MONASH University

MONASH ENERGY INSTITUTE

Electricity Supply for Electric Vehicles

Parliament of Victoria
via online submission

From: Monash Energy Institute, Monash University
31 October

Dear Committee Members,

Re: Inquiry into Electricity Supply for Electric Vehicles

The Monash Energy Institute is pleased to contribute this submission to the Parliamentary Inquiry into Electricity Supply for Electric Vehicles, presenting a diversity of specialised expertise from across Monash University. The contributors to this response (Professor Hai L. Vu, Associate Professor Roger Dargaville, Dr. Changlong Wang, Dr Fareed Kaviani and Professor Yolande Strengers) are leading researchers in sustainable mobility, electricity systems, renewable energy integration, and the social dimensions of consumer energy resources.

Their work collectively advances Australia's energy transition through rigorous research, system modelling and scenario planning, and education of both future and current industry professionals. This submission summarises key findings from Monash-led studies. These include:

- The Monash University Renewable Energy Integration Lab (MUREIL) modelling framework to explore how electric-vehicle (EV) charging behaviours affect electricity generation, storage requirements, prices, and renewable utilisation across the National Electricity Market to 2050
- The 2030 Scenarios for Future Living projects, led by Monash's Emerging Technologies Research Lab, exploring how people will live and use energy out to 2050, and generating insights, foresights and scenarios.

The paper provides evidence-based insights and policy recommendations addressing:

- Strategies to reduce EV charging during periods of peak demand on the grid and increase charging during periods of peak supply
- Whether public charging infrastructure is being installed at a sufficient rate in different parts of Victoria, including older suburbs where most people do not have access to off-street parking
- Strategies to facilitate the take-up of EV ownership, including the facilitation of bidirectional charging.
- The best role for electricity distribution businesses in rolling out EV charging infrastructure, and how distribution network tariffs should be set for EV chargers.
- Engagement strategies for households to involve them in flexible charging initiatives and maximise self-consumption of solar energy.

If you have further enquiries about our submission, please don't hesitate to get in touch.

Best wishes,

[redacted]

Associate Professor Julie Karel
Deputy Director, Research, Monash Energy Institute
[redacted]

MONASH University

MONASH ENERGY INSTITUTE

Strategies to reduce EV charging during periods of peak demand on the grid and increase charging during periods of peak supply

Professor Hai L. Vu
Associate Professor Roger Dargaville
Dr Changlong Wang
Dr Fareed Kaviani
Professor Yolande Strengers

This response draws primarily on a study led by Monash University, using the Monash University Renewable Energy Integration Lab (MUREIL) framework. The model co-optimises generation, storage, and transmission under reliability constraints in the pathway to net-zero emissions.

The study models four distinct charging profiles (Figure 1):

- Convenient (red): fixed, unmanaged home charging peaked from 17:00–21:00.
- Optimal (green): 24-hour least-cost profile chosen endogenously by the model.
- Day (yellow): managed charging constrained to 07:00–17:00 to represent workplace/public charging infrastructure, e.g., "solar-sponge" hubs.
- Night (black): managed charging constrained from 16:00 through 06:00 (spans evening and overnight) to represent managed home charging windows.

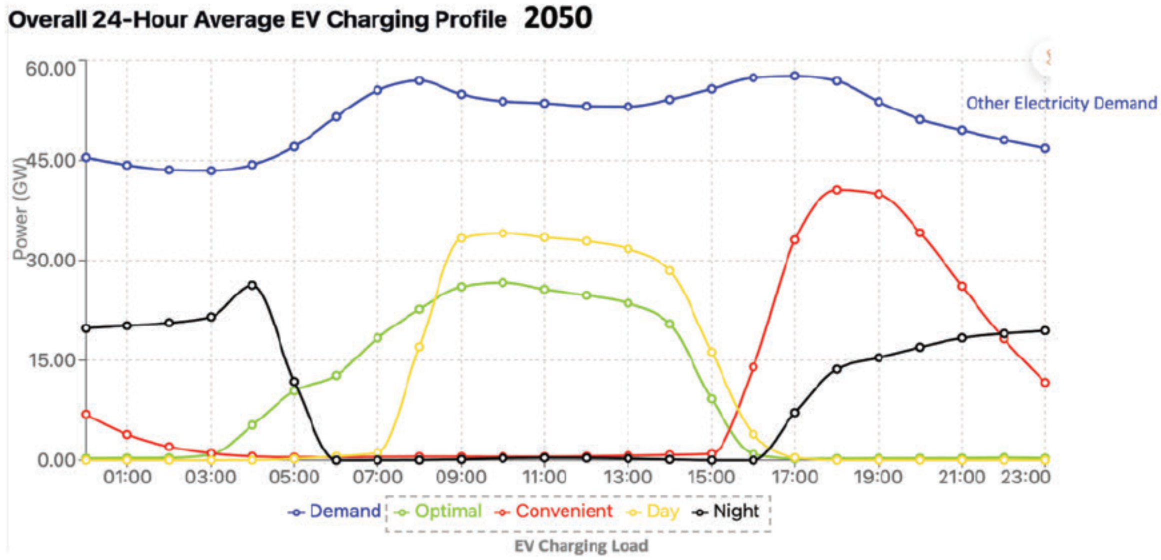

Figure 1: Overall, 24-hour average EV charging profiles in 2050 under four scenarios. The convenient (red) profile represents fixed, unmanaged home charging peaking from 17:00–21:00. The optimal (green) profile is a 24-hour least-cost schedule determined endogenously by the model. The day (yellow) profile is constrained to 07:00–17:00, representing workplace and public "solar-sponge" charging infrastructure aligned with solar output. The night (black) profile is constrained to 16:00–06:00, spanning evening and overnight hours to represent managed home charging. The blue curve shows baseline electricity demand excluding EV loads.

System Impacts of Charging Behaviour

The modelling results clearly show that charging behaviour has a decisive influence on system infrastructure needs (see Table 1). In particular, uncontrolled convenience charging (red curve, peaking 17:00–21:00) doubles the system peak load compared with the optimal/grid-friendly schedule (green curve), which flexibly shifts demand into solar-rich midday and low-demand overnight periods.

Convenience charging coincides with the existing evening residential peak, adding EV demand on top of high household usage when solar generation is no longer available and storage is already discharging. To meet this combined surge, the system must build substantial additional firm capacity, primarily in the form of short-duration batteries.

By contrast, the optimal strategy dynamically shifts most EV energy to hours of high renewable supply (daytime) and spare network and generation capacity (overnight). This spreads demand across the 24-hour cycle, flattening the load curve and reducing the required firm capacity by around 50 GW in 2050.

Indicator	Convenience Charging	Optimal/Grid-Friendly Charging	System Impact
2050 Peak Load	~100 GW	~50 GW	Doubles the firm capacity requirement
New Generation Build	Higher total; large gas-peaker and battery additions	Lower total; greater solar utilisation	Avoids over-building expensive assets
Battery Capacity	Substantially larger to cover evening peaks	Smaller; solar energy used directly	Reduces storage investment
Price & Reliability	Evening scarcity prices; $18 000/MWh unserved-energy penalties	Stable prices, lower volatility	Enhances reliability

Table 1. Summary of system impacts based on different charging behaviour.

Figure 2 compares the capacity-expansion outcomes between the optimal and convenience scenarios across the NEM and in Victoria. In both cases, optimal charging leads to significantly less storage and peaking capacity, while enabling greater deployment of wind and solar.

These results confirm that shifting EV load away from the evening peak reduces the need for costly flexibility infrastructure and improves the economic efficiency of renewable integration. Unmanaged evening-dominant charging is therefore system-expensive: it inflates capital investment, raises operational costs, and increases price volatility when EV and household demand coincide. In contrast, time-aligned charging (daytime and overnight) makes better use of existing assets and renewable supply, delivering a more stable and affordable power system.

Figure 2: Difference in installed capacity between the optimal and convenient EV charging scenarios (Opti – Conv) across the NEM and in Victoria (2020–2050). Bars show changes in wind (green), solar (yellow), and storage (blue) capacity required to meet demand. Negative values indicate capacity avoided under optimal charging. Optimal scheduling reduces the need for storage and peaking assets while improving utilisation of variable renewables, particularly after 2035.

Strategic Infrastructure and Policy Levers

The modelling demonstrates that optimal charging outcomes (green curve) can be achieved through a practical combination of daytime (yellow) and overnight (black) charging windows, which together flatten demand and align energy use with renewable generation. The yellow daytime profile—representing workplace and public "solar-sponge" charging, closely mirrors the optimal midday load, while managed overnight charging utilises surplus capacity during low-demand hours. In contrast, the red convenience curve (17:00–21:00) adds demand to the existing residential peak, requiring costly additional capacity and driving price volatility.

Therefore, infrastructure investment, market signals, and regulatory frameworks should anchor EV charging around solar-aligned and off-peak windows, while discouraging evening peaks. To achieve this, government policy should employ multiple coordinated levers:

a) Infrastructure Placement

Physical charging infrastructure should be designed to guide when charging occurs by aligning access and convenience with system needs.

- Workplace and public "solar-sponge" hubs (operating ~07:00–17:00) should be prioritised in funding and connection programs. These sites capture midday solar output directly, reduce curtailment, and alleviate the need for additional storage.
- Residential smart chargers should be standardised for managed overnight operation (e.g. ~00:00–06:00), enabling low-cost charging during trough demand while avoiding the 17:00–21:00 peak.

Together, these infrastructure streams replicate the green optimal load profile—absorbing solar surplus by day and utilising spare capacity overnight—without introducing new peaks.

Another important aspect is the bidirectional capability of EVs (or vehicle-to-grid, V2G) where the parked EVs can serve as distributed energy storage units or resources (DERs), supporting the grid resilience and smoothing renewable fluctuations. However, balancing between the primary function of EVs (i.e., to facilitate mobility) and energy storage or DERs is an open question. This is the topic of a flagship initiative in sustainable mobility led by Prof. Hai Vu at Monash, involving academics and industry partners across several countries (Australia, Malaysia, UK and Italy) and continents (Australia, Asia and Europe).

b) Pricing and Market Signals

Economic incentives must reinforce desirable behaviours and make grid-friendly charging the least-cost option:

- Introduce time-varying tariffs (time-of-use) with strong daytime and overnight discounts and high evening rates, so users may naturally shift charging to periods of low system cost.
- Provide bill credits or network-service payments for verified flexibility when chargers operate within DNSP dynamic envelopes.
- Allow aggregators and fleet operators to participate in wholesale demand-response markets, monetising their ability to shift load.

c) Regulation and Standards

Standards ensure consistent capability across the fleet and simplify orchestration:

- Mandate smart-charging functionality at the point of sale and installation, with default managed schedules (opt-out allowed).
- Establish open data and communication protocols between chargers, aggregators, and DNSPs to share capacity and constraint information.
- Require government and commercial fleets to implement daytime-dominant charging schedules and publicly report compliance, setting an example for industry.

In addition to these insights, Monash researchers (Professor Yolande Strengers, Professor Sarah Pink, Dr Fareed Kaviani, Dr Kari Dahlgren and Dr Nedha DeSilva) in the Emerging Technologies Research Lab are leading research exploring household engagement with consumer energy resources, including EVs. The RACE for 2030 Scenarios for Future Living project is being delivered in in partnership with Monash University, University of New South Wales, University Technology Sydney, CSIRO, Ausgrid, CitiPower, Powercor, United Energy, Red Energy, NSW Department of Climate Change, Energy, the Environment and Water and Department of Energy, Environment and Climate Action (Victoria). The project is investigating how households will live in the future, and what that will mean for energy demand, as well as exploring household practices and values related to battery storage and charging. The project builds on a body of research which consistently finds that price signals alone will not solve the anticipated issues associated with increased EV charging. There are other opportunities to engage households in desirable practices that align with their interests, routines and values.

d) Consumer Engagement Strategies

- Broaden engagement beyond price signals: Move beyond reliance on market-based and tariff incentives alone. Encourage household participation through approaches that connect with everyday energy routines, values, and motivations. [1] Households' increasing interest in self-consuming or resourcefully using (e.g. donating, locally sharing) their own solar power offers new demand management opportunities. [2]

- Leverage household interest in solar self-consumption: Build on households' growing desire to use or share their own solar generation by developing initiatives that link EV charging to periods of high renewable supply, turning self-consumption into a grid-supporting practice.
- Use familiar routines to build flexibility: Encourage households to shift charging habits by drawing on existing routines around charging smaller devices (phones, vacuums, tools). This can familiarise people with battery care, timing, and the value of aligning charging with supply and demand conditions—preparing them for managing larger batteries in EVs and homes. [2]
- Target flexible daytime users: Identify and engage home businesses and work-from-home households as key participants in daytime demand-management programs. Their flexibility offers significant potential to absorb solar generation during daylight hours and reduce pressure on evening peaks. [1]

Policy Implications

A coherent national (and state) strategy must combine infrastructure investment, smart-charging standards, tariff reform and household engagement to align EV demand with renewable supply and network headroom.

Government programs should:

- Direct capital grants and planning approvals toward workplace and destination chargers that operate mainly 09:00–17:00.
- Support residential adoption of smart chargers with default overnight settings.
- Align tariffs, incentives, and standards across jurisdictions to reinforce these preferred charging windows.
- Increase consumer engagement by connecting EV charging with everyday household routines and motivations, leveraging interest in solar self-consumption, familiar device-charging habits, and flexible daytime users (e.g. home businesses) to promote practical, grid-aligned charging practices.

Whether public charging infrastructure is being installed at a sufficient rate in different parts of Victoria, including older suburbs where most people do not have access to off-street parking

Dr Fareed Kaviani
Professor Yolande Strengers

While investments in shared or public charging infrastructure may help to broaden EV ownership, especially in dense or low-income housing areas, the strong preference for home-based charging (HBC) should be acknowledged. Our recent research revealed that 76.7 per cent of Victorian households that currently own or intend to purchase an EV in the next 5 years prefer HBC over public chargers. [1]

Access to a location to charge EVs at home, such as off street parking or a garage, will significantly impact the rate of EV adoption. While the lack of off-street parking for standalone homes and in affluent areas and suburbs which might otherwise be expected to have high EV adoption rates is an issue, it becomes more pronounced in the city and inner suburbs due to apartments. [2] We found that 81 per cent of flat, unit and apartment households do not have access to an EV charging point.

Uneven access to charging facilities will lead to new inequalities. [3] Renters and apartment dwellers risk being forced to rely on less convenient and often more expensive public charging. The integration of shared EV charging infrastructure in new and existing multiunit dwellings (MUDs), along with mechanisms that empower renters to access it, is becoming increasingly important for EV adoption and effective and equitable policy outcomes. [4]

In rural areas, but also in affluent inner city suburbs, people are worried how charging infrastructure might change their local area. People are hesitant to support charging stations that replace valued parking in town centres or disrupt local aesthetics. Combined with a preference for home charging, this may lead to resistance to visible local installations. However, stations at sites where people already wait for extended periods, such as health or recreation centres, are more likely to be accepted and used. [3]

The findings suggest several key recommendations:

- Establish regulatory mechanisms that require or incentivise landlords and developers to provide accessible, affordable charging options for renters to ensure equitable access to home-like charging convenience.
- Promote and incentivise the integration of EV charging in new and existing multi-unit dwellings (MUDs).
- In dense areas or neighbourhoods with lower-than-expected EV ownership due to limited garages or on-street parking, prioritise investment in accessible charging infrastructure.
- Focus shared public chargers in locations where people naturally spend longer periods, such as health centres, recreation facilities, or community hubs, to help maximise convenience and utilisation.

<u>Strategies to facilitate the take-up of EV ownership, including the facilitation of bidirectional charging.</u>

Dr Fareed Kaviani
Professor Yolande Strengers
Professor Hai L. Vu

Reliable and accessible charging infrastructure is crucial for transport electrification. EVs are commonly considered ideal for regular short commutes. Their use for longer travel or as the sole mobility option is still viewed with considerable uncertainty. In rural areas and outer suburbs, households envision keeping an ICE or hybrid vehicle for longer trips and reliability. [2] Apartment residents face constraints due to limited access to charging infrastructure, while renters are further restricted by tenancy conditions that limit installation options. While expanding both public and private charging networks is necessary, it is not straightforward and is the focus of several flagship initiatives at Monash mentioned above.

Literature reports a fast expansion of Australia's EV fleet where sales have jumped from roughly 30,000 in 2022 to 120,000 by mid-2023 and are projected to reach about 35% of new car sales by 2030. Yet public charging infrastructure is lagging, fast chargers grew from ~270 to ~650 and ultra-fast sites from ~100 to ~300 between mid-2022 and mid-2024.

Recent results from Monash University's RACE for 2030 Scenarios for 2030 "Emerging lifestyles, preferences and practices" survey shows that households express willingness to participate in vehicle to grid (V2G) programs. However, willingness varies with automation preferences, and a clear majority value the ability to retain control. [4] Recognising that smart technology rejection correlates with V2G resistance, tailored engagement or opt-in schemes may be more effective than default or mandatory approaches. For instance, including override features in V2G policy and program design may increase participation. However, it is crucial to anticipate, plan and prepare for what this may mean in practice for grid stability during locally or nationally coordinated events and emergencies (e.g. extreme weather events or significant holidays).

Equitable solutions must be developed that address people's desire for control, access to home based charging, and continuity of supply whilst maintaining V2G's functionality as "mobile energy assets". This is especially important given the anticipated disruptions or heightened periods of demand under climate change scenarios.

In addition to this research, Monash's sustainable mobility initiative is further exploring the different technical and behavioural barriers for bidirectional charging, and how to tackle them jointly. Governments and regulators play a key role in shaping the enabling environment for both EVs, their bidirectional charging and the grid's renewable energy transition.

The best role for electricity distribution businesses in rolling out EV charging infrastructure, and how distribution network tariffs should be set for EV chargers.

Associate Professor Roger Dargaville
Dr Changlong Wang
Dr Fareed Kaviani
Professor Yolande Strengers

Findings from "Supporting the Electrification of Victoria's Future Fleet"

Our response to this question draws on findings from the Victorian Higher Education State Investment Fund (VHESIF) project "Supporting the Electrification of Victoria's Future Fleet", a collaboration between Monash University, RMIT University, and the University of Melbourne, using the Melbourne/Monash University Renewable Energy Integration Lab (MUREIL) software.

The VHESIF project explored the technical, economic, and environmental dimensions of large-scale public bus fleet electrification in Victoria, focusing on how electricity tariffs, distribution network capacity, and wholesale market dynamics shape charging behaviour, costs, and emissions outcomes.

Our research shows that electrifying large fleets, such as metropolitan buses, creates concentrated, predictable loads that can support grid stability if distribution networks actively coordinate their integration. For Victoria, full bus fleet electrification increases statewide operational demand by only 0.4%, meaning system-wide generation adequacy is not a constraint. The challenge lies instead in local network hosting capacity: each depot's 6 MW peak classifies it as a large customer, triggering high connection charges and potential augmentation costs [5].

DNSPs therefore have a critical enabling role, not as sole infrastructure owners, but as system integrators that:

- Publish feeder-level hosting maps and fast-track "EV-ready" feeders, giving fleet operators and investors clear signals on where charging can connect with minimal augmentation.
- Implement dynamic operating envelopes so multiple depots and public chargers can share capacity flexibly without costly over-builds.
- Procure managed-charging and vehicle-to-grid (V2G) services as *non-network solutions* for peak shaving, voltage support, and minimum-demand uplift, turning EVs into flexible assets rather than passive loads.
- Coordinate open data and interoperability (OCPP, IEEE 2030.5/CSIP-AUS) so retailers and aggregators can automate responses to DNSP signals.
- Rebalance cost recovery: current arrangements push augmentation costs onto fleet owners even when public policy mandates electrification; targeted cost-sharing or incentive schemes are needed to align private investment with system benefits.

Our 2024 study quantifies how current commercial tariff structures mute both climate and market signals. Using a five-year historical and five-year forward simulation for Melbourne's bus fleet, we compared three charging strategies:

- Least-cost (tariff-following): concentrates charging overnight to avoid daytime usage and demand charges.
- Emission-minimising: shifts charging to daylight hours with lower grid-emission intensity, cutting indirect emissions by 33% but doubling annual bills.

- Spot-price-following: aligns with low wholesale prices (often midday solar peaks), reducing emissions by 13% yet increasing bills by 69% [6].

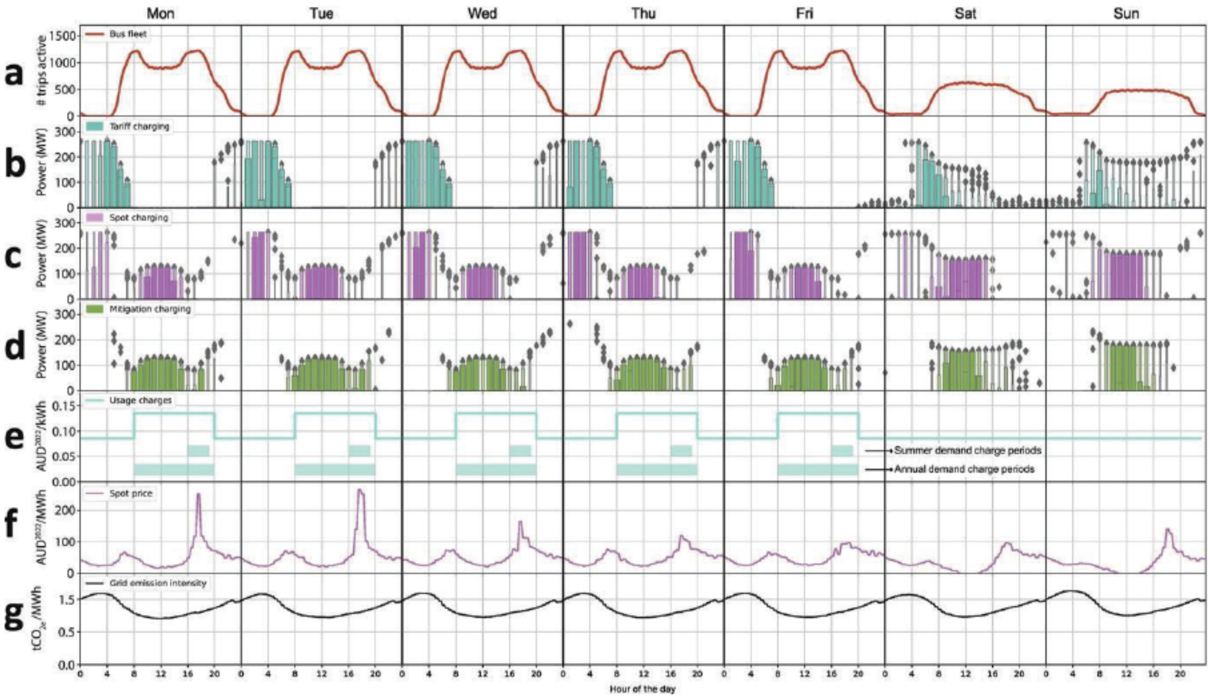

Figure 3. Weekly average profile for each charging strategy and their operational considerations in the analysis year 2021, taken from reference [6]. (a) Number of trips active across the metropolitan Melbourne public bus fleet. (b) Letter value boxplot (hourly) of grid demand under the tariff charging strategy. (c) Letter value boxplot (hourly) of grid demand under the spot charging strategy. (d) Letter value boxplot (hourly) of grid demand under the emission-minimising charging strategy. (e) Temporal pricing of usage charges and demand charge periods. (f) Average historical wholesale market prices in 2021. (g) Average GHG emission intensity of the grid (including rooftop PV generation) in 2021.

These results demonstrate a structural misalignment: tariffs designed for legacy load profiles discourage charging at the very times that are cheapest and cleanest for the grid [6].

To correct this, DNSPs should adopt:

1. Midday off-peak windows (e.g. 10 am–3 pm) with zero or minimal demand charges, rewarding alignment with high-renewable, low-price periods.
2. Capacity-based or critical-peak pricing in place of blunt monthly/annual demand charges, giving fleets predictable costs while maintaining peak discipline.
3. EV-specific sub-metering so depots, workplaces, and apartments can access tailored tariffs independent of the main site load.
4. Locational adders/discounts reflecting feeder constraints, guiding siting and operation toward unconstrained zones.
5. Incentives for verified flexibility—bill credits or network-service payments for responding to DNSP signals or operating within dynamic envelopes.

Since electricity makes up only a minor share of overall fleet costs, charging behaviour is shaped more by the tariff structure (timing and type of charges) than by the price level itself. Well-designed tariffs can therefore steer charging without undermining fleet viability.

Together, the studies show that smart tariffs and proactive DNSP roles can transform EV charging from a potential stressor into a decarbonisation lever:

- Aligning tariffs with midday renewables reduces emissions and wholesale costs simultaneously.
- Managed charging at depots mitigates local peaks, deferring costly network upgrades.
- Transparent data and flexible connection frameworks unlock private investment in charging infrastructure.
- Integrating fleet flexibility into DNSP planning complements generation-side reforms and accelerates net-zero transport goals.

Based on this study, the committee should consider:

- Mandate tariff reform that passes through wholesale and emissions signals—especially daytime off-peaks and capacity-based pricing.
- Enable DNSPs to publish hosting capacity maps, deploy dynamic envelopes, and procure flexibility as regulated non-network services.
- Support fleet pilots (bus and logistics depots) to demonstrate cost-effective, emissions-aligned charging under reformed tariffs.
- Establish national guidance for EV-specific tariffs and DNSP roles, harmonising state approaches while preserving local network efficiency.

Findings from RACE for 2030 Scenarios for Future Living Project

Findings from the Year 1 "Emerging lifestyles, preferences and practices" survey [4] underscore the need to integrate household understandings, preferences and values into technical planning and policy design.

- Automated charging of EVs is still an unfamiliar concept for both current and prospective EV owners. Many households envision being unwilling to hand over the management of their charging to a third party or automated system. Many are concerned about such systems' inability to account for their daily life contingencies and irregular but important priorities, such as having an EV with sufficient charge in case of an unexpected emergency. Therefore, ensure householders understand and are able to maintain control over charging incentives and programs, including those which are automated.
- Responding to demand management is increasingly not motivated by financial incentives alone. DSM programs should blend financial rewards with community and environmental benefits to broaden appeal.
- Many households are unaware of their tariff, in particular whether or not they are on a time-of-use or flat tariff, or what time the electricity price changes if they are on time-of-use tariffs. Even when people are aware of their tariff, most do not actively shift their behaviour in response to tariffs. Although few are engaged closely with their tariffs, consuming solar power from one's own system is of interest for many households with solar PV. The appeal of self-consuming solar generates positive feelings of productivity and self-reliance. Shifting energy use in relation to more tangible experiences, such as when the sun is shining, makes more intuitive sense to people than responding to quarterly energy bills.

Based on this study, the committee should consider:

- Ensuring automated charging programs maintain user control and transparency, blending financial, community, and environmental incentives to build trust and participation.

Expert bios

Prof. Hai L. Vu

Hai Vu is the Deputy Dean Research in the Faculty of Engineering and an expert in intelligent transport systems, modeling and design of complex networks and in application of AI to transportation applications.

A/Prof. Roger Dargaville

Roger Dargaville works on energy system integration, understanding the optimal combination of different technologies to achieve a low-carbon, affordable and reliable electricity system.

Dr Changlong Wang

Changlong Wang is a postdoctoral research fellow at Monash University. In his PhD, he developed a capacity expansion model to optimise the electricity generation, transmission, and storage systems simultaneously. Changlong is one of the key developers of the Hydrogen and Green Steel Economic Fairways Mapper, for which his team won the 2023 Australian Museum Eureka Prize for Innovative Research in Sustainability.

Prof. Yolande Strengers

Yolande Strengers is a digital sociologist and human-computer interaction professor investigating the sustainability and inclusion impacts of digital and smart technologies, including emerging forms of AI. At Monash University, she is the Director (Research) of the Monash Energy Institute and leads the Energy Futures research program in the Emerging Technologies Research Lab, which undertakes critical interdisciplinary and international research into the social, cultural and experiential dimensions of the design, use and futures of new and emerging technologies.

Dr Fareed Kaviani

Dr Fareed Kaviani is a research fellow in the Emerging Technologies Research Lab at Monash University, within the Faculty of IT. He is currently working on the RACE Scenarios for Future Living project. His research foregrounds social science knowledge and innovative interdisciplinary methodologies to anticipate energy and technology futures and social change.

References

[1] Kaviani, F., Dahlgren, K., Koppel, S., Strengers, Y., Martin, R., Korsmeyer, H., & Pink, S. (2025). “We’d rather have a clean planet than anything else”: Household values and automated future electric vehicle charging. Energy Research & Social Science, 121, 103965. https://doi.org/10.1016/j.erss.2025.103965

[2] Dahlgren, K., Korsmeyer, H., Kaviani, F., Martin, R., Strengers, Y., & Pink, S. (2023). Future Home Demand: Anticipating energy and everyday life trends across three Victorian networks. Melbourne VIC Australia: Monash University.

[3] Pink, S., Korsmeyer, H., Dahlgren, K., Strengers, Y., Martin, R., Kaviani, F., & Nicholls, L. (2022). Digital energy futures: Foresights for future living [Report]. Emerging Technologies Research Lab. (Australia). https://www.monash.edu/__data/assets/pdf_file/0019/3113164/Foresights-for-Future-Living-Nov-22.pdf

[4] Kaviani, F., Strengers, Y., Dahlgren, K., (2025) Scenarios for Future Living: Household and home businesses research, Emerging lifestyles, preferences and practices survey. [unpublished report] Emerging Technologies Research Lab (Monash University). Melbourne, Australia.

[5] Kelvin Say, Zsuzsanna Csereklyei, Felix Gabriel Brown, Changlong Wang, (2023) The economics of public transport electrification: A case study from Victoria, Australia, Energy Economics, 120, 106599 https://doi.org/10.1016/j.eneco.2023.106599.

[6] Kelvin Say, Zsuzsanna Csereklyei, Felix Gabriel Brown, Changlong Wang, (2024) The economics of public transport electrification: The charging dilemma, Energy Economics, 135, 107648, https://doi.org/10.1016/j.eneco.2024.107648.