



## Australian Renewable Energy Agency submission

### Select Committee on Electric Vehicles

Thank you for the opportunity to make a submission to the Select Committee on Electric Vehicles. The Australian Renewable Energy Agency (ARENA) makes this submission to inform the Committee of information and insight gathered through ARENA supported electric vehicle (EV) initiatives.

#### About ARENA

ARENA was established with the aim of improving the competitiveness of renewable energy technologies and increasing the supply of renewable energy in Australia.

ARENA provides financial assistance to support innovation and commercialisation of renewable energy and enabling technologies. This assistance is designed to accelerate the commercialisation of these technologies by helping to overcome technical and commercial barriers. A key part of ARENA's role is to collect, store and disseminate knowledge gained from the projects and activities it supports for use by the wider industry and Australia's energy market institutions.

Since its establishment on 1 July 2012 ARENA has committed approximately \$1.18 billion of funding to 376 projects, of which 168 are currently active (as at 31 March 2018). For the \$1.18 billion of ARENA funding committed, \$2.79 billion of third party funding has been committed.

#### ARENA interest in EVs

Improving Energy Productivity is one of ARENA's four investment priorities established in May 2017. Under this priority (which includes transport), ARENA aims to demonstrate how different technologies and approaches (including energy efficiency, smart controls, electrification and fuel switching to renewable energy sources) can reduce costs for consumers, while increasing the competitiveness and uptake of renewable energy.

Under the *Australian Renewable Energy Agency Act 2011*, ARENA is permitted to provide financial assistance (grants) for research, development, demonstration, commercialisation and deployment of renewable energy technologies and the storage and sharing of information and knowledge about these technologies. Renewable energy technologies include "hybrid", "enabling" or "related" technologies. These can include technologies and approaches such as energy storage, load shifting, electrification, fuel switching and energy efficiency, where these use, enable or support greater deployment of renewable energy.

## **ARENA supported EV initiatives**

This submission focuses on the EV related initiatives ARENA has directly supported through funding.

### **Initiative 1 - Monash University and ClimateWorks Low Carbon Study**

A key focus of this project was to investigate the role that EVs could play in decarbonising the economy as well as developing an understanding of what is needed to drive the uptake of EVs as part of Australia's transition to a low emissions economy.

The most recent and relevant output from this project is the *The State of Electric Vehicles in Australia. Second Report: Driving Momentum in Electricity Mobility* released in June 2018. This report provides a 'snapshot' of the state of the EV market in Australia in the 2017 calendar year and provides a useful contemporary overview of the Australian EV market.

The report is attached for your reference.

### **Initiative 2 - Evenergi South Australian Strategic Regional Electric Vehicle Adoption Program**

This project is expected to be completed in the near future and ARENA will provide the final deliverables to the Committee when they are publicly released.

Through the project, Evenergi are investigating methods to accelerate EV adoption, optimise infrastructure investment and help ensure that EVs are powered by renewable energy. This involves understanding behavioural barriers to adoption and suggesting interventions, understanding how EVs will be used and where they will likely be charged and investigating how EVs can best integrate with local solar generation and the wider grid in South Australia.

The project recruited a cohort of 1600 South Australians through an EV public awareness platform named "Charge Together South Australia". Behavioural research was also conducted including 460 quantitative interviews. Home energy usage and driving patterns were also monitored to provide data required to understand real-world behaviours.

Four deliverables will be produced and made freely available to the public.

1. A total cost of ownership calculator showing the long-term cost/benefit of EV ownership, and enabling users to understand the cost benefit with and without solar and batteries locally.
2. 'EV-Drive' - A tool to help consumers confront "Range Anxiety" by showing them what it means to operate an EV as opposed to a traditional vehicle
3. Report 1 - Unlocking demand for renewably powered electric vehicles in Australia

The purpose of this research was to better understand the gap between EV purchasing intent and the likely outcome of customer journeys. The report will recommend a series of possible structural and behavioral interventions to accelerate EV adoption and ensure that they are powered by renewable energy sources.

4. Report 2 - Managing the impacts of electric vehicles on distribution infrastructure

This study will inform an understanding of how, when and where network impacts, caused by groups of EVs charging together at the same time in the same location (hotspots), may occur in

the early stages of the EV market, and hence what measures may be used to manage the network impact over the 2018-2025 period.

### **Initiative 3 - Energeia Australian Electric Vehicle Market Study.**

This study was commissioned in partnership with the Clean Energy Finance Corporation and prepared by Energeia. The report is available on ARENA's website and is attached for reference.

The study consists of two related parts

- **Part A – Strategic Review of Electric Vehicle Charging Infrastructure**  
This section of the report outlines Energeia's research into current global and Australian market dynamics for EVs and charging infrastructure including EV policy and regulatory settings, drivers of demand for public charging infrastructure and how this infrastructure is being developed.
- **Part B – Market Review of Electric Vehicle Sales, Stock and Infrastructure**  
This section presents the results of the 'future scenario' modelling undertaken for this project. Energeia modelled three scenarios — No Intervention, Moderate Intervention and Accelerated Intervention — to project the potential uptake of EVs in Australia, and the associated requirement for charging infrastructure.

## **Conclusion**

Should the Select Committee wish to discuss any aspect of this submission, please do not hesitate to contact us via our Strategy Officer Scott Beltman ([scott.beltman@arena.gov.au](mailto:scott.beltman@arena.gov.au); 02 6159 7880). ARENA is also willing to discuss these projects, as well as observations arising from our broader market interactions, with the Select Committee.

ARENA has a strong interest in supporting further EV initiatives where a strong link to renewable energy technologies exists and as such ARENA will be pleased to consider the recommendations and conclusions of the Select Committee.

## **Attachments**

**Attachment A:** *The State of Electric Vehicles in Australia. Second Report: Driving Momentum in Electricity Mobility* (ClimateWorks Australia)

**Attachment B:** *Australian Electric Vehicle Market Study* (Energeia)