



HWR HYDROGEN

Helping Heavy Transport Transition to Hydrogen



48 COMPANIES

\$3 BILLION

ANNUAL REVENUE

2,700+

employees across NZ and Australia

New Zealand's largest
PRIVATELY OWNED
transport business



6 SECTORS

Allied Petroleum

135 FUEL TANKERS

delivering more than **1.6 billion litres** of fuel annually



Tankers travel more than
12 MILLION kilometres each year

100% NZ

owned and operated

SPECIALISE
in civil, transport,
agriculture and
mining industries

LARGEST
tier 2 fuel distributor
(behind BP, Z, Mobil and Caltex)

120 FUEL STOPS



nationwide from Northland to Stewart Island

250 STAFF

In business
for more than **30 YEARS**

NZ's authorised
distributor for
Mobil™





60 YEARS
in business



150
STAFF



80+ TANKERS

50+ 24/7



fuel stops

DRIVING CHANGE. DRIVING **HYDROGEN.**

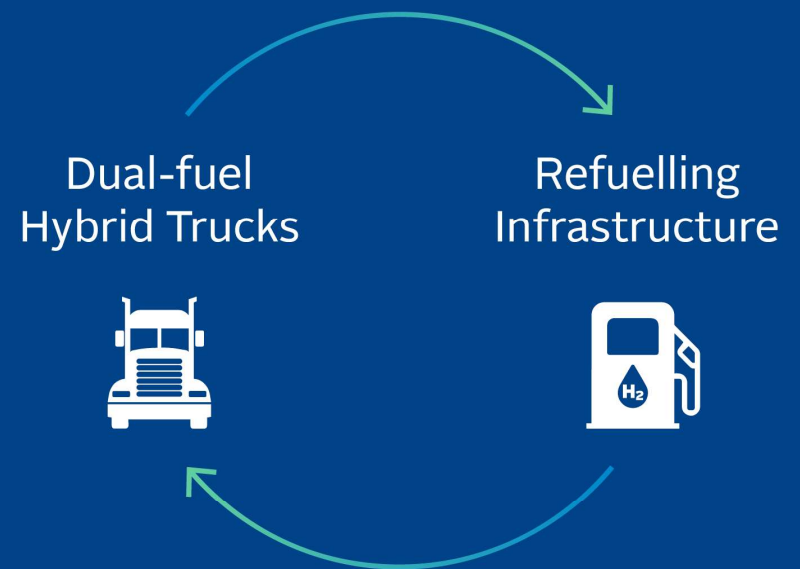
Helping heavy transport transition to hydrogen



HWR'S HYDROGEN PLAN.

To date we've committed over **\$15 million** exploring New Zealand owned and produced hydrogen and trialling **dual-fuel** technology.

Addressing both supply and demand.



DUAL FUEL HYBRID TRUCKS.



10 dual-fuel trucks (40% hydrogen 60% diesel mix) converted in NZ for the trial.

From here – continue to transition our fleet.



1 dual fuel truck running an average of 384km per day can **eliminate 200kg of carbon emissions per day**. Complete fleet transition would eliminate millions of KGs every year.



Through our commitments we're **reducing** our customer's supply chain footprint.

DUAL FUEL HYBRID TRUCKS.



NZ's average distance travelled by a truck per year is 100,000kms.

Average life span for a heavy vehicle in NZ is 16 years.

HWR **renews trucks** every 5 years.

HWR trucks are then on-sold in the second-hand market to smaller transport operators who can be part of the **hydrogen revolution** too.

By being among the first to transition a fleet to hydrogen, we are, in a way, subsidising as well as leading the industry to transition to a low emissions future.

PAYLOAD IMPACT

One day = 560km

KENWORTH USA COMPARISON

DIESEL

Fuel amount: 265L
Fuel weight: 230kg
Tank weight: 70kg
Total weight: 300kg

DUAL FUEL

Diesel amount: 178L
Diesel weight: 150kg
Diesel tank weight: 70kg
Hydrogen fuel amount: 25kg
Hydrogen tank weight: 850kg
Total weight: 1,095kg

COMPRESSED HYDROGEN

Fuel amount: 55kg
Fuel weight: 55kg
Tank weight: 1,905kg
Total weight: 1,960kg

BATTERY

Energy amount: 900kWh
Fuel weight: 0
Battery weight: 7,620kg
Total weight: 7,620kg



FIRST

DUAL FUEL TRUCK
IN AUSTRALASIA.







530

530

DYNES

TRANSPORT

225

TAPANUI LTD

T364

DUNEDIN TRYING

FAIRFAX
HYDROGEN



PROGRESS TO DATE.

- Designed, built and commissioned **two dual fuel trucks**.
- Built two temporary refueling sites.
- Designed and consented **two refueling sites** in Southland, Invercargill and Gore.
- Developed a **carbon tracking product** in our mytransport software to keep track of the gross carbon reductions.
- Created **solid relationships** with local NZ businesses to achieve scale deployment, including Fabrum, Transport Repairs, Fi Innovations, Halcyon Power.



SECOND

**DUAL FUEL TRUCK
IN AUSTRALASIA.**



**CONVERSION
PROCESS.**

VEHICLE TESTING.



- Holds 23kg of usable H₂
- Equivalent to 80L diesel
- Performing at ~35% displacement
- Tuning will come with more kms
- Fueling is slow without a fast refueler (3+hrs vs 7mins)
- You don't notice the fuel switch
- Can tolerate low purity hydrogen

VEHICLE SAFETY.

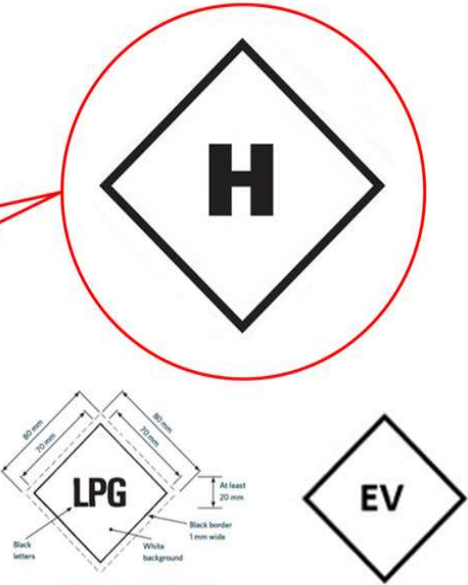


Figure 1-7-1. LPG vehicle identification label



IN-CAB HYDROGEN CONTROL.

- Driver can turn system on/off
- Hydrogen fuel gauge and temperature sensors
- Live displacement and carbon reduction statistics

mytransport



4.0
KG

49
BAR

E

F

HYDROGEN

DIESEL-ONLY

100

DUAL-FUEL

39 %
DISPLACEMENT

PRACTICAL CARBON REDUCTION. COST EFFECTIVE.

Dual fuel truck conversions are more cost effective per ton of CO₂e avoided.

1x \$150K
\$2142 per ton CO₂e



VS.

1x \$750K (Volvo FH Electric)
\$4285 per ton CO₂e



PRACTICAL CARBON REDUCTION. MEANINGFUL IMPACT.

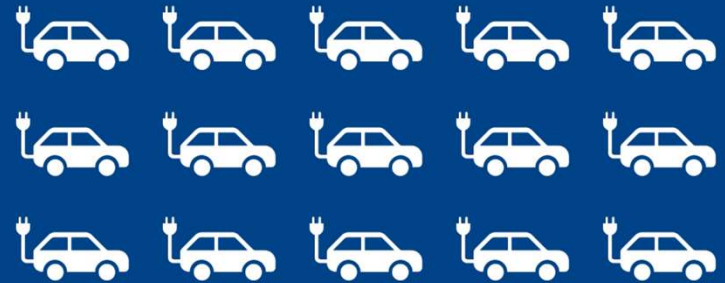
One Dual-Fuel Truck has the same impact on emissions as 15 EV's.

1x \$150K
-70t CO₂e



vs.

15x \$68K = \$1.02M
-70t CO₂e

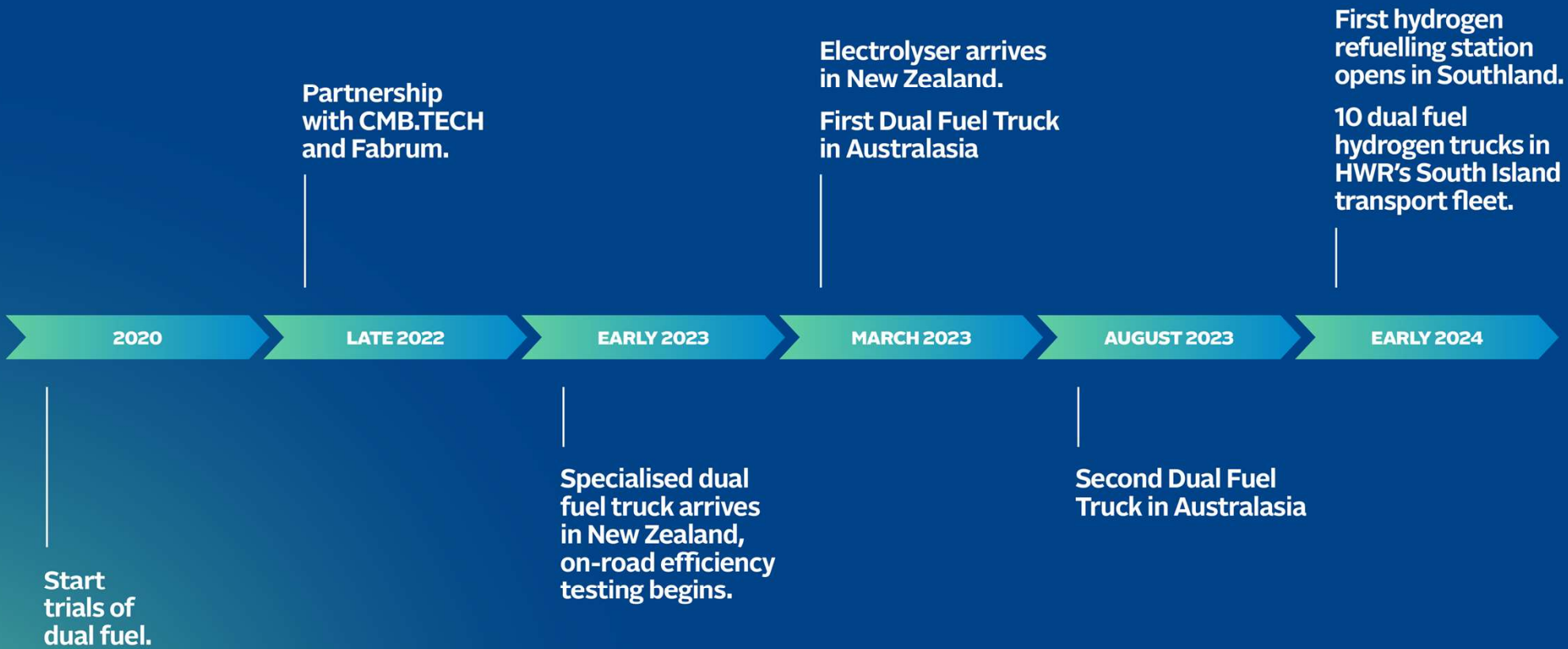




**HYDROGEN
REFUELLING
STATION.**

**HYDROGEN
FUEL
DISPENSER.**





OUR TEAM



DRIVING CHANGE. DRIVING **HYDROGEN.**

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hwr.co.nz/hydrogen



Scan here to register your
interest and receive updates:

