

**Submission
No 66**

INFRASTRUCTURE FOR ELECTRIC AND ALTERNATIVE ENERGY SOURCE VEHICLES IN NSW

Organisation: Energy Networks Australia

Date Received: 2 May 2025

02 May 2025

Ms Lynda Voltz, MP

Chair

NSW Legislative Assembly Committee on Transport and Infrastructure

Dear Ms Volts and fellow committee members,

Re: Inquiry into infrastructure for electric and alternative energy source vehicles in NSW

Energy Networks Australia (**ENA**) welcomes the opportunity to respond to the NSW Legislative Assembly Committee on Transport and Infrastructure's (the **Committee**) inquiry into the infrastructure needs for electric and alternative energy source vehicles across NSW (**the Inquiry**).

ENA represents Australia's electricity transmission and distribution and gas distribution networks. Our members provide more than 16 million electricity and gas connections to almost every home and business across Australia.

Owning an electric vehicle (**EV**) can help Australians lower the costs of owning and operating a car, as well as contribute to the goal of lowering emissions, but Australia's lack of adequate public charging infrastructure is creating barriers to uptake.

As demonstrated in *Street Smart: Scaling up Kerbside EV Charging in Australia* (**Appendix B**), enabling distribution network service providers (**DNSPs**) to install EV chargers on power poles to support a faster and cheaper roll out of kerbside charging will deliver a scalable approach that benefits consumers, strengthens the grid, and accelerates emissions reductions.

Lack of charging infrastructure is causing range anxiety and barriers to EV uptake

The global transition to EVs is accelerating, yet Australia continues to lag behind due to insufficient public charging infrastructure.

Australia's charging network is underdeveloped compared to global standards. Currently, there are 68 EVs per public charge point in Australia, far exceeding the global average of 11.¹ This disparity exacerbates range anxiety among potential EV buyers and deters wider adoption. In addition, even those Australians with an EV already are thinking of switching back to an internal combustion engine vehicle due to difficulties charging.²

The current approach of solely relying on the commercial market to invest in EV charging infrastructure is not working. It suffers from a '*chicken and egg*' problem where a lack of EV density cannot support private investment at scale, but without more public chargers, drivers won't buy EVs to increase density.

This can then result in lower maintenance investment and a bad customer experience. Global studies show that c.25% of commercial charging infrastructure is offline or non-functioning at any given time.

¹ IEA, Global EV Outlook 2024, Trends in electric vehicle charging

² McKinsey & Company, McKinsey Mobility Consumer Pulse, June 2024

Unlock Australia's EV Potential with DNSP-led kerbside charging solution

Existing power poles, ubiquitous across Australia, present an immediate and cost-effective solution for expanding EV charging infrastructure. Our research shows this would contribute to a further one million more electric vehicles onto the road by 2030 – with drivers saving up to \$2,500 per year in lower energy costs.³

By allowing distribution networks to install and maintain small EV chargers on poles, we will see:

- **Faster Deployment:** Chargers can be installed by networks at a rate of over 120 per week in states like New South Wales
- **Lower Costs:** Using existing infrastructure reduces the need for extensive and disruptive construction
- **Universal Access:** Chargers can be placed in any location with a power pole and parking space, not just in areas with high EV ownership and wouldn't require EV specific parking
- **Increased competition:** DNSPs would provide the chargers as “network infrastructure” like they do with poles and wires, and retailers and charge point operators would be able to use the network infrastructure to offer services to their customers

This solution is within reach with a straightforward regulatory change that allows kerbside chargers to be treated as a “distribution service” and regulated appropriately. By embracing this plug & play solution, policymakers and industry leaders can deliver a scalable approach that benefits consumers, strengthens the grid, and accelerates emissions reductions.

Response to the Committee's Terms of Reference

ENA has collated insights from our NSW members to inform the Committee on the future of EVCI installations in NSW. Please refer to (**Appendix A**).

Please do not hesitate to contact Naomi Wynn, Acting Head of Distribution, on nwynn@energynetworks.com.au if you would like to discuss this submission further.

Yours sincerely,



Dominic Adams
General Manager, Networks

³ L.E.K. Consulting, [The Time is Now: Getting smarter with the grid](#), August 2024.

Appendix A

Following the Energy Networks Australia (ENA) *Street Smart: Scaling up Kerbside EV Charging in Australia* report findings, ENA would like to provide the following insights from our NSW distribution network service provider (DNSP) members to inform the Committee on the future of electric vehicle charging infrastructure (EVCI) installations in NSW.

a) Funding and location of EVCI

According to IEA data, Australia's ratio of public chargers is worsening, declining from one charger for every 35 EVs in 2023⁴ to just one for every 68 EVs in 2024⁵. This is occurring despite DNSPs actively encouraging EV charger deployment, as our NSW members strongly support expanding EV charger access and connections across their networks.

This concerning trend, where charger installations are falling behind growing demand, can be largely attributed to the current private sector delivery model. This model prioritises EVCI placement based on projected utilisation rather than ensuring customers have adequate and equitable access to EVCI. This approach unfortunately continues to exclude lower socioeconomic and regional and remote areas of NSW, as site selection remains driven by private investment priorities.

CSIRO forecasts that NSW will need 38,000 charge ports by 2030, 28,000 of which would be required to service around 1 in 3 drivers who lack access to off-street parking. Kerbside AC chargers would be the most practical and cost-effective approach to service this cohort.

The NSW Government has been a national leader in supporting EV uptake, committing \$179 million in grant programs to help the private sector deploy EV chargers.⁶ However, even with grants covering up to 80% of installation costs, private sector investors continue to focus on high-EV density areas, leaving critical coverage gaps across NSW, particularly in regional NSW.

Round 1 of the NSW kerbside grants program will fund the installation of 671 charge ports across 291 sites. While a welcome and positive step, NSW is still tracking to fall short of the forecast need for NSW residents. To support the round 1 and round 2 grants programs, NSW DNSPs are leasing space on their existing power poles to charging companies.

b) The viability of alternative energy sources for freight, heavy vehicles

In addition to kerbside EVCI, ENA members are advancing efforts to decarbonise heavy vehicles and are already piloting electric heavy vehicles. For example, Ausgrid has three Forton EV Tippers and one SEA Electric Flatbed Truck and Essential Energy has introduced Australia's first fully electric prime mover trucks to provide stores to its depots in Northern NSW.

DNSPs see charging infrastructure as a challenge to widespread EV adoption within their workforce. For example, Ausgrid's heavy vehicle electrification strategy ensures that vehicles return to a home base for charging.

Ausgrid states, "...by planning infrastructure investments carefully, Ausgrid has mitigated the risk of range anxiety among staff. Their depots are equipped with chargers ranging from 20 kW to 120 kW, ensuring that even their heaviest vehicles can be recharged within an hour or two during shift breaks."⁷ These heavy vehicle electrification projects demonstrate that electrifying heavy vehicles is increasingly viable, with further potential as technology and infrastructure mature.

⁴ <https://www.iea.org/reports/global-ev-outlook-2023/trends-in-charging-infrastructure>

⁵ <https://www.iea.org/reports/global-ev-outlook-2024/trends-in-electric-vehicle-charging>

⁶ <https://www.nsw.gov.au/driving-boating-and-transport/nsw-governments-electric-vehicle-strategy>

⁷ <https://fleetautonews.com.au/ausgrids-fleet-electrification-journey-a-deep-dive-with-tim-kynoch/>

c) Use of existing infrastructure and measures to ensure market competitiveness, including ring fencing policies

The private sector's kerbside AC charger deployment to date has been heavily reliant on public subsidies from both Commonwealth and State governments, with limited appetite for broad-based or equitable coverage. In many cases, EV charging companies lack the regulatory directive, financial incentive or commercial viability to invest across NSW, leading to critical and persistent infrastructure gaps, particularly in lower-income and regional communities.

DNSPs offer an efficient and scalable alternative

In contrast, as highlighted in ENA's reports⁸⁹, DNSPs can deliver EV chargers at more than 50% lower costs than commercial providers, allowing customers to directly benefit from economies of scale. The DNSP-led model also ensures all existing DNSP safety, technical, cyber security and reliability standards apply to DNSP-installed EVCI.

DNSPs are extensively regulated and licenced to provide public electrical infrastructure. NSW DNSPs propose to install 22,500 AC chargers on existing power poles, substantially contributing to the 28,000 kerbside charge ports needed that the CSIRO forecasts. This initiative would complement, not replace, current private sector contributions, allowing the market to expand without crowding out competition, particularly in the fast charger and end of journey charger markets.

Promoting open access and competition

There is growing support for the DNSP-led model in which DNSPs install and own pole-mounted EVCI and provide open access to all energy retailers and EV charging companies to roam their customers on to the charger. This model enhances customer access to competition at the connection point. Customers can use any DNSP-owned charger via their preferred retailer or charging service, without needing to sign up to multiple platforms or charging apps. A DNSP-led model promotes customer choice and supports a more competitive and consumer-friendly EV charging market, while preserving the current market structure. DNSPs remain regulated infrastructure providers, while private companies continue to compete in retail energy service offerings.

Just as DNSPs today provide poles and wires that facilitate competitive energy retail services, this model provides the infrastructure at scale to facilitate the competitive provision of EV charging services. Competition in this market will lead to both competitive price outcomes for customers, as well as innovation in the range of services offered that different customers may value, depending on their circumstances (e.g. fixed price, time of use, solar soak or 'all you can eat' models).

Accessibility, equity and usability

The current fragmented model often requires customers to navigate a multitude of specific chargers and different apps, which poses a significant barrier, especially for the elderly and culturally and linguistically diverse (**CALD**) users who may struggle with multiple digital platforms. Compounding this, EV charge-point electricity pricing is unregulated and operates outside of the national electricity market's rules. This lack of transparency limits oversight of affordability and service level outcomes for customers in a market that will increasingly be seen as an 'essential service' in our economy.

Reliability and accountability for charger maintenance

Both local and State governments have heard repeated concerns from stakeholders on who has responsibility for monitoring, maintenance and repairs for EV kerbside chargers. With outdated equipment, increased usage, and lack of proactive maintenance, charger reliability is increasingly

⁸ L.E.K. Consulting, [The Time is Now: Getting smarter with the grid](#), August 2024

⁹ L.E.K. Consulting, [Street Smart: Scaling Up Kerbside EV Charging in Australia](#), January 2025.

compromised¹⁰. This undermines consumer confidence, delaying EV uptake. A DNSP-led EVCI rollout, clearly defines responsibility for maintenance - DNSPs would be accountable for ensuring chargers are reliable, safe and operational for the public.

Government and policy leadership

NSW DNSPs have been advocating to Governments and energy market bodies to be able to deploy pole-mounted EV chargers. We note, and commend, the NSW Government for committing to investigate a DNSP-led model as part of its Consumer Energy Strategy.¹¹ As a result, we encourage the Committee to provide a recommendation that the Updated NSW Government EV Strategy enables NSW DNSPs to deploy AC chargers on their poles.

Achieving NSW's decarbonisation and electrification targets depends on immediate investment in infrastructure, particularly in areas where private investors are unwilling or unable to act.

¹⁰ <https://www.whichcar.com.au/advice/why-are-ev-chargers-unreliable>

¹¹ See Action 31 https://www.energy.nsw.gov.au/sites/default/files/2024-09/NSW_Consumer_Energy_Strategy_2024.pdf



Street Smart: Scaling Up Kerbside EV Charging in Australia

The Time is Now

Dom van den Berg
CEO Energy Networks Australia

January 2025



Executive Summary: Unlocking Australia's EV Potential with Kerbside Charging Solutions

The global transition to electric vehicles (EVs) is accelerating, yet Australia lags behind due to insufficient public charging infrastructure. This paper outlines a straightforward and scalable solution: using existing power poles to deploy kerbside charging at pace. This approach offers enhanced convenience, supports grid stability, and accelerates emissions reductions while fostering competition in the market.

In August 2024, Energy Networks Australia released *The Time is Now: Getting Smarter with Grid*, a comprehensive report developed with L.E.K. Consulting. The report highlights how Australia's existing electricity distribution networks can be leveraged to advance the energy transition. Key findings include:

- Transitioning to EVs benefits individuals and significantly reduces emissions, even after accounting for vehicle purchase costs
- As EV technology and markets mature, the cost of ownership decreases, driving consumer interest
- Despite these benefits, inadequate public charging infrastructure

remains a critical obstacle, with nearly half of Australian EV owners considering a return to internal combustion engine vehicles.

Australia's charging network is underdeveloped compared to global standards. **Currently, there are 68 EVs per public charge point in Australia**, far exceeding the global average of 11. This disparity exacerbates range anxiety among potential EV buyers and deters wider adoption.

Existing power poles, ubiquitous across Australia, present an immediate and cost-effective solution for expanding EV charging infrastructure. By installing small chargers on poles we will see:

- **Faster Deployment:** Chargers can be installed at a rate of over 120 per week in states like New South Wales
- **Lower Costs:** Using existing infrastructure reduces the need for extensive and disruptive construction work
- **Universal Access:** Chargers can be placed in any location with a power pole and parking space, not just in areas with high EV ownership and

wouldn't require EV specific parking

- **Increased competition:** Distributions networks would provide the chargers as "network infrastructure" like poles they do with poles and wires, and retailers and charge point operators would be able to use the network infrastructure to offer services to their customers.

This solution is within reach with straightforward regulatory change to that allows kerbside chargers to be treated as a "distribution service" and regulated appropriately.

By embracing this plug & play solution, policymakers and industry leaders can deliver a scalable approach that benefits consumers, strengthens the grid, and accelerates emissions reductions.

Australia's transition to electric vehicles hinges on overcoming the barriers posed by inadequate charging infrastructure

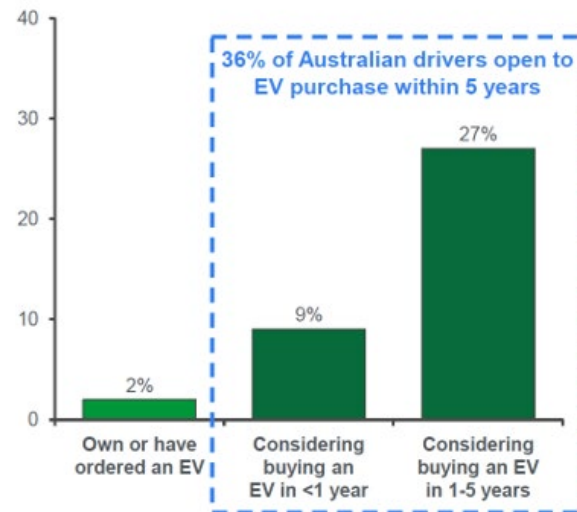
The time to act is now.



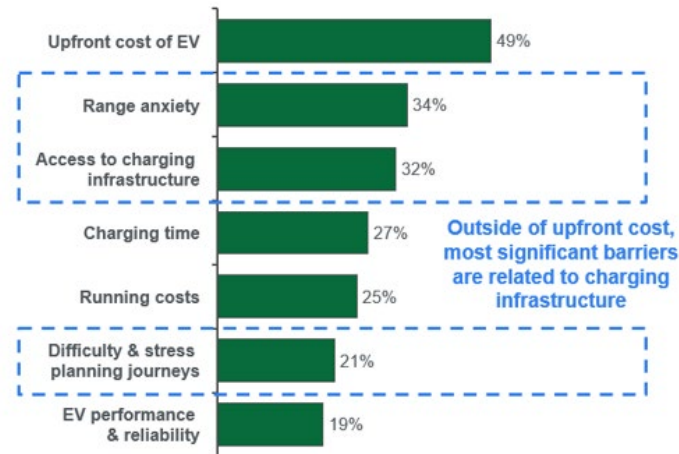
Barriers to EV growth

Availability of EV chargers remains a key barrier to *new and replacement* purchases of EVs in Australia

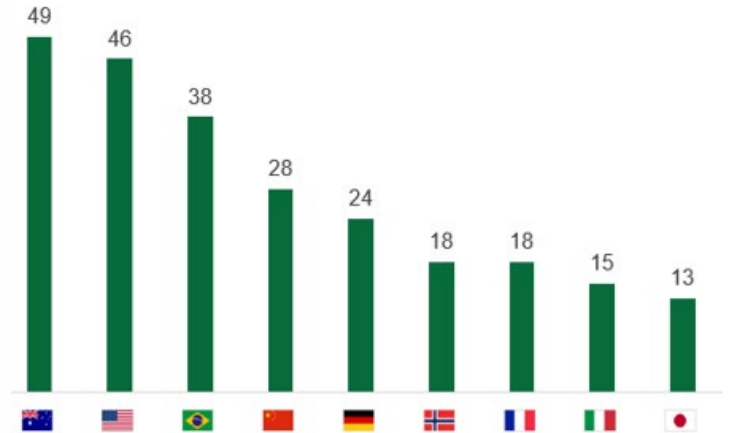
Australian drivers considering EV purchase
Percent



Leading barriers cited to EV purchase
Percent



Likelihood of current EV owners to switch back to ICE
Percent



Australians are willing to consider EV's for their next car...

But they still hold significant concerns about their ability to easily charge.

Even those with an EV already are thinking of switching back due to difficulties charging.



Industry Overview

Australian public charger density is low by global standards & we cannot leave it entirely to the commercial market



The Problem

Australia's EV charging network is immature by global standards.

We currently have 68 EVs per public charge point, compared to the global average of 11, and this is only getting worse over time. Public charging is key to enabling more widespread adoption of, and more equitable access to, EVs.



The Solution—Until Now

There are challenges faced by the commercial market when it comes to EV chargers investment: it suffers from a '*chicken and egg*' problem where a lack of EV density results in poor business models, but without more public chargers, drivers won't buy EVs to increase density. This can then result in lower maintenance investment. Globally studies show that c.25% of commercial charging infrastructure is offline or non-functioning at any given time.





Better using our existing infrastructure

Distribution networks across Australia can deliver kerbside chargers at lower cost, faster, with improved customer experience & access and they can start tomorrow.

1

Lower cost

Initial roll-out of EV chargers can be delivered at a lower cost than commercial operators – Networks > 50% cheaper

2

Faster deployment

Networks can install up to c.40 chargers per week per Network by leveraging the extensive existing infrastructure base of poles and existing expert workforce

3

Improved customer experience

Network expert workforces would ensure chargers are properly maintained over their life, ensuring that chargers work when EV drivers need them

4

Improved equity and access

EV chargers would be rolled out across a networks, rather than just focusing on areas which are most profitable. Plus there is scope for vehicle to grid capability in the future.

5

More competition and innovation

Network chargers could be 'neutral hosts' allowing any Charge Point Operator to roam, fostering competition and driving prices down for EV drivers

6

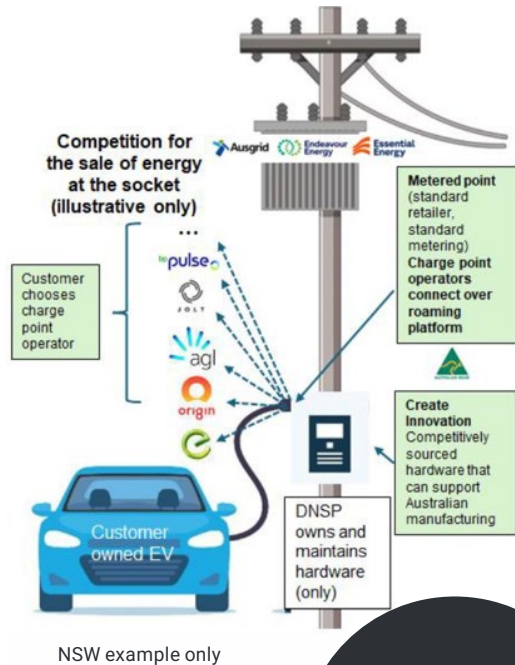
Less disruption for community

By installing on existing poles, Networks would avoid the need for extensive works that may disrupt the community (e.g. footpath excavation) as the infrastructure is plug and play



How would it work?

Characteristics of a Network-led EV charger rollout



FASTER,
CHEAPER &
MORE
EQUITABLE

1. Networks would install, own and maintain EV chargers and install at scale

This would consist of kerbside pole-mounted public chargers using the Network's existing assets (poles) and workforce.

2. Networks would work with customers and local councils

Local councils and Network's customers could assist in identifying suitable and preferred locations.

3. Networks would open the access to retailers to sell to customers

Networks would provide the enabling infrastructure to facilitate EV charging but Networks would not sell energy to EV owners, this would be done by retail service providers.

- ✓ **Lowest upfront cost**
- ✓ **Plug & play solution that can be rolled out at pace**
- ✓ **Ensures all customers have access to EV chargers**
- ✓ **Higher reliability and improved customer experience**
- ✓ **Better use of existing assets**



A simple solution exists

The existing grid can work harder for customers and our regulation framework can and should support that.

Existing arrangements and regulations block distribution networks from offering kerbside charging services to retail service providers, limiting or “capping” the services the grid is allowed to provide

Classifying kerbside EV charging infrastructure as a ‘distribution service’ in the regulatory framework would also see the service regulated appropriately, providing certainty and assurance to customers.

It would allow distribution companies to install and maintain kerbside EV chargers, and then provide open access to commercial charging operators who ‘sell’ the charging services to customers.

It’s a case of better using what we already have – unlocking the grid to do more for customers than just lights and power points.



Author: Dom van den Berg, CEO Energy Networks Australia.

Appendix A

The Time is **Now**

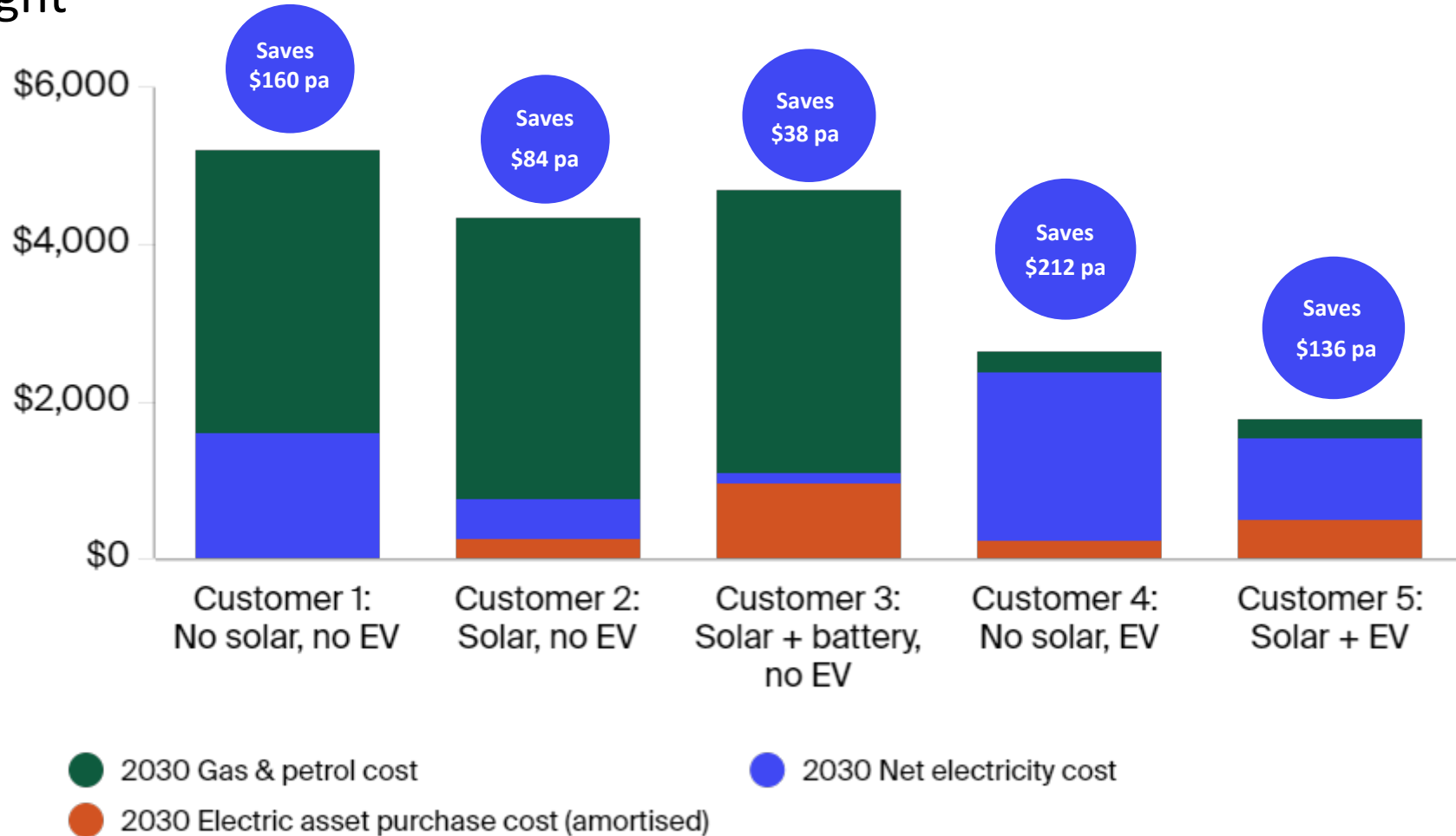
Customer archetype analysis

For the full report [click here](#)



REPORT EXTRACT:

All customers types save money by moving from the left to the right right



- ✓ All customers benefit from lower bills for grid supplied electricity
- ✓ Getting an EV & installing solar will further reduce a customer's total energy costs

Snapshot of customer's total energy costs in 2030