



# Powering our low-emissions future

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



November 2024



Photo supplied by Matahio

# Foreword

**This annual update of the Energy Resources Sector Net Zero Accord transparently and openly demonstrates the oil and gas sector's contributions to New Zealand's carbon emissions profile, and the actions being taken to reduce that.**

The sector has risen to the challenge and has made remarkable strides since 2010, demonstrating its commitment to reducing emissions.

Based on publicly available data up to 2022, we have observed a remarkable drop in the intensity of oil and gas emissions, and overall emissions more than halving.

In this update, I'm delighted to report a 90% decrease in gross emissions from venting and flaring since 2010, a testament to the sector's dedication and the success of its initiatives.

Alongside this progress, there remains a solid basis for conversations about achieving energy security, economic prosperity, and our climate goals. This significant reduction demonstrates the oil and gas sector's effective and rapid reduction of carbon

emissions and the success of market-driven initiatives like the Emissions Trading Scheme in incentivising reductions.

The Accord represents a unique global document for our industry, demonstrating the power of practical collaboration within the Sector and with Government and the sharing of best practices.

New Zealand's energy sector is doing the heavy lifting on emissions reduction. It will continue to grow and evolve, forging ahead with providing energy for the economy, all while making substantial contributions to a low-emissions future through such technologies as carbon capture, utilisation and storage in the future.

I am honoured to be associated with these organisations as they continue to work towards a low-carbon future that provides quality jobs, expertise, economic prosperity, and energy security.

**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

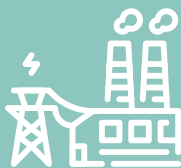
### 01

#### 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

**Completed**

We funded a detailed technical and economic study into the viability of carbon capture, utilisation and storage (CCUS) in New Zealand which resulted in our report: 2035/2050 Vision for Gas



### 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., offshore capabilities for offshore wind and geothermal through rig sharing.)



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### 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



**~10%**

Natural gas generation provides ~10% of New Zealand's electricity supply



**\$250m**

The Government collected around \$250 million in royalties and taxes from the oil and gas industry every year on average over the last decade (2013-2022)



**\$2b**

Oil and gas contribute over \$2 billion to the New Zealand economy in sales each year



**7,000**

Over 7,000 jobs are supported by the oil and gas sector (including direct and indirect employment)



**Energy**

Energy is a significant sector for regional economic development and unlocking economic growth



**~400,000**

Gas is used in ~400,000 households and businesses across the country for cooking, space and water heating, and industrial processes

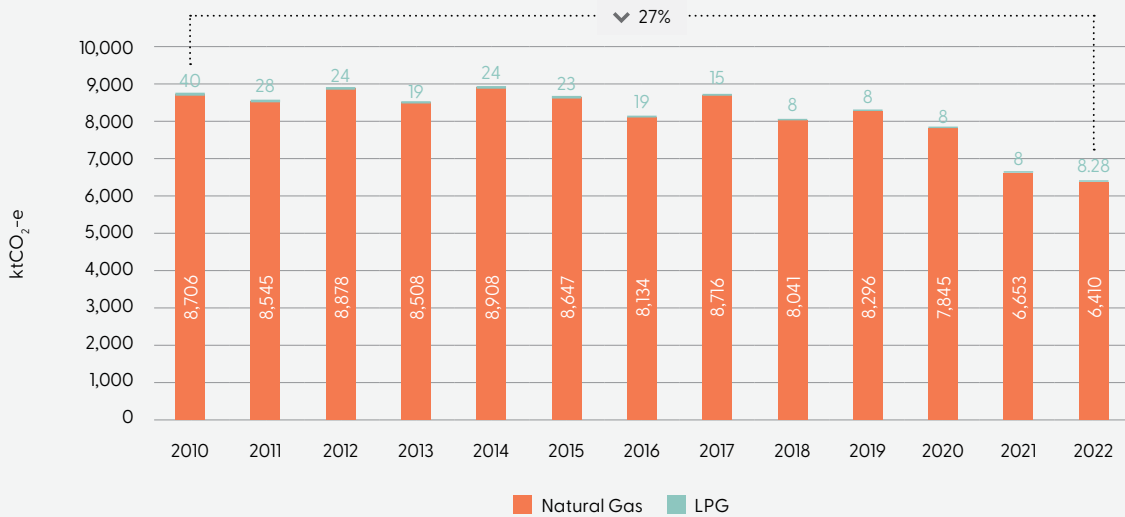
# Our progress

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 27% between 2010 and 2022, while overall supply fell 16% in the same period. This shows New Zealand is becoming more emissions-efficient at using natural gas and LPG, with overall emissions intensity of these fuels falling 12%. Last year's figure was 18% which reflects that in 2022 the rate of emissions reduction stayed relatively stable when compared with 2021, while the consumption of gas fell further in 2022.

## Exhibit 1:

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

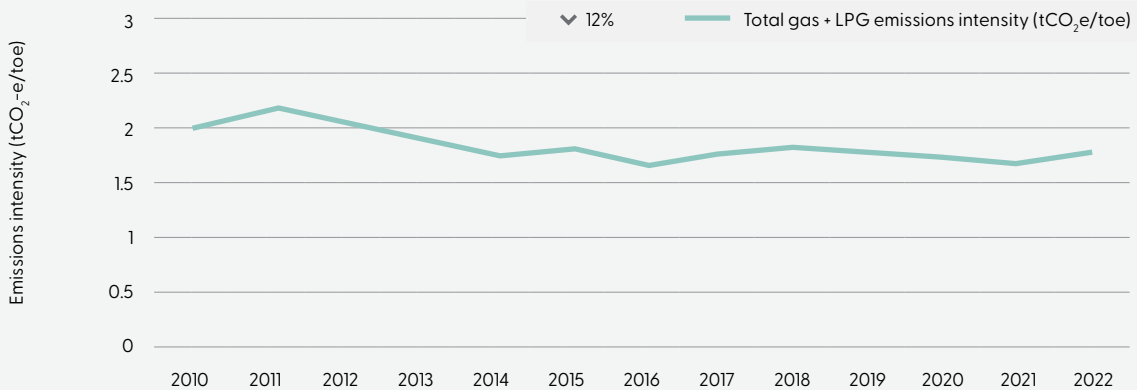
Source: Ministry for the Environment Greenhouse Gas Inventory 2023; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data



## Exhibit 2:

Total national emissions intensity of natural gas/LPG

Source: Ministry for the Environment Greenhouse Gas Inventory 2023; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data; Ministry of Business, Innovation and Employment Energy Balance Tables



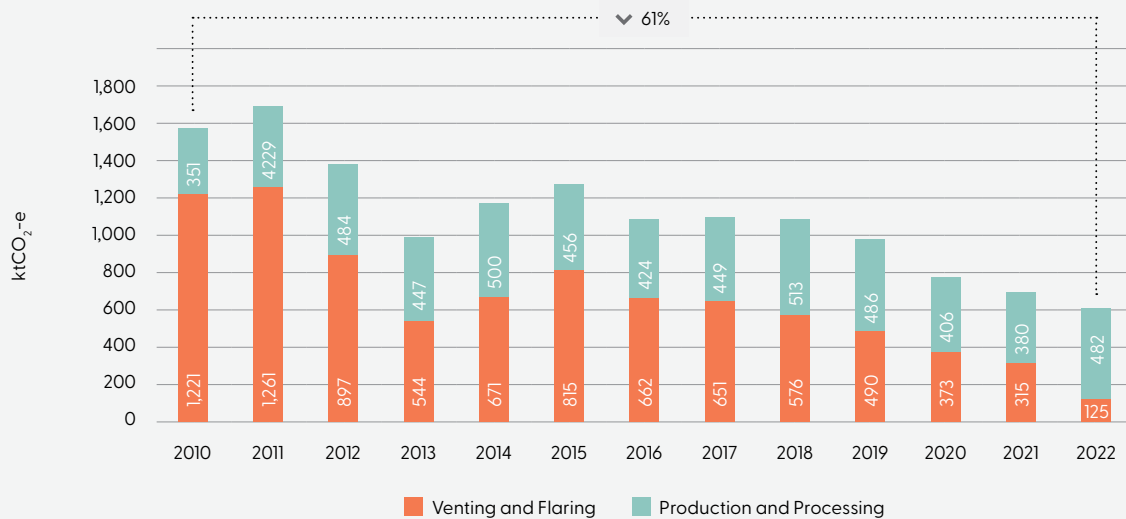


New Zealand's upstream oil and gas production in 2022 was 36% less emissions intensive on a per-unit basis than in 2010. Overall upstream emissions from the exploration, production, and processing of domestic oil and gas in NZ reduced by 61% from 2010 to 2022, from 1.6 Mt to 0.6 Mt. This is made possible by significant investments in efficiency and emissions reduction by upstream oil and gas operators – including all signatories of the Energy Resources Sector Net Zero Accord. These investments include significant reductions in venting and flaring (down 90%).

**Exhibit 3:**

Upstream oil and gas emissions

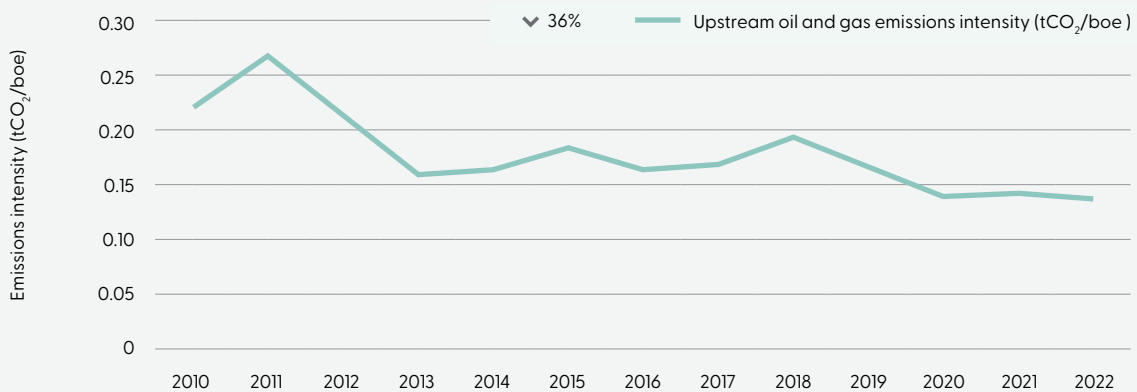
Source: Ministry for the Environment Greenhouse Gas Inventory 2023; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data; Ministry of Business, Innovation and Employment Energy Balance Tables



**Exhibit 4:**

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

Source: Ministry for the Environment Greenhouse Gas Inventory 2023; Ministry of Business, Innovation and Employment Energy Sector Greenhouse Gas Emissions Data; Ministry of Business, Innovation and Employment Energy Balance Tables



## Case Study



# Operational efficiencies drive down emissions



OMV is on a global journey to net zero by 2050 and a key part of this is reducing emissions in all areas of its operations, aiming to cut global oil and gas production by 20% by 2030 and cease production for energy use completely by 2050. It will also leverage its assets and expertise to expand geothermal, carbon capture and storage, solar and wind activities globally.

Over the past 5 years (2019-2024) OMV has reduced its operational emissions by 55%. In 2024 alone, OMV has:

- Reduced the purge rate to the process safety flare at Pohokura, reducing emissions by 220 tonnes CO<sub>2</sub>e / year,

- Installed a water maker for potable water on Māui A, reducing the existing vessel sailing for delivery of water and therefore emissions by 550 tonnes per year.
- Substituted inefficient air compressors on Maui A and Maui B with a modern, variable speed drive unit, reducing emissions by 330 tonnes per year
- Changed the service water pump on Maui B for a smaller version, saving 30 tonnes CO<sub>2</sub>e / annum.



## Case Study



# Collaboration to reach low-emissions goals



## Beach Energy - Supporting the sector's low-emissions goals through collaboration

Beach Energy's collaborative investigations into wind energy activity demonstrates the instrumental role energy producers play in supporting consumers and the sector through the journey to a low emissions economy.

- Beach Energy is hosting a LiDAR system on the Kupe offshore platform, 30km off the Taranaki Coast, to collect key data points over the next couple years that are critical for future wind farm developers, such as wind speed, direction, and consistency.
- By sharing this data with multiple offshore wind developers Beach has reduced the need for duplication and allowed the consortium

(consisting of Wind Quarry Zealandia, Copenhagen Offshore Partners, BlueFloat Energy, and Sumitomo SHI FW) to assess Aotearoa New Zealand's potential wind resources.

- The consortium is optimistic that the project will be underway by the end of the decade, thanks to the collaborative leadership shown by Beach Energy.
- Beach is highlighting the complementary role existing energy producers can play in the exploration and development of 'new energy' while still working to keep the lights on.



## Case Study



# Calculating emissions with 'EASE'



## Todd - driving decarbonisation through data-driven systems

An Emissions Accounting System (EASE) built by Todd in 2023 has been a game-changer for automating and simplifying emissions calculations to support emission intensity reduction across the natural gas producer's Taranaki operations.

Developed by Todd's emissions reduction team, EASE leverages AVEVA's PI System, a comprehensive suite of solutions designed to enhance efficiency and drive sustainability in the energy sector.

### Engineered for real-time data processing

The system processes live data from Todd's plants to calculate emissions. These automated calculations support compliance with New Zealand's regulatory requirements and enable better operational decision-making through real-time emissions data.

Over the past 12 months, EASE has helped prioritise efficiency initiatives, such as optimising operating modes and favouring equipment that generates less emissions. This approach aims to reduce both direct emissions and overall emissions intensity over time. The critical emissions data EASE provides supports Todd's emissions reporting, and tracks progress on emissions reduction targets.

### Recognition by AVEVA

Todd's innovative use of AVEVA's software earned them an invitation to speak at the AVEVA World Conference in Paris. Instead, they chose to present at AVEVA's September roadshow in Auckland, where they shared details of the system with businesses from the technology, energy, electricity and dairy sectors.



## Case Study



# Sustainable decarbonisation



## Matahio - continued focus on decarbonisation whilst preparing for the future

Early-stage emissions reduction projects identified and reported in 2023 have now been completed.

- To understand opportunities for further reductions Matahio has developed a day-to-day emissions monitoring scheme for fourteen key variables across the production system. This has justified a re-baselining of emissions forecasts to substantially lower levels than previously envisaged, thereby making the impact of reduction initiatives even greater.
- A feasibility study has been completed which suggests positive economics for installation of a Vapour Recovery Unit at Cheal. Engineering in-house through 2025 is anticipated to lead to installation the following year.
- Matahio continues to identify and adopt novel technology for both production enhancement and decarbonisation. It is planned to deploy a new drone-based sensor system in 2025 to assess fugitive sources, a critical aspect of methane emissions management. Studies into exhaust gas capture and storage at small-scale have also continued.

In parallel with these direct reduction initiatives, successful drilling campaigns in both 2023 and 2024, as well as a range of production optimisation measures derived from a Produce-the-Limit exercise conducted recently have boosted production. This has led to a reduced emissions intensity of 13 kgCO<sub>2</sub>e/Boe, once discretionary power generation is excluded, making the Cheal facility a lower emitter than upstream industry norms. A gas processing

agreement has also recently been signed with NZEC, which will further reduce plant emissions intensity once production comes online later this year.

With its commitment to progressive energy, Matahio is collaborating with industry experts to craft a comprehensive Low-Carbon business strategy, right-sized for a Small-Cap player. The next steps are to develop sector and country specific business plans for shortlisted technologies. The focus for New Zealand will be solar and biogas, albeit the solution-space for the latter remains challenging.





# Pioneering fugitive emissions detection:



## Todd's innovative use of imaging technology

Todd has become the first company in New Zealand to conduct fugitive emissions surveys using Quantitative Optical Gas Imaging (QOGI) technology. The surveys are a key component of the natural gas producer's fugitive methane emissions programme, which supports Todd's five-year sustainable development targets set in 2020, with a target completion date of 2025.

Following trials at Todd sites in Taranaki, MPC Kinetic's FLIR Quantitative Optical Gas Imaging technology was selected to conduct the comprehensive fugitive emissions surveys.

Led by Todd's emissions reduction and asset integrity teams, the surveys identified fugitive emissions of less than 0.04% of Todd's direct emissions and less

than 0.005% of Todd New Zealand's total emissions, which includes emissions from Nova Energy, a subsidiary of Todd.

Following the collection of comprehensive baseline data, an improvement programme is now underway to reduce the annual leak rate. This will include smaller-scale surveys conducted annually to monitor progress and identify any new sources of fugitive emissions.

Todd's successful surveys have attracted interest from other energy companies looking to enhance their emissions detection and quantification methods, and in response, Todd has extended its support to these companies.

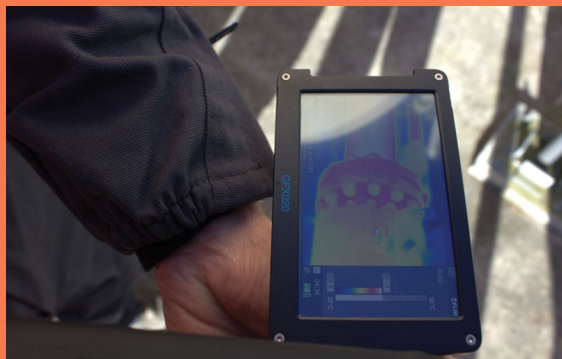




Photo supplied by Matahio



# Moving forward together

Our current signatories are committed to playing a central role in the journey toward net zero by 2050. The case studies illustrate this commitment and the innovation and collaboration required.

Alongside our signatories, we are fortunate to have critical supporting partners who offer invaluable infrastructure services, insight, and expertise.

This year, we're excited to have MPC Kinetic, a natural gas upstream solutions firm, join us as a new supporting partner of the Accord. You can find more about their valuable contributions to emissions reduction efforts in the case study on page 15.

Our collective commitment exemplifies how a community of like-minded organisations and individuals are working together in new ways to explore and expand the energy system of the future.

We want to build on the foundations of the Energy Resources Sector Net Zero Accord by expanding its membership to include signatories and support partners throughout the energy resources value chain. We welcome participation from producers, movers, retailers and users of all energy resources, including liquid fuels, gas, electricity, biofuels, hydrogen, and more.

Our adjustment to a low-carbon energy future is already well underway and we warmly invite all to join us on this journey.

## Accord Signatories



## Supporting Partners



## Convening Partner







