

## OUR SUSTAINABILITY JOURNEY 2022-23



TE PUNA HIHIKO - THE ENERGY SOURCE We're committed to supplying clean energy to our community now, and for future generations

> E ū ana mātou ki te whāngai hiko mā ki ō tātou hapori, i nāia pū nei, ā, ki ngā whakatupuranga o āpōpō.

# Find your way around Hig

lighlights	2	Our Five	
our CEO's		Top Goals	12
liewpoint	3	Our	
he Electricity		Sustainability	
ndustry	7	Focus	13
lgāwhā		Planet	15
leothermal		People	23
ower Station	10	Prosperity	31
		Governance	35

Click on the text above to jump to pages

## BUSINESS HIGHLIGHTS

We have an important role to play in the sustainability journey of the Far North and New Zealand.

# 72,000t

Reduction in emissions (tonnes) Reduced by over 50% this year He wāhanga nui tō mātou kia toitū ai i Te Taitokerau, ā, i Aotearoa whānui.



We generate more renewable electricity than the Far North needs



Waste diverted from landfill (tonnes) 42% of our waste diverted



**Reduction in lines charges** 

TOP ENERGY SUSTAINABILITY REPORT 2023

## OUR CEO'S VIEWPOINT

# Next steps of our journey.

Top Energy is the consumer trust owned electricity lines network and power generator for the Far North.

To understand our customers, we need to connect with their needs. This year we've focused on listening to their goals around sustainability. It's given us some great insights, and when we combine these with other stakeholders goals, we can see that our Planet, our People and the Prosperity of our business and community are on the right track.

This work has really helped us to define and focus our external goals and ensure we have the correct measures to track our progress as changes are made. Not only are we looking at external goals, we're also at the early stages of improving our internal programme, to enhance what we already do at Top Energy.

Being consumer trust owned, means our primary goal is to benefit the people of the Far North.

It also means our value is far wider than financial returns. We're working hard to make electricity more affordable for our customers.

We know that the cost of power affects people's cost of living and therefore, their experiences of living here. In the past 3 years we've reduced our prices by 24%. We've held prices at the same level for 2023 despite the effects of inflation (+7%) and an increase in transmission charges (+205%).

OUR CEO'S VIEWPOINT

> We've engaged Toitū Envirocare to work alongside us, to make sure we're progressing in the right direction and measuring our GHG emissions correctly to achieve our Carbon Net Zero Certification.

Key to achieving this is the process of reinjecting our Ngāwhā geothermal power station emissions back underground. Incredibly, this will reduce our GHG emissions by more than 95%.

The North Island was hit hard by Cyclone Gabrielle this year. It resulted in long outages and long working days for our staff and many in our community. We're humbled by the public support we received and the amount of resilience displayed in the face of such a historic weather event.

We know our sustainability journey is a long-term one for our business and the communities we serve. While we are pleased with the progress made so far, we appreciate there's more to do. I'll be sharing our achievements as we go and will continue to listen as we shape this path, together. OUR CEO'S VIEWPOINT

# Understanding the people we serve, is crucial.

While caring for our environment is a very important part of our sustainability strategy, it will always be with the future of the people of the Far North in mind. Our People goals set the course for supporting our community and managing our staff. As we know, the Far North region has a diverse landscape and population. It's a unique and vibrant place to live but we do face some challenges. Our fairly small population\* is spread over a large area of mostly rural land, and this fact means that access can be difficult for those making repairs to our network.

#### **Far North Population**



## O U R CEO'S VIEWPOINT

We appreciate that many people here have deep connections to where they live, and many of our population have lived here for generations. We've also seen some population growth with an increase in new arrivals. People who've made the decision to move here, to enjoy the outdoor lifestyle, raise their families or retire.

This unique environment is also home to many of New Zealand's key industries: agriculture, horticulture, forestry, fishing, and tourism. Protecting them is crucial for both communities and businesses. We know we have an important role here too, and our sustainability journey reflects our commitment to the Far North and New Zealand.

The EnergyMate hardship programme currently reaches those who are vulnerable in Kaitaia, and we've assisted with the programme's extension to the community in Te Kao.

We have multiple sustainability initiatives underway with an eye to future initiatives. The most material issues we are addressing are GHG emissions as a result of our Geothermal power plant by re-injecting these emissions back into the ground.

We are working toward becoming one of the lowest cost lines networks in the country.

We will achieve our goals while still meeting the needs of our community.



Russell Shaw June M Sta TOP ENERGY C

## THE ELECTRICITY INDUSTRY

## Geothermal energy, we play our part.

An impressive 200 power stations in New Zealand generate the nation's electricity, with almost 60% of that power coming from water via hydro stations.

Our 3 geothermal power stations at Ngāwhā, along with 16 other geothermal stations nationwide, supply 16% of the power to the National Grid. It's interesting to note that the amount of energy we generate in the Far North is enough to power 80,000 homes with electricity.

While New Zealand generates around 85% of its energy sustainably, one of the largest power generators, in Huntly, still burns gas and coal to deliver its energy to the National Grid.

Because Ngāwhā generates electricity all the time, it reduces the amount of fossil fuels New Zealand has to burn to produce electricity. Our own mission is to deliver energy sustainably to our customers and provide further benefits to them and the communities in which they live.

We're proud to be playing an important role in New Zealand's journey to decarbonise and know we can also bring much more value to our region and its people. While we focus on the delivery of energy each day, we have a keen eye on our future. We want to ensure the decisions we make today, continue to provide for generations beyond us.

Geothermal power is the ultimate renewable energy source, as it's more consistent and stable than solar and wind generation. Our one disadvantage, from an environmental aspect, is our carbon GHG emissions.

**TOP ENERGY** SUSTAINABILITY REPORT 2023

## **Resilience through Cyclone Gabrielle.**

We're committed to working with Civil Defenceand the Far North District Council to improve the ability of our community welfare centres, such as marae and schools, to provide a resilient and safe place for people to go to in the event of future emergencies caused by climate change.

TOP ENERGY SUSTAINABILITY REPORT 2023

8

#### Cyclone Gabrielle put us all to the test.

Facing 2 state-of-emergency declarations in 2 weeks was a huge challenge and called on our resilience and community spirit.

On Sunday 12 February, when the second state of emergency was declared for Northland, 140km/h winds ripped through the Far North.

There were 16,000 Far North residents without power and 29 roads closed/partially closed. Ōmanaia residents were asked to stop drinking their tap water while tankers were called in.

It's at times like these that we rely heavily on our emergency services and our infrastructure. Many of our organisations teamed up to deliver essentials to our most isolated communities.

Iwi, hapū, Civil Defence, the Far North District Council, Police, Fire and Emergency, our Defence Force and a large number of volunteers shared the load and drew on their strengths in responding to the cyclone. Following an appeal by the Far North Mayor, 32 generators were supplied by the Red Cross, supporting welfare centres across the Far North.

Working conditions for everyone were tough. Our crews worked every daylight hour to restore power to affected areas and we welcomed the support of extra boots on the ground from Northpower, Scanpower and Connetics to get the power flowing.

We want to thank the businesses that went the extra mile, keeping our crews fed and caffeinated. Businesses such as Keripies, Four Square Waimamaku, Cafe at Redwoods, Way Cup, Pita Pit, The Bakehouse Kerikeri and Singho Thai Restaurant were able to provide welcome meals and refreshments, Tash Henry Catering supplied our Kaitaia crews with hāngi and a customer at Junction Cafe & Dairy put down a \$100 food and coffee tab for the Puketona crews. There were also a few welcome beverages from The Pioneer in Kerikeri.

We know there were many others who did so much. Thank you to all who kept us going. NGĀWHĀ GEOTHERMAL POWER STATION

# Reinjecting emissions to meet carbon net zero.

Our expansion of the Ngāwhā Geothermal plant, completed in 2021, has increased the capacity of our generated electricity from 25MW to 57MW. That's an additional 32MW of electricity, enabling us to now generate power for 125% of the Far North. 10

## NGĀWHĀ GEOTHERMAL POWER STATION

Unlike other geothermal power stations, where some  $CO_2$  is released up through the ground naturally, Ngāwhā has a cap rock which stops this from happening. This means the geothermal fluid pumped from the wells underground contains higher concentrations of  $CO_2$  than other power stations.

To reduce this, we've been trialling the reinjection of carbon emissions into the ground. The  $CO_2$  gas is dissolved back into the liquid, and because it's no longer in gas form it doesn't rise back toward the surface. As the geothermal fluid has already been returned underground, any extra infrastructure needed to reinject the  $CO_2$  is minimal.

## Our goal is to become net carbon zero by the end of 2025 through reinjecting emissions.

Since the trial began this year, we've re-injected 35,000 tonnes of  $CO_2$  equivalent (t $CO_2$ e) back underground. We're currently successfully reinjecting at 2 out of 3 of our power stations.

#### There are a raft of benefits to reinjection in addition to the recapture of our emissions.

- Returning the emissions underground reverts the resource closer to its original state after we've used the heat from the geothermal fluid
- We're actively doing the mahi to support our Government's carbon zero goals
- We're increasing our longevity as a business aiming to be a carbon net zero business
- We're greatly reducing our spend on carbon credits. The reduction of 70,000NZU emissions this year from reinjection equates to \$5M that we won't have to spend purchasing carbon credits.
- We're able to pay back more quickly the debt incurred in building the power plant. This will mean we can transfer those financial gains to our customers and shareholders through discounts and annual dividends.

Once all our power plants are reinjecting their GHG emissions, we'll save \$10m each year in carbon credits.\*

While we know we have further to go with reducing our line charges, we've been able to achieve a reduction this year. OUR FIVE TOP GOALS

# Measuring ourselves using global standards.

The goals outlined in our Statement of Corporate Intent align directly with 9 SDGs set out in the 2030 Agenda for Sustainable Development.

- 1. Long-term value
- 2. A safe organisational culture
- 3. Acceptable network quality standards
- 4. Operate in an environmentally sustainable manner, responsive to the social needs of our community
- 5. Minimise the total delivered cost of electricity.



12

TOP ENERGY SUSTAINABILITY REPORT 2023

OUR SUSTAINABILITY FOCUS

# We start by listening to you, our community.

Top Energy is owned by a consumer trust. We have a wide range of stakeholders and are one of the largest employers in the Far North. For these reasons we want to build our sustainability programme with input from the entire region. In October 2022 we surveyed stakeholders, customers and staff by phone and used online surveys to see where we should concentrate our efforts.

Key takeaways from the survey

**CUSTOMERS & STAKEHOLDERS** Sustainability is extremely important to them. 42% of staff surveyed agreed.



CUSTOMERS, STAKEHOLDERS & TOP ENERGY STAFF Sustainability is very important for Top Energy.



PEOPLE SURVEYED Top Energy's sustainability is excellent.



NGĀWHĀ GEOTHERMAL

The only Top Energy sustainability effort consistently recognised.

When making purchase decisions, the most important factor was quality of delivery.

## OUR SUSTAINABILITY FOCUS

Our surveys, and accompanying verbatim feedback prioritised 5 areas of sustainability to focus on, which align with our most material issues.

Our goal is to set baselines, measures and targets and present a programme of work that can achieve our targets.

In the future, we want to review our end to end supply chain, focusing on GHG emissions and ethical business practices. There are many moving parts to a sustainability journey. We want to thank the people of Top Energy and our partners who strive to meet the challenges and goals we set ourselves. We're committed to our customers, communities and the businesses of the Far North. This is an amazing place and we want to ensure the region continues to prosper and support the exceptional people who call it home.



## OUR SUSTAINABILITY JOURNEY - PROTECTING OUR ENVIRONMENT

TIAKINA Ō TATOU TAIAO

PROTECTING OUR PLANET

# The path to carbon net zero.

Government has set into law a target for net zero Green House Gas emissions by 2050 (other than for biogenic methane). To support this outcome we're addressing the key GHG emissions from our geothermal power plant and assessing the use of fossil fuels for transport and power generation. We're also identifying the loss of electricity as it's transported through the network, known as a line loss.

The current plan is to reinject all non-condensable gases at the Ngāwhā geothermal power station. This will provide a realistic opportunity for the Top Energy Group to be carbon net zero for Category 1 and Category 2 emissions by the end of 2025<sup>\*</sup>.

\* Categories 1 and 2 - see page 20 for more info.

\*\* NZU = New Zealand Unit = 1 carbon credit.

The graph below shows the path to reduction. We expect to have fewer than 2000 NZUs of emissions, which we will offset with our Acacia forest and other initiatives.



**Glidepath journey to carbon net zero** GHG Emisisons (tC02e)

TOP ENERGY SUSTAINABILITY REPORT 2023

PROTECTING OUR PLANET

# Our forest provides more than future financial gains.

The Top Energy Group has 1000ha around its Ngāwhā geothermal power plant, featuring 76ha of Acacia forest that we planted in 2005. Originally seen as a future forestry investment, it's become so much more.

By keeping our forest in place, we gain 1500 carbon credits per year. We use them to offset our remaining emissions.

TOP ENERGY SUSTAINABILITY REPORT 2023

PROTECTING OUR PLANET



# How we measure & report on our emissions.

Top Energy is proud to announce our application to be part of the Toitū certification programme. As part of our sustainability initiatives, we're committed to working closely with Toitū Envirocare to audit and measure accurately our GHG emissions.

The programme will help us to put in place strategies to manage and reduce our impacts as we work towards achieving certification.

It will be a huge step forward for us in achieving our sustainability goals.

We've also adopted a measuring methodology based on the Ministry for the Environment's Measuring Emissions, A Guide for Organisations. The guide aligns with the Greenhouse Gas (GHG) for corporate accounting and reporting standards and ISO 14064–1:2018, the standard for measuring and reporting GHG emissions Baselines are currently being established to understand emission sources and set future targets to reduce emissions over time. Our actual emissions this year were  $57,000tCO_2e$ , lower than our forecast of 132,950tCO2e set in 2022.

The reinjection of non-condensable gases at our Ngāwhā geothermal plant will enable us to be carbon net zero by 2025

TOP ENERGY SUSTAINABILITY REPORT 2023

h

Ý

## **Top Energy : Emission Measures tCO**<sub>2</sub>**e**

CLASSIFICATION	SOURCE	FY22	FY23	FY24 Forecast
Category 1 Direct Emissions	Generation Fuel : Geothermal Generation Fuel : Diesel Transport Fuel : Diesel, petrol & LPG Sulphur Hexafluoride	127,243 706 1,180 13	55,664 252 1,244 0	38,520 300 1,207 0
Category 2 Indirect Emissions from Energy	Electricity Purchased Distribution Losses	56 255	51 136	51 180
Category 3 Transport Emissions	Air Travel Domestic and International	6	16	40
Category 4 Emissions from Products/Services Used by the Organisation	Electricity Distribution : Transmission for and Distribution Losses from Electricity Purchased	5	5	5
	TOTAL	129,434	57,368	40,303

P R O T E C T I N G O U R P L A N E T

# Solar adds capacity.

We know that one of the priorities of our customers and stakeholders is the growth of solar to increase the region's renewable energy sources. There is definitely appetite out there and we want to enable solar potential.

Top Energy Solar Stats



Applications for solar connections

1.07

Solar power in the Far North

Total connections in the Far North including solar

U/0

5

Applications are underway for large solar farms

These will capture an additional 90MW of power.

Demand met by solar at the height of summer tion to .

TOP ENERGY SUSTAINABILITY REPORT 2023

## P R O T E C T I N G O U R P L A N E T

# Measuring waste.

We will work to reduce our waste. This coming year we will start programme to set a baseline, agree measures and set a target to reduce our waste year on year consulting with experts and brainstorming with staff on the best way to reduce our footprint.

#### Reduction in waste achieved this year



The total amount of waste is 332t. 187t of waste went to landfill. Our goal is to further reduce our waste to landfill.

## OUR SUSTAINABILITY JOURNEY - CARING FOR OUR COMMUNITIES

## ATAWHAITIA Ō TĀTOU KĀINGA, Ō TĀTOU HAPORI

Plunis for Sole \$2060 one plum bout \$2.50 for

# **Committed to reducing the cost of power to consumers.**

Top Energy's per kilowatt hour lines charge is one of the highest in the country. The challenge we face is that we have a large, sprawling network that extends to some areas of tough terrain.

The entire network needs to be maintained for everyone, regardless of where in the Far North they live.

We also have a comparatively small population, spread over this large area, with a lower-than -average electricity consumption. Our warm climate here reduces the need for high power usage during the year.

Our network prices have increased in the past decade, as massive upgrades and maintenance programmes have been completed. If you've lived in the Far North in this time, we thank you for your patience. We understand increasing prices can be hard to manage, and we know you've experienced a more reliable power supply since this work was done.

Our geothermal power plant at Ngāwhā generates enough electricity to power 125% of the Far North. That means our surplus electricity can be sold and consumed by New Zealanders outside our region. With the income from selling electricity, we're planning to increase distributions back to our consumers by an additional \$50 every 3 or 4 years. The next planned payment will be up from \$250 to \$300 per connection in May 2024. While we may change the way this payment is made (part discount/part dividend for example), the overall savings passed on to our customers will increase.

It was disappointing to find that very little of our price reductions over the past 3 years have reached consumers power bills.

# Maintaining a sustainable power source & pricing.

Balancing the cost of power supply and the reliability of that power will be an ongoing focus for us.

We wanted to know what our customers thought about these aspects of our business. If the amount of work required to maintain the network increased, we would need to increase prices in order to undertake that work.

Alternatively, if we maintained the current network quality we would likely be able to keep prices steady, or perhaps reduced.

We surveyed more than 1000 customers in all wards of the Far North, in October 2022.

We'd like to thank those that took part in our survey.

Top Energy will continue to move from a being high-cost to a low-cost company by 2030, while maintaining our current level of reliability.

#### Key takeaways from our Customer Survey

% %**CUSTOMERS CUSTOMERS CUSTOMERS** Agree with Top Energy's Not prepared Consider objective: move from Top Energy's to pay more for high-cost to low-cost power supply reliability improved level company by 2030 to be acceptable of power supply

This requires reliability of supply to remain at the current level.

25

# **Train & hire locally.**



There's a real need for trained experts nationwide, and we face this challenge here in the Far North. We know that if we support our people locally we'll have a workforce who can stay living in the Far North area.

To ensure we build the long-term capability and security of our network, we'll also take on 3 new local trainees each year. This creates the opportunity for a workforce with strong ties in the Far North, and provides a new generation with a much-sought-after skillset.

Our engineering scholarship programme is open to all schools in the Far North for those already studying or wanting to gain engineering honours degrees.

Our scholarship package is \$8,000 a year for up to 4 years of study. In addition to receiving financial support, the scholarship winners have the opportunity to complete a paid internship at our Ngāwhā geothermal power plant or to work on our electricity network.

This provides practical experience, meaning they 'hit the ground running' once they graduate.

TOP ENERGY SUSTAINABILITY REPORT 2023

# Partnering with community initiatives.

27

**EnergyMate** is an award-winning energy hardship programme that provides a free energy coaching service to those struggling to pay their power bills.

In 2020 we partnered with EnergyMate and the Kaitaia Family Budgeting Service to pilot the programme in Kaitaia. We saw the benefits it provided for the community.

Proven results meant that when EnergyMate looked to extend the programme to Te Kao, we were quick with additional support.

EnergyMate has reported that 30% of people they worked with made positive changes with their power company. A satisfying 67% saw changes to their power bills. And with the goal of assisting with overall budgeting, 33% reported reductions in their average monthly debt. **Digital Wings** is a charitable trust that helps young New Zealanders to flourish in a digital world by responsibly disposing of and repurposing electronic equipment.

The trust works with like-minded social and environmentally responsible businesses and organisations which donate their quality IT equipment.

The trust has a clear focus on youth education and employment, but all charities are welcome. Donors can also nominate charities of their choice to receive equipment.

This is a new partnership for Top Energy, and we've agreed to donate any tech we no longer use, and that any repurposed equipment will support organisations in the Far North.

Digital Wings has gifted laptops, iPhones and computers to nearly 75 charities in Northland since 2020, and 28 of those charities are in the Far North.

## **Initiatives that ensure our team stays at the top.**

## **Safety first – Always**

It's vital that every person working for Top Energy gets home safely at the end of each shift, but we strive for something more. We want to reward those who look out for the safety of others.

A Safety Leadership Award is given each month to every one of our 5 departments, which each nominate a person. The nominee is someone who makes key safety decisions that go beyond the required health and safety guidelines.

**Casey Lloyd** was attending to a late-night fault in September. At 11pm and on his way home, he spotted a blinking light in a ditch. The light belonged to a person who had been in a motorbike accident. Casey instantly contacted emergency services and then our own control centre, to advise of the situation. He stayed with the seriously injured rider, who was unresponsive, administering vital first aid until emergency services arrived.

**Kape Murray** was heading to work one morning and saw that a truck parked on the side of the road was on fire. He pulled over and extinguished the flames with his safety kit (these are kept in all our vehicles). Quick thinking and training meant that a fallen gas torch didn't escalate into a much worse scenario.

**Caroline Pusch** was greeting our network team as they arrived for some refresher training in July. While the team had received advice to take RAT tests prior to entering the depot, Caroline identified that 4 had not yet tested. She provided them with test kits and discovered that one had returned a positive test.



## **Initiatives that ensure our team stays at the top.**

## We are a Living Wage accredited employer

Employers who pay the Living Wage want to make sure their workers get enough money to live with dignity.

The Living Wage considers basic expenses, and gives breathing room for rest, activities or saving for a rainy day.

It's good for our collective wellbeing, and our economy.

## A new approach to work locations Post-COVID-19 has been successful

Like many businesses during COVID-19, our teams were enabled to work from home to achieve an increased work/life balance.

We recognise that on the back of a stressful pandemic, staying flexible with a combination of in-office and at-home locations contributes to overall happiness for our people. It also means a measurable reduction in travel time and expenses for our team.

## Accessing help when it's needed

Clearhead gives staff evidence-based digital tools and access to therapists, and unlocks personal wellbeing insights. It provides access to help that each individual may need, when they need it. It's a powerful tool that gives each team member the ability to understand and have some control of their world.

It's important that while we build teams and plan for the future, we take good care of the team at Top Energy, today. OUR SUSTAINABILITY JOURNEY - ENSURING LONG-TERM PROFIT

0+1

## KIA WHAKATŪTURU NEI I NGĀ HUA A PAETAWHITI

### ENSURING LONG-TERM PROFIT

# **Growth will secure our collective future.**

When we talk about prosperity, we mean our ability to grow as a business and utilise our profits to benefit all of the Far North, which is what we can do as a trust-owned company. We need to continue making business decisions that ensure these benefits continue for future generations.

## Maintaining our network

As the provider of a critical lifeline, we continue our fundamental commitment to provide a safe and reliable electricity network to our community. In the past 5 years we've invested \$81m to substantially improving the resilience of the network and meeting our regulatory targets. Our investment programme enables us to be more reliable and flexible in how we manage the network.

We have the capacity to forecast growth in demand as the Far North prepares for electrification. This gives us insights when making decisions.

Being flexible was demonstrated this year when we decided to put a substation upgrade on hold and focus instead on minimising the impacts of power outages.

We also refurbished the Ōmanaia 33kV structures and the Paua 11kV feeder structures in Te Kao to add resilience to the network in those areas.

The successful completion of our annual Kaitaia maintenance programme just before Christmas has meant greater reliability of power in the far Far North.

### ENSURING LONG-TERM PROFIT

## Mitigating climate events.

Thanks to our diesel generation at Kaitaia, Pukenui, Ōmanaia and Taipā, we managed to keep the power on for the entire area while we worked on the maintenance of the lines. We got stuck in, cut back encroaching vegetation and completed additional substation maintenance while we were at it.

Generators also helped us to address the vulnerability in our network from the single high-voltage line supplied from Kaikohe.

On that note we're also pleased with the Supreme Court's rejection of an appeal against our building a contingency line from Kerikeri to Kaitaia. This means we'll have a second line to support the current 50-year-old lines running through the slip-prone Mangamuka Gorge.

This network resilience certainly made a difference during the cyclone, and we're enormously grateful to members of our team who worked so hard during the year.

## **Top Energy : Annual Sustainability Measures**

We are going to record the following measures, year-on-year. The results will be published so we can be transparent about what we are able to achieve.

MEASURE	FY23	FY24 target	TARGET
Waste to Landfill Reduction	187	177	Implement company-wide programme to reduce waste to landfill.
Residential Solar Installed (MW Cumulative)	9.5	10.5	
Large-Scale Solar Installed (MW Cumulative)	0	43	
Have the Network Cost Per Connection in the Lower Quartile by 2030	18/29	14/29	<8/29. To have the network cost (per connection) in the lower quartile by 2030.
Increase the Discount/Dividend Total Paid Every 3 Years	\$250	\$300	Discount/dividend to achieve \$400 by 2030.
Establish an Energy Hardship Programme			Establish an Energy Hardship Programme by the end of FY24
Increase Locally Hired Trainees	2	3	Hire 3 new trainees locally each year.

## OUR SUSTAINABILITY JOURNEY - TCFD ALIGNMENT



## CLIMATE RELATED DISCLOSURES

## Facing our risk headwinds.

Top Energy's Board of Directors is responsible for the governance of risks, including those related to climate change. This is entrenched in our current process, where 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 and reports proceedings back to the Board.

Our Climate Change and Sustainability Policy aims to limit our impacts on climate change with a view to carrying out all business activities in a sustainable manner. The Risk Management Policy recognises that risk management is a part of core business operations. We commit to risk management aligned with AS/NZS ISO 31000: 2009 Risk Management – Principles and Guidelines, to proactively identify, measure and manage risks. Risk appetites are documented to ensure that risks are managed within Board-approved risk parameters. Performance is reported in Top Energy's Statement of Corporate Intent and in our Annual Report. OUR UNIQUE GOVERNANCE STRUCTURE



CLIMATE RELATED DISCLOSURES

## **Climate change affecting Northland.**

#### **Temperatures**

Annual average temperatures will increase by between 0.7°C and 1.1°C by 2040, and up to 3.1°C by 2090. The number of hot days above 25°C will increase from 25 to 55 days by 2040 and up to 99 days in 2090. Frosts will decrease from 1 day every 2 years, to 1 day every 10 years. The likely impacts are increased vegetation growth, numbers of invasive pests, biosecurity risks and diseases such as salmonella. Some key crops will become financially unviable as frost instances decrease.

#### Rainfall

We expect reductions in rainfall of up to 20% by 2090. Large, extreme rainfall events are likely to increase in intensity. Drought risks will increase for coastal and southern inland areas. By 2090 the time spent in drought may double. This will likely lead to water shortages and increased risk of wildfires.

#### Tides

New Zealand tide records show an average rise in relative mean sea level of 1.7mm per year in the 20th century. For Northland this could mean an increased risk to infrastructure from coastal erosion and sea-level rise.

Because the Far North has a subtropical climate, we are already experiencing increased storm warnings and higher temperatures. We're no stranger to extreme weather as well as drought conditions and flooding. Our unique climate also means we have ideal conditions for fast and wide vegetation growth.

## CLIMATE RELATED DISCLOSURES

As these factors become more extreme, we'll need to ensure the resilience of the power supply to the Far North region.

Because our physical network is geographically located across a thin strip of land on an island, we will also be at risk of sea-level rise, as most of our region is coastal.

Top Energy's key transitional risk is decarbonisation. If we don't reduce our GHG emission and reach the required level by 2025 we won't be able to operate our geothermal power plant. The carbon reinjection programme at Ngāwhā is the key to achieving this goal.

### **Emissions**

We've identified our 4 largest causes of gas emissions and a path to reduction.

## FOSSIL FUELS DIESEL DIESEL LESS 1 % FOR TRANSPORT GENERATION GHG % UNE LESS 1 %

LOSSES

**EMISSIONS** 

## **Risk Management – Physical Risks**

DESCRIPTION	RISK Profile	IMPACT Description	MANAGEMENT RESPONSE
Severe Storms & Wind Speeds	5-10 year impact is likely 10-50 year impact is almost certain Risk = High (24) Severity = Major due to localised damage and extended outages Likelihood = Almost certain	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. The frequency is likely to increase in the coming years.	We're improving network communication and remote switching for faster restoration. This year we've adjusted our planned work to include greater redundancy of at-risk lines and additional capacity to make the network more robust. We'll continue maintenance such as pole replacement to increase network resilience to storms and wind speeds. We'll assess design specifications against future storm predictions as part of continuous improvement.
Vegetation Growth Rates & Treefall	5-10 year impact is likely 10-50 year impact is likely Risk = High (18) Severity = Serious financial impact (however, encompassed in current maintenance programme) Likelihood = Almost certain	Faster growth rates of many vegetation species as temperatures increase will lead to increased instances of unplanned outages increasing the System Average Interruption Duration Index (SAIDI).	We will adapt our maintenance program including vegetation resources annually in our Asset Management Plan. We'll make ongoing submissions to have the Hazards from Trees Regulations changed.
Rainfall & Flooding	5-10 year impact is likely 10-50 year impact is likely Risk = High (18) Severity = Serious financial impact Likelihood = Almost certain	Overhead and underground assets are increasingly exposed to this risk. The frequency is likely to increase in the coming years.	We're improving network communication and remote switching for faster restoration. This year we've adjusted our planned work to include greater redundancy of at-risk lines, and greater capacity to make the network more robust through the 11kV reliability programme. We'll assess design specifications against future storm predictions as part of continuous improvement.

## **Risk Management – Physical Risks – Continued**

DESCRIPTION	RISK PROFILE <sup>1</sup>	IMPACT Description	MANAGEMENT RESPONSE
Fire Conditions Due to Increased Drought Periods	5-10 year impact is unlikely 10-50 year impact possible Risk = Low Severity of harm = Minor Likelihood = Remote	Drier conditions pose additional fire risks to the network with vegetation near our overhead lines.	We'll talk to commercial entities about vegetation and clear zone agreements. We'll make ongoing submissions to have the Hazards From Trees Regulations changed. We'll campaign for the removal of encroaching bamboo shelter belts. Through our risk-based asset-inspection programme we'll actively replace poles, conductors, insulators and cross arms as one-off maintenance jobs and large capital projects, and review the protection scheme.
Sea Level Rise	5-10 year impact is unlikely 10-50 year impact possible Risk = Low Severity of harm = Minor Likelihood = Remote	Sea-level rise in the next 50 years is likely to increase the water table level in the Far North, particularly in coastal areas. This affects cable installation work and may increase the frequency of cable faults.	We've completed remediation at substations where there are potential flood risks. We're quantifying assets affected by sea-level rise and river flooding, according to 0–50 and 50-100 year/s impacts. We assess new coastal assets against sea-level rise and flood projections from the Far North District Council to minimise risks.

1. Risk Profiles are mapped to the Top Energy Group Risk Assessment Matrix.

## **Risk Management – Transitional Risks**

DESCRIPTION	RISK PROFILE <sup>1</sup>	IMPACT Description	MANAGEMENT RESPONSE
Reduced Ability to Generate with GHG Emissions	5-50 year impact is unlikely Risk = Medium (12) Financial impact = Major	Regulation and/or customer preference moving away from carbon-emitting services, could lead to a reduction in revenue.	We'll investigate alternative solutions for emitted carbon to support long-term geothermal generation.
Increasing Equipment Costs	5-10 year impact is likely 10-50 year impact is likely Risk = Medium (15) Financial Impact = Serious (\$100k-\$1.25M)	The costs of equipment and materials (including concrete poles, steel and timber), as well as transportation (including shipping) will likely increase, in part due to rising global carbon prices and supplier costs associated with implementing carbon-reducing strategies.	We'll investigate new technologies to reduce carbon-heavy equipment and materials. We'll influence our supply chain to achieve low-carbon outcomes, including for fleet and transportation. We'll ensure that increasing equipment and materials costs are accounted for in annual budgets.
Increase in Electricity Wholesale Price Volatility	5-50 year impact is almost certain Risk = Moderate (10) Financial impact = Minor	Increase in demand will lead to more renewable generation that is intermittent, resulting in fluctuating prices.	We'll ensure that, within our risk framework, the impacts of accepting the risk. We'll continue to manage the risk within agreed parameters.
New Technology	5-10 year impact is likely 10-50 year impact is likely Risk = Medium (5) Financial = Moderate (\$25k-100k)	New tech such as solar and EVs may mean a traditional network is no longer the most efficient energy solution as demand increases. Our network needs to become adaptable to 2-way flows and different customer solutions.	Given the significant network investment in the past 10 years, we're well placed to manage the new technology requirements. We'll continue to explore alternative network models to adapt to increased 2-way flow. We'll continue to increase resilience and replace older equipment on our network, bearing capacity in mind, to support our growth plans.

## CLIMATE RELATED DISCLOSURES

# Increased demand will drive future responses.

Our key opportunities for decarbonisation are increased network demand and generation. The network will grow in capacity for 2-way electricity flow, and new markets and technology for alternative sources of revenue will emerge. The impact on the network itself is expected to be minor, but the financial impacts have the potential to be major in the next 5-50 years. The increased electrification of heating and emerging technology such as electric vehicles will drive an increase in the consumption of and demand for electricity generation, resulting in higher revenue from lines charges. New pricing structures will be used to manage demand and ensure all users pay their fair share.

TOP ENERGY SUSTAINABILITY REPORT 2023

## **Opportunities**

DESCRIPTION	RISK Profile	IMPACT Description	MANAGEMENT RESPONSE
Enable Decarbonisation	Likely in the 10 to 50 year timeframe	Grid demand will increase through the electrification of heating and new technologies such as EVs, resulting in increased revenue A more resilient electricity network to meet demand, maintaining security of supply for our customers in the face of increasing weather events caused by climate change.	<ul> <li>We'll investigate carbon reduction options for the network in accordance with government guidelines.</li> <li>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.</li> <li>We'll use our new pricing structures to manage demand as well as encourage distributed generation connections.</li> <li>We'll use modern mapping to monitor and make decisions as the impact of climate change occurs.</li> <li>We'll upgrade some 33kV infrastructure to 110kV, adding route and supply diversity.</li> </ul>
Increased Demand Brings the Opportunity of Diverse Generation Markets	Likely in the 10-50 year timeframe	Increased revenue due to higher demand, e.g. regional decarbonisation (industrials, hospitals and schools turn off coal boilers), offers potential for future generation. Reliable baseload becomes more desirable to the market as renewables are intermittent. There is an opportunity to investigate markets that will emerge as alternative sources of revenue.	<ul> <li>We'll investigate:</li> <li>Renewable generation opportunities</li> <li>Export constraints</li> <li>Bespoke energy solutions with industries in our region</li> <li>The potential to diversify our generation portfolio</li> <li>Closed-loop geothermal</li> <li>Bundling to provide carbon-dependent businesses with power purchase agreements to enable electrified solutions.</li> </ul>

OUR SUSTAINABILITY JOURNEY 2022-23

