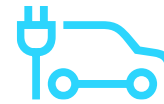


Overcoming barriers to ZE trucks

Presentation to QTLC

Future Freight Energy Hubs

16 June 2022
Mark Gjerek (MOV3MENT)



WHAT WE DID

Market study to identify barriers to ZEV transition and actions to overcome them



HOW WE DID IT

Research, analysis and industry consultation



WHY IT'S IMPORTANT

Emissions reduction targets will not be met without freight, but ZEVs are not widely adopted

The study focused on the best applications for zero tailpipe emission (ZE) trucks.

- Battery-electric (BEV)
- Hydrogen fuel cell (FCEV)

Diesel is versatile, cheap, ubiquitous, & incumbent.

ZEVs are energy-limited, which affects

- Driving range
- Payload
- Costs

Despite limitations, TCO is competitive today in some applications.

But ZEV uptake is much lower than TCO suggests it should be.

Obvious barriers: price, availability, charging and H2 refueling.

Other barriers result from an immature or under-developed market.

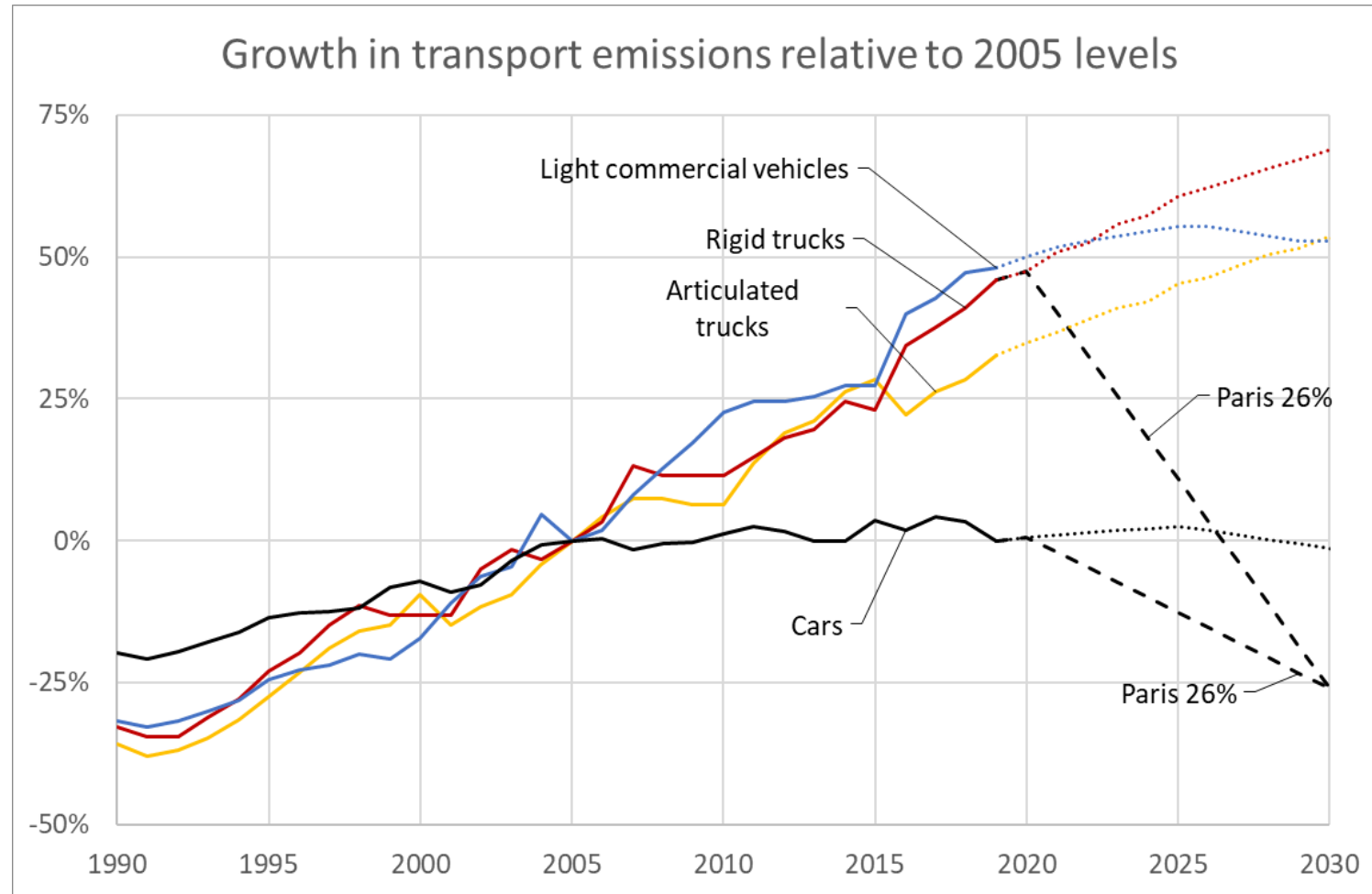
All players in the truck and energy markets need to collaborate to overcome barriers to accelerate ZEV uptake.

Recommendations are provided for different actors.

Key opportunities for industry are to

- Develop foundations
- Build user knowledge
- Implement accelerator opportunities

Why we need Zero Emissions trucks

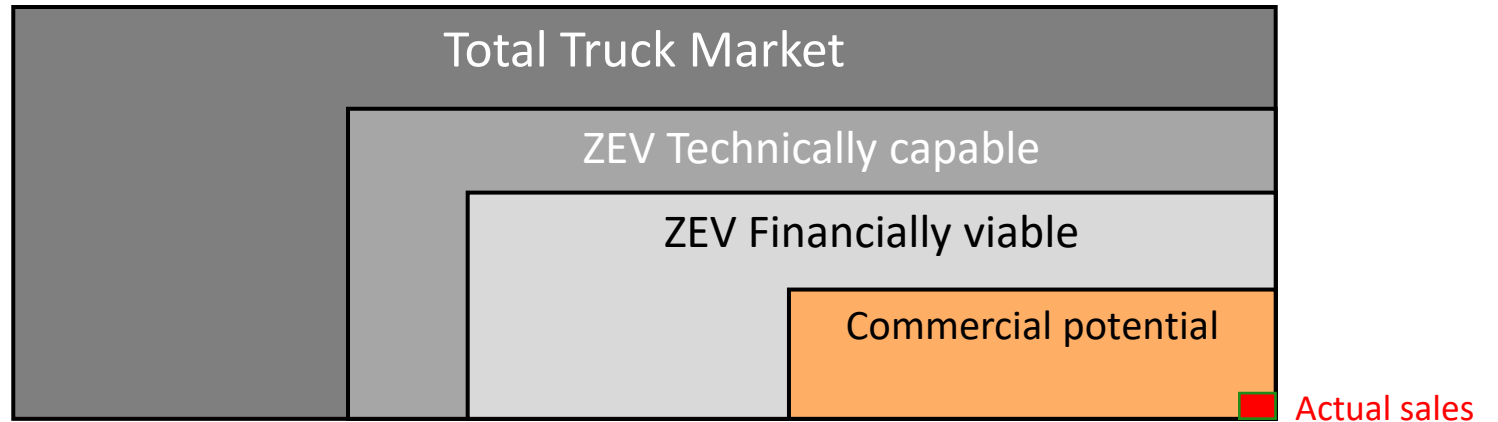


ZEVs are one of the only pathways to achieving climate goals in freight transport

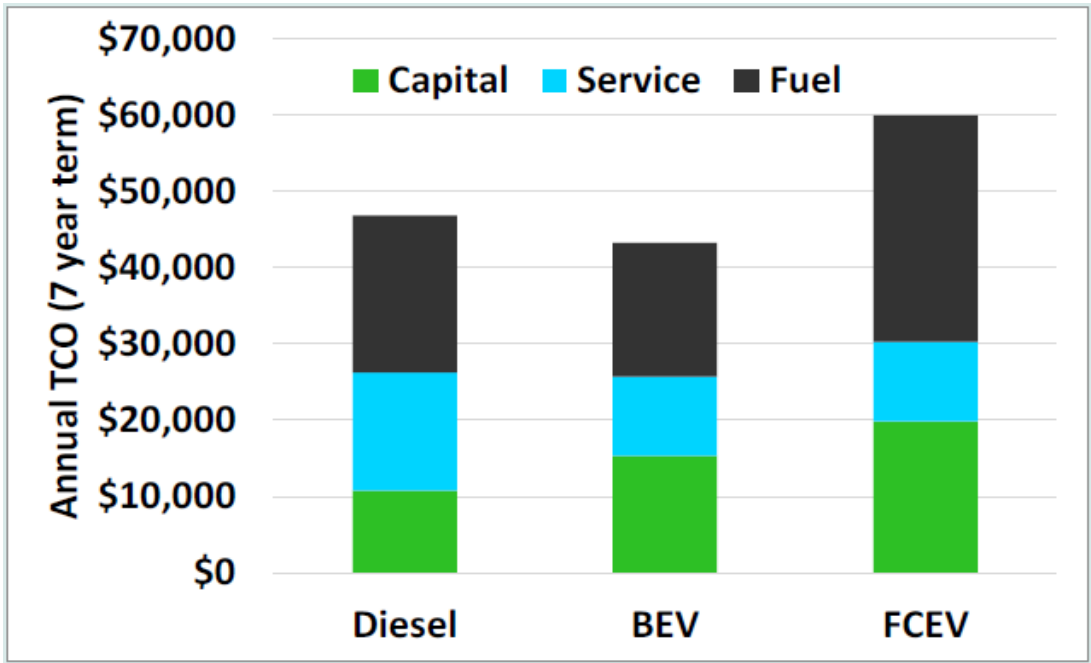


*Sweet-spots differ
by technology*

- ZE technologies entail some compromises
- Suitability varies in different applications



- BEVs suitable and commercially viable in
 - Urban distribution and low-frequency compactor.
 - Regional haul and high frequency compactors.
- FCEV suitable everywhere... but at higher cost

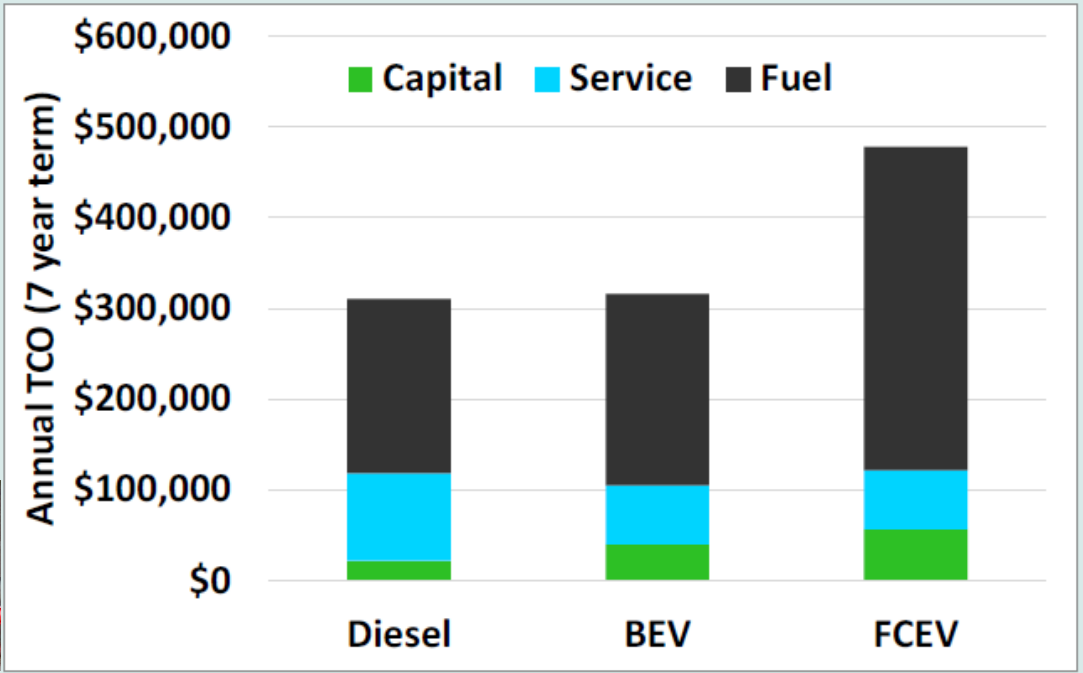


Urban delivery HR

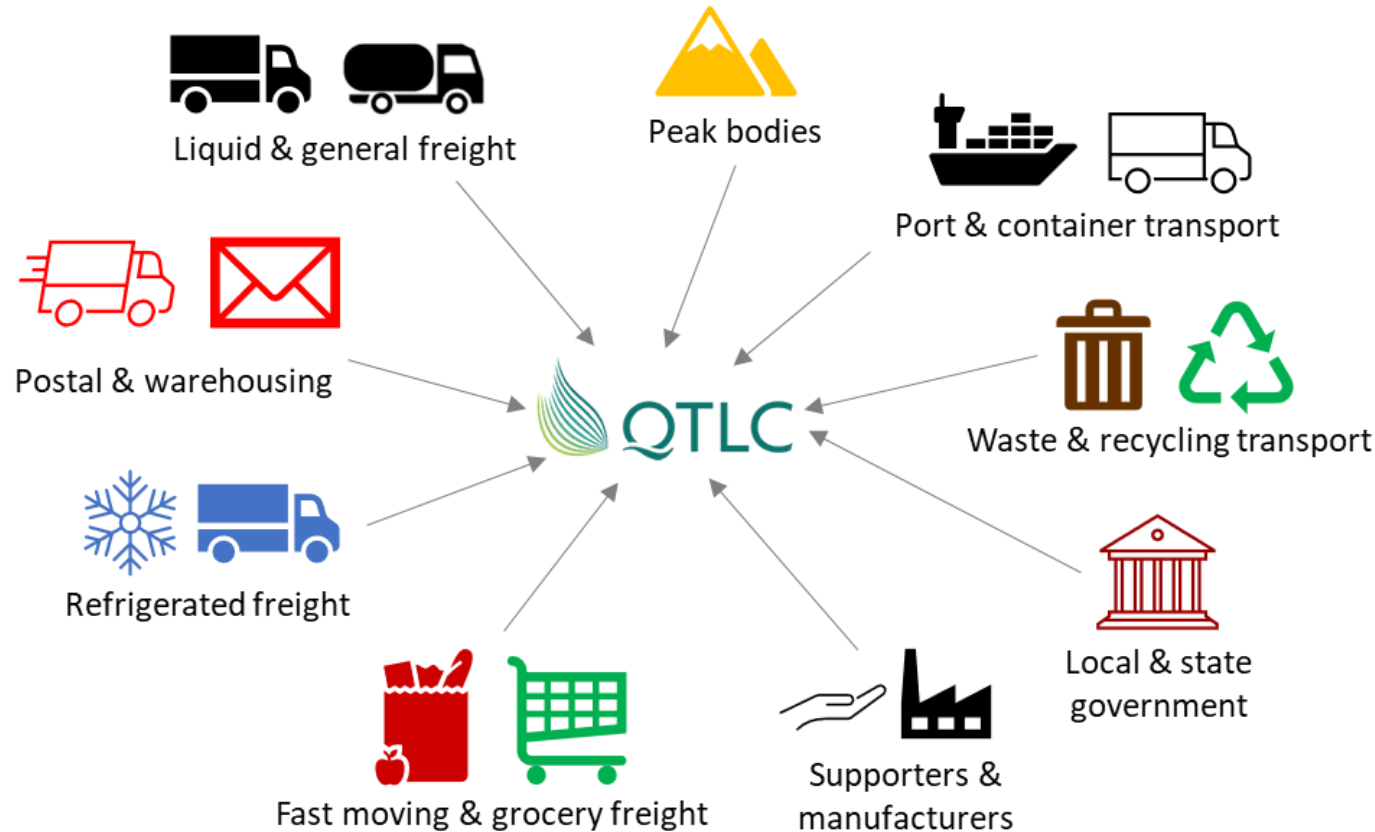


TCO suggests ZEV sales should be high

Line-haul artic (semi)



Asking industry why uptake is so low



We asked about their ZE truck journey, issues they perceive or experienced, and what's required for them to switch to ZE trucks

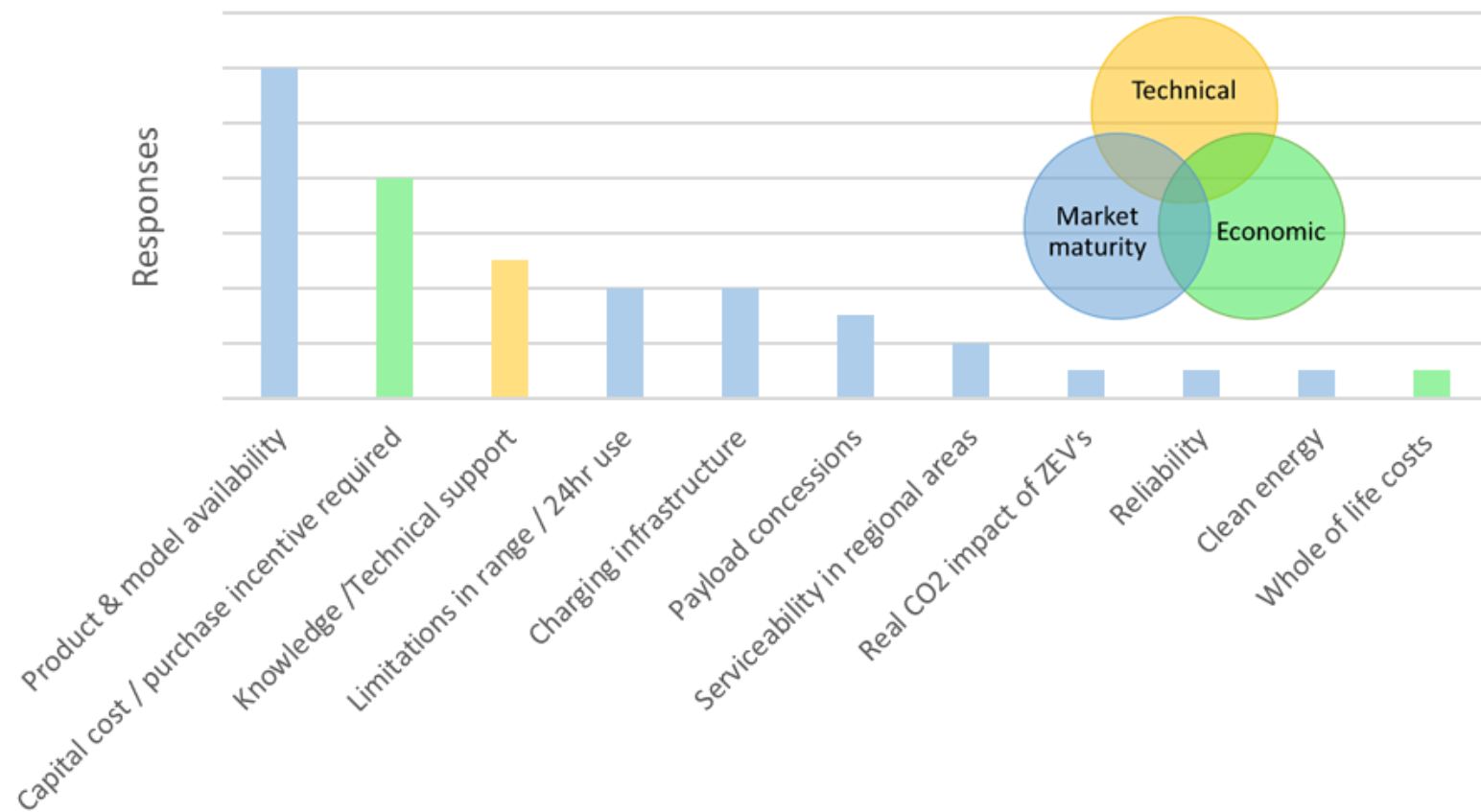
3 Workshops

14 Fleets

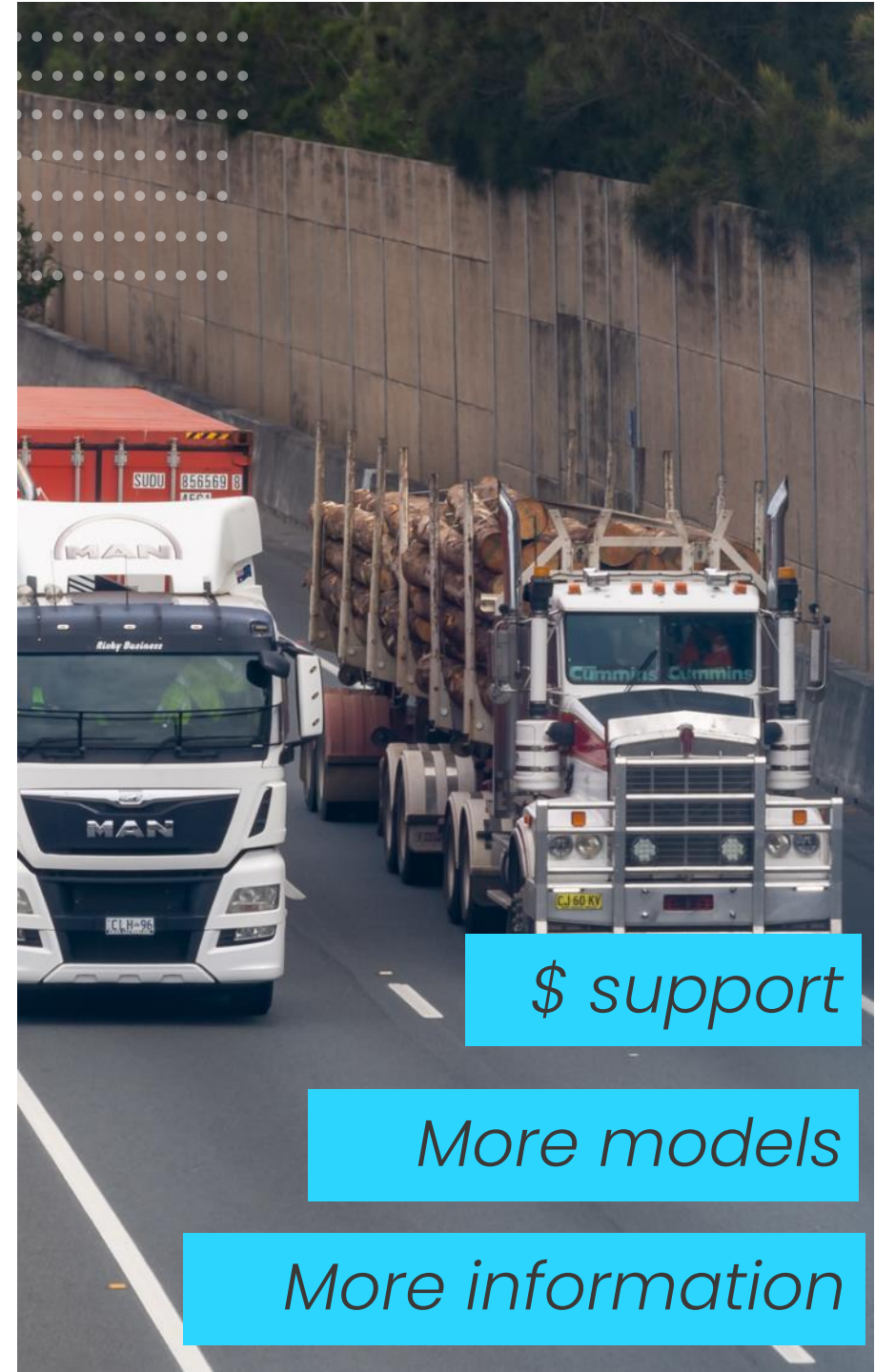
4 Peak bodies

8 Suppliers

What industry needs

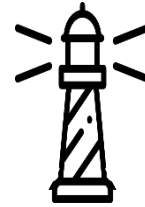


- Some barriers suggest the truck market is not ready
- Risk aversion, lack of confidence, knowledge gaps
- Regs, infrastructure, culture all change slowly



WHAT TO DO ABOUT IT

Kickstart grants program



★ ZEV precincts or hubs

Government

- Review & integrate policy
- Develop & implement effective policies & incentives
- Transport industry funding
- Lead with government fleet & contracts

Suppliers & service providers

- Energy & charging providers engage with fleets
- Financiers & FMOs to tailor ZEV offers
- Provide heavy vehicle refuelling / recharging infrastructure

Freight supply chain

- Shippers to provide favourable conditions to fleets that operate ZE trucks
- Develop zones & precincts as catalysts for change

Fleets

- Make a strategic choice to lead/follow
- Understand the current diesel fleet & its potential to switch
- Take the first step
- Establish partnerships

Manufacturers

- Provide leadership & differentiation
- Help customers assess suitability
- Develop Partnerships

All stakeholders: (Foundations)

Define heavy vehicle duty cycles

Collaboration opportunities

QUESTIONS?

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