Charge!

Phil Harrison

ENZ Transportation Group Conference
Auckland 12 May 2021

Creating what matters
for future generations

Charge!

It's not about plugging things in

Charge!

Payments, taxes, duties, tolls, penalties and rebates

Charge!

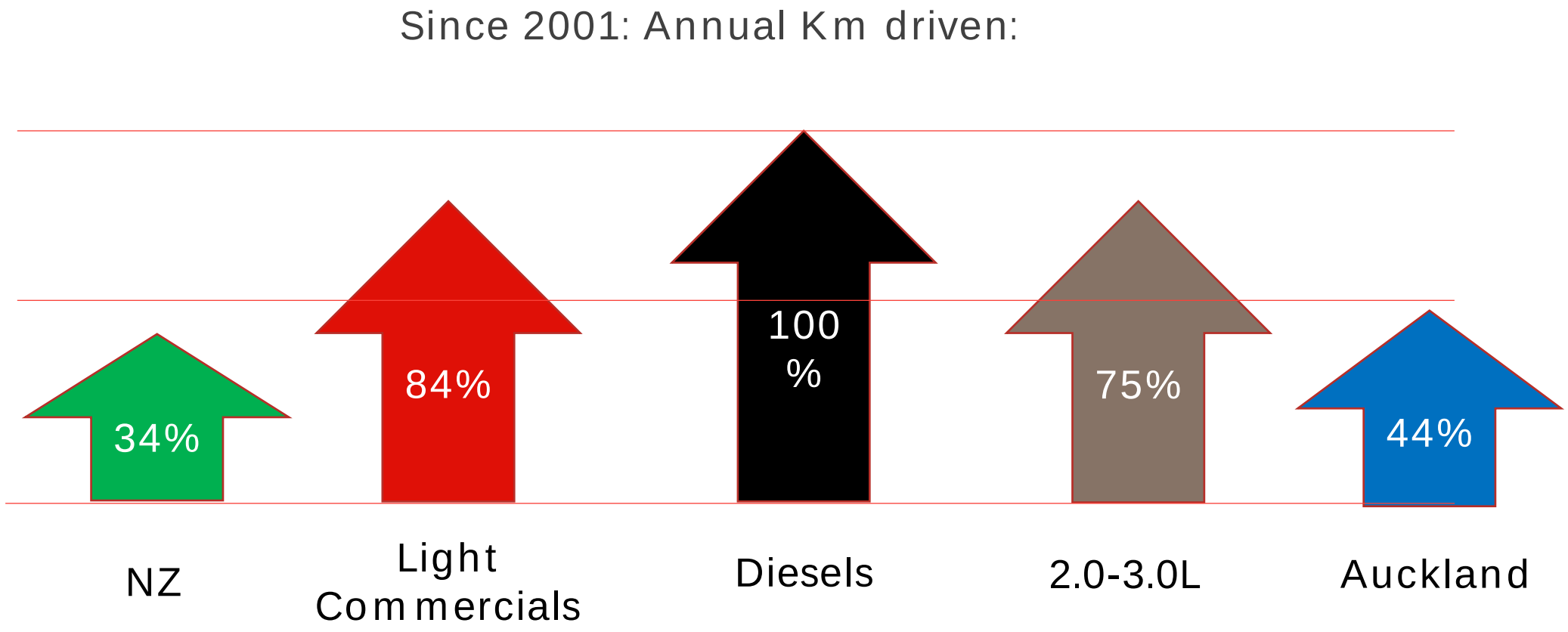
Moving ahead with urgency and purpose

The Problem

Too much driving and poor vehicle choices = more CO_2

Road Transport emits 15M T CO_2 per year

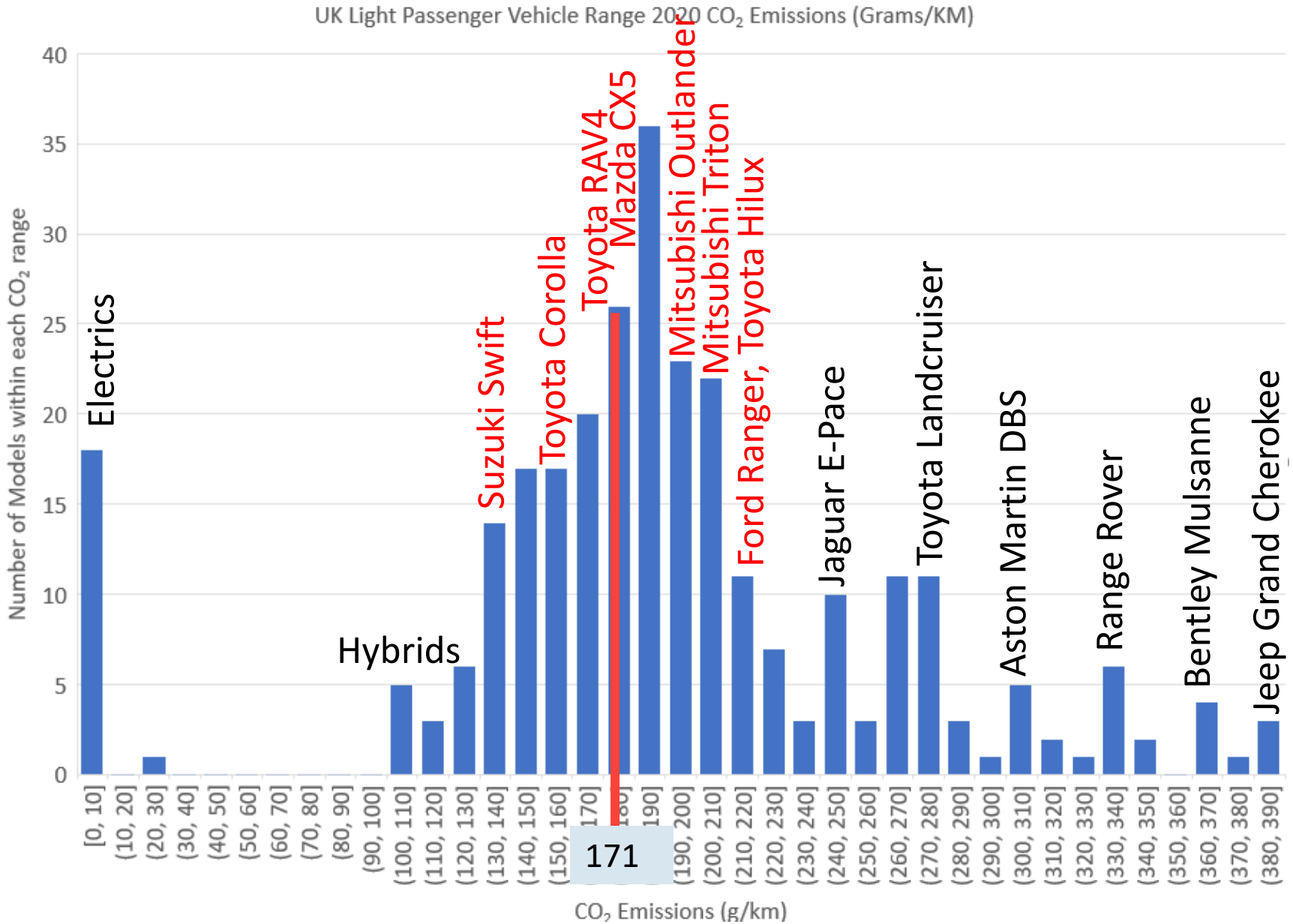
Nearly doubled since 1990



The Problem

Too much driving and poor vehicle choices = more CO_2

Highest selling new vehicles are increasing the average emissions of the fleet



So What Can We Do?

We could Charge!

Charge #1

Clean Car Import Standard

- Aim: reduce new car emissions to 105 g/km by 2025 (Japan 2014)
- Higher sales duty on higher emitting vehicles, reduce tax on most efficient

- Ford Ranger (212g/km) ↑ $3,000
- Electric/Hybrid ↓ $8,000
- Mid range unaffected

2021 Outlander PHEV $53,000

2022 Outlander XLS / PHEV $46,000?

2021 Outlander XLS $43,000

Rating: Limited in short term (average age of fleet) but medium-long term +ve

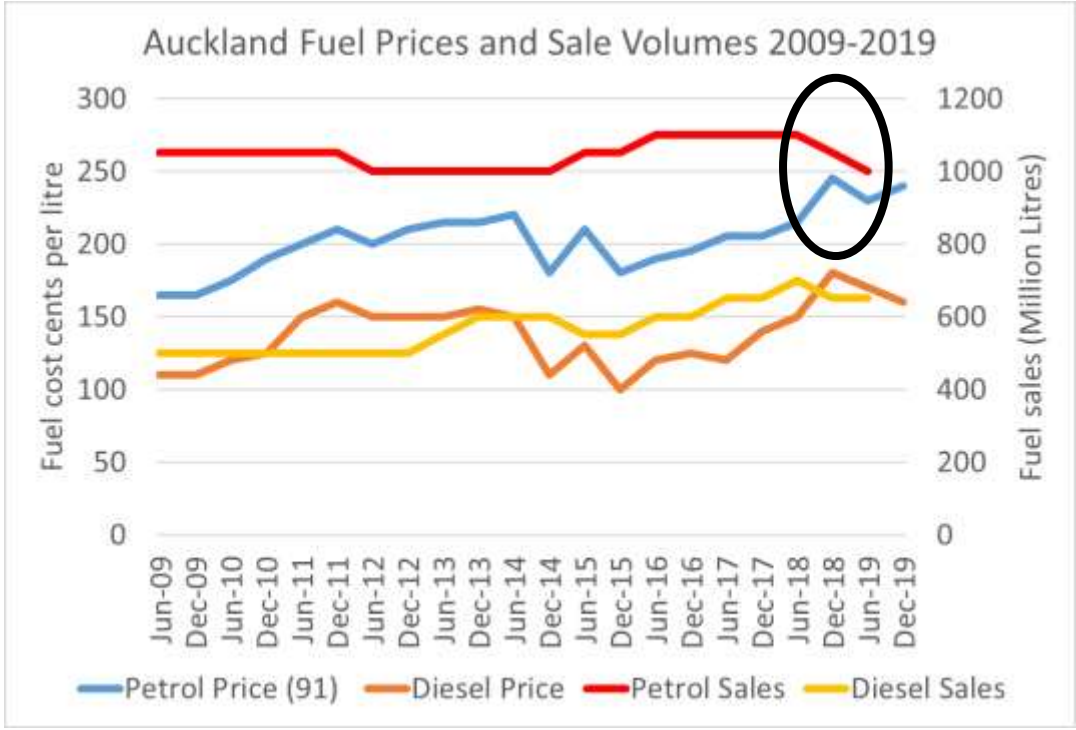
Charge #2

Fuel Tax

- Current fuel tax about $1.15 per litre (+10c in Auckland ☺)
- Fuel taxes:
  - *Simple to understand*
  - *Simple to collect*
  - *Equitable, in terms of amount paid is directly linked to consumption (and CO_2 emissions)*

10% increase in fuel price= 2% reduction in consumption.

For 20% reduction in fuel use (carbon emissions) fuel prices would need to double.



Rating: Good for raising revenue (to fund alternative modes) but unlikely to be effective in itself

Charge #3

Congestion Charging

- Several examples from around the world reviewed
- Designed to reduce congestion, usually in city centres
- Unintended consequences include increased trip lengths, use of local roads and induced trips
- Limited evidence of CO_2 reduction effects (10-15% in Stockholm, 1% in London).

Rating: Depends, but generally limited CO_2 reduction observed.

Auckland's Congestion Charging Plan

The Congestion Question project recommends way forward:

- City centre cordon linked to CRL opening, then Strategic corridors
- Designed to reduce commuting by car to city centre
- Evaluation weighted towards reduced congestion (65%).
- Economic, social, environmental and safety considerations 20% combined
- Forecast less than 1% CO2 reduction
- Are the objectives and evaluation weighting still valid?
- If CO_2 reduction were a specific target would the recommended option be different?

Charge #4

Emissions-Linked Charging

- London Low and Ultra-Low Emissions Zones example
- Based on Euro emissions standards that target Carbon Monoxide, NOx, **hydrocarbons and particulates. You don't meet standard, you pay.**
  - *LEZ covers most of Greater London, trucks pay up to £300 per day*
  - *ULEZ covers central London, expanding in 2021. Cars/vans £12.50 per day trucks £100 per day.*
- Decrease of 60% in non-compliant vehicles detected
- CO_2 emissions reduced by 6%.
- New scheme to combine the congestion charge and the ULEZ

Rating: Highly Effective in reducing use of older vehicles, leading to improved air quality. CO_2 reduction a by-**product, but needn't be.**

So What?

Conclusions

- CO_2 emissions increasing and likely to get worse, as more km are driven, and less efficient vehicles dominate our sales figures.
- Most pricing / charging schemes are designed to raise funds, to reduce traffic congestion, or to improve air quality
- Key is having the right objectives so a scheme can be designed specifically to result in CO_2 reduction, rather than as a by-product.
- Charges directly linked to carbon emissions

Also - Equity issues must be acknowledged and addressed.

What Now?

Recommendations

To address the urgent need to decarbonize NZ transport, my paper recommends* a combination of:

1. The NZ Clean Car Import standard
2. Fuel taxes
3. Auckland Congestion Charge redesigned to improve the outcomes for reduced CO_2 emissions. Tiered charges relative to CO_2 emissions of the vehicle = positive outcomes for reduced congestion and substantial decreases in CO_2 emissions.
4. No time to lose. 2035 target = annual 3% reduction in CO_2 from 2021. If we wait 5 years, it becomes 4.5% per annum….

Charge!

*As well as all the other good things discussed at this conference

Thank you

phil.harrison@wsp.com

wsp.com/nz