

# Submission: Review of Tasmania's Climate Change Act and developing the next Climate Action Plan.

Tasmania should position itself as a climate change leader by setting a target of net-zero emissions by 2035, underpinned by 5-yearly interim targets and sectoral emissions targets. Electrifying transport, buildings, and industry, as well as reducing residential and industrial gas use, and offsetting agricultural emissions will be key to Tasmania's climate transition. Conservation of Tasmania's blue carbon sinks has important potential to contribute to climate change mitigation.

**Audrey Quicke and Eloise Carr**  
**6 May 2021**

# Introduction

The Australia Institute welcomes the opportunity to make a submission to the Discussion Paper on Tasmania's Climate Change Act ('the Discussion Paper') and the Opportunities Paper 2021: Developing a New Climate Change Action Plan for Tasmania (the Opportunities Paper). This submission provides a combined response to these two separate but related consultation processes being run by Department of Premier and Cabinet.

This submission outlines the Institute's initial thoughts on the development of Tasmania's legislative framework and action on climate change, in addition to our previous submission (see Annex 1). Detailed work on the Climate Change Action Plan should be guided by an updated and strengthened Climate Change Act. We look forward to having a more comprehensive discussion as this policy evolves.

Tasmania has the opportunity to position itself as a climate change leader. Having already achieved 100% renewable energy and set a target to double renewable generation to 200% by 2040, the state must now look to address other high emitting sectors.

Electrifying transport, buildings, and industry, as well as reducing residential and industrial gas use, and offsetting agricultural emissions will be key to Tasmania's climate transition. Additionally, a target of net-zero emissions by 2035 would establish Tasmania as an ambitious climate leader, if underpinned by 5-yearly interim targets and sectoral emissions targets.

Coastal ecosystems are hotspots for carbon sequestration and have been overlooked to date. There is important potential for the conservation of 'blue carbon' ecosystems to underpin policy development for climate change mitigation.

## Set Ambitious Emissions Targets

Tasmania currently has a legislated emissions reduction target of 60% below 1990 levels by 2050, and a commitment to net-zero emissions by 2050.<sup>1</sup> Given the state's

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<sup>1</sup> Jacobs (2021) *Discussion paper on Tasmania's Climate Change Act: Independent Review of Climate Change (State Action) Act 2008*, p 14.

[http://www.dpac.tas.gov.au/\\_data/assets/pdf\\_file/0003/573096/Discussion\\_Paper\\_on\\_Tasmanias\\_Climate\\_Change\\_Act\\_-\\_final.pdf](http://www.dpac.tas.gov.au/_data/assets/pdf_file/0003/573096/Discussion_Paper_on_Tasmanias_Climate_Change_Act_-_final.pdf)

success in reaching net-zero emissions and 100% renewable energy, a far more ambitious emissions target is warranted and achievable.

As outlined in the Discussion paper, a net-zero emissions by 2035 target is ambitious, aligned with climate science and provides a first mover advantage.

However, emissions reduction from LULUCF will likely determine Tasmania's ability to reach this target. To achieve negative net emissions, Tasmania has largely relied on carbon sequestration from LULUCF to reduce emissions rather than sharp decarbonisation across sectors. Excluding emissions from the LULUCF sector, Tasmanian annual emissions increased between 1990 and 2018.<sup>2</sup>

Accounting of greenhouse gas emissions with the inclusion of LULUCF is widely considered unreliable and easily manipulated.<sup>3</sup> It is not appropriate to primarily rely on carbon sequestration from the LULUCF sector in achieving emissions targets, nor use the successful emissions reductions from the LULUCF sector as an excuse to delay ambitious action.

To avoid this, Tasmania's Climate Act should include a legislated net-zero 2035 target, underpinned by 5-yearly interim targets, and sector targets. Individual, sectoral emissions targets allow for clear and transparent monitoring of decarbonisation efforts outside the forestry sector. Good, legislated examples of sectoral emissions targets exist in other states and territories in Australia.

## Electrify Everything

Tasmania is well on its way to becoming a renewable energy superpower. The Climate Change Act should aim to enable Tasmania to leverage its renewable energy assets—by electrifying transport, buildings, and industry, and exporting renewable assets to the rest of the world.

While Tasmania is 100% self-sufficient in on-island renewable electric generation, it is still highly reliant on imported liquid fuels to power its transport sector. Increasing the uptake of electric vehicles, through a comprehensive EV plan with fleet targets, subsidies and infrastructure roll out. Additionally, policies should be established to increase the uptake of public and active transport.

The Federal Government has demonstrated an absence of leadership on electric vehicle policy. The primary federal electric vehicle policy - the Future Fuels strategy - offers no financial incentives, uptake targets or vehicle CO<sub>2</sub> emissions targets, and will

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<sup>2</sup> Climate Tasmania (2021) *Is Tasmania really a world leader in climate action?*  
<https://www.climate Tasmania.org/is-tasmania-really-a-climate-leader/>

<sup>3</sup> See: Climate Analytics (2011) *LULUCF Guide* <https://climateanalytics.org/media/lulucfguide.pdf>

do little to increase EV uptake in Australia (see: Attachment – submission on Future Fuels Discussion paper) This leaves effective EV policy primarily to the states and sub-national governments.

Tasmania has already announced a target to transition the Government fleet to 100% electric vehicles by 2030, delivered state-wide charging infrastructure, and established the Electric Vehicle Working Group. Additionally, the recently re-elected government has promised to waive Stamp Duty for new and second-hand electric vehicles for two years.<sup>4</sup> While these are welcome policies, more can be done to increase the uptake of electric vehicles in Tasmania. Electric vehicle policy that could be considered include:

- Developing and implementing a state electric vehicle strategy to provide business and consumers the certainty to invest in EV technology.
- Working with other states and territories to establish consistent fuel efficiency (CO<sub>2</sub>) standards (in the absence of federal standards).
- Providing upfront purchase incentives for electric vehicles. For example, interest-free loans – as offered in the ACT, or up-front subsidies – as recently announced by the Victorian Government.<sup>5</sup>
- Providing operating incentives such as registration rebates, free parking, and priority lane access.
- Offering rebates for traded-in higher emitting vehicles.
- Setting an electric vehicle sales target.

There are opportunities to electrify other areas of the economy, but transport is an obvious target to start with. The Australia Institute is happy to explore opportunities in other sectors as this strategy evolves. Additionally, Beyond Zero Emissions has detailed how electrification of other sectors, including industry and manufacturing, could be achieved.<sup>6</sup>

## Blue carbon opportunities

The Australia Institute recommends accounting for emissions and sequestration separately and transparently. In accounting for sequestration, ‘blue carbon’ sequestration opportunities have not been adequately considered either by the Discussion Paper or the Opportunities Paper.

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<sup>4</sup> Tasmanian Liberals (2021) *Taking Further Climate Action*, <https://tas.liberal.org.au/securing-tasmanias-future-taking-further-climate-action>

<sup>5</sup> Victoria State Government (2021) *Zero-emissions vehicles*, <https://www.energy.vic.gov.au/renewable-energy/zero-emissions-vehicles>

<sup>6</sup> Beyond Zero Emissions (2018) *Electrifying Industry*, [https://bze.org.au/research\\_release/electrifying-industry/](https://bze.org.au/research_release/electrifying-industry/)

Blue carbon sinks – saltmarshes, seagrass, kelp forests and temperate reefs actively fix and store vast quantities of carbon each year and seabeds provide significant carbon stores. The carbon sequestering values of these coastal marine ecosystems are vulnerable to disturbance from activities such as bottom trawling, dredging and coastal development.

Conservation of blue carbon sinks has important potential to contribute to climate change mitigation. Blue carbon strategies are now being included within Nationally Determined Contributions to mitigate and adapt to climate change. An Australian assessment of coastal ecosystems as global hotspots for climate change mitigation provides the most comprehensive assessment for any nation to-date and demonstrates the potential for conservation of these ecosystems to underpin policy development for reducing greenhouse gas emissions.<sup>7</sup>

## Conclusion

Tasmania should position itself as a climate change leader by setting ambitious emissions targets, electrifying everything, and taking up blue carbon sequestration opportunities.

Given the success in reaching net-zero emissions and 100% renewable energy, a far more ambitious emissions target is warranted and achievable. Tasmania's Climate Act should include a legislated net-zero 2035 target, underpinned by 5-yearly interim targets, and sector targets.

The state must now look to address other high emitting sectors. Electrifying transport, buildings, and industry, as well as reducing residential and industrial gas use, and offsetting agricultural emissions will be key to Tasmania's climate transition.

Conservation of Tasmania's blue carbon sinks – kelp forests, saltmarshes, seagrass beds, and temperate reefs - has not been adequately considered to date and has important potential to contribute to climate change mitigation.

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<sup>7</sup> Serrano, O., Lovelock, C.E., B. Atwood, T. *et al.* Australian vegetated coastal ecosystems as global hotspots for climate change mitigation. *Nature Communications* **10**, 4313 (2019). <https://doi.org/10.1038/s41467-019-12176-8>

**Annex A: Proposed amendments to the Climate Change (State Action) Act Submission**

**Annex B: Future Fuels Discussion Paper**

**Annex C: Tasmania in Pole Position: charging infrastructure.**

# Proposed amendments to the Climate Change (State Action) Act

## *Submission*

**The Australia Institute Tasmania**  
**November 2018**

The Australia Institute welcomes the opportunity to respond to the proposed amendments to the *Climate Change (State Action) Act 2008*.

The Australia Institute recommends that:

- 1) The title of the *Climate Change (State Action) Act 2008* be renamed to the *Climate Change Emergency Response Act 2018*
- 2) A preamble be added to the Act that includes: Tasmania recognises that, along with other Australian States, Tasmania must take action to respond to the climate emergency and that the level of response must match the urgency of the crisis. Tasmania through its leadership position on renewable energy and its clever and connected communities is in a position to be a leader for the rest of the nation.
- 3) A climate change advisory body be set up to advise the Premier on climate risks and opportunities. The advisory body would include leading experts from the scientific, industry, biosecurity, emergency services and community sectors.
- 4) The Act require a sectoral analysis of threats and opportunities associated with the changing climate over the next decade, based on the best available science and that the analysis is completed within 12 months of the amendments to the Act being passed, with the climate change advisory board to take charge of it.
- 5) The Act require an analysis of the State's emergency services capability to respond to the changing climate over the next decade and that the analysis is completed within 12 months of the amendments to the Act being passed.

The independent review made the following five recommendations for amending the Act:

## Independent review Recommendation 1

Set a new aspirational long-term emissions reduction target of zero net greenhouse gas emissions by 2050;

**Australia Institute response:** That the climate change authority are tasked with proposing a new short – 2025, medium – 2035 and long – 2050 term emissions reduction targets

## Independent review Recommendation 2

Consolidate the objects of the Act around four themes.

**Australian Institute response:** This recommendation should not be implemented by reducing the existing objects of the Act to four; rather the existing objects should be organised around the proposed four themes – and, if necessary, new objects should be added.

The proposed four themes are logical and could be supported by objects including, but not limited to:

***Independent review recommended Theme 1: to set a target to reduce greenhouse gas emissions in the State;***

Australia Institute proposed addition:

- a) Ensure that Tasmania exploits its natural advantage and reduces its greenhouse gas emissions as quickly as possible.
- b) Take advantage of Tasmania’s largely renewable electricity supply, large renewable resources and relatively small population and settled area to test approaches and technologies for transitioning away from fossil fuels.
- c) Prevent new fossil fuel exploration and production activities in Tasmania.
- d) Within 12 months of the amendments of the Act being passed by parliament, publicly release a plan that charts Tasmania’s path to being 100% fossil free
- e) In consultation with major industries and scientific experts, set reductions targets for industries and sectors
- f) Work in coordination with the federal government policies and the safeguards mechanism that puts a baseline on emissions for the 100 largest polluters in the country, including some that operate in Tasmania.

***Independent review recommended Theme 2: to monitor, evaluate and report on progress made in relation to the target;***

Australia Institute proposed addition:



- a) Provide information, assistance, and data to Tasmanians on climate change and on progress with the energy transition.
- b) Provide an independent assessment of the likely greenhouse gas emissions of all significant projects that includes but is not limited to: how the proposal aids or impedes the State reaching its emissions reduction target. Any proposed measures to mitigate emissions. Consideration of alternatives.
- c) Require industries and sectors to report, on a three-yearly basis, progress against pre-defined emission reductions targets.

***Independent Review Theme 3: to respond and adapt to the impacts and projected impacts of climate change;***

Australia Institute proposed additions:

- a) Ensure Tasmania’s planning and associated decision making systems and its physical infrastructure design standards are consistent with the prudent management of the risk of extreme weather events and sea level rise associated with climate change.
- b) Ensure Tasmania’s public health system is prepared for the risk of extreme heat waves, and other potential health risks associated with climate change.
- c) Provide assistance to Tasmanian community and businesses to improve energy efficiency.
- d) Assist major industries to respond to the effect climate change is having and will continue to have upon their industries.
- e) To produce an action plan and liability framework for coastal properties – public and private – that will be affected by rising sea levels.
- f) Assist businesses, industries and communities who enter into voluntary Energy Transition Plans.

***Independent review recommended Theme 4: to complement national and international climate change initiatives.***

- a) The Paris Agreement, which Australia has ratified and which entered into force on 4 November 2016, has the central aim to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius. For Australia and, at a state level, Tasmania, to align with the Paris Agreement, we need to do our fair share. Australia’s emission reduction target to reduce emissions by 26% from 2005 levels by 2030 is insufficient to meet the Paris Agreement’s central aim. Given Tasmania’s largely renewable electricity supply, small geography and population, our state should not just meet but exceed this target and seek to exploit any advantages that could be secured by doing so.

## Independent review Recommendation 3.

Require Tasmanian Government agencies to consider the target, objects and proposed principles of the Act in relation to relevant decisions;

**Australia Institute response:** The Government response to recommendation 3 treats climate change as different to, rather than a part of, community wellbeing and economic growth. A more robust approach would be to require all agencies to produce a climate emergency plan that identifies all threats and opportunities associated with climate disruption and produce a set of guidelines that must be adhered to rather than just considered when assessing or suggesting projects. These plans should be made in consultation with community, scientific, economic and industry experts.

## Independent review Recommendation 5

Continue to prepare a plan for mitigating and adapting to climate change, and make it a statutory requirement for the Tasmanian Government to have a climate change action plan.

**Australia Institute response:** This planning should be detailed and identify opportunities as well as threats including but not limited to:

- a) take advantage of Tasmania's largely renewable electricity supply, small geography and population to test new storage technologies and roll out the country's first state wide electric vehicle charging network.
- b) Project Marinus, including a cost benefit analysis of its impact on the NEM, not only Tasmania
- c) A program to develop demand-side resources and empower consumers and solar 'prosumers' and battery owners
- d) Aggregated demand response of consumer and small commercial consumers, to lower their costs and improve the efficiency of the market including reduced network augmentation

# Submission on the Future Fuels Discussion Paper

The federal government can improve Australia's low electric vehicle uptake through upfront purchase incentives, CO<sub>2</sub> emissions standards, a 100% gov fleet target and correcting its own misinformation and modelling.

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Audrey Quicke  
April 2021

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Level 1, Endeavour House, 1 Franklin St

Canberra, ACT 2601

Tel: (02) 61300530

Email: [mail@australiainstitute.org.au](mailto:mail@australiainstitute.org.au)

Website: [www.australiainstitute.org.au](http://www.australiainstitute.org.au)

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# Summary

Australia is a laggard when it comes to electric vehicle (EV) sales. A thriving EV market is necessary to decarbonise transport emissions which have risen steadily over the last three decades. EVs will also benefit household budgets, fuel security and our broader air quality.

The federal government is well placed to correct Australia's lagging EV take-up. It has the solutions, laid out by the tax-payer funded Australian Electric Vehicle Market Study. It is therefore disappointing that instead of implementing those solutions, the government has produced yet another paper.

The Future Fuels Discussion Paper is not a strategy to drive uptake (despite one a strategy being promised in 2019), contains no new funding commitments and disappointingly rules out policies that work like purchase incentives for EVs, fleet procurement targets and vehicle CO<sub>2</sub> standards.

To justify the absence of EV incentives and subsidies, the Discussion Paper relies on modelling that claims to show EV subsidies are not value-for-money. However, this modelling is misleading. Abatement costs are not calculated using like-for-like vehicle models, and do not reflect the fuel and maintenance savings over the lifetime of an EV. Emissions comparisons are averaged over five years rather than ten years (the average life of a vehicle) and do not even try and account for EV charging from rooftop solar, thus inflating the emissions profile associated with EVs.

The Government's rush job modelling is apparently for 'illustrative purposes only' and yet has been used by numerous federal ministers to claim that EV incentives do not represent value for money and justify this do-nothing approach to EVs.

What is worse is that the modelling contradicts the Government's own 2020 Emissions Projections, and specific comments made by the Treasurer when he was the Minister for Energy.

The Government needs to come up with an actual EV strategy and the Australia Institute has made a number of recommendations to assist in that regard.

Specifically, the modelling in Attachment A of the Future Fuels Discussion Paper should be scrapped and redone in a credible and transparent way. The Final Future Fuels Strategy should provide short-term financial incentives to reduce the purchase price of an electric vehicle, include light vehicle CO<sub>2</sub> emissions standards, and set a Government fleet target of 100% electric vehicles by 2030.

# Introduction

Internationally, the electric vehicle (EV) transition is well underway. In countries across the world, motorists are moving away from fossil-fuelled vehicles, assisted by ambitious policies to stimulate electric vehicle roll-out and decarbonise the transport sector.

Australia lags behind the rest of the world in EV policy and uptake. With no strategy to decarbonise transportation, no CO<sub>2</sub> emissions standards, and no incentives to bridge the gap between the cost of an EV and an Internal Combustion Engine Vehicle (ICE) – Australian EV uptake has been slow compared to other OECD countries.<sup>1</sup> A robust plan to support EVs is needed to decarbonise the Australian transport sector and make EVs accessible for everyday Australians.

Achieving the goals of the Paris Agreement requires steep reductions in emissions across all sectors. Transport is one of the fastest growing sources of emissions in Australia, increasing by 62.4% in March 2020 from 1990 levels (note Australia signed up to the UN Framework Convention on Climate Change in 1992).<sup>2</sup> For the year to September 2020, transport emissions accounted for 18% of Australia's greenhouse gas (GHG) emissions, making transport the third largest emitting sector.<sup>3</sup> The majority of Australia's transport emissions are from light duty vehicles (cars and light commercial vehicles).<sup>4</sup>

The Paris Agreement aims to limit global temperature rise to well below 2 degrees Celsius and fully decarbonise economies by 2050. The Australian Academy of Science suggests that developed economies should decarbonise sooner than 2050- in the next 10 to 20 years.<sup>5</sup> Given the average age of motor vehicles in Australia is ten years (with many lasting 15 years),<sup>6</sup> the vast majority of new car sales should be zero emissions by 2035 to reach net-

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<sup>1</sup> Electric Vehicle Council (2021) *New electric car sales figures show Australia stalled with hazards flashing*. <https://electricvehiclecouncil.com.au/new-electric-car-sales-figures-show-australia-stalled-with-hazards-flashing/>

<sup>2</sup> Department of Industry, Science, Energy and Resource (2021) *Quarterly Update of Australia's National Greenhouse Gas Inventory: March 2020*, p 9. <https://www.industry.gov.au/sites/default/files/2020-08/nggi-quarterly-update-march-2020.pdf>

<sup>3</sup> *Ibid*, p 9. <https://www.industry.gov.au/sites/default/files/2021-02/nggi-quarterly-update-september-2020.pdf>

<sup>4</sup> Department of Industry, Science, Energy and Resources (2020) *Australia's emissions projections 2020*, p 29. <https://www.industry.gov.au/sites/default/files/2020-12/australias-emissions-projections-2020.pdf>

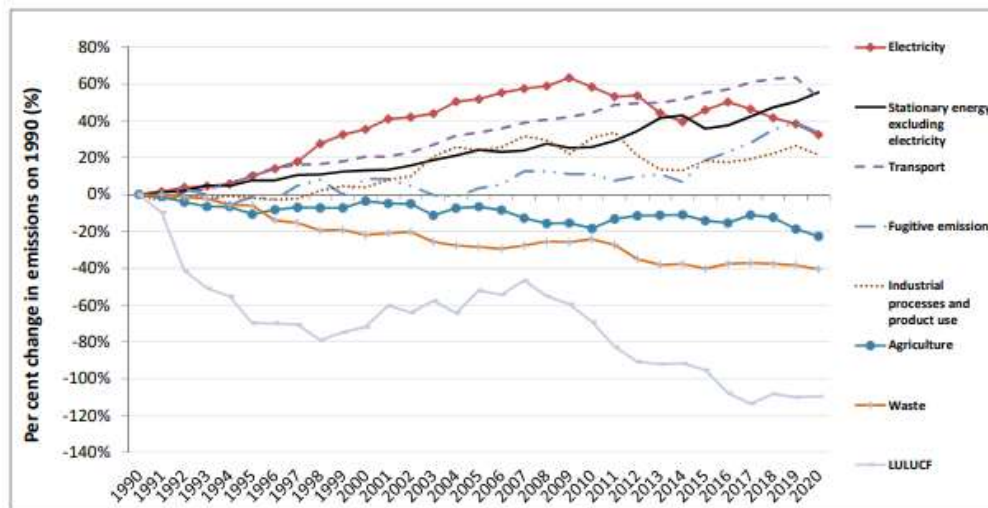
<sup>5</sup> Australian Academy of Science (2021) *The Risks to Australia of a 3°C Warmer World*, <https://www.science.org.au/files/userfiles/support/reports-and-plans/2021/risks-australia-three-deg-warmer-world-report.pdf>

<sup>6</sup> ABS (2020) *Motor Vehicle Census, Australia*. <https://www.abs.gov.au/statistics/industry/tourism-and-transport/motor-vehicle-census-australia/31-jan-2020>



zero emissions by 2050.<sup>7</sup> According to the UNFCCC, progress is underway in many leading vehicle markets to achieve 100% new vehicle sales by 2035.<sup>8</sup> Jurisdictions around the world have introduced targets to phase out internal combustion engine (ICE) vehicle sales, including 19 countries (See the Annex for list of countries with ICE phase out goals). Australia Institute research also shows the majority of Australians support a similar ban on new petrol and diesel vehicles from 2035 in Australia.<sup>9</sup>

**Figure 1. Percentage change in emissions, by sector, since September 1990 (DISER)**



Source: Department of Industry, Science, Energy and Resources

Source: Department of Industry, Science, Energy and Resources – GHG quarterly update September 2020

Australia has no nationally coordinated plan for the transition to clean vehicles. In 2019, the Senate Select Committee on Electric Vehicles put forward 17 recommendations, including the development of “a national EV strategy to facilitate and accelerate EV uptake and ensure Australia takes advantage of the opportunities, and manages the risks and

<sup>7</sup> AVERE, BEUC, et al. (2020) *Call on the European Commission President to set an EU-wide end date for sales of internal combustion engine cars and vans by 2035*. [https://www.politico.eu/wp-content/uploads/2020/09/2020\\_09\\_Joint\\_letter\\_EU-wide\\_end\\_date\\_sales\\_cars\\_vans\\_2035.pdf?utm\\_source=POLITICO.EU&utm\\_campaign=363f00401a-EMAIL\\_CAMPAIGN\\_2020\\_09\\_14\\_05\\_00&utm\\_medium=email&utm\\_term=0\\_10959edeb5-363f00401a-189774485](https://www.politico.eu/wp-content/uploads/2020/09/2020_09_Joint_letter_EU-wide_end_date_sales_cars_vans_2035.pdf?utm_source=POLITICO.EU&utm_campaign=363f00401a-EMAIL_CAMPAIGN_2020_09_14_05_00&utm_medium=email&utm_term=0_10959edeb5-363f00401a-189774485)

<sup>8</sup> United Nations Global Climate Action (2020) *Climate Action pathway- Transport Executive Summary*, p 4. <https://unfccc.int/news/un-climate-action-pathways-map-route-from-covid-19-recovery-to-resilient-net-zero-economy>

<sup>9</sup> Australia Institute (2020) *Majority of Australians Support EV Policies, Including Subsidies for New Car Purchases* <https://australiainstitute.org.au/post/majority-of-australians-support-ev-policies-including-subsidies-for-new-car-purchases/>

challenges, of the transition to EVs”.<sup>10</sup> While the majority of the Senate Committee’s recommendations were ignored, the Australian Government promised to deliver an EV strategy. The promised strategy was then consistently delayed - postponed from 2019 to mid-2020,<sup>11</sup> to late-2020<sup>12</sup> - and finally taking the form of a ‘consultation paper’ rather than a strategy and from EVs to ‘future fuels’.<sup>13</sup>

Vehicle manufacturers have demonstrated a reluctance to bring vehicles to markets with no clear commitment to EVs, including in Australia. Recently, Managing director of Volkswagen Australia Michael Bartsch commented on the effect of Australian EV policy on Volkswagen’s decisions on where to market its EV models:

“Hardly a day goes by when we don’t get an inquiry from someone who would dearly love to buy a Volkswagen electric vehicle, and we have to tell them we don’t know when we can introduce them. It seems to get more and more uncertain... I guess the way I would put it is that it is embarrassing”<sup>14</sup>

Australia is trailing other nations in EV adoption. For the year 2020, EVs (battery and plug-in electric vehicles) accounted for 0.7% of new vehicle sales, compared to the global average of 4.2%.<sup>15</sup> In Norway, where ambitious public policies promote EV uptake, 75% of new car sales are EVs.<sup>16</sup>

In February 2021 the Government delivered the Future Fuels Discussion Paper (FFDP) – the consultation paper that is the Morrison government’s central plan to reducing carbon emissions from Australia’s road transport sector. It contains no new funding commitments, no EV uptake targets, and no vehicle emissions standards.<sup>17</sup> Critically, the FFDP rules out

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<sup>10</sup> Senate Select Committee on Electric Vehicles (2019) *Recommendations*.

[https://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Electric\\_Vehicles/ElectricVehicles/Report/b02](https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Electric_Vehicles/ElectricVehicles/Report/b02)

<sup>11</sup> Schmidt (2020) *Coalition says no plans for electric vehicle strategy until mid-2020*.

<https://thedriven.io/2019/03/26/coalition-says-no-plans-for-electric-vehicle-strategy-until-mid-2020/>

<sup>12</sup> Angus Taylor MP (2020) *Supporting new technology to drive uptake of electric vehicles*.

<https://www.minister.industry.gov.au/ministers/taylor/media-releases/supporting-new-technology-driveuptake-electric-vehicles>

<sup>13</sup> Environment and Communications Legislation Committee (2021) *Proof Committee Hansard- Monday 22 March 2021*. [https://www.aph.gov.au/Parliamentary\\_Business/Hansard/Estimates\\_Transcript\\_Schedule](https://www.aph.gov.au/Parliamentary_Business/Hansard/Estimates_Transcript_Schedule)

<sup>14</sup> O’Malley (2021) *VW boss says ‘embarrassing’ rules stop cheap electric car imports*.

<https://www.smh.com.au/business/consumer-affairs/vw-boss-says-embarrassing-rules-stop-cheap-electric-car-imports-20210322-p57d85.html>

<sup>15</sup> Harris (2021) *Maker of world’s most popular electric car blasts Australia’s lack of ambition*.

<https://www.smh.com.au/politics/federal/maker-of-world-s-most-popular-electric-car-blasts-australia-s-lack-of-ambition-20210302-p5772f.html>

<sup>16</sup> Fraser (2021) *EV sales figures show Australian uptake in the slow lane*.

<https://www.whichcar.com.au/car-news/australian-ev-uptake-stuck-in-the-slow-lane>

<sup>17</sup> DISER (2021) *Future Fuels Strategy: Discussion Paper*. <https://consult.industry.gov.au/climate-change/future-fuels-strategy/>

financial incentives for EV uptake, despite most G20 countries offering incentives that are shown to successfully drive early-stage adoption of electric vehicles.<sup>18</sup>

This submission addresses the priority initiatives of the FFDP, highlights successful EV policies that have been excluded from the FFDP, and identifies the misleading modelling included in the FFSD.

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<sup>18</sup> BloombergNEF (2021) *G20 Zero-Carbon Policy Scoreboard*.

<https://assets.bbhub.io/professional/sites/24/BNEF-G20-Zero-Carbon-Policy-Scoreboard-EXEC-SUM.pdf>

# Priority Initiatives

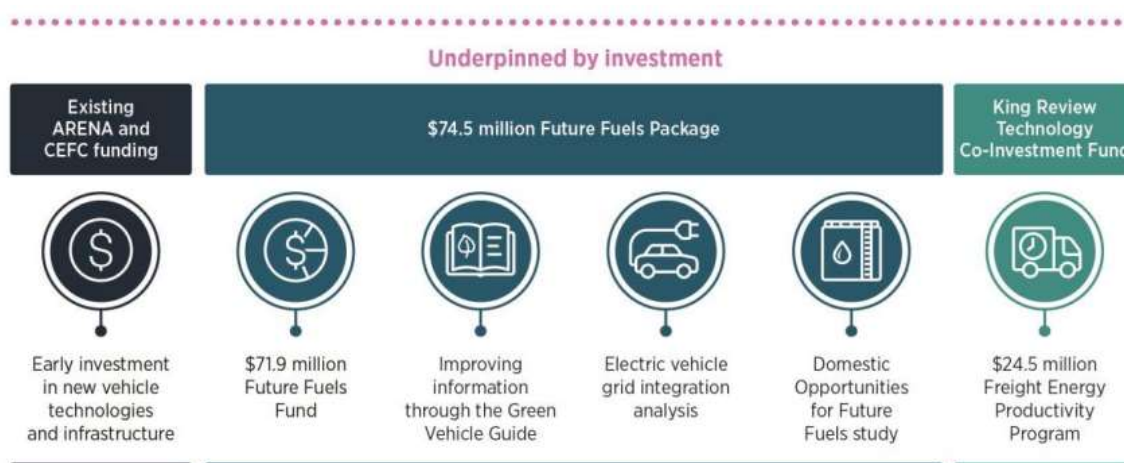
The FFDP lists five priority initiatives:<sup>19</sup>

1. Electric vehicle charging infrastructure and hydrogen refuelling infrastructure where it is needed,
2. early focus on commercial fleets,
3. improve information for motorists and fleets,
4. integrating battery electric vehicles into the grid,
5. and supporting Australian innovation and manufacturing.

While these initiatives are welcome, the FFDP does not detail how they will be achieved, or the policy mechanisms that will support them. Furthermore, any policies to support these initiatives will be restricted by the limited investment underpinning them.

The FFDP contains no new funding commitments. The funding commitments listed in the FFSD (see figure 2, below) come from pre-existing sources: The Australian Renewable Energy Agency (ARENA), the Clean Energy Finance Corporation (CEFC), and the \$72 million Future Fuels Fund (the Fund) under ARENA, as announced in the October 2020 budget.

**Figure 2. Future Fuels Strategy - Investment**



Source: Future Fuels Strategy Discussion Paper, page 6.

It is unclear how much funding is available for each initiative. For example, priority one acknowledges that EV charging infrastructure is needed, but does not stipulate how much of the Fund will be co-invested in EV charging stations or used to support commercial fleets undertake EV charging station installation projects. According to ARENA, the First Round of the Fund will make \$16.5 million available to fund EV charging infrastructure, while future

<sup>19</sup> DISER (2021) *Future Fuels Strategy: Discussion Paper*, p 6.

rounds will support 'other future fuels including hydrogen and biofuels, as well as reducing barriers for other road transport users such as commercial fleets, trucks and buses.'<sup>20</sup> This suggests that only a limited amount of the Fund will be available for EV charging infrastructure.

## FLEETS FIRST APPROACH

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The FFDP takes a 'fleets first' approach, acknowledging the effective role that bulk fleet purchases play in EV adoption. Businesses accounted for 40% of new light vehicle sales in 2020, making fleet purchasing decisions a major potential driver of EV uptake.<sup>21</sup> The relatively fast turnover rate of fleet vehicles means electrification of fleets will drive the expansion of a second-hand EV market in Australia.

However, despite purporting to focus on transitioning fleets, the FFDP offers little in the way of policies to encourage fleet electrification. Action 2.1 states '[t]he Future Fuels Fund will support businesses to trial new vehicle technologies and fuel options across the spectrum of fleet vehicles used in Australia, and help with infrastructure needs.' It is not clear how much of the Fund will be allocated to this action, how the funding will be allocated, or which vehicle technologies will be funded.

The FFDP does not include government fleet targets or incentives/tax exemptions to accelerate fleet uptake. A government fleet target for new light passenger vehicles would demonstrate leadership and send a strong signal to vehicle manufacturers. The Australian EV Market Study conducted interviews with Original Equipment Manufacturers (OEMs) to understand the impact of fleet targets on EV purchases and model availability. It found:

“if government or private fleet operators see an overseas model that will suit their fleet requirements, and they can promise 200 sales per year, OEMs may be willing to introduce that model into Australia.”<sup>22</sup>

Thus, Government fleet targets not only increase EV sales, but could also lead to the introduction of new EV models in Australia.

Fringe benefits tax (FBT) exemptions are another mechanism to drive fleet uptake that is not addressed in the FFDP. FBT exemptions for EVs have been recommended by the

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<sup>20</sup> ARENA (2021) *Future Fuels Fund Round 1: Public Battery Electric Vehicle Fast Charging Infrastructure Guidelines*, p 2. <https://arena.gov.au/assets/2020/04/future-fuels-fund-round-1-ev-guidelines.pdf>

<sup>21</sup> DISER (2021) *Future Fuels Strategy: Discussion Paper*, p 4.

<sup>22</sup> Energeia for ARENA (2018) *Australian EV Market Study Report*, p 23.

<https://arena.gov.au/knowledge-bank/australian-electric-vehicle-market-study/>

NRMA,<sup>23</sup> the Chair of the Senate Select Committee on EVs,<sup>24</sup> and others.<sup>25</sup> Providing an FBT exemption for electric vehicles (including through novated leases) until they reach price parity with ICE vehicles would counteract their higher capital costs, making them a more attractive option for fleet operators. The FBT exemption could also be extended to novated leases.<sup>26</sup> In the last week of March, the Federal Labor Party supported a form of FBT exemption, raising further questions as to why this is not included in the FFDP process.

Priority Three of the FFDP (Improving information for motorists and fleets) would be more effective at driving EV uptake if coupled with policies to make EVs more affordable. Australian fleet operators would prefer the Government provide subsidies to reduce the cost of EVs than provide knowledge about EVs and infrastructure.

The Australasian Fleet Management Association (AFMA) surveyed 177 fleet operators about government policies to encourage EV transition. Just under half (45%) rank 'subsidies to reduce the cost of EVs' as a top 3 policy, while a quarter (24%) rank 'provide knowledge about EVs and infrastructure' as a top 3 policy.<sup>27</sup>

If the federal government is serious though about pursuing the provision of knowledge to drive uptake, the easiest place to start is correcting the false information on EVs it provided during the 2019 election campaign.<sup>28</sup>

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<sup>23</sup> NRMA (2020) *EVs: Accelerating Adoption in Australia*.

<https://www.mynrma.com.au/-/media/documents/evs/evs-accelerating-adoption-in-australia.pdf?>

<sup>24</sup> Senate Select Committee on Electric Vehicles (2019) *Chairs Additional Comments*.

[https://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Electric\\_Vehicles/ElectricVehicles/Report](https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Electric_Vehicles/ElectricVehicles/Report)

<sup>25</sup> ClimateWorks (2016) *The path forward for electric vehicles in Australia*.

[https://www.climateworksaustralia.org/wpcontent/uploads/2019/11/the\\_path\\_forward\\_for\\_electric\\_vehicles\\_in\\_australia\\_-\\_submission\\_to\\_the\\_federal\\_government\\_vehicle\\_emissions\\_discussion\\_paper\\_1.pdf](https://www.climateworksaustralia.org/wpcontent/uploads/2019/11/the_path_forward_for_electric_vehicles_in_australia_-_submission_to_the_federal_government_vehicle_emissions_discussion_paper_1.pdf)

<sup>26</sup> Ibid.

<sup>27</sup> AFMA (2020) *Electric Vehicles in Business Fleets*.

<https://afma.org.au/electric-vehicles-in-business-fleetsreport/#download>

<sup>28</sup> ABC (2019) *Prime Minister Scott Morrison says an electric vehicle can't tow a boat or trailer. Is he correct?*

<https://www.abc.net.au/news/2019-05-10/federal-election-fact-check-electric-vehicle-tow-boat/11078464?nw=0>

# Policies excluded

The FFDP omits some of the most effective policies for increasing EV uptake. The Australian Electric Vehicle Market study, prepared by ENERGEIA for government-funded bodies ARENA and CEFC conducted a market review of electric vehicle sales, stock and infrastructure, to determine which policies and regulations impact most strongly on EV purchase decisions. It found:

- An increase in direct purchase incentives would drive EV model availability and demand,
- fleet procurement targets increase model availability and overall uptake,
- and vehicle CO<sub>2</sub> standards (set at 105g/km) would increase EV availability and uptake in Australia.

As discussed above, fleet procurement targets are not included in the FFDP despite it apparently taking a 'fleets first approach'. Vehicle emissions standards and direct purchase incentives are also excluded from the FFDP.

## CO<sub>2</sub> EMISSIONS STANDARDS

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Australia is one of the only OECD countries with no fuel efficiency standards. Mandatory fuel efficiency standards have been adopted in approximately 80% of the global light vehicle market, including in the US, EU, Canada, Japan, China, South Korea and India.<sup>29</sup>

Figures released by the Federal Chamber of Automotive Industries (FCAI) show Australian light passenger vehicles emit 23% more CO<sub>2</sub> than their European counterparts, and Australian heavy SUVs, utes and vans emit 38% more than their European counterparts.<sup>30</sup>

Fuel efficiency (CO<sub>2</sub>) standards are key policy levers for driving EV uptake and increasing EV model availability. Research by Transport and Environment shows that when European emissions standards (set at 95g CO<sub>2</sub>/km) came into effect, EV market share grew from 3% in 2019 to 10.5% in 2020. Following the new vehicle emissions standards, Europe saw the largest decrease in new car CO<sub>2</sub> emissions since data has been available.<sup>31</sup>

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<sup>29</sup> Australian Government (2016) *Improving the efficiency of new light vehicles*.

[https://www.infrastructure.gov.au/vehicles/environment/forum/files/Vehicle\\_Fuel\\_Efficiency\\_RIS.pdf](https://www.infrastructure.gov.au/vehicles/environment/forum/files/Vehicle_Fuel_Efficiency_RIS.pdf)

<sup>30</sup> The Driven (2021) *Australian cars, utes and vans are up to 40 pct dirtier than in Europe*,

<https://thedriven.io/2021/03/25/australian-cars-utes-and-vans-are-up-to-40-dirtier-than-in-europe/>

<sup>31</sup> Transport and Environment (2021) *Mission (almost) accomplished*, p 22.

[https://www.transportenvironment.org/sites/te/files/publications/2020\\_10\\_TE\\_Car\\_CO2\\_report\\_final.pdf](https://www.transportenvironment.org/sites/te/files/publications/2020_10_TE_Car_CO2_report_final.pdf)

A ministerial Forum on vehicle emissions was established by the Turnbull government in 2015, but has gone nowhere.<sup>32</sup> This major policy failure is not addressed by the FFDP.

## DIRECT FINANCIAL INCENTIVES

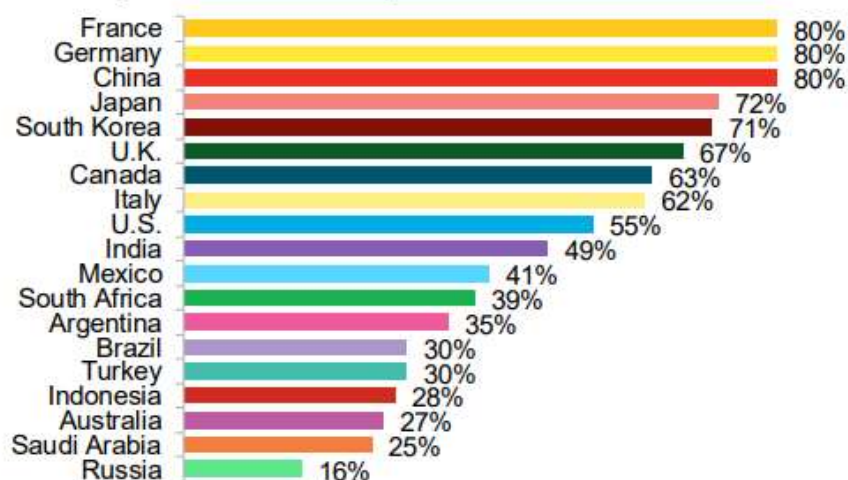
Direct financial incentives or subsidies are one of the most effective policies to drive EV uptake. Neither are included in the FFDP.

The Bloomberg G20 Zero-Carbon Policy Scoreboard report assesses the decarbonisation policies implemented by G20 countries. For road transport policies, Australia ranks third last, ahead of only Saudi Arabia and Russia – two of the world’s largest oil exporters. Australia’s score of 27% is well below the top score of 80% for France, Germany, and China – countries that have implemented robust policies to drive EV sales.<sup>33</sup>

According to the Bloomberg Policy Scorecard, “Policies lowering the upfront costs have been the most effective tool for driving early-stage adoption of passenger EVs and are offered in most G20 countries.”

**Figure 3. Bloomberg G20 Zero-Carbon Policy Scorecard – road transport**

**Figure 23: Country scores – road transport**



Source: BloombergNEF (2021) p 24.

The Australian EV market study report also concludes that direct financial incentives have the biggest impact on EV purchase decisions. It finds that in Norway, the leading country in EV uptake, financial incentives impact most strongly on EV purchase decisions, with non-financial incentives playing a supporting role.<sup>34</sup> Reviewing ‘leading international

<sup>32</sup> DITRDC (2021) *Ministerial Forum on Vehicle Emissions*.

<https://www.infrastructure.gov.au/vehicles/environment/forum/index.aspx>

<sup>33</sup> Bloomberg New Energy Finance (2021) *G20 Zero-Carbon Policy Scoreboard*, p 24.

<https://assets.bbhub.io/professional/sites/24/BNEF-G20-Zero-Carbon-Policy-Scoreboard-EXEC-SUM.pdf>

<sup>34</sup> Energeia for ARENA (2018) *Australian EV Market Study Report*, p 2.

<https://www.arena.gov.au/assets/2018/06/australian-ev-market-study-report.pdf>



jurisdictions', it concludes that "up-front financial incentives, that reduce the purchase cost of the PEV [plug-in], were identified as the most impactful on PEV uptake."<sup>35</sup>

The FFDP defends the lack of financial incentives through modelling that purportedly shows incentives are uneconomical. However, as discussed further in this submission, this modelling is misleading and was only added to the FFDP in the months before its release.

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<sup>35</sup> Ibid, p 18.

# Misleading modelling

The FFDP includes cost modelling that compares the total cost of ownership of EVs, ICE vehicles and hybrids, and emissions modelling that compares light vehicle emissions from EVs, ICE vehicles and hybrids.

A leaked copy of the FFDP was obtained by the media in December 2020.<sup>36</sup> There was no mention in media reporting of the cost modelling or the emissions modelling. The Department of Industry, Science, Energy and Resources was questioned about the modelling in the FFDP which was published on 5 February 2021. Department officials confirmed the modelling had been conducted ‘through November and December’<sup>37</sup> – just months before the document was released. Recall this documents has been in the works since early 2019.

This suggests that the modelling used in the FFDP to justify the absence of EV incentives was conducted *after* the Government had decided on its approach and ruled out including incentives.

Department officials also confirmed that the decision to add the last-minute modelling came through engagement with the Minister’s office.<sup>38</sup>

Furthermore, figures from these models have been used by the Minister for Energy and Emissions Reduction, Angus Taylor, to claim that EV incentives do not represent value for money.<sup>39</sup> This is despite the FFDP clearly stating that the total cost of ownership comparison is for ‘*illustrative purposes only*’.<sup>40</sup>

The modelling presents a misleading account of EV emissions and costs, as outlined briefly below.

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<sup>36</sup> Clarke (2020) *Australia’s electric car strategy only doing ‘the bare minimum’, expert says of leaked draft*. <https://www.abc.net.au/news/2020-12-15/federal-government-draft-paper-into-electric-vehicle-use-slammed/12983416>

<sup>37</sup> Environment and Communications Legislation Committee (2021) *Proof Committee Hansard- Monday 22 March 2021*, p 115.

<sup>38</sup> Ibid.

<sup>39</sup> Angus Taylor MP (2021) *Supporting future fuel technologies and consumer choice*.

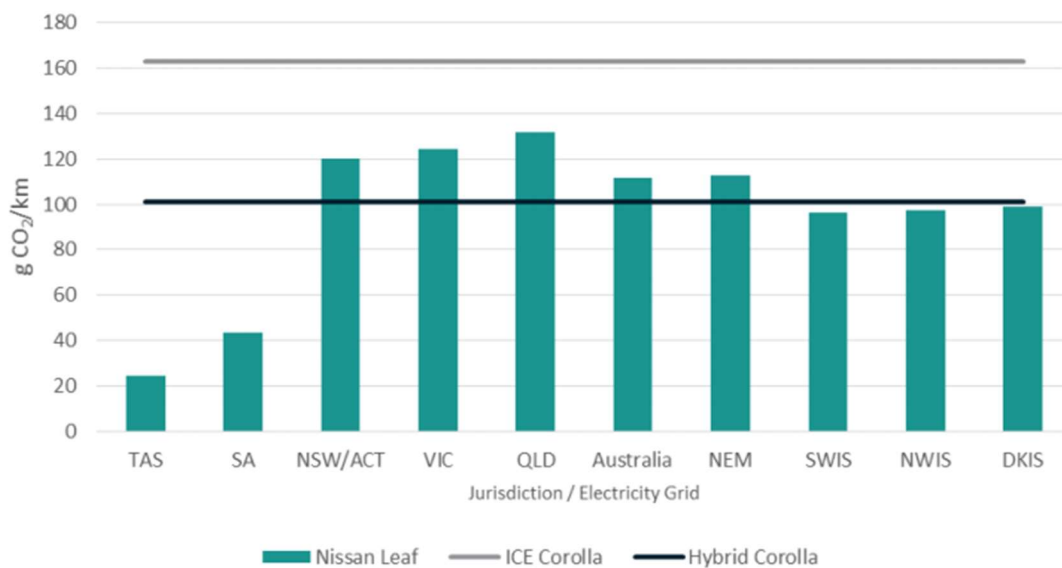
<https://www.minister.industry.gov.au/ministers/taylor/media-releases/supporting-future-fuel-technologies-and-consumer-choice>

<sup>40</sup> DISER (2021) *Future Fuels Strategy: Discussion Paper*, p 31.

# COMPARISON OF LIGHT VEHICLE EMISSIONS ACROSS JURISDICTIONS AND GRIDS

The comparison of light vehicle emissions across jurisdictions and grids is in Attachment A of the FFDP and shown below in Figure 4. The emissions comparison is calculated using the indirect Scope 2 and 3 combined emissions factors for Australia’s electricity grids averaged over 2021-2025. These are sourced from the December 2020 Emissions Projections.<sup>41</sup>

**Figure 4. FFDP Comparison of light vehicle emissions across jurisdiction and grids using 2021-25 electricity emissions factors**



Source: Future Fuels Strategy: Discussion Paper<sup>42</sup>

The comparison inflates the emissions associated with an EV by restricting the analysis to five years. The projected emissions factors for all Australia’s electricity grids decline out to 2030. By averaging the emissions factors over a five year period rather than the ten year life-span of a vehicle, the comparison does not fully account for the declining emissions intensity of the electricity supply system over the life of a vehicle.

The comparison does not consider renewable electricity charging options. Many EV owners charge their EVs using rooftop solar. A survey of Australian EV owners conducted in 2018 found that *almost three quarters* (73%) owned rooftop solar systems and that the vast majority of charging occurred in the home (80 per cent).<sup>43</sup> Public charging stations too, are

<sup>41</sup> Department of Industry, Science, Energy and Resources (2020) *Australia’s Emissions Projections 2020*.

<https://www.industry.gov.au/sites/default/files/2020-12/australias-emissions-projections-2020.pdf>

<sup>42</sup> DISER (2021) *Future Fuels Strategy: Discussion Paper*, p 34.

<sup>43</sup> Whitehead (2019) *Clean, green machines: The truth about electric vehicle emissions*.

<https://theconversation.com/clean-green-machines-the-truth-about-electric-vehicle-emissions-122619>

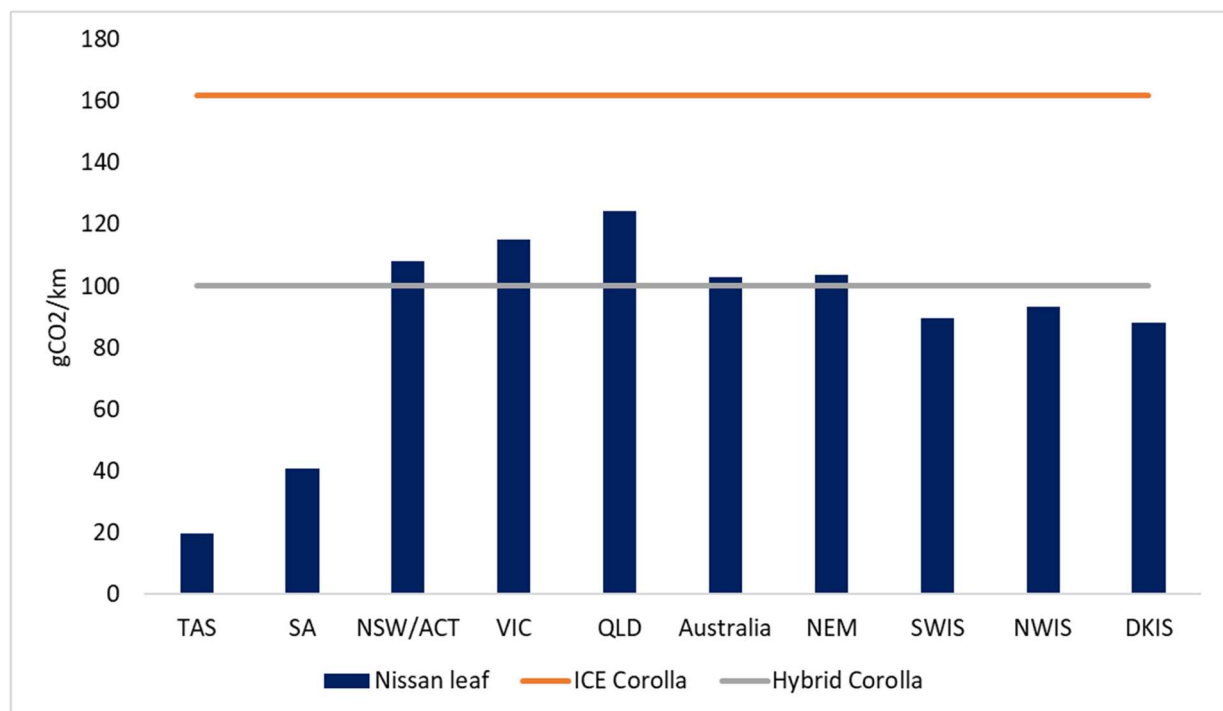
often powered exclusively by renewable energy. Australia’s largest EV charging network – Chargefox – is powered by 100% renewable energy.<sup>44</sup>

Figures 5 and 6 (below) illustrate what the FFDP’s comparison of light vehicle emissions would look like if the emissions factors were averaged over the full life of the vehicle (Figure 5), and in a scenario where EVs are charged by off-grid renewable electricity 20% of the time (Figure 6). Figures 5 and 6 do not depict the actual emission impact of vehicles, but rather highlight what the FFDP modelling would look like under different assumptions and time frames.

When the emissions profile for the full life of the vehicle is included, the FFDP’s claim that ‘hybrids ... have immediate emissions reduction benefits, even over battery electric vehicles’ no longer stands for the average Australian grid.

When 20% off-grid renewable electricity charging is included, the emissions intensity profile of EVs falls below that of the hybrid for every Australian grid, and well below the ICE vehicle.

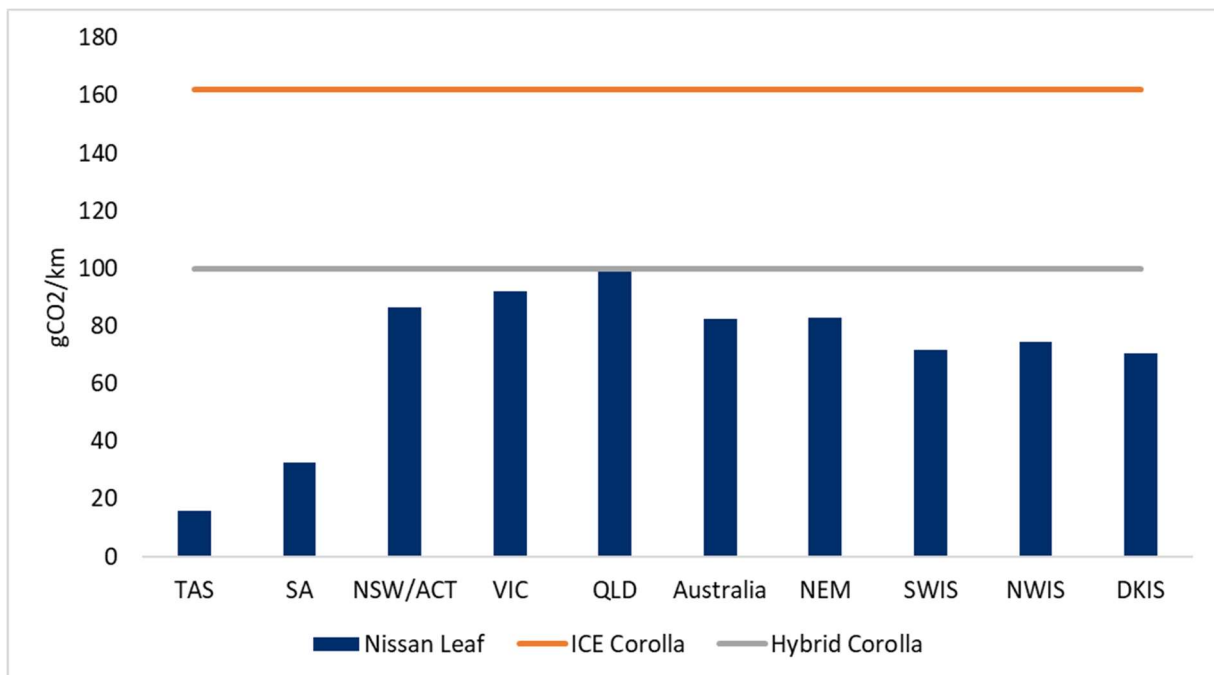
**Figure 5. comparison of light vehicle emissions, based on FFDP, average over 2021-30**



Source: Future Fuels Discussion Paper and emissions factors from Australia’s Emissions Projections 2020

<sup>44</sup> Chargefox (2021), <https://www.chargefox.com/>

**Figure 6. comparison of light vehicle emissions, based on FFDP, averaged over 2021-30, assuming 20% off-grid renewable electricity**

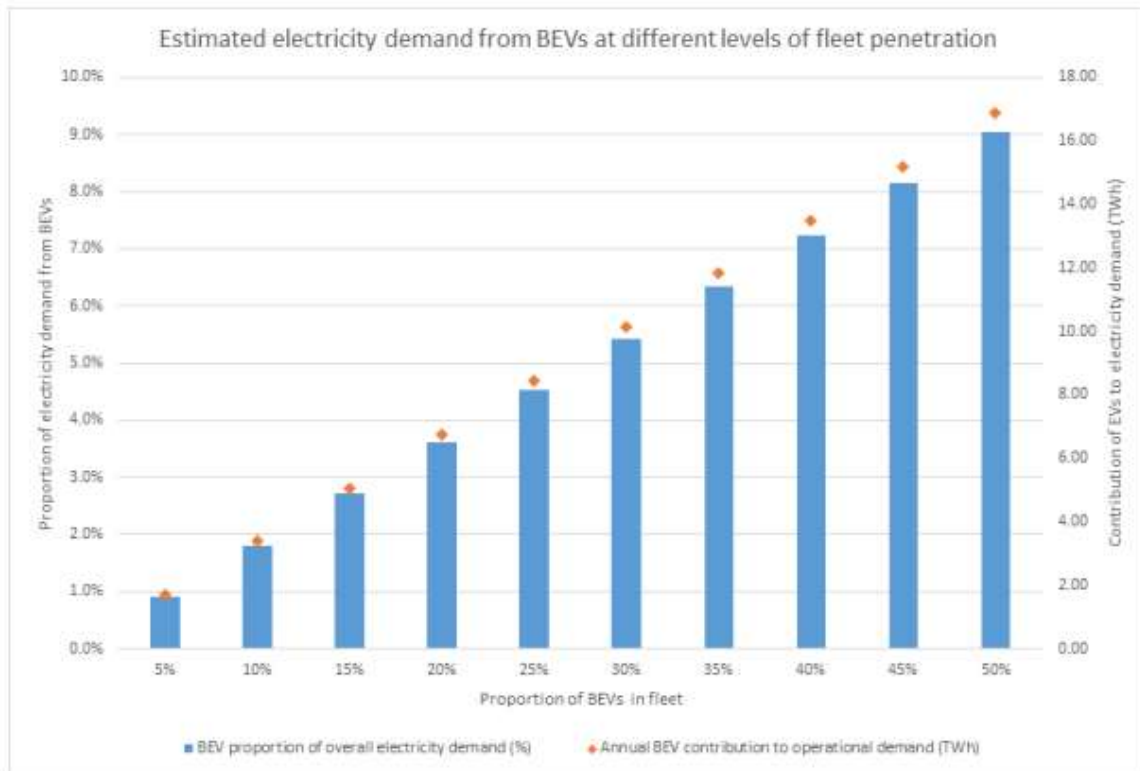


Source: Future Fuels Discussion Paper and emissions factors from Australia’s Emissions Projections 2020

Additionally, by focusing on the average emissions intensity of electricity generation, the comparison does not account for the additional supply of renewable electricity that is likely needed to meet demand. Figure 7 (below), from the FFDP highlights the additional electricity demand from EVs at different levels of fleet penetration. The Australian electricity supply mix is moving away from fossil fuels, and new capacity is predominantly renewable. Thus, the marginal supply response to the increased electricity demand from EVs will be far lower than the average emissions intensity.<sup>45</sup>

<sup>45</sup> For more detail, see: Richardson (2018) *Submission to the Senate Inquiry into electric vehicles*. [https://www.aph.gov.au/Parliamentary\\_Business/Committees/Senate/Electric\\_Vehicles/ElectricVehicles/Submissions](https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Electric_Vehicles/ElectricVehicles/Submissions)

**Figure 7. FFDP- The impact of EVs charging on annual electricity demand**



Source: Future Fuels Discussion Paper, p 20

Other factors influencing the outcome of the emissions comparison are not acknowledged in the text of the FFDP. The comparison uses fuel consumption values reported under test conditions without acknowledging the well-documented gap between real-world measurements and test-condition measurements.<sup>46</sup> It also includes ‘scope 3’ emissions, not normally included in grid intensity calculations.<sup>47</sup>

The emissions comparison included in the FFDP is out of step with other, more comprehensive, lifecycle emissions analyses. A recent study of lifecycle CO<sub>2</sub> emissions by European research outfit Transport and Environment found that the average EU electric car emits almost a third the CO<sub>2</sub> of an equivalent conventional car. EVs emit less CO<sub>2</sub> than ICEs, even in the worst-case scenario where the battery is produced in China and the vehicle is driven on Poland’s coal-heavy electricity grid.<sup>48</sup> A lifecycle assessment of greenhouse gas emissions from Australian passenger vehicles by Transport Energy Emissions Research finds

<sup>46</sup> Australian Automobile Association (2021) *The Real-world driving emissions test*.  
<https://www.aaa.asn.au/get-involved/realworld/>

<sup>47</sup> Joshi (2021) *Taylor rehashes old climate delay tactics with new hybrid vehicle plan*.  
<https://reneweconomy.com.au/taylor-rehashes-old-climate-delay-tactics-with-new-hybrid-vehicle-plan/>

<sup>48</sup> Transport and Environment (2020) *How Clean Are Electric Cars*.  
<https://www.transportenvironment.org/sites/te/files/T%26E%2%80%99s%20EV%20life%20cycle%20analysis%20LCA.pdf>

that EVs significantly reduce lifecycle emissions rates for passenger vehicles compared to fossil-fuelled vehicles.<sup>49</sup>

In fact, the FFDP emissions modelling contradicts the Government’s own analysis, located in the same emissions projections document referenced by the FFDP. Page 30 of the 2020 Emissions Projections includes an estimate of emissions intensity of electric vehicles compared to ICE vehicles in 2020, 2025 and 2030. For the year 2020, the Emissions Projections estimate EV emissions intensity at 111g CO<sub>2</sub>-e/km, dropping to 83g CO<sub>2</sub>-e/km in 2025 and 68g CO<sub>2</sub>-e/km by 2030. By 2025, battery electric vehicles have a lower emissions intensity profile than the hybrid vehicle example used in the FFDP.

**Figure 8. Projected emissions intensity of light duty vehicles, DISER**

*Table 13: Projected emissions intensity of new light duty vehicles, g CO<sub>2</sub>-e per km*

	2020	2025	2030
<b>Internal combustion engines (g CO<sub>2</sub>-e per km)</b>	222	208	196
<b>Battery electric, excl. plug-in hybrids (g CO<sub>2</sub>-e per km)</b>	111	83	68

DISER Emissions Projections 2020, p 33.

When asked in 2018 about the emissions associated with EVs compared to ICEs, then Energy Minister Josh Frydenberg said the Nissan Leaf had a smaller carbon footprint than the Toyota Corolla;

“It depends on the vehicle, but by and large electric vehicles will be much more lower in emissions intensity than conventional cars, particularly over time, as the grid goes down in its own emissions intensity,”

## ABATEMENT COST WALK THROUGH

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The total cost of ownership comparison included in the FFDP was used by the Minister for Energy and Emissions Reductions Angus Taylor, to claim that EV subsidies do not represent value-for-money. In a joint media release from Deputy Prime Minister Michael McCormack, Christian Porter MP, Keith Pitt MP, Stuart Robert MP, Michelle Landry MP and Senator Jonathon Duniam, it is stated:

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<sup>49</sup> Smit (2020) *Meeting our greenhouse gas emission targets: can electric vehicles meet the challenge? – A probabilistic Life Cycle Assessment (LCA) for GHG emissions from Australian passenger vehicles.*  
[https://51431d88-662c-4884-b7bc-b5b93a225b7d.filesusr.com/ugd/d0bd25\\_bbeb4c905a2b4121b0ef3870648f78cf.pdf](https://51431d88-662c-4884-b7bc-b5b93a225b7d.filesusr.com/ugd/d0bd25_bbeb4c905a2b4121b0ef3870648f78cf.pdf)

“Importantly, this discussion paper shows that closing this gap through subsidies for new technology vehicles is not value-for-money for taxpayers and is an expensive form of abatement. Depending on the vehicle type and use, this would cost up to \$747 per tonne of carbon dioxide equivalent or up to around \$8,000 over the life of a vehicle.<sup>50</sup>

The abatement figure used to claim that EV subsidies do not provide value-for-money is misleading. The \$747/tonne abatement figure comes from the ‘cost walk through examples’ detailed on page 31 of the FFDP. It is the high figure from a \$195-747 range.

To calculate the \$747/tonne abatement figure, the FFDP compares a Renault Kangoo MAXI (electric) with the Renault Kangoo Compact (petrol). This inflates abatement costs, due to the larger size and price of the MAXI version. Additionally, the cost analysis only looks at a five year financing period, further inflating abatement costs by ignoring the full fuel and maintenance savings of an EV over a ten year lifetime.

When questioned about the cost analysis during Senate Estimates, Ms Maguire from the Department of Industry, Science, Energy and Resources concluded by saying – “I think you could change all the assumptions that we made and get a different outcome”<sup>51</sup>.

While this is true for most modelling exercises, the assumptions made in the FFDP are not clearly outlined or explained. Despite clearly stating that the modelling is for “illustrative purposes only”, the upper number of the cost comparison range is being used by Ministers to justify the Government’s reluctance to introduce EV subsidies.

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<sup>50</sup> Angus Taylor MP (2021) *Supporting future fuel technologies and consumer choice*, <https://www.minister.industry.gov.au/ministers/taylor/media-releases/supporting-future-fuel-technologies-and-consumer-choice>

<sup>51</sup>Environment and Communications Legislation Committee (2021) *Proof Committee Hansard- Monday 22 March 2021*, p115.



# Conclusion

Australia is a laggard in EV uptake and policy development. To remedy this, the Government promised an EV strategy in early 2019. The recently released Future Fuels Discussion Paper is a do-nothing document. It is not focused purely on EVs, it is not a strategy, it contains no new funding commitments, rules out purchase incentives for EVs, and fails to include fleet procurement targets or vehicle CO<sub>2</sub> emissions standards.

The Australian Electric Vehicle Market Study, commissioned by tax-payers through ARENA, clearly concluded that purchase incentives, fleet procurement targets and CO<sub>2</sub> standards would drive EV uptake and model availability in Australia. It is unclear why the Government has chosen to ignore a publically funded study on Australia's EV market for the purposes of informing policy makers. It is even more galling that the government has ignored its own EV emissions intensity projections – instead relying on misleading modelling.

The FFDP will limit consumer choice, not power choice, as its subtitle suggests. By ruling out many of the EV incentives that have been shown to work in other jurisdictions and are recommended by the Government's own commissioned research, the FFDP stifles consumer choice and ability to purchase an affordable EV. It prevents access to the range of EVs available in other jurisdictions, and denies many Australians the opportunity to own a vehicle that is cleaner, quieter, and cheaper to run.

## RECOMMENDATIONS

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The Australia Institute recommends the federal government:

- Remove the misleading modelling in Attachment A of the Future Fuels Discussion Paper, and redo the modelling with proper stakeholder consultations and full transparency of assumptions and objectives.
- Provide short-term financial incentives to reduce the purchase price of an electric vehicle. These could include upfront incentives or tax incentives.
- Introduce light vehicle CO<sub>2</sub> emissions standards, in line with European standards.
- Set a Government fleet target of 100% electric vehicles by 2030.

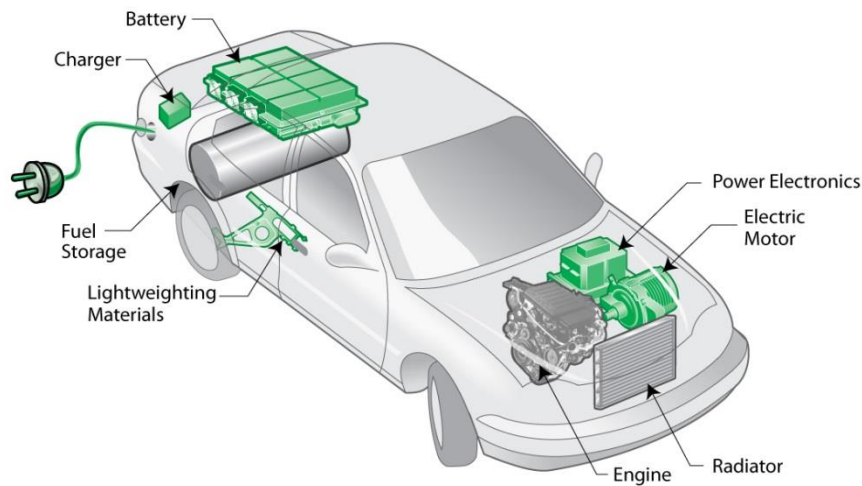
# Appendix

**Table 1: National targets to phase out ICE vehicles**

Country	Target	Year
Canada	All new cars sold 100% electric vehicles	2040
Colombia <sup>52</sup>	All new cars sold 100% electric vehicles	2035
Costa Rica	All new cars sold 100% electric vehicles	2050
Denmark	No new gasoline, diesel and PHEV vehicles	2035
France	No new fossil-fuelled passenger vehicles	2040
Germany	All new cars sold 100% electric vehicles	2050
Japan <sup>53</sup>	No new fossil-fuelled passenger vehicles	2035
Iceland	No new gasoline and diesel passenger vehicles	2030
Ireland	No new fossil-fuelled passenger vehicles	2030
Israel	No new gasoline or diesel vehicles	2030
Netherlands	All new cars sold 100% electric vehicles	2030
Norway	All new passenger cars and light-duty vans sold 100% Zero Emissions	2025
Portugal	No new ICE vehicles	2040
Scotland	No new gasoline or diesel vehicles	2032
Singapore	No new internal combustion engine vehicles	2040
Sri Lanka	All new cars sold 100% electric or hybrid vehicles	2040
Spain	All new cars sold 100% electric vehicles	2040
Sweden	No new gasoline and diesel vehicles	2030
United Kingdom	No new petrol, diesel, hybrid or PHEV vehicles and vans	2030

<sup>52</sup> International Council on Clean Transportation (2020) *Growing momentum: Global overview of government targets for phasing out sales of new internal combustion engine vehicles*, <https://theicct.org/blog/staff/global-ice-phaseout-nov2020>

<sup>53</sup> Schmidt (2020) *Japan to ban fossil fuel car sales by 2035. Will Australia follow or become a Cuba?*, <https://thedriven.io/2020/12/04/japan-to-ban-fossil-fuel-car-sales-by-2035-will-australia-follow-or-become-a-cuba/>



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# Tasmania in pole position for electric car industry

## The potential of electric vehicles in Tasmania

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*Around the world, governments are using policy to embrace electric vehicles. This paper examines the technology's suitability for Tasmania.*

Discussion paper

Leanne Minshull  
September 2017

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Level 1, Endeavour House, 1 Franklin St

Canberra, ACT 2601

Tel: (02) 61300530

Email: [mail@tai.org.au](mailto:mail@tai.org.au)

Website: [www.tai.org.au](http://www.tai.org.au)



# Summary

Around the world, governments are recognising the benefits of wide-scale electric vehicle use and are supporting their uptake through policy.

Thanks to its compact geography, Tasmania would encourage people to purchase electric vehicles by providing even just a handful of public vehicle charging stations. This paper explores two options for providing coverage to a large part or most of the state, with three or six charging stations. These options cover the most travelled routes and the most popular tourism areas. They could be built for approximately \$1 million or \$2 million respectively.

## Hobart/Launceston option and Touring option



An electric vehicle fleet would use electricity sourced largely from the state's hydroelectric generators, which produce almost zero carbon emissions. This allows the fuel source for electric vehicles to be considerably cleaner than elsewhere, which would help reinforce Tasmania's international reputation as a "clean and green" tourist destination.

No other Australian state has taken a strong lead with electric vehicles. This hesitation represents an opportunity for Tasmania, as the capital cost of supporting the electric vehicle market's expansion is substantially lower than other states. Tasmania's population density, size and booming tourist industry all serve as competitive advantages that the state could exploit.

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# Introduction

Electric vehicles are popular with both sides of Tasmanian politics. In June 2015, Tasmanian Opposition Leader Bryan Green announced Labor's \$10 million electric car initiative, consisting of:<sup>1</sup>

- \$3 million dedicated to a partnership between Hydro Tasmania and the University of Tasmania to identify the state's infrastructure and technology requirements for an electric vehicle rollout;
- \$2 million dedicated to a pilot project rolling out electric vehicles throughout state government vehicle fleets; and
- \$5 million to finance the conversion of existing Metro buses from conventional fuels to electric power.<sup>2</sup>

Electric vehicles have enjoyed bipartisan support in Tasmanian state politics, for a number of years. In 2015, Liberal Party State Growth Minister Matthew Groom confirmed that the government was actively involved with partners Hydro Tasmania and TasNetworks to build the business case for deploying electric vehicles in Tasmania.<sup>3</sup>

While Tasmania's interest in electric vehicles is strong, both amongst the public and within its politics, the momentum to take it forward has stalled. Questions exist over the technology's suitability to the state's geographic conditions and commercial viability of the market itself. This paper examines the opportunities for Tasmania to develop a fleet of electric vehicles, the obstacles that must be overcome, and recommends strategies to maximise the state's opportunities in a cost-effective, market-oriented manner.

## ELECTRIC VEHICLES: A BACKGROUND

Electric vehicles are most easily differentiated from internal combustion engine (ICE) vehicles by their fuel source. Electric vehicles (or EVs) rely on a charged internal battery to power an electric motor to generate velocity. The battery is charged with an

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<sup>1</sup> Bryan Green, "Electric Cars a Natural Fit for Tasmania," *Hobart Mercury*, June 25, 2015.

<sup>2</sup> Bruce Mounster, "Buzz Grows on Car Plan," *Hobart Mercury*, October 29, 2015.

<sup>3</sup> *Ibid.*



external source of electricity, sourced either from the electricity distribution network ('grid') or from an off-grid, independent generation source, such as a solar panel.<sup>4</sup>

Unlike "hybrid" vehicles, which rely on both an electric motor and a backup internal combustion engine, battery-powered electric vehicles are powered by an electric motor and battery alone.<sup>5</sup> Just as the range of traditional ICE vehicles is determined by its fuel efficiency and its tank capacity, the range of an EV is contingent on both its efficiency and its battery size.

The battery is drained with use, and must be recharged to recover. To do so, EVs can rely on three broad strata of charging infrastructure, the details of which are outlined in the table below:

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<sup>4</sup> Anthony M. Vassallo, Philippe Gomme, and John E. Blik, "The Potential Influence of Electric Vehicles on the Transmission Network Serving Sydney," trans. School of Chemical & Biomolecular Engineering, TransGrid Powering Sydney's Future - Electric Vehicles (Sydney: University of Sydney, 2014).

<sup>5</sup> Australian Energy Market Operator, "National Electricity Forecasting Report," Emerging Technologies Information Paper (Melbourne: Australian Energy Market Operator, 2015).

**Table 1: Electric vehicle charging infrastructure**

Level	Voltage	Amperes	Power (kW)	Charging speed	Availability	Compatibility
<b>Level 1 (Nominal)</b>	240 A/C	10	2.4	3 to 8 km equivalent per hour	Universal; account for most household power outlets	Universal; vehicle does not require additional technology <sup>6</sup>
<b>Level 2 (Fast)</b>	240 A/C	30	7.2	16 to 30 km equivalent per hour	Moderate; account for most public charging stations, most private home garage chargers	Universal; requires additional charging equipment
<b>Level 3 (Superfast)<sup>7</sup></b>	400-600 D/C	125	> 50-75	95 to 130 km equivalent in 20 minutes	Limited; competing standards and proprietary technologies <sup>8</sup>	Limited; not compatible with all plug-in vehicles, and not all vehicles accept the power it requires.

Source: Australian Energy Market Operator<sup>9</sup>; Electric Vehicle Infrastructure Training Program and Clean Cities Alternative Fuels Data Center<sup>10</sup>

There are a number of electric vehicle models in Australia, though the market is much less developed than elsewhere internationally. Market penetration remains limited. Only three models of electric vehicles are sold in Australia. These are the Nissan LEAF, BMW i3, and Tesla Model S. The estimated prices and range of each model are reproduced below:

<sup>6</sup> Ethan N. Elkind and Anne Ku, “Electric Vehicle Paradise: How Hawai’i Can Lead The World in Deployment” (University of Hawai’i Maui College: University of California Berkeley School of Law, September 2013).

<sup>7</sup> Also referred to as ‘Supercharger’, ‘DC Level 2’.

<sup>8</sup> Cunningham, Wayne, “Slow, Fast, and Faster: Where to Charge Electric Cars,” *CNET*, October 1, 2013.

<sup>9</sup> Australian Energy Market Operator, “National Electricity Forecasting Report.”

<sup>10</sup> Electric Vehicle Infrastructure Training Program and Clean Cities Alternative Fuels Data Center, “Plug-In Electric Vehicle Handbook for Public Charging Station Hosts” (United States Department of Energy, 2012).

**Table 2: Comparison of currently-available electric vehicles in Australia**

Model	Price (\$AUD)	Range (kms)
<b>Nissan LEAF</b>	\$39,990	175
<b>BMW i3</b>	\$65,900	310
<b>Tesla Model S</b>	\$100,800	502

## **TOURISM INDUSTRY**

Tasmania’s tourism industry is a valuable and fast-growing sector of the state’s economy. Tourism in Tasmania directly and indirectly contributes around \$2.55 billion or 9.9 per cent to Gross State Product (GSP). The sector directly contributes \$1.17 billion and is a major employer.<sup>11</sup>

The health of the tourism sector relies heavily on the state’s reputation as clean, pristine and naturally beautiful<sup>12</sup>. A 2010 report into the consumer sentiments of Tasmania’s visitors found the state’s wilderness experiences have the strongest emotional associations, the greatest appeal and are the most potent motivators to shift travel intention to Tasmania.<sup>13</sup>

Despite this growth in demand for eco-tourism, consumer research suggests the market is yet to fully mature, with the number of survey respondents indicating they wish for their next travel experience to be more focused on the natural world dwarfing current demand.

A 2013 survey by Roy Morgan found one in five Australians want a “total ecotourism experience” for their next holiday, whereas only one in one hundred had such an experience.<sup>14</sup> This suggests the market has not yet expanded to meet latent demand. Survey data compiled by Tourism Tasmania indicates that, in the minds of visitors, Tasmania remains closely associated with scenery, nature, and the environment.<sup>15</sup>

This consumer preference for environmental sustainability sits comfortably with the state’s electricity generation profile, which is much cleaner than the national average.

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<sup>11</sup> Tourism Tasmania fast Facts <https://tourismtasmania.com.au/industry/facts>

<sup>12</sup> T21. “The Tasmanian Visitor Economy Strategy 2015-2020.” Hobart: Government of Tasmania, 2015

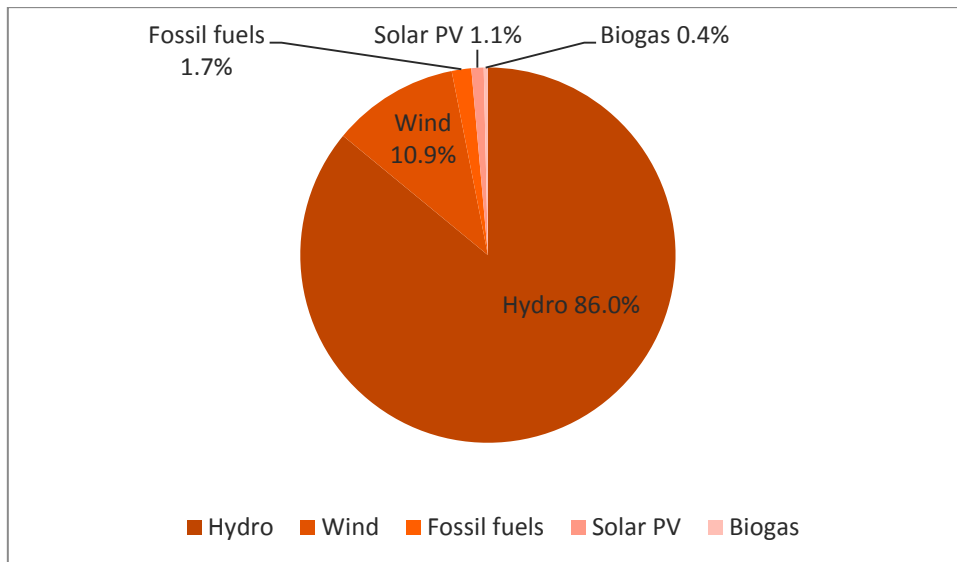
<sup>13</sup> Tourism Tasmania, “Appeal Triggers and Motivations for Tourism in Tasmania” (Hobart: Government of Tasmania, 2010).

<sup>14</sup> Roy Morgan Research, “Ecotourism Remains a Dream for Too Many,” *Finding No. 5037*, 2013.

<sup>15</sup> *Ibid.*

The profile of Tasmania’s electricity generation is highly unusual in that it features no coal-fired electricity generation capacity<sup>16</sup>. This contrasts with coal’s 53 per cent of generating capacity throughout the National Electricity Market (NEM).<sup>17</sup> A breakdown of the components of Tasmania’s electricity generation is provided below:

**Figure 1: Tasmanian electricity generation by fuel source, 2014-15, (GWh; share of generation)**



Source: Office of the Chief Economist<sup>18</sup>

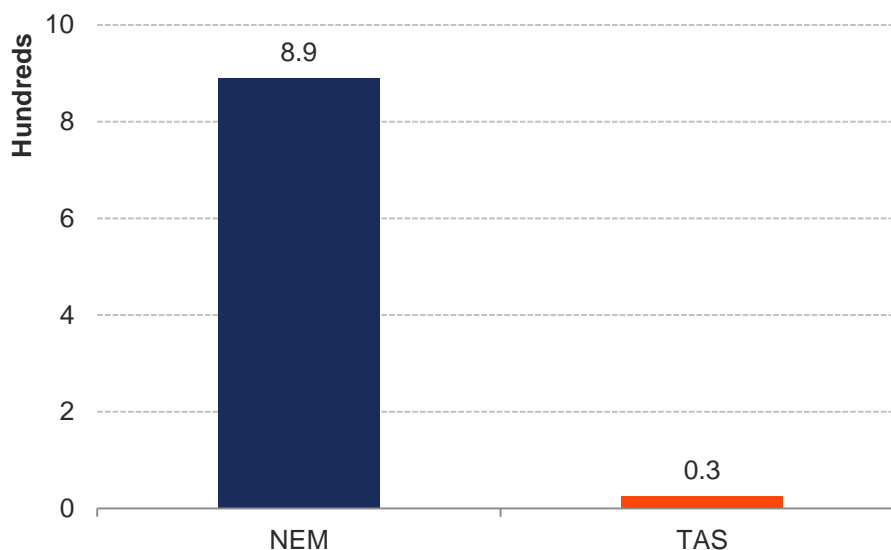
As a result of this electricity generation profile, Tasmania’s emissions of carbon dioxide-equivalent, or CO<sub>2</sub>-e, are far lower per giga watt hour (GWh) than that of the NEM more broadly. The comparison is provided below:

<sup>16</sup> Tasmania does import coal generated power from Victoria

<sup>17</sup> Australian Energy Regulator, “State of the Energy Market 2014” (Melbourne: Australian Competition and Consumer Commission, December 19, 2014).

<sup>18</sup> Office of the Chief Economist, “Australian Energy Statistics 2016” (Canberra: Department of Industry, 2016).

**Figure 2: Average tonnes CO2-e emitted per GWh electricity generated, 2014**



Source: Australian Energy Market Operator<sup>19</sup>

For firms seeking to promote their environmental credentials, Tasmania provides a unique and valuable opportunity to simultaneously exploit high levels of electricity without facing criticism for this input’s environmental consequences. As recent visitor surveys attest, the tourism industry could be a major beneficiary of that advantage.

Transport serves as both a large cost to consumers as well as a large component of Tasmania’s emissions. Transport accounts for 24 per cent of Tasmania’s total carbon emissions.<sup>20</sup> As EVs emit zero tailpipe emissions, and do not rely on the burning of fossil fuels for their energy, widespread adoption of this transport option could comfortably reduce Tasmania’s contribution to global warming.

The emissions resulting from the burning of fossilised carbon in fuels accumulate in the atmosphere, contributing to the absorption of warmth and heating of the planet.<sup>21</sup> Tasmania’s electricity generation is dominated by renewable sources. This lowers the emissions profile of Tasmania’s electricity, relative to the national average.

<sup>19</sup> Australian Energy Market Operator, “CDEI Summary Results 2014” (Australian Energy Market Operator, 2014).

<sup>20</sup> Tasmanian Climate Change Office, *Low Carbon Tasmania: Issues Paper 2013*.

<sup>21</sup> Nicholas Stern, *The Economics of Climate Change: The Stern Review* (Cambridge: Cambridge University Press, 2007).

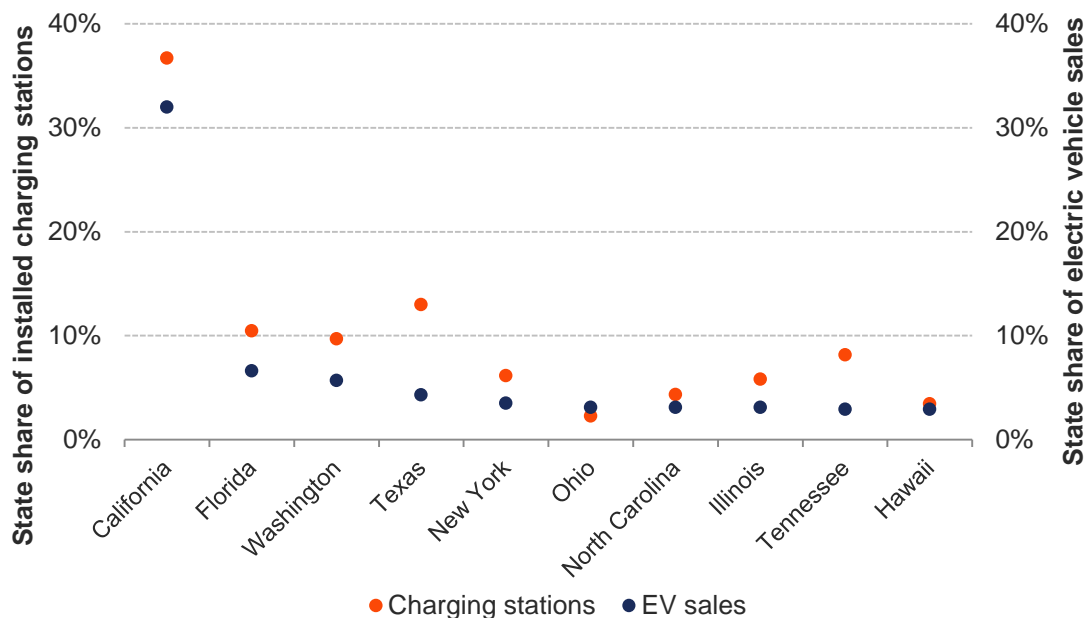
# How could Tasmania do it?

In its 2015 forecast of electricity trends, the Australian Electricity Market Operator (AEMO) noted the low number of electric vehicles in Australia. It suggested that there are three barriers to the EV sector’s expansion in Australia:

1. A lack of “significant policy incentives for consumers” to encourage EV purchase
2. The high capital cost of providing the means for an expansion
3. Consumer perception barriers, including a lack of awareness, concerns over effective range, and a lack of public infrastructure<sup>22</sup>

As is evidenced by the spotted pattern of expansion of electric vehicles in the United States, the availability of public charging infrastructure is a significant factor in the scale of electric vehicle uptake. States with the greatest availability of EV charging stations have seen the greatest expansion of their EV fleet, as illustrated in the figure below:

**Figure 3: Share of sales of electric vehicles and share of installed electric vehicle charging station, by state, USA**



Source: Miller<sup>23</sup>

<sup>22</sup> Australian Energy Market Operator, “National Electricity Forecasting Report.”

Tasmania’s compact geography makes the state an ideal environment for electric vehicles. An electric vehicle could drive from Hobart to Launceston and back to Hobart on a single charge.<sup>i</sup>

To date, only one supercharger has been installed in Australia. While the cost of its installation are commercial-in-confidence, the cost to install a supercharger in the United States ranges from \$140,000 USD (\$182,000 AUD) to \$175,000 USD (\$228,000 AUD).<sup>24</sup> Allowing for premiums on Australia’s labour costs, materials and planning, we conservatively estimate the cost to install one Tesla supercharger at \$307,000. Two potential options for a Tasmanian supercharger network are provided below.

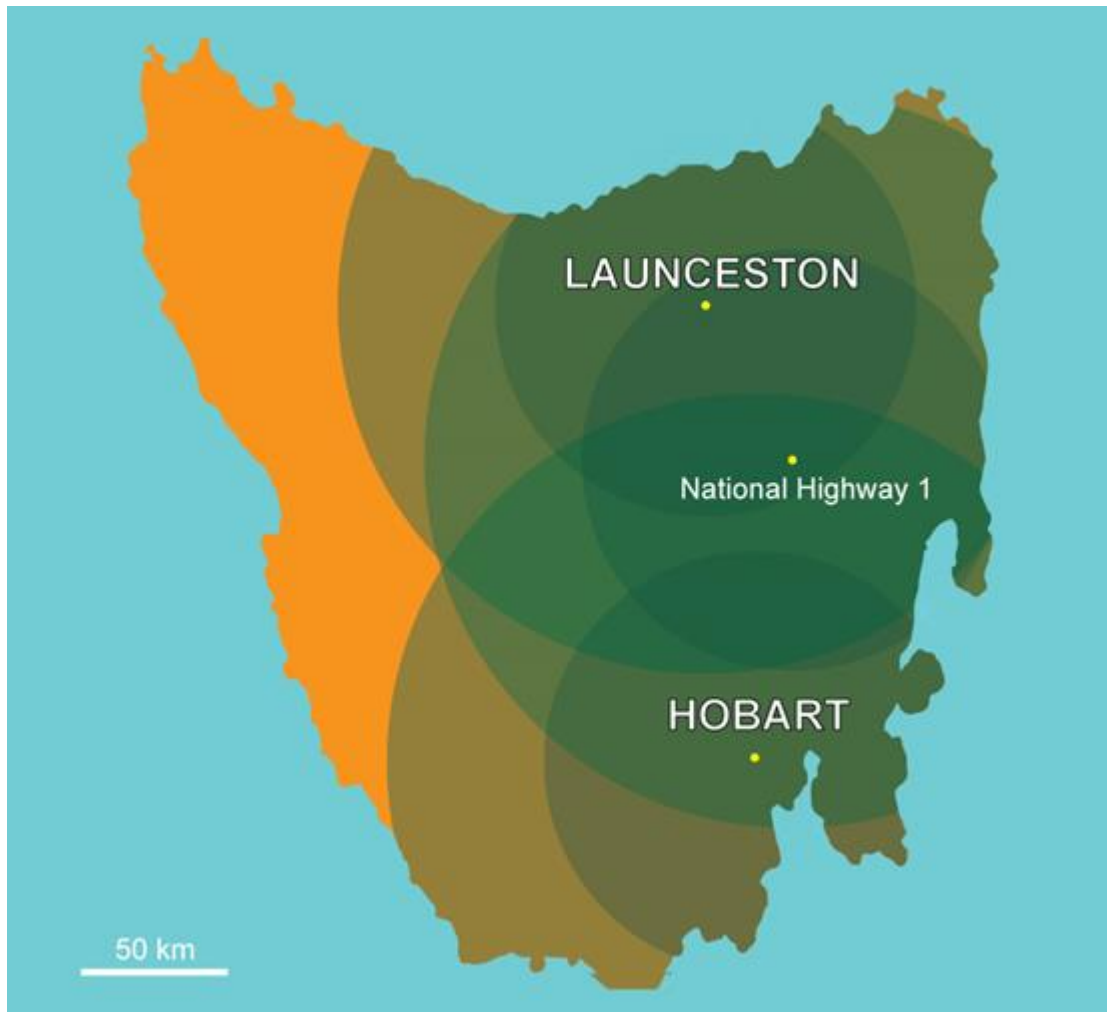
**Table 3: Supercharger map legend**

Circle	Radius represented (km)	Diameter represented (km)	Charge required to travel from epicentre to boundary and return (%)
Small circle	62.5	125	24.9
Large circle	125	250	49.8

<sup>23</sup> Jennifer Miller, “Electric Vehicle Tourism,” White Paper (Phoenix: Arizona State University, 2014).

<sup>24</sup> Office of Codes Enforcement, “Construction Report by Category” (Auburn: State of Alabama, 2014).

**Figure 4: Hobart/Launceston option**



The first option features chargers in:

- Launceston
- Hobart
- National Highway 1

This option uses only three charging stations to support some of Tasmania's most dense vehicle routes. The cost of installation is estimated at \$921,000.



**Figure 5: Blanket coverage option**



The second option features superchargers in:

- Strahan
- Derwent Bridge
- Hobart
- Devonport
- Launceston
- Bicheno
- National Highway 1

This option is designed to support an electric vehicle network that connects some of Tasmania's most popular eco-tourism destinations to the most densely-travelled regions of the state. In doing so, this option allows for near-blanket coverage of regions and provides an opportunity for an electric vehicle eco-tourism industry to develop. The cost of installation is estimated at \$2.15 million.

# The risks of fragmentation

The electric vehicle market is currently fragmented between charging technologies that are not mutually compatible. Some manufacturers use different charging technology to others, and there is as yet no standardised uniform charging type. As a result, one charger cannot be used by all electric vehicles, and a standardised rollout would favour one series of manufacturers over another series. The result, then, would be to provide one manufacturer with a natural monopoly over future rollout. To the extent that this is uncompetitive and promotes inefficiency, it is not preferred.

This market fragmentation means that governments must balance the promotion of a competitive market against the promotion of the industry itself. With market players adopting different technologies, government assistance for one may prove the death knell for the other. For whichever technology becomes dominant, a natural monopoly threatens to develop.

Natural monopolies occur when it is cheaper for one firm to provide a service to the market than for two or more firms to do the same. It is prohibitively expensive, for example, for every phone company to construct its own communications network of cables, wires and satellites. The dilemma is that without such a network, no market can exist in the first place. The first firm to construct the network incurs all of the associated costs, while its competitors can simply piggy-back off the capital costs of the market's establishing firm. To avoid this 'first-mover' disadvantage, the company that invests in creating such a network will hope to protect its sole right to use it. In this way, its sole right to use becomes a monopoly. The first-mover locks out its competitors, and enjoys increasing returns to scale from its increase in production. The barriers to entry are so vast that no competing firm can hope to enter the market without digging deep into its own pockets.

Technological innovations can create similar natural monopolies. Companies that own the intellectual property over their product restrict their competitors from establishing the same innovation.

Facebook's key advantage over its rivals is the network effects it enjoys through its share of the social media market. People visit Facebook because their friends are visiting Facebook. There is no legal prohibition from a third party setting up its own rival to Facebook, and even if it delivers a superior product, it cannot deliver Facebook's audience. Any company can offer you access to their network through a simple registration – but only one can offer you access to Facebook's.

Tesla's charging technology is incompatible with most other electric vehicles in Australia. In Australia, most electric vehicle models utilise a J1772 plug technology, while Tesla utilises a Type 2 Mennekes technology. These plug types cannot be used interchangeably, so a rapid rollout of one will have significant impacts on the expansion rate of one share of the market over another.

Though the challenge facing the governmental regulation of electric vehicles is very different to those posed by Facebook's growth, the threat of natural monopoly remains the same. There is nothing to stop any electric vehicle company from establishing itself in Tasmania, and constructing its own network of charging stations to service its fleet. But if any electric vehicle can use the same product, then there is little incentive for a single private firm to take on the capital costs of establishing a charging network. Any costs will be its own to bear, while any benefits will be shared with its competitors.

Any firm establishing its own network of vehicle chargers has an incentive to shut the door behind it, restricting its rivals any access to their newly constructed series of charging stations. A private firm controlling the charging infrastructure of an electric vehicle grid has the capacity to control access to the market, by requiring any competitor to construct their own, rival network, with no guarantee that consumers will welcome the investment.

## **There are options for government**

Governments therefore face a challenge with no simple solution. It is recognised that government support is necessary for the potential of the nascent electric vehicle industry to be realised; yet to support the industry in its currently fragmented state means favouring one technology over another (and, in doing so, support those manufacturers who support that technology).

For the government to avoid facilitating a natural monopoly through its intervention in the market, it must allow consumers and firms to trade without favour. The disadvantage with government directly providing charging infrastructure is that doing so benefits one technology over another, rather than letting consumers determine their preferred technology (and associated brands and products).

One alternative may be to subsidise the cost of charging stations, either by making available low-interest loans to prospective businesses, supplying grants, hiring contractors to provide for the construction labour, or with some other mechanism that allows the private firm to engage the government with an application and for the government to support that application, no matter the technology involved.

Such an approach, while more supportive of the market's unfettered allocation of winners and losers, would find the government inevitably supporting a technology that becomes unpopular and eventually falls into disuse. It may also artificially extend the time required for the market to reveal a clear consumer preference. By reducing the private sector costs of expanding a firm's charging network, the government could find itself subsidising technologies that are out of favour with the public, even if the firm has not yet realised its losing position in the market.

To compensate for this risk, the government should impose an assistance package with a clear approval window. Once this window expires, the government can review the market and close its doors to further entrants. This strategy allows the post-assistance market to settle, and for private firms to consolidate market share following the rapid expansion made possible by the government's assistance.

The longer the market is left without support, the more apparent winners and losers will become. Recent international developments suggest that the market fragmentation of charging technology is diminishing. In January 2013, the European Commission announced its adoption of "Type 2" electric charging plug technology as Europe's common standard.<sup>25</sup> Governments must be cautious not to allow natural monopolies to develop, nor to allow the opportunities afforded through innovation to lapse.

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<sup>25</sup> Siim Kallas, "EU Launches Clean Fuel Strategy" (European Commission, January 24, 2013).

# Conclusion

Tasmania is uniquely placed to profit from electric vehicles.

Electric vehicles have limited range, relative to ICE vehicles, limiting their application in some geographic climates. Thankfully, due to the land mass of Tasmania, a fully-charged electric vehicle can travel from one coast to the other on a single charge.

Similarly, Tasmania enjoys a valuable international reputation for its well-preserved natural environment and surroundings. Electric vehicles provide an opportunity to capitalise on this reputation without sacrificing the environment standards that are so valuable to the state's tourism industry and broader economy.

Internationally, the degree of success an electric vehicle rollout program experiences has been contingent on availability of public charging infrastructure, similar to petrol stations. Tasmania can provide this infrastructure with relatively low cost, and support broad coverage of a future fleet of electric vehicles.

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<sup>i</sup> Based on the driving distance of a Tesla 2012 Model S Automatic (A1), which has a range on a full charge of 426 km, as measured by the United States Environmental Protection Agency. Route distance is based on the route utilising the National Highway 1 in both legs of the trip, and the trip origin and destination is in each city centre respectively. The total route distance is 399 km, which is 27 kilometres less than the range of the vehicle on a full charge.