QFLEET ELECTRIC VEHICLE TRANSITION STRATEGY

For the Queensland Government motor vehicle fleet

Queensland Government

Minister's foreword

When the Queensland Government released *The Future is Electric: Queensland's Electric Vehicle Strategy* last year, we made a commitment to transition the government fleet to electric vehicles. This challenge is being met by QFleet, the commercialised business unit in the Department of Housing and Public Works, responsible for the procurement and management of the Queensland Government fleet.

The *QFleet Electric Vehicle Transition Strategy* establishes this new technology firmly on the government's fleet agenda. The current inclusion of electric vehicles in QFleet's fleet, and the intention to at least double their number each year for the next four years, will demonstrate their suitability as part of a multi-functional and versatile vehicle pool.

This leadership position will be sustained, and negotiations are already underway with vehicle manufacturers to pave the way for early access to new electric vehicle models when released onto the Australian market.

With a combined fleet of more than 10,000 vehicles located across the state, departments will have many opportunities to make the shift to electric models as vehicles fall due for replacement over the coming months and years. With their support, this strategy will make the transition a reality.

Agencies can also take advantage of the Queensland Electric Super Highway — the growing network of fast recharging stations that has become the world's longest electric super charger highway in a single state, already stretching from Cairns to the Gold Coast.

Importantly, the *QFleet Electric Vehicle Transition Strategy* will play a major part in reducing the fleet's greenhouse gas emissions and contribute to the government's goal of achieving zero net emissions by 2050, supported by a 50 per cent renewable energy target for Queensland by 2030.

When QFleet had its beginnings some 25 years ago, the idea of fully electric, rechargeable passenger and light commercial vehicles being available to the general public was a new concept. But if low-pollution transport was a desirable aspiration then, it is a critical goal now; revelations about greenhouse gas emissions, climate change and their likely consequences have seen to that.

Electric vehicles play an increasingly important role in our emissions reduction activities and in building a culture of fleet environmental sustainability.

They promise to be an exciting part of our journey towards a low-carbon future.

The Honourable Mick de Brenni MP
Minister for Housing and Public Works, Minister for Digital Technology and Minister for Sport

Introduction

The Queensland Government has committed to take an active role in preparing Queensland for the introduction of electric vehicles, ensuring the state is best placed to capture the benefits this change will bring.

The Future is Electric: Queensland's Electric Vehicle Strategy was released in October 2017 by the then Treasurer and Minister for Trade and Investment, the Honourable Curtis Pitt MP; and the then Minister for Main Roads, Road Safety and Ports and Minister for Energy, Biofuels and Water Supply, the Honourable Mark Bailey MP.

An electric vehicle is defined as any vehicle that is fully or partially driven by an electric motor and can be plugged-in to recharge. They comprise two main types:

- the battery electric vehicle (BEV)
- the plug-in hybrid electric vehicle (PHEV).

The shift to electric vehicles will expand over the next decade and beyond, and will be a dynamic process as the technology improves and the market continues to develop.

BEVs (and PHEVs when running on their electric motors) produce virtually no tailpipe greenhouse gas emissions. And the emissions produced for recharging the vehicles is potentially zero when using green power or solar power.

Recharging from the standard grid will become less emissions intensive as Queensland progresses towards the government's target of deriving 50 per cent of its energy from renewable sources by 2030, announced by government in *Pathways to a clean growth economy – Queensland Climate Transition Strategy in 2017*.

The Strategy

Focus areas for electric vehicle uptake

QFleet is embracing the transition of its fleet to electric vehicles and will adopt a proactive leadership approach to increasing the number of electric vehicles in its fleet. This will integrate seamlessly and concurrently with the other emissions reduction initiatives being undertaken.

There are six focus areas:

1. Replace existing vehicles with PHEV models.

2. Introduce electric vehicles into car sharing pools (CBD and larger regional centres).

3. Introduce BEVs to match existing lease vehicle replacements.

4. Incentivise agencies to take up electric vehicles.

5. Introduce electric vehicle evaluations.

6. Explore opportunities encouraging manufacturers to speed up the importation of electric vehicles through bulk purchasing deals across state boundaries.

1. Replace existing vehicles with PHEV models

QFleet will encourage agencies to replace existing conventional internal combustion engine (ICE) vehicles with PHEVs of a similar type. This is intended to overcome the 'range anxiety' of agencies and drivers concerned about becoming stranded in a BEV if the battery should run completely out of power while on the road. It will also overcome qualms agencies might have about having vehicles with restricted capability in their fleets/pools.

2. Introduce electric vehicles into car sharing pools (CBD and larger regional centres)

There are already three PHEVs in QFleet's Brisbane CBD car sharing pool of 16 vehicles. Having proved popular with customers, the number will be increased as ICE vehicles fall due for replacement and new Brisbane car sharing precincts are added. BEV units will also be introduced as suitable models become available on the market.

Similarly, PHEVs and BEVs will be included in the vehicle mix in regional car sharing pools, with due regard to the nature of each location and vehicle usage patterns. Feasibility of expanding the car sharing model to Cairns and Townsville is being explored for implementation in 2018-19.

By utilising car sharing electric vehicles, drivers will experience the technology and become more accepting, and enthusiastic about having these vehicles in their agencies' fleets.

3. Introduce BEVs to match existing lease vehicle replacements

QFleet assists many customer agencies in developing and reviewing the annual vehicle replacement programs. QFleet's fleet consultants will possess the knowledge and tools to identify where BEVs (and PHEVs) are a good fit in agency fleets and encourage uptake.

This will be supported by access to loan or evaluation models.

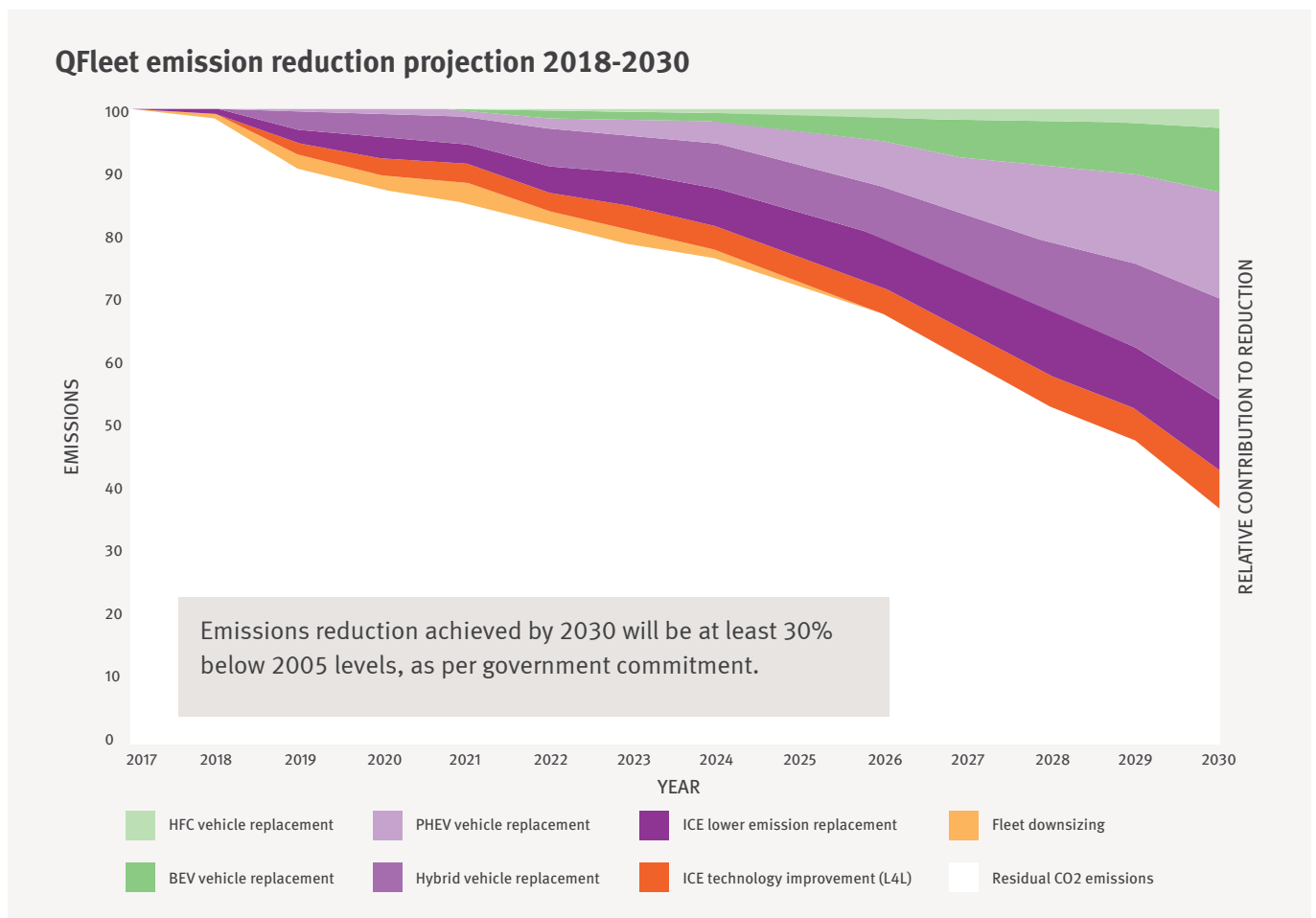### 4. Incentivise agencies to take up electric vehicles

QFleet will investigate the option of cross-subsidising electric vehicle lease rates, to reduce the effect on customer agencies of the comparatively higher purchase costs. The concept involves introducing a loading on higher emission vehicles leases and a parallel discounting for electric vehicle leases. This would provide an incentive for agencies to take up electric vehicles and reward their behaviour change. The lease adjustments would be managed so as to have no net financial impact on the business.

Another incentive QFleet will explore is end-of-lease adjustment. One of the considerations when determining a lease rate is the residual value of the vehicle—the price expected to be realised by the vehicle sale at end-of-lease. Because of the relative newness of the electric vehicle market and uncertainty throughout the industry about resale values, projected residual values need to be quite conservative. Including a lease adjustment arrangement in electric vehicle lease agreements assures agencies that if a vehicle is sold for more than the residual value, QFleet will adjust lease rates accordingly.

5. Introduce electric vehicle evaluations

QFleet will motivate customer agencies to participate in evaluating electric vehicles in order to (a) assess the vehicles' suitability for inclusion in the QFleet fleet (b) enable agencies to gain hands-on experience with the new technology (c) stimulate interest and uptake of BEVs and PHEVs.

In many cases, customer agencies will have the option to convert a short-term evaluation direct to a lease agreement.

QFleet emission reduction projection 2018-2030

Emissions reduction achieved by 2030 will be at least 30% below 2005 levels, as per government commitment.

Legend:
- HFC vehicle replacement
- BEV vehicle replacement
- PHEV vehicle replacement
- Hybrid vehicle replacement
- ICE lower emission replacement
- ICE technology improvement (L4L)
- Fleet downsizing
- Residual CO2 emissions

EMISSIONS

RELATIVE CONTRIBUTION TO REDUCTION

YEAR

Evaluation programs will include regional centres where electric vehicles have a potential for inclusion in local fleets or pools.

QFleet will arrange for manufacturers to conduct electric vehicle information events exclusively for government, where customer agencies can learn from industry experts, have questions answered and enjoy hands-on experience.

Establishing well-structured evaluation programs and gathering meaningful customer feedback will inform vehicle replacement programs and potentially encourage manufacturers to increase supply.

6. Explore opportunities encouraging manufacturers to speed up the importation of electric vehicles through bulk purchasing deals across state boundaries

QFleet will include electric vehicle procurement in its strategic discussions with vehicle manufacturers at quarterly contract review meetings and during the annual price and volume commitment process (next scheduled for April–June 2018). Of interest will be:

- market intelligence regarding the future release of electric vehicle models and upgrades
- advice to manufacturers of the types/models of electric vehicles that will attract government sales
- gaining early access to new electric vehicles for evaluation purposes.

These negotiations have a primary focus on purchase price. Bulk-buy arrangements with manufacturers can achieve procurement discounts and QFleet has employed this method to realise significant savings for customer agencies and government. Leasing and buy-back opportunities will also be explored as a risk mitigation option.
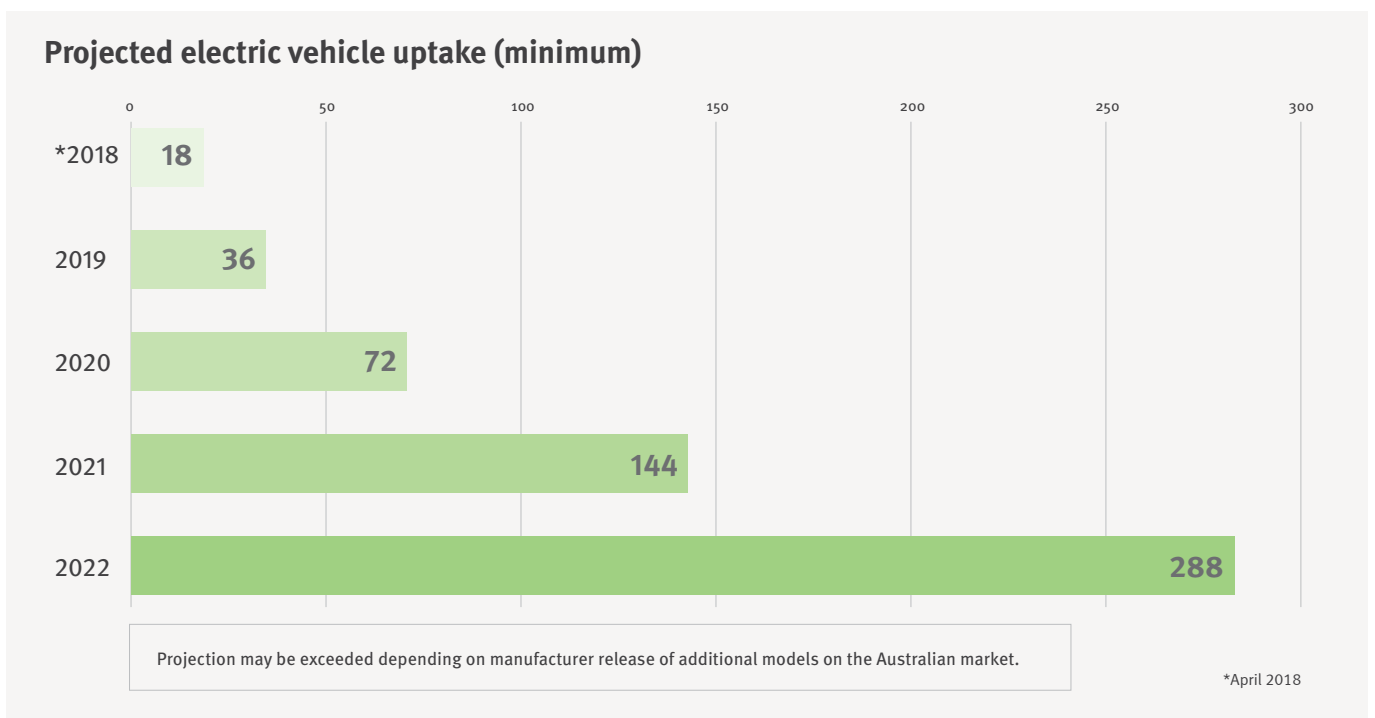
Given the relatively high purchase cost of electric vehicles and the expected modest initial uptake by agencies, QFleet will investigate the benefits of engaging with other jurisdictions — local councils and state and territory governments — to negotiate aggregated volume procurement.

QFleet will be a major participant in the Queensland Electric Vehicle Council — a government/industry consultative group under development by the Department of Transport and Main Roads and including other agencies with owned fleets, such as the Queensland Police Service and Queensland Public Safety Business Agency.

In this way, electric vehicles will play a key role in reducing QFleet's greenhouse gas emissions.

Short-term increase target

With this leadership approach, QFleet will double the number of electric vehicles in its fleet each year during the next four years, increasing from 18 to 288.

Projected electric vehicle uptake (minimum)

Year	Value
*2018	18
2019	36
2020	72
2021	144
2022	288

Projection may be exceeded depending on manufacturer release of additional models on the Australian market.

*April 2018

Electric vehicle availability

The evolving electric vehicle market in Australia

Only a modest range of EVs that are suitable for general use in the Queensland Government fleet are either available now or are certain to be available in the next few years. There are 11 electric vehicles currently offered on the Australian market. However, some models are considered either (a) unsuitable because of likely negative public perception of the model e.g. luxury or sports appearance/performance, and/or (b) questionable on the basis of their high purchase cost.

Electric vehicles currently available across the Australian market (as at February 2018)

MANUFACTURER	MODEL	TYPE	
BMW	i3 94Ah- Small	BEV	✓
BMW	i3 94Ah Range Extender - Small	BEV	✓
BMW	i8 - Sports	PHEV	✕
Mitsubishi	Outlander - SUV	PHEV	✓
Mitsubishi	Outlander Aspire - SUV	PHEV	✓
Tesla	S 75D - Sports	BEV	✕
Tesla	S 100D - Sports	BEV	✕
Tesla	S P100D - Sports	BEV	✕
Tesla	X 75D - Sports	BEV	✕
Tesla	X 100D - Sports	BEV	✕
Tesla	X P100D - Sports	BEV	✕

Robust projections for upcoming electric vehicle releases in Australia cannot realistically be made at this time. While many manufacturers have models in production or advanced planning in the northern hemisphere, most are only being produced in left-hand-drive format while others are in the luxury or sports car categories. Because of this and for reasons of commercial sensitivity, manufacturers are unable to make firm commitments as to which models will be released in Australia and the timeframes for their introduction.

Notwithstanding these constraints, QFleet will maintain a calendar of projected electric vehicle availability based on the best industry intelligence available.

Anticipated new electric vehicles scheduled for future release across the Australian market (as at February 2018)

MANUFACTURER	MODEL	TYPE	EXPECTED	
BMW	i3 - Small Sedan	BEV	April 2018	❌
Renault	Zoe - Small Sedan	BEV	May 2018	✔
Renault	Kangoo - Small Van	BEV	May 2018	✔
Hyundai	IONIQ - Small Sedan	BEV	November 2018	✔
Hyundai	IONIQ - Small Sedan	PHEV	November 2018	✔
Jaguar	I-PACE - Medium SUV	BEV	November 2018	❌
Mini	Countryman - Small Sedan	PHEV	November 2018	❌
Nissan	Leaf - Small Sedan	BEV	December 2018	✔
Audi	e-tron - Sportsback	BEV	June 2019	❌
Tesla	Model 3 - Medium Sedan	BEV	July 2019	✔
Volvo	Each type of Volvo vehicle will have an electric or hybrid motor by mid-2019.			
Hyundai	Medium SUV	FCEV	September 2019	❓
Skoda	Superb - Large Sedan	PHEV	October 2019	❓

The information in this table is current at the time of publication and may be subject to change.

✔	Suitable for inclusion in QFleet general offering to customers	✔	Possible though limited suitability
❌	May not be suitable e.g. high purchase price, public perception (luxury/sports vehicle)	❓	Insufficient information currently available

In assessing vehicles for inclusion in its fleet, QFleet will take into consideration factors such as:

- suitability in terms of public perception
- ANCAP safety rating
- total cost of ownership (including purchase cost and projected residual value)
- fit-for-purpose suitability
- recharging requirements and available infrastructure.

Recharging infrastructure for government vehicles

Under The *Future is Electric: Queensland's Electric Vehicle Strategy*, the Queensland Government will undertake an electrical infrastructure analysis of government buildings, in order to understand the opportunities and barriers to installing EV charging.

The lessons learnt from this study are not only intended to be used to support the roll-out of EV charging infrastructure in government owned buildings for government EVs, but will also inform building guidelines and regulations to ensure the installation of EV charging infrastructure can become a straightforward task.

This exercise will inform the progressive deployment of QFleet electric vehicles in government offices in Brisbane and regional centres.

Government drivers travelling longer distances will also be able to take advantage of the government's expanding Queensland Electric Super Highway, the world's longest electric fast charging highway in a single state.

Referenced documents

The Future is Electric: Queensland's Electric Vehicle Strategy

https://publications.qld.gov.au/dataset/the-future-is-electric-queensland-s-electric-vehicle-strategy/resource/7e352dc9-9afa-47ed-acce-2052cecfec8a

Pathways to a clean growth economy – Queensland Climate Transition Strategy

https://www.qld.gov.au/environment/assets/documents/climate/qld-climate-transition-strategy.pdf

For more information

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