



TE MANATŪ WAKA  
MINISTRY OF TRANSPORT

# Reducing harmful transport emissions

Daisy Cadigan

23 August 2022

Harmful transport pollution contributes **\$10.5 billion** every year to air pollution social costs

**13,000**

Cases of asthma prevalence in our tamariki

**2,200**

Premature deaths

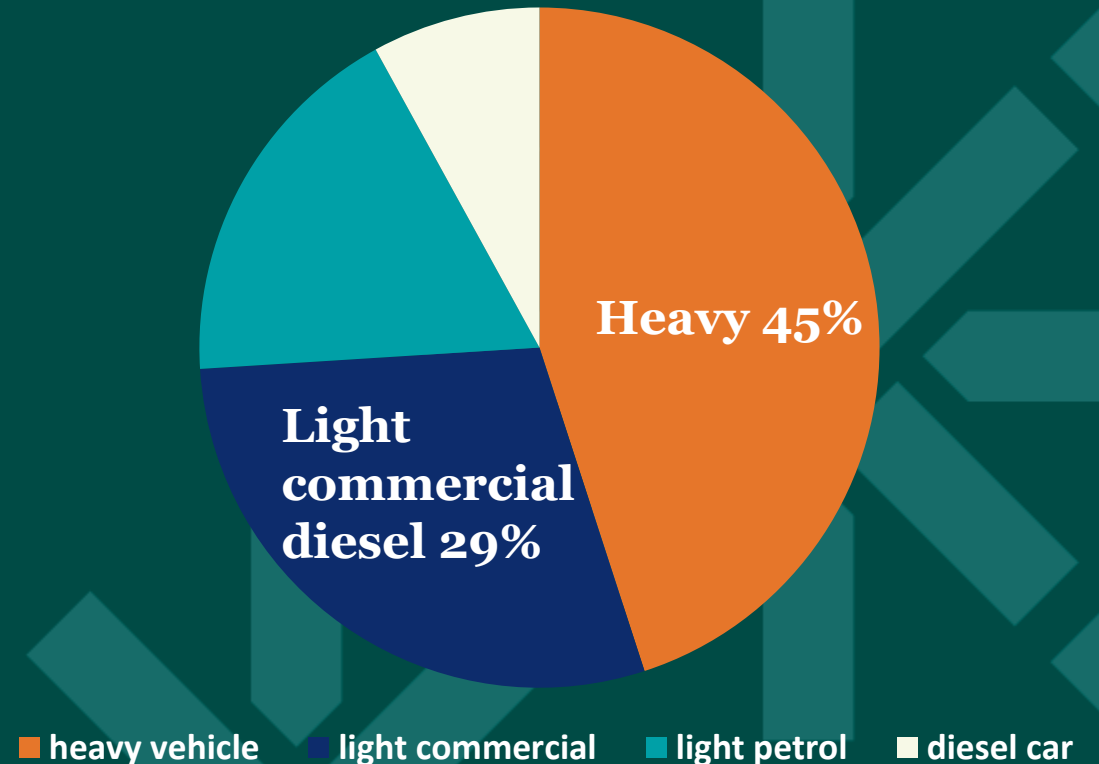
**9,000**

Cardiovascular and respiratory hospitalisations

# Diesel vehicles contribute the most harm...

- Diesel vehicles contribute to 82% of the total transport air pollution harm
- Most heavy vehicles are run on diesel. They make up 10% of the total vehicle fleet but contribute to almost **half** the total harm
- Light commercial vehicles and diesel cars make up around 9% of the light vehicle fleet and contribute 37% of the total social harm

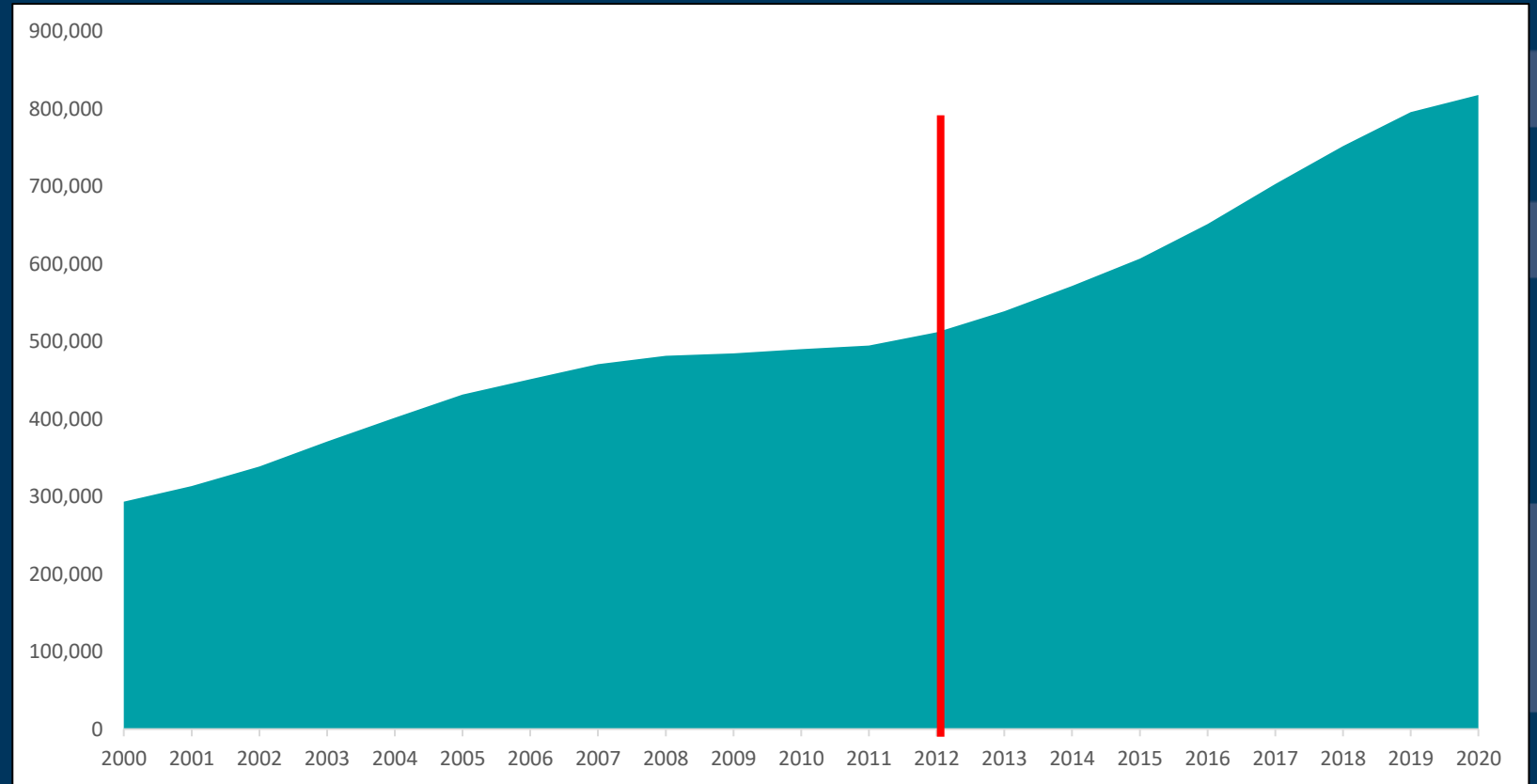
Relative social cost of vehicles in Aotearoa 2022



# ... and the number of diesel vehicles are rising

## Number of diesel vehicles in Aotearoa

- At the time of the last HAPINZ publication in 2012, there were 500,000 diesel vehicles in the Aotearoa fleet
- That number has grown to 800,000 as of 2020



# So... what's a solution?

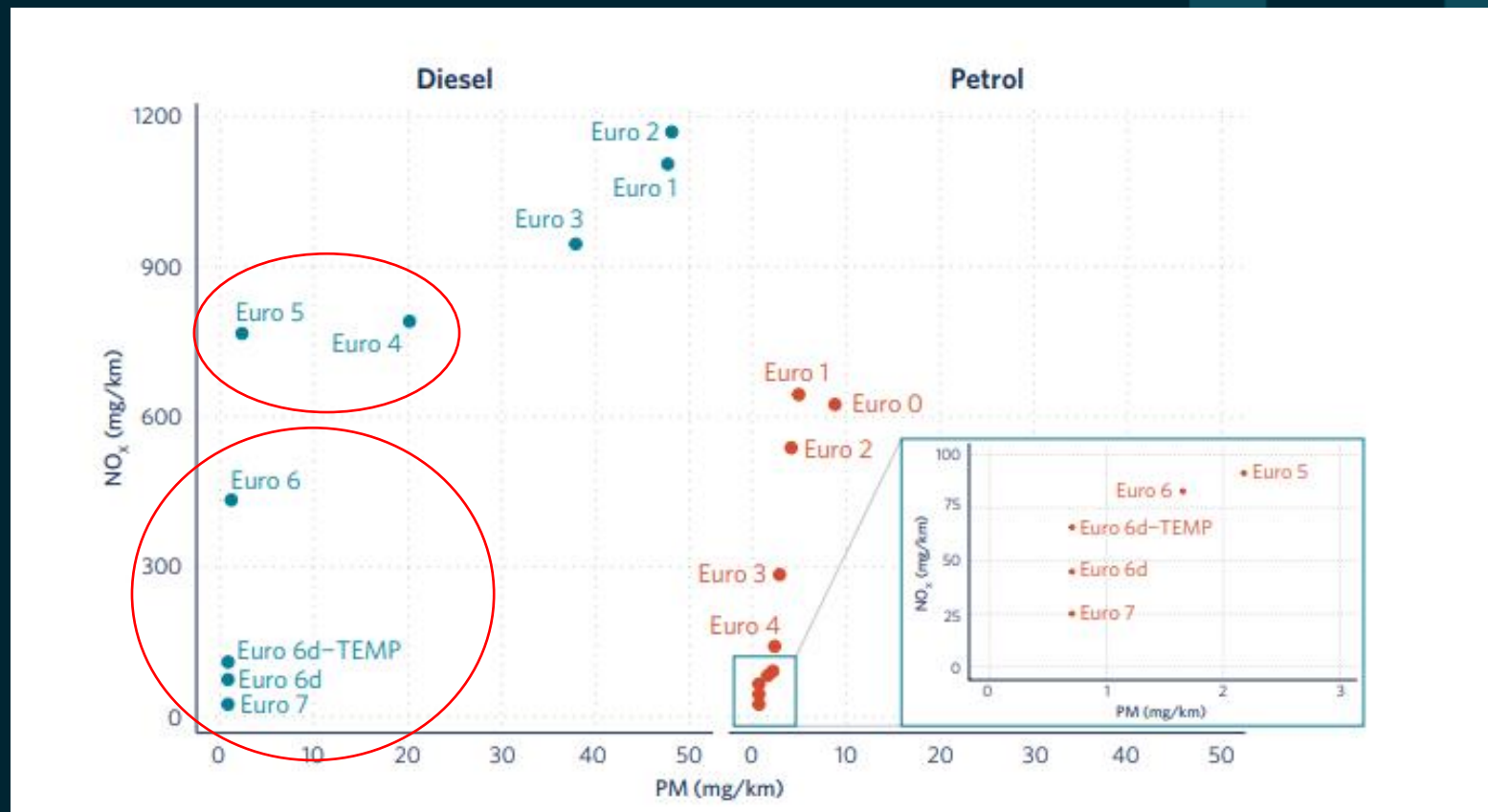
## Euro standards

- Euro standards define the maximum limits for exhaust emissions for new vehicles sold in the European Union and European Economic Area member States
- Australia, Japan and the United States, where we also import vehicles from have their own version of harmful emissions standards
- The latest Euro standard is Euro 6/VI, adopted by the EU in 2014
- Currently Aotearoa requires Euro 5/V for new imports and Euro 4/IV for used imports

# Euro 6/VI is the first standard to reduce harmful emissions in the real world

Comparison of real-world NO<sub>x</sub> and PM emissions estimated from remote sensing

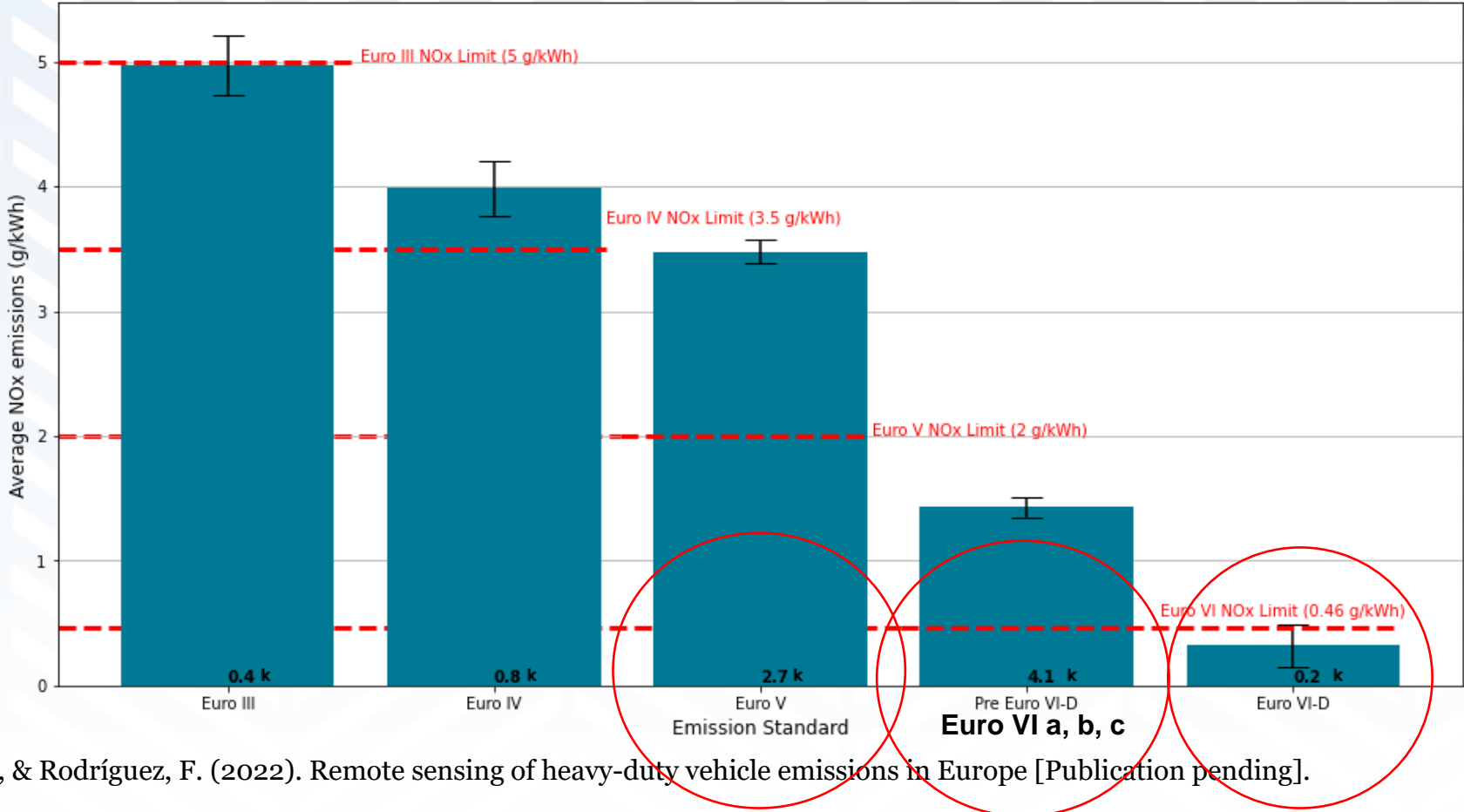
Results are grouped by Euro standard with diesel vehicles shown in blue and petrol vehicles in red



<https://theicct.org/wp-content/uploads/2021/12/Impacts-of-LEZ-Sofia-TRUE-Report-EN-v4-dec21.pdf>

# Euro 6/VI is the first standard to reduce harmful emissions in the real world

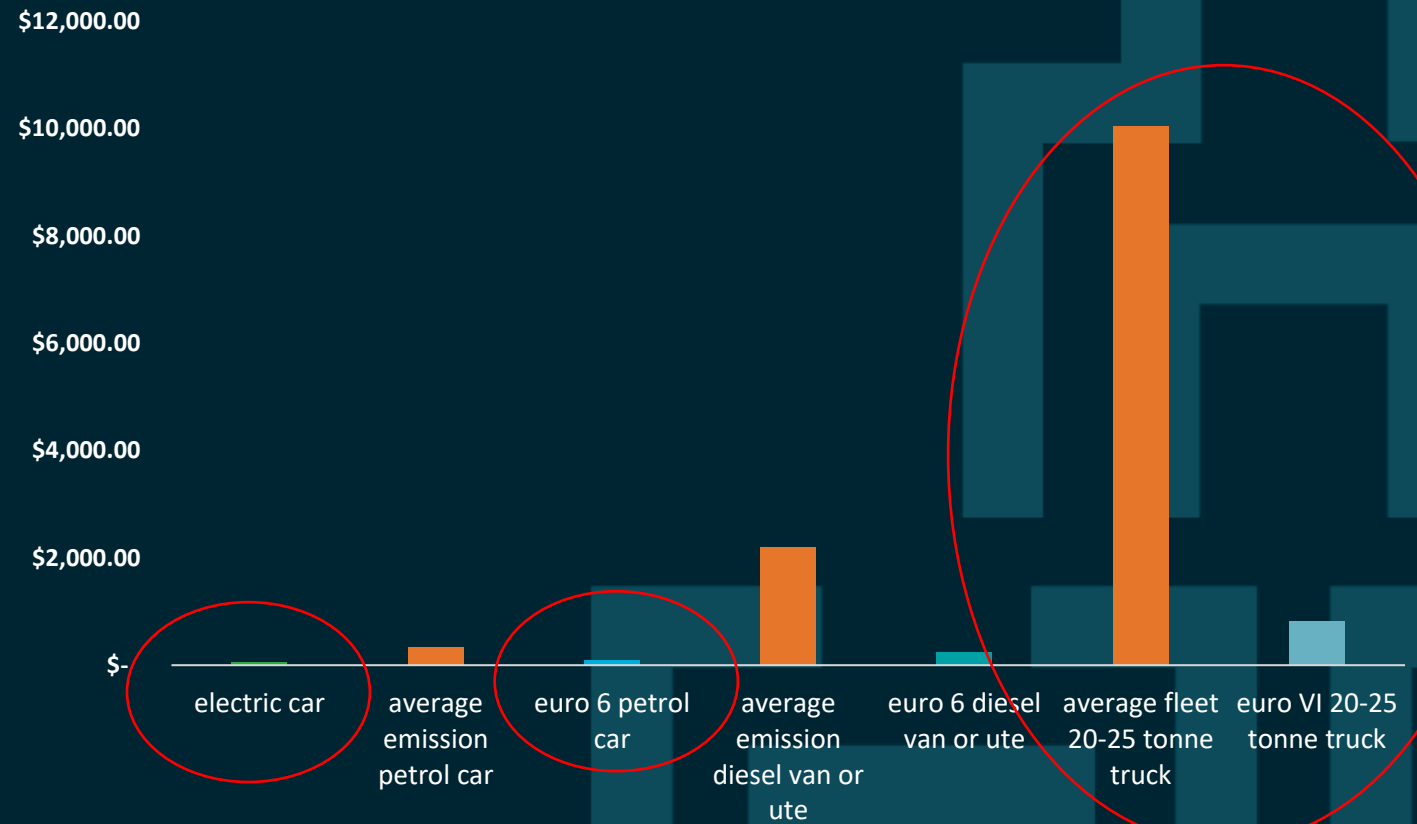
NOx emissions limits across the Euro standard for heavy vehicles



Kazemi Bakhshmand, S., Mulholland, E., Tietge, U., & Rodríguez, F. (2022). Remote sensing of heavy-duty vehicle emissions in Europe [Publication pending]. International Council on Clean Transportation.

# Euro 6/VI is the first standard to reduce harmful emissions in the real world

Average **social costs per 10,000km** of vehicles in the fleet compared to Euro 6/VI vehicles



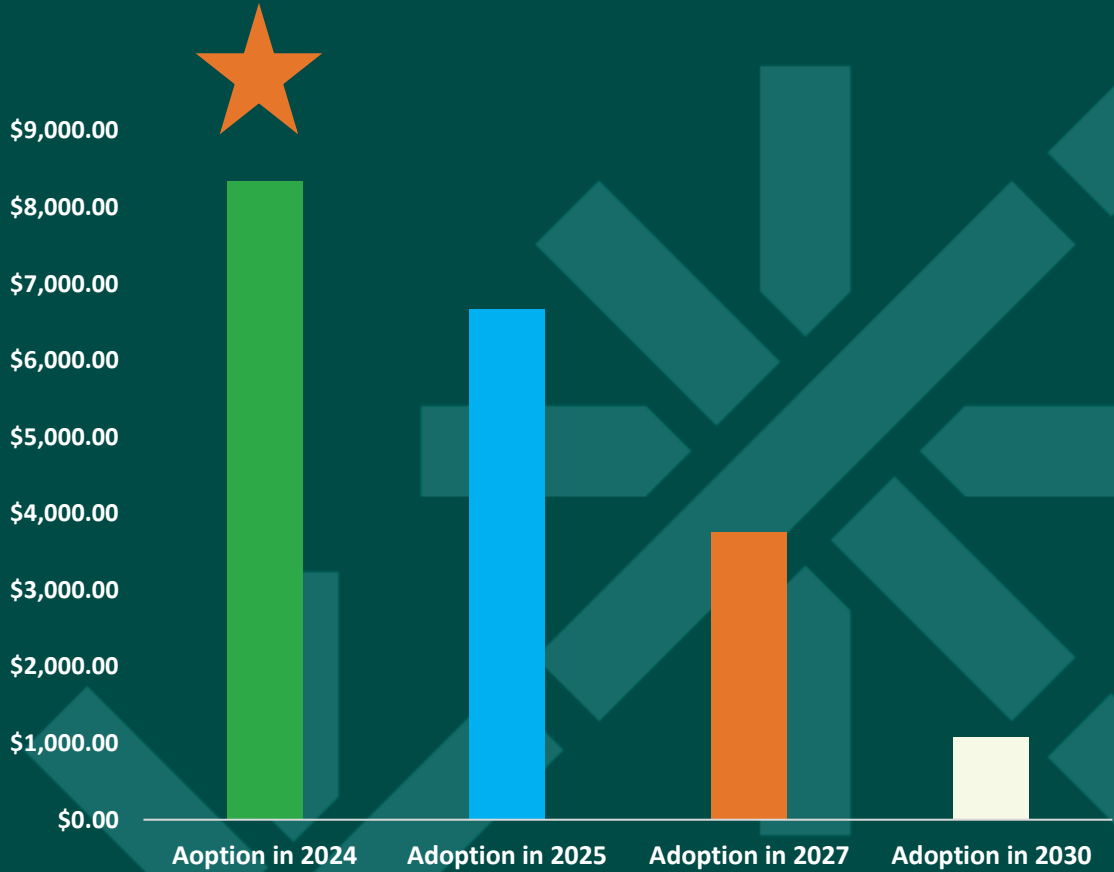
<https://theicct.org/wp-content/uploads/2021/12/Impacts-of-LEZ-Sofia-TRUE-Report-EN-v4-dec21.pdf>



# Adopting Euro 6/VI will reduce air pollution significantly over the long-term

- Adoption as early as 2024 could save over **\$8 billion** in social costs out to 2050
- Public consultation on proposed implementation dates for Euro 6/VI will take place next month

Benefits of introducing Euro 6/VI



# Other actions to reduce harmful emissions

## The Clean Vehicles Programme

- The Clean Vehicle Discount and Clean Vehicle Standard continue to incentivise consumers towards low and zero carbon dioxide (CO<sub>2</sub>) emission vehicles and is likely to result in reduced harmful emissions over the long term
- Because it uses pricing to bring about change, vehicles with high CO<sub>2</sub> (and harmful) emissions are still permitted but should reduce over time
- The ERP has a target for 30 percent of the overall light fleet to be zero emissions by 2035, which if achieved, will reduce harmful emissions in the long term.

# Other actions to reduce harmful emissions

## Updating Rightcar

- Waka Kotahi are beginning work to recalculate the star bands for air pollution ratings on Rightcar, to more accurately reflect harm levels of different vehicles

Vehicle	Possible Clean Car rebate	Safety rating	Carbon emissions	Fuel economy	Air pollution	Safety rating system VSRR	Clean Car rebate/fee
LDV EDeliver 3 Van 2020- (EV)	✓ Possible Clean Car rebate	★★★★★	★★★★★★	★★★★★★	★★★★★★		Possible rebate of \$3,450.00 - \$8,625.00
LDV EDeliver 9 Van 2020- (EV)	✓ Possible Clean Car rebate	★★★★★	★★★★★★	★★★★★★	★★★★★★		Possible rebate of up to \$8,625.00

<https://rightcar.govt.nz/>

# Other actions to reduce harmful emissions

## Freight decarbonisation

- The work on the Green Freight project and current freight decarbonisation strategy is likely to reduce levels of harmful pollution from heavy vehicles
- The ERP has a target to reduce freight CO<sub>2</sub> emissions 35 percent by 2035, noting that achieving this is reliant on formulating and adopting new policy.
- Mode shift, biofuels and electric truck uptake will all improve harmful emissions in the long-term

# Other actions to reduce harmful emissions

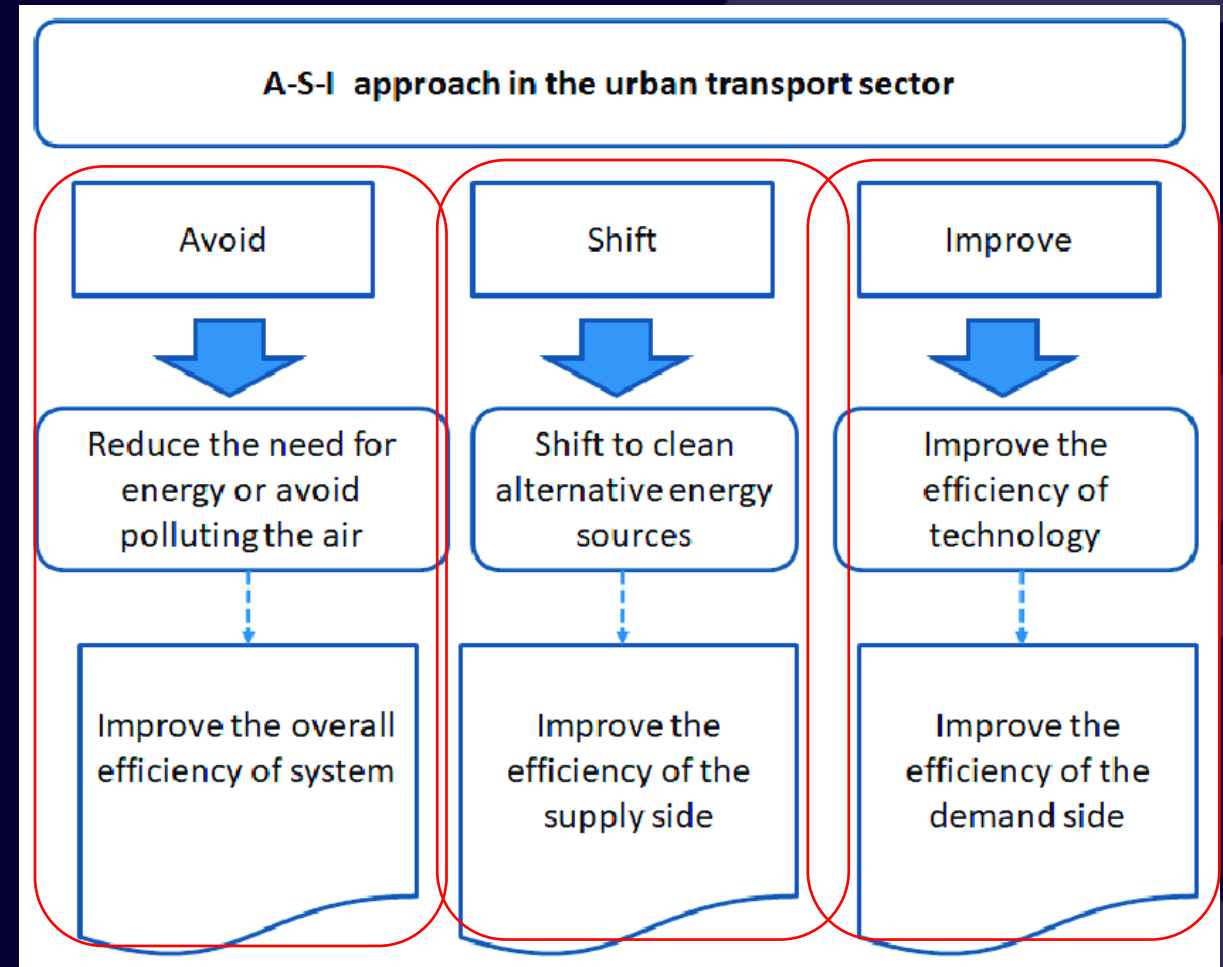
## Low-Emission Zones

- LEZs are areas—usually within cities and larger towns—where the most polluting vehicles are regulated or restricted to improve air quality.
- They are used in hundreds of cities globally. Some cities also have Zero Emissions Zones where only pedestrians, cyclists, and zero emissions vehicles have unrestricted access.
- LEZs are not currently used in Aotearoa, and there is no legal mechanism for local authorities to create these. The Government’s Reshaping Streets regulatory proposals, which we are consulting on until 19 September 2022, includes a proposal to enable Road Controlling Authorities (RCAs) to restrict or prohibit one or more classes of vehicles from using specific roads. This provision could potentially be used by councils to create LEZs. RCAs could define classes of vehicles that are restricted from using streets within a specified zone.
- See <https://www.nzta.govt.nz/about-us/consultations/reshaping-streets-consultation> for more information on Reshaping Streets.

# Why we need Euro 6/VI anyway

## Avoid-Shift-Improve

- A lot of transport actions in the ERP are through the avoid-shift-improve framework
- Improvements to urban design to reduce the need to travel, and reduce trip lengths is an **avoid** action
- Promoting mode shift to low-carbon modes, whether it be active transport, or shifting freight to coastal shipping and rail is a **shift** action
- Requiring Euro 6/VI for vehicles entering our fleet is an **improve** action



# Why we need Euro 6/VI anyway

## Despite all the mahi in the ERP

- It's low cost and easy to implement
- Euro 6/VI vehicles are a proven technology which is widely available
- The average age of a vehicle in Aotearoa is 14 years, and the average age vehicles are scrapped (removed from the fleet) is 19 years of age
- That means a Euro 5 vehicle imported this year, will, on average, continue emitting harmful pollution until **2041**
- Although actions through the ERP will do significant work to reduce harmful emissions, we need to turn off the tap of vehicles with high levels of harmful emissions coming in through the border



TE MANATŪ WAKA  
MINISTRY OF TRANSPORT

# Ngā mihi nui

- Contact me
- Read the modelling report on introducing Euro 6/VI
- International Council on Clean Transport