

# The energy revolution in our homes

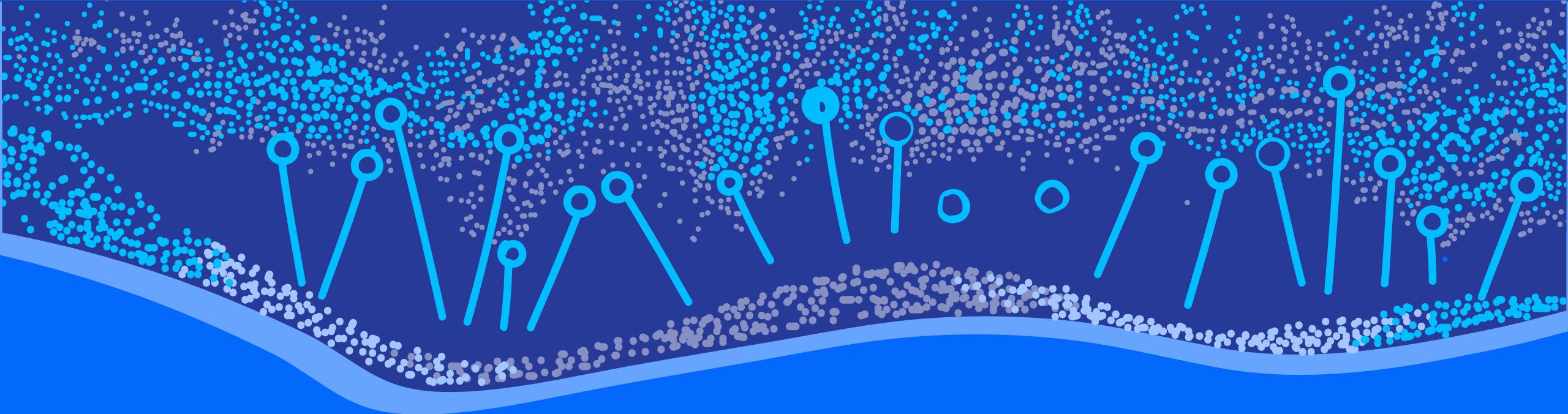
Victoria Mollard

Executive General Manager – Economics and System Security

3 December 2025

Australian Energy Market Commission

AEMC



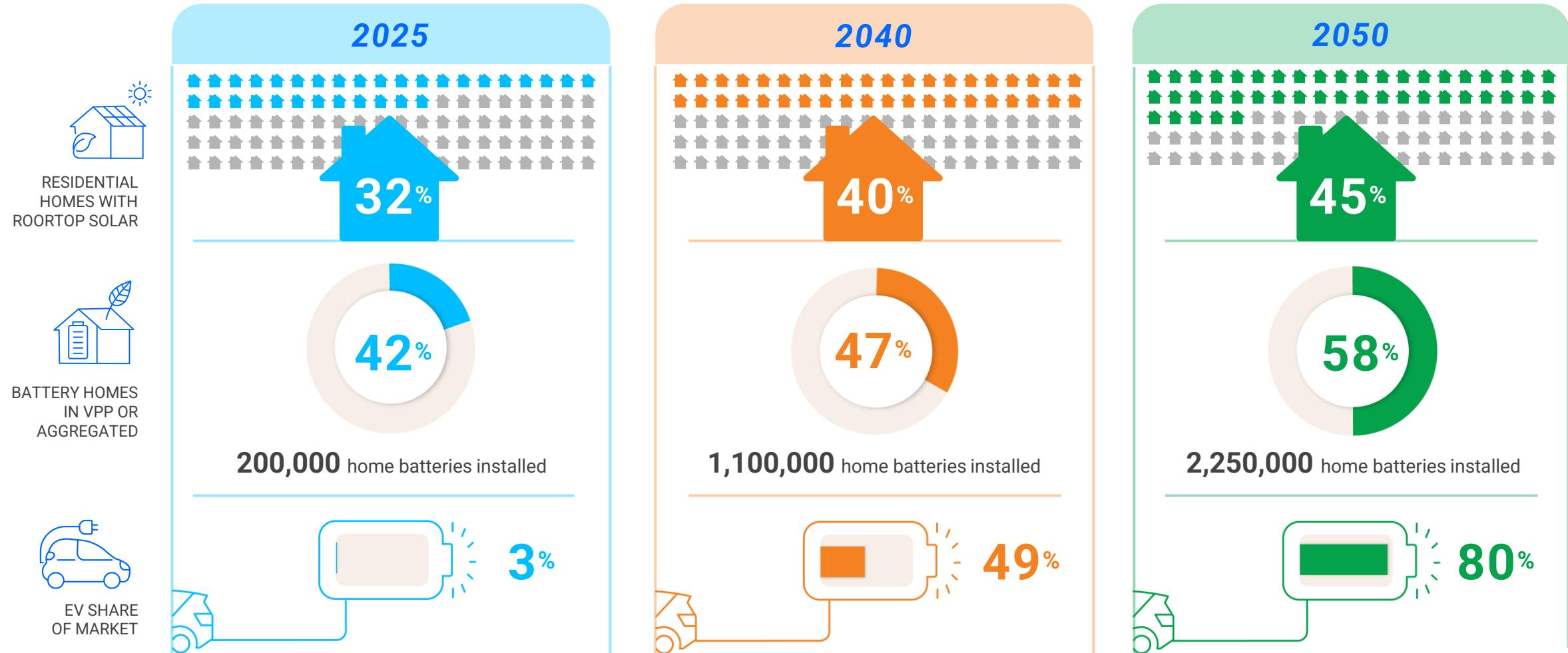
# ACKNOWLEDGEMENT OF COUNTRY

*The AEMC acknowledges and shows respect for the Traditional Custodians of the many different lands across Australia on which we live and work. The AEMC office is located on the land of the Gadigal people of the Eora Nation. We pay respect to all Elders past and present, and the enduring connection of Aboriginal and Torres Strait Islander peoples to Country.*



# CER adoption is expected to rise steadily over the next 25 years

## Projected uptake of CER in Australia



Sources: AEMO (2025) 2025 IASR; Electric Vehicle Council (2025) State of Electric Vehicles 2025; AEMO (2025) DER Register Data; Clean Energy Regulator (2025) Small-scale installation postcode data; ACCC (2025) Inquiry into the National Electricity Market – July 2025 Report; CSIRO (2024) Small-scale solar PV and battery projections 2024; CSIRO (2024) Electric vehicle projections 2024; GEM (2024) Projections for distributed energy resources; AEMC analysis.

# CER uptake and electrification are reconfiguring Australia's energy supply chain

## Australia's energy supply chain

NEM only; Residential downstream only

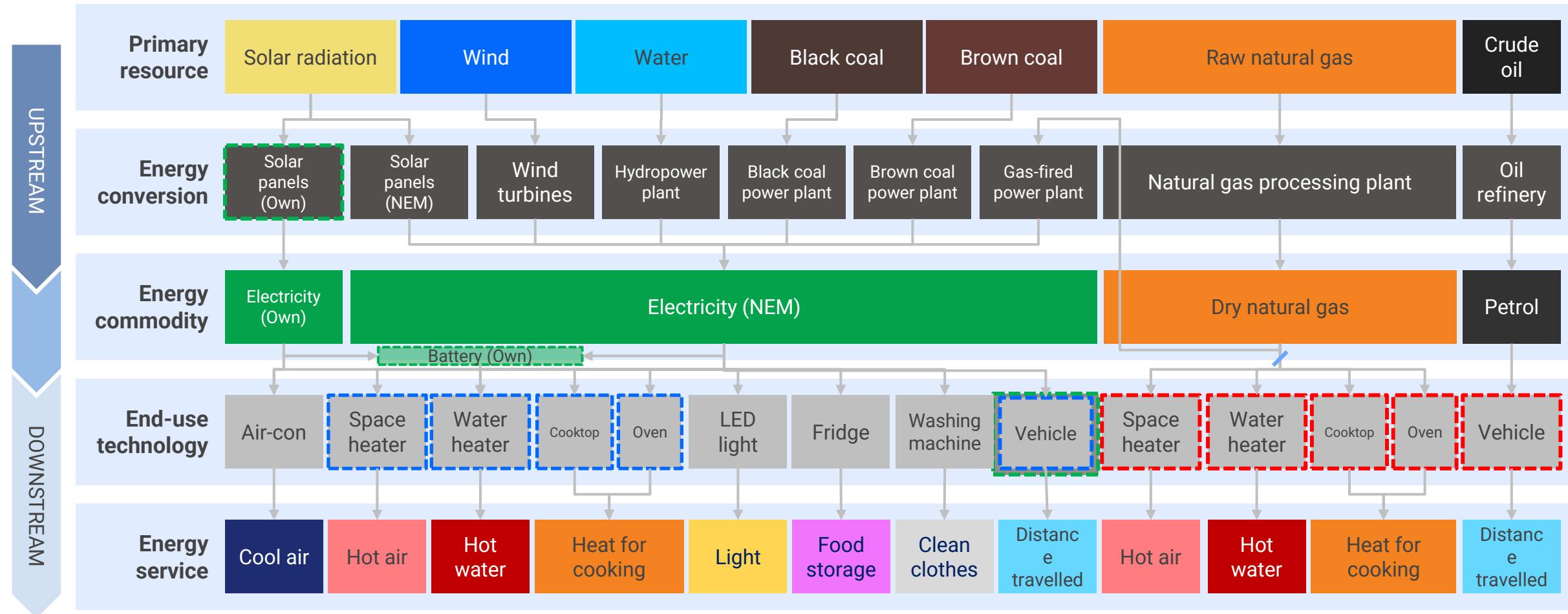
Before electrification



After electrification



CER



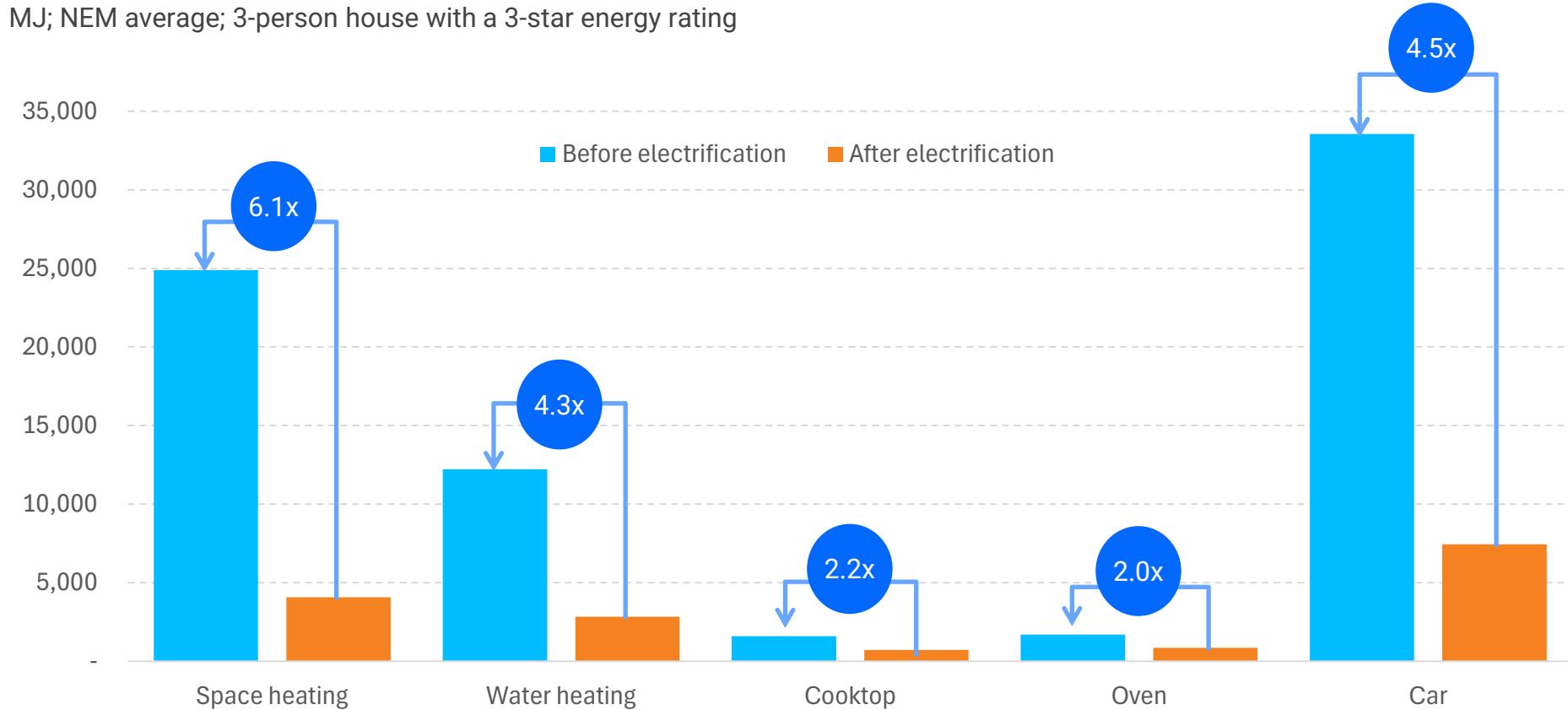
Source: AEMC analysis.

# Electric technologies are up to six times as efficient as gas and petrol counterparts



## Annual household energy usage, by service

MJ; NEM average; 3-person house with a 3-star energy rating



Future innovations will make electric appliances and vehicles even more energy efficient

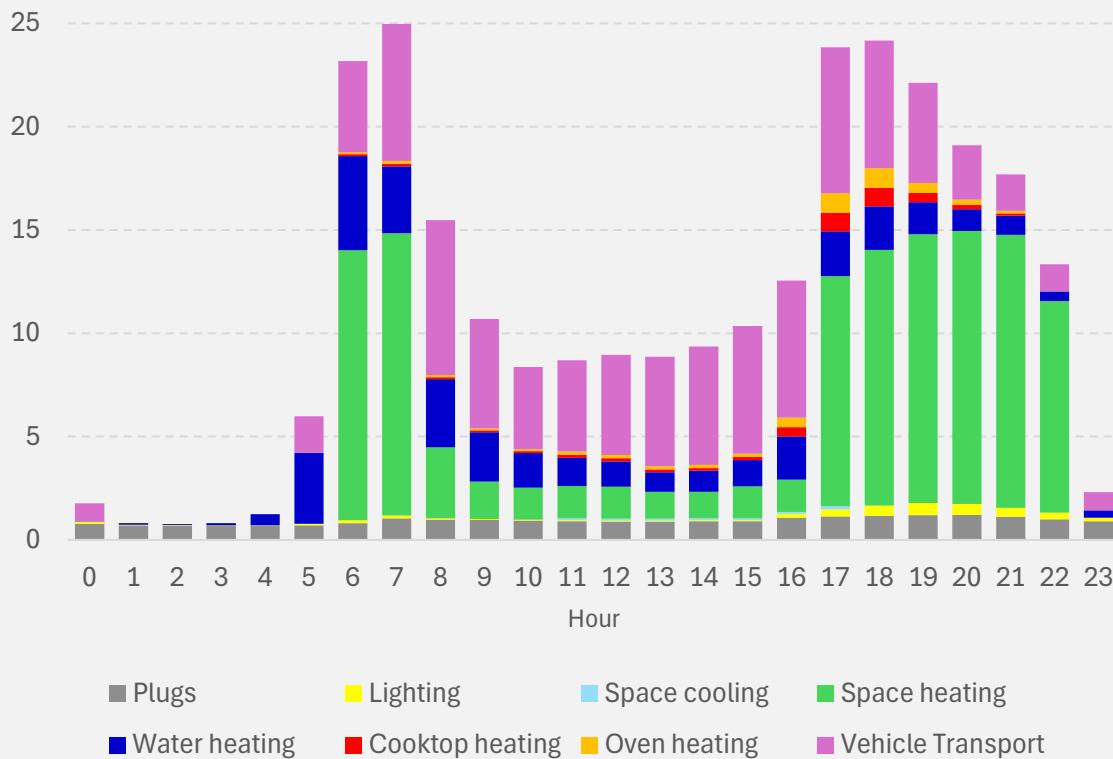
Notes: It is assumed that before electrification, households in Melbourne and Canberra use a 3-star gas ducted heater, while households in other cities use 3-star gas room heaters with energy efficiencies of 73%.

Sources: AEMC Household Electrification Model.

# Before electrification, a significant amount of energy is used for heating and driving

## Hourly energy usage, before electrification

MJ; 3-person house with a 3-star energy rating in Melbourne; Average day in October



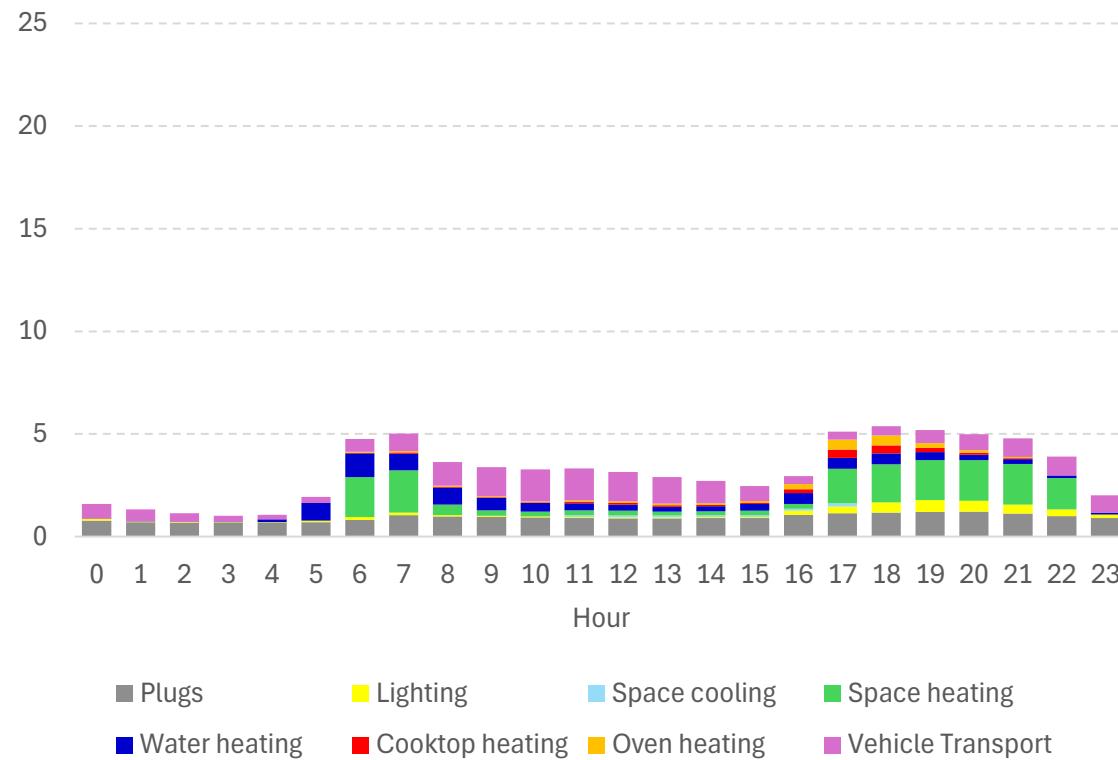
We captured 8 different energy sub-loads, converted them to a common energy unit (MJ), and summed them to form a household's gross energy load

Notes: The shape of the vehicle energy sub-load before electrification is illustrative only and does not impact results.  
Sources: AEMC Household Electrification Model.

# After appliance and vehicle electrification, a household's gross energy load collapses

## Hourly energy usage, after electrification

MJ; 3-person house with a 3-star energy rating in Melbourne; Average day in October



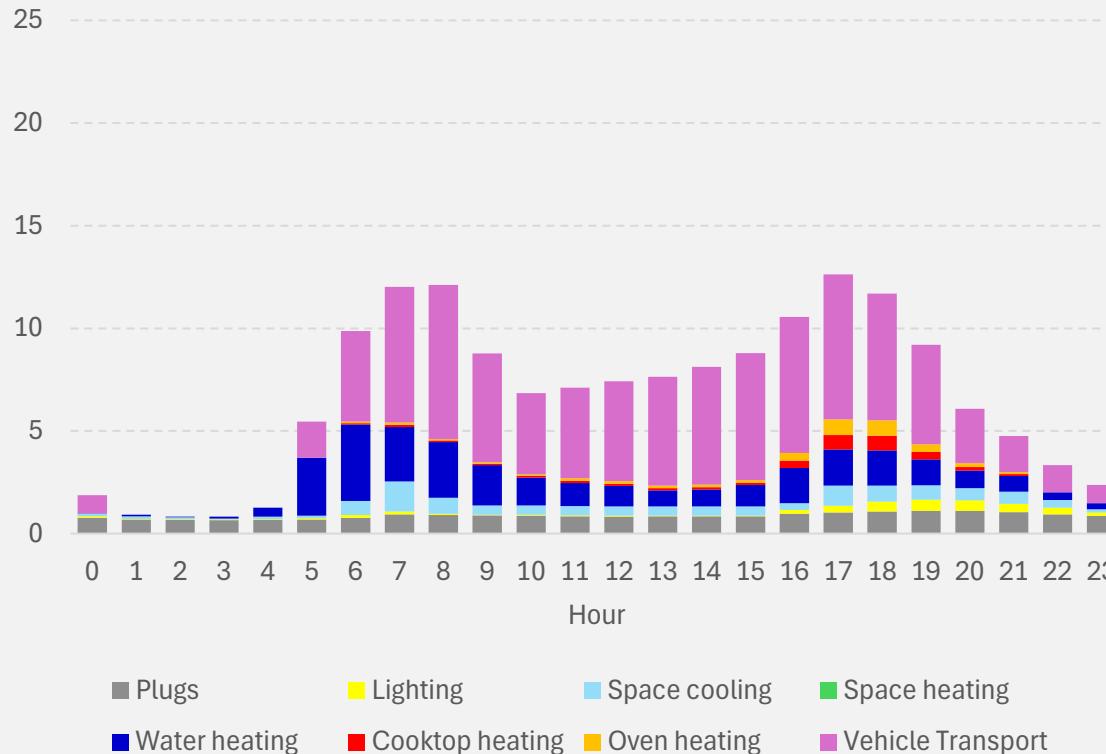
Efficient electric assets deliver the same energy services using a fraction of the energy used by inefficient gas and petrol assets

Sources: AEMC Household Electrification Model.

**In warmer climate zones and months, heating declines and cooling rises ...**

### Hourly energy usage, before electrification

MJ; 3-person house with a 3-star energy rating in Brisbane; Average day in January



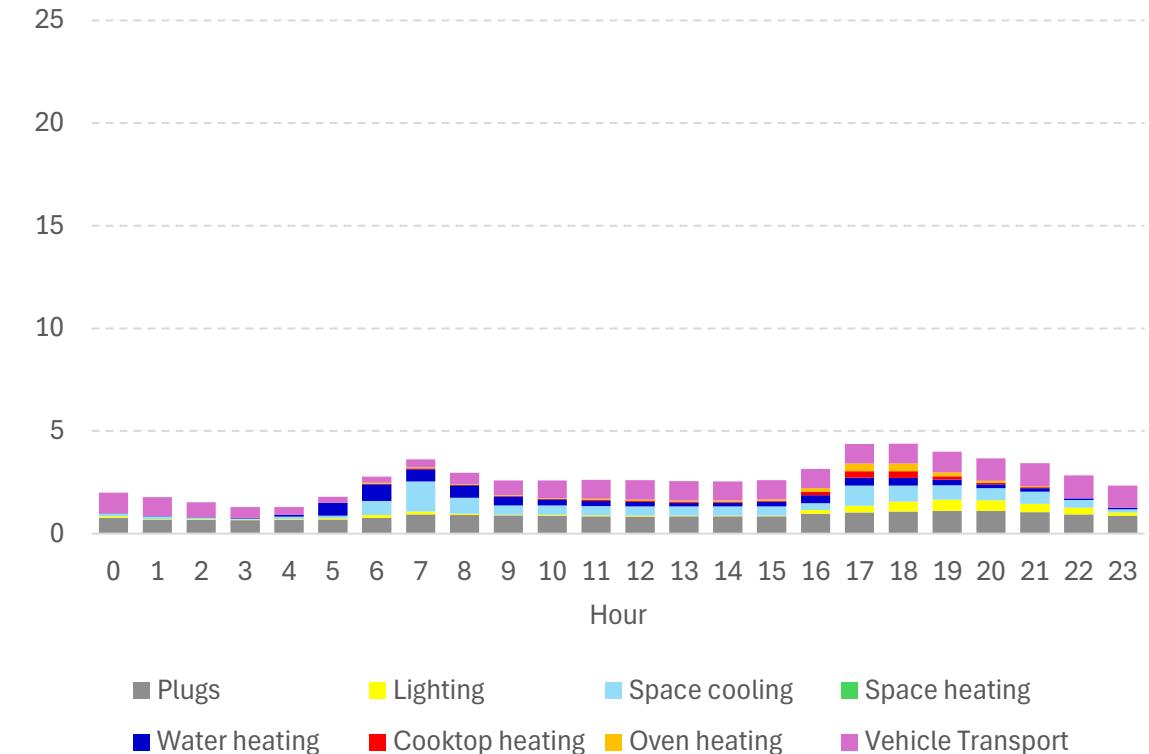
We captured 8 different energy sub-loads, converted them to a common energy unit (MJ), and summed them to form a household's gross energy load

Notes: The shape of the vehicle energy sub-load before electrification is illustrative only and does not impact results.  
Sources: AEMC Household Electrification Model.

**... while the shape and level of energy use for other energy services remain fairly constant**

### Hourly energy usage, after electrification

MJ; 3-person house with a 3-star energy rating in Brisbane; Average day in January



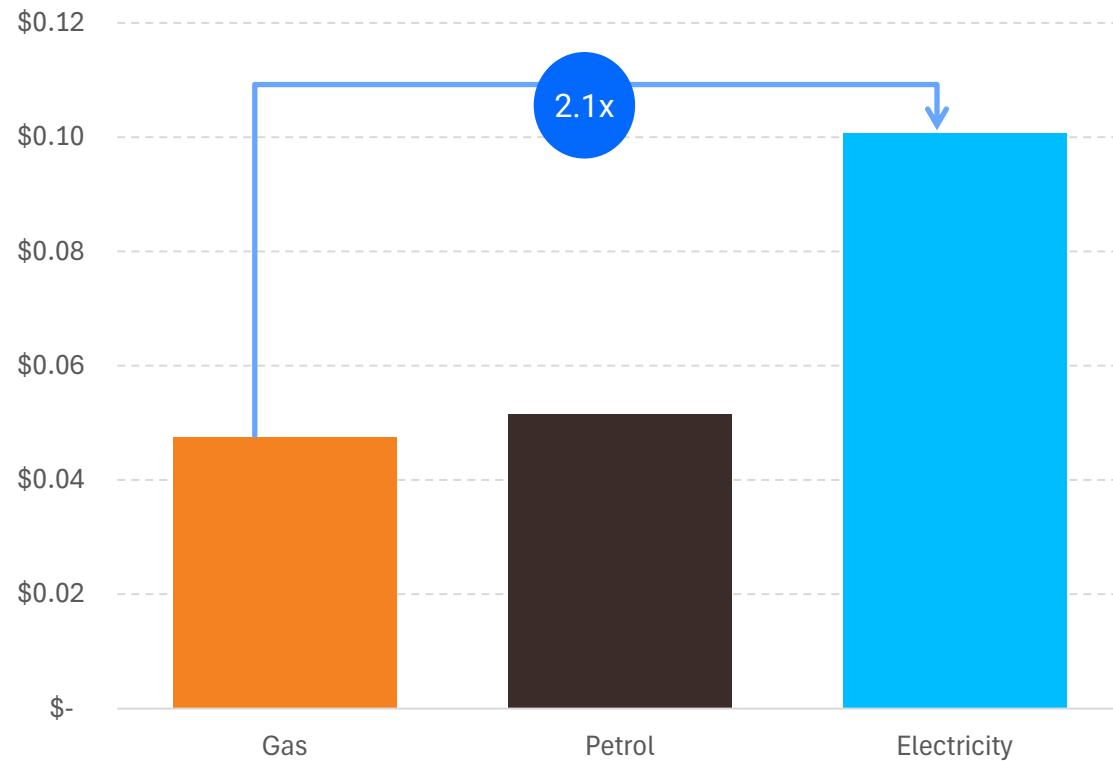
Efficient electric assets deliver the same energy services using a fraction of the energy used by inefficient gas and petrol assets

Sources: AEMC Household Electrification Model.

# Electricity usage rates are about double gas and petrol usage rates

## Energy usage rates, by fuel source

\$/MJ; NEM average; 3-person house with a 3-star energy rating



Notes: Gas (electricity) usage rate is calculated as a household's annual gas (electricity) bill before electrification divided by their annual gas (electricity) usage before electrification, using gas (electricity) standing offers. 1kWh = 3.6MJ. 1 gasoline litre = 34.2MJ.

Sources: AEMC Household Electrification Model.

# *The pricing review is seeking to address **two** fundamental objectives:*

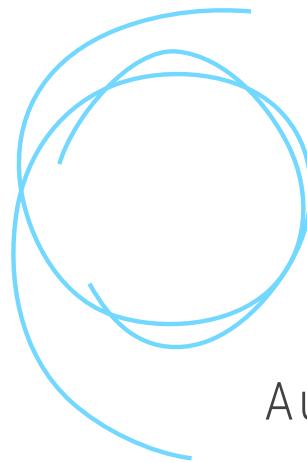
1

*Ensuring that the pricing framework supports the availability of the products and services that consumers want in the future, while also*

2

*Delivering a lower cost system for all consumers*





# AEMC

Australian Energy Market Commission



## *Keep in touch*

**At the Australian Energy Market Commission**  
we are always keen to keep in touch. You can learn  
more about who we are and what we do via our  
website, or email, [victoria.mollard@aemc.gov.au](mailto:victoria.mollard@aemc.gov.au)

[www.aemc.gov.au](http://www.aemc.gov.au)

