Endeavour Energy

Flexibility, electrification & storage

Strategies to support customers in a high renewable energy future

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POWER together

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Acknowledgment of Country

Endeavour Energy acknowledges the Traditional Custodians of Country where we work — the people of the Dharug, Wiradjuri, Dharawal, Gundungurra and Yuin nations.

We recognise their continuing connection to the land, waters, and community and pay our respect to Elders, past, present and emerging.

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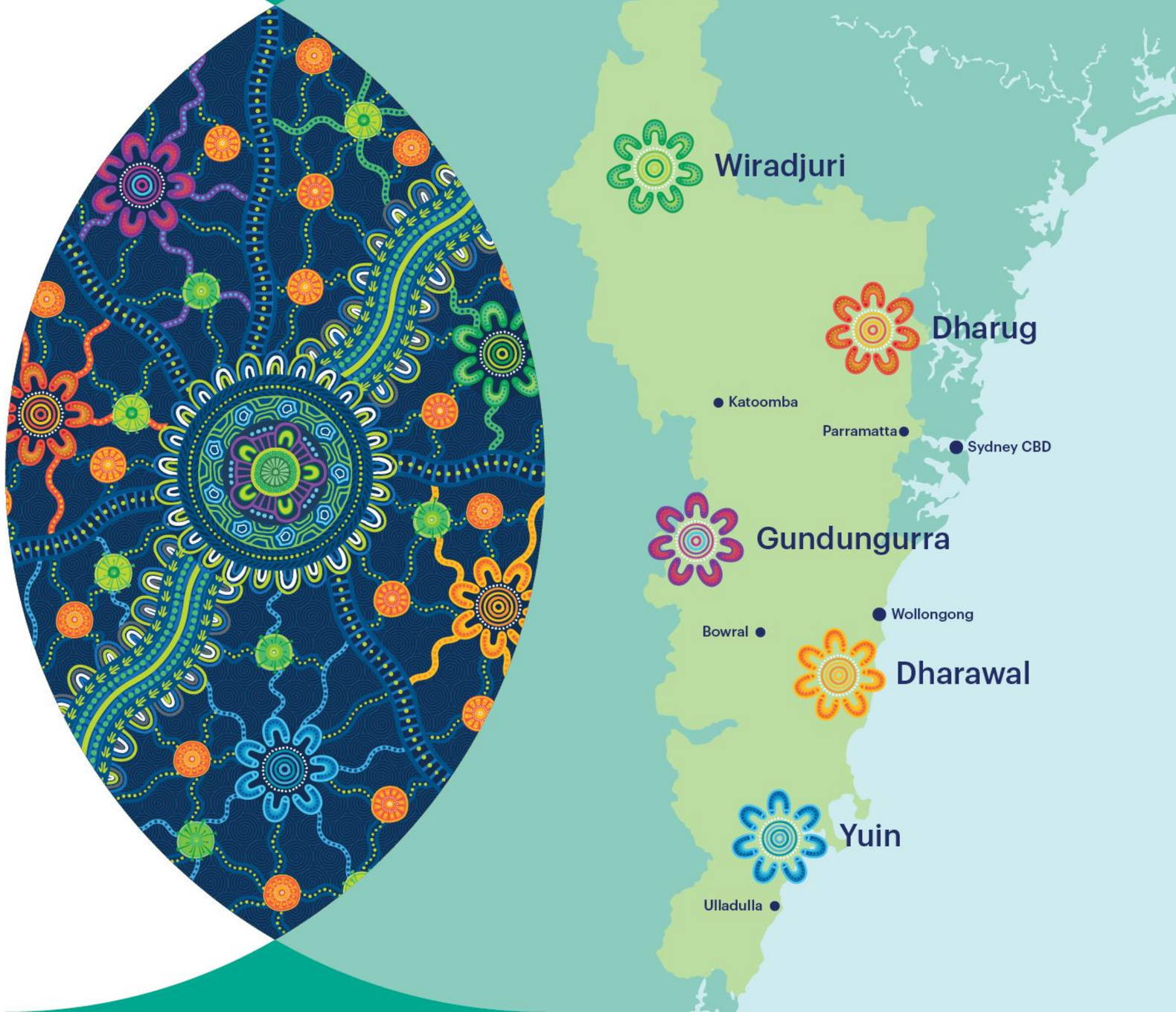

Our ~2.8m customers accelerating investment in their own energy future

Rooftop Solar

335,000 solar connections

Over 2.5GW installed capacity, increasing at 300MW p.a

Marsden Park (Right) highest penetration

Home Batteries

22,100 battery connections

Fastest uptake of federal rebate under SRES

>15 MWh usable capacity installed month of July 2025

Electric Vehicles

31,200 registered EVs

6,700 level 2 chargers (detected through Smart meter analytics)

86 GWh total aggregate energy p.a. from EV charging

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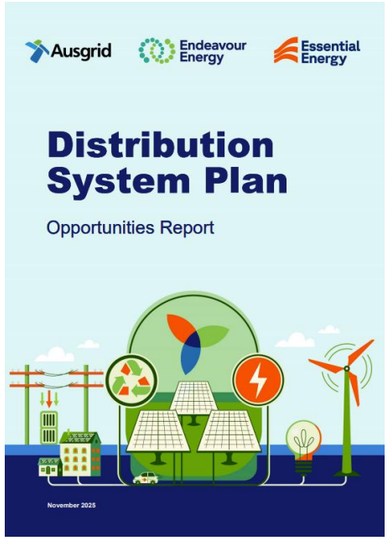
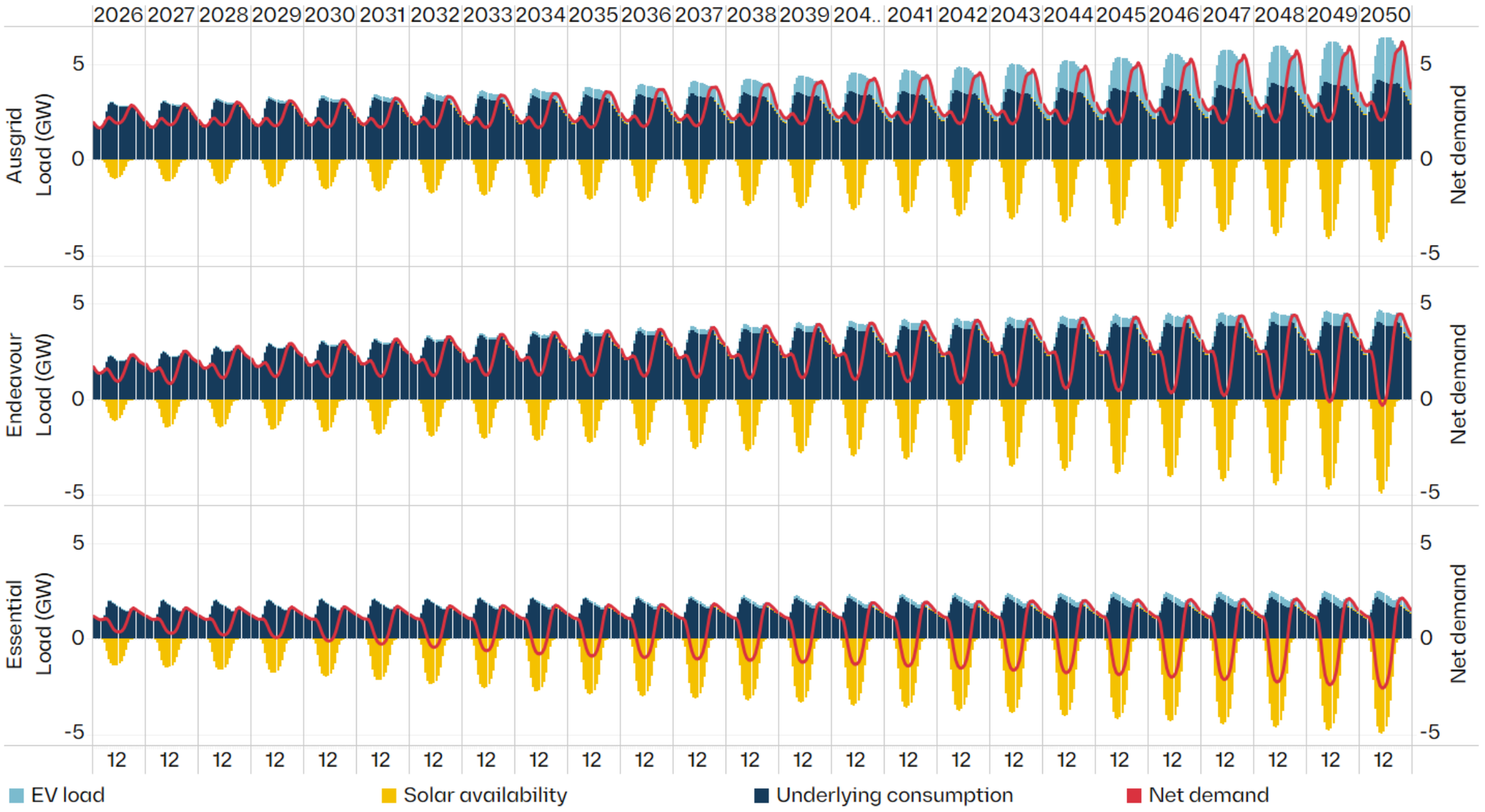
The recent NSW Distribution System Plan highlights future scenarios and changing net throughput of NSW networks out to 2050, showing significant changes





Challenges: Increasing Customer Energy Resource (CER) penetration creates several localised challenges that distribution networks must overcome

Forecasting uncertainty

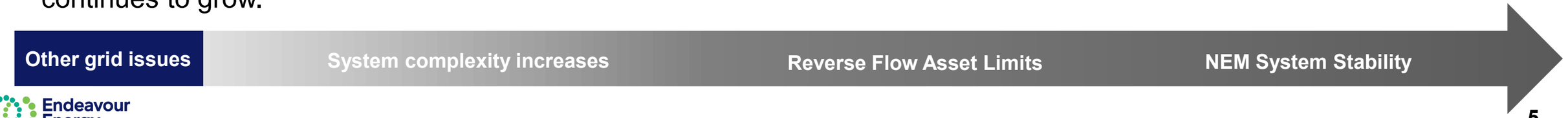
- **Change**: customers are installing high levels of energy intensive assets, making predicting their behaviour and uptake more challenging.
- **Challenge**: We need to forecast both maximum and minimum demand to plan the network and avoid over- or under-investment – a task that's becoming harder as DER continues to grow.

Voltage challenges

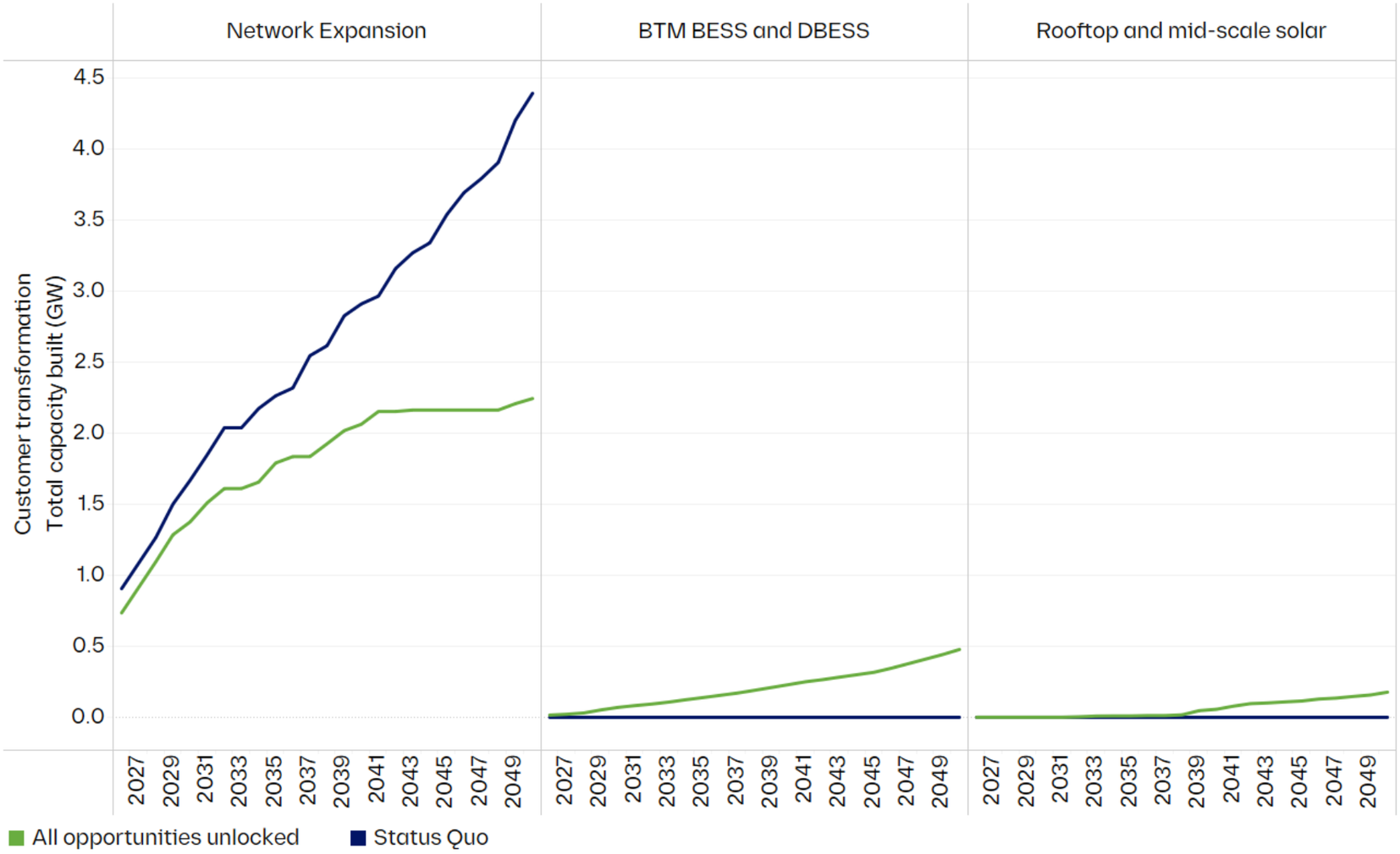
- **Change**: solar PV penetration is increasing, forecast to be >50% of households by 2030, and network voltages are pushed above and below statutory limits.
- **Challenge**: We have a power quality obligation to keep voltages within acceptable ranges to avoid negatively impacting customers.

Network thermal limits

- **Change**: batteries and EVs are increasingly being connected across the network, meaning material additional power must be served via existing networks.
- **Challenge**: networks have thermal limits that cannot be breached, orchestrated operation of high DER can draw more power than the local network assets can serve.



Counterfactual: What happens if we don't orchestrate CER or leverage the existing latent hosting capacity in distribution networks?



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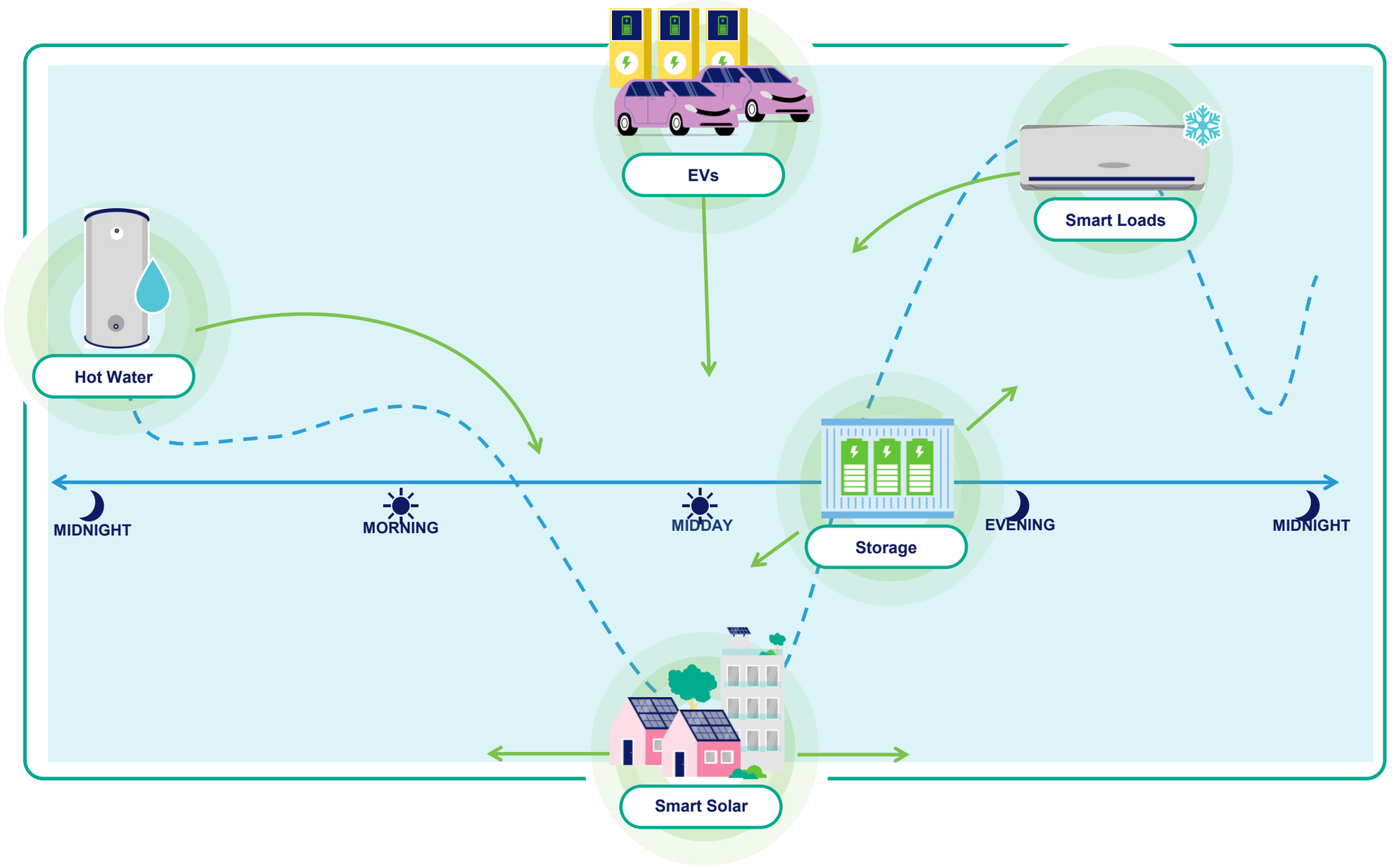
Solutions: Flexibility, storage, & orchestration will be key to maximise value of CER for households, increase network utilisation, and minimise energy costs



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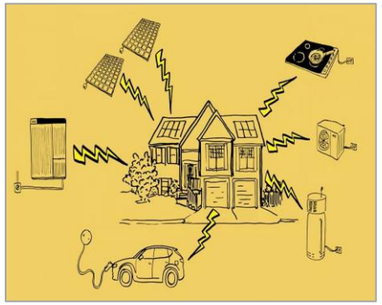
Customer at the centre of the energy transition – New products and services

We are embedding scalable reforms, testing new products and services through replicable, integrated models that combine technical, commercial, regulatory, and customer elements to deliver system-wide benefits



ELECTRIFY 2515
community pilot

Brighte · Rewiring Australia · Endeavour Energy

Australia's first community-led electrification project

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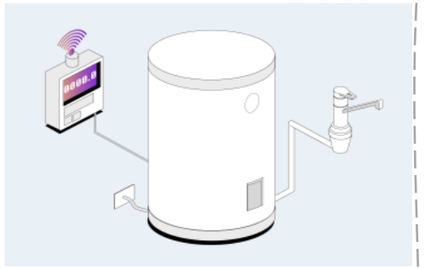
Community Batteries

Australian Government, Department of Climate Change, Energy, the Environment and Water · ARENA · origin · EnergyAustralia

Australia's largest community battery program



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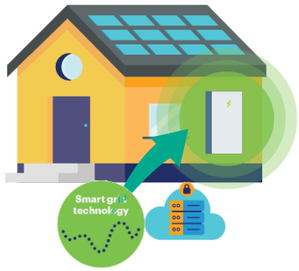
Off Peak+

A first for Australia

A leading approach to dynamic hot water storage flexibility



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Flexible Exports

GRIDSIGHT · switchDin · Edge Zero

World leading AI enabled dynamic & equitable flexible exports

Illawarra Urban REZ

Endeavour Energy · NSW Government · EnergyCo

FlexTogether

agl | Endeavour Energy

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NSW Distribution System Plan Opportunities Report

This is a plan for how distribution networks can play a central role in the transformation of the NSW energy system.

By making use of the network we have today, distributors can de-risk the energy transition, buying time whilst essential transmission projects are developed.

The plan lays out a future where the distribution network is fully utilitised. This includes renewable energy zones on the high voltage distribution network, co-locating load and generation in new industrial precincts, and connecting significantly more storage at all levels of the distribution network.

It also includes coordination of consumer energy resources (CER), in particular electric vehicles, ensuring all customers can benefit from these investments.

For the first time, the three NSW electricity distribution businesses have come together to develop a single, unified view of how to unlock these opportunities.

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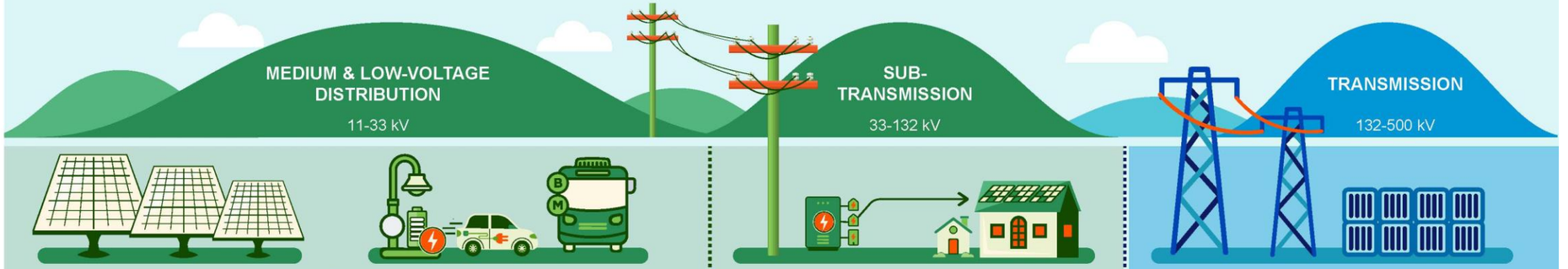
Essential Energy

PURPOSE

Reduce pressure on household energy costs → De-risk the timely achievement of renewable energy targets → Improve social licence and address transition inequities

Better utilisation of available capacity in the distribution network and optimising the value for and from consumer energy resources unlocks... → ...up to **$4.3bn** in economic benefits



Greater coordination of CER and unlocking mid-scale solar can deliver up to **$2.2 bn** in benefits

A DNSP-enabled rollout of EV charging infrastructure could accelerate uptake by **500,000 EVs** in NSW

Distribution-connected generation can produce more than **enough energy to power all NSW households**

Transmission investment is still needed, but distribution-connected generation buys **2-5 years**

Community batteries support more equitable outcomes for the **50%** NSW households without rooftop solar in 2030

In front of meter storage and CER coordination create an opportunity to defer zone substation upgrades by up to **15 years**

Distribution network augmentations **(~$3.2bn)** will enable **20.6 GW** **of distribution-connected wind and solar** by 2050 (~$0.15m per MW)

By 2050, distribution-connected wind and solar reduces gas-powered generation by **50 TWh**

... displacing almost **4 years** of NSW's current gas consumption

... and **reduces reliance** on other states **to service** NSW demand by **65%**

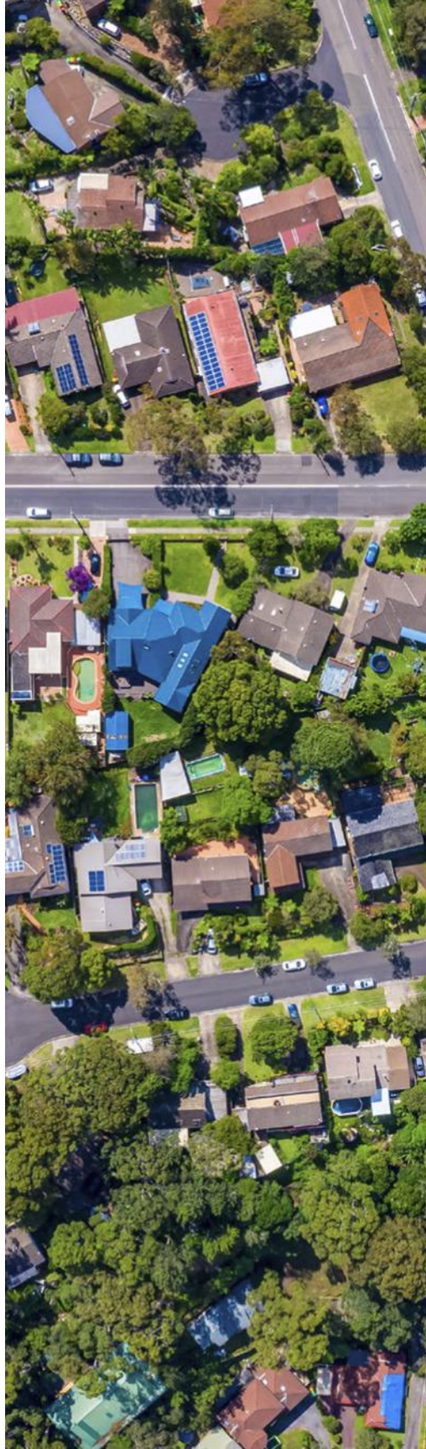
DISTRIBUTION

Unlocking this value requires → Bottom-up integrated strategic planning → Reforming project approval pathways → Regulatory changes to facilitate distribution-connected storage

Click here to launch the **NSW Distribution System Plan Opportunities Report**

Where to from here?

- Keep focused on **enabling customers** to achieve the energy transition
- Like all Distribution Network Service Providers (DNSPs), we are evolving to a **Distribution System Operator (DSO)** - this is central to supporting the uptake of solar PV as we reach intrinsic limits but also more CER generally
- There will be an increasing need to not only know what CER is out there but what is active, and how it is **participating** and **attuned to which market signals,** so we will continue to enhance our network visibility and forecasting toolkit
- **Ongoing innovation,** plus scaling up new technology solutions at the right time, will be required in order to **maximise the value of CER for customers** without overbuilding networks



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Q&A

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