Powering our low-emissions future

Energy Resources Sector Net Zero Accord: A Second Annual Update On Progress

December 2025

Photo supplied by OMV

Foreword

New Zealand's energy sector keeps our economy moving, and it's doing so with year-on-year reductions in carbon emissions and greater carbon efficiency.

In our most recent data from 2023, New Zealand's total greenhouse gas emissions were 76.4 million tonnes of CO_2-e, down two per cent from the year before. The energy sector led that drop with a 0.8 per cent reduction, influenced by record rainfall and reduced industrial output. Once forest and land-use offsets are included, net emissions fell four per cent to 56.2 million tonnes.

Since 2010, the sector has made huge progress. The 2023 data shows oil and gas emissions have dropped by 63 per cent, from 1.6 to 0.6 million tonnes of CO_2-e. Smarter operations and cleaner technology across exploration, production and processing have made the difference. Venting and flaring have fallen by almost 90 per cent.

These results are attributable to several factors coalescing. Carbon price signals and land-use changes have driven a steady decrease in emissions, and prove what can be achieved when innovation, investment and collaboration pull in the same direction. Marsden Point closed in 2022, so we also saw the impacts of that in the latest data. The pandemic impacts were felt through 2020-23.

Achieving durable emissions cuts will require widespread and diverse technology adoption, capital investment, and infrastructure build-out, such as grid upgrades, renewable projects (with firming), low-emission fuels, and CCUS. Most important of all, however, is the need for consistent and mature cross-party policy setting.

Our energy sector continues to do the heavy lifting. All of our signatories are still feeling the impacts of damaging policies and some challenging economic realities, but our highly skilled and talented people continue to drive emissions reductions. The new face of energy is emerging, leading the way towards a lower carbon future with the latest innovations in safety, operational efficiency, biotechnology and creating new economic opportunities as they go.

This year, we're proud to welcome four new organisations (two signatories and two supporting partners) to the Energy Accord. They have been working hard to turn waste products into highly valued, low-carbon fuels. Their innovation signals the next wave of progress in New Zealand's energy journey.

I am honoured to stand alongside these organisations as they deliver real results for New Zealand's energy future. With the right policies and investment, we will continue to see the sector progress.

John Carnegie
Chief Executive, Energy Resources Aotearoa

Convening Partner of the Energy Resources Sector Net Zero Accord

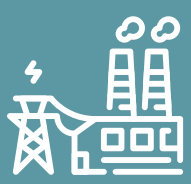
Energy Resources Sector Net Zero Accord

Our collective actions

01

Upstream decarbonisation

- We continue to invest significantly in low-emissions upstream technologies including energy efficiency; low-emission fuels; and flaring and venting reduction
- We continue to invest in permanent and/or production forestry to offset residual emissions



02

Customer decarbonisation

- We continue to work closely with our customers to understand their decarbonisation pathways/plans and match our gas production to meet these requirements
- We continue to support customers to switch from coal to gas where opportunities exist
- We are currently exploring opportunities for customers and other New Zealand businesses to use CCUS

03

Scaling low-emissions energy

- We continue to invest directly in low-emissions energy solutions like solar, wind, and CCUS
- We continue to support Ara Ake and Venture Taranaki to scale low-emissions energy by providing access to domestic and international expertise
- We are looking at opportunities to assist the scaling up of clean energy technologies where we have unique expertise (e.g., alternative fuels)

04

Supplying affordable, reliable, and low-emissions energy

We need the right policy, regulatory and market settings in place to deliver this Accord and to support New Zealand's progress toward national net zero by 2050. We will continue to work with government and the broader sector to:

- Promote policy and regulatory settings that improve investment confidence while enabling decarbonisation
- Contribute to enhancing flexibility and resilience of the energy sector through engagement on the national energy strategy
- Support a transition away from coal as the predominant solution for electricity dry years.

The role of the energy resources sector in New Zealand's economy

Natural gas continues to play a crucial role in New Zealand's total primary energy. It remains indispensable for balancing renewable electricity supply, meeting peak energy demand, and serving critical industrial sectors where electrification is not yet practical.

It is estimated that around 14 per cent of electricity demand is met by natural gas and coal, with most of that being from gas. This is gradually trending downward, but spikes during dry years.

Gross Domestic Product

The upstream oil and gas sector continues to support approximately $2.5 billion annually in GDP, with a significant concentration of activity in Taranaki

Exports

Oil exports remain substantial. Recent figures show crude petroleum exports in 2023 valued at around $750 million, primarily to Singapore and Australia

Crown Revenue

In the 2024-25 financial year, petroleum-related royalty revenue amounted to $123 million

Employment and Skills

The sector supports around 11,000 direct and indirect jobs, with many of these roles being high-skill, high-wage positions, particularly in Taranaki, where the industry underpins vital community infrastructure and training initiatives

Our progress

At the national level, we include emissions from production, processing, transport, and use of natural gas and LPG. National emissions from natural gas and LPG in New Zealand fell 29% between 2010 and 2023 (up 2% from between 2010 and 2022), while overall consumption fell 13% in the same period (down 3% from 16% between 2010 and 2022 as consumption rose slightly year-on-year to reflect changing economic circumstances).
This shows New Zealand is becoming more emissions-efficient at using natural gas and LPG, with overall emissions intensity of these fuels improving, falling 18% (up 6%).

Exhibit 1:

New Zealand's total emissions from natural gas and LPG (production, processing, transport, and use)

Source: Ministry for the Environment Greenhouse Gas Inventory 2025; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data

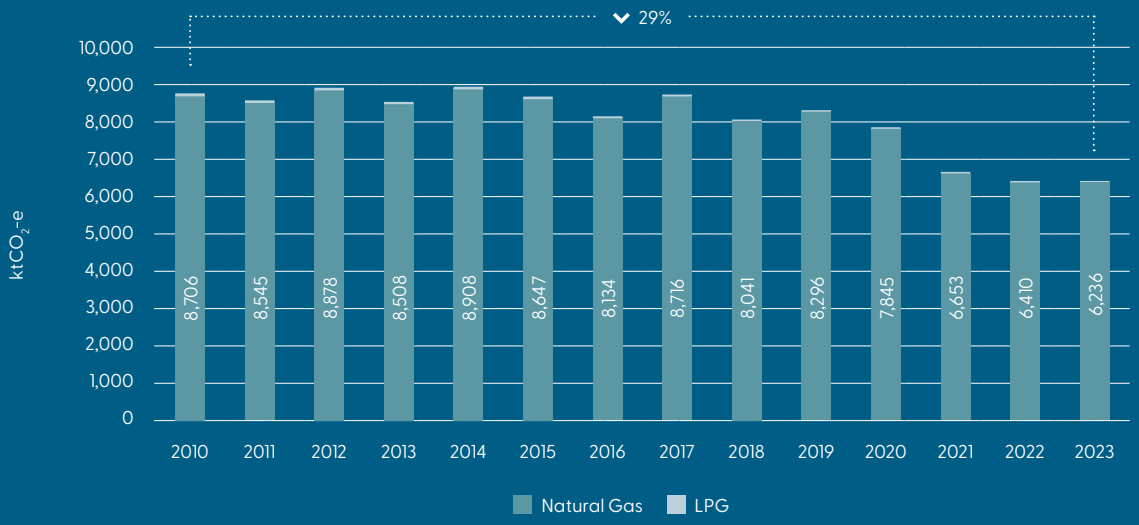
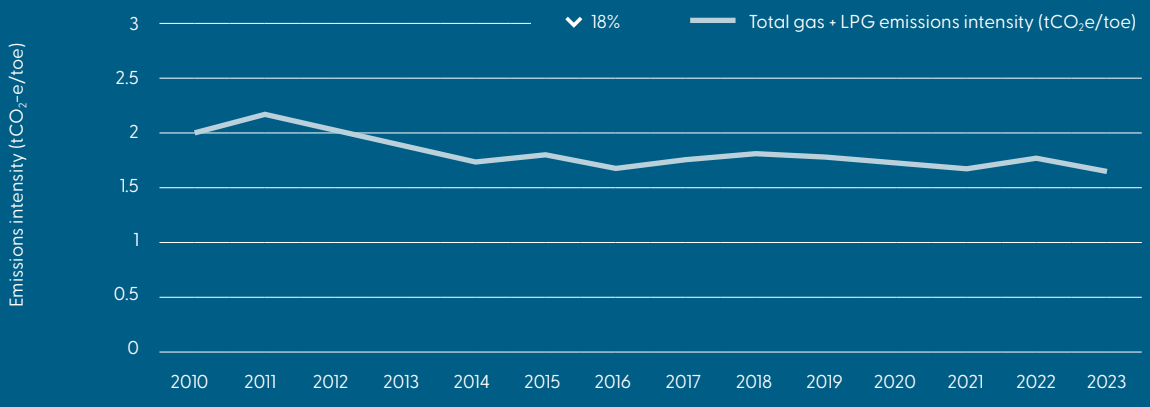


Exhibit 2:

Total national emissions intensity of natural gas/LPG

Source: Ministry for the Environment Greenhouse Gas Inventory 2025; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data; Ministry of Business, Innovation and Employment Energy Balance Tables



Overall emissions from the exploration, production, and processing of domestic oil and gas in New Zealand reduced by 63% from 2010 to 2023 (up 2% from 2010 to 2022). This improving trend results from a combination of falling production and ongoing investment in operational efficiency and electrification. Reductions in venting and flaring (down 88% between 2010 and 2023) while still significant, rose slightly in 2023 following a large drop in 2022. Emissions reduction by upstream oil and gas operators have outpaced falling production resulting in emissions per unit falling at a faster rate since our last annual update. New Zealand's production in 2023 was 44% less emissions intensive on a per-unit basis than in 2010 (up 8% from 2010 to 2022).

Exhibit 3:

Upstream oil and gas emissions

Source: Ministry for the Environment Greenhouse Gas Inventory 2025; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data; Ministry of Business, Innovation and Employment Energy Balance Tables

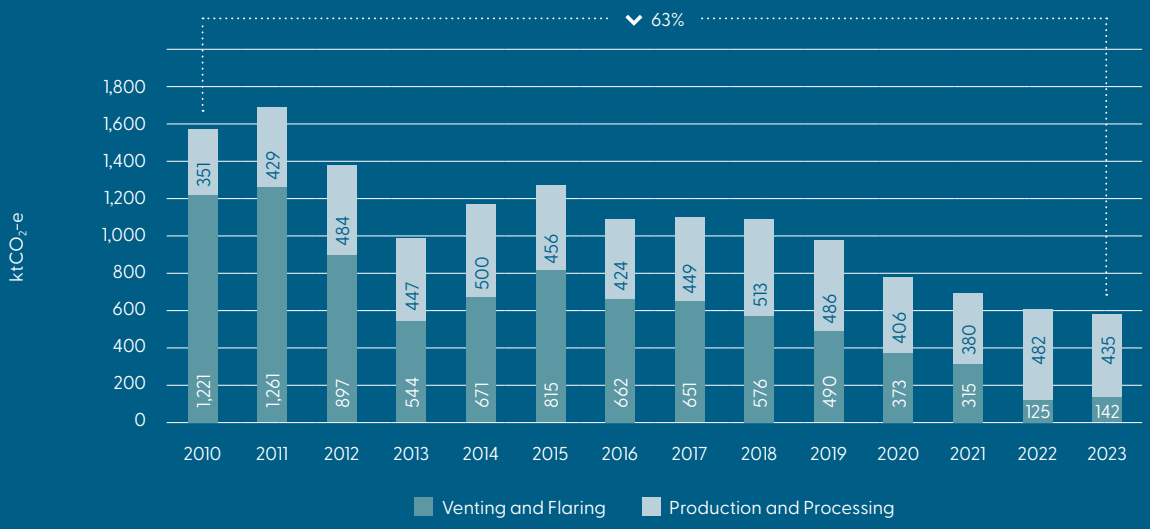
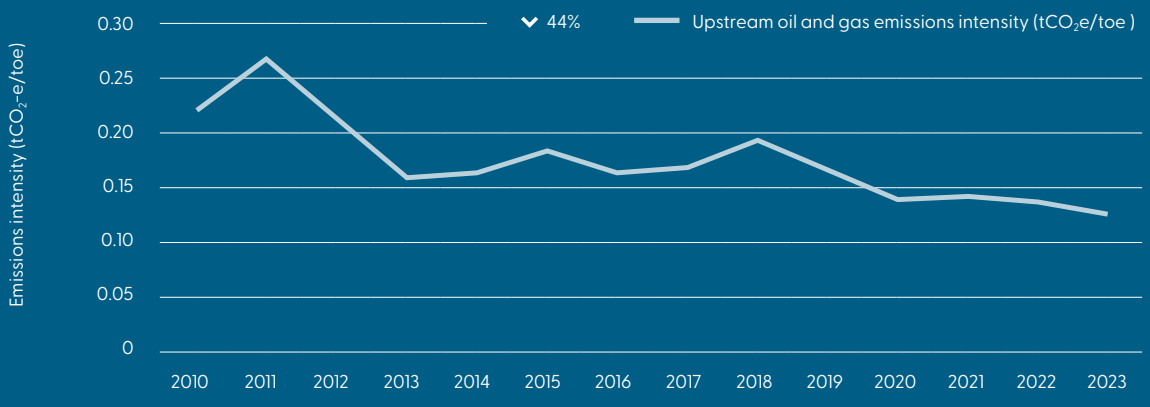


Exhibit 4:

Emissions intensity of New Zealand's upstream oil and gas sector

Source: Ministry for the Environment Greenhouse Gas Inventory 2025; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data; Ministry of Business, Innovation and Employment Energy Balance Tables



Case Study

Todd: Te Rahui Solar Farm – accelerating New Zealand's renewable energy future

A milestone for solar development in New Zealand

New Zealand's energy transition has taken a significant step forward with the financial close of Te Rahui, a grid-scale solar farm project near Taupō. Led by Todd and delivered by a partnership between Nova Energy and Meridian Energy, this initiative demonstrates a strong commitment to expanding sustainable energy infrastructure nationwide.

The project is a collaborative 50:50 joint venture between Nova (a Todd subsidiary) and Meridian, with both organisations sharing investment and energy offtake. It signals Todd's first significant move into renewable energy and reinforces Meridian's position as a leader in clean energy development. Located near Rangitāiki, east of Taupō, Te Rahui is expected to be New Zealand's largest solar farm once both stages are complete, with the capacity to generate 400MW of renewable electricity – enough to power about 100,000 homes. Construction on the first 200MW stage is scheduled to begin early 2026, aiming for completion by 2027. Site preparation is already underway, as Beon Energy Solutions, the primary EPC contractor, mobilises teams and equipment for large-scale installation.

More than just energy, Te Rahui is committed to delivering benefits for local biodiversity and

An artist's impression of the Te Rahui Solar Farm next to State Highway 5, Napier-Taupō Rd

An artist's impression of the Te Rahui Solar Farm next to State Highway 5, Napier-Taupō Rd

communities. The project involves ongoing collaboration with iwi, hapū, landowners, and residents, while respecting the whenua, boosting energy resilience, and supporting a sustainable future for New Zealand.

With Te Rahui advancing toward commissioning in 2027, and the 300MW Twizel solar project recently referred under the Government's Fast-track Approvals process, Todd's renewable pipeline has grown to approximately 700MW. This positions Todd firmly among New Zealand's leading solar developers and underscores its growing role in accelerating the country's energy transition.

For Meridian, Te Rahui marks an important milestone on the path to launching seven new renewable projects by 2030. Having invested more than $1 billion in the last five years, Meridian will invest a further $2 billion over the next three years to deliver approximately 1,000MW of additional clean energy capacity.

Case Study

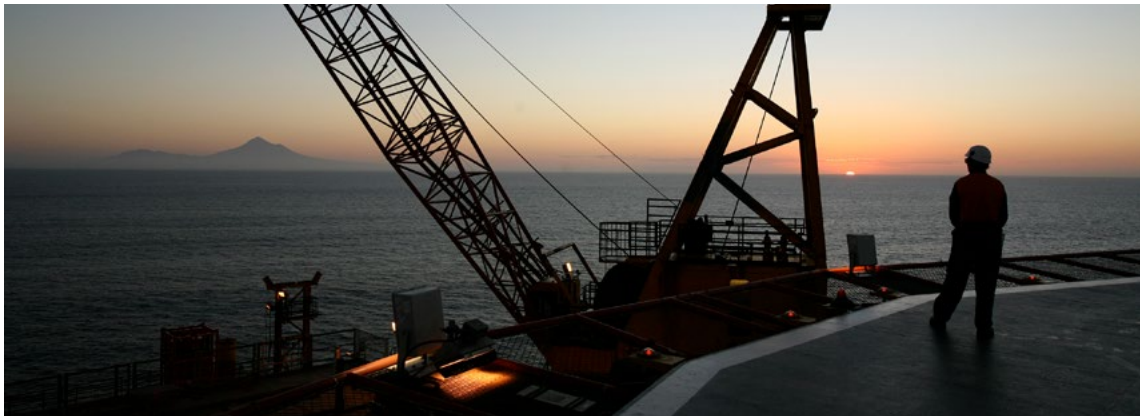
OMV: Cutting emissions across offshore fields

OMV has delivered a series of efficiency projects across the Māui, Maari, and Pohokura fields.

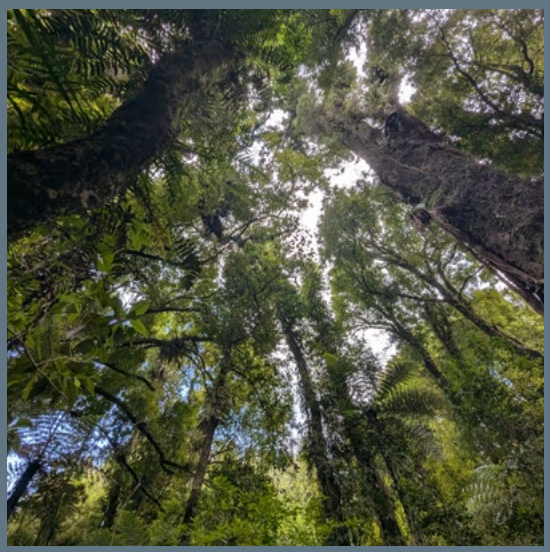
Over the years, efforts at the Māui and Maari fields alone have reduced emissions by the equivalent of around 36,000 tonnes of CO_2. This is comparable to the annual energy use of more than 27,500 New Zealand households:

- at **Māui**, upgrades include replacing oversized or diesel-driven equipment with electric units, improving combustion efficiency in heaters, optimising turbine load management, reducing flare purge, and bypassing molecular sieves. Together, these measures deliver thousands of tonnes in annual emissions savings;
- at **Maari**, OMV's largest emissions-reduction project in 2023, the Raroa. This involved the switch to reverse-osmosis water makers and improvements to flare gas and pressure control have significantly lowered steam demand and cut fuel use. The move lowered carbon dioxide production by 6,000 tonnes a year, cut the amount of crude oil or fuel gas being burned by the equivalent of 45 barrels of oil per day, and saved about $50,000 in annual maintenance costs; and
- at **Pohokura**, optimisation of temperature control systems has reduced electricity demand by 120kW, cutting further CO_2 emissions.

OMV



Bioenergy and alternative fuels – converting waste to energy



New bioenergy technologies are rapidly diversifying the ways biomass and organic waste can be converted into low-emission fuels and energy.
Innovations go well beyond traditional wood-chip boilers. These days, advanced thermochemical processes such as gasification, pyrolysis, and hydrothermal liquefaction can turn forestry residues, agricultural by-products, and even municipal waste into syngas, bio-oil, or renewable gases suitable for electricity generation, industrial heat, or transport fuels. Biological and catalytic upgrading steps then refine these intermediates into drop-in bio-diesel, sustainable aviation fuel, or renewable natural gas that can feed directly into existing infrastructure as 'drop-in' fuels.

These next-generation technologies promise to improve energy yields. They will also reduce lifecycle greenhouse-gas emissions and unlock previously under-utilised feedstocks.
Compared with first-generation biofuels, they can process wetter or more contaminated feedstocks and achieve higher conversion efficiencies, while also producing valuable co-products such as bio-char for soil enhancement or carbon sequestration. Many systems are designed for modular or distributed deployment, reducing transport costs for bulky feedstocks and supporting regional economic development.

Commercial demonstration is now under way in New Zealand and internationally.
Companies such as Mobil are trialing blending of advanced bio-diesel into conventional fuel supply chains; Carbona is developing high-temperature gasification for renewable syngas and power; and eNZoil is refining waste oils into renewable liquid fuels. These case studies illustrate the breadth of technical pathways and the importance of sustained R&D, supportive policy, advocacy, and off-take agreements, which all help to scale up production and deliver measurable emissions reductions.

Case Study

Mobil: Mobil Ethos+ Renewable Diesel R20

Mobil Oil New Zealand delivered its first shipment of Mobil Ethos+ Renewable Diesel R20 in March 2025, marking a significant milestone in the company's commitment to supporting New Zealand's energy transition. The fuel continues to be supplied to Allied Petroleum, part of the HW Richardson Group, in Christchurch. The continued use of Mobil Ethos+ Renewable Diesel R20 demonstrates the readiness of New Zealand businesses to adopt lower-emission fuel solutions that are available today and compatible with existing infrastructure.

Mobil Ethos+ R20 contains a minimum of 20% hydrotreated vegetable oil (HVO), refined from used cooking oil sourced across the Asia Pacific. It is certified under the ISCC EU Scheme, ensuring sustainability and traceability throughout the supply chain. The product offers an estimated 15.4% reduction in lifecycle greenhouse gas emissions compared to conventional diesel, based on the GREET 2023 rev1 model from the United States. It includes Mobil's proprietary Synergy™ additive, which enhances engine protection and cleaning, delivering premium diesel performance.

This shipment was the first ISCC-certified HVO cargo ever delivered to New Zealand. Mobil was the only fuel supplier in the country to have delivered both Sustainable Aviation Fuel and Renewable Diesel, reinforcing its leadership in lower-emission fuel supply. The company continues to support technology-neutral, market-based approaches to emissions reduction, and sees renewable diesel as a key part of a broader suite of solutions.

Mobil's global parent, ExxonMobil, is investing up to $30 billion in lower-emission opportunities between 2025 and 2030, with a focus on molecule-based solutions such as biofuels, CCS, hydrogen, and lithium.

Pictured: The launch was marked by a ribbon-cutting ceremony celebrating the first shipment of R20 into the country, attended by HW Richardson Group chief executive Anthony Jones, Mobil Oil New Zealand chairman Wayne Ellary and Climate Change Minister Simon Watts.

Case Study

Carbona: Torrefaction and Carbonisation Reactors

When biomass is thermally treated at temperatures above 200°C without oxygen (a process known as pyrolysis), it generates synthesis gas, or syngas. This gaseous by-product is rich in energy and plays a crucial role in torrefaction and carbonisation processes.

New Zealand could soon have a torrefaction plant like Europe's largest torrefaction facility, commissioned by Taaleri in Finland. It produces up to 60,000 tonnes of biochar annually. At its core is Polytechnik's syngas combustion system, designed to capture and reuse the energy released during torrefaction. Rather than wasting this energy or incurring additional costs to treat and release it safely, Polytechnik's approach extracts and utilises this syngas effectively, transforming a waste stream into a valuable energy resource.

Through tailored chamber design, Computational Fluid Dynamics (CFD) informed combustion control, and integrated heat recovery, operators achieve higher efficiency, lower emissions, and safer, more sustainable production.

carbona

Pictured Top: Torr Gas Burner
Pictured Bottom: Torrefied Biomass Briquettes

Case Study

eNZoil: Innovation in oil recycling a local win

Transformer grade mineral oil is a valuable and limited natural resource. Oil recovered from older scrapped transformers and de-graded service aged oil can be regenerated to as new condition meeting IEC international standards. eNZoil has developed and operates a circular, sustainable model for transformer oil out of their Seaview plant.

In 2015, Transpower identified corrosive sulphur within its transformer fleets oil, detrimental to the performance and lifespan of these critical, long-lived and expensive assets.

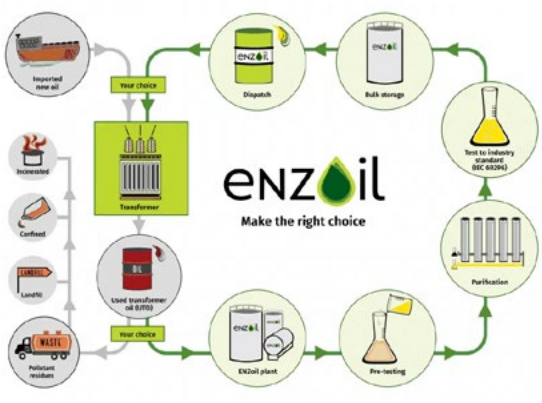
It contacted eNZoil, a Wellington-based company that has been supplying new and regenerated transformer oil since 2004. Working together, the companies sought a cost-effective and permanent solution that could remove the contaminants but also address the total life cycle sustainability of Transpower's large fleet of transformers.

A new process was trialled, using eNZoil's Regen oils to completely flush the contaminants from the transformer, then empty and refill again with fresh eNZoil regenerated oil. The original contaminated and flushing oils were captured and returned to eNZoil for re-processing back to as-new oil for future reuse, maintaining the circularity of the process.

Now, with 55 of 70 transformers flushed between 2018-2023, benefits include:

- 98% reduction in CO2 emissions vs new imported mineral oils;
- total estimated CO2 emissions savings of 12,709 tonnes;
- direct oil cost savings of more than $1,327,075 by using regenerated oils; and
- a 98% recovery of used oils for re-use in the wider transmission and distribution sector.

Transpower has also incorporated the requirement to return used transformer oil to eNZoil into its service provider standards so that the oil can be retained in circulation.



Source: Transpower Annual Integrated Report Approved Statement (2023)

Moving forward together

Building on strong foundations, we welcome four new organisations from every link in the energy value chain. Producers, distributors, retailers, and users of all energy resources. Liquid fuels, gas, electricity, biofuels, hydrogen, and more are invited to join.

We are proud to have two new signatories this year – Carbona and eNZoil – and two new supporting partners, Elemental and Mobil.

Our signatories are united in leading the charge toward net zero by 2050.The case studies in this collection are in many ways groundbreaking. They are focused on scaling up what works. They transform natural resources into energy and turn waste byproducts into valuable commodities for the economy. Bioenergy and renewable fuels all play a part in reducing emissions while strengthening the business opportunities for the future.

We are also fortunate to work alongside vital supporting partners, whose infrastructure and expertise help turn ambition into action. Together, this community of like-minded organisations is reimagining and reshaping the energy system of the future.

The Accord remains a unique global exemplar for collaboration between industry and government, showcasing the power of sharing best practices, such as those seen in our case studies, and market-driven mechanisms, like the Emissions Trading Scheme, in achieving rapid and effective carbon reductions.

Our transition to a low-carbon energy future is already in motion. We warmly invite you to be part of it.

Accord Signatories

Supporting Partners

Convening Partner

Photo supplied by OMV