HYUNDAI

Residential Electrification Inquiry

Senate Economics References

Submission by Hyundai Motor Company Australia
July 2023

1. Introduction

Hyundai Motor Company Australia (HMCA) welcomes the opportunity to make this submission to the Senate Economics References Committee's Residential Electrification Inquiry (the Inquiry).

With a growing number of Australians charging their electric vehicles (EVs) at home than ever before, the Inquiry is an important opportunity to consider the country's residential electrification strategy.

Hyundai is fully committed to introducing an ever-expanding range of EVs into Australia and supporting our customers to access and operate these vehicles as easily as possible, including by providing home charging options (which we do with every new EV sale through our charging partners).

While we have been pursuing innovation in electrification for at least two decades, Hyundai significantly accelerated its EV transition last year, thanks to strong sales of the IONIQ 5 and the successful launch of the IONIQ 6. The IONIQ 5 and IONIQ 6 together recorded over 100,000 units of global sales in 2022.

We believe decarbonising our model portfolio represents responsible business practice and ensures our company makes its contribution to economy-wide emissions objectives, in line with Hyundai Motor Group's stated global goal to reach carbon neutrality by 2045.

We are making significant investments in the expansion of our EV line-up to achieve our annual EV sales goal of two million units globally by 2030.

In Australia, HMCA currently offers one FCEV (the NEXO), three BEVs (Kona, IONIQ 5, IONIQ 6) and one HEV (Sante Fe Hybrid), with plans to introduce the IONIQ 7 fully electric SUV, the all-new KONA EV and three new hybrid vehicles (HEVs) in the near future (refer figure 1 and table 1).

Operating under HMCA, our sister luxury brand, Genesis, recently launched three BEV's in parallel in 2022 – the GV60, Electrified GV70 and Electrified G80. Similar to the Hyundai brand there are further electrified Genesis vehicles on the product plan for Australia. Genesis has also committed to be a fully electric brand by 2030.

Combined with HMCA's goal to offer a fully zero emission line-up in Australia by 2040, we anticipate significant uptake in EVs in this country over the coming years, particularly against the backdrop of an impending fuel efficiency standard currently under development and expected to be introduced in 2024.

Home electrification is therefore an important consideration for the future success of EVs in Australia. Our data shows most of our customers charge their EVs at home and overnight typically at off-peak hours to minimise electricity costs. This makes it especially critical for governments at all levels to ensure residential electrification policy is supportive and adaptable to the changing ways we use energy in the home.

Further, the electrification of transport will also open up new opportunities for how home energy is stored and utilised. Through capabilities such as vehicle-to-load, vehicle-to-home and vehicle-to-grid, EVs have the potential to provide power to the home, including during natural disasters. With this technology currently being rolled out in Australia today, it is an opportune time for the Committee to conduct this Inquiry into residential electrification.

Figure 1: HMCA model line-up (current & future)

Table 1: Specifications & pricing of the current Hyundai/Genesis eco vehicle range in Australia

Brand	Model	Launch year	Drive train	Range / Efficiency (WLTP)	DC charge time (350kW; 10% to 80%)	AC charge time (10.5kW; 10% to 80%)	Refuelling time	Battery capacity	Entry price (Manufact-urer list price)
Hyundai	Kona	2019	BEV	305km (standard range) 484km (long range)	47mins (100kW)	6hr (standard range)		39.2kWh (standard range) 64kWh (long range)	$54,500
Hyundai	IONIQ 5	2021	BEV	507km (RWD) 545km (AWD)	18mins	11hr 45mins		77.4kWh	$72,000
Hyundai	IONIQ 6	2023	BEV	614km	18mins	11hr 45mins		77.4kWh	$74,000

Brand	Model	Launch year	Drive train	Range / Efficiency (WLTP)	DC charge time (350kW; 10% to 80%)	AC charge time (10.5kW; 10% to 80%)	Refuelling time	Battery capacity	Entry price (Manufact-urer list price)
Hyundai	NEXO	2019	FCEV	666km			3-5 minutes	95kW fuel cell system	Available for lease
Hyundai	Sante Fe Hybrid	2022	HEV	6.0 L/100km				1.49 kWh	$69,550
Genesis	GV60	2022	BEV	470km	18mins	11hr 45mins		77.4kWh	$103,700
Genesis	GV70	2022	BEV	445km	18mins	11hr 45mins		77.4kWh	$127,800
Genesis	G80	2022	BEV	520km	22mins	13hr 15min		87.2kWh	$147,000

2. Inquiry response

With home charging comprising 80% of the energy delivered into an EV in Australia[1], a strategy for home electrification with EV charging at its core will be critical as the uptake of the technology accelerates.

With S&P Global forecasting finding that almost 1 million EVs will be on Australian roads in 2030 (779,000 BEV and 213,000 PHEV) under a scenario of no government policy change,[2] these vehicles will require access to charging infrastructure, both public and private.

Presently, there is a significant shortfall between public chargers announced and what is needed to meet forecast EV demand making home EV charging readiness a pressing issue.

As of October 2022, there were around 3,700 public chargers at just over 2,100 locations across Australia, according to an Electric Vehicle Council report.[3] On the public/semi-public level, the nation will need at least 6,800 charging points in 2025 to be on track to support 1 million EVs in 2030.[4]

With the introduction of a fuel efficiency standard, this charging shortfall will become even more acute. A lack of charging accessibility will result in consumer dissatisfaction with EVs, slowing uptake.

[1] Electric Vehicle Council estimate
[2] S&P Global, Australia Sales based Powertrain Forecast, Charging infrastructure requirement to support the forecasted electrification trend, February 2022
[3] Electric Vehicle Council, 2022 State of Electric Vehicle Industry Recap, February 2023
[4] S&P Global, Australia Sales based Powertrain Forecast, Charging infrastructure requirement to support the forecasted electrification trend, February 2022.

Australia is also facing the unique challenge of its disparate population centres which adds cost and complexity to the public charging network roll-out versus other markets.

Ultimately, this situation will increase consumer reliance upon charging their EV at home or the office.

While major investment is needed in the public network, we cannot leave home and business-based charging behind. With the shift to EVs expected to lead to a significant increase in home electricity consumption, this area requires significant policy coordination and funding assistance from governments at all levels.

Firstly, we recommend an in-depth study of overseas charging infrastructure schemes to understand what aspects are most successful in supporting the roll out of home and business charging. There are significant learnings to be gathered from many international markets, such as the UK, Europe and the US, given they are well advanced versus Australia.

We also suggest a number of specific areas the Committee should consider as part of its Inquiry:

- A national consumer grant scheme for the installation of home charging infrastructure
    - Many Australian households require financial assistance for the purchase and install of home charging units and this should be considered as an option to encourage EV uptake (refer to the UK EV chargepoint grant for an example of this in practice)
- Development of EV friendly retail energy products
    - Government should consider working with energy networks and retailers to develop products that strongly incentivise EV charging in the home at times of excess generation and spare network capacity (middle of day and middle of night)
- Achieving consistency and flexibility in standards for both vehicles and charging equipment
    - Ensuring that any Australian standards do not inhibit the implementation of vehicle to grid technology so consumers can take full advantage of this innovation as it rolls out in the coming years
    - Addressing the range of different state and territory level requirements associated with the type of EV charger permitted to be installed in a domestic home with the aim to achieve a nationally consistent framework
- Addressing EV charging readiness in the existing built environment
    - While changes to the National Construction Code requiring new apartment buildings to be built 'EV Ready' are welcome, significant work remains in the existing built environment, where the retrofitting of EV charging in brownfield apartment complexes faces many hurdles
    - Further, while focus to date has largely been on readiness in apartment complexes and workplaces, standalone homes and standalone multi-deck car parks have yet to be addressed and will require consideration in the near term
- Study and fund pilot projects aimed at supplementing the development of residential electrification charging options, particularly for residents of apartments and homes with no off-street parking:
    - Examples include on-street EV charging using existing power pole infrastructure (currently being trialled in NSW) or lamp posts
    - Governments should also study overseas schemes to understand the challenges and opportunities associated with funding, utilisation, uptake, reliability etc. of these innovative charging options (for example UK company Ubitricity, part of the Shell group, has pledged to install 50,000 on-street EV charge posts across the UK by the end of 2025; a similar national initiative should be explored for Australia with industry partners)

Finally, the adoption of EVs in Australia presents a sizeable economic opportunity for the country through the development of local supply chains in minerals, batteries, components and charging equipment. We therefore urge the Committee to consider how the country can:

- Facilitate opportunities for onshore processing and refining of critical minerals for battery and EV production

- Facilitate investments in the manufacturing of batteries, EV components, charging infrastructure and EVs themselves
- Proactively engage with automotive OEMs, component suppliers and charging manufacturers worldwide with the aim to attract investment to our shores

3. Conclusion

HMCA thanks the Senate Economics References Committee for the opportunity to make this submission to the Residential Electrification Inquiry. Should you have any questions regarding this submission please do not hesitate to contact Scott Nargar, Senior Manager Future Mobility and Government Relations on e: [redacted]

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