Regional Rail Project
Bi-mode technology

With transport accounting for almost 45% of the state's energy consumption, Transport for NSW plays a key role in reducing emissions and contributing to the NSW Government's long-term target of net-zero emissions by 2050.[1]

We are introducing bi-mode technology to the new Regional Rail fleet - the first trains in Australia to use this technology.

Bi-mode is a diesel-electric hybrid which will allow the fleet to run on overhead power when operating on the electrified train network.
When operating outside of the electrified network, the train uses on-board diesel generators to generate its own power.

Benefits of bi-mode

Operating the trains in a bi-mode configuration will:

CO_2 — reduce carbon emissions by **around 540 tonnes annually**

reduce diesel pollution by **around 3 tonnes annually**

These reductions in emissions will result in a **saving of approximately $1 million** through associated health and environmental benefits.

This is the equivalent of:

- the emissions of around 77 Australian households,
- travelling 3 million vehicle kilometres or Australia's perimeter 83 times.

Operating the trains in bi-mode will create a **saving of over $2 million** on diesel fuel costs annually. Bi-mode operation also means the engines will be switched off when under the electrified network, making the journey quieter for customers. Further noise reductions are expected when the trains are stationary.

FAQ's

Where will bi-mode use overhead power?

The NSW electrified rail network extends to Broadmeadow in the north, Lithgow in the west, Kiama in the south and Macarthur in the south-west.

Do the trains turn off the diesel engines when using the electrified network?

Yes, the trains can be fully powered by overhead electricity when operating on the electrified network.

Will overhead electricity be used in interstate cities?

Trains arriving and departing Brisbane and Melbourne will use their own diesel power supply.

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[1] Office of Environment and Heritage 2016, Achieving Net-Zero Emissions by 2050, OEH, New South Wales, viewed 10 July 2019, https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Climate-change/achieving-net-zero-emissions-by-2050-fact-sheet-160604.pdf

This document contains information about public transport projects in your area. If you require the services of an interpreter, please contact the Translating and Interpreting Service on **131 450** and ask them to call the Transport Projects Division on **(02) 9200 0200**. The interpreter will then assist you with translation.