

Step by Step to NetZero



Step by Step to NetZero

Rules of Engagement

- Please join the webinar on mute with your camera OFF, which should be maintained during the presentation.
- Participants will be invited to ask questions. Please raise your hand using the icon on Teams or simply turn on your camera or use the chat function.
- The presenters may invite you by name to contribute to the session. Where possible, when responding, please turn on your camera so the participants know who is speaking.

Objectives for the Webinar

- Working with webinar participants to explore development of an EV Transition Plan
- Topics
 - Carbon offsets – compliance and voluntary
 - Indigenous participation
 - Eligible projects
 - Volvo NetZero commitments
 - Volvo production
 - Procurement Plan
 - Infrastructure and Maintenance
 - Ownership v Leasing
 - Funding Risk

Introduction

Grant Andrews

- 45 years experience working in the motor vehicle industry
- Combined with 30 years consulting to Local and State Government
- Passionate about financial modelling and innovation

John Ravlic

- Associated with Local Government for over 30 years as an executive and consultant
- Passionate about developing best practice service delivery to meet community needs

Quote

Many business leaders have historically underestimated the speed of new green technologies. In the energy sector, for example, solar, wind, and electric vehicle technologies were all developed faster and more economically than originally predicted.



Step by Step to NetZero - Carbon Market

The **Compliance Market** is where companies must offset its greenhouse emission in order to comply with a legally requirement.

The **Voluntary Market** is where individuals and companies purchase offsets to compensate for their own greenhouse gas emissions, without being legally obliged to do so.

Verified Carbon Standard is a full-fledged carbon offset program developed and run by the non-profit Verra. It focuses on GHG reduction attributes only and does not require projects to have additional environmental or social benefits.

The Gold Standard (GS) is a voluntary carbon offset program focused on progressing the United Nation's Sustainable Development Goals (SDGs) and ensuring that project's benefit their neighboring communities. The GS can be applied to voluntary offset projects and to Clean Development Mechanism (CDM) projects.

Carbon Credits and First Nation People

Over the last 10 year there has been growing interest and opportunities for First Nations People in Australia to benefit from carbon credits.

Various organizations work with Traditional Owners to enable them to benefit from carbon farming projects--

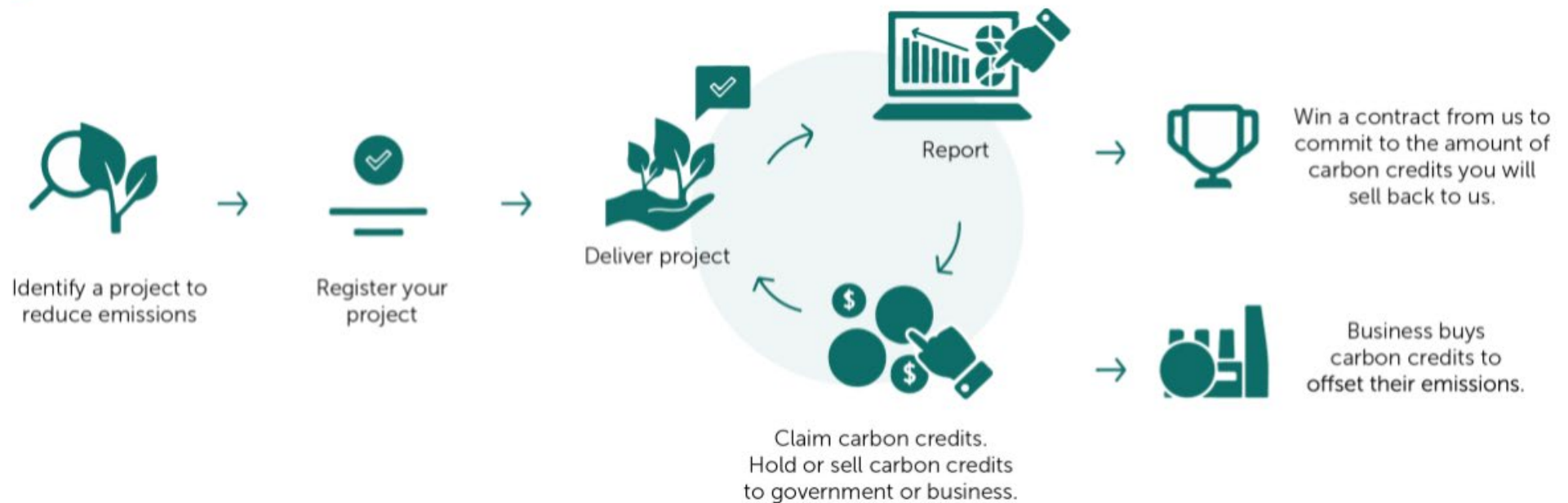
- Indigenous Carbon Industry Network
- Carbon Offsets Australia Pty
- Aboriginal Carbon Foundation

Other organization such as **Greening Australia and Green Collar** regularly work with Aboriginal group to enable them to benefit from carbon farming project directly through employment or through the generation of carbon credits.

The **Climate Solutions Fund** offers landholders, communities and businesses the opportunity to run new projects that reduce or remove greenhouse gas emissions from the atmosphere. By running a Climate Solutions Fund project, you can earn carbon credits and sell them to the Australian Government, or to businesses and other private purchasers.

Step by Step to NetZero

How it works



Step by Step to NetZero

Clean Energy Regulator – For a Project to be recognised:

- Australian based project
- New project – the project must not have been started
- The project must not be required by another Australian Law – eg environmental offsets
- The project must be run by a fit and proper person
- The carbon credit can't be used to fund the Project
- Must have the legal right to undertake the project
- Project can't be Government funded
- They must fall under the nominated category such as vegetation, agricultural, waste

V O L V O

Volvo Trucks Electromobility

Tim Camilleri – E-Mobility Solutions Manager

2022-05-11

Volvo Group



Volvo Trucks has set an ambition to reduce CO₂ with 50% in 2030 & net zero in 2050

2030

-50%

By 2030, CO₂ emissions from sold trucks shall be reduced with 50% vs 2019.

2040

-100%

By 2040, CO₂ emissions from sold trucks shall be reduced with 100% vs 2019

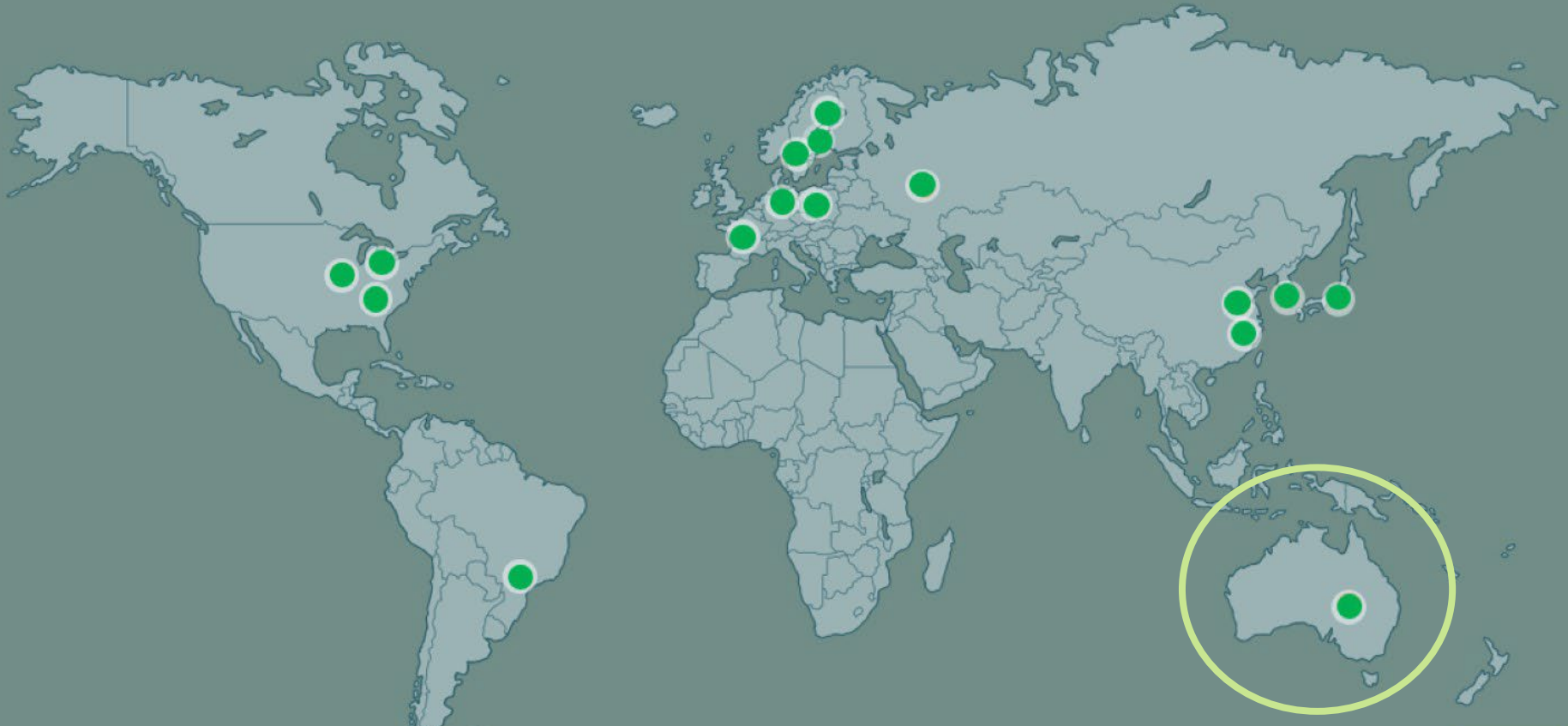
2050

Net zero

By 2050, Volvo Trucks population shall emit net zero CO₂ emissions

2025

Electric production roll-out



Production facility in BNE since 1972

Approx. 90 factory suppliers with a spend of \$125m

Global approach - C.A.S.T strategy



1995-2005
Environmental
Concept Trucks
and Buses

2010
Production start
Hybrid Truck
Hybrid Bus

2016
Production start
Plug-in Electric Bus

Prototype battery-electric
load carriers

2017
Production start
Electric Bus

2019
Production start
Electric trucks
distribution

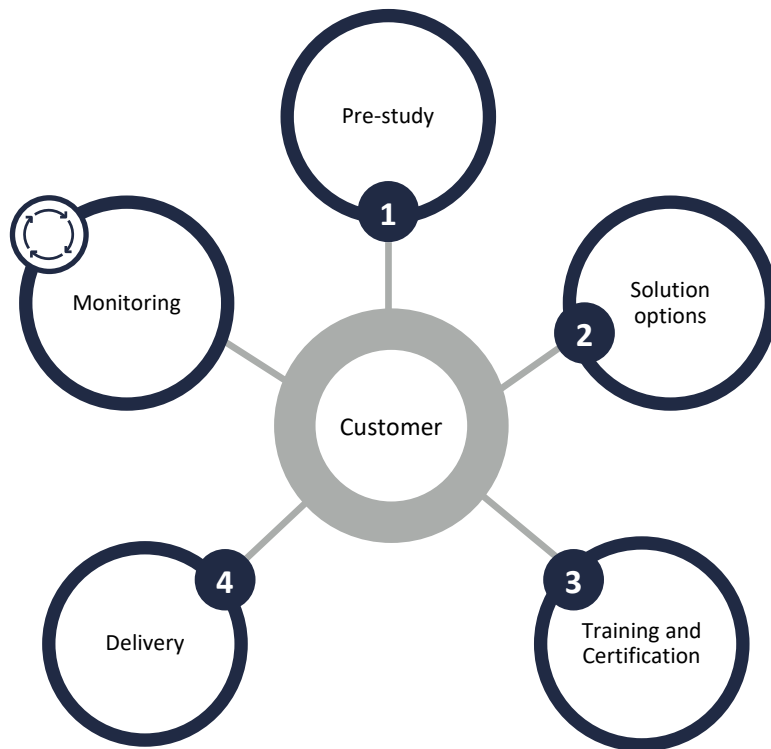
2021
First electric
compact
excavator and
wheel loader

2022
Volume
production
Electric trucks
regional haul

Based on our electric driveline in production since 2016, **4500 electric vehicles** operate in **everyday** transport assignments around the globe

VGA Strategy and approach

'#1 PARTNER OF CHOICE'



Partnership vs transaction

The sales process is extended, segments are replaced by 'applications'



Eco-System – Energy Range Simulator

← Test

Brisbane Metro Loop

Brisbane, 5 Waypoints

FL

FL - 4x2, 265 kWh

Energy consumption

30 °C

Typical

Total consumption, kWh 104.25

Average consumption, kWh/km 0.82

Remaining energy, kWh 63.39

Distance to empty, km 77.03

Charging

Charging time 0h

Charged energy, kWh 0.00

Regenerated energy, kWh 17.73

Route

Route distance, km 126.67

Total route duration 5h 14m

Driving time 2h 29m

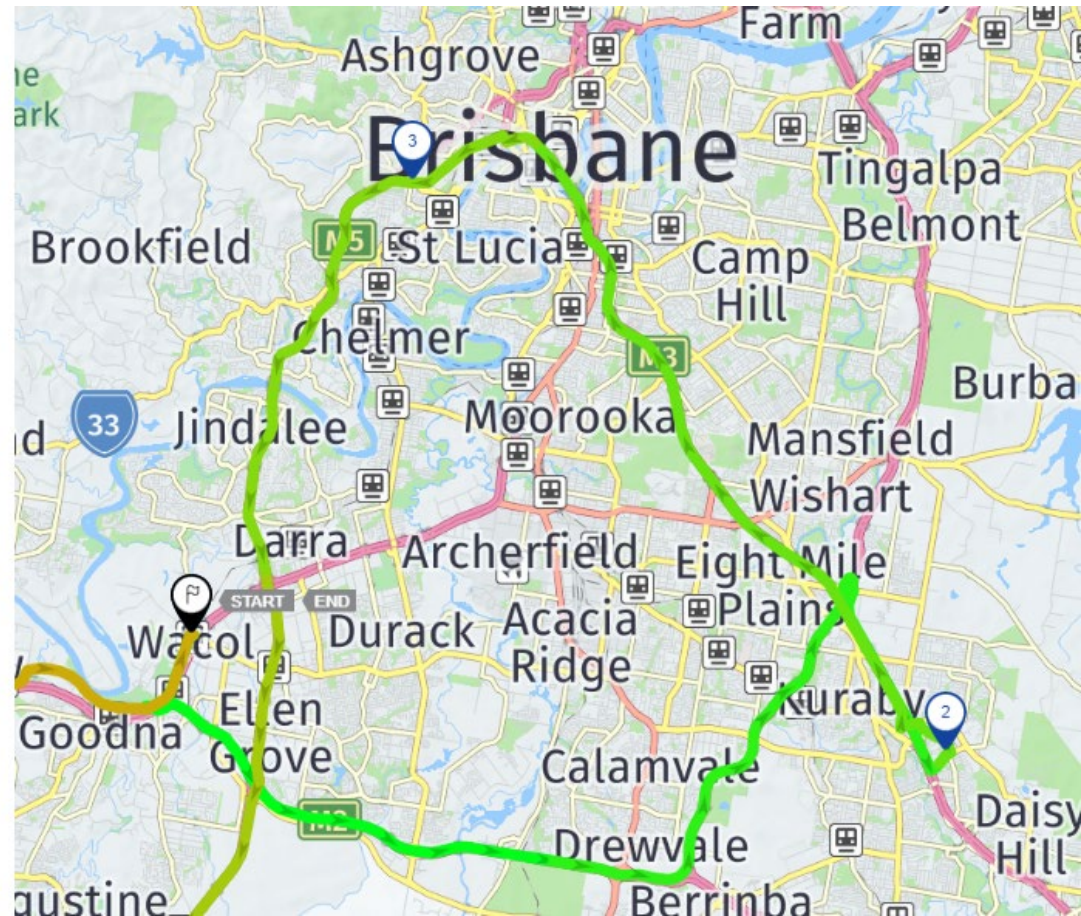
Service and rest time 2h 45m

Max. carried payload, kg 5000.00

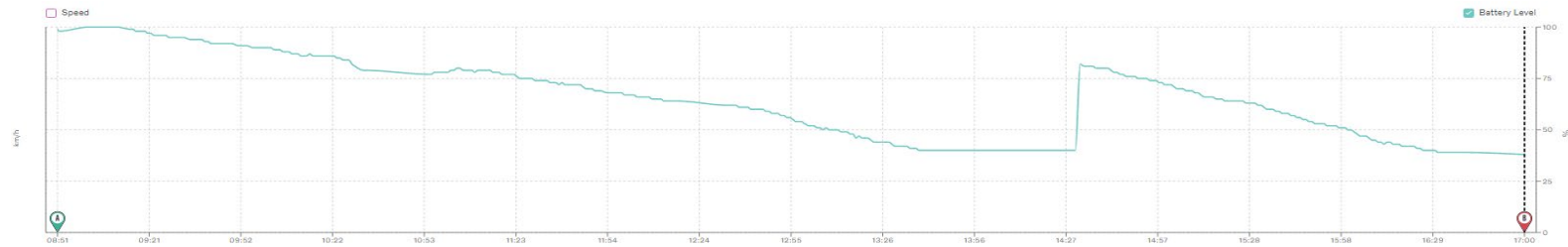
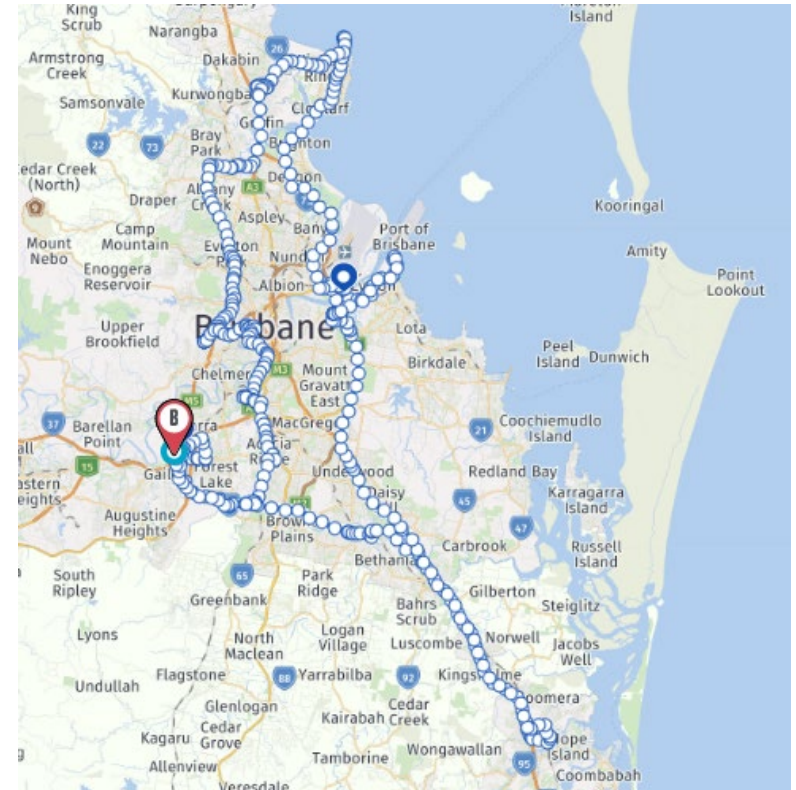
Average speed, km/h 51

Top speed, km/h 88

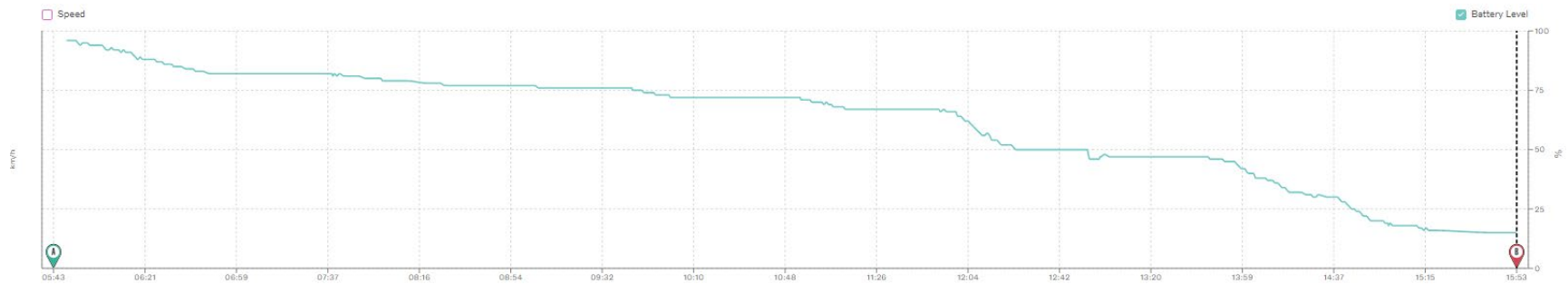
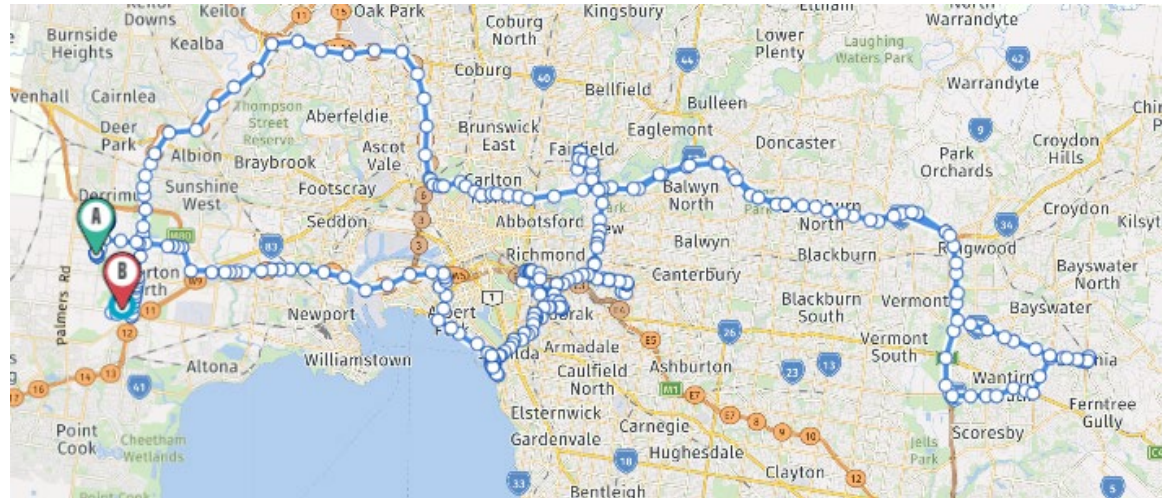
On the map the route is colored to show the batteries energy at the chosen reference temperature



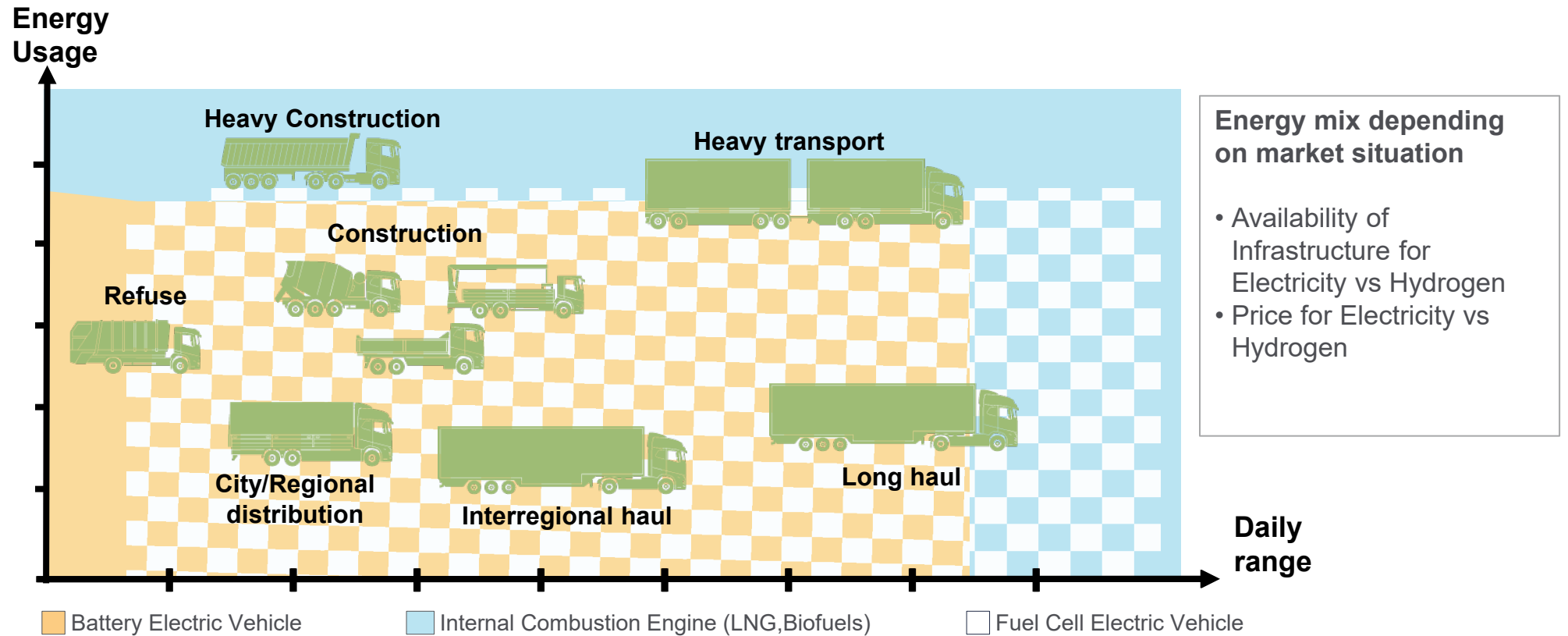
Operational Examples of Vehicle Range



Operational Examples of Vehicle Range



Technology offering 2030



Volvo Group Australia alternative energy TIMELINE

FL
FE



16 – 26 t

>200km

AVAIL NOW

3

Li

LITHIUM

FM
FH



44t

TBA

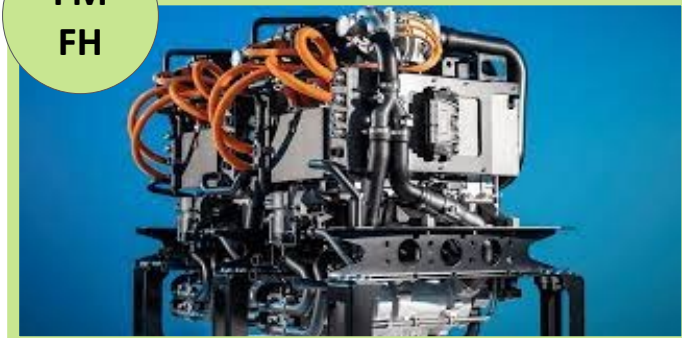
TBA

3

Li

LITHIUM

FM
FH



TBA

500 -1000km

>2026

1

1.0079

H

Hydrogen

Volvo FL Electric



Volvo FE Electric



TAKING ORDERS – LIMITED AVAILABILITY

Current Australian Specs



Future Australian Specs



Current European Spec Vehicles



What's next?

HD Range
Flexibility- from construction to
regional haul.



Power

490kW Continuous

Trans

12 Speed
2400Nm

Range

TBA

GCM

>44t

WB

3800-6700

Axles

6x2, 6x4, 8x4

Batteries

3 to 6
270-540kWh

Capacity

250kW charging

Step by Step to NetZero – Procurement Plan

Funding Procurement of Fleet & Plant

- The default for many councils has been to buy/own their fleet, plant and equipment;
- Much of this procurement has been funded by General Fund/rates and general income
- Some of this procurement has been funded by Fleet Reserves and more recently by loans; and
- Very little has been leased.

Plant Replacement Program

How much of the Program is wishful thinking? The Program should be populated with items that are:

- critical to the council's service delivery (business use only/**no private use fleet**);
- high utilisation (lease - low utilisation hire)
- aligned with NetZero ambitions;

What does this mean for Councils?

Conflicting community priorities create pressures on where the cash is spent. Replacement of Fleet and Plant does not rank in priorities dominated by community infrastructure requirements.

New ways of thinking are required by Councils to implement these approaches.

If you don't have the cash, you need alternative funding strategies to meet your community service objectives and standards!

Step by Step to NetZero Strategy

Infrastructure

- ✓ Confirm you are providing renewable energy for your charging stations.
- ✓ Remember if you are generating renewable energy there is a cost.
- ✓ Calculate optimum amount of chargers needed for your fleet and where they will be located.
- ✓ Will your chargers be accessed by the public (possible revenue)?
- ✓ Consider rapid charging stations.
- ✓ Offer free charging to staff that own an EV
- ✓ Installing and managing chargers is not core business for Councils. Outsource this activity to a specialist.



Maintenance

- ✓ In-house maintenance team will be challenged by the transition to EVs.
- ✓ EVs require minimal maintenance - brakes, and fluids etc.
- ✓ Keeping up with technology updates in EVs will require specialised IP-protected software.
- ✓ The capital cost to install analytics tools to maintain EV's will be substantial - leave this to the supplier
- ✓ Develop a simple electrical maintenance protocols to cater for small electrical issues.
- ✓ Develop internal skills on fault analytics, particularly strategic assets like electric/hybrid rubbish vehicles.



Step by Step to NetZero Cost

Lease Cost PHEV based on 5 years 100,000km

Make	Model	Annual Fuel Cost @ \$3.0/lt	Service costs	Annual Rental	Total
Hyundai	Ioniq	\$660	\$280	\$9,000	\$9,880
Mitsubishi	Outlander	\$1,140	\$600	\$10,260	\$12,000
Ford	Escape	\$900	\$510	\$11,400	\$12,810

BEV based on 7 years 140,000km

Make	Model	Renewable Battery Solar	Service costs	Annual Rental	Total
Hyundai	Kona	0	\$250	\$12,684	\$12,834
Nissan	Leaf	0	\$291	\$10,450	\$10,741
Mercedes	EQA	0	\$440	\$15,960	\$16,400

Step by Step to NetZero Cost – Funding Risk

Capital

- Capital money needs to be set aside for future replacement of assets and with EV's the capital funds required will increase
 - Your depreciation should go to a reserve
 - Depreciation needs to be accurate
- Replacements are deferred because the organisation has other priorities
 - Downtime increases having an impact on services
 - Repair and maintenance cost increase
- Lack of financial transparency
 - Financial systems are designed to capture costs but not the cost of downtime and service disruption
 - Financial systems don't reflect why the equipment failed. This is often due to lack of written processes that make individuals accountable

Lease

- No capital required monthly payments are locked in for the period of the lease
 - Assets are replaced at an optimum time
- Replacements can be deferred resulting in lower lease costs if vehicles are still considered to be in good mechanical condition
 - Asset owners have to adjust their process as the asset is not owned
- Financial transparency is provided through the lessors billing system
 - Maintenance management can be included providing further transparency
 - There are provisions for in house maintenance crews to be approved
 - Costs related to reconditioning before resale are clearly visible

Summary

- The world around us is moving towards NetZero by 2050
- Organisations not planning or working on their response are asleep behind the wheel
- In your progress towards NetZero 2050 you may require Carbon Offsets
- Manufacturers are committing to NetZero and production of EVs
- Adopting a Procurement Plan to move the organisation toward NetZero
- Understanding the Funding Risk and what's best for the organisation



Questions and Answers

Use the chat function to

- make a point or
- ask a question or
- seek clarification.

