Parliamentary
Budget Office

Senator Tim Storer
Chair
Senate Select Committee on Electric Vehicles
PB Box 6100
Parliament House
CANBERRA ACT 2600

Dear Senator Storer

Please find attached a response to your costing request, *Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets* (letter of 14 December 2018, PBO reference PR18/00628), submitted on behalf of the Senate Select Committee on Electric Vehicles.

As required by section 64U(d) of the *Parliamentary Service Act 1999*, we will publish your request and this response on the PBO website when the committee report is tabled.

If you have any queries about this costing, please do not hesitate to contact David Tellis, Assistant Parliamentary Budget Officer on or Mosfequs Salehin, Director on

Yours sincerely

Linda Ward
Acting Parliamentary Budget Officer

// January 2019

Parliamentary Budget Office

Policy costing

Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets	
Person/party requesting the costing:	Senator Tim Storer, Senator for South Australia, on behalf of the Senate Select Committee on Electric Vehicles
Date costing completed:	11 January 2019
Expiry date of the costing:	Release of the next economic and fiscal outlook report.
Status at time of request:	Submitted outside the caretaker period ☒ Confidential ☐ Not confidential

Summary of proposal:

This proposal contains six options to set mandatory electric vehicle purchasing and leasing targets for new vehicles added to the Australian Government vehicle fleet. The options are as follows:

- Option 1: set a target of 30 per cent of new vehicles in the Australian Government vehicle fleet by 2025.
- Option 2: set a target of 40 per cent of new vehicles in the Australian Government vehicle fleet by 2025.
- Option 3: set a target of 50 per cent of new vehicles in the Australian Government vehicle fleet by 2025.
- Option 4: set a target of 30 per cent of new vehicles in the Australian Government vehicle fleet by 2030.
- Option 5: set a target of 40 per cent of new vehicles in the Australian Government vehicle fleet by 2030.
- Option 6: set a target of 50 per cent of new vehicles in the Australian Government vehicle fleet by 2030.

Electric vehicles are defined as battery electric vehicles, plug-in hybrid electric vehicles and fuel-cell electric vehicles. Each electric vehicle added to the Government fleet would have dedicated charging infrastructure provided for it.

The Government fleet does not include vehicles acquired by Government employees under salary sacrifice novated lease arrangements.

The proposal would have a start date of 1 July 2019.

Costing overview

All options of this proposal would be expected to decrease the fiscal and underlying cash balances by between $1.6 million and $5.0 million over the 2018-19 Budget forward estimates period (see Table 1). These impacts are entirely due to increased departmental expenses across the Government.

Table 1: Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – Financial implications ($m)[(a)(b)]

	2018–19	2019–20	2020–21	2021–22	**Total to 2021–22**
Option 1 – Set a target of 30 per cent of new vehicles in the Australian Government vehicle fleet by 2025					
Fiscal balance	-	-0.3	-0.9	-1.8	**-3.0**
Underlying cash balance	-	-0.3	-0.9	-1.8	**-3.0**
Option 2 – Set a target of 40 per cent of new vehicles in the Australian Government vehicle fleet by 2025					
Fiscal balance	-	-0.4	-1.2	-2.4	**-4.0**
Underlying cash balance	-	-0.4	-1.2	-2.4	**-4.0**
Option 3 – Set a target of 50 per cent of new vehicles in the Australian Government vehicle fleet by 2025					
Fiscal balance	-	-0.5	-1.5	-3.0	**-5.0**
Underlying cash balance	-	-0.5	-1.5	-3.0	**-5.0**
Option 4 – Set a target of 30 per cent of new vehicles in the Australian Government vehicle fleet by 2030					
Fiscal balance	-	-0.2	-0.5	-1.0	**-1.6**
Underlying cash balance	-	-0.2	-0.5	-1.0	**-1.6**
Option 5 – Set a target of 40 per cent of new vehicles in the Australian Government vehicle fleet by 2030					
Fiscal balance	-	-0.2	-0.7	-1.3	**-2.2**
Underlying cash balance	-	-0.2	-0.7	-1.3	**-2.2**
Option 6 – Set a target of 50 per cent of new vehicles in the Australian Government vehicle fleet by 2030					
Fiscal balance	-	-0.3	-0.8	-1.6	**-2.7**
Underlying cash balance	-	-0.3	-0.8	-1.6	**-2.7**

(a) A positive number represents an increase in the relevant budget balance; a negative number represents a decrease.
(b) Figures may not sum to totals due to rounding.
- Indicates nil.

All options would be expected to have an ongoing impact that extends beyond the 2018-19 Budget forward estimates period. A detailed breakdown of the financial implications over the period to 2028-29 is provided at Attachment A.

All options of this proposal would affect the departmental expenses of various Australian Government departments. However a breakdown of the costs is not available due to difficulties in separating out costs per department based on currently available information.

There are several uncertainties associated with this proposal. The costing is sensitive to assumptions around the overall cost of leases for affected vehicles as well as the cost of the associated charging

infrastructure. There is also uncertainty around the availability of electric vehicle models suitable for some parts of the Australian Government vehicle fleet. There would potentially be difficulties in providing charging infrastructure to some sites, which could increase the costs associated with the proposal. There could be a potential behavioural response for affected agencies to extend lease times on existing vehicles in order to minimise the number of new vehicles acquired that are subject to the target; the costing has not taken any behavioural response into account. This costing has assumed that there would be no technological constraints to the take-up of new electric vehicles. If this is not the case then the targets may not be achievable.

Key assumptions

The Parliamentary Budget Office has made the following assumptions in costing this proposal. The costing is sensitive to all these assumptions.

- There would be no technological constraints to achieving the target under each option, and there would be sufficient suitable vehicles available.
- The average additional cost of an electric vehicle (excluding infrastructure) compared to an equivalent internal combustion engine vehicle is approximately $200 more per month. This difference would be expected to be maintained over the period to 2028-29 as both internal combustion vehicle and electric vehicle prices would be assumed to grow at the same rate.
  - This assumption is based on the difference between the average monthly novated lease costs for electric vehicles and similar internal combustion vehicles.
  - This additional cost of electric vehicles includes differences in lease financing costs, maintenance, outlays on electricity and other running costs.
- The average infrastructure cost associated with electric vehicles would be approximately $8,000 per unit. This cost would not change over the period to 2028-29.
  - This cost is derived from the estimates provided in Energeia's *Australian Electric Vehicle Market Study* and discussions with stakeholders.
- The overall number of new vehicles acquired each year by the Australian Government fleet would not change over the period to 2028-29. Currently there are approximately 1,500 new vehicles acquired by the Australian Government fleet per year.
- In each option, purchase of electric vehicles would commence in 2019-20 and build up gradually at a uniform rate until the target is achieved. This is based on the expectation that it could take some time for the market to become fully established and for the necessary infrastructure to be set up.
- All new electric vehicles added to the Australian Government fleet would be leased rather than purchased.
  - Charging infrastructure costs would be factored into the leases of electric vehicles.
- The average lease period for electric vehicles in the Australian Government fleet would be five years. Vehicles are currently leased for an average period of three years but given the additional infrastructure requirements and lower maintenance costs, electric vehicles are likely to be leased for a longer period.

Methodology

The costing was calculated by multiplying the estimated number of new vehicles by the expected increase in costs of electric vehicles compared to equivalent internal combustion engine vehicles. This amount was then added to the expected infrastructure costs per vehicle to estimate the increase in costs as a result of the proposal.

New vehicle purchases in each year were added to the costs of prior years' vehicle purchases. An allowance was made for vehicles being replaced at the end of their five-year lease period.

Estimates have been rounded to the nearest $100,000.

Data sources

Commonwealth of Australia, 2018. *Mid-Year Economic and Fiscal Outlook 2018-19*, Commonwealth of Australia: Canberra.

Energeia, 2018. *Australian Electric Vehicle Market Study*, Energeia: Sydney.

The Department of Finance provided information on the Australian Government fleet.

Selectus, 2018. *Novated lease calculator* [available online at] https://www1.selectus.com.au/ last accessed 7 January 2019.

Attachment A – Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – financial implications

Table A1: Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – Option 1 – Set a target of 30 per cent of new vehicles in the Australian Government vehicle fleet by 2025 – Fiscal and underlying cash balances ($m)[(a)(b)]

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	**Total to 2021–22**	**Total to 2028–29**
Total expenses	-	-0.3	-0.9	-1.8	-3.0	-4.5	-6.0	-7.2	-8.1	-8.7	-9.0	**-3.0**	**-49.5**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms. A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

\- Indicates nil.

Table A2: Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – Option 2 – Set a target of 40 per cent of new vehicles in the Australian Government vehicle fleet by 2025 – Fiscal and underlying cash balances ($m)[(a)(b)]

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	**Total to 2021–22**	**Total to 2028–29**
Total expenses	-	-0.4	-1.2	-2.4	-4.0	-6.0	-8.0	-9.6	-10.8	-11.6	-12.0	**-4.0**	**-66.0**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms. A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

\- Indicates nil.

Table A3: Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – Option 3 – Set a target of 50 per cent of new vehicles in the Australian Government vehicle fleet by 2025 – Fiscal and underlying cash balances ($m)[(a)(b)]

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	**Total to 2021–22**	**Total to 2028–29**
Total expenses	-	-0.5	-1.5	-3.0	-5.0	-7.5	-10.0	-12.0	-13.5	-14.5	-15.0	**-5.0**	**-82.5**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms. A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

\- Indicates nil.

Table A4: Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – Option 4 – Set a target of 30 per cent of new vehicles in the Australian Government vehicle fleet by 2030 – Fiscal and underlying cash balances ($m)[(a)(b)]

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	**Total to 2021–22**	**Total to 2028–29**
Total expenses	-	-0.2	-0.5	-1.0	-1.6	-2.5	-3.3	-4.1	-4.9	-5.7	-6.5	**-1.6**	**-30.3**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms. A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

- Indicates nil.

Table A5: Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – Option 5 – Set a target of 40 per cent of new vehicles in the Australian Government vehicle fleet by 2030 – Fiscal and underlying cash balances ($m)[(a)(b)]

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	**Total to 2021–22**	**Total to 2028–29**
Total expenses	-	-0.2	-0.7	-1.3	-2.2	-3.3	-4.4	-5.5	-6.5	-7.6	-8.7	**-2.2**	**-40.4**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms. A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

- Indicates nil.

Table A6: Revenue implications of setting mandatory Government fleet electric vehicle purchasing targets – Option 6 – Set a target of 50 per cent of new vehicles in the Australian Government vehicle fleet by 2030 – Fiscal and underlying cash balances ($m)[(a)(b)]

	2018–19	2019–20	2020–21	2021–22	2022–23	2023–24	2024–25	2025–26	2026–27	2027–28	2028–29	**Total to 2021–22**	**Total to 2028–29**
Total expenses	-	-0.3	-0.8	-1.6	-2.7	-4.1	-5.5	-6.8	-8.2	-9.5	-10.9	**-2.7**	**-50.5**

(a) A positive number for the fiscal balance indicates an increase in revenue or a decrease in expenses or net capital investment in accrual terms. A negative number for the fiscal balance indicates a decrease in revenue or an increase in expenses or net capital investment in accrual terms. A positive number for the underlying cash balance indicates an increase in receipts or a decrease in payments or net capital investment in cash terms. A negative number for the underlying cash balance indicates a decrease in receipts or an increase in payments or net capital investment in cash terms.

(b) Figures may not sum to totals due to rounding.

- Indicates nil.