



Minimising Emissions

Why reduce emissions?

High Operational Footprint: Our staff travel 4.5 million km annually, incurring significant fuel and servicing costs.

Customer Expectations: Customers face emission reduction challenges and expect us to act. Some request details of our Sustainability Programme (e.g., electricity, fuel, lubricants, solvents, water, and waste).

Global Shift to EVs: The world is moving from Internal Combustion Engine (ICE) vehicles to Electric Vehicles (EVs).

Aging Fleet Concerns: We operate ~200 ICE vehicles, often kept for 10+ years. Diesel vehicles will likely harm our reputation by 2035.

Climate Change Opportunities: Addressing climate change is a global challenge but offers opportunities for businesses that lead in sustainable transformation.

Business Benefits: Transitioning to EVs provides cost advantages and mitigates business risks.

Challenges for Vehicle Fleet Transition to EVs

Field Vehicles: Limited EV Suitability

- Field vehicles need high ground clearance, 4x4 capability, and towing capacity.
- Current EVs in NZ fail to meet all these requirements, making them unsuitable for some field operations.

Road-Based Vehicles: EV Compatible

- Design, Sales, and Management vehicles mainly operate on roads with minimal off-road/field use.
- These vehicles align well with existing EV options, facilitating easier adoption.

Private Use and Staff Preferences

- Some vehicles are used for private purposes and are highly valued by staff.
- Traditional ute brands lag in EV development.
- While China leads in EV production, some staff resist switching from preferred brands due to brand loyalty.

How to Transition:

Early Communication: engaging branches to prepare staff mentally for the shift.

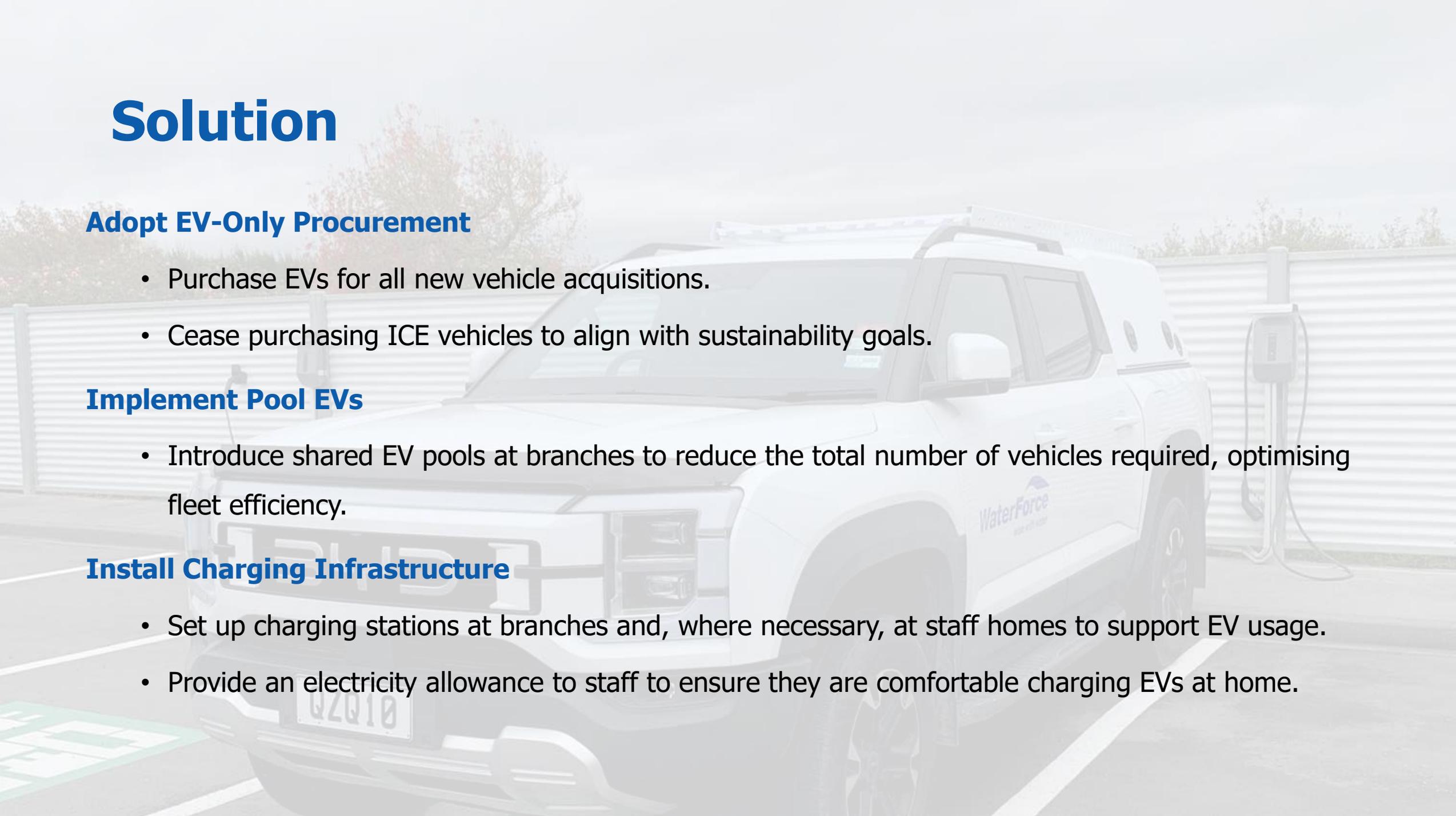
Infrastructure Support: installing charging stations at branches and homes, with an electricity allowance to ease home charging concerns.

Optimise Operations: reduce total kilometres driven through field efficiencies, using ERP, GPS tracking, minimising site visits, and adopting Zoom/Teams for meetings.

Increase EV Usage: prioritise EVs over internal combustion engine (ICE) vehicles to boost EV-driven kilometres.

Shift Vehicle Allocation: reallocate existing ICE vehicles used by Design, Sales, and Management staff to field operations as needed.

Solution



Adopt EV-Only Procurement

- Purchase EVs for all new vehicle acquisitions.
- Cease purchasing ICE vehicles to align with sustainability goals.

Implement Pool EVs

- Introduce shared EV pools at branches to reduce the total number of vehicles required, optimising fleet efficiency.

Install Charging Infrastructure

- Set up charging stations at branches and, where necessary, at staff homes to support EV usage.
- Provide an electricity allowance to staff to ensure they are comfortable charging EVs at home.

PHEV Ute - Staff Survey

WaterForce surveyed 14 drivers of the newly deployed BYD SHARK hybrid EVs.

Vehicles in use for a few months, with a 21-question survey conducted.

Goal: Assess suitability for daily operations and environmental impact.

Focus: Highlight emissions reductions through electric vehicle (EV) operation.

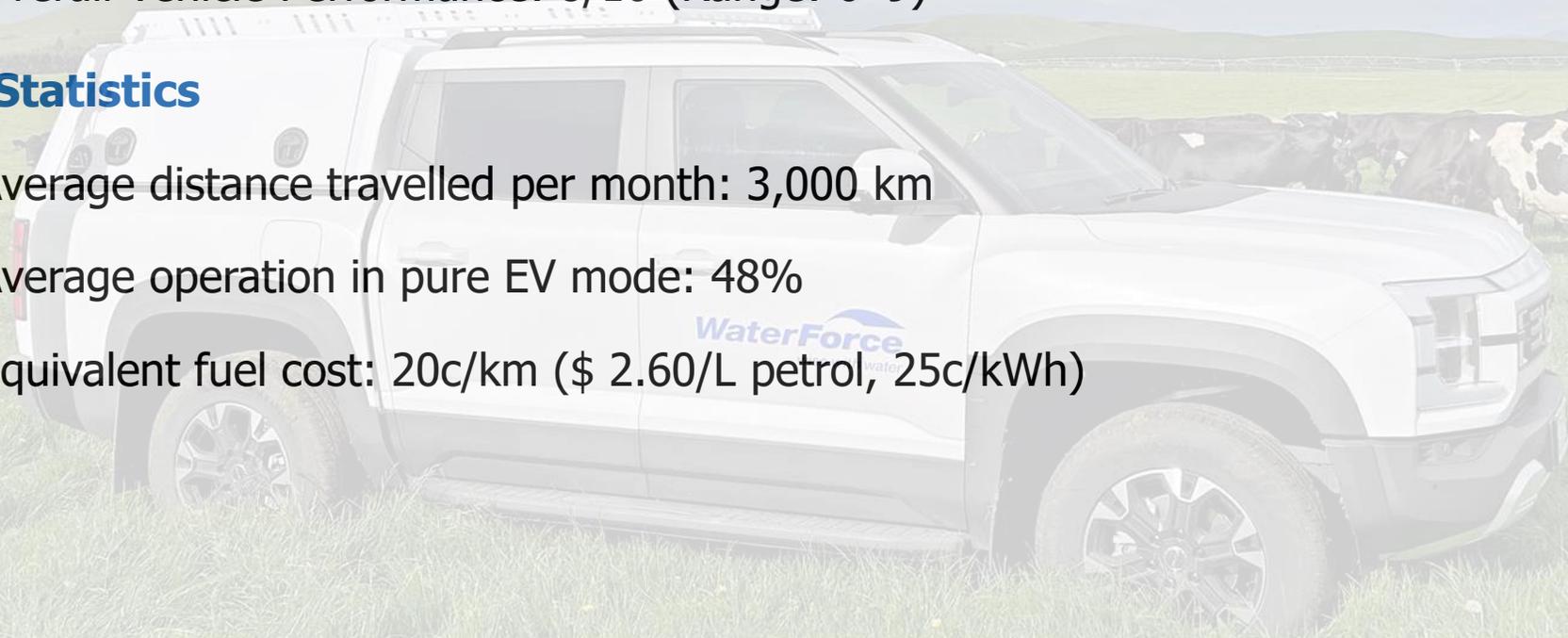
Survey Highlights

Key Performance Ratings

- Offroad Performance: 7/10 (Range: 5–8)
- Towing Performance: 6/10 (Range: 5–8)
- Overall Vehicle Performance: 8/10 (Range: 6–9)

Usage Statistics

- Average distance travelled per month: 3,000 km
- Average operation in pure EV mode: 48%
- Equivalent fuel cost: 20c/km (\$ 2.60/L petrol, 25c/kWh)



Emissions Reductions

Carbon Emissions Impact

- 48% of operation in EV mode significantly reduces carbon emissions.
- Minimal emissions from EV and HEV modes due to “green” electricity generation.
- Demonstrates clear environmental benefits of electric vs. petrol operation.

EV Operation - A Game-Changer for Emissions

EV vs. Petrol Emissions

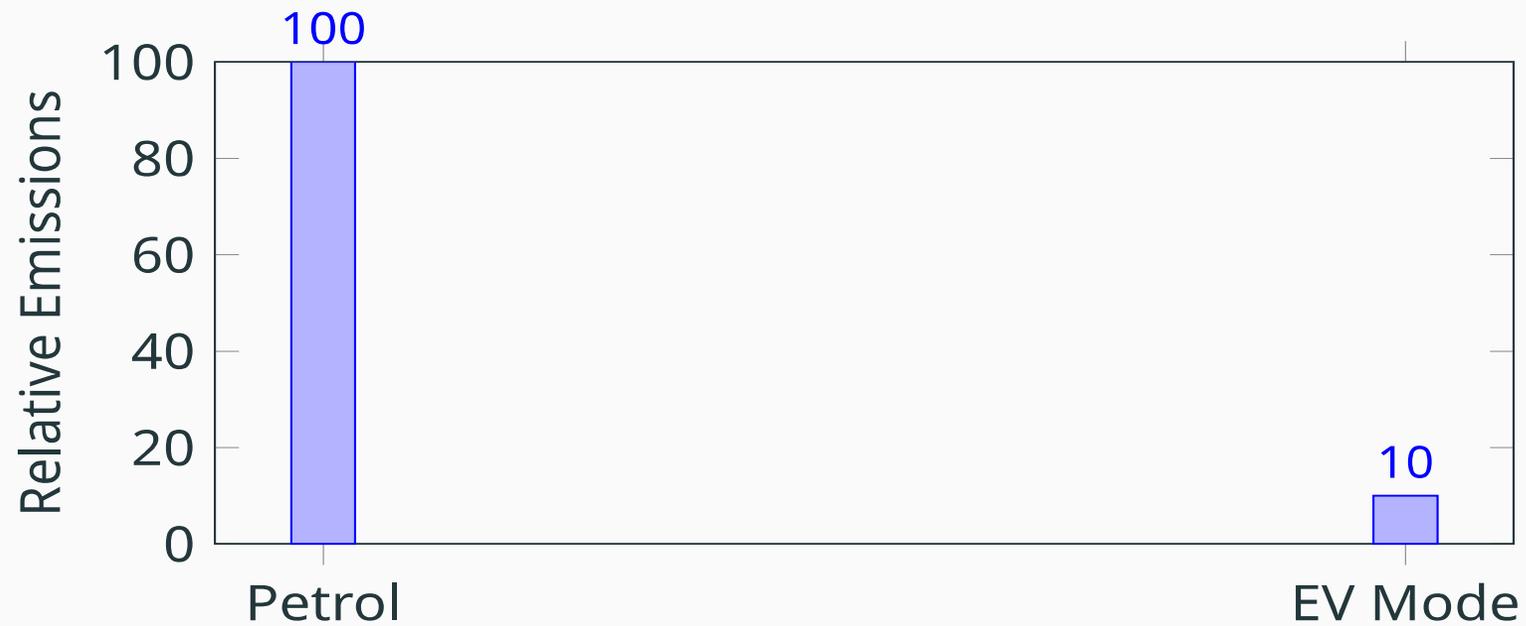


Figure 1: Approximate emissions: EV mode vs. petrol (illustrative).

Driver Feedback

Positive Sentiment

- Overall positive feedback on vehicle performance.
- Best comment: "Now the wife wants one!"

Criticisms

- Aggressive lane-assist and autonomous braking errors.
- Overheating when heater is turned on from cold.
- Cruise control disabled when towing.



Conclusion

- The PHEV Ute achieve 48% EV operation, significantly reducing emissions.
- Strong driver approval (8/10 overall performance).
- Minor issues to be addressed in future updates.
- It is early days but so far, the PHEV Utes appear to offer a sustainable choice for our operations, and aligned with environmental goals.