THE ALSCO HEAVY EV FACT SHEET

New Zealand's First Inter-city, Heavy EV Road Freighter

HEAVY EV AS A CLASS

Heavy goods vehicles are defined by NZTA as 12 tonnes and above.
The Alsco Heavy EV will be up to 22.5 tonnes fully laden.

RANGE OF HEAVY EV to full battery depletion: 200kms

THE FIRST ROUTE SELECTED by Alsco is their shortest heavy distribution route, encompassing some 284 kilometres in total. Operational adjustments will maximise the Heavy EV range. Alsco's long-term objective is to replace all 15 of their diesel freighters, combining battery life technology with further operations and handling innovations.

CHARGING ADAPTATIONS include installation of charging stations at all three depots on the route, so the Heavy EV can recharge during all operational load and unload times. This will enable the driver to complete the Rotorua/Taupo return, and subsequently Rotorua/Tauranga return, within a normal 8 hour shift.

LOW-ENERGY USE/NO EMISSIONS OUTPUT

The freighter is based on a Hino GH 1828 with SEA-Drive® 180 power-system, offering 259kW continuous power, 372kW maximum power; 1852 Nm continuous torque, and a maximum torque of 3500 Nm. With zero emissions, fewer moving parts and lower operating costs, the 100% electric freighter offers an ideal commercial vehicle solution for Alsco's operations. Alsco has a fleet of 350 vehicles, but the **15 Diesel road freighters consume 1/3 of Alsco's fleet fuel.**

The first Alsco Heavy EV Freighter replaces a diesel predecessor, saving an estimated 67 tonnes of carbon emissions yearly. The estimate is based on an average 5.6 tonne load each way daily over the identical 284km route. Estimated energy savings based on theoretical like-for-like analysis are likely to be 'highly conservative' at this early stage. Detailed empirical data will be collated over time and made available to interested parties.

COACH & CABIN BUILD ADAPTATIONS

The light weight **composite design** by Action Manufacturing, who brought the European technology to NZ about 6 years ago, has produced regular fuel savings of 5-7% in similar vehicles. The truck body is designed with a curved aerodynamically shaped roof, reducing down force, which in turn reduces drag. Side skirts also smooth airflow to reduce drag. Alsco, Action Manufacturing, and SEA Electric have worked jointly to reduce overall drag co-efficients and extend the range of the EV.

Our sincere thanks to EECA, SEA-Electric, Action Manufacturing, TransNet, Brave Design, Instep, and members of the Alsco team for all their help on this project.

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ALSCO'S NEW EV IS ESTIMATED TO SAVE AT LEAST

25,000

LITRES OF DIESEL

67,610

KILOGRAMS OF CO_2e

PER YEAR

the equivalent of...

ALL OF ALSCO ROTORUA'S EMISSIONS FROM ELECTRICITY USE IN 2018

or

50% OF AIR TRAVEL EMISSIONS FROM THE ENTIRE ALSCO GROUP IN 2018

Estimations for EV savings are based on real data using a laden **16 tonne diesel truck travelling 284km daily, 5 days a week between Rotorua, Taupo and Tauranga.** The emission factor used to estimate potential EV savings has been provided by Instep using combined NZ MfE and UK Government DEFRA Factors 2019, to create a tonne kilometre (tkm) factor. At this stage, actual freight factors for laden EV trucks in tkm are unavailable, due to a lack of real-world data. This is likely to change in the coming months, and real data will be updated when available.

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