



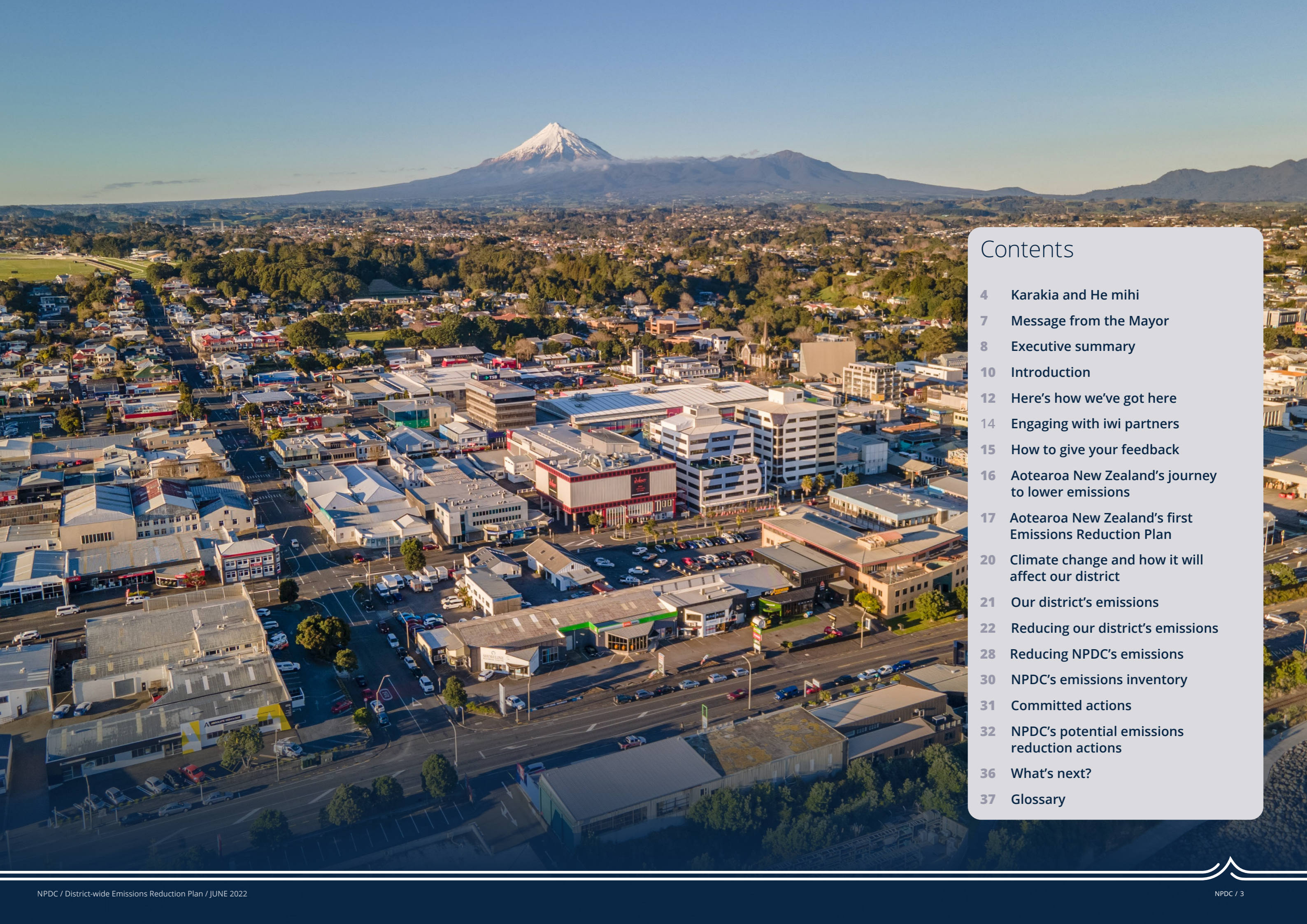
Draft district-wide

Emissions Reduction Plan



Te Kaunihera-ā-Rohe o Ngāmotu

**New Plymouth
District Council**



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Karakia

Ko Rangī
Ko Papa
ka puta, ko Rongo
Ko Tānemahuta
Ko Tangaroa
Ko Tūmataunga
Ko Haumiatiketike
Ko Tāwhirimātea
Tokona te rangi ki runga,
ko papa ki raro
Ka puta te ira tangata,
ki te whaiao, ki te ao mārama
E rongō whakairia ake ki runga
Tūturu whakamaua kia tina,
tina! Hui e, taiki e!

First there was Rangī (sky father)
and Papa (earth mother)
From them came Rongo, (cultivated food)
came Tānemahuta (the forest)
came Tangaroa, (the oceans)
came Tūmataunga (the people)
came Haumiatiketike, (uncultivated food)
came Tāwhirimātea, (winds)
The Sky was lifted above,
The land below,
People was born
to the world of light,
Let us be heard high above,
Hold steadfast together,
It is fixed!

He mihi

Tuia i runga i a Ranginui e tū nei
Tuia i raro i a Papa e takoto ake nei
Tuia iho te motu ngāherehere o Tane te waiora,
Tuia iho kia Tangaroa te whatu o te moana,
e tuia rā taku kaha nei.
Tuia ki uta, tuia ki tai, tuia ki a rātou kua wehe
atu ki te pō uriuri, ki te pō tangotango,
Ki te pō, oti atu ki te pō.
Nō koutou te mana, te ihi, te wehi, te tapu i uta,
i tai, i te pukepuke, i te maania.
I te taiao e pakangatia nei, kia tū, kia ora hei
taonga tuku iho, mā te uki whai muri....
Kāti ake rā.

Let us be one (let us be bound) with the heavens
Let us be one (let us be bound) with our mother
earth
Let us be one (let us be bound) with the
enduring forests of Tane the spring of life.
Let us be one (let us be bound) with the essence
of the sea. (Tangaroa)
Let us bind the umbilical that nourishes our
existence and relationship with the land and the
sea.
Our relationship with those that have passed
onto the great nights, the dark nights, the nights
that have no return.
It is from you that we gain our mana, our ihi,
our wehi and our tapu from the valleys, the
plains, the environment that is being fought to
be upheld, as a treasure to be appreciated and
nurtured for future generations.



Message from the Mayor

As a Sustainable Lifestyle Capital we're committed to supporting our people and businesses to transition to a low-emissions, high-value economic future. In Taranaki we produced more than 6,000 kilotonnes of greenhouse gases, about 50 tonnes per person, in 2019, with more than 80% coming from industry, according to Stats NZ.

We're taking a Team Taranaki approach through our Tapuae Roa regional economic strategy, working with mana whenua, business and other councils to position our region at the forefront of renewable energy off the back of our traditional energy industry. The centre piece is the Taranaki 2050 roadmap co-designed by our community.

At NPDC, this draft emissions reduction plan sets out our journey to a greener future. We manage assets worth \$3.5 billion and have an operating budget of about \$177 million, and we've looked at every aspect of our operations across the long-term.

Some of these actions are already in motion. Our Zero Waste 2040 goal was drawn up in 2017 and aligns with international work around eliminating "all discharges to land, water or air that are a threat to planetary, human, animal or plant health".

Our 10-Year Plan last year was developed with a sustainability lens, with one of the big calls being \$38 million to invest in Greening our Place, including plans to plant 34 hectares of urban native forest to offset carbon emissions and electrifying our vehicle fleet.

Please take time to read through this draft plan and give us your feedback. It's an important issue. Together we can tackle one of the epic challenges of our time for our kids.

Love this place.

Executive summary

In the fight against climate change, Aotearoa New Zealand has a target of reaching net zero emissions by 2050.

The Government's recently released National Emissions Reduction Plan includes changes we need to make to hit this target, and Taranaki is well placed to lead this transition.

Through initiatives such as the regional economic development strategy, Tapuae Roa: Make Way for Taranaki and the Taranaki 2050 Roadmap, the community has developed a vision of what a high value, low emissions future will look like for Taranaki. We now need Government and industry to join together to make it happen.

The draft district-wide Emissions Reduction Plan

In 2019, New Plymouth District Council adopted a Climate Action Framework, which focused on both adapting to the impacts of climate change and working to reduce emissions. Now, this draft district-wide Emissions Reduction Plan outlines the district's emissions and looks at ideas for reducing them.

NPDC's role

We've looked at our role in helping reduce the district's emissions and focused on four areas:



Advocacy and education

Speaking to Government on behalf of our district to ensure a just transition, and working with our communities to move to a more sustainable lifestyle.



Planning and infrastructure

Developing infrastructure and planning strategies that support more compact urban living, and green spaces.



Delivering low emissions options

Providing zero waste facilities, walkways and cycle paths for our community.



NPDC's organisational emissions

We've developed an inventory of the emissions we generate and have plotted a potential path to become a net zero emissions organisation by 2050.

Our emissions reduction target

We've aligned both our district and NPDC organisational emissions reduction targets to what has been set for Aotearoa New Zealand through the Climate Change Response Act 2002, which requires:

- All greenhouse gases, other than biogenic methane, to reach net zero by 2050
- A minimum 10% reduction in biogenic methane emissions by 2030, and a 24-47% reduction by 2050 (compared with 2017 levels).

The Government recently released the first three emissions reduction budgets, along with the country's first National Emissions Reduction Plan, which outlines the policies, plans and strategies that will help Aotearoa New Zealand reduce emissions to meet these targets.

Alignment with national targets, along with the transitional planning work that is progressing across the region, ensures we're well-placed to leverage national level support as we continue to reduce emissions locally.

Share your thoughts

We've made a good start, but want to achieve more. So we're asking the community for ideas about how we can work together to lower the district's emissions. Have your say at www.npdc.govt.nz/haveyoursay

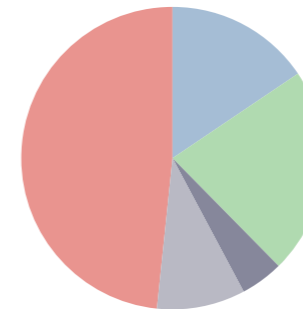
Lowering New Plymouth's emissions

Our district's emissions come mainly from agriculture, transport and energy, so a combined effort from industry, government, iwi, business leaders, innovators, educators, farmers and the wider community is needed to effect change.

The journey has already started through the transition planning done by the region. We've pulled some of these initiatives together, and included an outline of the government's recently released National Emissions Reduction Plan to look at how the district can lower its emissions.

New Plymouth District Emissions 2017/18

Energy	16%
Transportation	22%
Waste	4%
Industrial	10%
Agriculture	48%



Reducing NPDC's organisational emissions

Like other organisations, NPDC's everyday operations create emissions – mainly waste, gas and fuel. These account for about 5% of the district's total emissions.

We've developed a potential plan to lower NPDC emissions, and identified two major opportunities to do so:

1. **Complete implementation of the Landfill Gas Capture System at the Colson Road Landfill**
This will reduce emissions from landfill between 26-40%.
2. **Implement an Infrastructure Decarbonisation Programme**
Design, build and manage future NPDC assets according to low carbon principles. This will reduce infrastructure emissions by 42%.

There are lots of other ideas we can consider to help reduce NPDC's emissions further, and we've outlined some of them in the draft plan. Value for money, in terms of cost and the likely emissions reduced, will help us decide which ideas to prioritise.

CASE STUDY



Planting our Place

One of the big calls in our Long-Term Plan last year was Planting our Place. By working to plant 34 hectares of urban forest across the District over the next 20 years, NPDC aims to help bring back native birdsong to our urban areas and make our place greener and healthier for our kids.

With a vision of improving biodiversity, carbon sequestration and allowing community participation in NPDC's climate response, Planting our Place will help us reduce NPDC organisational emissions by offsetting emissions that are difficult to get rid of.

"We're committed to working with our community to offset emissions that are hard to abate, and to improving biodiversity within the district", says NPDC's Parks & Open Spaces Manager, Stuart Robertson.

Working in partnership with the community and local hapū, the programme has already piloted a community garden in Marfell with Sustainable Taranaki, and partnered with local Hapū to provide reserve land for planting a mahinga kai project with support from Trees that Count for 26,000 trees.

Planting our Place also includes Te Korowai o Tanē, our community grant for \$30,000 per year for community and not-for-profit groups including schools, sports clubs, kōhanga reo, kindergartens, early childhood and play centres and marae access of up to \$5,000 funding to plant on their own land.

The fund is open for applications now through: www.npdc.govt.nz/community/community-partnerships/funding-and-grants/te-korowai-o-tane-planting-our-place/

This is New Plymouth’s draft district-wide Emissions Reduction Plan. It outlines the district’s greenhouse gas emissions, and what the community is doing to reduce them to limit the impact of climate change. It also includes actions NPDC may choose to take to reduce organisational emissions.

This draft plan is part of our Climate Action Framework adopted in December 2019, when NPDC recognised that climate change required an urgent response.

NPDC’s climate response requires actions to both mitigate against and adapt to, the effects of climate change.

The draft plan outlines the district’s emissions, and looks at ideas for how the community can reduce these to mitigate against climate change effects.

NPDC is also developing a district-wide Climate Adaptation Plan to outline how we adapt to the irreversible effects of climate change, due for publication early 2023.

We have a lot of work to do to meet the national target of net zero emissions by 2050, and the challenge requires the whole district to work together.

Are we doing enough?

We’re keen to understand if you think we do enough in these areas or if you would like us to do more.

To get your feedback to us, either:

Do it online: www.npdc.govt.nz/haveyoursay

Email it to us: submissions@npdc.govt.nz

Post it to: Climate Response, Reply Paid NPDC, DX Box NP90081, New Plymouth

Have your say by Friday 29 July 2022

NPDC’s role in helping our district reduce emissions

NPDC has a role in helping the community reduce emissions, through:



Advocacy and education

NPDC can advocate for Government support when emissions reduction policies and legislation have a direct impact on our community – helping ensure a fair transition to net zero emissions.

Our teams can continue their work with the community, including educating about waste and recycling, offering advice on biking and walking to work or school, and providing information about how to reduce energy bills and create a healthy indoor environment.



Planning and infrastructure

Our infrastructure strategy takes a long-term view of what our community will need to live, work and travel in a low emissions future.

NPDC can continue to design a compact urban form and focus on building communities with infrastructure that enables active travel, such as biking and walking.

Our Proposed District Plan takes into account the need for trees and green spaces to offset emissions that cannot be reduced, and we will follow legislation to consent homes and buildings that are warmer and more energy efficient.



Delivering low emissions options

NPDC will continue to deliver services to the community so we can all make low emissions choices. This includes zero waste resources, such as recycling and food scrap collection, and water conservation measures. And while we continue to maintain walkways and cycle ways to provide safe off-road travel options, we’re also developing an Integrated Transport Plan with low emissions options in mind.

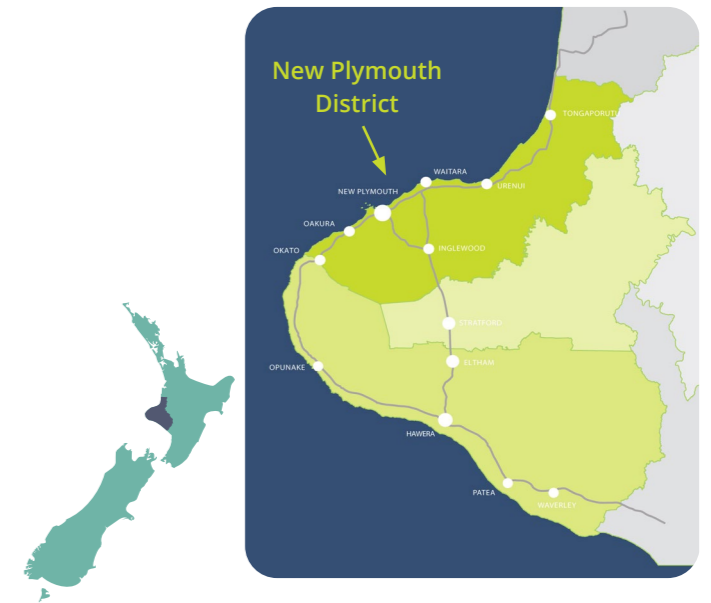


NPDC’s organisational emissions

NPDC is a medium-sized organisation and our emissions are our responsibility. We need to address the way we maintain our assets and think carefully before we build new ones. NPDC has developed an emissions inventory and, using our current Long-Term Plan, we have worked out potential pathways for further investigation and detailed costings to meet national targets of producing net zero emissions by 2050.

This draft district-wide Emissions Reduction Plan was created with the knowledge and skillset of NPDC staff who collaborated with engineers specialising in decarbonisation.

We’ve also included aspects of mahi done by our community in planning the move to a low emissions future, such as the Taranaki 2050 Roadmap and Tapuae Roa. Results of Sustainable Taranaki’s Behaviour Change Survey, and community feedback from NPDC’s 2020 Top 10 Korero engagement and Long-Term Plan submissions around climate change in 2021 have also provided input.



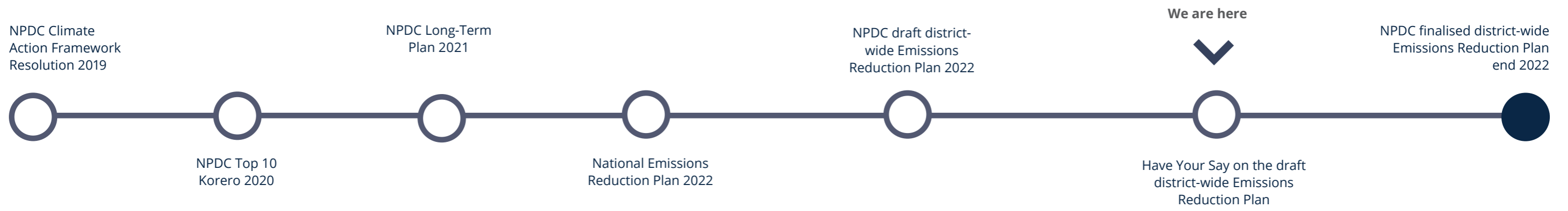
Climate change mitigation and adaptation

To **mitigate** climate change, we can reduce our emissions through activities such as using LED lightbulbs or making fewer trips by car.

To **adapt** to climate change, we can adjust to the changes in climate that have already happened, or are forecast to happen, such as rising sea levels or more frequent storm events.



Here's how we've got here



How it all fits together

This diagram provides a snapshot of the related strategic plans, policies, guidelines and legislation that guide NPDC's decision-making and will play a key role in our transition to a net zero district.



* Policies internal to NPDC

National Emissions Reduction Plan

We've aligned our timeframes for publishing this draft plan to incorporate a snapshot from the recently released National Emissions Reduction Plan.

Policies, plans, strategies and initiatives from the National Emissions Reduction Plan will be incorporated in our finalised district-wide Emissions Reduction Plan in a way that ensures it's relevant to our district.

NPDC is in good company

NPDC meets regularly with officers from South Taranaki and Stratford District Councils and Taranaki Regional Council to collaborate, share information and ensure there is regional consistency in our response to climate change.

NPDC is part of the Local Government Forum Council Climate Network, which encourages networking across all local governments in addressing climate issues.

NPDC takes part in the Energy Efficiency and Conservation Authority's Local Government Network.

NPDC works closely with Venture Taranaki, our regional development agency, to ensure a just transition for our region.

District and NPDC target

To ensure we're best placed to leverage the transition to low emissions and reduce the impact on our environment and community, we're aligning to nationally set emissions reduction targets for both 2030 and 2050, which are:

- All greenhouse gases, other than biogenic methane to reach net zero by 2050.
- A minimum 10% reduction in biogenic methane emissions by 2030, and a 24-47% reduction by 2050 (compared with 2017 levels).

NPDC is committed to strengthening a treaty-based partnership with tangata whenua, and welcomes news within the National Emissions Reduction Plan that Government will establish a platform for Māori climate action that will:

- **Embed partnership and representation** – to uphold Te Tiriti principles, processes and mechanisms will be resourced and designed alongside Māori to help tangata whenua to actively participate in the climate response.
- **Support Māori-led strategy and alignment** – to elevate te ao Māori within the climate response, Māori will be supported to define, measure and implement a Māori climate strategy and action plan.

- **Activate kaupapa Māori, tangata Māori solutions** – to enable community action, kaupapa Māori actions and solutions for the climate emergency will be funded.

NPDC is keen to work alongside Iwi as they progress their own fit-for-purpose climate response through this support and activation. Māori already demonstrate leadership that will assist a just transition to a low emissions future and climate resilient society, and NPDC can learn from that.

While consultation is open for this draft Plan, NPDC will gather feedback from Iwi that can be included in the finalised district-wide Emissions Reduction Plan.

Consultation is now open on this draft district-wide Emissions Reduction Plan. We welcome feedback from anyone in the New Plymouth District.

Submissions to our Long-Term Plan consultation in 2021 showed that 60% of people either supported our climate action work or wanted us to do more in this area. This draft Plan is the first step in an iterative process. We want to know what you think. For example:

- Do you think we have the balance right with our planned climate action, or would you like us to do more?
- In what ways do you want Council to support the community to lower their emissions?
- What do you think about the potential pathways for Council to reduce operational emissions?

We want to hear from you

You can provide feedback in a number of ways:

- Attend one of our Zoom Hui's, for details see NPDC climate response webpage: www.npdc.govt.nz/community/a-greener-district/climate-response/
- Do it online: npdc.govt.nz/haveyoursay
- Email to: submissions@npdc.govt.nz
- Write to: Climate Response, Reply Paid NPDC, DX Box NP90081, New Plymouth
- In person meeting, by request.

Please provide your feedback by Friday 29 July 2022

What's next?

Following feedback, the draft district-wide Emissions Reduction Plan will be workshopped with Council, before being finalised and adopted in either late 2022, or early 2023.

Please note this draft district-wide Emissions Reduction Plan builds on the work that is already being done nationally, regionally and locally around a low emissions future. This includes:

- Taranaki 2050 Roadmap and Tapuae Roa: Make Way for Taranaki.
- Other important documents such as the Proposed District Plan and Iwi environmental management plans.
- Alignment with government work and programmes.

CASE STUDY



Adapting to climate change at Rohutu

Rohutu Ahu Whenua Trust is working with NPDC and a Massey University research team on a collaborative project to help the Rohutu community adapt to the impacts of climate change.

The whenua at Rohutu is experiencing the impacts of coastal erosion from a changing climate and

several homes built within the past 60 years are at risk of storm surges or inundation.

“Our top priority is the safety of people living on the whenua in these at risk areas,” says a Rohutu Ahu Whenua Trust spokesperson, “we need to ensure everyone is safe from the impact of climate

change and that we also protect our whenua and our past as we adapt to a new way forward”.

The Rohutu Ahu Whenua Trust administers the Māori land freehold on behalf of the owners, and the work with NPDC and Massey University includes creating a plan to adapt to the short, medium and long-term challenges and opportunities for its whenua and those who live on it.

The project centres on creating positive outcomes for the people and whenua at Rohutu, and utilises a mixture of local, national and international experience in climate

change adaptation planning. The inclusion of Mātauranga Māori, local knowledge and scientific understanding will help progress the adaptation pathways.

“This project is a great opportunity to facilitate two way learning,” says the Trustee’s spokesperson. “The Trust, community and Council can learn from Massey, while at the same time the knowledge and insight from our people can contribute to the research team’s understanding of adaptation planning in Aotearoa.”

Aotearoa New Zealand's journey to lower emissions



New Zealand is part of the global fight against climate change.

In 2016, the Government signed the Paris Agreement, a global effort to reduce the effects of climate change by ensuring global temperature increase is limited to 1.5°C above pre-industrial levels.

In 2019, the Government passed the Climate Change Response (Zero Carbon) Amendment Act, which set a target of net zero emissions by 2050 for CO₂e emissions. The Act also set a target of reducing biogenic methane emissions by between 24% and 47% by 2050, compared with 2017 levels.

Government's plan to reduce emissions

Based on the advice from the Climate Change Commission, the Government developed the National Emissions Reduction Plan, published in May 2022.

Included in the plan, is an overview of the legislation, strategies and plans that 21 government agencies have written to influence reducing our emissions as a nation.

A snapshot of the National Emissions Reduction Plan can be found on the next two pages. When we finalise our district-wide Emissions Reduction Plan, we'll incorporate aspects of the Government's plan and initiatives in a way that ensures they're relevant to our district.

Emissions and global warming

New Zealand accepts the scientific evidence that underpins the Paris Agreement, a global legally binding agreement to act on climate change.

By signing the agreement, we joined 196 other nations which agree that to avoid the negative consequences associated with climate change, we must limit the increase in our global temperature to 1.5°C above pre-industrial levels.

Globally, temperatures have been rising for decades. This increase in temperature is referred to as global warming, and is caused by trapped gases building up in our atmosphere creating an environment that is warmer than previously.

Over time, the build-up of these trapped gases influence the rise in global temperatures, which contribute to changing our climate and creating weather events and patterns that we aren't used to.

Although much warmer conditions sounds appealing, our natural environment relies on our climate being stable. Temperature increases have many negative consequences for our way of life.

The gases that cause the greenhouse effect are referred to as emissions.

The most common emissions are carbon dioxide, nitrous oxide and biogenic methane. For simplicity of measurement, all emissions are grouped together as carbon dioxide equivalent, or CO₂e for short.

Aotearoa New Zealand's first Emissions Reduction Plan - a snapshot

Thriving households

WHAT'S UNDERWAY

- ▶ More than 1,100 electric vehicle (EV) chargers co-funded across Aotearoa with more to come.
- ▶ The Clean Vehicle package has helped triple monthly EV sales.
- ▶ The Warmer Kiwi Homes initiative helps fund heating and insulation upgrades for low-income households.
- ▶ The National Policy Statement on Urban Development to allow more housing close to urban centres and rapid and active transport routes.



WHAT'S COMING

- ▶ Most urban households to have access to a food waste collection service by 2030.
- ▶ All municipal landfills to have landfill gas capture systems by 2026.
- ▶ Zero-emissions public bus mandate established by 2025.

OUR GOALS

The total distance travelled by the light fleet (cars, vans, utes) is reduced by 20 per cent by 2035.

Zero-emissions vehicles are 30 per cent of the light fleet by 2035.

Improved insulation standards mean new buildings are warmer and drier and require 40 per cent less energy to heat.

Faster, frequent and convenient buses and trains and safe walkways and cycle lanes through our cities.



Enhanced nature

WHAT'S UNDERWAY

- ▶ Over 5,000 new nature-based jobs and support for planting native trees and restoring ecosystems.
- ▶ Aotearoa New Zealand Biodiversity Strategy is being implemented across the motu.



WHAT'S COMING

- ▶ Enhanced forestry planning and advisory services to be fully operational in 2023.
- ▶ Increased scale and reduced cost of native seedlings through improved technology use and management.
- ▶ Carbon Neutral Government Programme will use native forests to help sequester emissions from 2025.

OUR GOALS

Greater levels of native afforestation create long-term carbon sinks that benefit biodiversity.

Nature-based solutions are used to provide protection from the impacts of flooding.

Our native forests and the carbon they store are protected from the impacts of climate change.

Source: <https://environment.govt.nz/publications/aotearoa-new-zealands-first-emissions-reduction-plan/>

High-value exports and innovation



WHAT'S UNDERWAY

- ▶ He Waka Eke Noa, a partnership between government, industry and Māori to develop an agricultural emissions pricing system and prepare farmers for this change.
- ▶ Around \$200 million invested in agricultural emissions research has established the evidence base for new mitigation tools and technologies, capability and international leadership.



WHAT'S COMING

- ▶ Establish a Centre for Climate Action on Agricultural Emissions to get emissions reduction tools, practices and technologies into the hands of farmers sooner.
- ▶ Complete a pilot of farm-level accounting and emissions reporting by 2023.
- ▶ Agricultural emissions are priced from 2025.
- ▶ All farms have emissions reports by the end of 2022 and mitigation plans by 2025.

OUR GOALS

Aotearoa is one of the most sustainable producers of food and fibre in the world.

Farmers can access advanced mitigation technologies that support our pastoral farming systems.

Biogenic methane emissions from agriculture and waste are 10 per cent lower by 2030 and 24-47 per cent lower by 2050 (compared to 2017 levels).



WHAT'S UNDERWAY

- ▶ Multi-million-dollar co-investment in industry decarbonisation and economic growth.
- ▶ Mandatory climate-related risk reporting for listed companies and financial institutions.
- ▶ New Zealand Green Investment Finance to accelerate investment in our low-carbon future.
- ▶ End to new offshore fossil fuel exploration.

WHAT'S COMING

- ▶ Embed Te Tiriti, mātauranga Māori, and Māori aspirations in our research, science and innovation system through the Vision Mātauranga policy.
- ▶ Grow research and development spending across Aotearoa to 2 per cent of GDP by 2030.
- ▶ Use climate innovation platforms to drive the discovery and adoption of new clean technologies.
- ▶ Develop an energy strategy by the end of 2024.

OUR GOALS

Aotearoa has a circular economy with a thriving bioeconomy by 2050.

Half of all energy we use is from renewable resources by 2035.

Incorporating mātauranga Māori supports better decision-making throughout the climate response.



Source: <https://environment.govt.nz/publications/aotearoa-new-zealands-first-emissions-reduction-plan/>

CASE STUDY



Dr Cristiano Marantes, CE Ara Ake

Ara Ake

Ara Ake, New Zealand's future energy centre, supports the development and commercialisation of energy innovation through demonstration projects, sharing sector and

global insights, helping innovators and building connections.

Ara Ake supports communities across the motu to be energy resilient, with a current project allowing excess solar energy from a marae to be shared with local houses within the papakāinga.

"We are passionate about bringing all New Zealanders on the journey to a low emissions future," says Dr Cristiano Marantes, Ara Ake chief executive.

Ara Ake is also supporting communities with providing the tools and

direction to implement low emissions energy solutions. Actively nurturing talent of all ages, Ara Ake supports the EVelocity programme, the WITT Science and Technology Fair, and Taranaki Startup Weekend. Through partnering with WITT, a scholarship is available to energy students, with future third year students being offered the option of two energy courses.

Ara Ake also works with businesses – both small and large – on demonstration projects of new and emerging technologies. Projects such as, enabling WITT and Singapore-based Ecolabs

Centre of Innovation for Energy to develop a testbed at WITT's campus, and supporting Auckland-based start-up Emrod to pilot its world-leading, long-range wireless power transfer technology for the first time in an outdoor field demonstration in Taranaki.

Ara Ake casts its net globally to address New Zealand's unique energy challenges. Partnering with Hawaii-based Elemental Exceleator, allows our local talent to access international experts and mentors to share ideas.

CASE STUDY



John Snook, CE WITT

WITT

Leading the charge to reduce emissions and be carbon neutral by 2025, WITT CE John Snook knows a multi-pronged,

ambitious approach is needed. These ambitions are aligned with meeting the demand for a trained workforce required tomorrow and into the future.

WITT's role is to enable students to adapt and learn. "We need this workforce by 2030 and maybe sooner," says John. "WITT needs to teach students the skills they need today and provide pathways to future skills." These future pathways include working with Ara Ake on implementing energy saving technology at WITT for the Singapore-

based Ecolabs, through to upskilling construction students in sustainable building techniques.

"These partnerships not only illustrate the Team Taranaki approach; they are essential to being able to make the giant steps forward we need to meet our emissions reductions ambitions."

To enable this, John believes, requires accessible part-time education for full-time workers: "WITT's Qualify Me programme enables full time workers to get qualified faster by

taking their prior work experience into account."

WITT is working to position itself as a Centre of Vocational Excellence (CoVE) for Energy aligning with Canterbury and Victoria universities and appointing a Professor of Transitional Energy as it seeks to bring education of new technologies into the workforce and realise the strategy Te Korowai Matauranga o Taranaki - cloaking the entire rohe with knowledge.

Climate change and how it will affect our district

Our district's emissions

How Taranaki's climate could change

It's difficult to predict exactly how our climate will change in the future.

To help understand the potential changes, scientists use four main global emissions scenarios ranging from low to high greenhouse gas concentrations. The lower the greenhouse gas concentration, the less severe the changes are projected to be.

Below are the 2090 projections for Taranaki from a low emissions to a high emissions future. Projected changes are relative to 1995 levels, and the values capture the range across all four scenarios.

Projected changes to Taranaki's climate by 2090



Spring

- 0.6°C to 2.7°C temperature rise
- 2% to 3% more rainfall



Summer

- 0.6°C to 3.3°C temperature rise
- 1% to 2% more rainfall



Autumn

- 0.7°C to 3.2°C temperature rise
- No change to 4% more rainfall



Winter

- 0.7°C to 3.1°C temperature rise
- 5% to 9% more rainfall

Source: Ministry for the Environment – Climate change projections for the Taranaki district

What could this mean for our district?

More rainy days and sunny days may not sound too serious, but our natural environment relies on our climate being stable.

Here are some of the impacts New Plymouth may experience as our climate continues to change:

Coastal hazards - Potential increased risk to coastal roads and infrastructure from coastal erosion and inundation. There could be an increase in storm events and sea-level rise, which could threaten our low-lying areas.

Erosion and landslides - More frequent and intense heavy rainfall events are likely to increase the risk of erosion and landslides. Flooding is likely to become more frequent and severe.

Drought - By 2090, the time spent in drought ranges from minimal change through to more than double, depending on the climate model and whether a low emissions or high emissions scenario is considered. More frequent droughts are likely to lead to water shortages, increased demand for irrigation and increased risk of wildfires.

Disease - Warmer winters may alleviate cold-related illnesses and reduce cold-related deaths, while hotter summers will likely cause heat stress and encourage the spread of sub-tropical diseases.

Biosecurity - Warmer, wetter conditions could increase the risk of invasive pests and weeds. Climate change can adversely impact important ecosystems.

Agriculture - Warmer temperatures, a longer growing season and fewer frosts could provide opportunities to grow new crops. Farmers might benefit from faster growth of pasture and better crop growing conditions. However, these benefits may be limited by the likes of prolonged drought or greater frequency and intensity of storms. Competition for water may increase, and there might be greater stock losses because of more extreme events.

To find out more about how climate change may impact the region, see: [Climate / Taranaki Regional Council \(trc.govt.nz\)](https://www.trc.govt.nz/Climate)

Adapting to changes in New Plymouth's climate

We understand that the changes to our climate we are already experiencing, and are projected to experience means it is important that as a district that we are resilient to emerging conditions.

NPDC is actively assessing these risks and developing a draft district-wide Climate Adaptation Plan, due for consultation in 2023.

Reducing our emissions now will mean there is less warming for future generations to deal with. Check the NPDC website for more information on NPDC's plan for climate change adaptation.

Having a starting point

To successfully lower our emissions, we need to know where we're starting from – in other words, having a baseline – before we can develop a plan to tackle the emissions.

This means that in the future, when we measure our emissions against the baseline, we'll be able to see what is and isn't working.

Using the 2017/18 year as the baseline, NPDC worked with the South Taranaki and Stratford District Councils to develop an emissions inventory, which lists the emissions our region and districts produce.

Following the Ministry for Environment's reporting method, emissions are counted where they are produced, not where they are consumed. Therefore, the oil and gas and dairy products that the region produces count towards the region's emissions, despite them being consumed around the country and internationally.

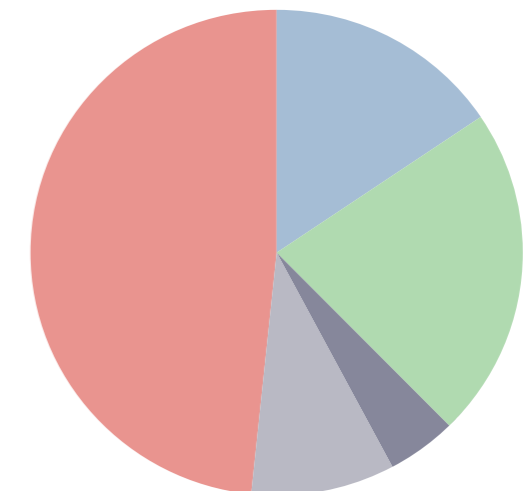
"Taranaki had one of the highest emissions intensities across regions as it produced 639 tonnes of emissions per million dollars of GDP and 50 tonnes of emissions per person." - Stats NZ.

New Plymouth District's emissions inventory 2017/2018

The pie graph below shows the activities that produced emissions in the New Plymouth District in 2017/18 and in what proportions.

New Plymouth District Emissions 2017/18

Energy	16%
Transportation	22%
Waste	4%
Industrial	10%
Agriculture	48%



New Plymouth's emissions inventory at a glance

During the 2017/18 year, New Plymouth District produced:

- Gross: 1,776,478 tonnes of CO₂e (carbon dioxide, nitrous oxide and biogenic methane combined).
- Net: 1,563,630 tonnes of CO₂e.
- Offset: 212,848 tonnes – the difference between gross and net emissions. This shows that our plants and trees are offsetting some of the emissions.

The district's contribution to the region's emissions

New Plymouth District contributed 38% of Taranaki's gross emissions in 2017/18.

Activities producing the top three emissions volumes in the New Plymouth District:

1. Agriculture 48%
2. Transport 22% (including 14% road transport).
3. Energy production 16%.

Reducing our district's emissions



A combined community-wide effort is needed to reduce New Plymouth's emissions.

Through the draft district-wide Emissions Reduction Plan, we're asking the New Plymouth community how emissions across the district can be reduced. This can range from simply changing behaviours through to large scale innovation by industry and new government policy.

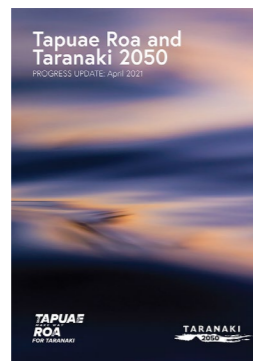
NPDC will do its part to advocate for the district and listen to the community when planning for infrastructure and services, but everyone will need to work together to lower emissions.

What's under way?

As a region, we've done the mahi around planning our transition to a low emissions future. There are a range of initiatives under way, some of which are listed, below:

Taranaki 2050 Roadmap and Tapuae Roa

In 2020, the Taranaki 2050 Roadmap and Taranaki's existing economic development strategy, Tapuae Roa: Make way for Taranaki, both facilitated by Venture Taranaki Trust, were combined to form a single, consolidated and prioritised work programme underpinned by a regional vision, which is:



"Ensuring a just transition to a resilient, high-value, low emissions economy, built on inclusivity and sustainability."

Key thematic priorities of the Taranaki 2050 Roadmap / Tapuae Roa are:

Skills, Entrepreneurship and Innovation – Interventions to address high levels of education deprivation, develop a future-focused workforce, and build an effective regional innovation and entrepreneurship ecosystem.

Industry Transformation – Progressing the low emissions and sustainable transition of key sectors, particularly in energy and food and fibres, as well as leveraging technologies and fostering niche sectors of the future.

Progressive Communities – Inclusive support for communities to ensure an increase in intergenerational wellbeing, the development of a smart economy, meaningful jobs, and lower emissions across the region.



Opportunities for sustainable behavioural change

Sustainable Taranaki has run a Behavioural Change Survey for the past couple of years, and the results provide an insight into how respondents prioritise sustainability.

Some insights from the 2022 survey showed us:

- Food sustainability and water use have become more important since 2020, with more knowledge on water use.
- The community values sustainability and intends to do more.
- Minimising waste, sustainable gardens, and clean transport are the top personal commitments.
- Reliability and longevity of the product is a top consideration when buying goods.
- Cost is the most important barrier, followed by convenience, then lack of knowledge about what is available.
- Affordability is the top motivator to change, followed by feeling good about helping the environment, then saving money in the long term.

These results show that there are opportunities to increase participation in low emissions activities if the motivators and barriers are considered by policy makers, businesses and community groups.

CASE STUDY



Taranaki 2050 and Tapuae Roa

In 2019 Venture Taranaki with the people of Taranaki created the Taranaki 2050 Roadmap. People of Taranaki said their vision for Taranaki includes:

- A strong, sustainable environment;
- Education options that move and flex with a changing world
- Attractive jobs
- A lifestyle similar to the one we enjoy now
- Leading the way in sustainable, low-emissions energy



Sustainable Taranaki

Sustainable Taranaki's mission is to educate, inspire, and enable our community to protect, preserve and enhance our natural environment. It wants to harness the power of the community's close connections in their

practical programmes and education. The establishment of the Marfell Community garden shows what can be achieved when a community comes together. The community has seized on

- A region that looks out for and cares for itself and its people
- In 2020 the Taranaki 2050 Roadmap joined with Tapuae Roa, the region's economic development strategy, to create a joint action plan, which Venture Taranaki now coordinates and reports on. Nga Kaiwhakatere o Taranaki – a group of regional leaders across local government, iwi, business, unions, community, education and central government – leads the delivery of the actions established through Tapuae Roa and Taranaki 2050. Venture Taranaki, as the regional development agency, supports the facilitation and co-ordination.

food resilience with huge interest in the Sustainable Backyard Trail and the added benefits of getting families outside and connecting.

"Everyone has barriers and limitations so no one-size-fit-all when it comes to supporting the community to become more sustainable," says Sustainable Taranaki behaviour change lead, Alexandra Vernal.

Motivators are different for everyone. Growing food for your whanau, learning new skills, enjoying the outdoors and the health benefits of being active are all good reasons to participate.

"Many of the diverse actions identified throughout have the potential to deliver direct emissions reduction, with others supporting and resulting in indirect reductions also. Collectively these will contribute lasting and significant impacts as part of our transition to a low emissions, high value economy," says Kelvin Wright, Venture Taranaki Chief Executive.

Sustainable transport also generates lots of interest and is responding by piloting new ideas. A recent car-pooling pilot with Taranaki District Health Board (TDHB), where car parking spaces on site were reserved for carpooling participants, showed how much can be achieved when employers get on board to support staff.

Sustainable Taranaki offers useful education and advice for individuals and business to make a start in sustainability. See <https://sustainabletaranaki.org.nz> for more.

Environmental sustainability in New Plymouth

These activities, led by various community groups, businesses, not-for-profits, as well as NPDC, can help reduce emissions in our district right now.



Getting around

- Link Car Sharing App
- Blip Scooters
- Bee Card
- Citylink Bus
- Connector Bus
- ChargeNet EV charger, New Plymouth
- New Plymouth Walkways



Buildings and energy

- Warmer Kiwi Homes programme
- Revive Building Recyclers
- Building Traders Second-hand Building Supplies
- Planning for urban form and integrated travel
- Ara Ake community energy projects
- 2021 Building Code update
- Developing biofuels



Advocacy

- Climate Change Commission
- EECA – Energy Efficiency and Conservation Authority
- He Waka Eke Noa – Primary Sector Climate Action Partnership
- Sustainable Taranaki
- Enviro Schools
- H2 Roadmap
- Zero Waste Taranaki



Government

- National Emissions Reduction Plan
- Natural and Built Environments Plan
- Climate Change Response Act
- Building for Climate Change programme
- Climate Adaptation Act
- Local Government Act
- National Planning Standards
- Three Waters reform
- Carbon Neutral Government Programme
- Clean car discount/standard
- Waka Kotahi
- One Billion Trees Programme
- New Zealand Infrastructure Strategy
- Trees That Count



Community initiatives

- Electricarna
- Taranaki Farmers Market
- Sustainable Taranaki
- Wild for Taranaki
- Sustainable Backyards
- Waste Education at The Junction
- Community Gardens
- Let's Compost
- Impact Programme
- Waste-free parenting
- I Love Public Transport
- Bring it take-away packaging
- Bike Kitchen
- On the House



Shared economy

- Again Again cup borrowing
- Uber
- Carpool carparks
- Crop swaps
- Airbnb
- Seed savers



NPDC

- Climate Action Framework
- Let's Go education and active travel infrastructure
- Let's Go bike skills for schools and early childhood education
- Proposed District Plan
- Integrated Transport Plan
- City Centre Strategy
- Planting our Place
- Zero Waste 2040
- LED streetlights
- Emulsion bitumen
- Electric rubbish trucks
- Resource Efficiency + Emissions Policy (internal)
- The Junction
- EV fleet renewal project
- Sustainable Homes assessment
- Wai Warrior campaign
- Water conservation project
- Universal water metering
- Responsible Investment Policy
- Thermal dryer project
- Community orchards
- Recycling bins in the community
- Environmental Sustainability Policy (internal)

What other existing initiatives could be added?

Tell us more

We've made a start by gathering together the list above, but we know that's not everything. What else can we add?

Let us know at www.npdc.govt.nz/haveyoursay



Co-benefits of reducing emissions

We know many of us are motivated to do the right thing by the environment, but what else is there to be achieved?

We now know that activities that reduce emissions come with a host of benefits for everyone and not just the environment.

Active travel

- Less congestion on our roads as fewer people take their cars.
- Improved health and wellbeing benefits from being outside in the fresh air.
- Better social connections in the community as people carpool, take public transport or kids get to school in a walking bus.
- More carparking spaces available for those who need them.
- Improved air quality.
- Fewer vehicle traffic accidents.
- Less money spent on fuel and car ownership
- Less public money spent on maintaining roads and highways.

Water conservation

- Less money spent on treating our water.
- Fewer seasonal water restrictions.
- Less money spent on increasing capacity of the water network.

Zero waste

- Less money spent on new materials.
- Less land used for landfill.
- Less odour from landfill.
- Fewer services required to collect and process waste.

Planning and building

- Homes and facilities cheaper to run.
- Materials easy to reuse and recycle.
- Healthier indoor environments for us to live and work in.
- Better access to amenities and transport links from our homes, schools and workplaces.

Measuring progress and staying on track

The Government has set an emissions reduction target for New Zealand to reach, and we have the data from the emissions inventory to set a baseline to start from. But how will we know if our actions are working?

A vital step will be for the Government to provide a measurement framework, which will be flexible enough to take into account emerging opportunities and technology that helps reduce emissions.

Measurement will help us to:

- Understand if actions are effective and are resulting in emissions reductions.
- Identify other benefits for our community.
- Identify any gaps in our plans.
- Identify actions that are underperforming.
- Ensure actions are promoting a fair transition.
- Find new ways of working.

CASE STUDY



Jen Natoli, E tū Team Leader

E tū

New Zealand's biggest private-sector union, E tū, develops workplace leaders to organise their workmates to win better lives. E tū also trains delegates to provide

members with workplace representation, supported by legal advice, a free phone support centre, education on work rights and other services as well as a political voice. Now, more than ever, workers need to be enabled to engage actively in changes they face at work and what work will look like for generations to come.

Climate Change will mean changes to jobs, goods and services and E tū recognises this is an unsettling time for both businesses and employees. However, the union movement has a long history of engaging workers to design and

lead change to guide organisations through transformations and is the reason there is a Just Transition.

Organisations need to plan to adapt to the effects of a changing climate and those plans start with workers. A changing climate means collaboration about the effects of heat and disruption to production/logistics through major weather events.

The union movement is highly experienced in dealing with change, such as automation and labour rights, and climate change presents another challenge to

overcome. Businesses and their employees need to engage early to prepare. "Justice comes when you ask employees what they want," says E tū Team Leader Jen Natoli. Early collaboration between staff and businesses includes a roadmap that could reassess the relevance of what they produce in a low-emissions economy. Employees can also prepare to re-skill in emerging technologies and products.

CASE STUDY



Carmen Castro and Joop Verbeek, IncaFé

IncaFé Organic Coffee

IncaFé is an award-winning organic specialty coffee producer importing coffee and organic products, such as raw cane sugar and drinking chocolate directly from growers, mostly in Peru. Run by Carmen Castro and Joop Verbeek in New Plymouth, it has won numerous

awards including the TSB Business Excellence Award for Environmental Excellence in 2020.

IncaFé is a Toitu Carbon Zero company, certified organic and Fairtrade, too.

"Becoming carbon positive hasn't been difficult. IncaFé has

actually been carbon zero certified since 2008, but only started promoting it just three years ago", says Joop.

The process began with looking at their emissions through their financial accounts. Joop believes that well over 90% of emissions can be captured through gas, freight, petrol/diesel and electricity bills. "One third of IncaFé's emissions are from the containers we receive each year. We can't get rid of all our emissions (yet) so we double offset and are now climate positive."

Joop wants to further cut the company's carbon footprint with new technology.

He says the Government could help businesses by having emissions reporting as part of their tax returns rather than having a separate certification. "Buying carbon credits is not overly expensive and if smaller companies like IncaFé can do it then bigger companies can try as well," says Joop.

Reducing NPDC's emissions



Our Climate Action Framework ensures climate change is considered in all NPDC's key plans, operational processes and reports.

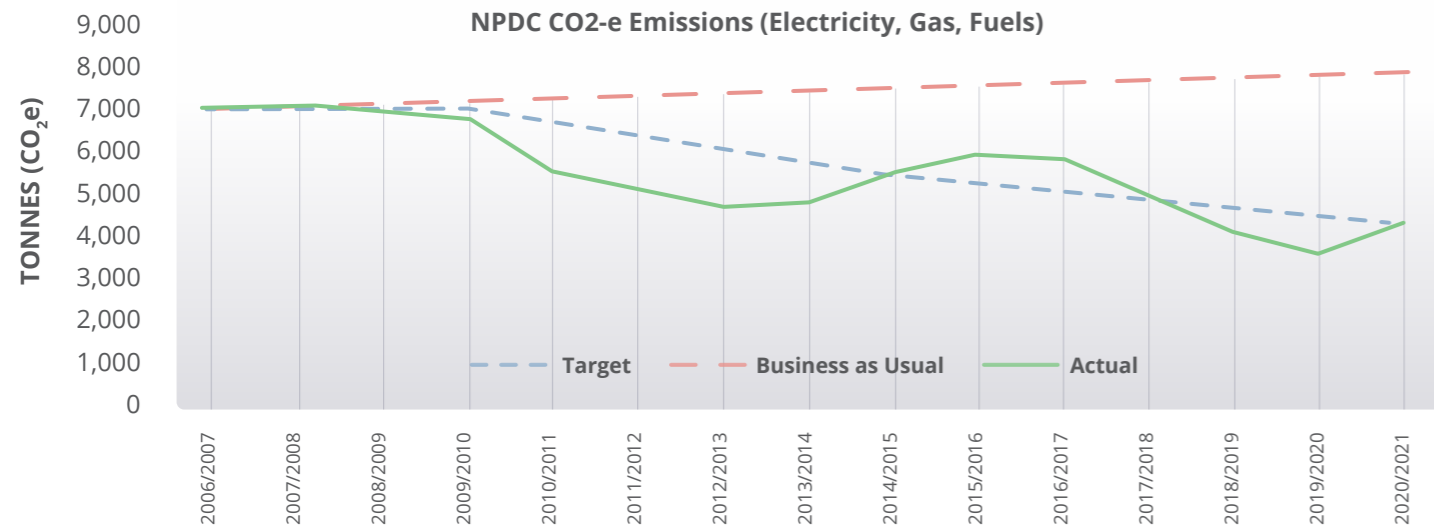
Like other organisations, NPDC creates emissions from its everyday operations. We want to reduce our emissions and are actively working on ways to do this.

In addition, we've had an emissions inventory developed that specifically evaluates the emissions NPDC creates and can control. The results of this work and our options to further tackle the organisation's emissions are explained in the next section.

Energy use at NPDC

Our Energy Management Team was set up in 2006 and since then has added managing carbon to its aims. This team reviews every asset to ensure that our facilities are running as efficiently as possible. Emerging technology and analysis of data has ensured that NPDC has achieved considerable energy and emissions reductions.

The diagram below shows that despite 30% population growth and the addition of facilities such as the Len Lye Centre and water infrastructure across the district, the operations teams has managed to drive down energy use and emissions.



CASE STUDY



Craig Stevenson, CE NPDC

LED streetlights

NPDC made the switch from older, mainly sodium-vapour street lights to newer, more efficient LED technology in a bid to save money and emissions.

The project to replace more than 9,000 street lights began in 2015 and was completed a year ahead of schedule and \$1.83 million under budget.

"LED street lights are the best option for our district's local roads", says NPDC Chief Executive, Craig Stevenson. "They're fantastic value for money and will save the district \$6.5 million over 20 years", he adds.

NPDC manages all the street lights in the district, including the under-veranda lights in the CBD and shopping areas. The district has almost 9,500 street lights across local

roads, state highways and in our parks.

"These lights are significantly better for the environment and are very reliable with an average life of 20 years," says Stevenson.

The 'invest-to-save' initiative exceeded expectations and makes a tangible difference to cutting emissions in the district.

When the options for replacing street light technology were reviewed, the savings offered by LED in both emissions and cost made it a win: win decision for the district.

The low emissions work continues on other projects, too, as NPDC staff start to include low emissions options to help inform decision making across NPDC's project.



Some of the initiatives that have helped us to reduce energy use and emissions.

Mechanical dewatering of the Wastewater Treatment Plant

We've reduced gas use by 25% compared with 2006 levels, even though the plant processed 50% more water. Conversion to bioreactors in 2012 achieved a further 18% reduction in energy use.



Civic Centre energy management

Renovations to the Civic Centre allowed NPDC to reduce electricity by 49% and gas use is down 66%.

Landfill and food waste electric trucks

NPDC has six electric recycling and food waste trucks. Over the vehicle lifecycle, this fleet achieves reduced emissions of 60% compared with internal combustion engine vehicles.



Minimising road maintenance emissions

Switching to emulsion in road resealing

NPDC successfully saved 367 tonnes in 2019/20 through switching from cutback bitumen to emulsion.

NPDC's emissions inventory

We've developed an emissions inventory for NPDC using the 2017/18 year - the same year as the New Plymouth District inventory. This baseline year enables both council and community to work together on reducing emissions.

NPDC's emissions across its assets and activities are largely made up of waste, gas and fuel.

There have been some changes in the way NPDC operates since 2017/18, mainly the Colson Road Landfill, which has closed. This means waste is now trucked to a landfill outside of the district. As the owner of the Colson Road Landfill, NPDC is responsible for the emissions that continue to be released.

Like any inventory, our emissions inventory is a snapshot in time. We have since accounted for operational changes and our actions will reflect this. When the inventory is updated, any future changes will similarly be taken into account.

When we exclude landfills from NPDC's emissions, the categories reflect more typically of most organisations. That is, our Scope 3 emissions (emissions from purchased goods and services) are the largest proportion.

Emissions

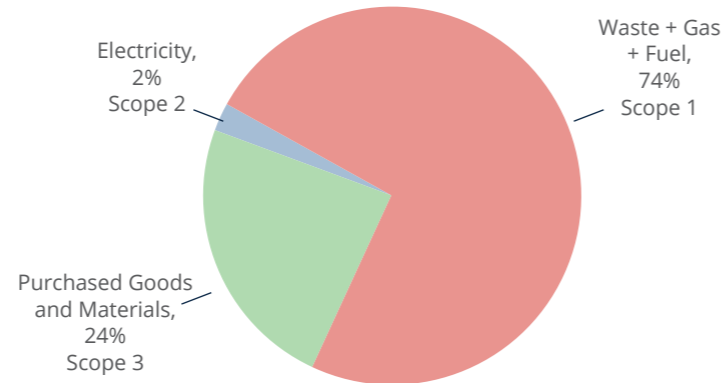
There are three categories of emissions.

Scope 1 - Covers emissions an organisation makes directly, e.g. running boilers and vehicles. For NPDC, our landfills generate the most Scope 1 emissions.

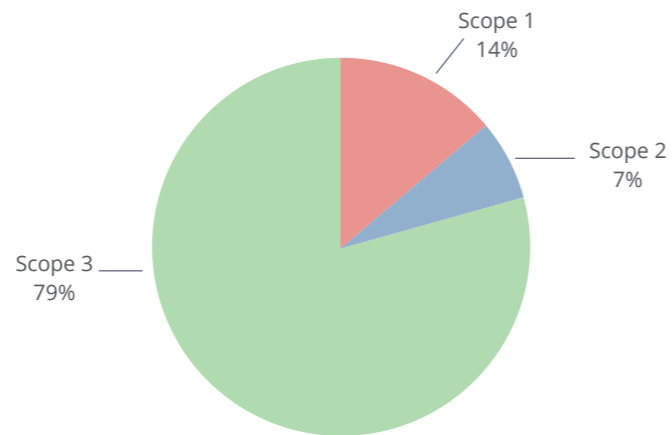
Scope 2 - Emissions organisations are responsible for indirectly, from the use of grid supplied energy.

Scope 3 - Emissions from the supplies an organisation buys, and then when their customers consume their goods and services.

NPDC Emissions Inventory 2017/18



Emissions by scope excluding open and closed landfill emissions

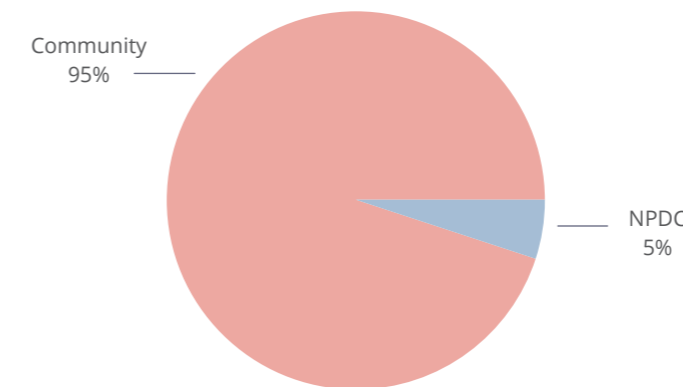


NPDC's contribution to the district's emissions

Comparing NPDC's emissions with the district's emissions

Although NPDC represents only 5% of the district's total emissions, we have an important role in helping the community reduce overall emissions. This includes advocating for the district, providing infrastructure that helps the community make low emissions choices, and helping people make behavioural changes to reduce emissions. However, we still need to address our own emissions.

NPDC proportion of district emissions 2017/18



Committed actions

Here are some of the projects we have committed to in our current Long-Term Plan that will have a positive effect on reducing NPDC's emissions.

- Commercial waste sorting facility, to divert wood waste from landfill.
- New organic waste processing facility.
- Road maintenance conversion to emulsified bitumen.
- New Plymouth Wastewater Treatment Plant thermal dryer upgrade.
- New Plymouth Wastewater Treatment Plant aero strip diffuser replacement.
- New Plymouth water conservation programme.
- Switching fuel from gas boilers at Len Lye Centre, Puke Ariki, Civic Centre as well as Inglewood and Waitara Pools.

Upgrade to the thermal dryer

NPDC has secured \$37 million of Government funding to upgrade the thermal dryer to run on a blend of natural gas and green hydrogen. Once complete, the upgrade is forecast to reduce NPDC's emissions by approximately 13,300 tonnes over the next 20 years.

NPDC's potential emissions reduction actions



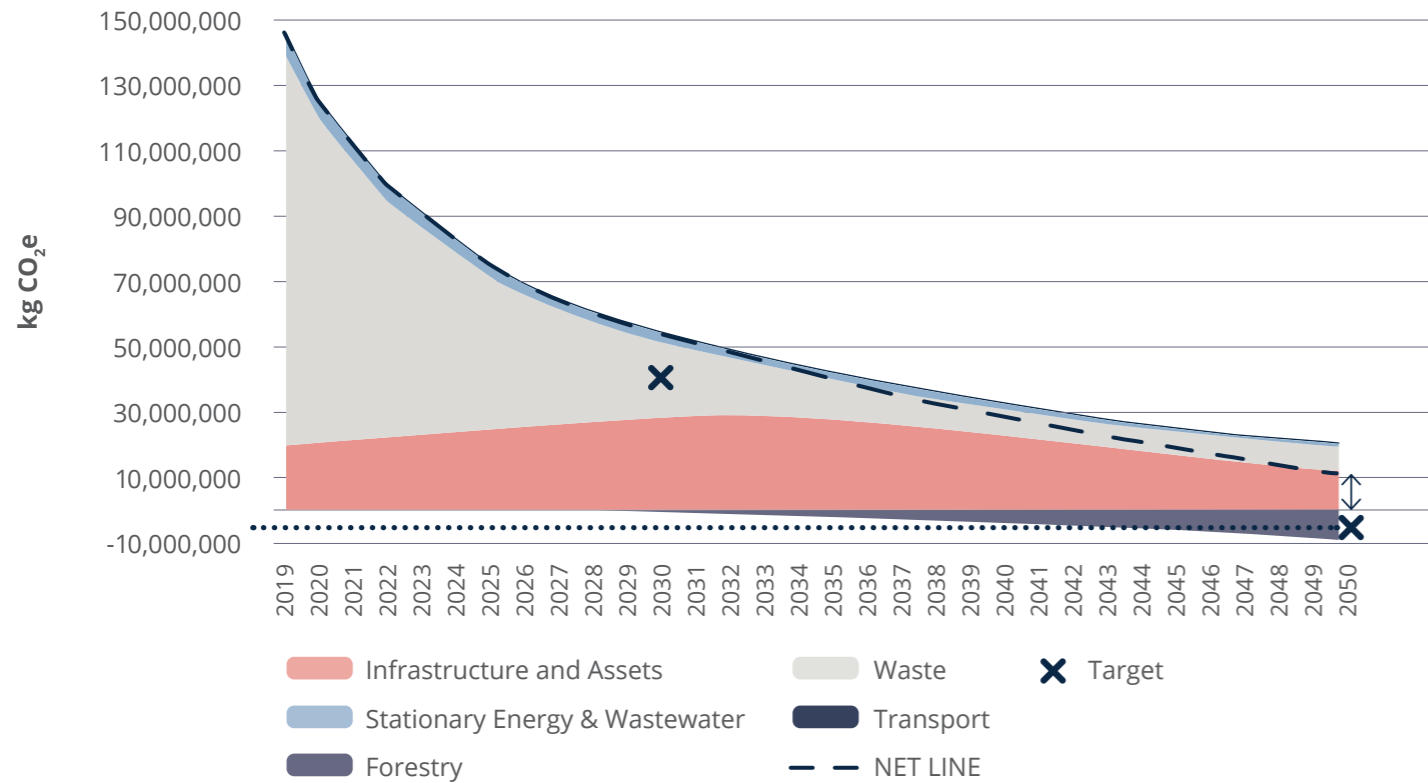
It will be a challenge to reach net zero emissions

We needed to know how far our planned actions would take us and what else we need to bridge the gap to lower organisational emissions. To understand this, and to be clear on what costs and barriers we had to deal with, we needed data that was evidence-based.

NPDC worked with sector decarbonisation specialists to analyse our operations. They formed a team with our staff and operations managers and, for a start, found out how far our planned actions would take us to our target.

NPDC committed actions

Emissions projection scenario: Committed actions only



Reading this graph

The wide grey band is emissions from our waste processing and landfills.

The X represents New Zealand's 2030 and 2050 emissions targets.

The dotted black line is the net line, which takes into account the offset from planting trees.

What does this mean for NPDC reaching net zero emissions by 2050?

This graph clearly shows we will not meet requirements for net zero emissions by 2050 through our committed actions only.

It also shows that if we're to reduce our emissions further, the best place to start is in our infrastructure and assets, and in waste and closed landfill.

Two key actions NPDC can take to make a difference

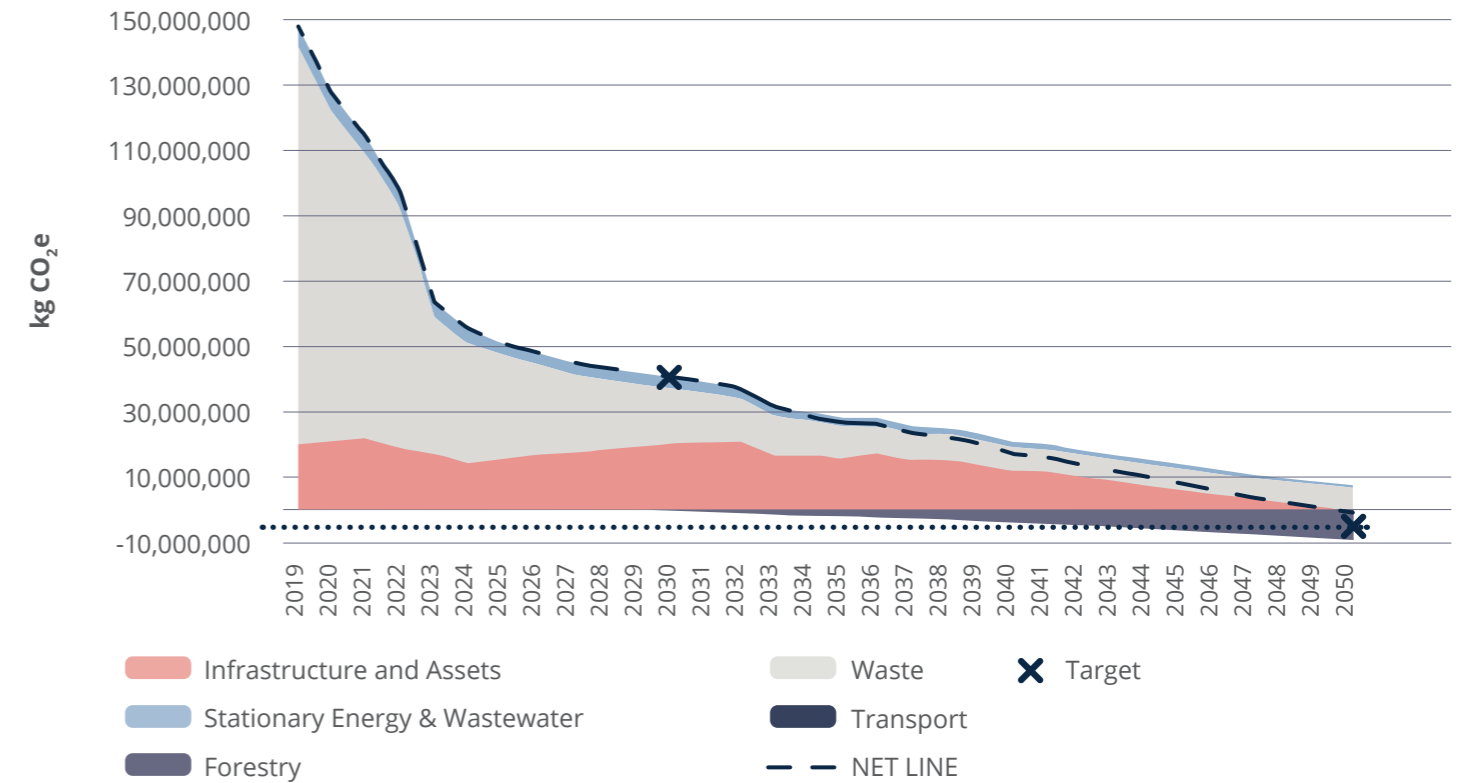
There are two major opportunities to reduce NPDC's most significant emissions in waste and infrastructure:

1. Complete the implementation of the Landfill Gas Capture system at the Colson Road Landfill. The estimated cost is \$600,000, with an estimated emissions reduction of 26-40%.

2. Implement an infrastructure decarbonisation programme to design, build and manage future NPDC assets according to low carbon principles. The estimated cost is \$200,000, with an estimated emissions reduction of 42%.

By implementing these projects, the graph changes to look like this:

Emissions projection scenario: Committed actions & Landfill Gas Capture improvements & infrastructure decarbonisation



As the graph shows, the reduction in emissions from these two major actions get NPDC closer to net zero emissions, but not quite there.

Additional actions are needed.

However, there are still lots of ideas we can consider to help reduce NPDC's emissions further.

Here is a look at the full list of committed and potential actions that could reduce NPDC’s organisational emissions. Some of these opportunities need further investigation to understand the potential emissions reductions, as well as the cost to implement. Actions we are committed to through our current Long-Term Plan are noted in blue.

Category	Action
Waste	Commercial waste sorting facility, to divert wood waste from landfill
	Green waste collected and diverted from landfill
	Collect commercial food waste
	Encouraging participation in home food waste collection from 35% to 50%
	New organic waste processing facility
	Colson Road Landfill Gas Capture efficiency improvements
Infrastructure and assets	Waste collection fleet conversion to 100% battery electric vehicles
	Road maintenance conversion to emulsified bitumen
	NPDC road maintenance bitumen to include recycle plastic additives
	Decarbonised infrastructure programme (20-30% emissions reduction)
Stationary energy and wastewater	Todd Energy Aquatic Centre: heating fuel switch and solar PV system
	Inglewood Pool: gas boiler replacement
	Inglewood and Waitara pool heating fuel switch
	Waitara Pool: gas boiler replacement
	NPDC Civic Centre and Len Lye Centre: heating fuel switch
	Puke Ariki: cooling tower replacement with chiller
	New Plymouth Wastewater Treatment Plant: aeration diffuser upgrade
	New Plymouth Wastewater Treatment Plant: aerostrip diffuser replacement
	New Plymouth Wastewater Treatment Plant: thermal dryer upgrade
	New Plymouth water conservation programme
Transport	NPDC fleet renewal project to EV
	NPDC non-pool fleet conversion to plug-in hybrid electric vehicles
Community wide	Integrated Transport Plan (in development - excluded from NPDC projections)
	Planting Our Place - planting 34 hectares of NPDC land with native forest

Save money and emissions

We needed to understand what emissions could be reduced and how much these solutions would cost to implement.

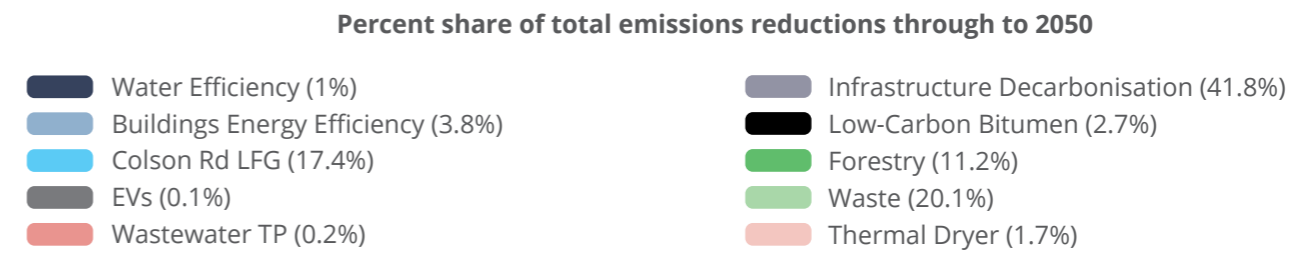
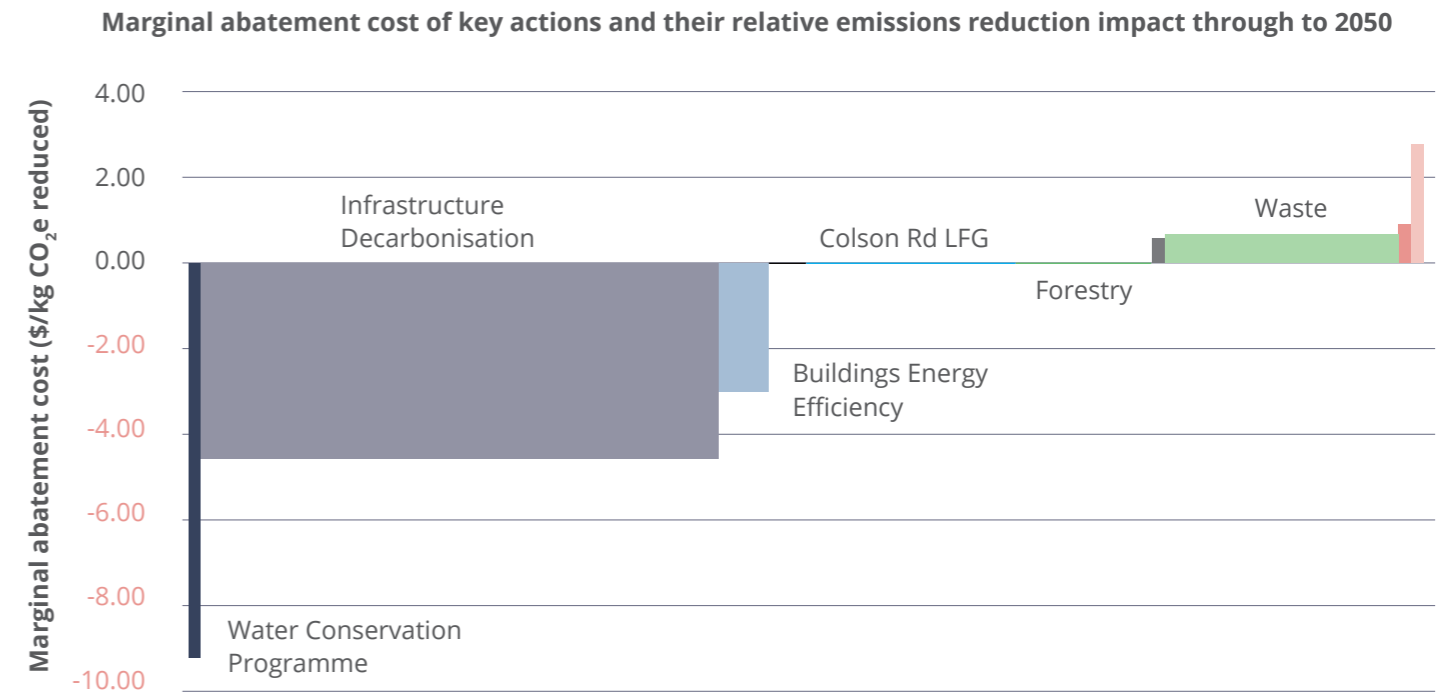
Using high level cost estimates for these actions and the emissions forecast to be saved, we can establish value for money comparisons between solutions.

The following diagram shows that there are actions that both save money and reduce emissions, such as infrastructure decarbonisation and water conservation.

There are also actions that are low in cost but achieve significant emissions savings, such as the Landfill Gas Capture system.

Then there are actions that are more expensive to implement and have fewer emissions savings but may deliver other significant benefits.

This information will contribute to helping us decide which actions to prioritise. In the future, we can update the analysis with emerging factors such as carbon pricing, inflation or shipping costs.



Reading this graph

The width of the columns indicates the volume of emissions reduced by the action.

Actions below the line will save NPDC money, once implemented. The length of the column indicates the potential cost saving.

Actions that show little-no column and sit on the 0.00 line are cost neutral once implemented.

Actions that sit above the line will cost money.

Developing a measurement framework

We need to create a measurement framework to stay on track until we meet net zero emissions by 2050. Our measurement framework will incorporate:

- Actions we are undertaking and how much carbon we expect to save.
- Measurement of carbon savings over time.
- Other benefits the actions deliver.
- Impacts on other systems, such as the economy and the environment.
- Measurement of carbon reduction potential of committed/potential actions.
- Costs or difficulty expected in implementing the actions.

Next steps for reducing NPDC's emissions

Ideas we think will help reduce emissions will be investigated to test whether they meet our expectations. These include:

Developing ideas into business cases to confirm our assumptions and their ability to help us achieve targets.

Conducting feasibility studies into additional emissions reduction opportunities as they arise, to ensure NPDC is taking advantage of emerging technology.

Reviewing and prioritising projects in relation to NPDC's annual or long-term planning cycles.

Key insights

NPDC has some potential pathways to help reduce its organisational emissions.

The infrastructure decarbonisation programme not only saves the most emissions but also saves money.

Other high emissions saving projects, such as the Landfill Gas Capture project can be delivered for a comparatively low cost.

The cost benefits or savings associated with our actions are likely to be greater when the Government extends financial penalty schemes on emissions. It's also expected that the prices for fossil energy, such as natural gas, will rise in future.

What's next?

Consultation is now open on this draft district-wide Emissions Reduction Plan. We welcome feedback from anyone in the New Plymouth District.

This draft Plan is the first step in an iterative process. We want to know what you think. For example:

- Do you think we have the balance right with our planned climate action, or would you like us to do more?
- In what ways do you want Council to support the community to lower their emissions?
- What do you think about the potential pathways for Council to reduce operational emissions?

We want to hear from you

You can provide feedback in a number of ways:

- Attend one of our Zoom Hui's, for details see NPDC climate response webpage: www.npdc.govt.nz/community/a-greener-district/climate-response/
- Visit the Have Your Say webpage: www.npdc.govt.nz/haveyoursay
- Email: submissions@npdc.govt.nz
- Write to: Climate Response, Reply Paid NPDC, DX Box NP90081, New Plymouth
- In person meeting, by request.

Please provide your feedback by Friday 29 July 2022

What's next?

Following feedback, the draft district-wide Emissions Reduction Plan will be workshopped with Council, before being finalised and adopted in either late 2022, or early 2023.

Please note this draft district-wide Emissions Reduction Plan builds on the work that is already being done nationally, regionally and locally around a low emissions future. This includes:

- Taranaki 2050 Roadmap and Tapuae Roa: Make Way for Taranaki.
- Other important documents such as the Proposed District Plan and Iwi environmental management plans.
- Alignment with government work and programmes.

Glossary

Term	Definition
Aotearoa New Zealand's 2050 target	Net zero emissions of all greenhouse gases (except biogenic methane) and biogenic methane emissions reductions of 24–47 per cent below 2017 levels.
Active travel	Walking, cycling and other non-motorised forms of travel.
Adaptation	Efforts to respond to a changing climate.
Baseline	Data or information that serves as a basis for comparison.
Bioenergy	Fuel produced from plant or animal waste.
Biogenic methane	Biogenic methane is made in different ways by natural processes involving plants and animals. As a greenhouse gas, methane is 25 times more potent than CO ₂ and dominates emissions from waste and agriculture. Human activities create additional methane emissions that otherwise would not have occurred naturally (such as through decomposition of organic waste in landfills).
Carbon dioxide equivalent (CO₂e)	Used to describe and compare different types of greenhouse gases, by comparing their warming potential to that of CO ₂ .
Carbon sequestration/sinks	Any reservoir, natural or otherwise, that absorbs more carbon than it releases, thereby lowering the concentration of CO ₂ in the atmosphere. Examples include vegetation, forests, peatland and the ocean.
Climate Change Commission	An independent crown entity that provides evidence-based advice to the Government, to help Aotearoa move to a climate-resilient, low emissions future.
Climate Change Response (Zero Carbon) Amendment Act 2019	This Act sets a framework for emissions targets: reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050; and reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030.
Decarbonisation	The term used for removal or reduction of carbon dioxide output into the atmosphere.
Emissions	Greenhouse gases, especially CO ₂ , released into the atmosphere, where they trap heat or radiation.
Emissions inventory	A database that lists, by source, the amount of greenhouse gases discharged into the atmosphere during a given time period.
EV	Electric vehicle.
Fossil gas	Commonly known as natural gas. The term 'fossil gas' is used to distinguish methane from the lithosphere (under the ocean floor or on land) from methane from the biosphere (animal and biological waste). See biogenic methane.
Global emissions scenarios	Plausible future development pathways of human greenhouse gas emissions.

Term	Definition
Greenhouse gases	Gases in the atmosphere that trap the sun's heat by preventing it from leaving the atmosphere. Common greenhouse gases include water vapour, CO ₂ , methane and nitrous oxide.
Gross emissions	Total greenhouse gas emissions from all sources.
Landfill gas	Landfill gas, a by-product of decomposing organic waste in landfills, mainly composed of biogenic methane and CO ₂ .
Landfill gas capture	The process used at modern landfills to capture landfill gas, which is then used for energy or flared.
Top 10 Korero	Consultation on 10 topics which were important to NPDC's Long-Term Plan. Climate response was one of these topics.
Long-Term Plan	NPDC's 10 year plan which sets the direction for Council investment and is formally reviewed and updated every three years. The plan includes details of the activities Council will undertake, how they will be managed, delivered, and funded.
Mahi	Work or an activity.
Marginal abatement cost curve	A figure presenting the costs or savings expected from different opportunities, alongside the potential volume of emissions that could be reduced if implemented.
Mitigation	Efforts to reduce or prevent emissions.
National Emissions Reduction Plan	Released by the Government in May 2022, the plan outlines the policies, strategies and plans Government will use to reduce and remove emissions, in order to meet each emissions budget, and the target of net zero emissions by 2050.
Net emissions	Total emissions minus activities or assets that remove greenhouse gases from the atmosphere such as tree planting.
Net zero	In Aotearoa New Zealand this means completely negating the amount of greenhouse gases, produced by human activity (except biogenic methane) by 2050. This can be done by balancing emissions and removals of greenhouse gases, or by eliminating emissions from society.
New Zealand's Emissions Trading Scheme (NZ ETS)	A key tool for meeting our domestic and international climate change targets. It places a price on greenhouse gas emissions and requires all sectors of our economy, except agriculture, to pay for their emissions.
Paris Agreement	A legally binding international treaty on climate change mitigation, adaptation and finance, adopted by 196 parties in Paris and signed in 2016.
Submission	Feedback and views from individuals or organisations on a proposal (eg, in a discussion document), which they send to the Council.
Thermal dryer	NPDC's Thermal Drying Facility creates Bio-Boost™ from dried sludge from wastewater process. This prevents sludge having to go to landfill and becoming a source of landfill gas made up of ~50% Methane. Bio-Boost™ also offsets the use of organic fertiliser offsetting usage of synthetic fertilisers which have a larger carbon footprint.
Urban form	The three dimensional shape of a town or city. It is the result of the shape of the land, plus the shape of the built environment on it.





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