technologies e.g. solar and EVs may mean a traditional network is no longer the most efficient energy solution as demand increases. Our network needs to become more adaptable to two-way electricity flows and different customer solutions.	With the significant network investment over the last 10 years, we are well placed to manage the new technology requirements. We will continue to explore alternative network models to adapt to increased two-way electricity flow. We will continue to increase resilience and replace older sub-transmission cables on our network to support our growth plans.
Reduced ability to generate with carbon emissions (Transitional)	Medium and Long Term: **Medium / Likely**	Major	Regulation or customer preferences moving away from carbon emitting services could lead to a reduction in revenue.	We will investigate alternative solutions for emitted carbon to support long-term geothermal generation.
Increase in electricity wholesale price volatility (Transitional)	Medium and Long Term: **Likely**	Minor	Increase in demand will lead to more renewable generation which is intermittent, resulting in fluctuating prices.	Within our risk framework the cost of mitigation is traded off against the impact of accepting the risk. We will continue to manage the risk within agreed parameters.
Increasing equipment costs (Transitional)	Medium Term: **Low / Likely as not** Long Term: **Medium / Likely**	Minor	Costs for equipment such as concrete poles, steel and shipping could increase, due to the rise in global carbon prices.	Investigate new technology to reduce carbon-heavy materials and influence supply chain for low-carbon outcomes, including fleet.

OPPORTUNITIES

OPPORTUNITY DESCRIPTION	RISK PROFILE	IMPACT	IMPACT DESCRIPTION	MANAGEMENT RESPONSE
Enable decarbonisation - Network (Transitional)	Medium and Long Term: **Medium / Likely**	Minor	Grid demands will increase through electrification of heating and new technologies such as EVs, resulting in increased revenue and network resilience in the drive to a lower carbon environment.	Investigate carbon reduction options for the network and work towards and along governments guidelines. Use new technology to monitor our network, model load and demand profiles to ensure we maintain a robust network to cater for an increase in demand. New pricing structures will be used to manage demand as well as encourage distributed generation connections.
Increase network resilience - Network (Transitional)	10-50 year timeframe: **Medium / Likely**	Minor	We have a commitment and responsibility to ensure a resilient electricity network, to maintain security of supply for our customers in the face of increasing weather events caused by climate change.	We will investigate impacts of weather on our network to allow us to build future resilience. We have identified impacted substations and affected infrastructure in our Asset Management Plan. We will engage with others in the industry to improve the overall resilience of New Zealand's electricity network during significant weather events. We will use modern mapping to bring in a dynamic model of monitoring and decision-making to changes and impacts of climate change. Upgrade some 33KV infrastructure to 110KV, adding route and supply diversity.
Increase demand for electricity - Generation (Transitional)	Medium and Long Term: **Medium - High / Likely**	Major	Increased revenue due to higher demand, e.g. regional decarbonisation (industrials, hospitals and schools turn off coal boilers). Potential for future generation. Reliable baseload becomes more desirable to the market as renewables are intermittent.	Investigate new renewable generation opportunities, export constraints and bespoke energy solutions with industry in our region.
New markets - Generation (Transitional)	30 year timeframe: **High / More likely than not**	Major	As decarbonisation occurs, there is the opportunity to investigate alternative markets that will emerge as an alternative source of revenue.	We are investigating the potential to diversify our generation portfolio and closed loop geothermal. Investigate bespoke energy solutions and bundling to provide carbon dependant businesses with power purchase agreements to enable electrified solutions.

SDGs

The United Nations Sustainable Development Goals (SDGs) are a set of 17 goals and 169 targets set out to achieve sustainable development globally, known as Agenda 2030. They bring together the 3 dimensions of sustainable development: economic, social and environmental. They apply to all countries.

SUSTAINABLE DEVELOPMENT GOALS

In New Zealand, the government has outlined its contribution to achieving the goals through a combination of domestic action, international leadership on global policy issues and supporting countries through the New Zealand Aid Programme.

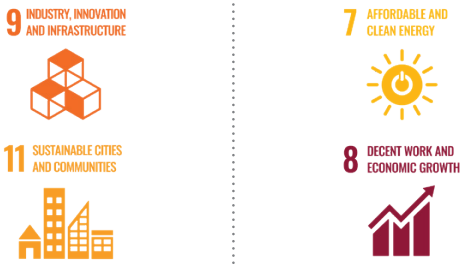
Government agencies are reviewing the goals and how they align to their priorities. New Zealand companies including, those in the electricity industry, are also engaging with the SDGs to varying levels. Most companies engaging with the SDGs have identified priority SDGs to focus on where they feel they can have the greatest impact.

Leading organisations are also looking at the target level to help build their own sustainability targets. This helps anchor efforts in sustainability to achieving the business' strategy as well as contributing to the broader effort towards sustainable development.

Top Energy has identified 9 priority SDGs to focus on where the greatest impact can be made. The SDGs have been linked to the Statement of Corporate Intent to help anchor efforts in sustainability and achieve not only the business's strategy but also contribute to the broader effort towards sustainable development. These are outlined on page 11.

OUR GOALS

Top Energy aims to be a successful business, achieving long-term value by operating in an environmentally sustainable manner, being responsive to the social needs of our community and having a well-defined corporate governance system to support the long-term strategy. Our priorities are aligned to the following 9 SDGs, where we believe the greatest impact can be made.

ENVIRONMENTAL	SOCIAL			GOVERNANCE	
					
ENVIRONMENTAL • Decarbonisation • Renewables • Small scale solar • Consent, compliance and cultural monitoring	**SAFETY CULTURE** • Safety is our No.1 priority • We are committed to keeping our communities and people safe	**TOTAL COST OF ELECTRICITY** • Minimise the cost to serve for consumers • Support consumers in an area which has low socio-demographic and economic factors • To build strong relationships with our community so young people reach their potential, local businesses succeed and the Far North benefits	**SOCIAL, SUSTAINABILITY, SPONSORSHIP** • Support sustainable development of the Far North and have a positive impact in our community • To respect our operations that cross land areas and utilise resources treasured by our community • To reduce emissions • To minimise the impact of our operations on surrounding land areas	**NETWORK QUALITY AND STANDARDS** • To enable a reliable energy source that meets consumers needs	**LONG-TERM VALUE** • Optimise long-term value from the lines network and Ngāwhā generation • To increase the use of renewable energy sources in support of the government's 100% renewable targets

THE FOLLOWING PAGES DESCRIBE SOME OF THE ACTIVITY TOP ENERGY HAS RECENTLY UNDERTAKEN TO SUPPORT THESE GOALS

GOALS
ENVIRONMENT

DECARBONISATION

We have adopted the measuring emissions methodology based on the Ministry of Environment's *Measuring Emissions, A Guide for Organisations*. Baselines are being measured to understand emission sources and set future targets to reduce over time. Actual emissions were 132,950 tCO_2e, lower than the target of 138,674 tCO_2e.

The guide aligns with the GHG Protocol Corporate Accounting and Reporting Standard and ISO 14064-1:2018. It provides information about preparing a GHG inventory, emission factors and methods to apply them to activity data. The commissioning of OEC4 in December 2020 has increased emissions.

CLASSIFICATION	SOURCE	FY19	FY20	FY21	FY22
Scope 1 Direct emissions	Generation fuel : Geothermal	61,608	60,444	80,970	127,243
	Generation fuel : Diesel	195	354	398	706
	Transport fuel : Diesel, petrol and LPG	1,243	1,250	1,154	1,180
	Sulphur Hexafluoride	0	251	0	13
Scope 2 Indirect emissions	Electricity purchased	50	47	43	56
	Line losses	3,099	3,628	3,927	3,741
Scope 3 Indirect emissions	Air travel	37	46	14	6
	Electricity distribution : Transmission and distribution losses for electricity purchased	4	3	3	5
	TOTAL	**66,236**	**66,023**	**86,509**	**132,950**

We are currently investigating initiatives to address emissions and will report on these next year.

11 SUSTAINABLE CITIES AND COMMUNITIES

13 CLIMATE ACTION

15 LIFE ON LAND

ENVIRONMENT GOALS

ENABLE GROWTH OF RENEWABLES

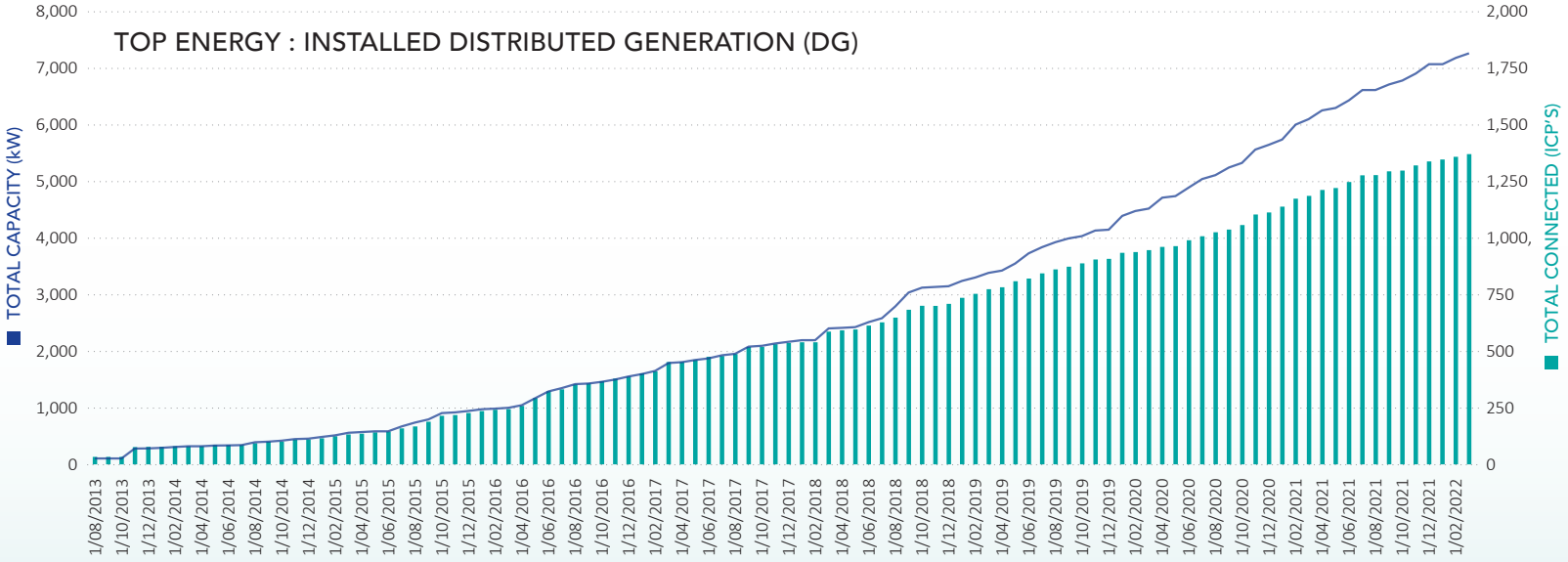
Top Energy is investigating diversification of the generation portfolio, to be able to offer counterparties other renewable sources, and utilising our wholesale energy trading capability to maximise returns.

ENABLE SMALL-SCALE SOLAR

We are enabling the growth in renewables across the network and have the second-highest solar penetration in the country. Currently 1 in 25 connections have solar installed across the network. We are aware of network and transmission constraints across Northland, and we are working with key stakeholders to remove these external roadblocks through a Renewable Energy Zone.

CONSENT, COMPLIANCE AND CULTURAL MONITORING

Independent monitoring of the geothermal resource, flora, fauna and waterways is undertaken on a routine basis. The generation plant emits carbon, and we are investigating opportunities to either reuse, capture or offset these emissions. As part of the Ngāwhā Generation resource consent, cultural monitoring is undertaken according to a cultural monitoring plan agreed to by the mana whenua hapū and a kaitiaki advisor provided by the Parahirahi Ngawha Waiariki Trust to give cultural advice.



11 SUSTAINABLE CITIES AND COMMUNITIES

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GOALS
SOCIAL

SAFETY FIRST – ALWAYS

We are uncompromising when it comes to safety – whether that be our staff, the public or our network.

An important element of our safety culture is employee wellbeing. We have assessed wellbeing across 5 key themes: health, security, environment, relationships and purpose.

Mental health advocate and comedian Mike King is not afraid to show his vulnerability – in fact he sees it as a strength. Mike has become a very popular and regular speaker at Top Energy, sharing his wisdom to a sector that traditionally is not great at opening up about feelings. His simple message of asking friends, families, and colleagues "hey mate, are you ok?" can make a huge difference to someone who may be struggling. It may even be the difference between life or death. By acknowledging our vulnerability, we give people permission to express their vulnerability. In this way, we create a caring and supportive work culture at Top Energy by supporting wellness.

DIVERSITY IN OUR WORKFORCE

Top Energy is proud that we engage a workforce made up of people with diverse skills, values, backgrounds and experiences. Building a diverse and inclusive workplace culture results in enhanced relationships with stakeholders, customers and a stronger corporate reputation. We have a commitment to recognise diversity and inclusion in all areas of the business, including:

- Recruitment and selection
- Staff retention
- Performance management
- Remuneration
- Employment provisions
- Flexible work arrangements
- Development and talent management
- Board appointments.

TOP ENERGY PAYS A LIVING WAGE

From 1 April 2021, Top Energy committed to paying every employee the living wage. This is the start of our journey to investigate what it takes to achieve Living Wage Certification.

The living wage has emerged as a response to growing poverty and inequality that continues to hold back so many Kiwi workers, their families and our economy. It's the hourly wage a worker needs to pay for the necessities of life and participate as an active citizen in the community. It reflects the basic expenses of workers and their families such as food, transportation, housing and childcare, and is calculated independently each year by the New Zealand Family Centre Social Policy Unit. This is really important to us, and we ensure that every one of our direct employees is paid a living wage.

3 GOOD HEALTH AND WELL-BEING

8 DECENT WORK AND ECONOMIC GROWTH

SOCIAL GOALS : TOTAL COST OF ELECTRICITY

Top Energy is working to bring down the cost of power in the Far North

Bringing the cost down over the electricity supply chain

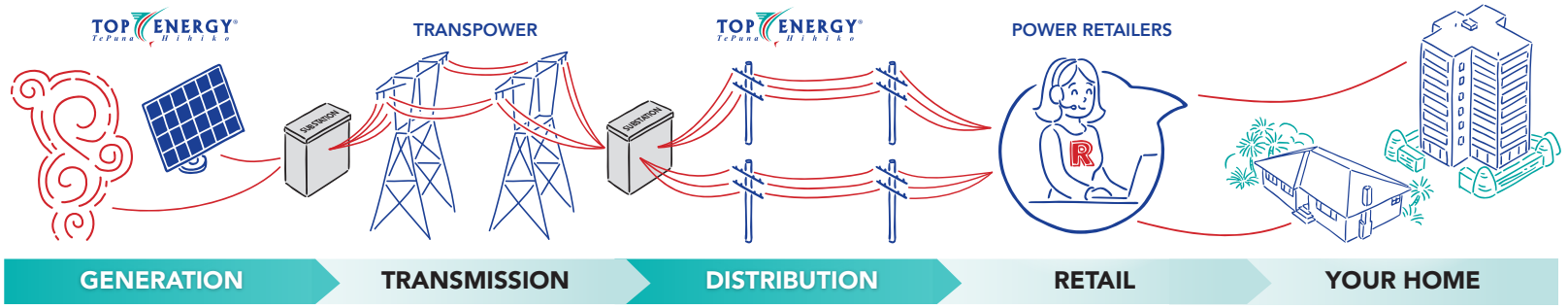
The commissioning of the new geothermal power station (OEC4) reduced the local wholesale energy location factor from 1.06 to 1.02 as the generation is closer to demand, meaning fewer losses.

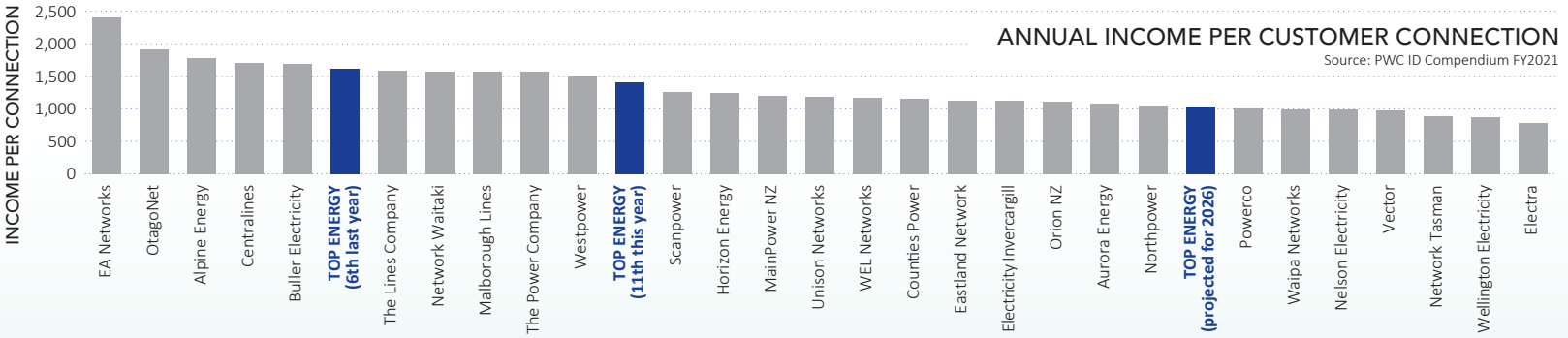
Transmission costs have also reduced by 65% in 2022 due to the reduction in peak demand through commissioning OEC4, which is passed directly though to consumers.

Distribution charges reduced by 18%.

Promoting competition through introducing new products, e.g. time of use pricing and widening our electricity counterparties for generation from Ngāwhā.

Assisting consumers to lower their costs and get the best deal by promoting Powerswitch and managing their consumption in partnership with Energymate scheme.





Returning value to consumers

Ngāwhā geothermal generation is increasing the amount Top Energy can earn. As a result, in 2020 the discount increased by $50 to $250 with another $50 increase planned in 2024, as we continue to pay back the $200m it cost to build.

1 NO POVERTY

7 AFFORDABLE AND CLEAN ENERGY

10 REDUCED INEQUALITIES

SOCIAL GOALS : SOCIAL, SUSTAINABILITY, SPONSORSHIP

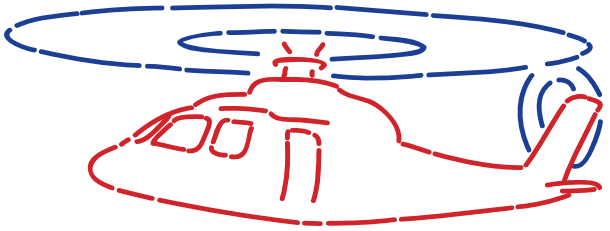
We have an interest in the social sustainability of our community through a broad sponsorship programme that represents the long-term interests of Top Energy consumers.

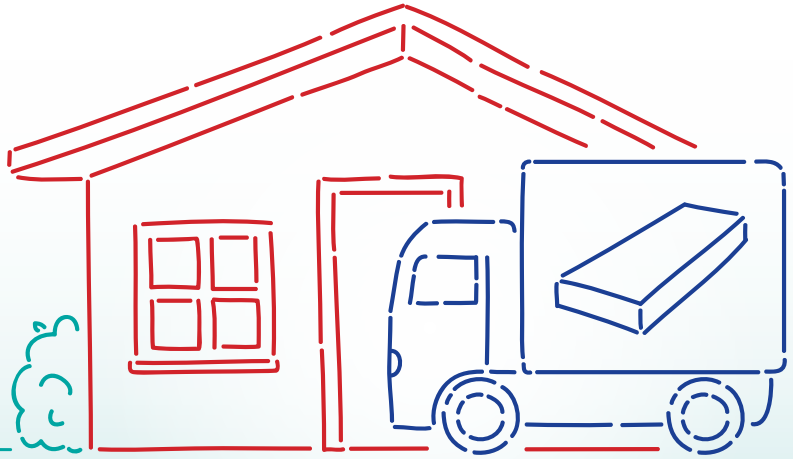
Through this programme we encourage entrepreneurial students, fund engineering university scholarships, provide business grants for innovative businesses, encourage water safety, and provide help for those struggling with electricity costs and uninsulated homes.

Our flagship sponsorship of over 30 years is the Northland Emergency Trust Rescue Helicopter service, which has raised several millions of dollars.

Top Energy sponsored the pilot of Energymate in Kaitaia. During the in-home visit, EnergyMate coaches help households get on the power plan that best suits their needs, give advice on heating the home in the cheapest way and on using appliances efficiently, check hot water and shower flow, and deliver free LED lightbulbs for instant power savings. This is an ongoing initiative, supported by ERANZ and MBIE, offered to Kaitaia residents and has been expanded to add 2 more EnergyMate coaches in Kaitaia.

Healthy Homes Tai Tokerau has insulated 12,000 homes since 2008 with the long-term funding support of Top Energy.





1 NO POVERTY

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

10 REDUCED INEQUALITIES

GOALS
GOVERNANCE

GOVERNANCE GOALS : NETWORK QUALITY STANDARDS

As a critical lifeline utility service, we have a fundamental commitment to our community to provide a safe and reliable electricity network.

Over the last 5 years we have invested $81 million to substantially improve the resilience of the network and to ensure we meet our regulated quality targets. This investment programme enabled us to introduce greater reliability and flexibility in how we manage the network and provides capacity for the forecast demand growth as the Far North prepares for electrification.

Through the investment in short-term diesel generation at Kaitaia, Pukenui, Omanaia and Taipa, we have addressed the vulnerability in our network from the single high-voltage line supplied from Kaikohe. Capable of generating 17.2MW of electricity, the generators provide certainty in the planning and design of our network and minimise the impact of outages on our community. Further capacity will be added once easements for a second line from Kaikohe are secured.

In the coming years our focus is to develop the sustainability of our network through alternative options such as combining small generators, batteries and solar panels to create micro-grids to boost the local power supply. Underpinning this network development is the renewable power generated from our Ngāwhā power station.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

11 SUSTAINABLE CITIES AND COMMUNITIES

GOVERNANCE GOALS : LONG-TERM VALUE

NGĀWHĀ

The expanded Ngāwhā geothermal power station, one of the largest projects undertaken in Northland came online in December 2020 – 6 months earlier than planned.

The expansion makes the Far North almost self-sufficient in terms of electricity, and all of it comes from renewable geothermal energy – contributing the government's net zero carbon challenge.

Prior to commissioning, most of the region's power was imported from the Waikato, resulting in higher costs for consumers. Top Energy is able to export it to the rest of the country, generating savings and value to the local community.

In a region where power prices are among the highest in the country, the Ngāwhā geothermal power station is a key part of the company's commitment to supporting economic growth and, over time, provide savings to consumers through reduced wholesale pricing of electricity.

Top Energy has an ongoing interest in the sustainability of the Ngāwhā geothermal resource and works closely with local hapū and the appointed kaitiaki advisor as guardians of cultural impact to ensure operations are respectful of cultural significance, and that we are aware of any changes by measuring the temperature and make-up of the geothermal resource, maintaining healthy waterways, and ensuring the health of culturally significant flora and fauna.

RENEWABLE ENERGY ZONE (REZ)

We are working in collaboration with Transpower & Northpower to develop a REZ concept to enable up to 2GW of power into the electricity network. That's enough renewable electricity to power up to 375,000 households.

Transpower is exploring the potential for a REZ to facilitate investment in renewable electricity generation that is constrained by network connection processes. A REZ is a cluster of renewable generation sources connecting to the network via shared electricity transmission or distribution network.

Top Energy and neighbouring lines company Northpower are committed to exploring the potential of renewable energy and the benefits it will deliver to their customers in Northland. A REZ pilot in Northland is an opportunity to understand investment opportunities and tap into our region's renewable potential.

A Northland REZ has the potential to lower the energy cost for the highest cost electricity region in NZ, attract industry and create jobs for a low socio-economic region.

The REZ concept would help New Zealand in halving net greenhouse gas emissions by 2030 and net zero carbon emissions by 2050, helping unlock potential in regions with renewable resources but limited access to infrastructure.

Local demand for alternative energy sources is strong, with Northland having one of the highest uptakes of solar power in the country. On Top Energy's network there is more than 7MW of connected solar generation and applications for another 67MW of utility-scale solar generation in the Kaitaia area.

Top Energy has a published Governance Code and is committed to ensuring it conducts its business in accordance with the highest ethical standards and applicable corporate governance best practice.

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

MEASURES

	PILLAR	MEASURE	TARGET	FY22 ACHIEVEMENT
ENVIRONMENT	**Environment**	Maintaining Ngāwhā resource consent and cultural monitoring compliance	No compliance issues	*No compliance issues*
		Enable renewables with an increase of DG on our network year on year	More renewables	*Additional 1200kW installed across 200 ICPs*
		GHG reporting and first separate sustainability report	Publish for FY22	*Published*
SOCIAL	**Safety Culture**	Minimise lost time injuries ensuring people go home safe	<2	*1*
		Introduce Diversity Policy	Implement FY22	*Implemented and on website*
	Total Cost of Electricity	To have the network cost (per connection) in the lower quartile by 2030	FY30	*Prices in FY23 will reduce 9% due to OEC4*
		Grow time-of-use connections	90% of smart meter customers	*Increased to 50% FY22*
		Numbers of retailers on our network – increased competition	>20. Longer term goals will be developed	*>23*
GOVERNANCE	**Long term value**	Determine the timing and feasibility of further geothermal development post the commissioning of OEC4 after 3.5 years of monitoring	FY25	*Year 1 field monitoring, no adverse affects found*
		Renewable Energy Zone	FY23	*Driving for Northland to be the pilot*
	Network Quality and Standards	Reduce unplanned electricity interruptions (SAIDI)	246	*340*
		All Kaitaia residential consumers have power during the 110kV shutdowns	100%	*100%*

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