Port Marlborough

Marlborough Environment Awards 2025

Sound environmental management is good business

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Marlborough Lines

Judges' Report

CATEGORY:

Electrification & Energy Efficiency

Dynes Transport

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DATE	19 November 2024
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INTRODUCTION

Dynes Transport has demonstrated innovation in sustainable transport through their hybrid diesel-hydrogen truck "Blue Hydro" (PTF439), the first HPMV T&T unit in the Southern Hemisphere. This milestone marks their eighth year operating in Marlborough's harvest season, where they came with the explicit intention of "doing things differently."

GENERAL INFORMATION

DESCRIPTION OF PROJECT

The project centers on a self-funded hybrid diesel-hydrogen truck with a 38-tonne carting capacity.

Additional Sustainability Initiatives include:

- Direct fuel use reduction of 8% in past three years while increasing travelled kilometers by 2%.
- Implementation of EURO6 emission standards on new DAF trucks.
- Comprehensive digital transformation reducing paper usage.
- SAFED Driver Training program implementation.

Key achievements include:

- 40% reduction in Nitrogen Dioxide emissions.
- 20% less AdBlue used.
- 1kg of hydrogen replaces 3.32L of diesel, avoiding 206kg CO2e per system fill.
- Hydrogen provides 26% of fuel needs when loaded and 34% when unloaded.
- Range of 678km on dual fuel driving.
- Retrofit completed in New Zealand by the company's own workshop team.

CURRENT ACTIVITIES INCLUDE

- Five operational trial vehicles in place.
- Ten more units in preparation.
- 30 additional units ordered.
- Regular updates of operational statistics on their website.
- Integration with new Allied Petroleum fueling station in Blenheim (opened April 8th, 2024).

THE JUDGES WERE IMPRESSED BY

- Successful in-house retrofit completed in New Zealand.
- Significant emission reductions while maintaining fleet range capabilities.
- Integration with transfer hub concept showing potential for successful practice.
- Greater payload capacity compared to electric alternatives.
- Self-funded initiative without government or external funding.

Part of a broader range of sustainability initiatives including:

- Direct fuel use reduction of 8% in past three years while increasing travelled kilometers by 2%.
- Implementation of EURO6 emission standards on new DAF trucks.
- Comprehensive digital transformation reducing paper usage.
- SAFED Driver Training program implementation.

PROBLEMS AND HOW THEY HAVE BEEN TACKLED

Key challenges include:

1. Technical: Truck switches to diesel under load, though ongoing tuning is expected to increase hydrogen use by 5-10%.
2. Operational: Managing driver concerns about hydrogen safety, with 10% of drivers now recruited from overseas.
3. Infrastructure: Limited hydrogen supply, though now addressed with new Allied Petroleum fueling station in Blenheim.
4. Range management: Successfully addressed through hybrid system, achieving 678km range on dual fuel.

SUMMARY

The project represents an impressive step toward sustainable transport. The investment in hydrogen technology, combined with other environmental initiatives, demonstrates a comprehensive approach to reducing environmental impact while maintaining operational efficiency. Although the truck is not permanently based in Marlborough due to current hydrogen supply limitations, there is good tangible evidence of positive results.

SUGGESTIONS

- Provide clearer documentation of trial benefits, similar to the milk transfer hub project format.
- Develop and communicate a clear roadmap for hydrogen supply and fueling station infrastructure.
- Address and document the energy efficiency of the complete hydrogen supply chain.
- Continue tuning operations to maximize hydrogen usage under load.
- Consider expanded driver training programs to address safety concerns.
- Create detailed performance metrics for industry sharing.