

Taranaki Future Scenarios



Te Kaunihera-ā-Rohe o Ngāmotu
**New Plymouth
District Council**

An Introduction to the Future

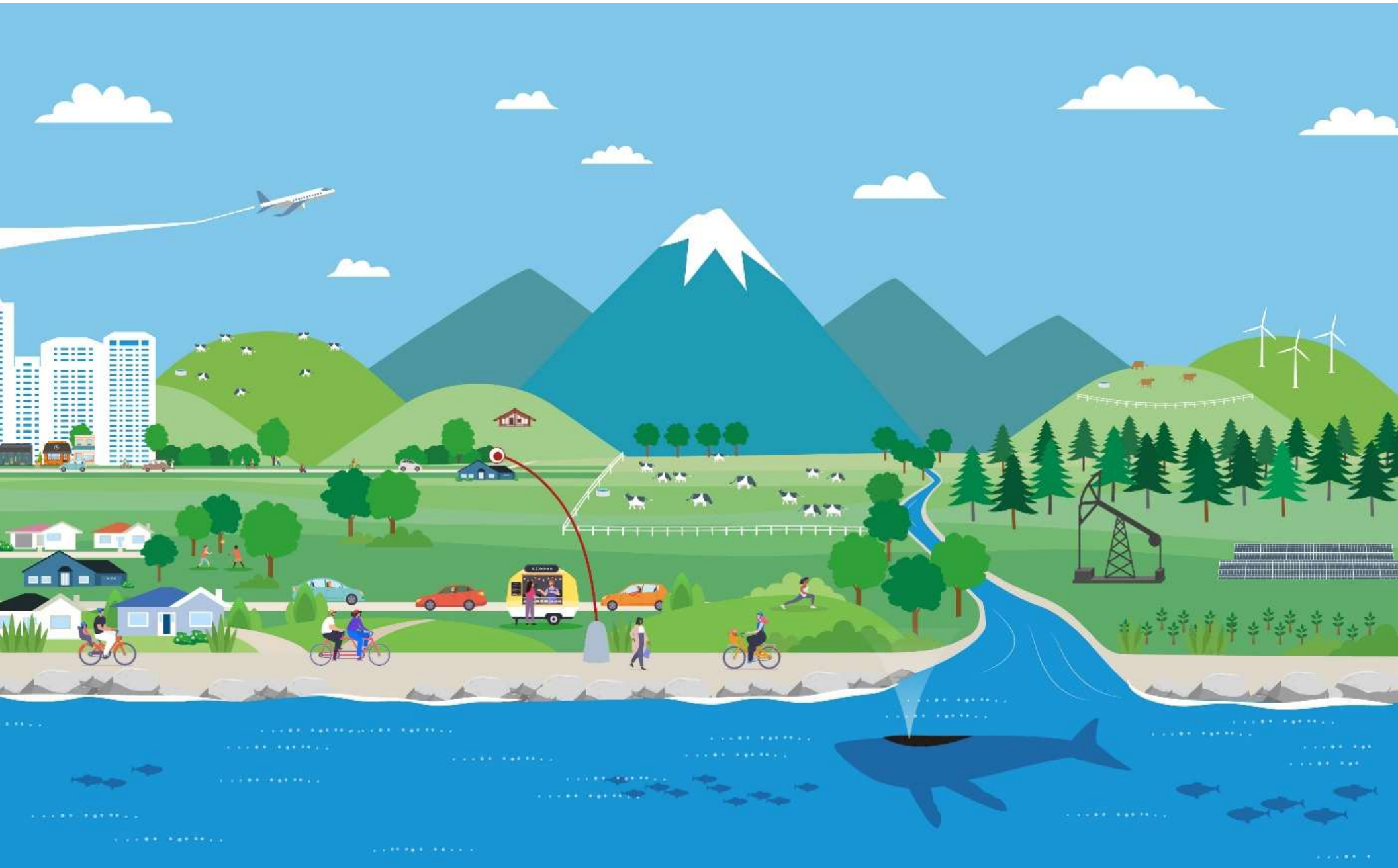
As tangata whenua, iwi and their hapū exercise mana whenua over traditionally defined areas across the Taranaki region. This weaves across the lands, waters, taonga species, wāhi tapu, wāhi taonga, urupā and sites of significance within their rohe.

Iwi and hapū hold permanent ongoing historical, cultural and spiritual connections to these. Their environment is a part of who they are. In return, as kaitiaki, they have the responsibility of ensuring the mauri of the environment and its interdependent kinship relationship with ira tangata is protected and enhanced for future generations.

The future scenarios of the Taranaki region presented below are an attempt to walk backwards into the future, with our eyes fixed on the past. These futures exist only in the context of our shared past and when they are read through the eyes of the present it's important this is acknowledged.



Taranaki Today

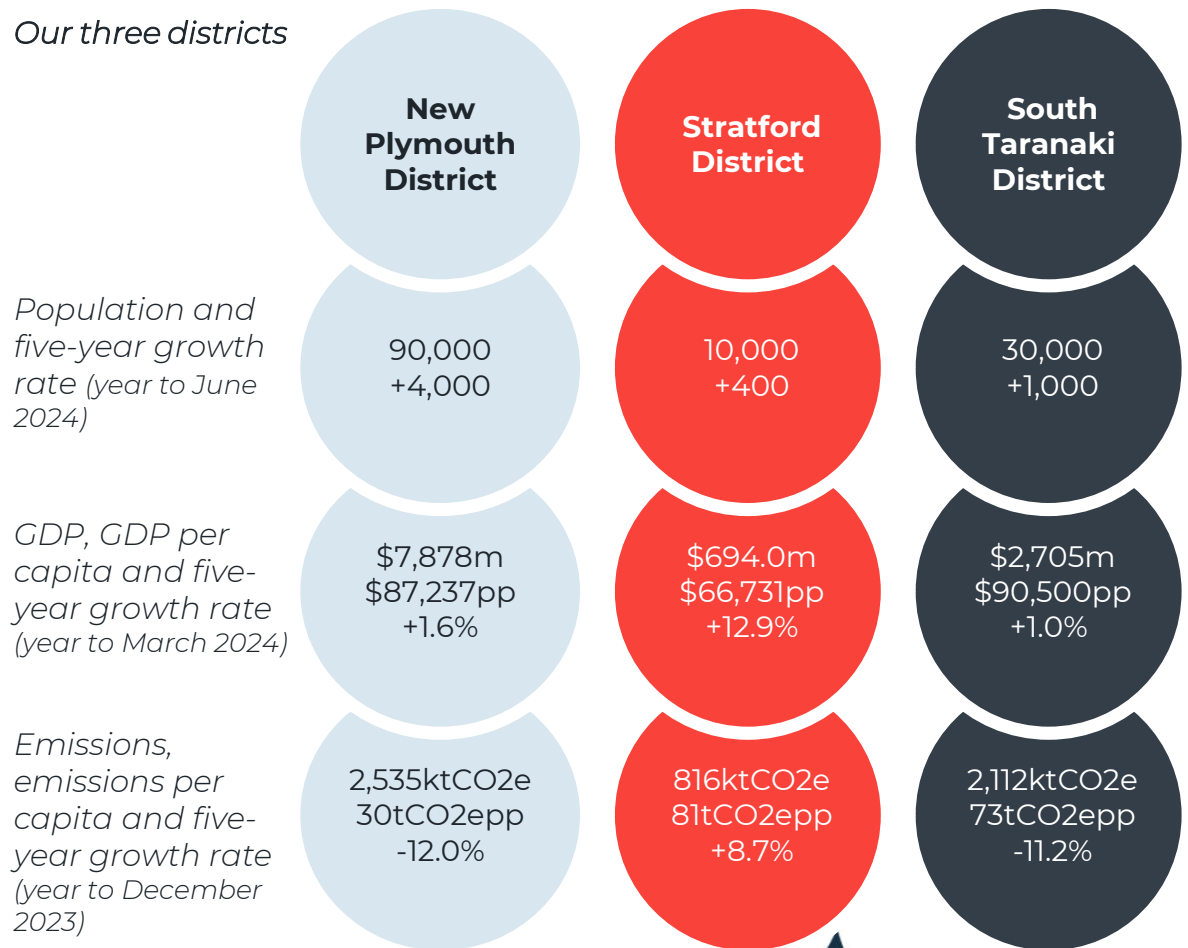


Taranaki is located on the west coast of Aotearoa New Zealand's North Island, and is centred around Taranaki Maunga. Taranaki was traditionally settled by Māori, with thriving populations throughout Taranaki. Following pressure from the Crown for land and the Taranaki Land Wars, almost all of Taranaki was confiscated by the Crown from Māori ownership in the 1860s. This was followed by development and the degradation of the environment, including the loss of indigenous plants and animals, and the pollution of waterways and important offshore fishing reefs.

Taranaki today has a population of 130,000, with 90,000 of those living in New Plymouth District, 10,000 in Stratford District and 30,000 in South Taranaki District. Taranaki is Aotearoa's energy province, being home to New Zealand's only operational oil and gas fields. Taranaki is also a significant dairying region. Combined, Taranaki is New Zealand's second highest emitting region per capita, with 44 tonnes of CO2-equivalents emitted in 2023 compared to the national average of 15 tonnes. These industries have also led to a prosperous region, with Taranaki having the second highest regional GDP per capita at \$85,000 per person, above the national average of \$78,000 per person.

Taranaki has around 300 kilometres of coastline, with significant long-term erosion trends for most of the coast. Numerous communities, including New Plymouth City (Taranaki's largest settlement), are located along the coast. Taranaki is also known for its heavy rainfalls and strong westerly winds. Taranaki has also taken out New Zealand's sunniest region several times recently and can experience drought conditions through summer. Wider environmental outcomes are mixed, with some improvements in recent years through increased riparian planting, farm management, pest eradication programmes and improving infrastructure standards.

Our three districts



Source: Infometrics

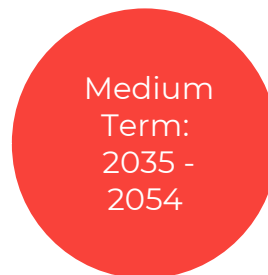


An Introduction to Future Scenarios

Climate change has many potential paths and futures. These paths and futures depend on policy decisions at local, national and global levels. The paths can be smooth and straight in a single direction, or they can weave with policies swinging and changing. The paths lead to different future temperature outcomes.

Four potential paths and futures are outlined for how climate change may impact Taranaki. They have been designed to help Taranaki to plan for the future by understanding what different futures may look like. These are plausible, distinct and challenging scenarios. They are not predictions of the future but are all still realistic possibilities at this stage. The scenarios are broad outlines of potential futures and are not a substitute for risk mapping and hazard identification. These future scenarios align to global scenarios and different temperature outcomes.

Future Scenarios	Sustainable Lifestyle Capital	Trailblazers	Slow Followers	Hot House World
Temperature outcomes	2050: +1.6°C 2100: +1.7°C	2050: +1.9°C 2100: +2.2°C	2050: +2.0°C 2100: +2.6°C	2050: +2.1°C 2100: +3.9°C
Scenario reference	SSP1-1.9	SSP4-3.4	SSP2-4.5	SSP3-7.0



A summary of four scenarios are outlined on the next two pages, and more detailed outline of each scenario is on the following pages. The Trailblazers and Slow Followers scenarios are more detailed reflecting that they have higher changes in policy over time.



Summary of the scenarios over time

Sustainable Lifestyle Capital

Trailblazers

Slow Followers

Hot House World

Short-term

Momentum builds for rapid decarbonisation, led locally by mana whenua and NPDC's Sustainable Lifestyle Capital vision. Taranaki experiences job losses in industries, particularly oil and gas sector. There is stress in the agricultural sector from emissions pricing. There is a strong focus on economic diversification in Taranaki. There is significant uptake in public and active transport.

Momentum to decarbonise is led by export rules to avoid trade barriers. There is an uncoordinated economic transition, resulting in significant job losses and disproportionate impacts. Farmers reduce stock numbers and rural investment slows., impacting mental health. Rising energy costs impact households. There is rapid uptake of EVs and public transport. Mana whenua support, coordinate and lead responses.

There is limited national commitment to climate change. The repeal of the oil and gas ban supports Taranaki's energy sector, but has severe impacts on free trade agreements. Society becomes more polarised, with mana whenua and youth frustrated. Mana whenua undertake their own action to restore ecosystems. Climate change events bite, with agriculture feeling the pressure and struggling to adapt.

Taranaki's economy continues with its business as usual approach with natural gas extraction and agriculture continuing. However, there is uncertainty as increasing climate events are felt, with farmers struggling from these events. Urban sprawl continues, supported by roading infrastructure investment, and a push to develop inland areas more. There is difficulty in securing funding for climate resilience and adaptation.

Medium-term

Taranaki economy is now focused on renewable energy, with distributed energy. Rural industry largely focuses on horticulture, with some high-end sustainable agriculture. Emitters struggle to get finance as access to finance is linked to sustainability. EVs are the norm, along with public and active transport. Growing physical impacts from climate change are being felt.

Top-down, consistent national policy integrates with local co-governance models to drive climate action. Agriculture shifts, to being more sustainable, but farmers are under stress. Social and economic pressure grows. Taranaki is prosperous through renewable energy, and seen as an attractive place to live. Taranaki experiences more severe weather events.

The transition away from fossil fuels is largely led by international trade, resulting in a highly disruptive shift. Increasing climate events, low access to insurance, and energy poverty place significant pressure on households. Taranaki becomes vulnerable to global supply chain issues, and businesses reliant on high energy close. Large scale renewable energy projects increase. Emission trading pricing shifts land use from agriculture to sequestering pines.

The impacts of climate change have intensified, and the agricultural sector is particularly hard hit. There is minimal investment in climate action, and the emissions trading scheme is ineffective. Ecosystems are severely stressed, impacting their mauri. Mana whenua concerns about te taiao create tensions with government, and mana whenua undertake their own actions to protect their hapori.

Long-term

Full economic decarbonisation has been met., and there has been a shift away from consumerism. Energy is fully renewable. There are few private vehicles, and almost all are electric. Resource management law is fully integrated with Te Ao Māori and ecosystems are restored. Global tipping points have been avoided, but physical impacts are still regularly felt.

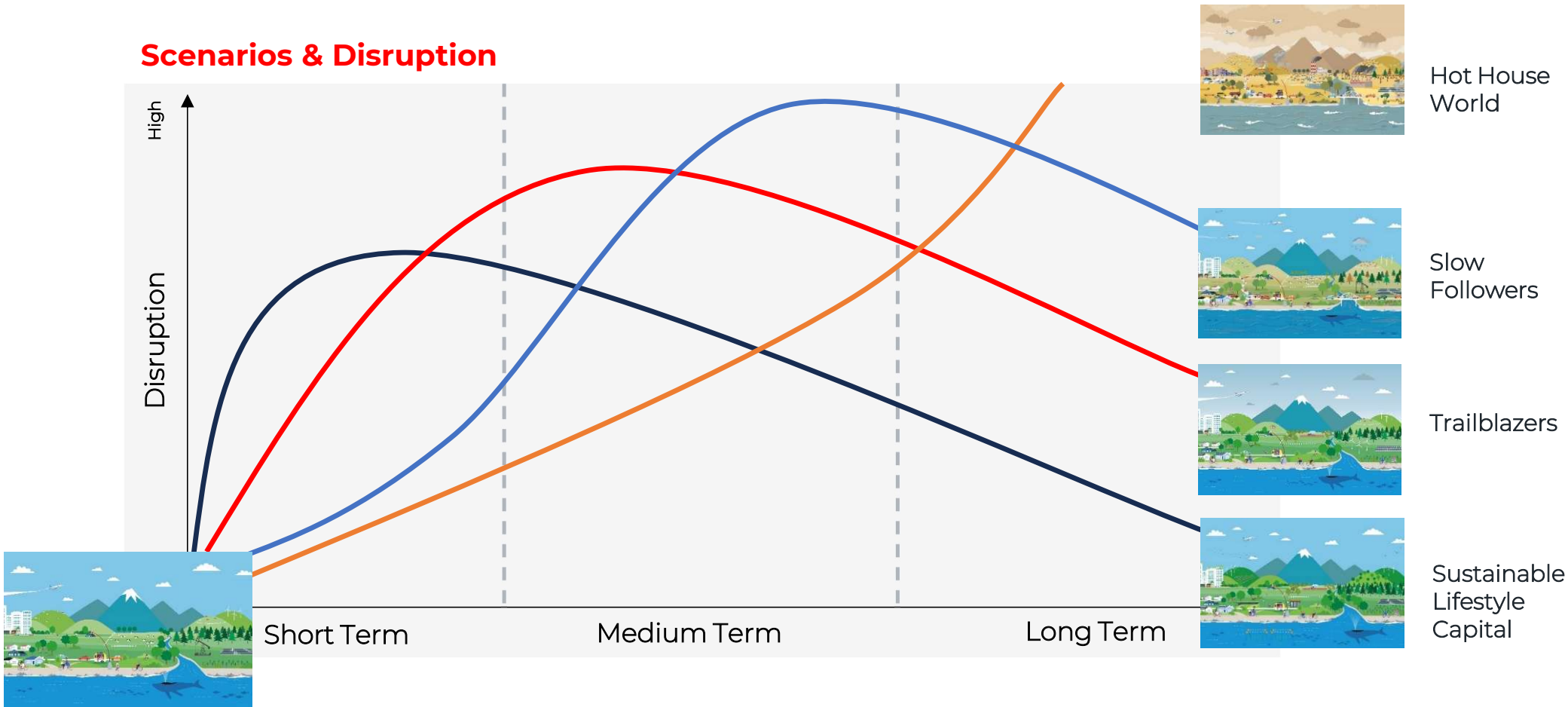
There is ongoing significant investment to decarbonise, and climate issues are no longer politicised. Co-governance is seen as a key contributor to a just transition. Taranaki is a global leader in offshore wind, and this success results in significant population growth in higher-density living. Demand for energy is high, and there is ongoing energy poverty. Farmers are largely producing sustainable food for the local market. The uncoordinated response means Taranaki continues to face severe weather events, with some areas uninhabitable.

The Government makes decisive climate action due to international trading pressure and climate disasters. Large climate events are now regular, and coastal communities have now largely moved inland in an ad hoc fashion. Significant job losses occur as the economy rapidly shifts, and Taranaki's population stagnates then declines. Efforts to invest in renewables are hampered by poor infrastructure., and agriculture struggles with climate change. Mana whenua continue to undertake regeneration, but taonga species are lost.

Extreme weather events are now annual,, creating financial and emotional stress on communities. Councils have no time or finding for planning. Taranaki is still seen as a relatively safe place by international standards, attracting inward migration. However, this creates social tension through overcrowding and homelessness. Technological innovations in the 2070s enable wealthier communities to live more safely in the changed climate. Mana whenua mourn the loss of te taiao and now live in self-sufficient papakāinga.

Each of these scenarios represents significant disruption to Taranaki. However, they differ in when disruption occurs, how big the disruption is, and the cause of that disruption. The below graph provides an indication of the disruption each of these scenarios brings to Taranaki.

Scenarios & Disruption

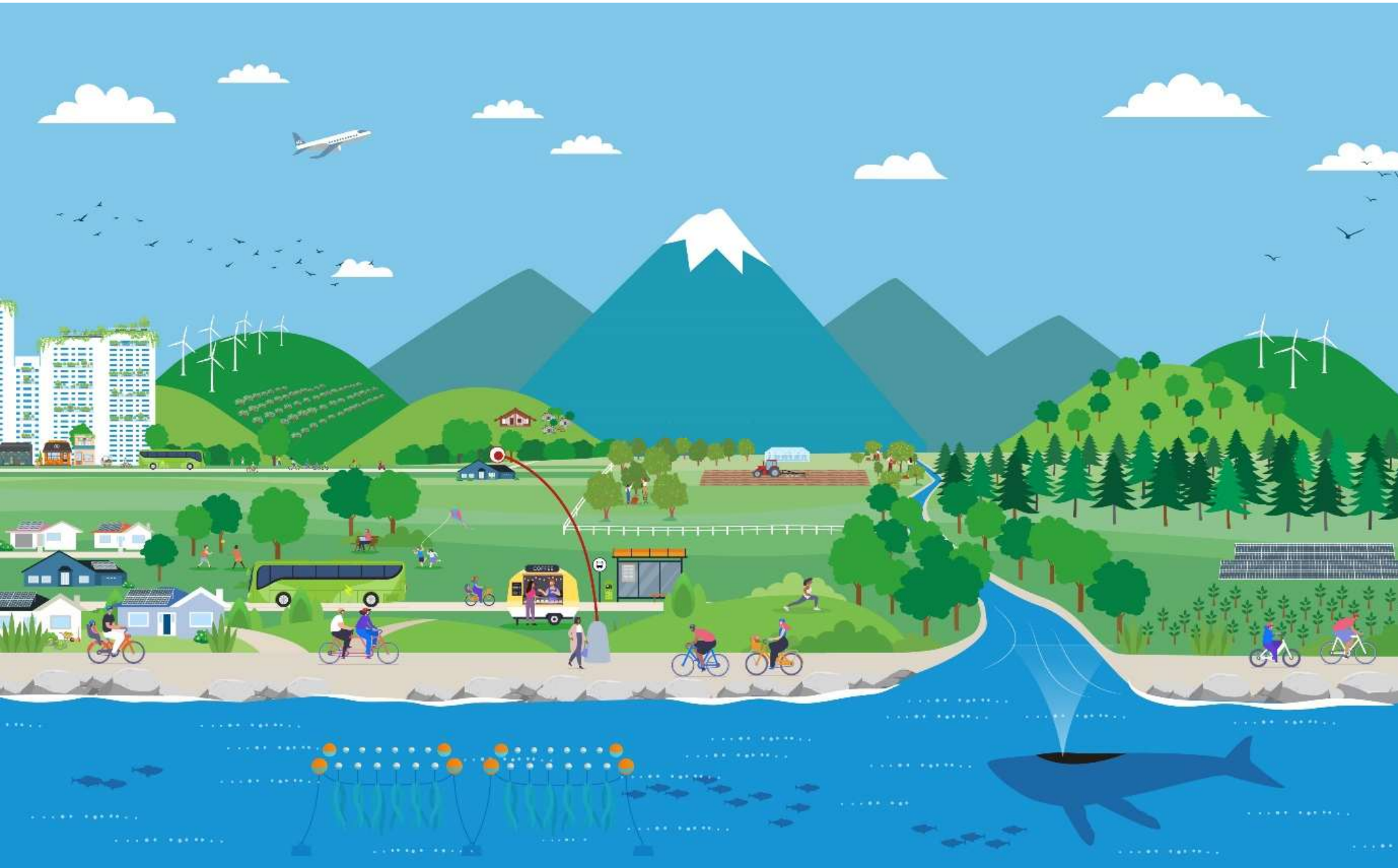


These scenarios are written for New Plymouth District Council initially, but have been designed so that all Taranaki organisations are able to use them for thinking about climate change in future planning.



Sustainable Lifestyle Capital

The Sustainable Lifestyle Capital scenario represents a world defined by a rapid global push to decarbonise in the 2020s, achieving net zero emissions by 2050. This scenario assumes decarbonisation is achieved abruptly and immediately through a wide range of renewable energy sources and energy efficiency measures. Aotearoa New Zealand invests in strategic, transformational mitigation measures with innovation playing an important part. Global emissions peak in the 2020s and then decline, reaching net zero by the 2050s.



Sustainable Lifestyle Capital

Short
Term:
2024 -
2034

Throughout 2025 momentum builds in efforts towards climate action, and global economic and geopolitical stability show signs of improvement. Two pivotal milestones shape the trajectory of Western economies. First, a critical mass of public awareness about climate change and the loss of biodiversity drives an urgent demand for action. Second, a dramatic move of early actors triggers a vast retreat from insurance, indicating a highly inaccessible insurance environment in a world heated beyond 2°C.

Central government, NPDC, local iwi, businesses and the Taranaki community are largely clear about their roles and responsibilities in coordinating and responding to the climate crisis. There is bipartisan support for long term climate action driven through embracing co-governance models, as government recognises the importance of mana whenua views in tackling the degradation of the environment. Recognition of the limitations of relying solely on the ETS price signal to drive change. The level and speed of change is highly disruptive to all industries, especially energy, requiring a staggering rate of decarbonisation year-on-year. The energy sector prioritises development of resilient and flexible grid infrastructure; integration of more renewable energy sources, such as solar and onshore and offshore wind, to ensure a stable and reliable power supply.

Where organisations and industries fail to implement a just transition, widespread job losses become inevitable. With Taranaki heavily dependent on the oil and gas industry, this wave of deindustrialisation threatens significant social unrest and upheaval. Organisations seen as lagging face greenwashing or other reputational risks; only those that have developed robust transition plans can access affordable insurance and capital. Some businesses don't survive the revolutionary transformation required to reach net zero. This rapid pivot creates high socio-economic costs with high inflationary and cost of living pressures across the region.

Locally, the 2024 Tapaue Roa Action Plan, which brings in the Taranaki 2050 vision, starts significant conversations within the region around decarbonisation efforts and economic diversification. Increased investment in economic development by central and local government and iwi helps to reduce the disruption on the local economy, although many businesses face uncertainty and re-sizing while transitioning to lower emissions approaches. NPDC, iwi and hapū work together to embed te ao Māori and mātauranga Māori into council decisions, placing a higher value on the natural environment and sustainability.

By 2026, a levy is introduced on agricultural emissions, putting a price on biogenic methane and nitrous oxide emissions and leading to decreasing stock numbers for dairy, sheep and beef farmers. This rapid transition places financial and emotional stress on farmers throughout Taranaki. The Branching Out programme catalyses farmers to diversify their farms as a response, and farmers face low barriers to investing in horticulture due to easy access to finance for sustainability measures. Local Iwi support farmers to diversify their operations through community knowledge sharing around indigenous horticulture and food growing methods, further fostering an increase in papakāinga and improved food security.

Transport investment shifts away from increasing road capacity, with a stronger focus on building a fit-for-purpose public transport network both within New Plymouth City and linking communities around the Maunga. The successful completion of Te Pae o te Rangi, the Coastal Walkway extension to Waitara, results in increasing demand for more safe cycling and walking infrastructure between communities.



Sustainable Lifestyle Capital

Medium
Term:
2035 -
2054

Government has helped to navigate tensions between decarbonisation, nature preservation policies and economic growth through a strong partnership model supporting iwi/Māori, the energy sector, and wider businesses. Taranaki continues advancing renewable energy efforts in wind, wave, biofuel and solar.

Physical climate change impacts still have significant effects. Droughts have worsened and intense rainfall and storm events occur multiple times every decade, damaging infrastructure. Sea level rise and storm surges also escalate the risk of flooding and landslides, disrupting supply chains, transportation networks, and communities across Taranaki. Central and local government work with banks and insurance sectors to collaboratively build community resilience and to relocate communities away from risk.

A market for Taranaki's leading premium, sustainable animal products still exists, but the broad shift in demand has continued farming diversification into high value, low emissions crop and horticulture products. Iwi/Māori as significant landowners were positioned as key figures in the transition; products grown using indigenous horticulture methods are in high demand.

Growing a collaborative community and developing a shared model for resources further supports de-risking land use changes and entry into the food industry. Farmers and communities opt into pay-as-you-generate solar panel models (e.g. a cents/kWh rate), which are possible through Power Purchase Agreements (PPAs). In 2035, a group of leading horticulture, transport and energy organisations sign a landmark deal on scaling biofuels by repurposing existing infrastructure in Taranaki.

By 2035, access to insurance and finance is almost impossible for high emitters. Petrol and diesel vehicles have been phased out and EVs are the norm, with charging infrastructure being well-developed across the country. Mode shift to active and public transport use also increases, reducing network load. Access to capital becomes linked to sustainability, and lenders incur financial penalties for missing sustainability targets. Net zero is achieved by 2050 through a highly ambitious and coordinated global effort to decarbonise during the late 2020s and early 2030s.

Long
Term:
2055 -
2100

Tipping points in the earth system have largely been avoided, but the world still faces increased physical impacts of climate change.

Transition to net zero has positively impacted regional GDP, resulting in a shift in economic activities away from consumerism, and driving tech-enabled efficiencies and health outcomes.

Roads have been re-designed to support safety and enjoyment for active transport modes, like scooters and bikes. This has led to many co-benefits such as reduced spending required in healthcare with an overall improvement in mobility and mental health in the community. There are fewer vehicles and almost all are e-vehicles. As a result, there's less need for parking spaces, so many areas within New Plymouth have been repurposed into green and vibrant community places increasing biodiversity and reducing urban heat island effects. Companies that have not embraced the transition to a low-carbon energy system are no longer in business.

In the energy sector, decarbonisation is achieved through a wide range of renewable energy sources and energy efficiency measures, reducing energy demand and improving overall energy productivity. Biofuel is widely used, especially for operations for large scale energy users such as the Taranaki Port. Taranaki's leadership in renewable energy and environmental restoration solidifies its position as the sustainable lifestyle capital of New Zealand.

Nationwide resource management policy is fully integrated with te ao Māori values, enhancing native forest regeneration, biodiversity protection and climate resilience. Revenue generated from the agricultural emissions levy has supported Taranaki to restore its once thriving ecosystems through clean awa (rivers), a healthy whenua (land), providing abundant food and resources and a healthy moana (sea) full of kaimoana.



Trailblazers

The Trailblazers scenario is a world where the level of international cooperation has varied across countries, resulting in a fragmented response to climate change. Aotearoa New Zealand has moved with the leaders. Whilst the country is seen as an attractive place to invest, this scenario does not represent a socially just transition. Most businesses are not prepared. Global emissions peak in the 2030s, reaching net zero by the 2080s.



Trailblazers

Government priorities



Starting in 2025, international markets and trade partners, many of which have already adopted stringent climate policies, are starting to impose trade barriers on Aotearoa New Zealand's exports, citing non-compliance with ESG reporting standards and sustainability obligations. Government makes a bold push to decarbonise in alignment with global climate leaders, despite a fragmented international environment. Strict policies are implemented to drive rapid emissions reductions. Initially, these policies are primarily driven by efforts to support export industries overcome trade barriers. Poor coordination of these policies, ongoing politicisation, a lack of focus on domestically focused industries, and insufficient global support results in high costs for businesses and consumers. The focus on undertaking actions to avoid and reduce greenhouse gases leads to rapid regulatory changes, forcing companies and farmers to adapt quickly and creating financial strain across the region.

Iwi and hapū groups throughout the region support the shift from the Government, citing that they have been advocating for improved kaitiakitanga for decades as they have the responsibility to protect and care for their whenua and taiao.

In the financial sector, domestic banks, such as TSB, play a crucial role in facilitating Taranaki's transition to a low-carbon economy. Sustainability-linked loans and incentives become mainstream by 2027 providing businesses and homeowners with increased access to capital for decarbonisation efforts, such as solar panels. However, despite these opportunities, the lack of support for adaptation continues to leave many communities vulnerable to the immediate impacts of climate change. Rebuild funding echoes this, as infrastructure and homes are recovered but not improved or relocated to safer areas.

Society



Initially, the public are generally onboard with the goal of decarbonising. However, many are not prepared or able to make large lifestyle changes especially in rural communities. Taranaki takes a leading role in the rapid expansion of renewable energy for the country by 2027. The accelerated demand for skilled construction workers in wind and solar industries far outstrips supply, causing strain on projects. The labour shortage slows the pace of the energy transition, with businesses and NPDC having to compete for qualified workers from outside the region as wages and project costs increase.

The uncoordinated shift away from oil and gas production leaves many highly skilled workers redundant, many making the move to Australia. There is an opportunity for reskilling programmes, however, the uptake is slow as the urgent demand for skilled labour takes priority, leaving little time or resources for training.

Rural and Māori communities throughout the region who are in lower socioeconomic brackets are disproportionately impacted by rising travel costs. This is caused by the increasing carbon price placed on fuel, the high upfront costs of transitioning to low emission private vehicles and Taranaki's slow uptake of vehicle sharing schemes.

Port Taranaki must diversify its portfolio after the closure of key natural gas companies, the Port's largest customers. The population continues to grow, but there are annual fluctuations in growth rates, resulting in lower overall population growth.

Environment



Taranaki remains less affected to the physical impacts of climate change when compared to other regions in Aotearoa. However, the region continues to see more extreme weather events such as heavy rainfall and storms, leading to occasional flooding in low lying areas. Droughts become more frequent with some of the drier summers placing stress on the water availability in the region, placing financial strain on farmers.

Infrastructure, particularly coastal roads, bridges and drainage face increasing challenges. Early signs of strain appear in water management systems as the decrease in Mean Annual Low Flow (MALF) affects river levels and freshwater supplies. TRC develops water take limits in consultation with key stakeholders, iwi/hapū and the wider community, to restrict the amount of water being taken from rivers, streams and lakes to reduce the environmental effects of these drier times.

Following the final treaty settlement and the personification of the Taranaki Maunga, iwi and council pursue a more integrated co-governance structure. Collaborative strategies and initiatives, such as Planting our Place, Taranaki Taku Tūranga - Towards Predator-Free Taranaki and the Regional Biodiversity Strategy, help improve biodiversity and predator control. These initiatives create a strong sense of community collaboration.

Energy



Taranaki pushes forward as a key player in New Zealand's renewable energy transition. The region sees significant investments in expanding its generation capacity, with projects focusing on wind and solar energy generation and battery storage. Rising fossil fuel energy costs become a significant challenge and low-income households, who are slow to decarbonize, are particularly hard-hit across the region. Government and local financial support mechanisms, such as subsidies and sustainability-linked loans, are introduced to alleviate these pressures, but funding is insufficient to meet the growing demand.

Rapid uptake of electric public transport, EV's and the electrification of household appliances by 2028 adds additional strain to the region's electricity grid. Insufficient generation, battery storage infrastructure and lack of advanced demand-side management systems result in ineffective load balancing, leading to localised blackouts during peak demand periods. The region's energy resilience is repeatedly tested throughout the early stages of the transition.

Iwi, hapū and rural communities begin to work in the region to improve energy resilience, utilising solar generation technology and community scale microgrids.

Agriculture



The lack of a coordinated land use policy combined with changes in consumer demand and high food prices, creates an uncertain operating environment for farmers and growers. Promising innovations, such as methane inhibiting vaccinations, provide hope to farmers but are slow to reach commercial scale in New Zealand and fail to reduce emissions significantly.

By 2030, a levy is introduced on agricultural emissions, which puts a price on biogenic methane and nitrous oxide emissions, which leads to decreasing stock numbers for dairy, sheep and beef farmers.

An increasing cost of living creates the need for innovative and efficient food growing practices to build resilience and food security in the region. Iwi work with community groups to build out a network of Papakāinga and local food production throughout the region, supported by NPDC.

Investment into the agriculture sector slows, and difficulty accessing capital necessitates farmers across the region to diversify their land to avoid liquidation. The mental health of farmers in the region suffers during this transition increasing the need for support from local government and the community



Trailblazers

Government priorities

Top-down policies focus on integrating both adaptation and mitigation into the national agenda, as Taranaki positions itself as a leader within the country, and Aotearoa as a global climate leader. Politicisation reduces, with fewer policy shifts between different governments. Co-governance between NPDC and iwi continues to strengthen, especially in critical decisions.

Accessible low cost, low emissions public transport is being utilised in the areas surrounding New Plymouth. However, rural communities still struggle with a lack of options. Water restrictions are implemented as part of a broader adaptation strategy. Government funding is directed towards enhancing water infrastructure, such as advanced water metering to encourage conservation and to cope with droughts and other climate impacts.

The levy placed on agricultural greenhouse gas emissions has contributed to reducing the sector's high emissions footprint, but it significantly raises costs for farmers, placing financial strain on many in the industry and rural communities. While this move strengthens Aotearoa's climate commitment and international reputation, the transition is challenging for the rural economy, with smaller farms and agribusinesses particularly vulnerable.

Consenting for renewable energy projects accelerates in the mid 2030s, particularly for offshore wind farms causing rising tension with iwi and environmental groups over effects on marine ecosystems.



Society

Economic and social impacts of climate change become more apparent across Taranaki. Isolated areas and rural Māori communities are disproportionately affected by high energy prices in the mid 2030s and increasingly severe weather events. This drives these communities to become early adopters of decentralised energy grids, reducing their reliance on the national grid and increasing local energy resilience.

Iwi and hapū intensify their collaboration with NPDC and local organisations to prioritise the restoration of Taranaki's natural environment. These efforts focus on restoring wetlands, native forests and waterways, driven by a shared vision of enhancing biodiversity, ecosystems and carbon sequestration.

By 2035, Taranaki's growing reputation as a leader in renewable energy attracts international investment, creating new economic opportunities. The region becomes recognised as a hub for clean energy innovation, with an influx of talent attracted to Taranaki's sustainable lifestyle making it a desirable place to live and work. The region's clean energy also attracts global communication and AI companies to build energy intensive operations such as data centers in Taranaki.

Population growth becomes stronger, returning to the growth rates seen in the 2000s and 2010s, which drives housing prices to increase.



Environment

Taranaki experiences intensified environmental challenges with warmer temperatures and more frequent intense weather events becoming normal. Severe droughts and reductions in annual rainfall strain inland water resources; the declining MALF amplifies the importance for water management. Consents authorising groundwater usage become more common, especially in rural areas where water sources such as streams and rivers are not easily accessible.

Increased intense rainfall has accelerated soil erosion in the Taranaki hill country with soft sediment causing downstream effects to the quality of rivers and streams throughout the region. Many flow directly from Taranaki Maunga and as the awa pass through the region to Te Tai-o-Rehua, the Tasman Sea, the increased rainfall runoff contributes contaminants to the waterways, including excess nutrients, sediment and bacteria.

Iwi support local government to combine traditional and indigenous water testing methods to improve the water quality of the awa in the region.



Energy

A cross-party political outlook within New Zealand has enabled long term decarbonisation planning in the energy sector. The strong buildout of renewable energy generation continues in 2035 throughout Taranaki as the region becomes a global leader in wind energy generation, both on and offshore, although at a relatively high cost.

By the 2040s, energy prices stabilise alleviating some of the cost-of-living pressures for rural and lower socioeconomic communities in the region.

Global economies of scale reduce the price of renewable energy technologies, seeing local distribution networks such as solar and small-scale hydro power stations become widely adopted across Taranaki, particularly in rural areas. Innovative technologies such as grid-scale flow batteries are used to store the clean energy being generated, which improves resilience to a dry-year problem.

A diverse range of energy sources are built throughout the country during this time fueling heavy freight transport and industry, such as hydrogen and bioenergy. However, this transition leaves stranded assets for companies or industries that lag behind without robust transition plans.



Agriculture

With the emissions levy now putting a price on biogenic methane and nitrous oxide emissions from farms, this has encouraged farmers to reduce their emissions by decreasing stock numbers, changing management practices, diversifying their farm system, and/or adopting new technologies. This rapid transition to reduce emissions has placed financial and emotional stress on farmers throughout the region. To alleviate this pressure, the government recycles revenue gained from the levy back to the catchment it came from, to be spent on actions to provide adaptation solutions, native forestry planting and biodiversity improvements.

Regenerative practices and innovative mixed farming systems, such as precision agriculture for food growing, has built resilience and food security in the region. Community food growing and sharing networks increase leading to benefits in social cohesion.

Taranaki, now seen as a proactive and sustainable hub, attracts environmentally pioneering start-ups such as producers of lab grown dairy; a product growing in use, feasibility and popularity overseas.



Trailblazers

Government priorities



In a final push towards net-zero, there is significant investment during the 2050s in nature-based solutions for carbon sequestration with increased investment in blue carbon as well as carbon capture and storage (CCS) technologies. While global emissions peaked in the 2030s and began declining, net zero is only achieved by the 2080s.

Co-governance between iwi, hapū and local government is seen as a key contributor to Taranaki fulfilling a socially just transition.

Climate issues stop being politicised, resulting in critical transition decisions being delivered without interference. High investment in decarbonising the public transport system in the medium term combined with strategic planning of space for active transport modes has reduced the need for private vehicle use in New Plymouth.

Taranaki is taking advantage of the benefits that have come from a disorderly but rapid transition towards decarbonisation. Growth in international and domestic investment for offshore wind sees the region as a global leader in wind energy generation, which makes it an attractive place to live and visit.

Society



A largely successful, albeit disruptive, transition to net zero has occurred by 2080. Taranaki's leadership in renewable energy and environmental restoration solidifies its position as the sustainable lifestyle capital of New Zealand. Success in attracting international investment drives higher than expected net migration to the region, leading to significant population growth in urban areas.

NPDC prioritises high-density, mixed-use developments that combine residential uses and commercial opportunities. The faster growing regional population places pressure on critical infrastructure such as water, wastewater and transport systems.

Resource management policies fully integrate Māori principles, emphasising the importance of conserving biodiversity and protecting natural resources. The shift has led to a more strategic approach to environmental restoration, with iwi and hapū taking an active role in shaping regional and national policies. By adopting a mātauranga Māori approach to decision-making, New Zealand shows how society can change its relationship with the natural world and incorporate kaitiakitanga into private and public sector policy and procedures.

Environment



Global emissions have reached net zero by 2080 and global temperatures have increased by 2.2°C. Strong collaboration with iwi has led to impacts on nature and the environment being key considerations in the decision-making processes with local government. This has improved adaptation and resilience to the continually changing climate.

Despite New Zealand's relatively fast transition, a fragmented global response means Taranaki continues to face significant and permanent environmental challenges.

The region experiences more frequent and severe storms, floods and prolonged droughts. Coastal erosion has made some low-lying areas uninhabitable such as Waitara, and rivers and streams are often depleted.

Environmental and ecological changes have altered species migration and population, affecting communities such as Tongapōrutu where ecological concerns are of great significance to whitebaiting.

Energy

The transition to renewable energy has stabilised, and domestic energy prices have become more affordable. Government's financial aid has supported businesses and consumers in the adoption of renewable energy sources, seeing energy poverty decrease and supporting the economic viability of Taranaki's small businesses.

Demand for energy is still increasing with the electrification of public and private transport and the wide scale use of AI technologies. There is diverse mix of renewable energy sources in the country with wind, solar, and geothermal still dominating grid-scale generation with growing availability of wave energy technologies. The hydrogen pipeline has expanded allowing heavy transport and freight to reduce their footprint substantially, combined with the use of biofuels. Infrastructure throughout the region has been repurposed to be compatible with bioenergy which is commonly used in industry. Community and household energy is being generated by solar with battery storage technologies maturing, helping to decentralise and improve resilience especially during weather events.

Agriculture



The transition towards net zero has drastically disrupted the trajectory of the agriculture sector. Consumers are increasingly conscious of their food consumption, with plant-based diets continuing to grow in popularity due to their reduced environmental footprint. Locally grown produce and meat is the consumer preference; a saving grace for smaller farms who are restricted by newly implemented export barriers.

Revenue generated from the emissions levy has bolstered land use conversion to native forestry; improving biodiversity, creating thriving ecosystems and providing resilience for farms around the region.

Community food sharing and papkāinga is now common practice which has improved food security and reduced food waste.



Slow Followers

The Slow Followers scenario talks to a world where Aotearoa New Zealand has taken a 'bare minimum' approach towards achieving net zero, in comparison to the ambition of most other developed countries. This scenario assumes that nations around the world make efforts to decarbonise, but with varying levels of ambition. Global emissions peak around 2040, nearly reaching net zero by 2100.



Slow Followers

Government priorities



Aotearoa New Zealand is slow to address the urgency of climate change and there is a limited commitment to decarbonisation. Companies remain heavily reliant on fossil fuels without external pressure to mobilise transition plans to renewable energy. Repeal of the ban on oil and gas exploration leads to positive impacts on the Taranaki regional economy as a result of increased exploration and drilling activities. The decision, however, has severe consequences for not meeting obligations in several of Aotearoa New Zealand's free trade agreements. There is ongoing strong opposition from iwi and hapū who are deeply concerned about the damage to fragile coastal ecosystems and the potential affects on kaimoana throughout the region.

Frustration continues to build within iwi and hapū following inadequate consultation in decision-making processes in the region. The relationship with NPDC continues as BAU.

Government prioritises short term economic growth through rezoning and land use changes, accelerating urban sprawl and expanding the road network. This leads to worsening congestion getting in and out of New Plymouth. Policies on issues such as freshwater protection are frequently upheaved and reformed, leaving NPDC uncertain on how to invest in water infrastructure. The lack of investment into storm-, drinking- and waste-water infrastructure results in systems that are ill-equipped for heavy rainfall, droughts and serving increasing populations.

Society



As climate issues become increasingly politicised, a growing social divide emerges. Younger generations, along with those most vulnerable to climate impacts, feel that Aotearoa New Zealand's approach is not proactive enough for their futures. The lack of coordinated action leads to frustration, and a sense of abandonment from those who feel the brunt of climate-related disruptions.

Taranaki grows more divided accelerated by an aging population, with local innovation halted by inconsistent or insufficient support. Population growth slows as a result of the oil and gas sector insecurity.

Māori communities in Taranaki, frustrated by the government's slow response and insufficient action on climate change, begin to actively challenge inadequate policies.

The loss of mahinga kai and continual damage to vulnerable communities, including homes and marae, become a symbol of the wider struggles Māori communities are facing.

The cost of living continues to increase in the region, this is further exacerbated as NPDC is forced to raise rates to increase funding to rebuild and maintain infrastructure.

Environment



Physical effects of climate change, both acute and chronic, continue to impact Taranaki; this is becoming more noticeable in particularly vulnerable rural and coastal areas. Some roads and tourist hotspots such as the New Plymouth Coastal Walkway and the Pouākai Circuit on Taranaki Maunga are frequently damaged by storms and heavy rainfall.

Intense weather events impact sea and air freight, causing delays to imports and exports and a flow on effect on Taranaki's supply chain efficiency.

Roading infrastructure in the region is not equipped for heavy rainfall and repair funding is not strategically allocated, leading to critical roads remaining vulnerable to unpredictable weather. Some rural roads are almost perpetually in poor condition.

Stream and wetland reclamation, excess nutrient and sediment inputs from agricultural land use, deforestation and urbanisation have all contributed to loss and degradation of aquatic ecosystems.

Driven by kaitiakitanga, iwi and hapū take matters into their own hands, organising local efforts to restore biodiversity and rebuild once thriving ecosystems.

However, these grassroots movements are hampered by inadequate central or local government funding, making it difficult to scale up initiatives, resulting in maladaptation and missed opportunities for meaningful change.

Energy



Fossil fuel use remains widespread in the short term but changing international policies and reductions in production see prices increase over time. The reversal of the oil and gas exploration ban on the Taranaki coast creates jobs in the region. However, with no guarantee of finding new resources, this creates uncertainty in the sector. Little progress is made on transitioning to renewable energy as policies are politicised; pressing issues such as offshore wind projects and investments in renewable energy are frequently delayed due to 'flip flop' policies between government terms.

New Zealand is slow to reduce emissions per capita from a global perspective, and the country's 'clean, green' reputation suffers. Sustainable investors shift their focus to climate proactive countries and renewable energy projects in the Taranaki region struggle to access international capital as a result.

Continued reliance on imported fuel and coal becomes costly by 2030 as international carbon prices increase. These costs are passed on to consumers, which leads to greater energy poverty especially for lower socioeconomic communities in the region.

The lack of a national energy strategy hampers the Taranaki region's ability to prepare for a transition away from oil and gas. This leaves workers in the sector uncertain about future projects.

Agriculture



Taranaki's agricultural sector begins to feel the pressure as climate change brings more erratic weather patterns. Farmers face rising costs from increased insurance premiums, if they can secure coverage at all, and the growing unpredictability of seasons makes crop planning and livestock management increasingly difficult. Many farmers, especially on smaller farms, struggle to adapt to the changing climate which has severe impacts on their mental wellbeing, with flooding and droughts taking a toll on yields and livestock health.

In response to lower yields and degraded soil quality, many farmers increase their reliance on nitrates and synthetic fertilisers to maintain productivity. However, this only exacerbates environmental issues, as more frequent heavy rainfall events lead to greater nitrate runoff into waterways, further degrading freshwater ecosystems. While some farmers attempt to adopt regenerative, innovative or mixed farming practices, the broader sector lags.

Farmers begin to feel isolated, facing the impacts of climate change with little clear guidance or support. The insurance sector begins to retreat from providing farm coverage, with farmers often struggling to receive insurance to help recover from events.



Slow Followers

Government priorities



Due to the Government's slow approach, Aotearoa starts to experience economic isolation. In the late 2030s, the physical impacts of climate change are unable to be ignored. However, the transition away from fossil fuels is driven ultimately by economics of international trade, triggering the government to commence a rapid climate response.

By 2035, international markets and trade partners, many of whom have already implemented strict climate policies, begin imposing trade barriers on Aotearoa New Zealand's exports, citing failure to meet ESG reporting requirements and sustainability targets.

This places further strain on Taranaki's economy that is heavily reliant on oil and gas along with the agricultural sector, which lacks maturity in measuring emissions. There is a disruptive policy shift away from oil and gas in favour of renewable energy with poor regulatory controls resulting in a fragmented approach of using highly productive land for energy generation.

Government focuses on complying with international standards for exports, however, this is uncoordinated and lacks strategic planning leaving key sectors without clear, long-term support. Some public and private sector projects fail to consider sustainability which results in ecological degradation, leading to push back from environmental advocacy groups, iwi and hapū over ecological and te taiao concerns being overlooked.

The relationship between iwi and local government is ad hoc due to a lacking partnership.

Society



Large areas of Taranaki are deemed high-risk and vulnerable to climate impacts; the cost and accessibility of insurance, combined with rising energy costs exacerbates social inequities. Damaged houses from weather-related events are selling below market rate tempting first home buyers into unsafe properties. Net migration to Taranaki remains moderate, leading to slow population growth, leaving the region unable to attract the skilled workers needed to transform the economy. Urban migration increases as infrastructure and accessibility challenges continue to occur for those living in rural communities.

Those in rural communities in Taranaki focus on creating their own renewable energy solutions, investing in small-scale solar projects and microgrids to enhance self-sufficiency. Community efforts to upskill local populations and embrace sustainable practices gain momentum; but progress is hampered by limited funding and government support.

Highly self-reliant papakāinga are set up to provide more sustainable living to reduce the impacts of supply chain disruption. Despite these initiatives, the cascading effects of climate change and economic challenges cause significant disruption for people living in Taranaki. Insurance retreat and affordability become a challenge as global reinsurance companies see Aotearoa as an increasingly risky location.

Environment



As the impacts of climate change intensify, various parts of Taranaki are more susceptible and prone to devastation than others. Frequent storm events have resulted in flooding and landslides consequently damaging infrastructure, impacting transportation networks, disrupting communities and national supply chains. Wetlands that once played a role in natural carbon sequestration and flood mitigation have shrunk, leaving larger areas of Taranaki exposed to flash flooding. The changing climate is starting to affect densities of pest plant and animal species around the region; leading to biosecurity risks and flow on effects to both native flora and fauna and to agricultural productivity.

Changes in government priorities in 2037 that aim to dramatically reduce emissions, leads to ecological concerns being overlooked. Consenting for large renewable energy projects and fast-growing exotic forestry plantations results in the loss of ecosystems and biodiversity degradation in these areas.

Energy



Taranaki remains heavily reliant on both imported and domestically produced natural gas, but global decarbonisation efforts lead to reduced availability and rising costs for imported gas. This dependence on imported fossil fuels makes Taranaki vulnerable to global supply chain disruptions, driving up energy prices and further straining the local economy. Households and businesses face higher energy prices; energy poverty and black outs become more prevalent, particularly among low-income communities. Businesses highly reliant on energy start to reduce their production and some close. Phase out dates for thermal assets continue to be pushed out due to a lack of incentives, leading to the increasing risk of stranded assets.

By the 2040s renewable energy technologies have become affordable (because of global economies of scale) and are increasingly adopted in Aotearoa New Zealand. Increasing demand for energy places stress on the national grid due to lack of energy storage and strategic planning.

Large renewable projects, such as hydro, commercial solar farms and offshore wind, are accepted through the consenting process with little time for consultation around wider environmental impacts. The private sector steps in, offering sustainable finance and incentives to build out rooftop and commercial solar for businesses and households to improve energy security and resilience. Micro-grids become common in rural and Māori communities, reducing the need to rely on the national energy grid.

Agriculture



Acute and chronic effects of climate change cause major disruptions to the agricultural industry; however, the impacts are less severe in Taranaki when compared to the rest of Aotearoa especially in terms of drought. New technologies emerge for those that can afford them, such as precision agriculture which improves efficiency and productivity for growers although the unpredictability of weather patterns still hampers total yield.

A policy shift occurs in 2037, focusing on emissions reduction. This shift introduces a levy on agricultural emissions that puts a price on biogenic methane and nitrous oxide emissions leading to decreasing stock numbers for dairy and sheep and beef farmers. There is a shift in land use on the ringplain to fast growing pine to remove significant quantities of carbon from the atmosphere, which is linked to the emissions trading scheme. However, when clear-felled, the exposed land is left particularly vulnerable to erosion during the period following harvest.

Severe droughts have had lasting effects on farmers and growers; some farmers lost access to irrigation and were forced to cut down production, diversify, or liquidate and abandon their farm.



Slow Followers

Government priorities



After years of lagging behind, Government has now made decisive actions on climate change. Facing increasing international pressure and escalating impacts from climate disasters, Government implements stringent emissions reductions targets and introduces policies aimed at adapting infrastructure to cope with ongoing climate challenges.

However, the delay in these measures means the costs of transitioning are higher, with significant investments required to overhaul outdated systems and rebuild resilient infrastructure. Some investments are simply unaffordable, resulting in infrastructure being left at high-risk.

In Taranaki, the slow start means much of the region's energy and agricultural sectors have been severely affected. The focus shifts towards adaptation as carbon emissions are now locked in and the physical impacts are a reality; there are major government-led projects in water management, coastal defence and energy infrastructure. While these efforts eventually lead to some stability, the lack of earlier action leaves rural communities, particularly Māori, struggling to recover.

Society



By the time government climate policies have firmed up, the public are receptive and onboard with Aotearoa New Zealand's progress toward reaching net zero in 2100. However, policies such as incentivised land use conversion from high emitting dairy, sheep and beef farms to crops and forestry creates economic disruption in Taranaki, and many are not prepared for the job losses and redundancies they face. As a result, Taranaki's population starts to stagnate and then decline.

Communities throughout the region are now largely decentralised from the national energy grid, which has improved resilience and ability to cope with the ongoing weather events.

Insufficient climate action has led many people throughout Aotearoa to lack trust in government agencies. This has a negative effect for those working for NPDC who face abuse, leading to health and safety issues and difficulty attracting staff to work at the council.

Environment



Native bush and forested areas, previously rich with diverse species, have slowly thinned out due to poor restoration efforts and delayed pest control. This leads to the loss of native flora and fauna. The increasing number of hot days and drought events in the region lead to wildfires becoming more common. Taranaki Maunga experiences reduced snowfall and ground water in summer months. Meanwhile, degraded agricultural land affects the rivers and streams that flow from the maunga, leaving them sluggish and polluted with excess sediment. Land that was converted to fast growing pine in the 2040s is left vulnerable to erosion during the period following harvest. This has a negative effect on soil health, biodiversity and the water quality in the streams and rivers in these catchments.

Sea level rise and associated storm surge has forced vulnerable coastal communities to retreat in some areas of the region. These retreats are often not proactive and instead occur after significant storms, with new inland replacement developments often created on an ad hoc basis with low quality urban planning.

Māori values of kaitiakitanga remain a constant theme in attempt to protect Taranaki's environment, with iwi continuing to lead local conservation initiatives. However, these efforts face ongoing uphill battles as climate impacts start to affect less obvious areas, such as soil health, and hinders efforts to regenerate native species. Some taonga species are no longer able to survive in Taranaki, particularly kaimoana and sub-alpine flora.

Energy



Aotearoa New Zealand transitions away from fossil fuel usage, driven by a combination of consumer choices, international pressure in the form of climate-targeted tariffs and trade barriers, and fossil fuels being out-competed on price. The limited availability of skilled workers within Aotearoa hampers the ability and speed of the sector to transition.

Taranaki leads the shift towards renewables, with offshore wind farms in the South Taranaki Bight, solar farms throughout the region and new hydro facilities contributing to the grid. However, years of political delays and regulatory hurdles mean much of the region's infrastructure is outdated, resulting in frequent maintenance issues and supply chain interruptions.

Those businesses and households that shifted to solar energy in the short term benefited from the ability to be self-sufficient during weather events.

Agriculture



Taranaki's agricultural sector has been forced to adapt to the realities of a changing climate. Sea level rise and associated storm surge is causing significant problems especially for low lying, productive, agricultural land that begins to suffer from salination around coastal areas, or soil loss and degradation.

The government introduced environmental levies to reduce emissions and implemented water restriction policies, meaning smaller farms struggled to survive the transition. Large agribusinesses now dominate Taranaki, focusing on low emissions production to meet international market demands for sustainable dairy and crops, but at the cost of smaller, family-run farms.

Rotational grazing and native forestry plantation have helped restore soil health and protect water quality, but the environmental damage from years of heavy nitrate use and flooding along rivers has been irreversible. While high-value and adaptable crops such as manuka honey and hemp have gained popularity, the region remains economically divided. Larger farms thrive on government incentives and international demand, while smaller farms continue to bear the brunt of climate impacts and inequity.



Hot House World

Hot House represents a world where minimal and fragmented efforts towards climate change mitigation have resulted in severely increased physical impacts. Countries focus on their short term domestic best interests, resulting in persistent and worsening inequality and environmental degradation. There is a resurgence in the view that "Aotearoa New Zealand's emissions are insignificant" and that the country cannot afford to take the lead or act alone. Emissions continue to rise unabated throughout the century and there is continued reliance on fossil fuels across the energy sector.



Hot House World

Short
Term:
2024 -
2034

Throughout the 2020s, Taranaki feels the strain of the changing climate, particularly in coastal areas where sea-level rise and more frequent intense storms have begun to threaten homes and critical infrastructure. Minimal investment in mitigating the effects of climate change, combined with an ineffective emissions trading scheme (ETS), leaves Aotearoa New Zealand vulnerable to economic pressures in the future. Reliance on the ETS fails to incentivise significant reductions in emissions or drive adaptation efforts, leaving key industries like agriculture and infrastructure exposed to climate impacts.

Taranaki's major economic sectors continue with business as usual, although they face growing uncertainty. Energy continues to exploit the regions natural resources, such as natural gas and oil to maximise economic returns, with little ambition to progress toward supporting the renewable energy transition. Farmers struggle with frequent droughts and unpredictable weather, leading to reduced crop yields and water scarcity. Uncertainty about sector futures sees a lack of investment, resulting in difficulty attracting skilled labour and productivity issues that leave Taranaki more exposed to economic shocks.

Urban sprawl accelerates, amplified by uncertainty around population changes and a push to develop inland areas that are at less risk of sea-level rise and erosion. The rapid spread of housing and industry into areas not yet affected by climate change makes long-term planning more difficult. Policy priorities shift towards short-term, economically driven goals, such as building roading infrastructure to support urban sprawl. These priorities, along with population uncertainty, challenge NPDC and Government in forecasting and securing funding for climate resilience and adaptation.

In the 2040s the impacts of climate change have intensified. The agriculture sector is hit particularly hard, with widespread crop failures due to frequent and prolonged droughts. This threatens the economic viability of farming but also contributes to the growing concerns about food security. A shift in rural land use to exotic, fast growing pine forests occurs as the government prioritises carbon sequestration over reducing emissions sources. This negatively affects soil health, biodiversity and water quality in the streams and rivers near to these catchments.

Medium
Term:
2035 -
2054

Ecosystems are severely stressed; native bird, plant and marine species struggle to adapt to the changes in temperature, rainfall and biodiversity. Some ecosystems appear to be approaching tipping points for collapse, significantly impacting the mauri and wellbeing of Māori. In rural areas where critical infrastructure is more vulnerable, power outages and road closures become common, cutting off access to essential services. Heatwaves and higher temperatures drive up energy demand for cooling, putting immense pressure on the energy grid. Taranaki experiences frequent power outages, with regular controlled shutdowns of supply to prevent total grid failure.

A growing number of communities in coastal and flood-prone areas are displaced by extreme weather events such as cyclones. NPDC is pressured to reprioritise funding as the changing climate forces continual rebuilding of critical infrastructure, such as transport connections and wastewater. Without government support, communities are forced to leave their homes without planning or infrastructure to support their relocation. New Plymouth, as the region's largest city, faces heightened demand on housing, utilities and public services, straining already stretched resources. The influx of people into urban areas also creates tension as competition for jobs and affordable housing increases.

There is insufficient funding for infrastructure and service investments to support the growing community, resulting in lower service levels ranging from water shortages in summer to poorly maintained roads, parks and facilities. Neither central or local government have sufficient finance to also tackle emissions reduction due to the ongoing costs of rebuilding infrastructure.

Tensions rise with iwi and hapū increasingly concerned about the degradation of te taiao and lack of action by central and local government to reduce emissions. As iwi have an obligation to protect their whenua, they develop networks throughout the region to advocate climate action and improve resilience. Papakāinga are developed as some Māori seek to protect their hāpori whilst continuing to advocate for the mauri of ecosystems.



Hot House World

Long
Term:
2055 -
2100

Extreme rainfall and drought are now occurring every year across Taranaki with temperatures frequently exceeding 30°C in summer months, adding to wildfire risk. People, especially Māori, suffer from long-lasting psychological effects due to the impacts of extreme weather events and biodiversity loss. Rising sea levels and worsening river floods prompts a nationwide managed retreat policy. Wildfires reduce the effectiveness of pine forests for carbon sequestration.

Individuals, communities, and businesses have endured decades of financial and emotional stress due to environmental changes. NPDC are constantly being called upon to respond to the cascading problems arising from the effects of climate change, leaving insufficient time and funding for long term planning or effective emissions reduction. Without resilience planning in the 2020s and proactive government intervention, global climate tipping points have long been exceeded and years of ecological destruction have already been locked in. Infrastructure rebuilds are often fast and cheap options with little strategic thinking to improve resilience, sustainability or integrate iwi into the decision-making process. Taranaki is still seen as a relatively safe place by international standards, which helps in attracting skilled workers, but the growing amount of climate-induced migration globally means that immigration is a highly charged topic, politically and socially. This exacerbates stress within communities, particularly around housing and employment, with over-crowding and homelessness issues rising.

Technological advancements have soared during previous decades. By 2070, Taranaki has access to the technology needed to survive a new physical climate. Early warning systems, for example, provide localised warnings about events such as potential flood hazards and heatwaves, avoiding injury and death considerably. What technology has not been able to address, however, is the devastating social effects of a deteriorating climate and accompanying high costs of living. Taranaki suffers from widespread social unrest, worsened social cohesion and a highly politically and economically divided population. Socio-economic disparities exacerbate tensions, with poorer communities still exposed to frequent severe weather while wealthier communities have invested in private infrastructure to protect themselves. Iwi and hapū continue to advocate for te taiao whilst experiencing ongoing loss of cultural connection. Papakāinga are increasingly self-sufficient with iwi increasingly required to support the wider community post weather events with housing and food. The public are increasingly concerned about food and water security issues, and safe places to live.





Te Kaunihera-ā-Rohe o Ngāmotu
**New Plymouth
District Council**

