

Methanex New Zealand  
Sustainability Highlights

# Here for the Future

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We all want a better future. That includes a low emissions economy supported by solar power, wind turbines, electric cars and more. The methanol we produce supports all of these products.

It's also an irreplaceable ingredient in many of the things we use every day. From phones, computers, appliances and furniture, to clothing, paint, plywood and pharmaceuticals. And it's helping power the future as a cleaner, lower emission fuel.

## Demand continues to grow

We've been producing bio-degradable methanol expertly with New Zealand natural gas for over 30 years. We proudly drive 10% of Taranaki's economy, provide over 200 highly skilled

people with careers, and indirectly support another 3,000 jobs. We do it cleaner than many of our global competitors (some of who burn coal). And we're exploring new ways to increase our energy efficiency and further reduce emissions.

The world is changing fast but we're here for the long haul. Delivering a vital ingredient none of us can exist without. Helping Taranaki thrive, keeping communities employed, working with iwi, and both local and central government. Playing our part by contributing to a better tomorrow.

**Methanex – we're here for the future**





# An essential ingredient for everyday life

A bio-degradable product, methanol is used in many of the things we use and need every day. From phones, computers, appliances and furniture, to clothing, paint, plywood and pharmaceuticals.

Methanol is also found in electric vehicles, wind turbines and solar panels. It's also a cleaner, lower emission fuel that's already helping to power a greener future on land and sea.

## Chemical end uses

Methanol is an essential chemical building block for hundreds of consumer and industrial products, including paints, carpets, fabrics, building materials, and a variety of health and pharmaceutical products. It's also difficult to substitute based on its unique chemistry, scale, ease of transport and cost.

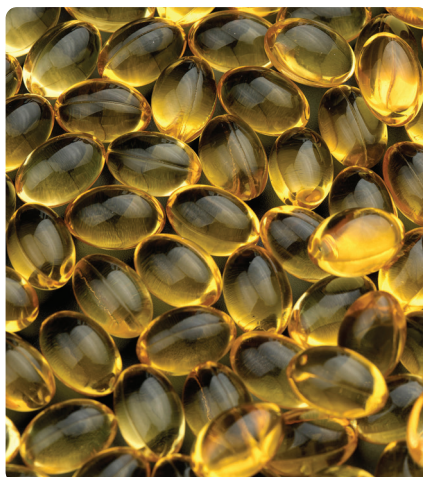


## Pharmaceuticals

Methanol is used in the manufacture of vitamins, hormones, antibiotics, and other pharmaceuticals.

## Medical equipment

Methanol is used to make medical supplies such as masks and gloves that help keep front-line workers safe.

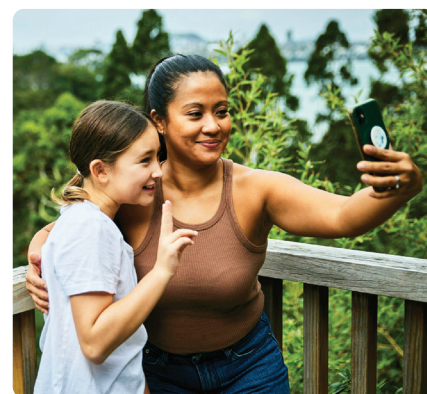


## Building materials

Methanol is used to make plywood and medium-density fibreboard (MDF) and is also an essential ingredient in sealants, paints and solvents.

## High-tech applications

Methanol is used in technology that keeps us connected, like laptops and cellphones. It is also used in applications that harness clean energy, such as solar panels and wind turbines.





### Methanol driving innovation with AICA NZ

AICA NZ is one of our important local customers. Based in New Plymouth, it is a leading producer of industrial adhesive resins used in the manufacture of wood products that support New Zealand’s construction industry, and are vitally important for building warm, dry homes.

Our methanol is a key ingredient for AICA and is transported directly to AICA’s plant by pipeline. We also supply the company’s operation in Nelson.

An innovative bunch, AICA recently started making biodiesel with a mixture of our methanol, tallow and sodium hydroxide. After rigorous testing, plans are now underway to use this for key parts of the company’s operation. It will also be sold to AICA customers to help them to decrease costs and reduce emissions.



### Energy-related end uses

A cleaner-burning fuel, methanol can help improve air quality by reducing emissions compared to traditional fuels such as diesel or coal. As it can be made from renewable sources, methanol fuel can also help society achieve its decarbonisation goals.



#### Automotive manufacturing

Methanol is used in plastics that make cars lighter and more fuel efficient to reduce CO<sub>2</sub> emissions. Examples include plastic body panels, dashboard foam and plastic gears and mouldings.

#### Clothing and textiles

Chemicals made with methanol can extend the durability and life of consumer products like fleece clothing and carpeting. New applications can also make these products more easily recyclable.

#### Marine fuel

As a cleaner-burning marine fuel, methanol significantly reduces emissions of SO<sub>x</sub> by 99 per cent, NO<sub>x</sub> by 80 per cent, PM by 95 per cent\* and CO<sub>2</sub> from combustion by 15 per cent.

#### Vehicle fuel

Methanol is used to fuel cars, buses and trucks that transport people and goods, replacing gasoline and diesel. Methanol is also used as a fuel-additive (MTBE) to help reduce tail-pipe emissions.

#### Domestic applications

Methanol provides a heat source for residential applications like cooking stoves.

#### Industrial and commercial applications

Methanol-fuelled boilers in China generate heat and steam for industrial applications, and methanol provides a heat source for commercial applications like kilns.

\*NOTE: Compared to Tier I vessels running on traditional marine fuel (heavy fuel oil).

# Supporting a low-carbon economy

As well as being a chemical building block for the day-to-day things we all need and a lower emissions marine and automobile fuel, methanol offers other benefits. It can be made from renewable sources and supports long-term decarbonisation.

Here are three reasons methanol is ‘future-proof’.



## An essential ingredient for a more sustainable future

Methanol is required for the things that will make our lives more sustainable. Energy-efficient buildings, electric cars, solar panels and wind turbines. Our New Zealand customers are also significant contributors to the construction industry. Many of who are helping build warm dry homes.



## Increasingly produced in new and sustainable ways

Methanol can be made from renewable sources supporting long-term decarbonisation of both the chemicals that make modern life possible, and the transportation sector. Our New Zealand team is exploring using local bio-gas and green hydrogen to make our methanol in a greener way, right here in Taranaki. Depending on the feedstock used methanol can have high or low-carbon intensity (see our diagram on the next page). However, the end result is the same – an essential ingredient that will help Aotearoa New Zealand and the world meet product manufacturing and travel emissions targets.



## Decarbonisation in the shipping industry

The shipping industry facilitates more than 75% of world trade and accounts for 3% of man-made CO<sub>2</sub> emissions. Today, if our methanol was used as a marine fuel it would reduce carbon emissions by 15% and significantly reduce other air emissions harmful to human health. With New Zealand's coastal shipping industry transitioning to lower-carbon fuels, it could have tremendous economic and environmental benefits. Our methanol will be instrumental to New Zealand meeting its new legislation to reduce maritime emissions as a party to MARPOL Annex VI (a global agreement where ships switch to low sulphur fuels). The use of our methanol (Methanex NZ produced methanol) as a marine fuel would be the equivalent of removing all of New Zealand's cars from our roads from an air pollution perspective.

# A brighter future for methanol production

Methanol can be produced from different feedstocks using different energy sources. No matter how it's produced, it's always chemically identical, meaning the end product can be used in the same way.

There are different ways of producing methanol.

## Brown Methanol

Not done in New Zealand.

This form of methanol comes from coal. A non-renewable feedstock that's four times higher in carbon intensity than methanol produced using natural gas.

## Grey Methanol

Grey methanol comes from natural gas – a non-renewable/fossil fuel feedstock and is what we produce in New Zealand.

## Blue Methanol

Blue methanol is produced via conventional processes with an integrated carbon capture, utilisation and storage (CCUS) scheme. Methanex is currently evaluating the feasibility of CCUS for its North America operations.

## Renewable methanol can be:

### Biomethanol

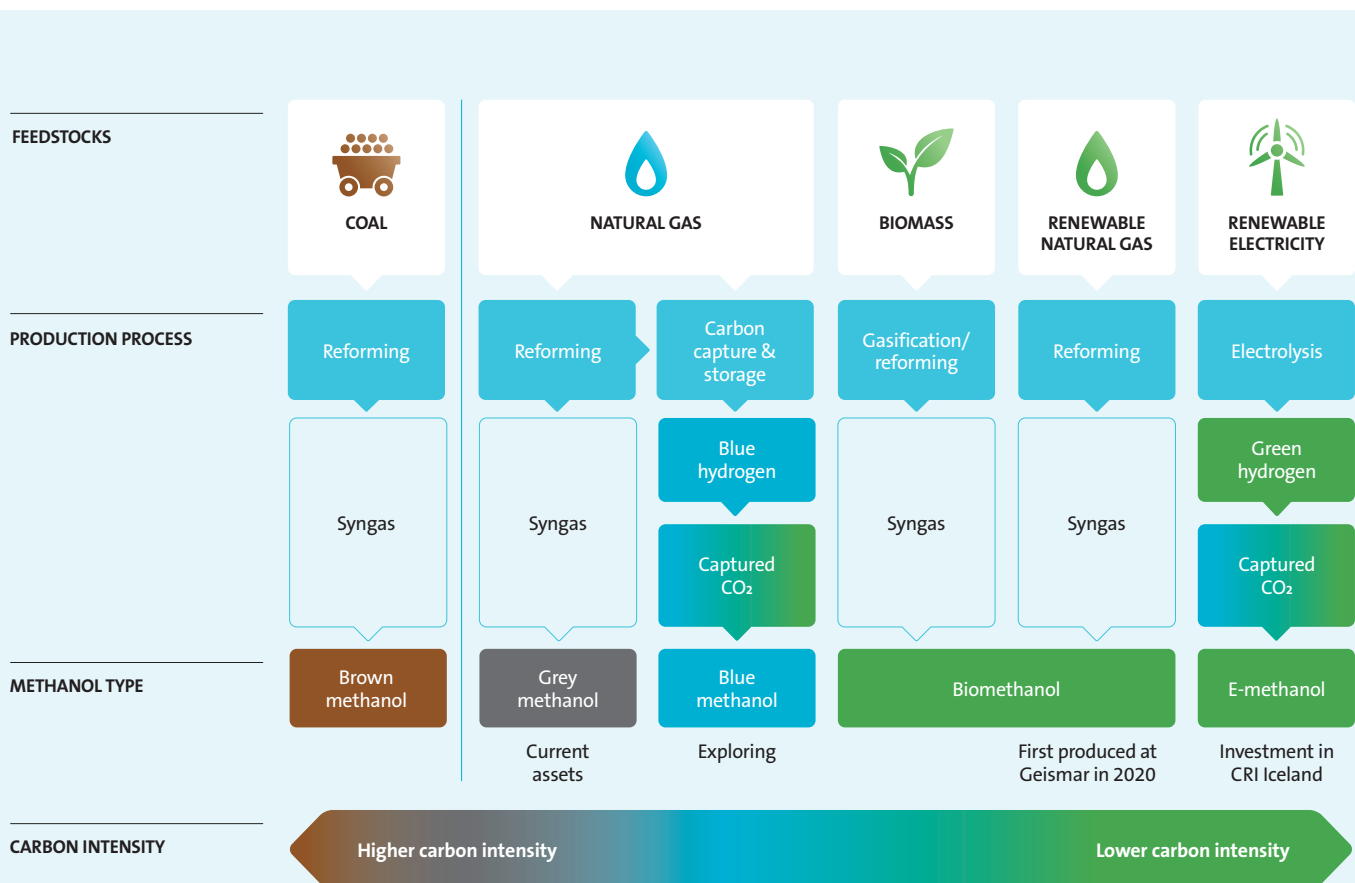
This is produced with renewable natural gas sourced from landfills, sewage plants, animal manure or biomass.

Potential sustainable biomass feedstocks include (but are not limited to):

- Forestry and agricultural waste/by-products.
- Municipal solid waste and (iii) black liquor from the pulp and paper industry.

### E-Methanol

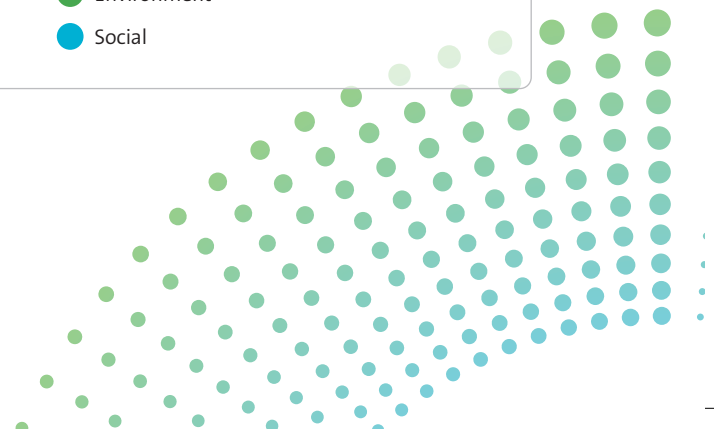
This variety comes from CO<sub>2</sub> captured by renewable sources via bio-energy with Carbon Capture and Storage or Direct Air Capture, and green hydrogen (i.e. hydrogen produced with renewable electricity).



# Our future focussed commitments

Continual improvement is woven into the fabric of our company. Globally, as part of our sustainability journey, we have made commitments to improve our sustainability. These include environmental, safety and social commitments that are a core focus of our New Zealand business:

1	<p><b>Reduce</b> Scope 1 and Scope 2 <b>GHG emission intensity</b> from manufacturing by <b>10 per cent</b> by 2030 from 2019 levels.</p>	5	<p>Achieve zero Severe Injury or Fatality (SIF) incidents annually.</p>
2	<p>Complete evaluation of additional opportunities for <b>greenhouse gas (GHG) reduction projects</b> at all existing sites by 2022 and incorporate capital spend in annual capital cycle, beginning in 2023.</p>	6	<p>Achieve zero major incidents for process safety (i.e. Tier 1) annually by continuing to implement robust process safety programs.</p>
3	<p>Target <b>97 per cent</b> or higher <b>reliability</b> of our existing assets, which will maintain or decrease current GHG emissions.</p>	7	<p><b>Work with governments</b> to advance initiatives that support the transition to a low carbon economy, including the benefits of methanol.</p>
4	<p>Annually lower our recordable injury rates with the aspirational goal to achieve <b>zero harm</b>.</p>	<p><b>KEY</b></p> <ul style="list-style-type: none"> <li><span style="color: green;">●</span> Environment</li> <li><span style="color: blue;">●</span> Social</li> </ul>	






# Helping deliver a low-carbon future

Two priorities are guiding our activities to support a transition to a low-carbon economy.


1. Production of lower carbon/carbon neutral methanol.
2. Growing markets for methanol.

## Methanex's priorities


**PRODUCING LOW-CARBON METHANOL**



Plant efficiency




Carbon capture, utilisation and storage




Alternative feedstocks and renewable energy


**GROWING MARKETS FOR METHANOL**




Marine fuel



Vehicle fuel



Thermal applications such as industrial boilers and cooking stoves



Low carbon methanol as a feedstock for chemical applications

### We're looking at ways to go greener

Our manufacturing process is one of the lowest emission intensity uses of New Zealand's natural gas. We use this gas as an ingredient with two-thirds of its possible emissions captured in our high-quality product. We're also exploring initiatives to improve energy efficiency and further reduce emissions.

Our environmental performance is world class, which is vital to our positive relationships with iwi and the Taranaki Regional Council.



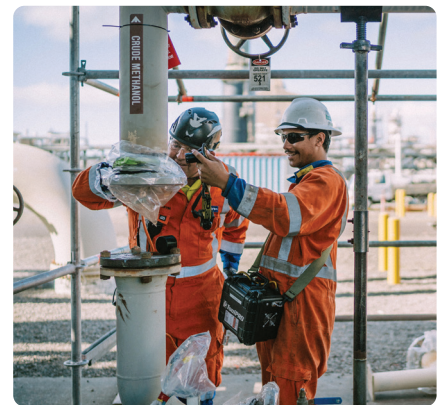
### Distillation reconfiguration dramatically decreasing emissions

Our team of engineers are always looking for ways to reduce emissions and improve the efficiency of our plants. We're currently reconfiguring our distillation capability. A multi-million dollar investment that'll see improved technology in our distillation columns, alongside other critical modifications at our Motunui site. This has been undertaken to reduce carbon emission by over 50,000 tonnes, the equivalent of taking 25,000 cars off the road.



### Reformer catalyst trial cutting emissions

Globally we have a team geared towards reducing the carbon footprint of our methanol production. As part of our major turnaround and maintenance projects in New Zealand this year, where we invest over \$100m into the local economy, we are trialling a new Reformer Catalyst – the part of our plant that creates the chemical reaction to transform natural gas into methanol. This will significantly reduce our emissions and the amount of natural gas we use every day.



## Doing more in our community



### Improving fish care at our Waitara river water intake

Following on from our Energy Excellence award for strengthening hapū relationships through learning and understanding, we invited four hapū in our rohe (area) – Manukorihi, Ngāti Rāhiri, Otaraua, and Pukerangiōra Hapū – to participate in Te Rōpū Rangapū Aronga Tahi, 'The Group of Shared Vision'.

This collaboration reflects our commitment to mātauranga Māori (Māori knowledge). Together we are developing a Cultural and Environmental Monitoring Programme for our resource consents and seeking opportunities to enhance our air and water resources.

We are thrilled to be working with NIWA to improve the fish pass at our fresh water intake. This will further protect native ika (fish) species in the Waitara river.



### Taranaki Rescue Helicopter

We are proud sponsors of the Taranaki Rescue Helicopter's (TRH) winch. This vital piece of equipment makes saving lives around Taranaki's peaks, rivers and ocean surrounds just that little bit safer and easier.

The dedicated, professional TRH team responds to around 250 emergency calls across Taranaki and neighbouring regions every year.



### YMCA Youth Services Division

YMCA Youth Services are doing great work, offering a range of programmes for at risk and vulnerable rangatahi (young people) in Taranaki.

Its workshop provides a safe place to learn skills, build items and store tools (some of which have been donated by our generous staff).

To ensure they're able to keep up the good work, we're helping build a new workshop at their Spotswood site so they can further broaden students' practical skills.



### On The House

On The House is a community organisation that collects surplus food from supermarkets and cafes that would otherwise go to waste and redistributes the food to families in need.

This year we're the major sponsor, doing everything we can to ensure this worthy organisation can cover its operational costs.



### Huirangi School

We came to the party for Huirangi School's 150th jubilee celebration, brightening up the grounds with two awesome murals.

These reflect the cultural identity of the rohe and represent the three school houses – Pukeko, Tui and Kiwi.

Local artist Michael Montgomery and screen painter David Moore put their immense talent to work bringing the murals to life.



### Waitara Foodbank – Pātaka Kai

Methanex has a long relationship with the Waitara Foodbank – Pātaka Kai. The staff are involved in the annual foodbank collection around the Waitara area, where hundreds of non-perishable items are collected.

Methanex even brings out one of its two big foam tenders to make a lot of noise. Methanex also provides a financial donation to the foodbank.

Pictured here are our 2022 Summer Interns lending a hand to sort the donations from the Christmas food drive.



### SPCA clean up

Methanex's IT and HR teams were happy to get their hands dirty at North Taranaki's SPCA. They had a mini working bee where they helped fold up animal blankets, assisted with a stocktake, packed away pallets of animal food, painted a fence and weeded the gardens. They even got to hold some cute puppies.



### Methanex Bell Block Aquatic Centre

Home to local Olympic swimmer Zac Reid, the Methanex Bell Block Aquatic Centre provides a wide range of facilities and is an important part of the local community.

This year we sponsored a new, modern entrance, the installation of a new pool heating system, LED lighting (to help save electricity) and security cameras to improve safety.

### Riding for the Disabled

New Plymouth Riding for the Disabled is a voluntary not-for-profit equestrian group which has been running for nearly 50 years.

Lily, one of Riding for the Disabled's therapy horses, is sponsored by Methanex. Lily and the other horses support riders with physical, intellectual, emotional and social challenges. Each year, over 100 riders are involved in over 2000 sessions that aim to develop independence and confidence in riders over time.

Methanex staff enjoy visiting Lily and supporting the valuable work of the organisation whenever possible.

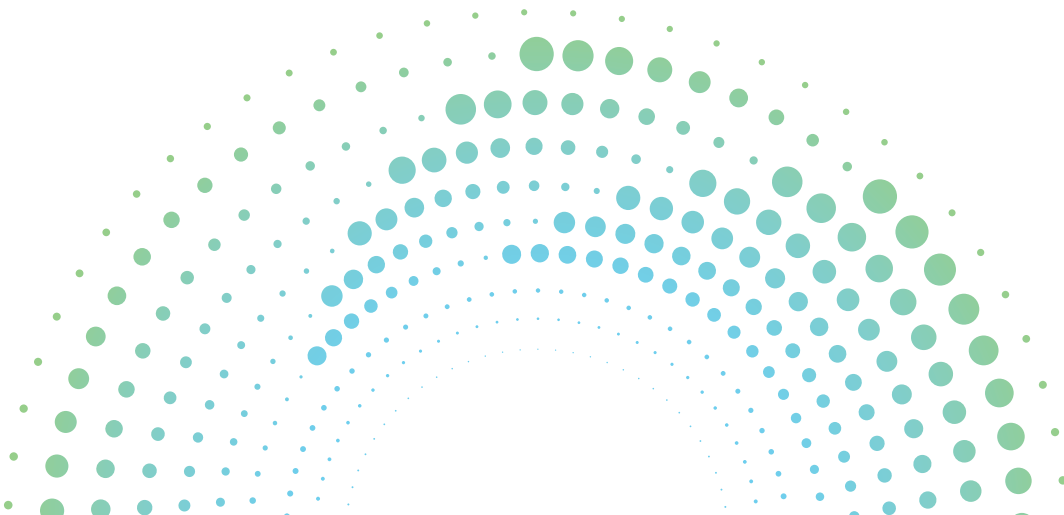


### Urenui School

Urenui School is one of our neighbouring primary schools and has been involved in the EPro8 Challenge, where 25,000 students from around the country compete in the inter-school science and engineering competition.

Methanex provided financial support for the school to order construction equipment that included 24kg of quality resources (over 450 parts) to construct mini bridges, cranes and machinery.

We work hard to support STEM learning in our community and funding innovative resources such as these makes a huge difference to learning opportunities for Taranaki tamariki.





### Methanex Neonatal Unit

As part of a massive redevelopment of Taranaki Base Hospital, Methanex has recently become the major partner for the neonatal unit.

The long-term commitment will create a new unit to provide state-of-the-art care for our region's most vulnerable babies and better support local whānau who use the facility. As well as providing financial support, Methanex staff will have a programme of involvement to raise additional funds and fulfil volunteering opportunities where possible.

The partnership is for the next ten years and will provide huge benefit to the local community, many of whom currently need to travel with their babies for care from another hospital, meaning that parents are far from their support networks, homes and jobs and that the transition between cities creates additional risk and stress for babies.



### Fitzroy Beach clean up

Several Methanex departments were tidy Kiwis and spent an afternoon in the sun picking up rubbish from East End Beach, the skate park and the Te Henui walkway. Those involved spend a lot of their spare time in the area and wanted to collectively do their bit to help tidy up the community.



**Ōwae Marae**

Methanex supported the redevelopment of Ōwae Marae’s wharekai (food hall) in nearby Waitara, which caters for up to 250 guests. The entire marae site consists of a number of sacred buildings that will also be developed as part of a major project.

Methanex is working with Maunkorihi Pā Trust to establish other ways it can support their work as the project progresses. The marae is a very significant cultural site in Taranaki.



**Waitara East School Library**

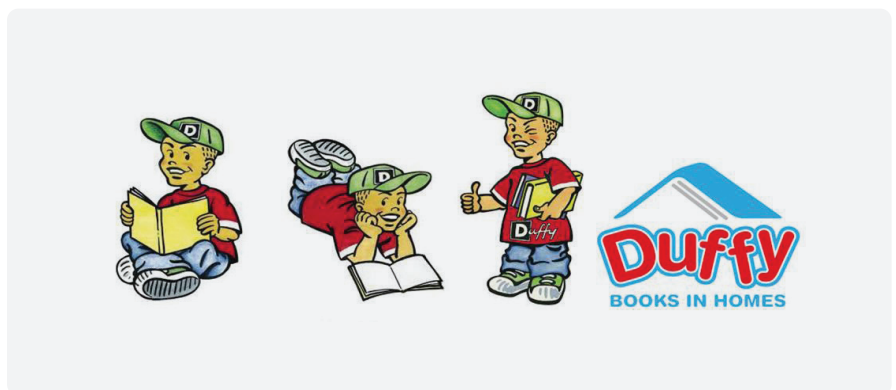
We’ve been thrilled to help Waitara East Primary School upgrade its library.

Our support is going to make reading even more fun for the students, providing comfy cushions, armchairs and sofas, cool storage boxes, furniture and most importantly, loads of new books.



**Spotswood Primary School – Duffy Books in Homes**

The New Zealand-based programme, Duffy Books in Homes, provides primary school children who may not have access to books at home a chance take a one home to read and cherish. The philosophy is to break the cycle of booklessness for children. Methanex has been supporting the programme since 1998 and has provided over 1000 children from across Taranaki books to take home.



## Here for the Future

The world is changing fast but we're here for the long haul.

Methanol is essential to everyday life today, and a pathway to a low-carbon future tomorrow.

Helping Taranaki thrive, keeping communities employed, working with iwi, and both local and central government.

Playing our part by contributing to a better tomorrow for all of us.

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