

# Fleet Decarbonisation Optimisation & Transition Plan

**2021 - 2031**



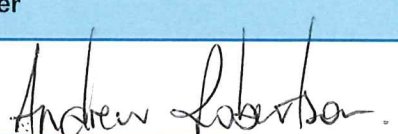
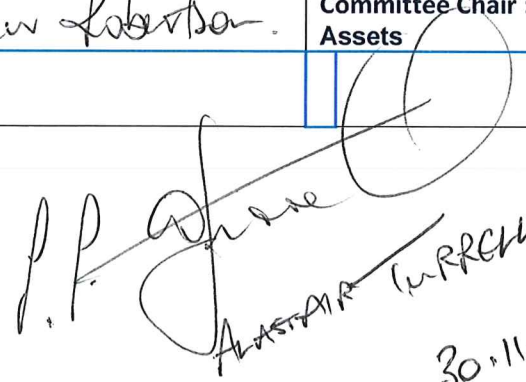


### Endorsement status

Job title	Date and signature
Senior Responsible Owner Director Asset Management Steve O'Neill	<i>Endorsed by email</i>
Benefits Realisation Owner Business Manager Asset Management Kirit Parbhu	<i>Endorsed by email</i>
Project Director Fleet Manager David Jacobs	<i>Endorsed by email</i>

### Recommended Actions and Approvals

Approval to Proceed		
1.	<b>Note</b> that the Department initiated projects to optimise and decarbonise the fleet in 2019.	YES/NO
2.	<b>Note</b> the contents of the attached Fleet Decarbonisation Optimisation and Transition Plan subject to any amendments recorded in minutes.	YES/NO
3.	<b>Note</b> the recommendation to proceed with further evaluation of <b>Option 2 Progressive (EV Uplift)</b> which would accelerate the replacement of the petrol car fleet with battery electric cars over the next four years.	YES/NO
4.	<b>Note</b> that the CFO is required to provide a transition plan to MBIE by 1 December 2021 in response to a Cabinet request dated 16 August 2021	YES/NO
Financial Approvals		
5.	<b>Note</b> the financial implications of the Fleet Decarbonisation Optimisation and Transition Plan <b>Option 2 Progressive (EV Uplift)</b> will be factored into the ongoing fleet modernisation programme.	YES/NO
6.	<b>Note</b> that the funding memo for Tranche 3 of the Four-Year Fleet Modernisation Programme will include the implications of <b>Option 2 EV Progressive (EV Uplift)</b> which will be submitted to IFPGC for consideration in February 2022.	YES/NO

Approver	Role
	<b>Infrastructure Facilities Portfolio Governance Committee Chair : DCE Infrastructure &amp; Digital Assets</b>
Signature & Date	

*P. P. Jones*  
 ALASTAIR CURRIE  
 30.11.2021

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# Fleet Decarbonisation Optimisation and Transition Plan

## Executive Summary+

### Purpose

The purpose of this the paper

- 1) Is to present a proposed Fleet Optimisation and Transition Plan that is being requested by MBIE for the Chief Financial Officer to respond by 1 December 2021;
- 2) Contingent on IFPGC's endorsing the Fleet Optimisation and Transition Plan and option 2, requires Asset Management Fleet to submit a supporting investment case to IFPGC in early 2022 for the accelerated transition of the fossil fuel car fleet segment to electric vehicles.

The key points of the Fleet Decarbonisation Optimisation and Transition Plan are:

- MBIE as lead decarbonisation agency has asked for the Department's Fleet Optimisation and Transition Plan by 1 December in response to a Cabinet request in August 2021
- Fleet have been on the decarbonisation journey since 2019 with several initiatives in flight
- There is a cabinet directive for light commercial for light commercial fleet (cars/utes/vans) to become emissions free by 2025/26. Due to technology limitations Corrections will not positioned to meet this directive by 2025/26
- The Departments current optimisation and whole of fleet transition plan is targeting zero-carbon by 2030 assuming zero-carbon options become available during that 10 year period (option Status Quo)
- There is are several options to accelerate the roll out of battery electric cars and fleet are well placed to do that so the Department want to do that
- The only constraint is funding so whether this is a priority for the Department is a strategic decision but there are better value options for reducing our carbon footprint
- The plan recommends Option 2 Progressive (EV Uplift) to consider additional funding in addition to the 4-year modernisation programme already in flight to transition the car fleet segment to electric vehicles.

### Background

On 16 August 2021 Cabinet noted several actions underway to accelerate fleet optimisation and transition including:







- 1 December 2021 due date for all mandated agencies to have fleet optimisation and transition plans in place.
- Establishment of an expert panel consisting of a range of suppliers to provide support for fleet optimisation and transition
- End-to-end guide on fleet optimisation and transition
- Guidance on the parameters for exemptions to purchase petrol or diesel vehicles due to operational requirements
- Promoting EVs on the All of Government vehicle catalogue and actively engaging with agencies to demonstrate value for money

A letter to the Chief Executive dated 14 October from the Ministry of Business Innovation & Employment the lead agency for the Carbon Neutral Government Programme, requested that the Department submit a Fleet Optimisation and Transition by 1 December 2021.

### Options



There are options to transition the fleet to Carbon Zero over different timeframes. The following preliminary options were identified and now require a more detailed assessment:

Option	Approach	Description	Funding Required	Risk	Timing
1. Status Quo	Prioritises good practice fleet asset management that seeks to balances asset life, asset use, and asset condition	Continue with the current IC approved 4-year fleet replacement programme (FY2020/21-22-23/-24) and under the next four-year replacement programme smooth the bow wave out and achieve a near-zero carbon car fleet by 2030.	Funding for this option is available <b>within the baseline \$6.5 million per annum</b> identified in the CAPEX plan for fleet modernisation. With the reduction in the size of the car fleet through optimisation enabled by the Smart Vehicle Systems Project not additional funding is required to achieve the overall objective by 2030.		
2. Progressive (EV Uplift)	Prioritises the replacement of vehicles as suitable electric vehicle technology is available	Accelerate the replacement of the petrol car fleet with battery electric vehicles	Under the current programme seek supplementary capex to accelerate the replacement of the car fleet segment by increasing the number of EVs purchased by 50 per annum.  With the first uplift to be added to Tranche 3 due for approval in February 2022. <b>This will require an additional \$3 million per annum in capital funding for the next 4 years</b> to achieve a low-emissions car fleet by 2025.		
3. Big Bang	Prioritises achieving a low carbon deadline over good asset management practice	Move the entire car fleet to electric as soon as practical. This will be in advance of optimisation being enabled by the Smart Vehicle System and include replacing petrol hybrids	<b>This will require an additional \$20 million in capital funding over the next two years</b> to achieve a near zero-carbon car fleet by 2025.  The risks of this option are: <ul style="list-style-type: none"> <li>• Buying into a cycle of large- scale technology jumps</li> <li>• Creating an uneven future replacement cycle</li> <li>• Generating capital spikes</li> </ul>		

### Preferred Option

The preferred option is Option 2 – Progressive (EV Uplift) which prioritises the replacement of vehicles as suitable electric vehicle technology is available accelerating the replacement of the petrol car fleet with battery electric vehicles within the limits that funding allows.

Any proposed acceleration of this option will require additional capital funding and not the re-prioritisation of existing fleet replacement funding. This is required to maintain the integrity of the fleet modernisation programme already approved by IFPGC to ensure the replacement of the most at-risk fleet assets.

Determination of the level of funding available for this option is best considered when IFPGC is asked to next consider the drawdown of **Tranche 3** of the **4-Year Fleet Modernisation Programme** expected to be in early 2022.

## Conclusion

The Department has already commenced work on transitioning the entire fleet to a lower emissions profile by 2031. At present in many fleet categories there are no suitable electric or alternative fuel options available. However, after consultation with CustomFleet, ECCA, suppliers and other industry specialists the Department has been able to construct a timeline of potential conversion options.

While the Government has targeted the procurement of battery electric vehicles for the light commercial fleet the Department's car fleet makes up only 40% of its total motorised fleet. Overall, vehicles only contribute 6.4% to the Department's carbon footprint. As such the Department can potentially achieve greater reductions in its greenhouse gas emissions by targeting other decarbonisation opportunities ahead of the transition the fleet.

The Department commenced its journey to a greener fleet in 2019. In order reduce the greenhouse gas emissions profile of the fleet the Department has instigated several initiatives including:

- **Smart Vehicle Systems Project** – Implement a technology platform to specifically provide the information and tools required to right-size and optimise the fleet.
- **Fleet Modernisation Programme** – Adopted a policy to purchase vehicles with the lowest rated emissions at the time of replacement.
- **Electric Vehicle Pilot** – Purchase charging infrastructure and battery electric vehicles to trial their use in day-to-day real-world Corrections operations.
- This **Fleet Decarbonisation Optimisation and Transition Plan** brings together the components of switching the fleet to low emissions within a comprehensive Sustainable Transport Strategy.

The Department faces three options to support the government's environmental objectives for low emissions and has identified Option 2 EV Uplift as the option which provides the best public value. This option brings forward the fleet optimisation and transition plan for the car fleet for which there are good low emissions alternatives balancing the need to address competing priorities and fiscal constraints.

## Recommendation

The Department has a Fleet Optimisation and Decarbonisation plan in place that intends to deliver a zero-carbon fleet by 2030 assuming zero -emissions vehicles are available as and when vehicles are due to be replaced and that the plan be presented to MBIE by the Chief Financial Officer by 1 December 2021

The Department already has in place the systems and processes to accelerate the decarbonisation of the fleet should additional funding be available. Therefore, it is recommended that IFPGC endorses the further evaluation of Option 2 EV Uplift for the Fleet Decarbonisation Optimisation and Transition Plan.

Note the fiscal implications of adopting this plan will be considered by IFPGC early in 2022 when it considers the drawdown of Tranche 3 of the 4-Year Fleet Modernisation Plan.



## Fleet Decarbonisation Optimisation and Transition Plan

### Purpose

The purpose of this paper is to obtain approval for a Fleet Decarbonisation Optimisation and Transition Plan that will reduce the carbon footprint of the Department's fleet and meet zero-carbon commitments made by the Chief Executive to the Minister.

### Background

The Government is committed to taking decisive action to protect our climate by reducing greenhouse gas emissions. Transport presents the biggest opportunity in the energy sector to reduce emissions and the Government is committed to acting on climate-change and to a low-carbon economy.

In February 2019 the Minister for Corrections outlined changes to fleet asset procurement:

- A Cabinet directive for the light commercial fleet (e.g., cars, vans, and utility vehicles) to transition and become emissions free by 2025/26.
- Expectations for the Department to procure future replacement vehicles having greenhouse gas emissions 20 percent below the current average for the fleet; and
- Establishment of a publicly available emissions dashboard across government agencies.

Corrections Chief Executive responded in March 2019 confirming the Department's commitment to reducing the fleet's greenhouse gas emissions profile and moving the light commercial fleet to emissions free by 2025/26 where practical. It was also noted that the Department had already introduced petrol hybrids and had commenced an Electric Vehicle (EV) Pilot Project.

The Prime Minister reiterated the government's position in June 2020 in a letter that stated:

*"We want our country to tackle the major challenges facing New Zealand and the next generation. To support this ambition, and to lead New Zealand's reduction in greenhouse gases, we set a target of having all light vehicles in the government fleet emissions free, where practicable by 2025/26."*

In November 2020 Cabinet agreed that mandated agencies should optimise their fleets with the aim of reducing the number of vehicles in the government fleet, and to an "electric vehicles first" policy (where agencies must purchase electric vehicles unless there are operational requirements that cannot be met) [CAB-20-MIN-0491].

On 6 April 2021, Cabinet released further decisions on the Carbon Neutral Government Programme (CNGP) [CBC-21-MIN-0030] including inviting a report back on:

- Progress towards transitioning the government fleet to low-emissions vehicles
- The development of a transition timeline
- Remaining barriers to the transition and options to address them
- Advice on mechanisms to support agencies to accelerate the transition including different funding options.

In June 2021 a letter from the Minister to the Chief Executive advised that the Department is required to set credible gross emissions reduction targets and plans for 2025, 2028 and 2030. With an expectation to have a formalised transition plan to move the fleet to Electric Vehicles (EVs) unless there are operational circumstances that prevent the Department from doing so.

A survey conducted by MBIE between April 2021 and June 2021 identified that of the 57 agencies that responded 20 had optimisation and transition plans in place.

It should be noted that Corrections did not respond to this survey. However, while the Department had not formally adopted an Optimisation and Transition Plan it already completed an 11 electric vehicle pilot in 2019; approved a four-year fleet modernisation plan that included the purchase of 64 battery electric cars; and had in-flight projects to optimise its fleet through the Smart Vehicle Systems Project Stage 1A Optimisation and approved a \$3.8 million four-year EV Charging Infrastructure Project with 205 chargers to be installed across 50 sites.

The MBIE finding from the survey was noted by Cabinet on 16 August 2021 along with several actions underway to accelerate fleet optimisation and transition including:

- 1 December 2021 due date for all mandated agencies to have fleet optimisation and transition plans in place.
- Establishment of an expert panel consisting of a range of suppliers to provide support for fleet optimisation and transition
- End-to-end guide on fleet optimisation and transition
- Guidance on the parameters for exemptions to purchase petrol or diesel vehicles due to operational requirements
- Promoting EVs on the All of Government vehicle catalogue and actively engaging with agencies to demonstrate value for money

This report looks at the options available to the Department to continue its transition its entire fleet to low-emissions vehicles within the next ten years.

### All of Government Context

The CNGP has been set up to accelerate the reduction of emissions within the public sector. The Government will join businesses and communities already leading the way to reduce their emissions as we transition to a low-emissions economy.

The programme's requirement is to make all government departments carbon neutral from 2025. It was launched in December 2020. The CNGP is supported by the State Sector Decarbonisation Fund with funding available to invest in low-emissions heating, cooling, electric vehicles, and energy efficient lighting.

The immediate priorities for the CNGP to reduce emissions are:

1. Phasing out coal-fired boilers from the public sector, with a focus on removing the largest and most active by the end of 2025
2. Requiring NABERSNZ, a system for rating the energy efficiency of office buildings, from January 2021 for agencies that occupy large office space (over 2,000m<sup>2</sup>) and are covered by the Property Functional Leadership mandate
3. Optimising the size of agencies' car fleets and purchasing electric vehicles or plug-in hybrids if a full electric is not appropriate, unless this is not possible due to operational requirements (for those mandated to apply the Government Procurement Rules)

The key components of the programme in relation to the Department's fleet are:

- Measure, verify, and report emissions annually
- Set gross emissions reduction targets and longer-term reduction plans
- Introduce a plan to reduce the Department's emissions

### Ara Poutama Aotearoa Context

The Department's total emissions for the year 2020/21 was 46.188k tCO<sub>2</sub>-e and has committed to the CNGP. Aligning with Aotearoa New Zealand's commitment to the Paris Agreement, the Department needs to reduce emissions in line with limiting global warming to 1.5 degrees above pre-industrial levels. This requires reducing emissions at least 42% by 2030. The electrification of the



fleet will be a necessary part of a department-wide strategy to achieve this target. In 2020/21, the fleet accounted for 5.16.4% of total departmental emissions. As a key area stated by the CNGP to transition to a low carbon economy, the electrification of our fleet offers an important opportunity to contribute to the necessary emission reduction throughout the Department.

## Scope

Decarbonisation of the fleet needs to be viewed within the wider context of a sustainable transport strategy. The strategy will:

- **Enable sustainable transport** - to achieve carbon neutrality by 2031 by establishing and maintaining effective and responsive governance and management; and
- **Assess impact** – to monitor and measure progress by measuring, verifying, and reporting progress annually.

Within the broader sustainable transport strategy there are two general approaches to reducing transportation emissions:

- **Vehicle travel reduction strategies** that reduce total vehicle kilometres travelled. These will require changes to the way the Department conducts its operations:
  - **Avoid Travel** - to reduce transport demand by avoiding passenger trips and freight movements to reduce the distance travelled by motorised transport.
  - **Mode Shift** – optimise transport modes by shifting passenger travel and freight movements to more environmentally sustainable modes of transport
  - **Right-Size Fleet** – to increase fleet utilisation by planning passenger trips, consolidating freight movements and optimising fleet use.
- **Greener vehicle strategies** that reduce per kilometre emission rates:
  - **Fleet Good Practice** – to enhance fleet performance by improving the energy efficiency of fleet assets
  - **Procure Greener Assets** – to reduce fleet emissions by modernising the fleet to reduce the carbon content of the fuel used

This report focusses on the Department’s strategy to reduce greenhouse gas emissions produced by its vehicle fleet. Within the scope of this report are the core fleet management activities identified within the sustainable transport strategy including *right-sizing, fleet good practice, and procure green assets*.

Projects already in flight that will support these core activities are:

- **Smart Vehicle Systems Project** – Stage 1A is to provide the connected technology platform that provides the information and tools required to support sustainable fleet practice.
- **Fleet Modernisation Programme** – A four-year replacement that replaces fleet assets with new vehicles that minimise emissions.
- **Critical Control Protocol (Vehicles)** – Informs Stage 2 of the Smart Vehicle Systems Project and provides the mandate to activate smart vehicle system features that will improve driving performance.
- **EV Charger Project** – to provide the infrastructure required to support a switch to an electric vehicle fleet.
- **EV Uplift Project** – to provide the mandate to accelerate the roll out of electric vehicles

Figure 1 positions the core fleet management decarbonisation opportunities within a broader *Sustainable Transport Strategy* that is still to be developed. Work on the fleet management components, the blue boxes, can be developed in advance of completing the broader strategy but need to retain the flexibility to incorporate changes that arise from activities that seek to reduce transport demand or optimise transport modes. It is essential however, that effective governance and appropriate reporting are established early.

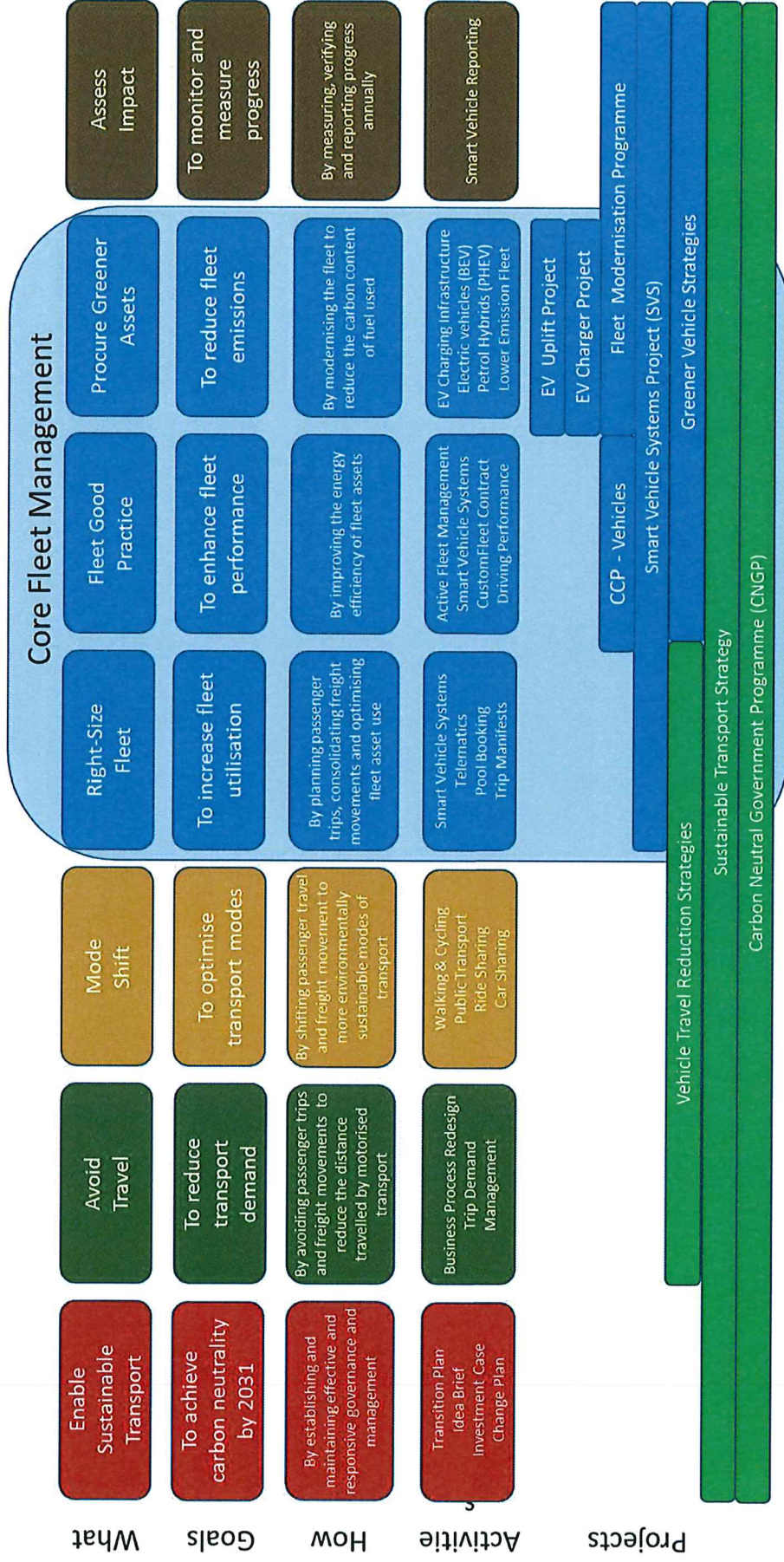


Figure 1 - Sustainable Transport Strategy



## Overview

Sustainable transport is transport that moves away from being based on non-renewable sources of energy, like fossil fuels, towards transport that uses sustainable fuels or technology, or transport that doesn't require non-renewable energy sources like biking and walking.

New Zealand is well placed to benefit from electric vehicles. More than 80% of electricity is generated from renewable sources and there is enough supply for the widespread adoption of electric vehicles (EVs) to reduce carbon dioxide emissions from the transport sector and significantly increase the energy efficiency of the Department's vehicle fleet.

## CO<sub>2</sub> Emissions

Cabinet agreed in 2020 that a priority outcome is to leverage government procurement to reduce the emissions profile of the government fleet, as part of work to transition to a net zero emissions economy by 2050.

A dashboard has been developed by New Zealand Government Procurement and Property (NZGPP) to measure and monitor the progress towards reducing fleet emissions.

The government fleet emissions dashboard is publicly accessible since April 2021 and shows the fleet size and greenhouse gas emissions for 136 key government agencies mandated to apply the Government Rules of Sourcing.

Figure 2 derived from the dashboard shows the agencies that have the highest total vehicle emissions as of Quarter 4, 20/21 ranked by Average CO<sub>2</sub> (g/km). The Department has the second largest fleet behind Police.

Highest average vehicle emissions by agency					
FY-20/21 Q4 rank		FY-20/21 Q3 rank	Agency	Fleet size	Average CO <sub>2</sub> (g/km)
73		73	New Zealand Antarctic Institute	7	248
72		72	Public Trust	12	228
71	▲	70	National Institute of Water and Atmospheric Research Limited	81	216
70	▼	71	Te Kāhui Whakamana Rua Tekau mā Iwa — Pike River Recovery Agency	9	216
69		69	Institute of Environmental Science and Research Limited	7	210
68	▲	67	Te Puni Kōkiri (Ministry of Māori Development)	1	206
67	▼	68	Fire and Emergency New Zealand	1,097	206
66		66	AgResearch Limited	54	204
65	▲	64	New Zealand Police	3,339	192
64	▲	63	The New Zealand Institute for Plant and Food Research Limited	115	191
63	▲	62	Maritime New Zealand	49	186
62	▲	60	Land Information New Zealand	6	185
61	▲	59	Department of Corrections	1,256	184
60	▲	57	New Zealand Defence Force	111	184
59	▼	61	Department of Conservation	813	183
58		58	Ministry for Primary Industries	535	183

Table 3. Highest average vehicle emissions by agency  
 The agency fleet size reported represents an estimate of each agency's fleet based on the NZ Transport Agency Motor Vehicle Registry.

### Figure 2 - Highest average vehicle emissions

To provide some context the Fleet Size used by MBIE refers to the Department's motorised fleet which includes cars, minibuses, utility vehicles, trucks and PEVs but excludes mobile plant and trailers. The following figures provide a breakdown of the fleet used for the MBIE emissions calculations

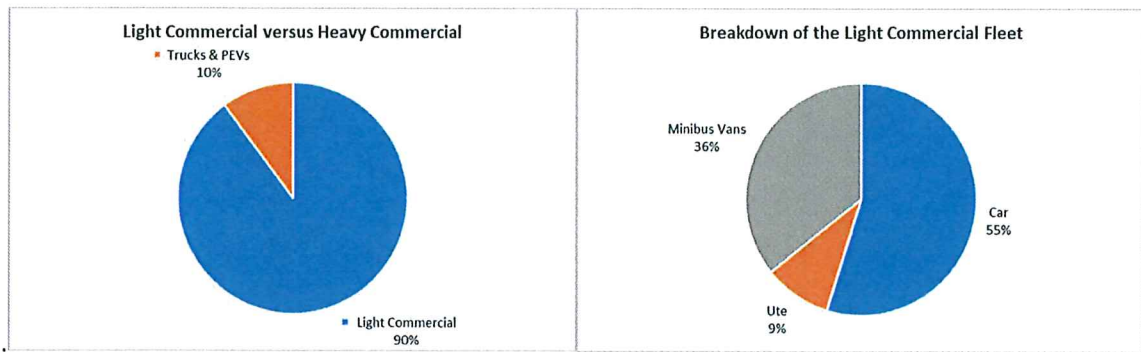


Figure 3 - Corrections Fleet Breakdown

**Figure 4** puts fleet emissions in perspective against the total greenhouse gas emissions footprint of the Department. In 2020/21 fleet produced 2.98 million kilograms of CO<sub>2</sub>-e which is 6.4% of the Department's total carbon emissions. This was a 10% reduction from 2019/20.

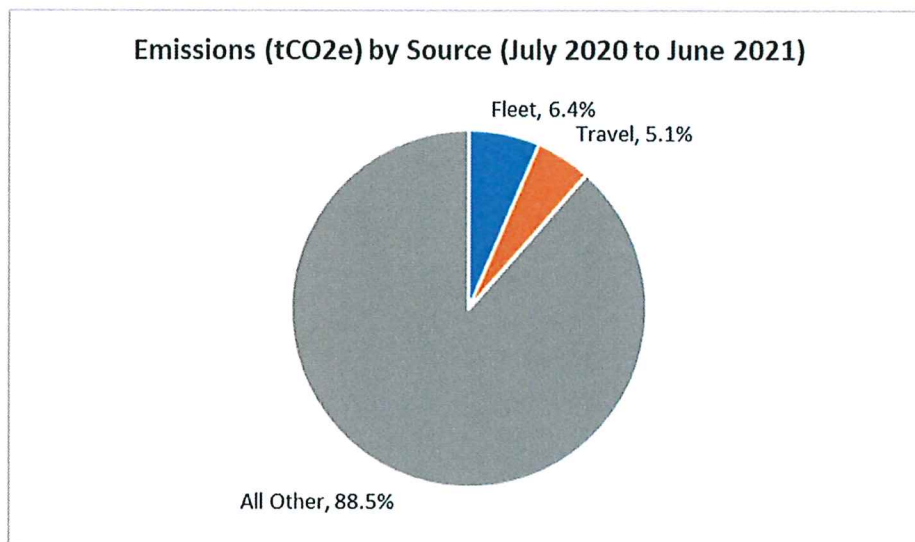


Figure 4- Corrections CO<sub>2</sub> Emissions by Source

### Proposition

As part of our strategic intent Asset Management – Fleet is making our fleet safer, greener, and more productive by 2031.

The Proposition for Making our Fleet Greener includes the development and Implementation of a Fleet Decarbonisation Transition Plan by December 2021.



## Strategic Drivers

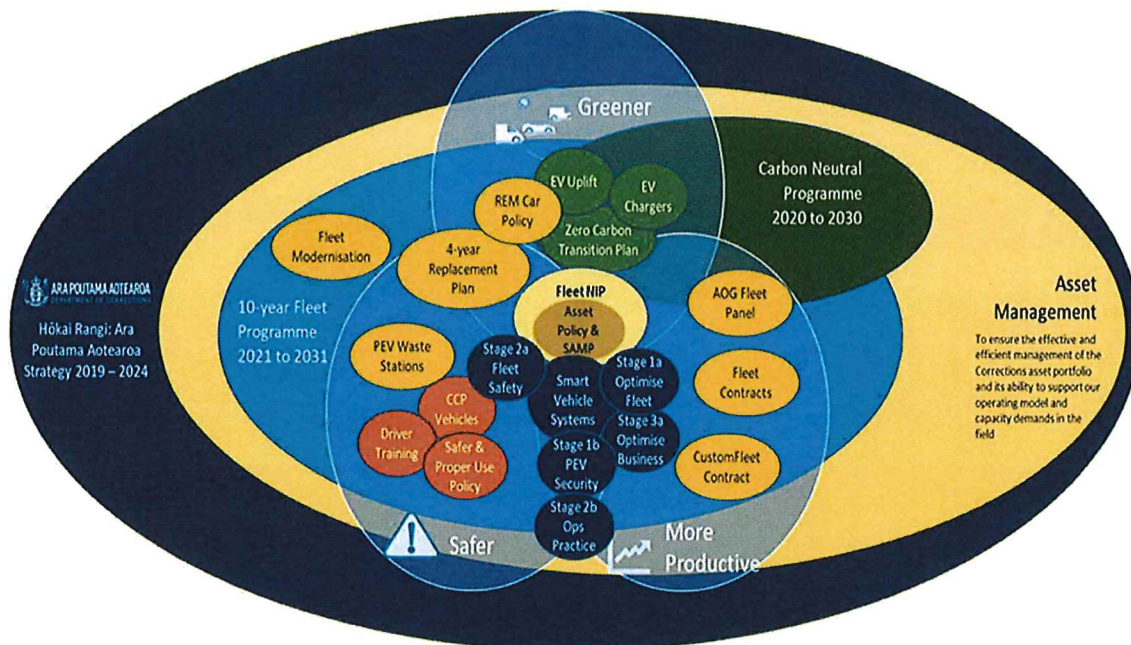


Figure 5 - Fleet Management

The Department's approach to fleet management is founded on asset management principles to ensure the effective and efficient management of the Corrections fleet asset portfolio and its ability to support our operating model and capacity demands in the field.

The Department has a small professional fleet management team whose primary role is to manage the entire lifecycle of the Department's fleet assets. Ensuring the fleet is the right-size and fit for purpose, while reducing associated risks and ensuring compliance with legislation.

The fleet asset management policy, prioritisation, plan, and programme are based on modern asset management principles and practices that are considered appropriate for a fleet of this size and complexity.

The key strategic objectives for Fleet Management are:

- To provide a fleet that is low emissions, cost effective, efficient, modernised, dependable, and compliant.
- Aligned with the Hōkai Rangī: Ara Poutama Aotearoa Strategy 2019-2024
- Ensuring the effective and efficient management of the Corrections asset portfolio and its ability to support our operating model and capacity demands in the field
- Enabling the business needs of the Department
- Supporting the needs of our staff and the people in our care.
- Achieving the best public value over the life of the asset
- Managing risk exposure
- Building positive partnerships with the market
- Committing to a sustainable transport strategy to achieve carbon neutrality by 2031.

## Operational Drivers

The Department has adopted the NAMS International Infrastructure Management Manual (IIMM) as the basis for management of the Department's fleet assets. The IIMM describes the objective of

asset management as “meeting a required level of service, in the most cost-effective manner, through the management of assets for present and future customers with the required level of service determining what assets and their performance levels”.

The key benefits of active asset management include, but are not limited to:

- Improved financial performance
- Informed asset investment decisions
- Managed risk
- Improved services and outputs
- Demonstrated compliance
- Improved efficiency and effectiveness.

### Service Levels

The following table outlines the scope of service levels provided by fleet management at each stage of the fleet asset life cycle: with projects already in flight to decarbonise the fleet identified:

Lifecycle Stage	Scope	Activities	Decarbonisation
1. Fleet Requirements	<p>The need for the service provided by the fleet assets is defined by:</p> <ul style="list-style-type: none"> <li>• The Hōkai Rangi: Ara Poutama Aotearoa Strategy 2019-2024</li> <li>• The operation’s level of service required both now and into the future</li> <li>• Legislative and regulatory requirements</li> </ul>	<ul style="list-style-type: none"> <li>• Validation of business justification establishing the need for the asset.</li> <li>• Confirming the service levels required of the asset in use</li> <li>• Fleet right-sizing and utilisation management</li> </ul>	<p>Sustainable Transport <b>Vehicle Travel Reduction</b> strategies that include:</p> <ul style="list-style-type: none"> <li>• <b>Avoid Travel</b> – avoiding passenger trips and freight movements to reduce the distance travelled by motorised transport</li> <li>• <b>Mode Shift</b> – moving passenger travel and freight movements to more environmentally sustainable modes of transport</li> </ul>
2. Fleet Planning	<p>Involves confirming the service required from operational users and ensuring the most effective solution is found to meet that need. Where that need confirms a fleet asset solution is required to ensure that is included in the ten-year fleet plan</p>	<ul style="list-style-type: none"> <li>• Ten-year Capital Plan</li> <li>• Demand and forecast management</li> </ul>	<p>Sustainable Transport <b>Vehicle Travel Reduction</b> strategies that include:</p> <ul style="list-style-type: none"> <li>• <b>Right-Size Fleet</b> – by planning passenger trips, consolidating freight movements and optimising fleet asset use</li> </ul>
3. Fleet Acquisition	<p>Is the provision and /or improvement to, a fleet asset where the outlay can reasonably be expected to provide benefits beyond the year of outlay.</p>	<ul style="list-style-type: none"> <li>• Centralised purchasing</li> <li>• Obtain user and operating requirements</li> <li>• Develop technical fit-for-purpose requirements/ specification</li> <li>• Managing, maintaining, and using fleet asset supply contracts</li> <li>• Post purchase fit-out and deployment</li> </ul>	<p>Sustainable Transport <b>Greener Vehicle Strategies</b> that include:</p> <ul style="list-style-type: none"> <li>• <b>Fleet Modernisation Programme</b> - By modernising the fleet to reduce Green House Gas (GHG) emissions.</li> <li>• <b>EV Uplift Project</b> - Purchase electric vehicles where there is available charging</li> </ul>



Lifecycle Stage	Scope	Activities	Decarbonisation
		<ul style="list-style-type: none"> <li>At handover driver/operator induction</li> <li>At handover testing and commissioning mobile plant</li> <li>At handover driver/operator/owner's manual</li> </ul>	infrastructure unless there are operational requirements that cannot be met
4. Fleet Operating	Functions relating to the day-to-day running of fleet assets	<ul style="list-style-type: none"> <li>Inspection system to ensure proper asset upkeep</li> <li>Duty of care inspections for driver/operator and owner</li> <li>Obligations as NZTA Transport Passenger Licence fleet operator</li> <li>Obligations as NZTA Transport Goods Service Licence fleet operator</li> <li>Systems and processes for insurance</li> <li>Fuel management</li> </ul>	Sustainable Transport <b>Greener Vehicle Strategies</b> that include: <ul style="list-style-type: none"> <li><b>EV Charger Project</b> – Install electric vehicle charging infrastructure at all sites where it is practical to do so to remove EV operational constraints</li> <li><b>Smart Vehicle Systems Project Stage 1A (2021/22)</b>– Telematics and pool booking</li> <li><b>Smart Vehicle Systems Stage 2A (2022/23)</b> – Driving performance</li> </ul>
5. Fleet Maintenance	Functions relating to the day-to-day and periodic upkeep of fleet assets	<ul style="list-style-type: none"> <li>Systems and processes for safe, reliable, and compliant asset upkeep</li> <li>Systems and processes to support preventative maintenance</li> <li>Systems and processes for reactive repairs</li> </ul>	Sustainable Transport <b>Greener Vehicle Strategies</b> that include: <ul style="list-style-type: none"> <li><b>Fleet Good Practice</b> – To enhance fleet energy efficiency performance through active fleet management</li> </ul>
6. Fleet Performance	Performance relates to the ability of a fleet asset to meet target levels of service, and condition reflects the physical state of the fleet asset. Fleet asset condition and performance information drives future replacement programmes.	<ul style="list-style-type: none"> <li>Systems and processes for asset condition assessment</li> <li>Smart Vehicle Systems Asset Performance Reporting</li> </ul>	Sustainable Transport <b>Greener Vehicle Strategies</b> that include: <p><b>Assess Impact</b> - to measure and monitor decarbonisation progress</p>
7. Fleet Replacement	Options to significantly upgrade or replace a fleet asset to restore the fleet asset to the required service level, functional condition and performance. This to occur until the service is	<ul style="list-style-type: none"> <li>Systems and processes for establishing asset replacement criteria to maximise public value</li> <li>Systems and processes for asset retirement and disposal.</li> </ul>	Sustainable Transport <b>Greener Vehicle Strategies</b> that include: <ul style="list-style-type: none"> <li><b>Fleet Modernisation Programme</b> - By modernising the fleet to reduce the carbon</li> </ul>

Lifecycle Stage	Scope	Activities	Decarbonisation
	no longer required or when the fleet asset becomes less economical than other methods of delivering the service		content of the fuel used.

### Current State

The Department has a diverse fleet of 1902 vehicles which is one of the largest in the New Zealand Public Sector.

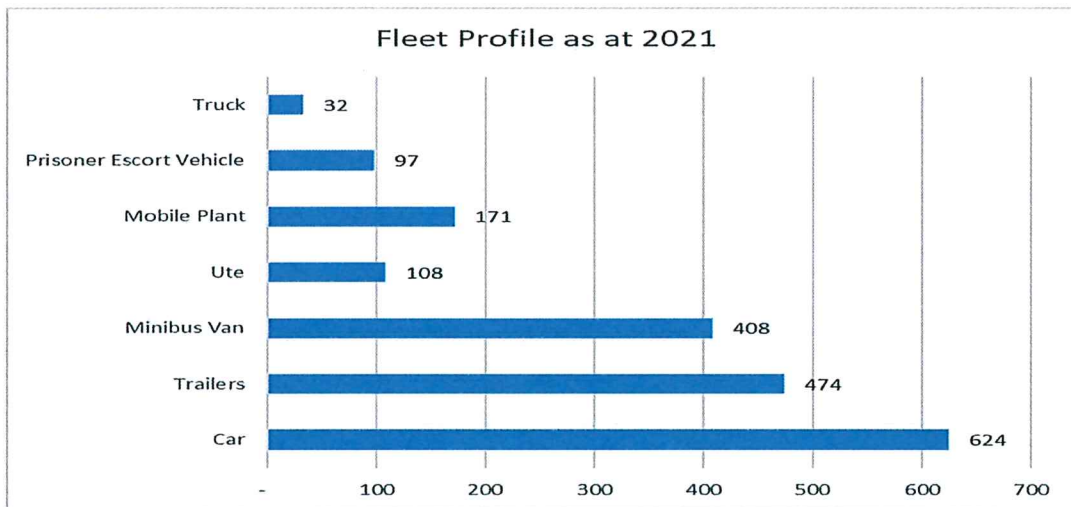


Figure 6 - Department of Corrections Vehicle Fleet 20/21

The following table provides an overview of the types of fleet assets the Department requires to meet its strategic objectives:

Asset Hierarchy Level No 1	Asset Hierarchy Level No 2	Descriptor	Accounting Treatment	Designed Economic Life
Light Commercial	Passenger Pool Vehicles	Operational vehicles: Includes all passenger vehicles (sedan, hatchbacks, station wagons and off-road passenger vehicles i.e., SUVs, vans for either passengers or goods) constructed and primarily designed for the carriage of passengers	5 Years 20% residual	8 years
	Minibus Vans	Goods and passenger minibus and cargo vans. Excludes vans modified for prisoner escorts.	8 Years 0% residual	10 years
	Reasonable Private Use Passenger Car	Applies to full reasonable use vehicles as defined under the fleet policy.	5 Years 20% residual	8 years
	Road Registered Utility Vehicles	Operational 2WD and 4 WD utility vehicles.: Includes on road	8 years 0% residual	10 years



		registered utility vehicles (under 3,500 kg)		
Prisoner Escort Vehicles	Vans	Commercial vans modified for prisoner escort purposes	8 years 0% residual	10 years
	Trucks	Trucks and buses modified for prisoner escort purposes	8 years 0% residual	10 years
Mobile plant	Agricultural & Ground Care Plant	Agricultural, horticultural, grounds and turf care mobile and motorised plant but excluding attachable plant and machinery. For example, tractors but excluding attachable ploughs.	10 years 0% residual	2000 hours (3 years) to 10,000 hours (12 Years)
	Site Utility Task Vehicles	All terrain type vehicles, mules, golf carts, side-by-sides, farm motor bikes, etc.	10 years 0% residual	5 years
	Earthmoving	Earth moving plant, i.e., loaders, including attachments	10 years 0% residual	2000 hours (3 years) to 10,000 hours (12 Years)
	Forestry Plant	Plant assigned to forestry activities, mobile wood saw, mobile log splitter log loader	10 years 0% residual	2000 hours (3 years) to 10,000 hours (12 Years)
	Industrial Mobile and towable plant	Includes mobile cranes, forklifts, Self-propelled Scissor or Boom Lift, cranes, etc.	10 years 0% residual	2000 hours (3 years) to 10,000 hours (12 Years)
Towable Plant	Trailers and towable plant machinery	Domestic trailers, special purpose trailers, transport trailers, towable compressors,	10 years	12 Years
Trucks	Trucks	Assets having a gross vehicle mass exceeding 3,500kg	8 years 0% residual	10 years

Table 1 - Fleet Assets

As of October 2021, in its fleet of 1448 powered vehicles the Department had:

- 34x battery electric vehicles (2.4%)
- 101x petrol hybrids (7.1%)
- 5x Battery Electric Forklifts
- 3x Battery Electric Scooters
- 1x Battery Electric Side by Side

90% of the Department's fleet uses fossil fuels.

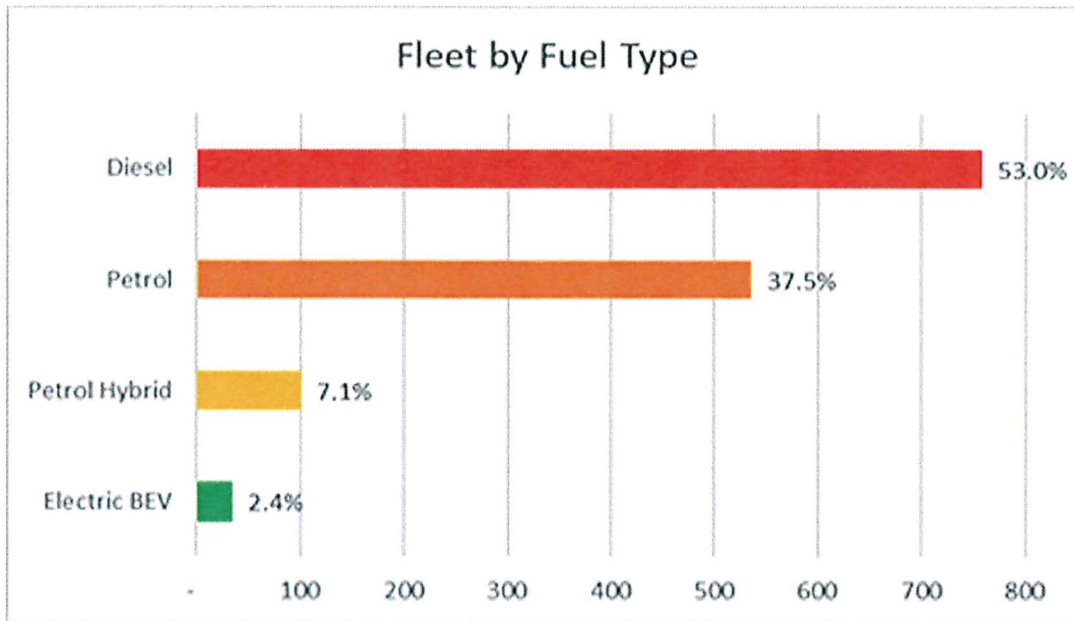


Figure 7 - Fleet by fuel type

By 2023/24 under the current **Four-Year Fleet Modernisation Programme** the Department plans to have 77 battery electric cars in its fleet

### Modernisation

Fleet Management in the Department has moved through several phases:

#### Past

Timeline	Theme	Features	Consequence
Before 2011	Decentralised fleet management	Cost pressures trade-offs resolved locally	Inefficient use of fleet assets leading to high cost of operations and greater capital requirements
2011 to 2015	Centralised fleet management	Centralised fleet management and outsourced fleet administration to CustomFleet  Period of capital underspend and the creation of a capital bow wave due to deferred replacement.  In 2014 Mobile Plant was brought under centralised fleet management.	Rationalisation of fleet management activities producing fleet operating cost savings while the active approach extended the life of fleet assets.  The unintended consequence was that the Department “sweated its fleet assets” reducing the level of capital invested in fleet replacement.



Timeline	Theme	Features	Consequence
2016 to 2020	Risk based fleet replacement	<p>Normalisation of fleet renewals within capital allocation</p> <p>Fleet assets selected for replacement using a risk weighted multi-criteria assessment</p> <p>Prioritisation of assets based on long term replacement planning.</p> <p>Establishment of core fleet contracts to streamline fleet procurement.</p>	<p>Fleet replacement switched from reactive to proactive.</p> <p>Establishment of a rolling 10-year fleet programme ensuring fleet could fully commit the capital allocation.</p>

Present

2019 to 2024	Safer, Green and More Productive Fleet	<p>Embedded a strategic asset management approach to fleet management</p> <p>Establish core pillars for fleet management and set strategic intentions</p> <p>4-Year modernisation plan of the most at-risk fleet assets</p> <p>Inclusion of Low Value Asset (LVA) Trailers into fleet capital replacement programme.</p>	<p>Tranche 1 was fully committed by 30 June 2021</p> <p>Tranche 2 is inflight and is forecast to be fully committed by March 2022</p> <p>A funding memo to drawdown funding for Tranche 3 and Tranche 4 is planned for submission to IFPGC in February 2022</p>
2021 to 2031	Decarbonisation	<p>Initiated optimisation of the fleet and transition to carbon zero</p>	<p>Optimisation and Transition Plan to be endorsed by IFPGC in November 2021.</p> <p>Funding options to accelerate the decarbonisation programme to be</p>

			submitted to IFPGC in February 2022
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Future

2025 to 2031	Normalised fleet management	Fleet assets replaced as they assessed to be end of life.	Benefits of active fleet management in right sizing a fit for purpose fleet reflected in a reduced capital allocation for fleet replacement of up to \$1 million
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The following figure provides a year-on-year comparison of the capital investment in fleet assets:

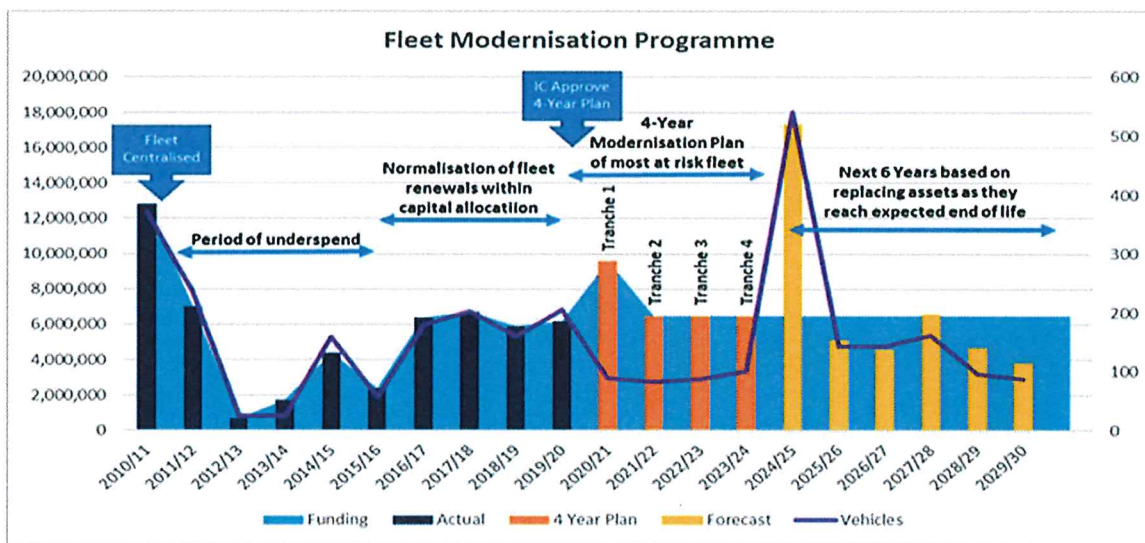


Figure 8 - Fleet Modernisation Programme

From the chart above it is worth noting that the Department is facing a significant bow wave of fleet asset replacement including a significant number of light commercial vehicles that are reaching end of life. To mitigate the risks associated with aging vehicles the Department has already invested in several initiatives designed to mitigate the bow wave and support broader objectives to make the fleet safer, greener, and more productive. These initiatives described in the following sections on optimisation and transition include:

- Smart Vehicle Systems Project Stage 1A
- Electric Vehicle Installation Project
- Electric Vehicle Uplift Project

Optimisation

The Department is in the process of finalising a contract with a Preferred Respondent to implement an Integrated Smart Vehicle System. The primary goal of Stage 1A of this project is improved capital efficiency through right sizing the Department’s vehicle fleet. Approval to procure this solution will ultimately provide the Department with a vehicle fleet that is the right size, cost effective, efficient, modernised, reliable and in a compliant state.

The main benefit of this investment is better value for money through better use of fleet resources. This is reflected as a reduction in the size of the Department’s fleet reducing the capital requirement



ongoing for vehicle replacement and savings in operating costs from vehicles permanently removed from the fleet.

The following breakeven analysis that supported the approved investment case presented three fleet optimisation scenarios:

Approach	Description	Breakeven Optimisation	Fleet Reduction
Reactive	Through attrition as vehicles reach their end of life and are disposed of and not replaced.	124	9%
Mid-point (most likely)	Where the Department takes a less aggressive approach to fleet reduction but still seeks to remove some vehicles before end of life	95	7%
Proactive	With the Fleet Manager using telematics data to identify underutilised vehicles and working with regional managers to reduce the fleet in a shorter timeframe	85	6%

From the market research undertaken during the Feasibility Study phase of the project the size of the fleet reductions expected from implementing a Smart Vehicle Systems where none previously existed is considered be modest and at the lower end of the range as has been achieved by other organisations. The Department has taken the prudent approach given the importance of transporting people and freight is to the core operations of the Department.

The Department is facing a significant bow wave of vehicle replacement in 2024/25 so the mid-point approach to optimisation is well aligned to reducing the number of end-of-life vehicles that will not be replaced based on evidence gathered through the Smart Vehicle System.

### Transition

Since November 2015, the Department has taken an active approach to making our fleet safer, greener, and more productive.

This is achieved by managing each fleet asset through its lifecycle from pre-purchase to replacement and disposal, making important interventions when needed. One of those interventions is ensure that the Department is well placed to enable investment in the Car Fleet Replacement Programme for the potential wider adoption of electric vehicles. And migrate towards meeting the Government priority to significantly reduce the emissions profile of the government light fleet.

The completion of this project over the forecast four years will facilitate the potential replacement of 205 existing fossil fuel cars with electric vehicles by June 2024. The solution involves the installation of 167 chargers at 50 key Corrections sites nationally where 70% of the Department's fleet is located. This project will also provide the basis to accelerate the uplift of EVs as additional funding becomes available.

### Future State

The Department has already commenced work on transitioning the entire fleet to a lower emissions profile by 2031. At present in many fleet categories there are no suitable electric or alternative fuel options available. However, after consultation with CustomFleet, ECCA, suppliers and other industry specialists the Department has been able to construct a timeline of potential conversion options.

Attached as Appendix 1 is an assessment of the future state low emissions vehicle technologies for all the categories of vehicle with the Department’s fleet. For many fleet categories that there are no suitable zero-carbon options available in the short to medium -term. This is a major constraint on the Department’s ability to accelerate the transition its whole fleet. Consequently, the Department has focused its attention on fleet optimisation and the transition of fleet categories where the technology is already mature (e.g., battery electric cars).

### Prioritisation

The Department is required to make smart investment decisions that maximise public value. This following table provides a public value framework for determining where best to invest its limited financial resources into initiatives that reduce the Department’s fleet greenhouse gas emissions:

Objective		Attribute	Considerations	Decarbonisation Implications
Public value	Value for money	Good price	Upfront price The price paid when sourcing a new vehicle	<ul style="list-style-type: none"> <li>Battery electric vehicles are more than twice the cost of an equivalent ICE vehicle</li> <li>AoG vehicle panel discounts are less than for ICE vehicles</li> <li>Clean Car rebates available until March 2022</li> <li>Total cost of ownership does not favour EVs at this stage due to the high acquisition cost.</li> </ul>
			Ongoing and end of life Lifetime costs of owning and operating a vehicle are optimised	<ul style="list-style-type: none"> <li>The required electric charging infrastructure is already being installed at the 50 sites where most vehicles are based.</li> <li>Electric vehicle operating costs are significantly less than ICE vehicles</li> </ul>
	Good quality		Effective Meets Corrections core business objectives	<ul style="list-style-type: none"> <li>The Department has had an optimisation and decarbonisation plan in place since 2019.</li> <li>The Fleet Team is well positioned to accelerate the uplift of electric vehicles</li> </ul>
			Efficient Delivered in the right way and within a reasonable time frame	<ul style="list-style-type: none"> <li>Potential supply chain constraints due to Covid-19.</li> <li>Limited or no electric vehicle options for many fleet types available from manufacturers.</li> </ul>



Objective		Attribute	Considerations	Decarbonisation Implications
	outcomes	Environmental	Support low-emissions economy	<ul style="list-style-type: none"> <li>The Status Quo will deliver a zero-emissions car fleet and low-emissions fleet overall by 2030.</li> <li>There are options to accelerate the transition of the car fleet to electric should additional CAPEX funding be available.</li> </ul>
				<ul style="list-style-type: none"> <li>Options to further accelerate the fleet decarbonisation programme would divert CAPEX funding from higher priority initiatives.</li> </ul>





This above assessment suggests that the best public value balances the need to support the government's low-carbon environmental objectives against other competing priorities.



The best public value is likely to be achieved through providing additional funding to accelerate the status quo through the steady acquisition of readily available battery electric cars as the rollout of electric charging infrastructure progresses. Options that look to take a big bang approach and accelerate the transition to electric even faster will be constrained by the efficiency constraints identified in red above:

- Covid-19 supply chain constraints
- Limited or no electric vehicle options for many fleet types available from manufacturers
- Diversion of CAPEX funding from higher priority Departmental initiatives including the opportunity for greater reductions in the Department's green house gas emissions in energy and agriculture

### Options

There are options to transition the fleet to Carbon Zero over different timeframes. The following preliminary options were identified and now require a more detailed assessment:

Option	Approach	Description	Funding Required	Risk	Timing
4. Status Quo	Prioritises good practice fleet asset management that seeks to balances asset life, asset use, and asset condition	Continue with the current IC approved 4-year fleet replacement programme (FY2020/21-22-23/-24) and under the next four-year replacement programme smooth the bow wave out and achieve a near-zero carbon car fleet by 2030.	Funding for this option is available within the baseline \$6.5 million per annum identified in the CAPEX plan for fleet modernisation. With the reduction in the size of the car fleet through optimisation enabled by the Smart Vehicle Systems Project not additional funding is required to achieve the overall objective by 2030.		
5. Progressive (EV Uplift)	Prioritises the replacement of vehicles as suitable electric vehicle	Accelerate the replacement of the petrol car fleet with battery electric vehicles	Under the current programme seek supplementary capex to accelerate the replacement of the car fleet segment by increasing the number of EVs purchased by 50 per annum.		

Option	Approach	Description	Funding Required	Risk	Timing
	technology is available		With the first uplift to be added to Tranche 3 due for approval in February 2022. This will require an additional \$3 million per annum in capital funding for the next 4 years to achieve a low-emissions car fleet by 2025.		
<b>6. Big Bang</b>	Prioritises achieving a low carbon deadline over good asset management practice	Move the entire car fleet to electric as soon as practical. This will be in advance of optimisation being enabled by the Smart Vehicle System and include replacing petrol hybrids	<p>This will require an additional \$20 million in capital funding over the next two years to achieve a near zero-carbon car fleet by 2025.</p> <p>The risks of this option are:</p> <ul style="list-style-type: none"> <li>• Buying into a cycle of large- scale technology jumps</li> <li>• Creating an uneven future replacement cycle</li> <li>• Generating capital spikes</li> </ul>		

### Preferred Option

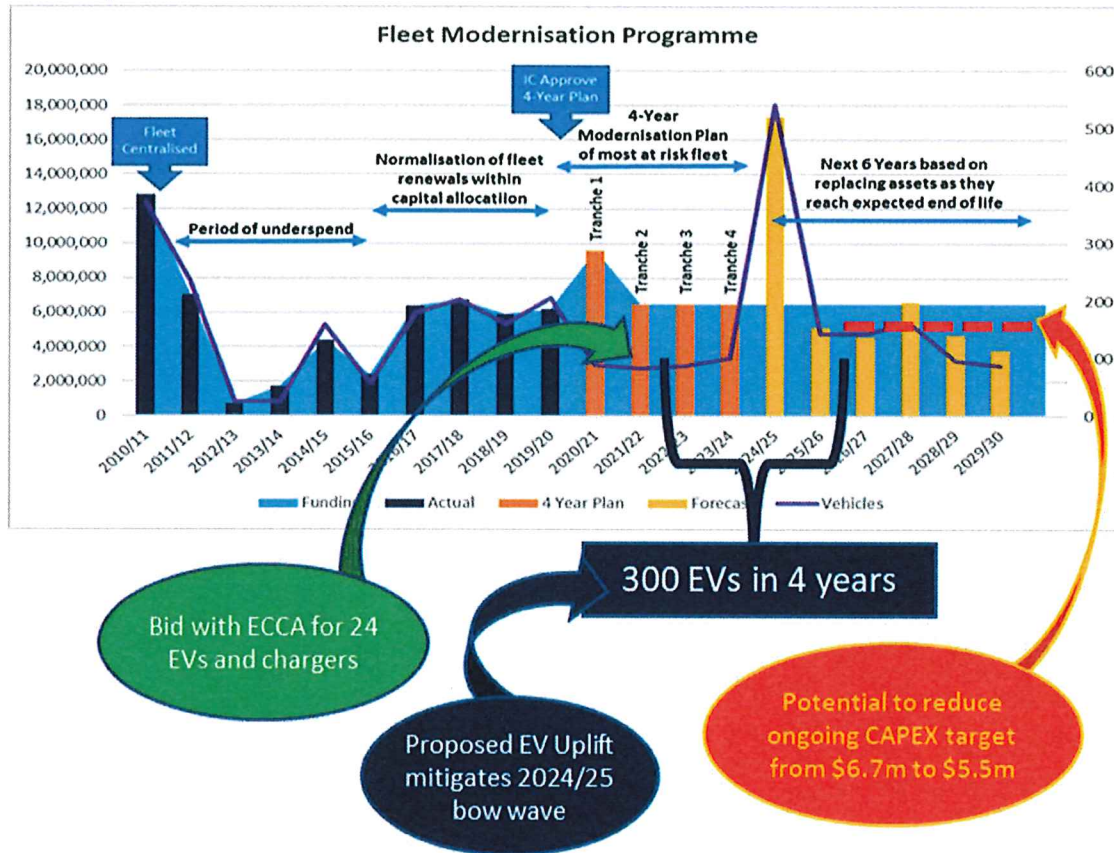
The preferred option is Option 2 – Progressive (EV Uplift) which prioritises the replacement of vehicles as suitable electric vehicle technology is available accelerating the replacement of the petrol car fleet with battery electric vehicles within the limits that funding allows.

Any proposed acceleration of this option will require additional capital funding and not the re-prioritisation of existing fleet replacement funding. This is required to maintain the integrity of the fleet modernisation programme already approved by IFPGC to ensure the replacement of the most at-risk fleet assets.

Determination of the level of funding available for this option is best considered when IFPGC is asked to next consider the drawdown of **Tranche 3** of the **4-Year Fleet Modernisation Programme** expected to be in early 2022.



## Delivery Plan



Investment Committee (ICF) approved a \$27.2 million 4-Year Fleet Modernisation Programme in June 2019 to run from 1 July 2020 to 30 June 2024. We are currently implementing Tranche 2.

Fleet Management is committed to making the fleet safer, greener, and more productive. In that context the fleet modernisation programme requires fleet assets to be replaced with the lowest emissions vehicle available that is still fit for operational purposes.

There is sufficient funding headroom at \$6.5 million per annum to smooth the 2024/25 bow wave of vehicle replacement by 2030.

The Smart Vehicle Project it is expected to reduce the fleet by at least 110 vehicles (-7.7%).

The 10-year replacement programme capped at \$6.5 million per annum will see the remaining 489 (less optimisation) petrol and diesel cars replaced with EVs by 2030.

Other fleet asset classes (e.g., vans and trucks) will be converted to electric as viable options become available.

This means there is sufficient headroom in the future fleet replacement programme to bring funding forward to allow for the purchase of an addition 300 EVs over the next four years.

## Conclusion

While the Government has targeted the procurement of battery electric vehicles for the light commercial fleet the Department's car fleet makes up only 40% of its total motorised fleet. Overall, vehicles only contribute 6.4% to the Department's carbon footprint. As such the Department can potentially achieve greater reductions in its greenhouse gas emissions by targeting other decarbonisation opportunities ahead of the transition the fleet.

The Department commenced its journey to a greener fleet in 2019. In order to reduce the greenhouse gas emissions profile of the fleet the Department has instigated several initiatives including:

- **Smart Vehicle Systems Project** – Implement a technology platform to specifically provide the information and tools required to right-size and optimise the fleet.
- **Fleet Modernisation Programme** – Adopted a policy to purchase vehicles with the lowest rated emissions at the time of replacement.
- **Electric Vehicle Pilot** – Purchase charging infrastructure and battery electric vehicles to trial their use in day-to-day real-world Corrections operations.
- This **Fleet Decarbonisation Optimisation and Transition Plan** brings together the components of switching the fleet to low emissions within a comprehensive Sustainable Transport Strategy.

The Department faces three options to support the government’s environmental objectives for low emissions and has identified Option 2 EV Uplift as the option which provides the best public value. This option brings forward the fleet optimisation and transition plan for the car fleet for which there are good low emissions alternatives balancing the need to address competing priorities and fiscal constraints.

### Recommendation

The Department has a fleet decarbonisation plan in place that intends to deliver a zero-carbon fleet by 2030 assuming zero-emissions vehicles are available as and when vehicles are due to be replaced.

The Department already has in place the systems and processes to accelerate the decarbonisation of the fleet should additional funding be available. Therefore, it is recommended that IFPGC endorses Option 2 EV Uplift for the Fleet Decarbonisation Optimisation and Transition Plan to be submitted by the CFO by 1 December 2021.

Note the fiscal implications of adopting this plan will be considered by IFPGC early in 2022 when it considers the drawdown of Tranche 3 of the 4-Year Fleet Modernisation Plan.



APPENDIX 1 – Whole Fleet Zero Carbon Outlook Planning

**Whole Fleet Zero Carbon Outlook Planning Tool For The Fleet**

Infrastructure & Digital Assets - Asset Management - Fleet  
October 2024. Draft Version 1. Internal use only for discussion  
Prepared by Daniel Gibson, Fleet Manager  
Version No. 3 - IPSC, Rev 21

Asset Groups & Types	Base Line Oct-2021						4 Yr Invest. Cycle										4 Yr Invest. Cycle									
	Flt Qty	Full ELEC DRK	Part Electric	Partial Petrol	DFG/Petrol	0	Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Light Commercial Vehicles</b>	619	34	101	531	483	0	Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Car</b>							Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Medium Van</b>							Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Passenger Van</b>	279			279			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Goods Vans</b>	23			23			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Special Purpose (i.e. Site Emergency Response)</b>	11			11			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Utility Vehicle</b>	108			108			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Mobile Plant</b>	175	9	0	120	42	4	Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Agicultural &amp; Ground Care Plant</b>							Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Tractors</b>	46			46			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Pair on Mowers</b>	11			9	2		Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Earth Moving</b>							Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Wheelbarrow</b>	5			5			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Ball Drives</b>	1			1			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Industrial Plant</b>							Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Cranes Trucks</b>	2			2			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Peak Lifts</b>	29	5		19	1	4	Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									
<b>Other (Mechanised goods, Trolly &amp; Roller)</b>	2			2			Unlikely to be available for 9 to 10 years time. Current Constraints.										Unlikely to be available for 9 to 10 years time. Current Constraints.									



Asset Groups & Types		Base Line Oct 2021							Ten Year Technology Outlook									
		RT QTY	Full Electric	Part Electric	Diesel	Petrol	LP/G/petrol	na	Current Constraints									
		Unlikely to be available for 9 to 10 years time							4 Yr Invest Cycle									
		Unlikely to be available for 9 to 10 years time							4 Yr Invest Cycle									
Site Specific Utility Vehicle Prison Camcorder		29	1		5	23				Availability for certain applications to be leveraged	No impediment to adopt where practical, i.e. where low range, low payload, no towing & prison based activities on campus prevail							
Farming / Agricultural		47			31	16				Positive signs of emerging technology taking place suitable to Corrections applications	No practical technology options are yet available, current constraints are off road conditions, terrain, payload and towing requirements. Overseas 2WD systems are in the development phase							
Scots (Ride On)		3	3							Mature	No impediment to adopt where practical, i.e. where low range, low payload, no towing & prison based activities on campus prevail							
<b>Prisoner Escort Vehicle</b>		<b>94</b>	<b>0</b>	<b>0</b>	<b>94</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>									
Minibus, Cargo Van - PEV		63			63					Suitable technology risk - unlikely to be available for 9 to 10 years time	High risk safety & security considerations take precedence							
Truck - PEV		31			31					Suitable technology risk - unlikely to be available for 9 to 10 years time	High risk safety & security considerations take precedence							
<b>Truck</b>		<b>32</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>									
Truck - Heavy		5			5					Positive signs of emerging technology taking place suitable to Corrections applications	No practical technology options are yet available, current constraints are payload combined with torque-power towing capability requirements. However there is also the emergence of potential alternate fuel technologies developing.							
Truck - Medium		24			24					Positive signs of emerging technology taking place suitable to Corrections applications	No practical technology options are yet available, current constraints are payload combined with torque-power towing capability requirements. However there is also the emergence of potential alternate fuel technologies developing. Hybrid technology is also emerging for early adoption							
Truck - Light		3			3					Maturing	No impediment to adopt where practical and suitable to site and operating requirements. Hybrid technology also to be considered in the early adoption phase							
<b>Attachable Plant</b>		<b>11</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>11</b>									
Attachable Agricultural Plant		2								2 Non energy dependent fleet assets	Not Applicable							
Attachable Mower		8								8 Non energy dependent fleet assets	Not Applicable							
Attachable Sprayer		1								1 Non energy dependent fleet assets	Not Applicable							





Asset Groups & Types	Ten Year Technology Outlook										
	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	4 Yr Invest Cycle	
	FY 2021/22	FY 2022/23	FY 2023/24	FY 2024/25	FY 2025/26	FY 2026/27	FY 2027/28	FY 2028/29	FY 2029/30	FY 2030/31	FY 2031/32
<b>Towable Plants</b>	448	333	0	0	0	0	0	0	0	0	0
Trailer - General Use - Low Value Assets Less than \$28k	333	0	0	0	0	0	0	0	0	0	0
Trailer - General Use \$70-\$100k	76	0	0	0	0	0	0	0	0	0	0
Trailer - Special Purpose - has defined Purpose	26	0	0	0	0	0	0	0	0	0	0
Trailer - Special Purpose - Purpose unspecified Over \$100k	13	0	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>1907</b>	<b>43</b>	<b>101</b>	<b>777</b>	<b>523</b>	<b>4</b>	<b>659</b>				

**Notes**

- Cars to be purchased only after the EV charging infrastructure has been installed
- Need to phase purchase of EVs to avoid creating a future replacement bow wave
- Pricing for EVs will come down so it is better value for money to adopt a phase procurement approach.

**Research Sources:**

- Corrections Supplies - AB Equipment (Forklifts), Norwood's (Tractors, Ride on Mowers & Side by Sides), Power Farming (Tractors), Yamaha, Side by Sides & Electric Shuttles, Blue Wing Honda (Side by Sides), Parkland (Ride on Mowers), Action Engineering (Trucks), Wade Group (Prisoner Escort Vehicles)
- Other: Fleet Decarbonisation Workshop - 11 October 21 - EECA, Police, Custom Fleet and Corrections Fleet Mgmt Team

**Whole of Fleet - Energy Type**

Energy Type	Percentage
Full Electric	24.07%
Diesel	40.74%
LPG/Petrol	0.21%
Part Electric	5.30%

**Light Commercial Fleet - (Cars / Vans & Utes) Energy Type**

Energy Type	Percentage
Full Electric	2.96%
Diesel	46.27%
Petrol	41.54%
Part Electric	8.81%

**10 Year Outlook EV Technology Exploitation Potential**

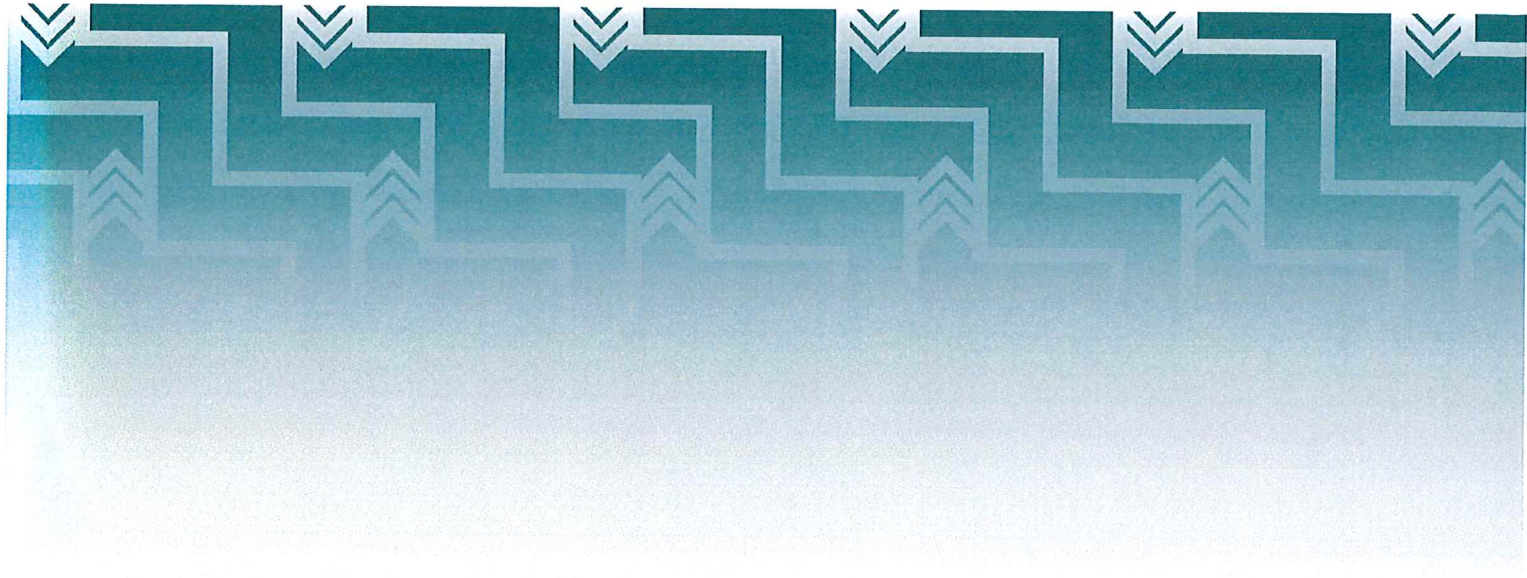
Category	Percentage
Non energy dependent fleet assets (Towable Plants)	24%
Still to emerge - to be exploited when technology becomes available and practical	8%
Positive signs of emergence taking place - to be exploited when technology become available and practical	26%

**Whole of Fleet - Energy Type**

Energy Type	Percentage
Full Electric	24.07%
Diesel	40.74%
LPG/Petrol	0.21%
Part Electric	5.30%

**Light Commercial Fleet - (Cars / Vans & Utes) Energy Type**

Energy Type	Percentage
Full Electric	2.96%
Diesel	46.27%
Petrol	41.54%
Part Electric	8.81%



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DEPARTMENT OF CORRECTIONS

