

## Gas scenario planning: Sharing our approach to using climate scenarios in practice

This paper outlines how climate scenarios have been embedded into our infrastructure asset management planning frameworks and used in practice to inform investment decisions on the gas network, as outlined in our [Gas Asset Management Plan](#) (Gas AMP 2025).

It's a practical example of how climate scenarios, developed in line with the [Aotearoa New Zealand Climate Standards framework](#), can be embedded within an Asset Management System and applied in the decision-making process to identify and respond to a changing climate.

By sharing our approach, we aim to build confidence across the sector that climate scenarios can be applied in a balanced and pragmatic way, supporting resilient investment decisions that deliver value for customers.

### Our climate scenarios

We have developed four [climate scenarios](#), specific to our gas and electricity networks. These scenarios are shown below and explore how New Zealand and the global transition to a net-zero carbon future (or lack of) will plausibly affect us over the short (2035), medium (2050) and long term (2080). Using these scenarios we have identified and evaluated material climate-related risks and opportunities for our gas and electricity network.

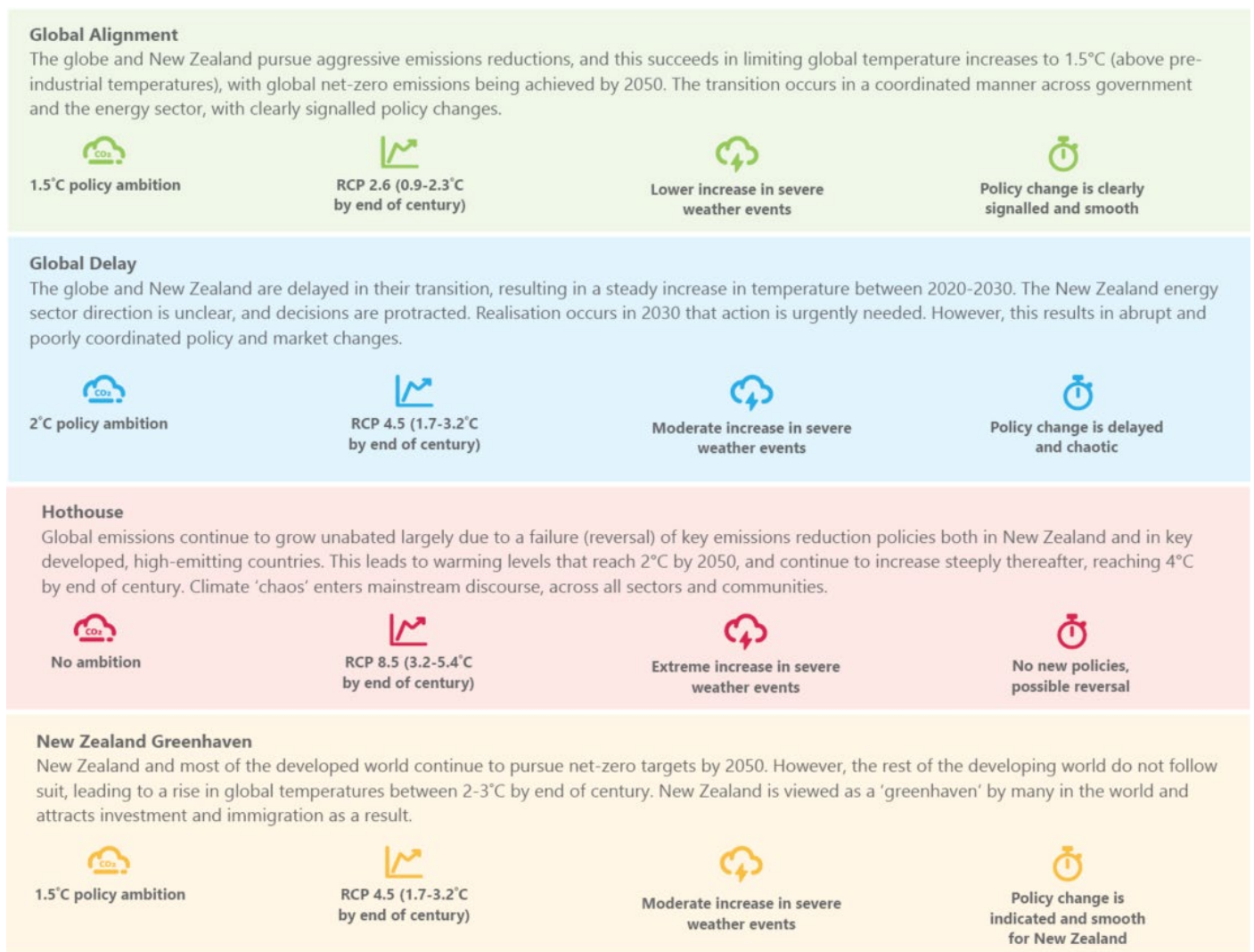


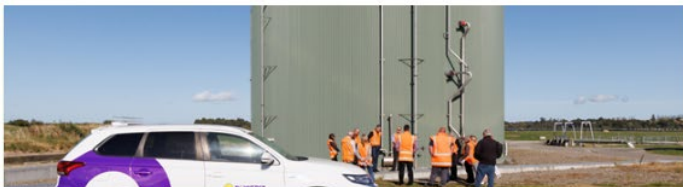
Image reference: Our four climate scenarios, available [here](#) on our website.

## Gas scenarios and developed pathways

Our gas network scenarios and developed pathways are shown below and describe how the various transitional and physical drivers could plausibly materialise under each of the climate scenarios.

- Transition risks for our gas network relate to how the energy transition may affect the network and our ability to enable the uptake of renewable gases. Pathways outline the foundations of the gas transition, the role of gas in the overall energy system, and how the network can provide reliable back-up supply to support resilience.
- Physical climate-related risks for our gas network relate to how resilient our network is to the acute and chronic impacts of a changing climate. Our [Climate Adaptation & Resilience Plan](#), released in 2024, outlines our methodology to identify gas priority assets vulnerable to physical climate risks.

These scenarios and pathways provide the context for how we interpret changes in the operating environment. Actual outcomes will depend on how the energy sector transitions to electrification and renewables, and how environmental factors play out. Therefore, we use these scenario drivers to inform our planning assumptions.



### Global Alignment

Maintain existing ICPs – where possible to within life of gas appliances (residential and commercial).

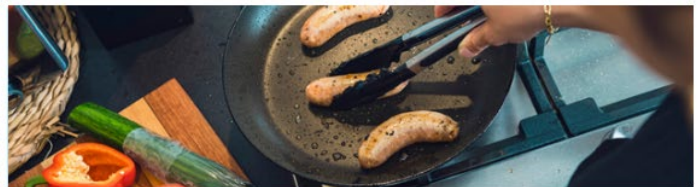
Gas pipelines maintained and ready for energy transition.

A few assets rationalised to avoid stranding.

Gas network supports the overall energy system while the electricity grid upgrades. Back-up supply options, including LNG where required, support energy security during the transition.

By 2035 the biomethane transition is largely complete (residential and commercial).

A few larger industrials electrify early freeing up gas supply for the residential market.



### Global Delay

Initial decline of existing ICPs before stabilising (residential and commercial).

Gas pipelines maintained and ready for energy transition.

Some assets rationalised to avoid stranding. We expect more of our assets to be impacted.

As the energy transition is slowed, New Zealand continues investment in the exploration of natural gas for energy security, providing ample wholesale gas supply.

Gas network serves as a reliable back-up, enhancing resilience during prolonged electricity outages, while overall energy system transitions.

The transition to biomethane is largely complete by 2050 (residential and commercial).



### Hothouse

Prolonged residential ICP gas demand as sector decarbonisation doesn't occur.

No loss of industrial and commercial customers.

Gas pipelines maintained for business-as-usual strategies.

The gas network remains as we see it today with no further investment in renewables.

The gas network balances seasonal extremes, preventing blackouts and protecting energy security.

Ample wholesale gas supply from new domestic production and imported LNG.



### New Zealand Greenhaven

Loss of ICPs over time as the industry fails to decarbonise the gas network.

Assets become stranded over time with the entire asset base stranded by 2050.

With the decline in the availability of gas, by 2030, the government decides the gas network will be wound down during the next 10 years.

As fossil gas is phased out, vulnerabilities in energy supply emerge during outages from storms or cold periods.

### Translating scenario drivers into planning assumptions

Balancing investment in our network while navigating this evolving landscape is a key priority. While all four climate scenarios are considered in our analysis, we use the Global Alignment scenario as a practical reference for near-term investment planning.

The early signals outlined below help us test the drivers under each scenario to inform our planning assumptions. These planning assumptions are then applied through our investment decision-making frameworks, translating scenario signals into targeted actions on the network.

Scenario drivers (early signals)	Planning assumptions (current)
Forecast demand, including customer connections and disconnections	This signal informs planning assumptions that prioritise maintaining a safe and reliable service for existing customers, rather than network expansion for growth.
Assets at risk of stranding	This signal informs planning assumptions to manage the risk of asset stranding. We have undertaken a high-level assessment of the financial performance of our networks and grouped them into four categories – healthy, vulnerable, industrial vulnerable, and high risk. Our recent performance analysis indicates that about 99.3% of our total gas customer connections are assessed as 'healthy' networks, which indicates a strong foundation for ongoing and future gas supply. A small number of 'vulnerable' networks are closely monitored (Gas AMP 2025, page 18-19).
Progress on renewable gas development, including biomethane	This signal monitors our progress towards the potential for biomethane to play a role in the gas network over time. Powerco is working towards a biomethane plant being operational by 2035, with 2027 identified as a potential earlier opportunity, subject to regulatory, commercial, and market developments.
Energy security considerations and government policy direction affecting the gas sector	Scenario assumptions reflect New Zealand's net-zero 2050 target and the need for a mix of energy options. Renewable gases, alongside backup supply options, such as LNG at a system level, are considered in assessing future energy security and network resilience.
Physical impacts of climate change	Scenario analysis has highlighted increased flood risk for strategic pipeline crossings located on bridges and district regulator stations in low lying areas. We are undertaking feasibility assessments for sites identified as exposed and vulnerable to inland and coastal flooding and slips to understand the most appropriate mitigations.

### Our investment decision-making frameworks

These planning assumptions are then applied through our investment decision-making frameworks. Investment priorities focus on maintaining safe, reliable and efficient services for existing residential and commercial customers, while supporting industrial customers to assess the most appropriate decarbonisation pathway for their operations.

Transition risks are addressed through our gas [Volume-to-Value Investment Framework](#) (refer Section 4.10.10), which supports careful consideration of asset replacement, cost, and long-term value. With slower growth in new connections, greater emphasis is being placed on balancing capital and operational expenditure.

For assets exposed to physical climate risks we consider whether assets should be replaced like-for-like, relocated, reinforced, or managed through alternative risk treatments. This ensures that investment in physical resilience is targeted and proportionate, rather than applying uniform upgrades across the network. Refer to our targeted mitigation approach and capital investment projects for [gas regulator stations](#) (Section 5.2, Table 5.19) and [gas special pipeline crossings](#) (Section 5.4, Table 5.35) in of our Gas AMP 2025.

### Observed conditions

The current operating environment provides practical insight into how scenario drivers are unfolding in reality. The early signals outlined below help us test whether the assumptions underpinning the Global Alignment scenario remain appropriate, or whether conditions may be beginning to align with an alternative scenario.

#### Transition conditions – demand and customer behaviour

During the past 12 months, the number of new residential gas connections has continued to decline. This reflects broader economic conditions, alongside declining gas supply, uncertainty around long-term gas availability, decarbonisation pressures, and rising gas prices. In contrast, gas consumption from industrial customers has remained relatively stable, with many industrial users continuing to rely on gas to provide high-temperature process heat that is currently difficult to replicate with alternative energy sources.

#### Physical conditions – network performance and resilience

While the gas network is largely underground and less exposed to wind damage, physical climate risks remain material, particularly for assets located on bridges and in flood-prone areas. The events listed below provide practical insight into how these risks are manifesting:

- **Cyclone Gabrielle (February 2023)** caused widespread infrastructure damage across the country. While the gas network largely remained intact and continued to supply homes and businesses, gas pipes located on bridges in the Hawke's Bay region were damaged by logging debris (slash).
- **Taranaki weather event (July 2025)** resulted in a gas pipe on a bridge rupturing because of water flows. Although this did not cause a loss of supply, repairs were required to restore full reliability following the event.
- **Wellington weather event (February 2026)** resulted in strong winds that caused large trees to fall and uproot, impacting underground gas pipelines and leading to a gas leak on a key service line.

These events, in isolation, are not indicators of scenario alignment. Rather, it is how the network performs during the transition and how learnings are incorporated into asset management and investment decisions that are informative.

### What this means for our planning assumptions

Taken together, demand trends and progress of biomethane development, along with network performance during recent weather events, and targeted mitigations indicate conditions remain broadly consistent with the Global Alignment scenario, where the gas network transitions towards a lower-carbon future rather than a uniform or unmanaged decline. At the same time, these observations reinforce that the transition is evolving and that assumptions need to be continually monitored and tested.

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### Ongoing review and refinement

We continue to monitor external drivers and conditions closely to determine whether our planning assumptions remain appropriate, including changes in regulatory settings which may impact our investment priorities.

By embedding climate scenarios into our asset management planning framework, we are better able to understand potential futures and make more informed investment decisions across our gas network. This approach supports a balanced focus on resilience, safety and customer as the energy landscape continues to evolve.

Should we observe material changes in gas supply dynamics or slower-than-expected progress in renewable gas development, we would reassess the assumptions underpinning our investment planning associated with the Global Alignment scenario, including whether conditions are aligning more closely with the Global Delay climate scenario.

### Sharing our approach

As New Zealand's energy transition unfolds, infrastructure owners are increasingly required to make long-term investment decisions in the face of uncertainty around future demand, supply and policy settings. Through this paper, we aim to contribute to wider infrastructure industry understanding of how climate scenarios can be used as practical tools to guide investment decisions, and support transparent, decision-useful disclosures.

The recent [Commerce Commission decision](#) on our five-year gas investment plan provides greater alignment with our view of future gas demand and recognises the need for ongoing resilience investment, including dedicated funding for resilience projects. This highlights the importance of using scenario-based approaches to inform long-term investment decisions in the face of uncertainty around future demand, supply, and resilience requirements.

While we are not a mandatory climate reporting entity, we have elected to voluntarily disclose to provide rigour and visibility of our climate-related strategic decision-making. Our most recent climate-related disclosures are included in our [Integrated Report 2025](#) (refer to page 81-82 for our climate standards index), with our next Integrated Report due to be published on the 31 July 2026.

This paper reflects current observations and planning assumptions, which remain subject to change as market conditions, policy settings, and the energy transition evolve.

If you would like any further information, please contact Anna Middlemass or Elizabeth Shires.

### Key Powerco documents

- [Grow to Zero](#)
- [Gas Asset Management Plan 2025](#)
- [Powerco Integrated Report 2025](#)
- [Powerco Climate Adaptation & Resilience Plan, published July 2024](#)
- [Embedding climate adaptation and resilience into infrastructure asset management](#) (webinar)