SA Power Networks Regulatory Proposal Engagement 2025-30

Focussed conversation – Energy Transition

Workshop 1 – 12 August 2022



Acknowledgement of Country

‘I would like to begin by acknowledging the multiple Traditional Owners of the lands on which we are joining from today, and those that host the South Australian electricity grid.

I would also like to pay my respects to Elders past and present and acknowledge that these are living cultures by paying respect to emerging leaders.’



Welcome



Housekeeping

Diverse group of stakeholders, keen to hear all voices

Online session

- Raise hand if want to speak (✋)
- Questions/ comments in chat function
- Mute if not talking
- Cameras on preferable (particularly when asking a question)
- Session will be recorded

Parking Bay

- Capture questions or ideas that we aren’t able to cover during the session

Follow up

- Survey to provide opportunity for further input following the session
- Workshops 2 and 3 scheduled 22 September and 1 November

Overview of the day

9.30 - 9.45am	**Welcome and introduction**
9.45 - 10.30am	**Background and context** • Reset process and price outcomes 2025-30 • South Australia's energy transition • Broad and diverse engagement outcomes
10.30 – 11.20am	**Topic 1: enabling clean energy** • Continuing to upgrade and evolve the distribution network to keep pace with South Australia's world-leading transition to renewable energy • Balancing cost vs service levels
11.20 – 11.30am	**BREAK and STRETCH**
11.30 – 11.55pm	**Topic 2: empowering our customers** • Supporting our customers to get the most from their investments in solar, batteries and other energy resources • Empowering the community
11.55 - 12.20pm	**Topic 3: enabling the EV transition** • Including our plans for our own vehicle fleet
12.20 – 12.30pm	**Next Steps & Questions**

Who’s online?

Workshop invitees

- Electricity & Water Ombudsman SA
- Department Energy & Mining
- Essential Services Commission South Australia
- Business SA
- Electric Vehicles Association
- SA Council of Social Services
- Uniting Communities
- Australian Electric Vehicle Association
- Australian Energy Regulator
- Consumers SA
- Service to Youth Council
- NRG Solar
- Central Irrigation Trust
- RAA
- Shine Hub
- 369 Labs
- Chargefox
- AGL
- Simply Energy
- SwitchDin
- Tesla
- Suntrix
- Intellihub
- The Energy Project
- Smart Energy
- Flow Power
- Yates Electrical
- SA Power Networks Community Advisory Board members
- Members of AER and AER’s Consumer Challenge Panel (CCP30)

Who’s online?

SA Power Networks staff presenting and listening:

- Brendon Hampton – Head of Network Strategy
- Dan Popping – Head of Stakeholder Engagement
- Matthew Napolitano – Head of Network Planning
- Bryn Williams – Network Strategy Manager
- Tim Adams – Large Embedded Generation Manager
- Jonathan Leake – New Energy Projects Director
- Helen White – Pricing Manager
- Duska Vojinovic – Customer Experience Reset Manager
- Liam Mallamo – Future Networks Engineer
- Hiroe Terao – Program Stakeholder Engagement Lead
- Amanda Hudson – Customer Consultation Lead
- Rebecca Reed – New Energy Services Manager
- Peter Chapman – Digital Technologies Manager

The Price Reset process

As a monopoly service provider, our prices are approved by an independent regulator

In building our **Regulatory Proposal** we engage deeply with customers and the community



Our reset engagement is structured around four key themes



Affordable and equitable energy supply



A reliable, resilient and safe electricity network

Today's session is the first in a series focused on:



Enabling clean energy and unlocking future value for our state



Customer experience, choice and empowerment

Purpose of focussed conversations

The key objective of the **focussed conversations engagement** is to:

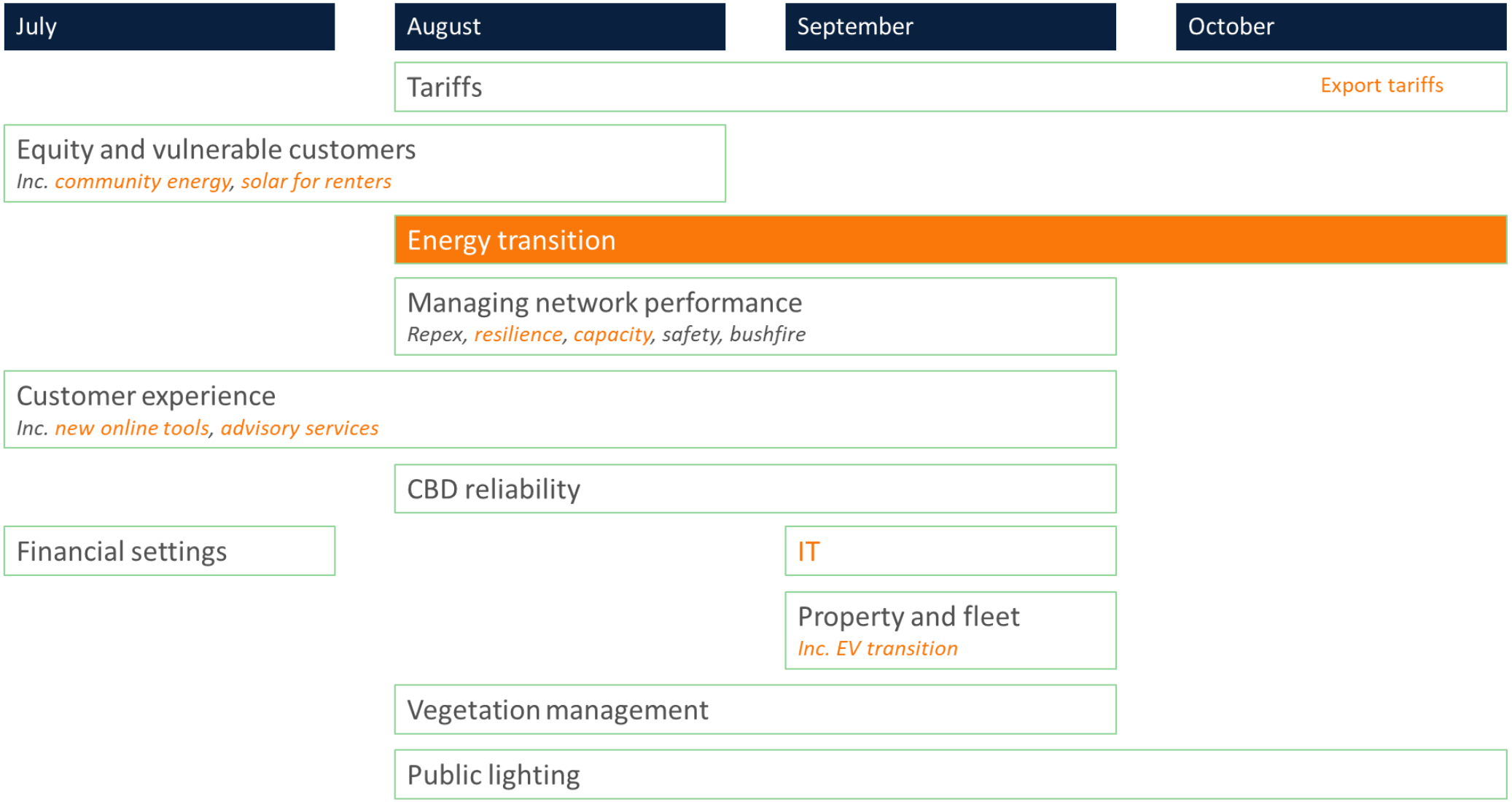
- Engage on identified priority topics and facilitate focused engagement activities
- Narrow options on service outcomes and potential expenditure
- Create a report, using a standard template for key input into Stage 4 engagement
- Recommendation for each topic to deliberative People's Panel

Note that we also continue to engage on specific topics with our dedicated reference groups like our *DER Integration Working Group*, *Solar Industry Reference Group*, *Connections Working Group* and others.

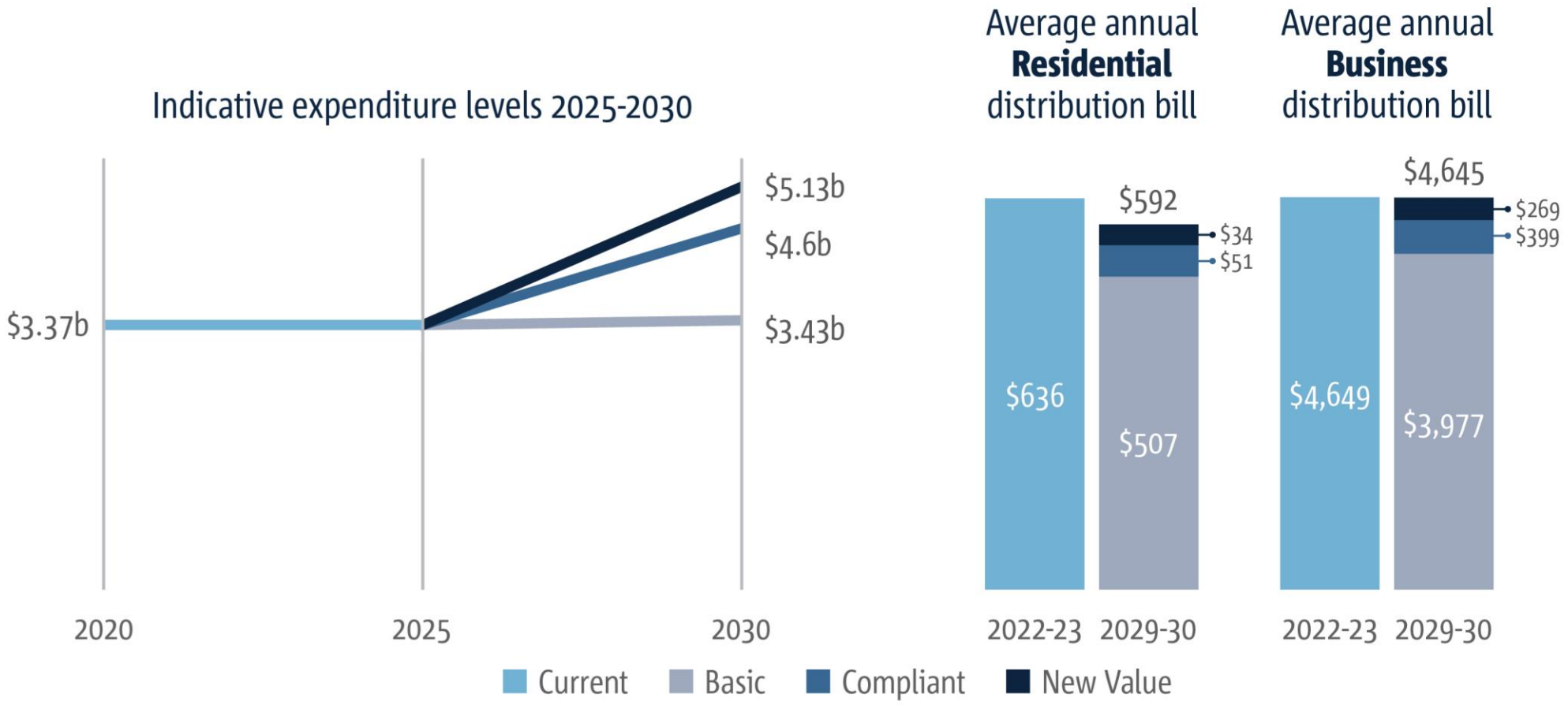
Key questions for the group to consider during this first **energy transition** workshop include:

- Do we have the right people in the room to provide advice?
- What are the key topics for detailed discussion in subsequent workshops?
- What kind of information will we need to bring to subsequent workshops to explore these key issues in more detail and provide advice on options?
- Is there anything missing that we should be thinking about for 2025-30 in this area?

Focussed conversations timeframe & interdependencies



2025-30 forecast totex & annual average distribution bills ($2025)



The average residential bill will be lower in 2029-30 than 2022-23 under all scenarios.

The numbers supplied are forecasts and will be updated due to stakeholder input and external market influences over time. Our final numbers will be provided in our 2025-30 Regulatory Proposal to be lodged with the AER in January 2024.

Setting the scene: our role in South Australia's energy transition



Enabling clean energy and unlocking future value for our state





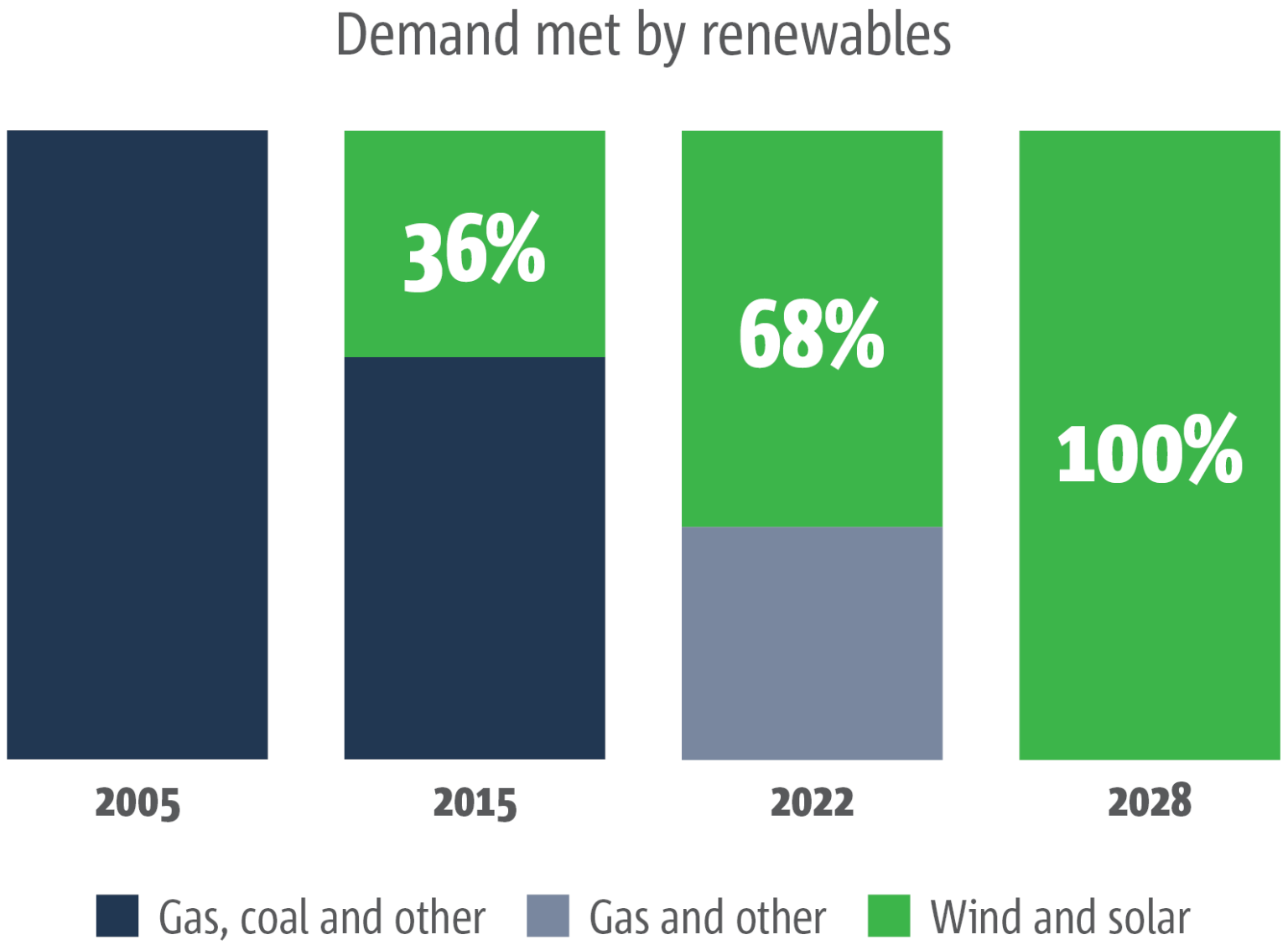
The clean energy future

South Australia has a higher proportion of renewable and distributed energy than anywhere else in the world

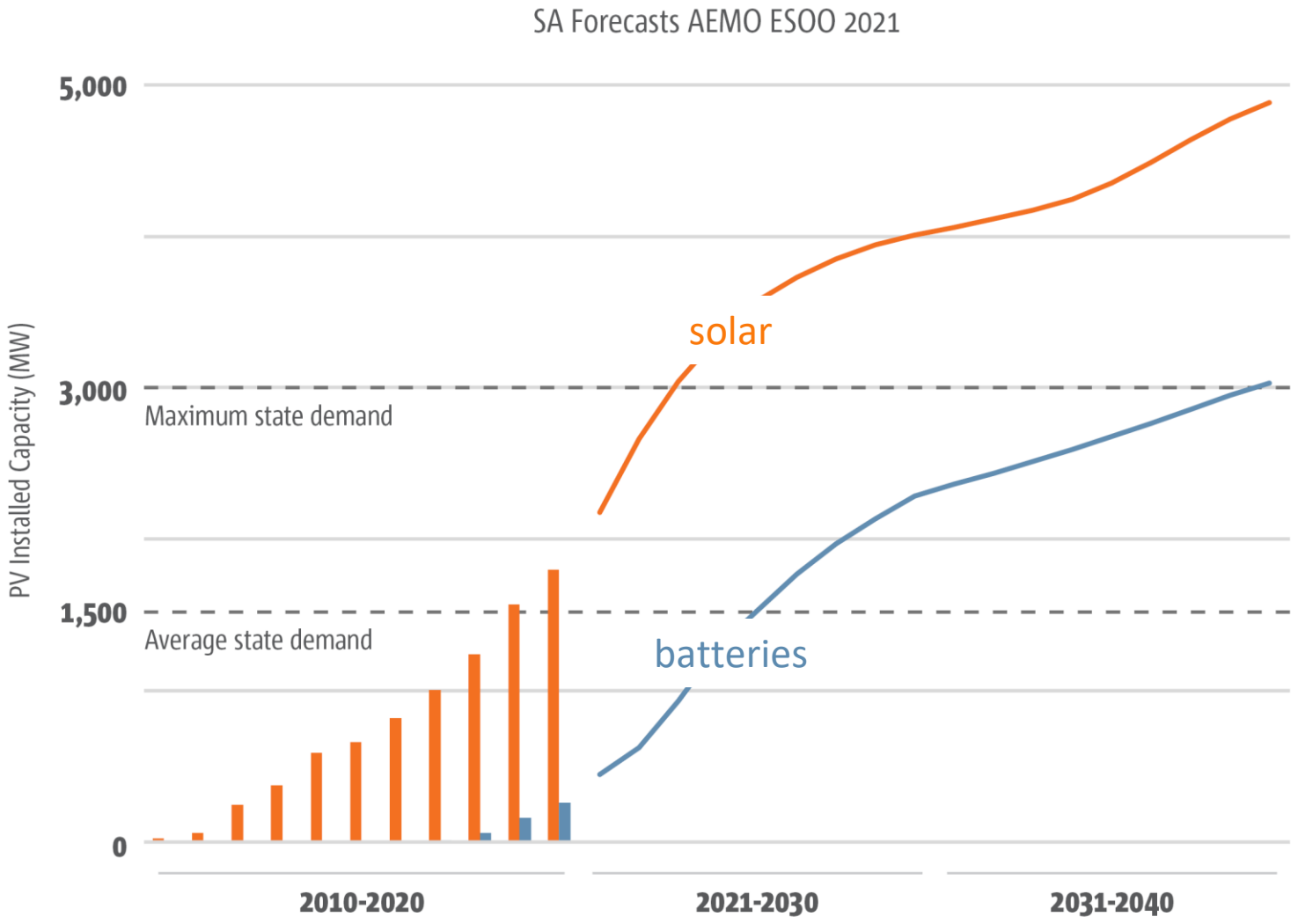
We can leverage our world leading transition to create huge opportunities for customers, the community and our state.

SA Power Networks has an important role at the heart of the clean energy future – we want to understand how we can best serve our customers in this future.

South Australia's profound transition to renewable electricity



South Australia is leading the way in distributed energy



~300,000 Rooftop solar systems

>1 in 3 customers, world's highest

State's largest generator

Record growth continues

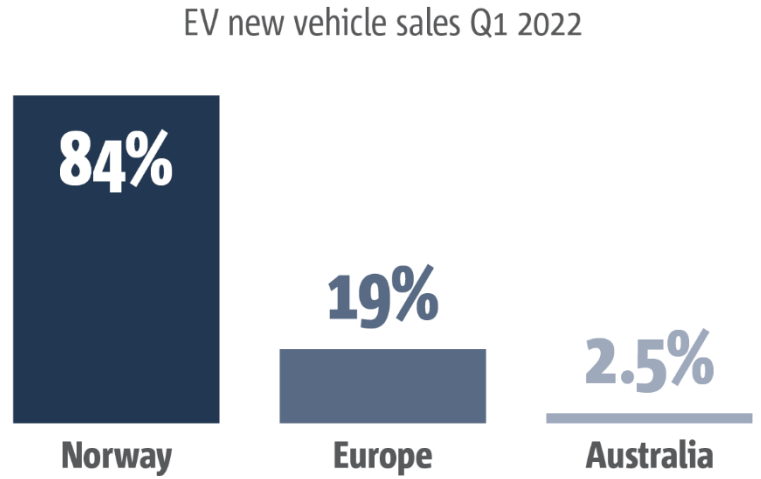
~30,000 Home batteries

9 Virtual Power Plants operating in SA

We can leverage this position to create huge opportunities for our State

Electric Vehicles (EVs) will be the next big thing for our industry





EVs present a significant opportunity to deliver more value from the network and reduce energy costs

>20 countries have announced plans to phase-out internal combustion engine (ICE) car sales between 2025-35

eg. Scandinavian countries, UK, China, Japan

Many major automakers are also planning to cease making ICE vehicles between 2025–35

eg. Jaguar, Volvo, Audi, VW, GM, Ford, Lexus

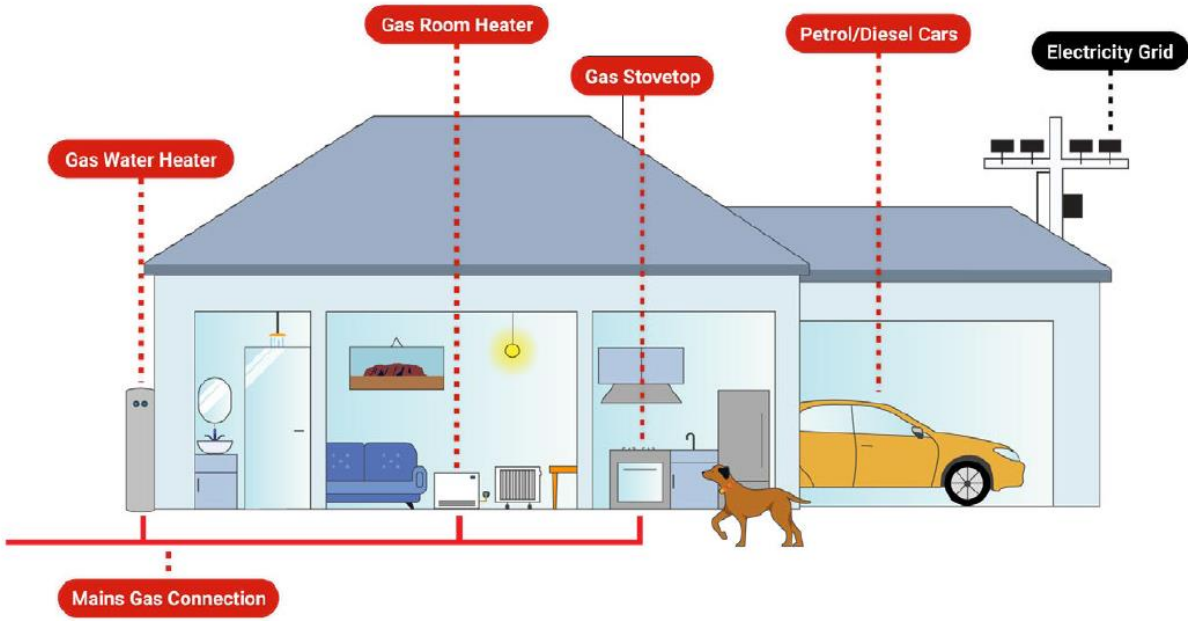
And broader electrification is coming



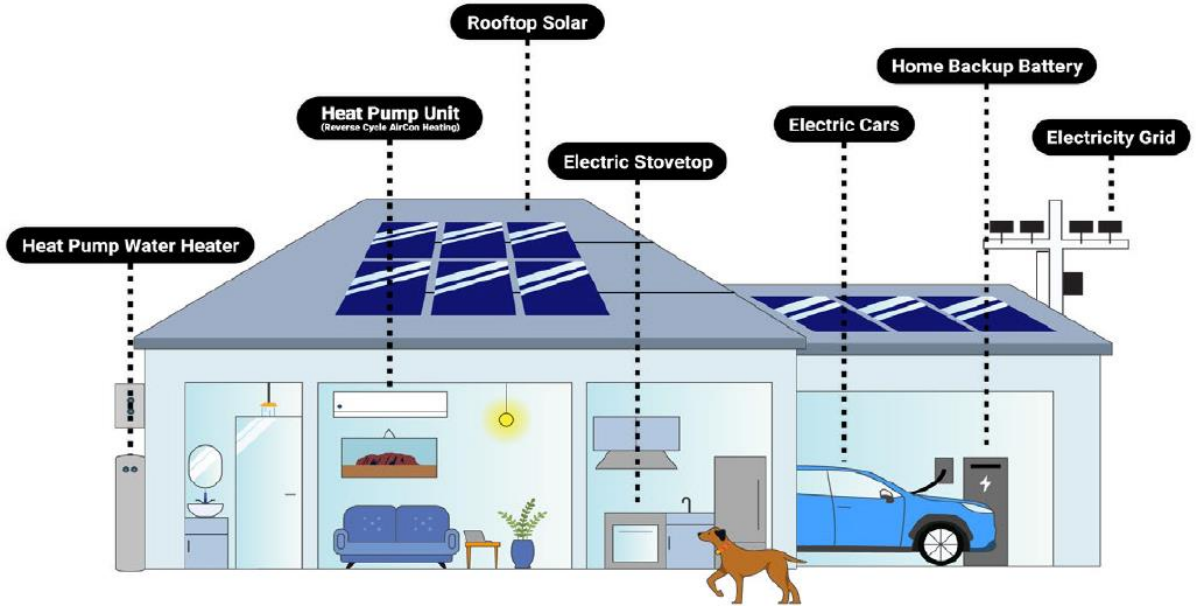
For most applications, electricity has significant advantages

Rooftop solar allows energy to be generated very cheaply, close to where it will be consumed

Electrification presents a significant opportunity to save customers money and rapidly decarbonise



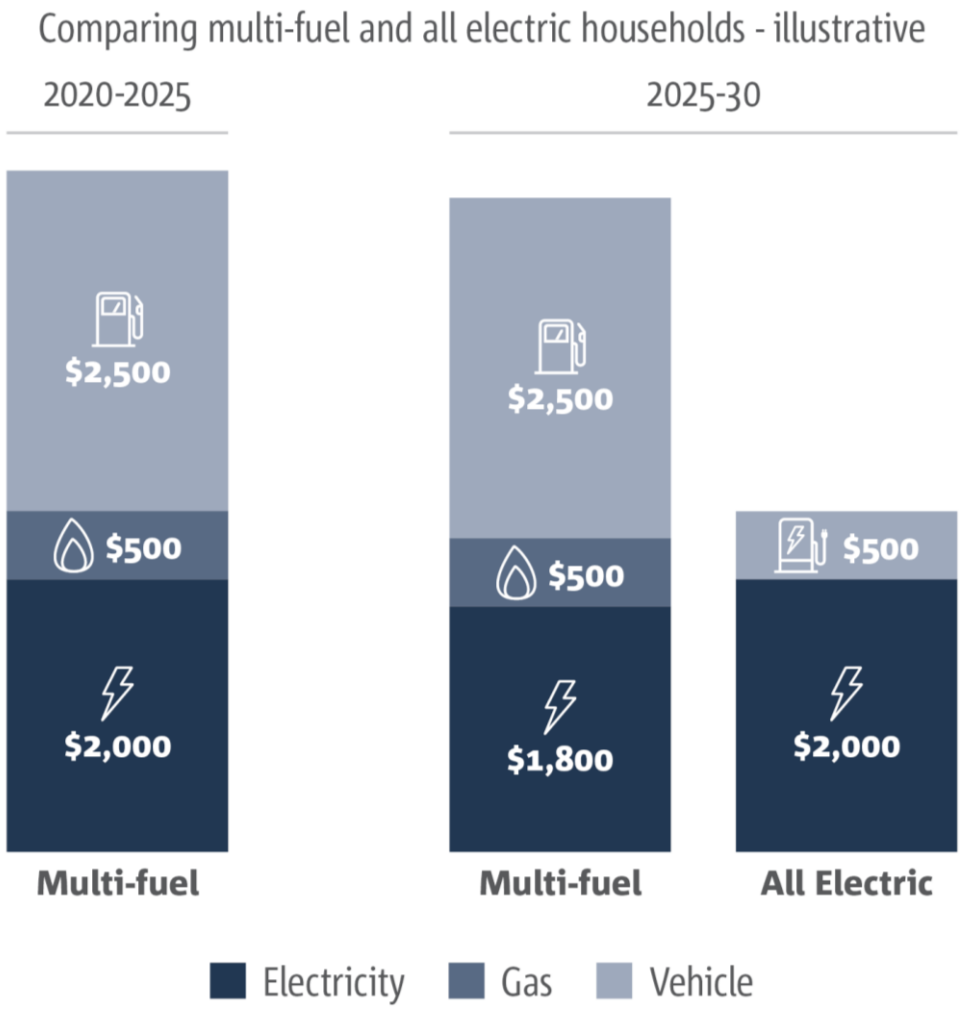
Conventional Home



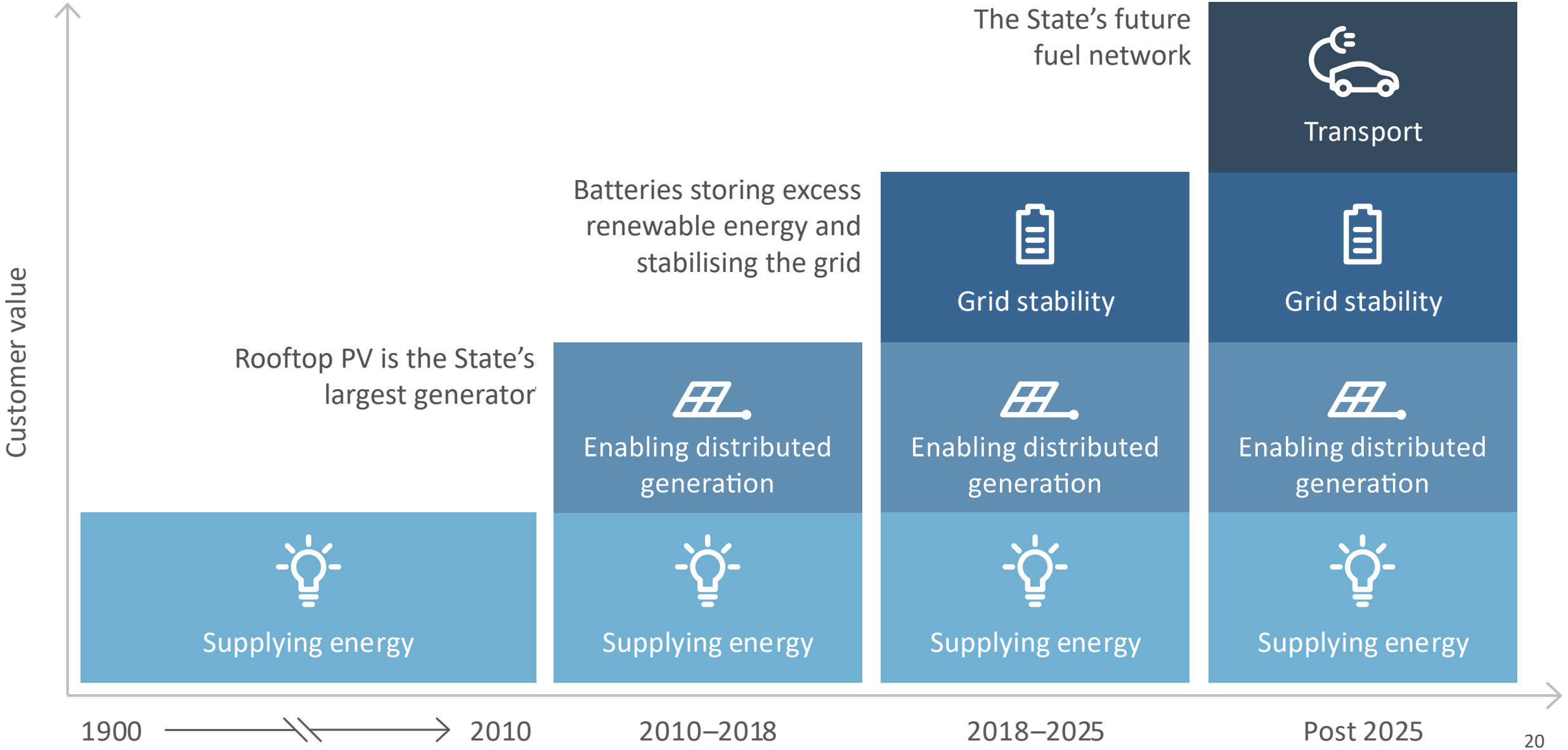
Electrified Home

Customers moving to all-electric could halve their energy costs

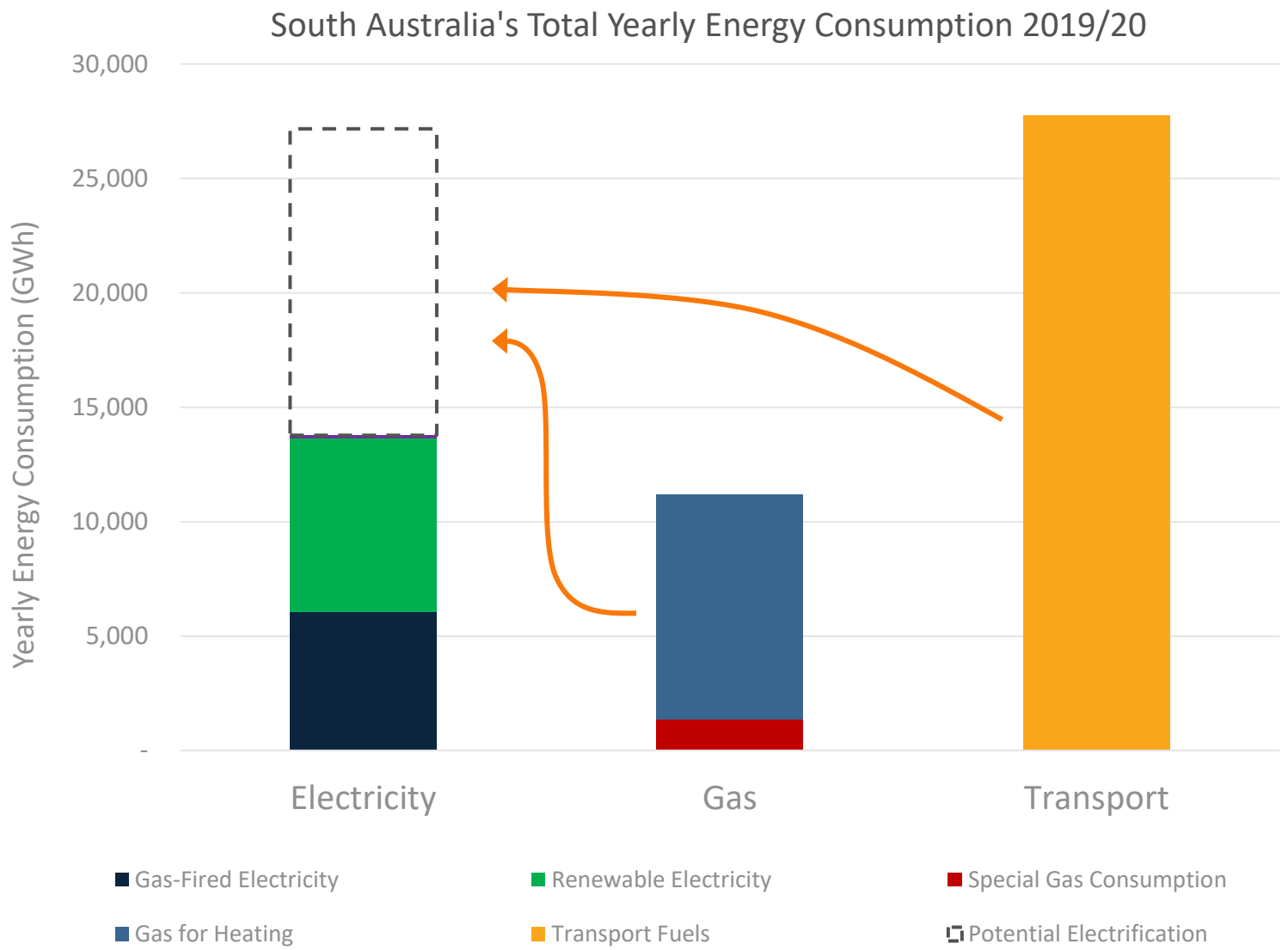
Although ‘traditional’ customers are expected to see modest reductions in their bills, customers moving to electric vehicles, or all-electric homes, could potentially halve their energy bills



We can adapt the network to release significant value



However, this will require the distribution network to carry vastly more energy



The electricity network currently delivers ~22% of state end-use energy

As we decarbonise, the distribution network could ultimately supply 80%+ of the state's energy needs

Source: Australian Energy Statistics + SAPN

A huge opportunity for our State

We can leverage our unique circumstances:

- Abundant renewable resources
- The latent capacity of our network
- Existing strong industry collaboration
- Our world-leading thinking

To create a future where energy is clean, reliable and affordable

Providing a key foundation to the future prosperity of our customers and the State



Navigating the energy transition

We're making a commitment to facilitate a customer centric pathway through the transition

Key considerations:

- Managing uncertainty
- Engagement & collaboration
- Maximising the value of customer investment
- A fair & just transition
- Safe, reliable, affordable network





Broad and diverse engagement

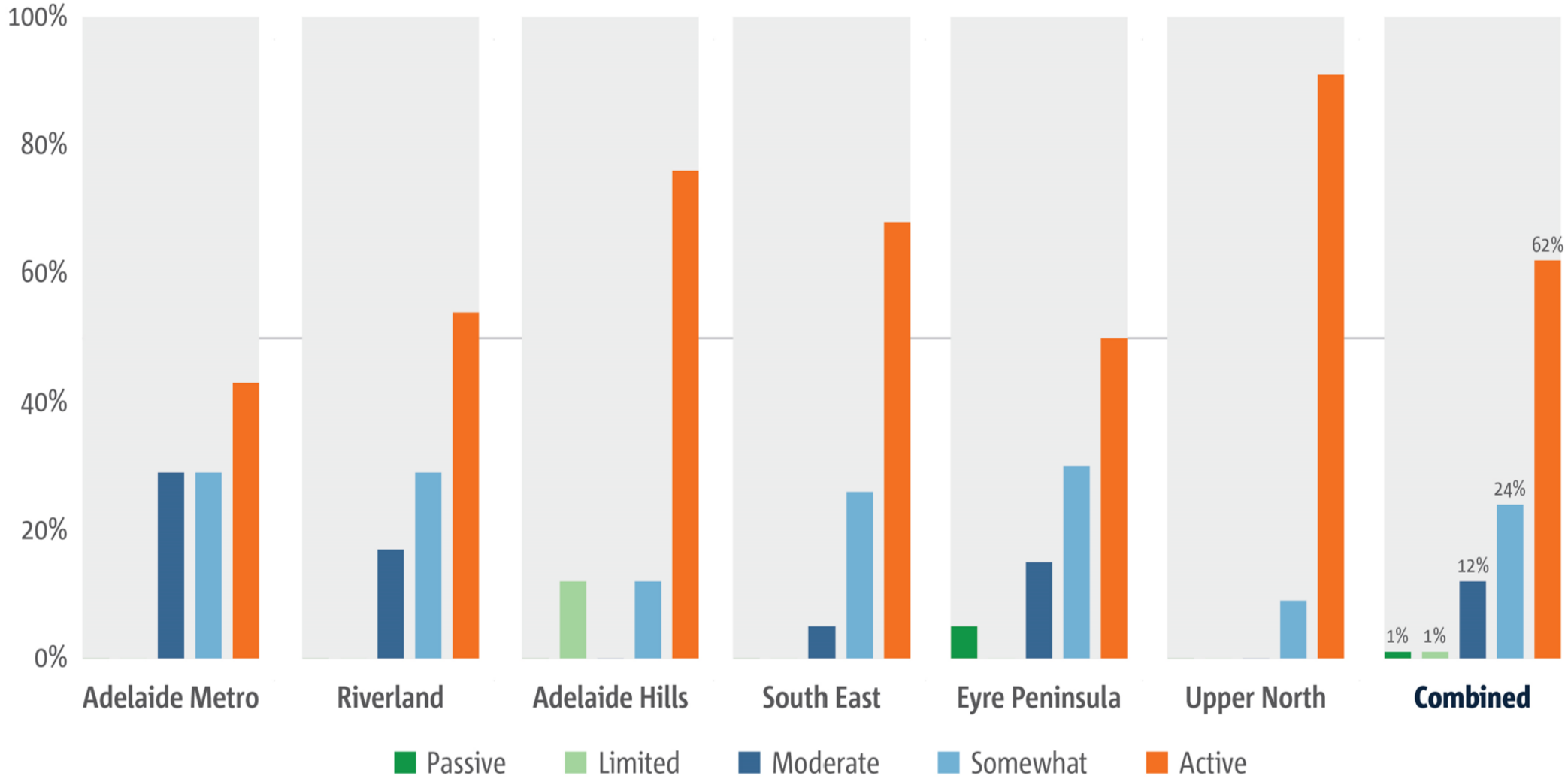
- **April – May 2022** on the four themes
    - Regional visits/workshops - Mt Gambier, Riverland, Port Lincoln, Whyalla, Adelaide, Adelaide Hills
    - Targeted workshops - Youth, Indigenous, CALD x 2, Deaf & Hearing impaired, Renters
    - Online engagement via ‘Talking Power’ website
    - Feedback and inputs inform and support engagement for our ‘focussed conversations’

Outcomes from broad and diverse engagement - key insights

Safety	• In home concerns and lack of understanding of who to seek advice from
Clean and green	• Customers are seeking clean, reliable and affordable energy
Customer service/communication	• The industry is extremely complex and hard for customers to navigate • Complexity of industry and tariffs
Access to information / education	• Where and how to find information, how to reduce your bill
Trust	• Customers really don't know who to trust
Affordability / equity	• Cost of electricity – essential service • Equity is important. Often it's the most vulnerable customers who have trouble engaging with the industry • Renters/ vulnerable customers feel locked out of energy transition • Strong customer support to help vulnerable customers and ensure no-one left behind in the energy transition
Network	• Managing ageing assets • Reliability

Outcomes from broad and diverse engagement

How active a role should we play in the energy transition?



Outcomes from broad and diverse engagement



Responses: “What should we focus on to ensure you can maximise the opportunities presented by the energy transition?”

OPPORTUNITY	VOTES
Smart home energy use & optimisation[1]	62
Energy Advisory Services[2]	54
Affordable and accessible batteries, EVs, solar	28
Solar for rentals	26
Greater ability to export excess energy back to grid[3]	22

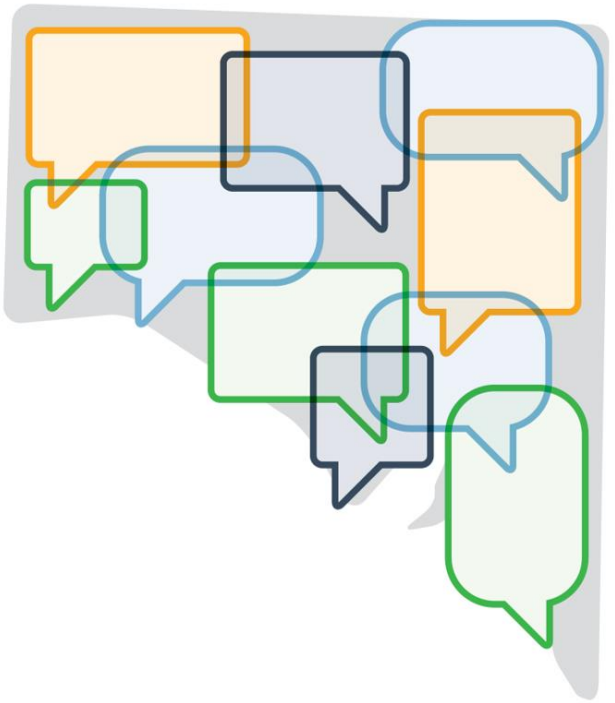
1. This includes EV charging, load shifting and home automation

2. Education, personalised advice and support, helping customers save money by making wise energy decisions and investments, and partnering with others to deliver complete energy solutions for customers

3 This was predominately from one focus group (Riverland)

Questions?

- *Notes*



Discussion topics for today



Enabling clean energy

- What are we planning to do to continue to support the uptake of rooftop solar and other customer energy resources?
- What level of service should we be aiming for?
- What might that cost, and what does it mean for tariffs?

Empowering our customers

- How can we help customers make the most of their flexible loads and other resources?
- What new customer services might we offer?

Enabling the EV transition

- How can we best support and enable cost-effective EV charging at home and in public?
- Transitioning our own vehicle fleet to EVs

Today's discussion is not about coming up with answers, it's about identifying the key questions and initiatives you want us to explore in our next workshops



Topic 1

Enabling clean energy



South Australia's high-DER power system

In October 2020 we reached a major milestone

All of South Australia's power comes from solar panels in world first for major jurisdiction

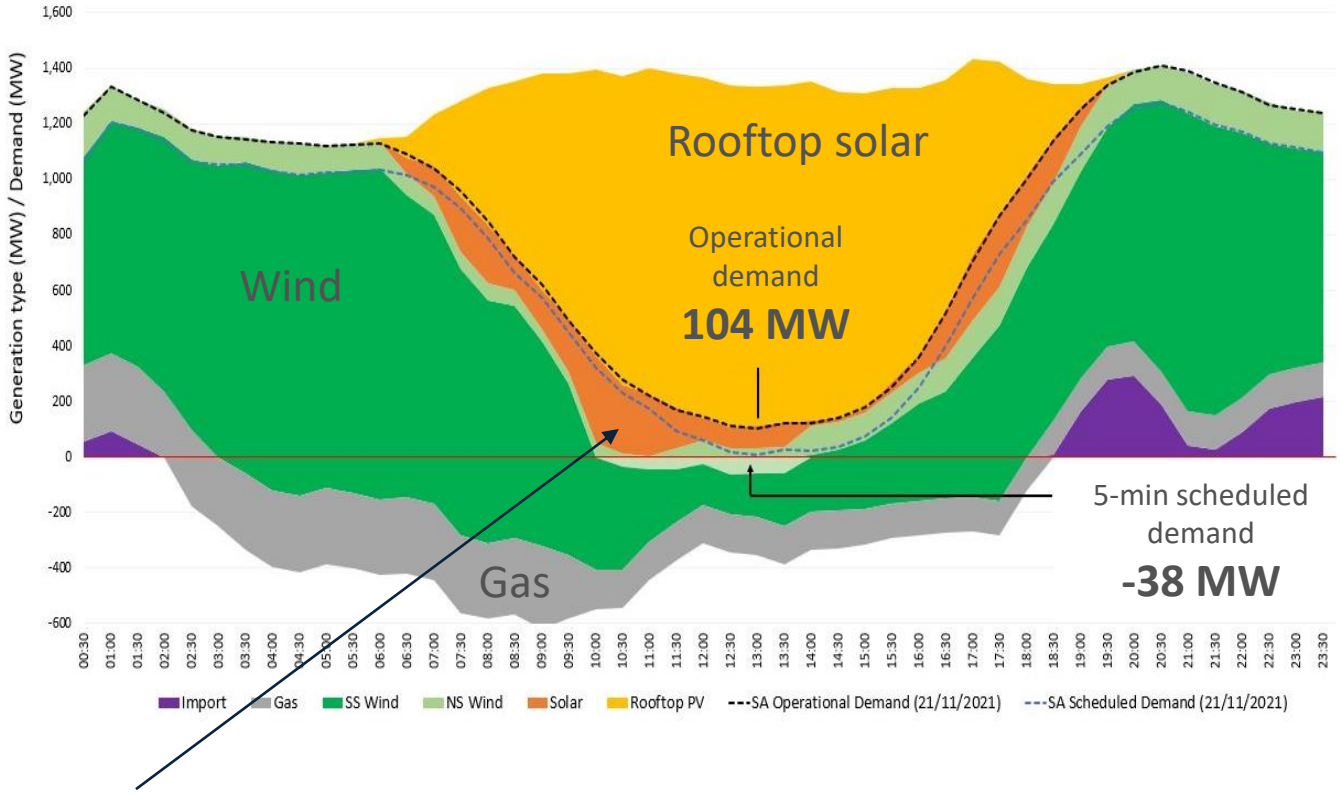
By Richard Davies
Posted Sun 25 Oct 2020 at 9:05am

In 2021…

Net load on the SA distribution network fell **below zero** for the first time ever, reaching -**185 MW** on 27/12/21

Whole of SA demand will become negative within the next year

21 November 2021



Large solar farms



Our primary challenge today – fitting more solar on the network

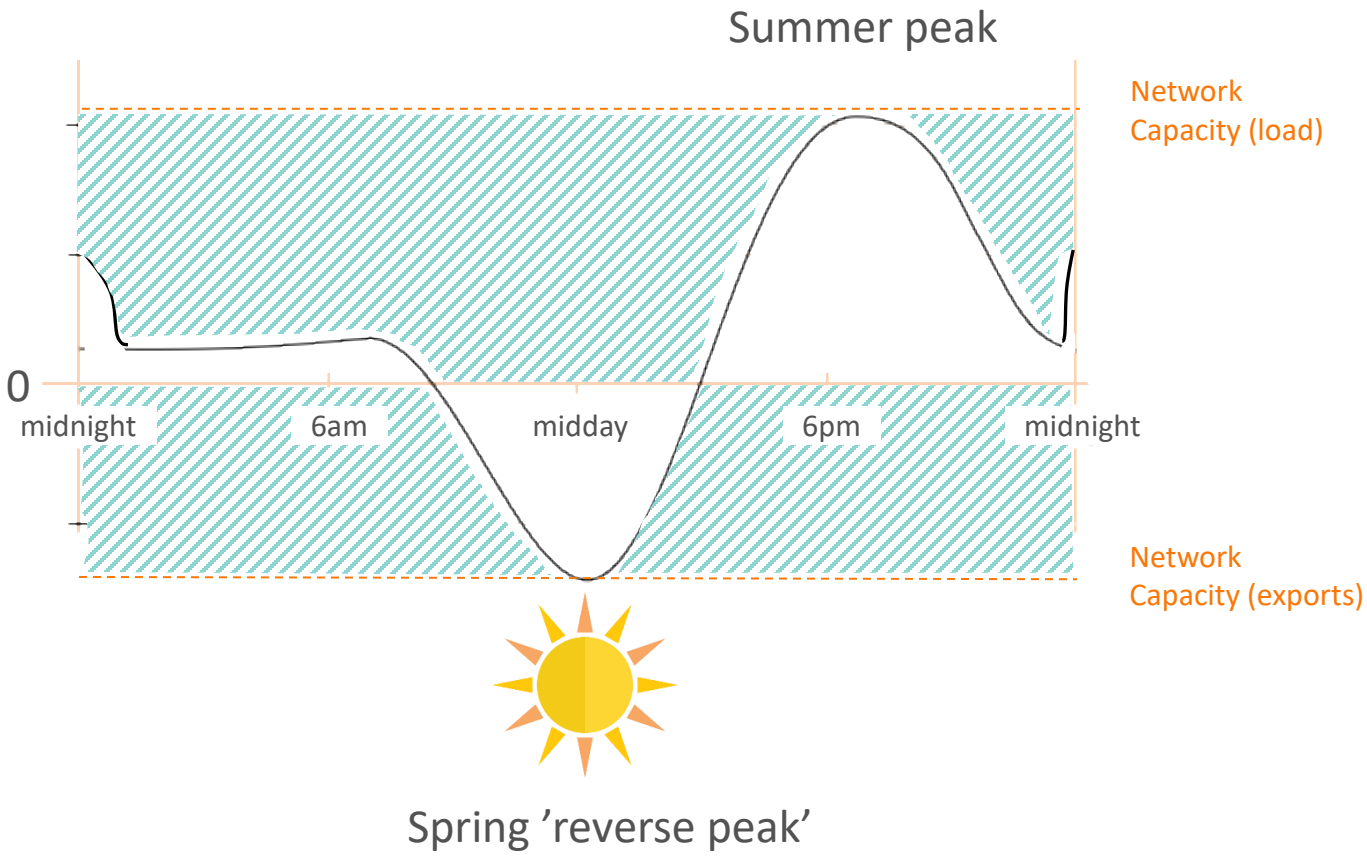
We want to:

- Play our part to enable SA's future vision for **>100% renewables**
- Ensure customers can **continue to connect new solar** to the network
- Make sure the network has **enough capacity to meet customer expectations**
- Do this **at least cost** by squeezing as much capacity as we can out of the existing network assets before we upgrade
- Manage this transition **fairly and for the benefit of all customers**, not just solar customers

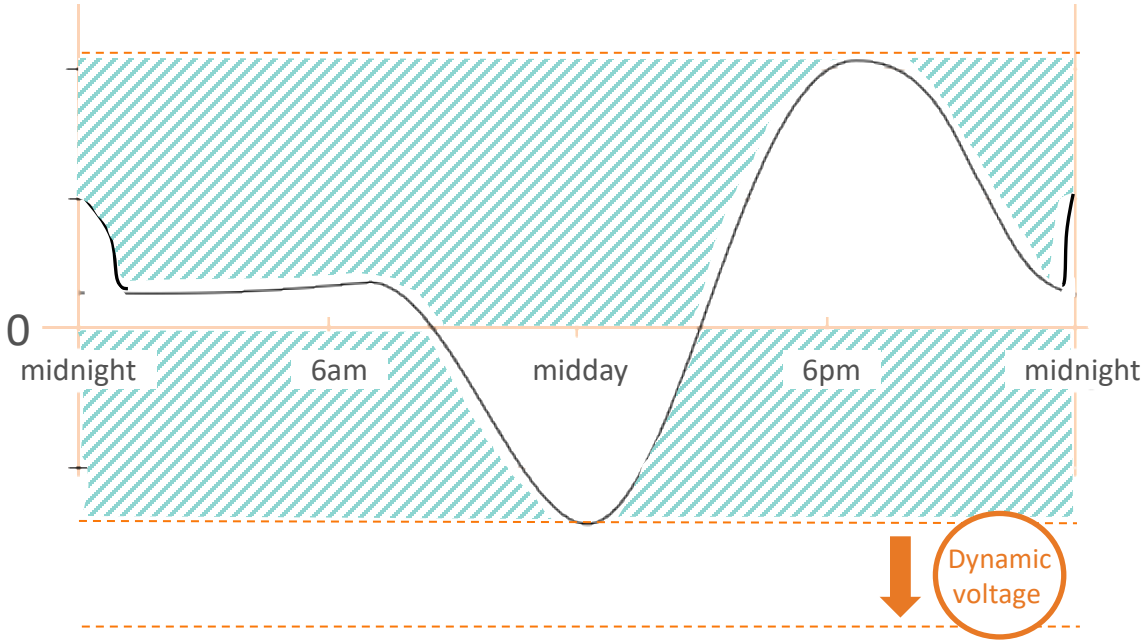
But…

- We have historically applied a **fixed 5kW export limit** for new solar PV systems
- We now know our network can only host **1-2kW** of export per customer at certain times
- As solar continues to grow, we are **reaching capacity** in some areas during spring time
    - Customers impacted by localised **voltage issues** in the middle of the day
    - Approaching **reverse limits** of some major plant, e.g. substations
- Excess solar generation in spring time also causes challenges for **AEMO** in keeping the system stable

Network capacity



Strategies for network capacity

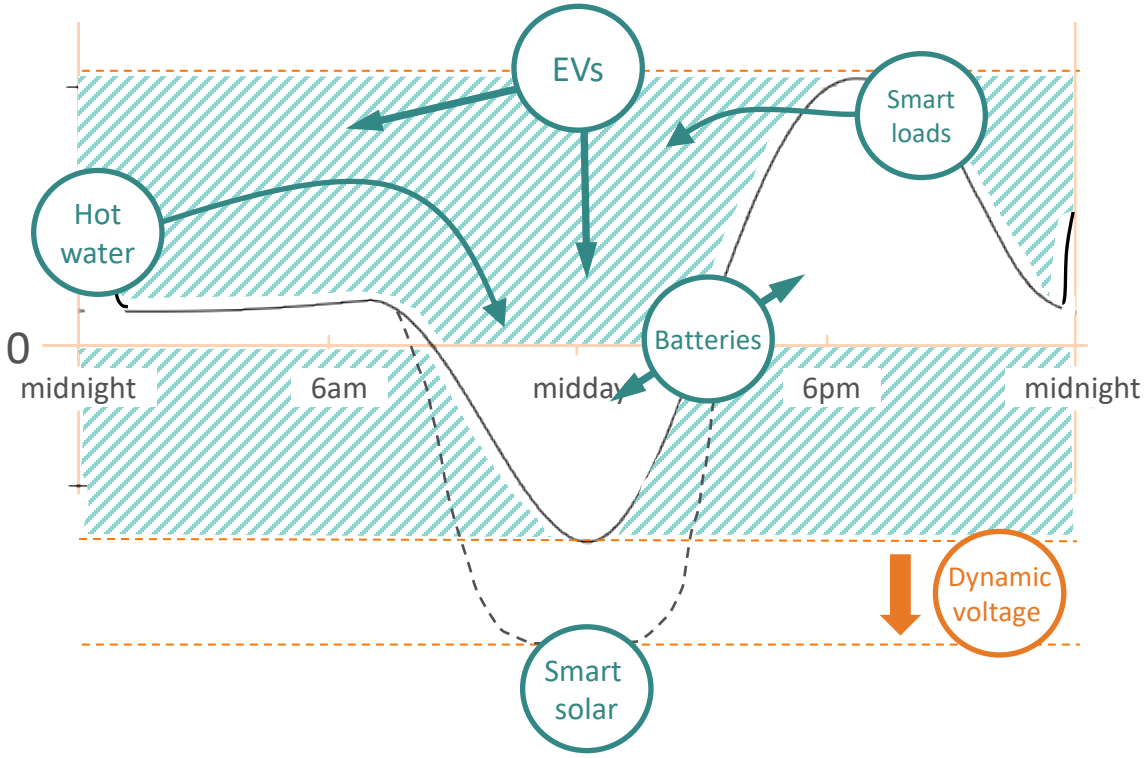




Stretch the network capacity through smarter network management and targeted upgrades

Strategies for network capacity

Fill the spare capacity with flexible DER and loads



Stretch the network capacity through smarter network management and targeted upgrades

A key strategy for integrating more solar: flexible exports

Even with all this solar energy, there's ample network capacity the majority of the time

The key to unlocking all this spare capacity for customers to use while still maintaining voltage and security of supply during times of extreme congestion is in activating **smart inverters** with **flexible export limits**

- **Avoid expensive network upgrades** –> underutilised assets
- **Avoid low fixed exports limits e.g. 1.5kW year-round** –> underutilised energy resources

We have pioneered the transition from fixed to flexible export limits in SA, now being pursued across the NEM



*Our Flexible Exports program enables **smart inverters** to **receive dynamic export limits** from SA Power Networks, reflecting the real-time capacity of the network at their location*

Our new connection options

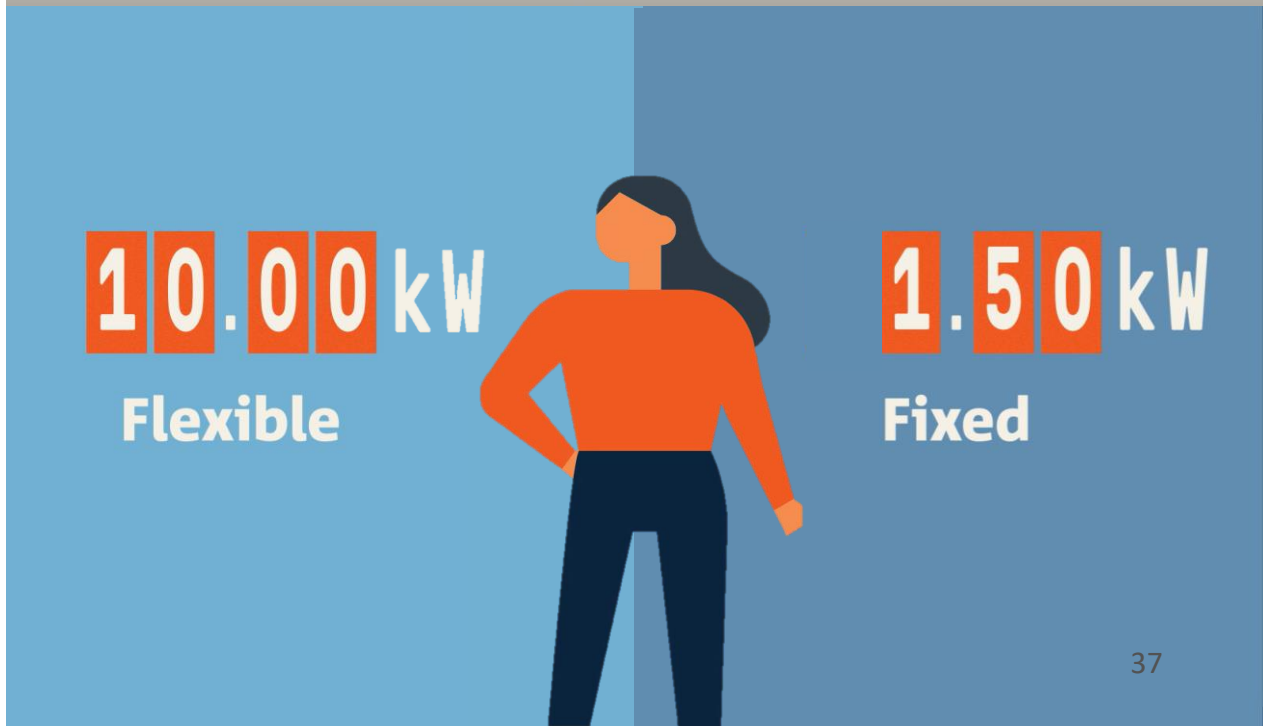
- Flexible exports went live in SA in September 2021 in selected areas

- Customers in congested areas now have a choice between:
  - **Flexible export** (1.5-10kW/phase)
  - **Fixed export** (1.5kW/phase)

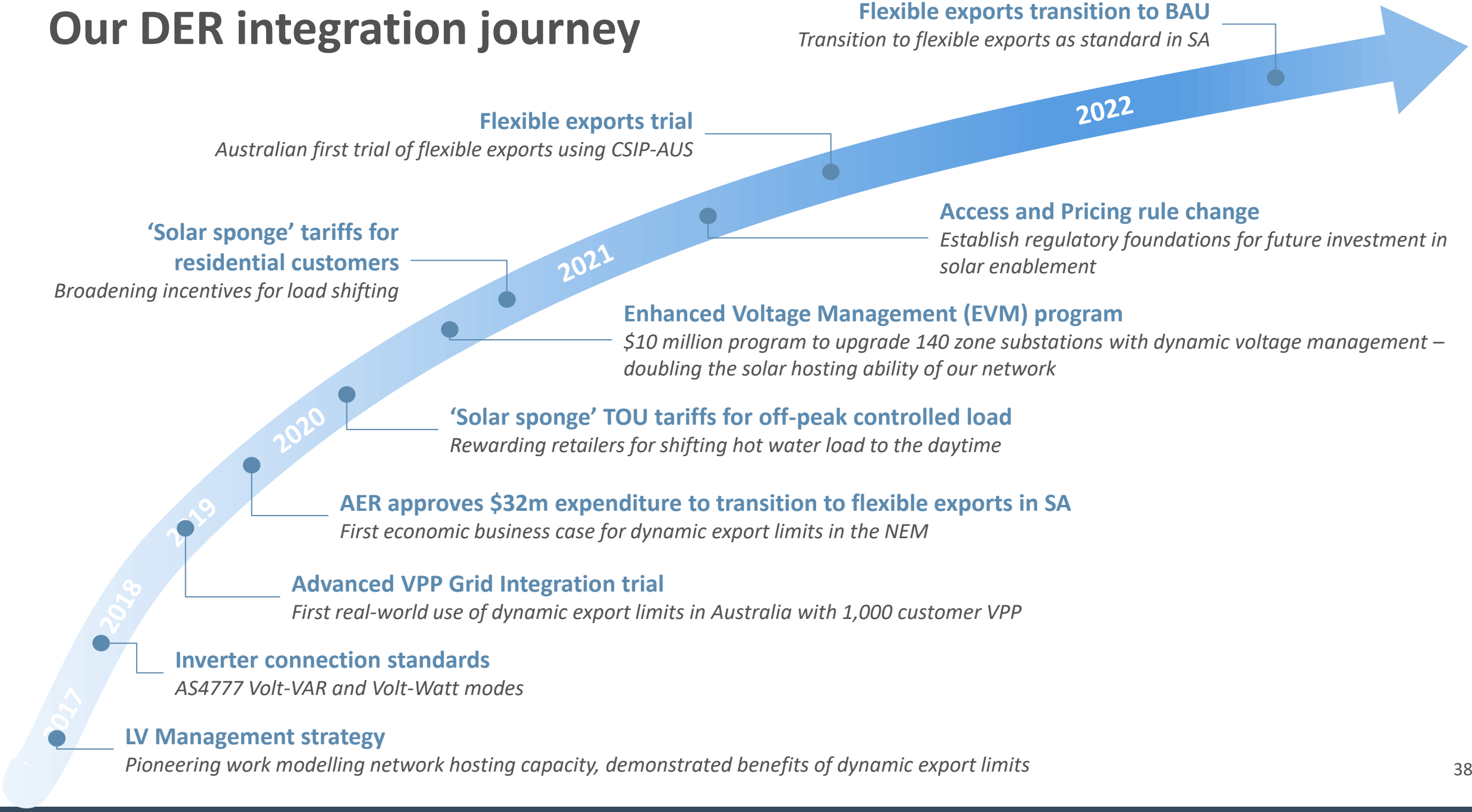
- For typical customers, flexible exports will only be limited below the maximum for a **few hours** on **a few days** per annum

- Under SA Government rules, all new rooftop solar systems installed in SA from December 2022 must support the national standard for flexible exports ('CSIP-AUS' based on IEEE2030.5)





Our DER integration journey



LV Management strategy
Pioneering work modelling network hosting capacity, demonstrated benefits of dynamic export limits

Inverter connection standards
AS4777 Volt-VAR and Volt-Watt modes

Advanced VPP Grid Integration trial
First real-world use of dynamic export limits in Australia with 1,000 customer VPP

AER approves $32m expenditure to transition to flexible exports in SA
First economic business case for dynamic export limits in the NEM

'Solar sponge' TOU tariffs for off-peak controlled load
Rewarding retailers for shifting hot water load to the daytime

Enhanced Voltage Management (EVM) program
$10 million program to upgrade 140 zone substations with dynamic voltage management – doubling the solar hosting ability of our network

'Solar sponge' tariffs for residential customers
Broadening incentives for load shifting

Access and Pricing rule change
Establish regulatory foundations for future investment in solar enablement

Flexible exports trial
Australian first trial of flexible exports using CSIP-AUS

Flexible exports transition to BAU
Transition to flexible exports as standard in SA

Looking forward to 2025 and beyond

- With flexible exports we can continue to connect solar across the network through to 2030 and beyond without adding any new upstream capacity

- If we do this, solar customers in congested areas will experience a progressive decline in the **level of service** they receive as more customers compete for access to the available network capacity

- This means in practice that their export limit will be reduce more often, and by more, as time goes on

- This may or may not have a material impact – we need a way to measure and express this level of service so that customers can understand whether their service level is meeting their needs and expectations



Measuring level of service

We have been working with the University of Technology Sydney through the RACE for 2030 CRC to explore the best way to measure and express service levels for DER customers. For example:

Amount of energy curtailed

- How much energy that could have been generated was lost because the network did not have enough capacity to transport it?
- This is the measure that the AER expects us to use in any economic analysis, as the AER defines a standard $ value for a unit of energy lost (the 'Customer Export Curtailment Value' or CECV)
- It is not easy to measure for individual customers, and may not be that meaningful from a customer perspective, so we think it's more suited to a regulatory business case than a customer performance measure

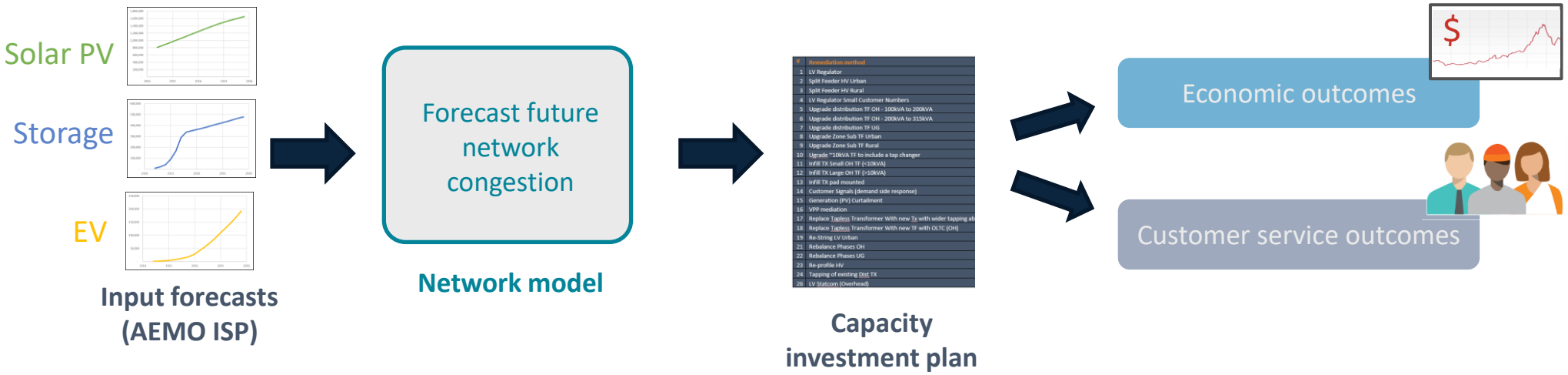
Total curtailed energy from rooftop solar in 2022 was x MWh, representing an economic value of $y

Duration of curtailment

- How often was my system limited during the year?
- This is easier to measure, including for individual customers, and easier to explain
- We think this is likely the best way to approach service levels from a customer perspective, e.g. in conversations around the levels of service customers want

In this area, solar customers received an average export service level of 99.5%, meaning their systems were export-limited less than 0.5% of the time

Modelling future network investment



Modelling 3 investment scenarios:

1. **Minimal investment ('basic')**

   Continue with current levels of investment, don't add new upstream capacity, manage congestion using flexible exports

2. **Target economic outcome ('compliant')**

   We choose how much to invest based on purely economic outcomes (as determined by the AER)

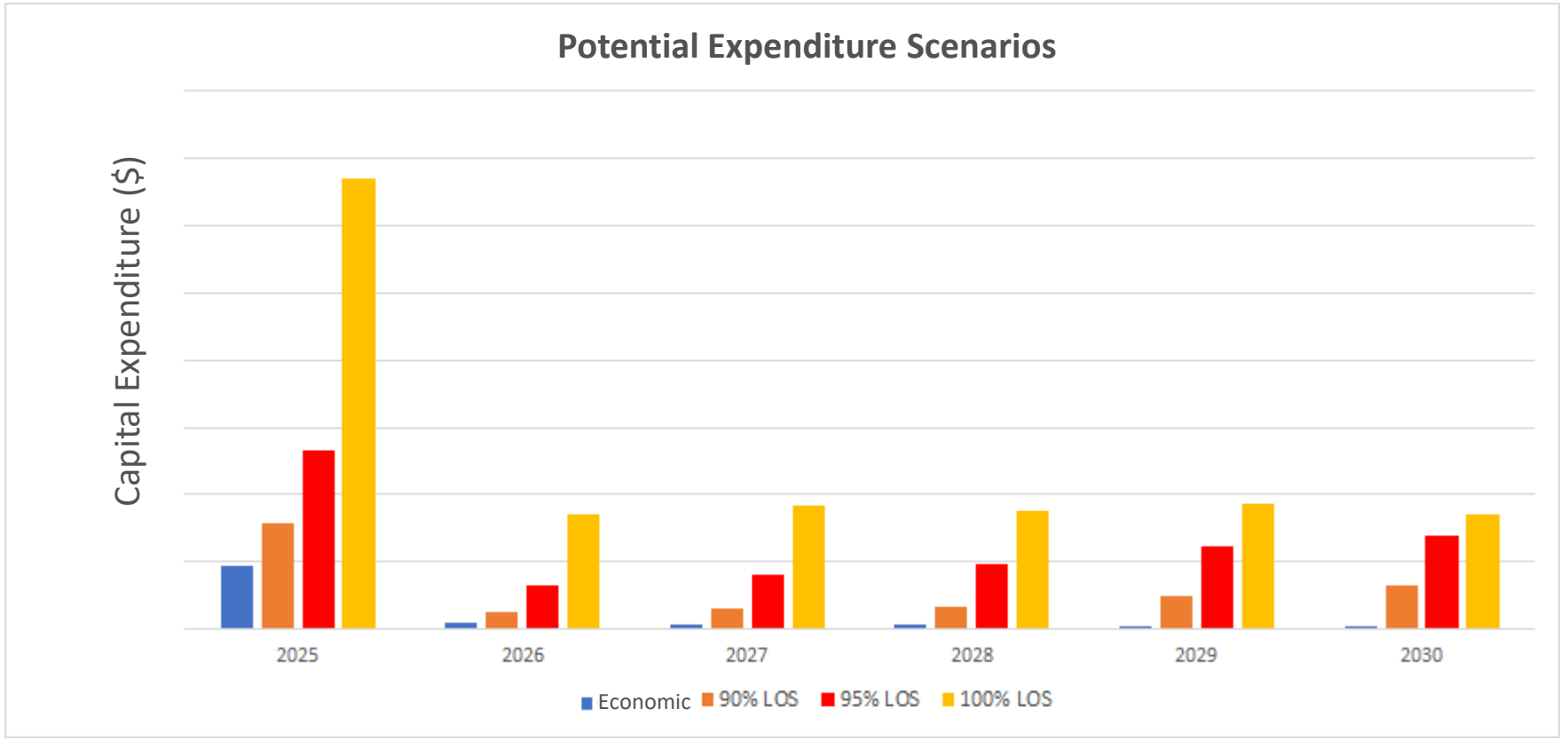
3. **Target level of service ('new value')**

   We engage with our customers to determine how much we should invest to maintain a level of service that customers want and are willing to pay for*

**We are undertaking a separate process in coming months to survey customers to try to quantify customer value and willingness to pay*

Understanding potential outcomes

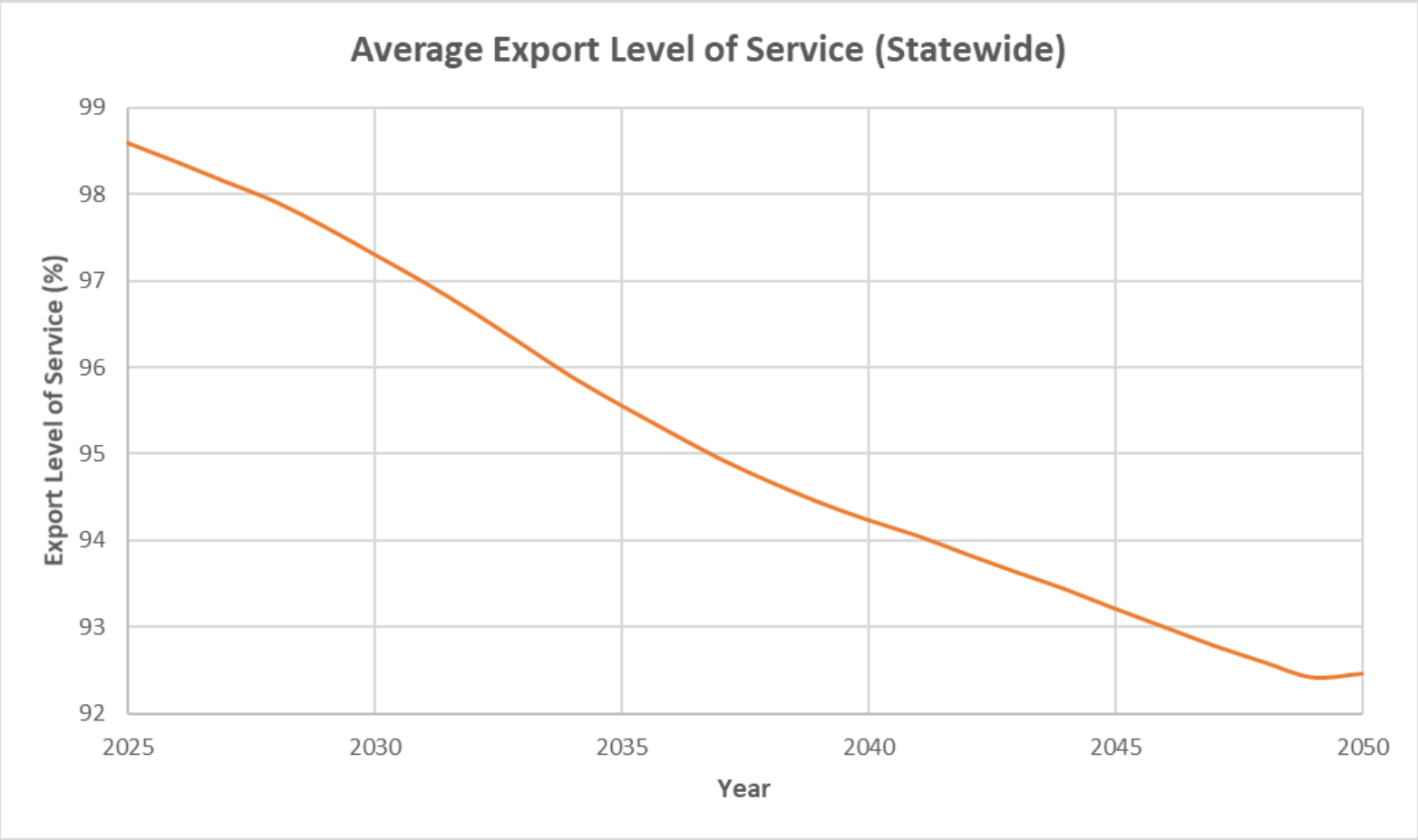
We are exploring the kinds of charts and data that can best help us to understand and consider the costs and benefits of each investment scenario in future workshops. The charts below and on the following slides are **illustrative only**, to seek feedback on different ways we might present the data.



For illustration only – preliminary modelling

Variation in level of service level over time

Under our ‘base’ investment scenario, average service levels may decline over time from today’s level



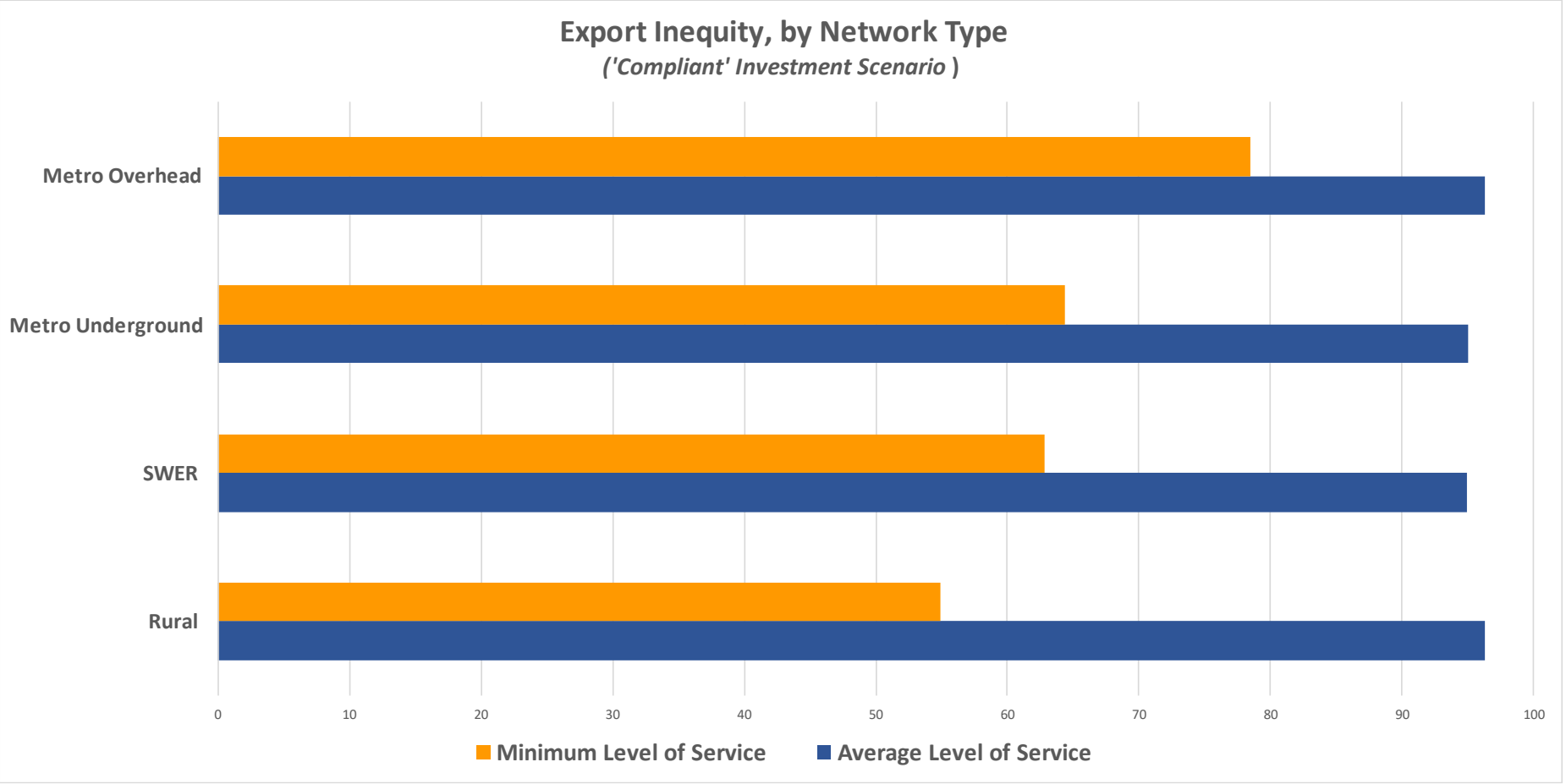
- Without investment, the network will become increasingly ‘congested’ as more DER is installed
- Constraints will need to be placed more frequently on exports

Level of Service = % of time that maximum export capacity is available

For illustration only – preliminary modelling

Equity of access

We can compare equity of access under different scenarios. A purely economic investment plan results in inherently inequitable levels of service. A statewide service level target is an option to allow all customers equal export access.



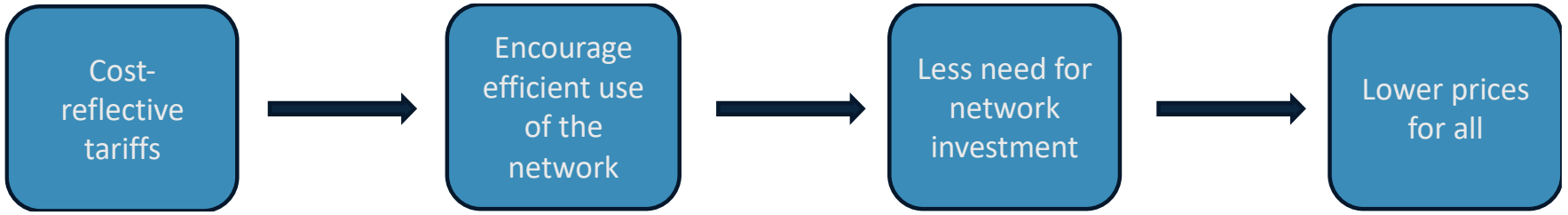
The level of service that you receive may vary by factors in your local area, such as:

- Network construction (i.e. overhead/underground)
- The age of the network
- The amount of solar PV & batteries installed
- The amount of load, including electric vehicles

For illustration only – preliminary modelling

The relationship between investment, service level and tariffs

- We recover the cost of our investments through our network tariffs
- Today, network tariffs are only applied to energy consumed from the grid
- In 2021, a **rule change** was made that
  - Places new obligations on us to manage demand for export capacity as well as traditional load
  - Allows networks to have tariffs that also apply to energy exported to the grid



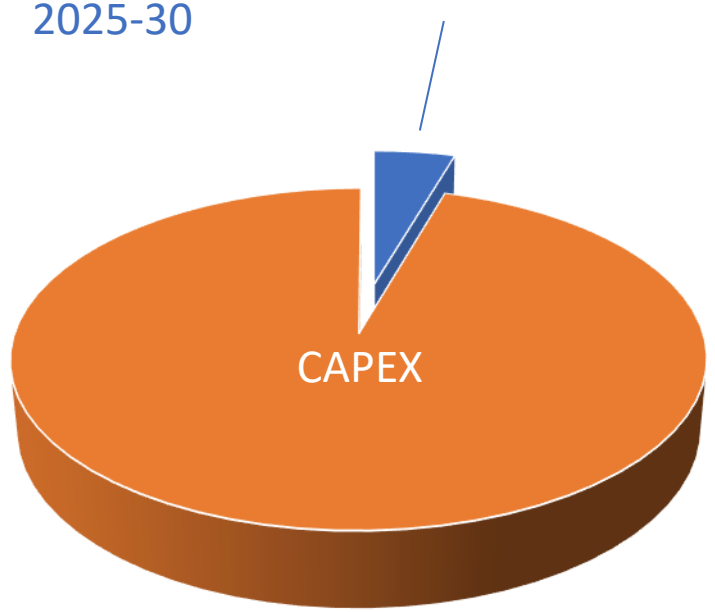
- If we have a 2-way network without 2-way tariffs:
  - DER customers have no incentives to use the network efficiently
  - We have little insight into customers' willingness to pay for additional export capacity
  - Non-DER customers must pay for capacity they cannot use

We'll explore the potential for export tariffs in SA in our next workshops and also in our Tariffs focussed conversations

DER integration initiatives – enabling clean energy

Initiative	Value	
Enhanced Voltage Management (EVM) phase 2 *Investment in more advanced dynamic voltage management at the substation level to enable more solar*	$$	*
Flexible Exports enhancements *Unlocking additional value from flexible connections for solar and battery customers*	$	
Targeted export capacity augmentation *Targeted investment in additional export capacity, particularly in the Low Voltage (LV) network, to ensure customer service levels are met*	$$$	*
New connection options, service levels and tariffs *Providing a choice of service levels and tariffs for customers, including the potential for export tariffs*	$	*
Compliance program *Working with industry to improve compliance to technical standards (e.g. inverter standards) that enable the network to operate efficiently*	$	
System security program *Maintaining our capability to support AEMO in managing system security at times of minimum system load*	$$	

DER integration initiatives expected to account for 2% - 7% of total CAPEX for 2025-30



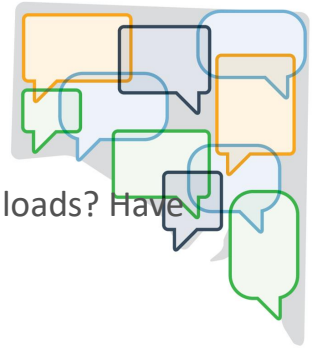
* **Proposed key topic areas for focussed conversations**

Discussion

- What are the key topics to carry forward for detailed discussion?
- Should we seek to explore options beyond the purely economic?
- How important is equity of access?
- What risks do you see with these approaches?
- Are there other ways to achieve outcomes?
- What evidence do you need to see to form an opinion?
- What's missing?



Discussion & notes



- Expand on economic value of enabling more exports
- How much will customer grade of service decline for flexible export customers if we don't invest? Will the (low) duration of curtailment seen so far in our trial increase over time?
- Options beyond the economic - how does this align with allowing for increased emissions reduction – i.e. our global goals? Will what is done here affect the ability to reduce our emissions further in SA?
- For asset investment, how do we separate component of investment that relates to exports from the component for load capacity?
- How to treat export tariffs for customers with legacy meters? (type 6)
- Does AER CECV look at overall impact of solar on wholesale price (i.e. benefit of driving down wholesale price over time)? Will this cost saving for all customers outweigh any additional network costs?
- What about V2G? Have we considered that EV customers may be exporters too?
- With the increased investment in EVM, will that allow for increased loads as well as increase supply from solar (ie will it have a positive affect for future EV charging etc)?
- Need more info on solar sponge tariffs and what these look like in future
- Which of the initiatives proposed on the final slide are most sensitive to considerable variation when considering "basic" versus "AER economic" versus different levels of "value added" investment levels described earlier in the presentation?
- What's the effect of customers coming off premium FIT?
- What about EV charging hotspots, e.g. holiday parks?
- What about shifting demand and creating more daytime loads? Have we thought enough about the opportunities here?
- Can we show a map of network congestion?
- What about renters ?
- Could we increase the capacity of controlled load?
- Are we just solving for network cost without considering the impact of our choices on the whole costs for consumers?
- Be clear on how we are using both technical and price levers
- Need to be able to explain the CECV and what we are and aren't including in our economic assessment
- Is there a future for utility solar in SA given the rise of rooftop solar?
- Have we considered how to purchase network services to offset any capex spend, such as voltage management and min. demand from retailers and/or aggregators with solar, solar & battery and EV customers?
- For customers in areas that will have reduced ability to export would it be more economically feasible to subsidise home batteries for them to maintain equity for solar savings?
- As renters are typically locked out of many of these benefits, is there thought to allow them access to an altered service compared to homeowners who can access PV, batteries etc.?

Morning tea break





Topic 2

Empowering our customers





Helping maximise the benefits of customers' energy resources

- South Australians have already invested more than $2 billion in small-scale distributed energy resources and will invest much more between now and 2030
- We want to play our part in ensuring
    - Customers who have invested in their own resources have the greatest opportunity to use these to save money
    - Customers who do not have their own resources are not left behind, and share in the benefits of South Australia's energy transition
    - The services we offer continue to evolve to keep up with the changing needs and expectations of the community
- We are considering a range of initiatives in this area, some of which will be discussed in detail in other focussed conversations.

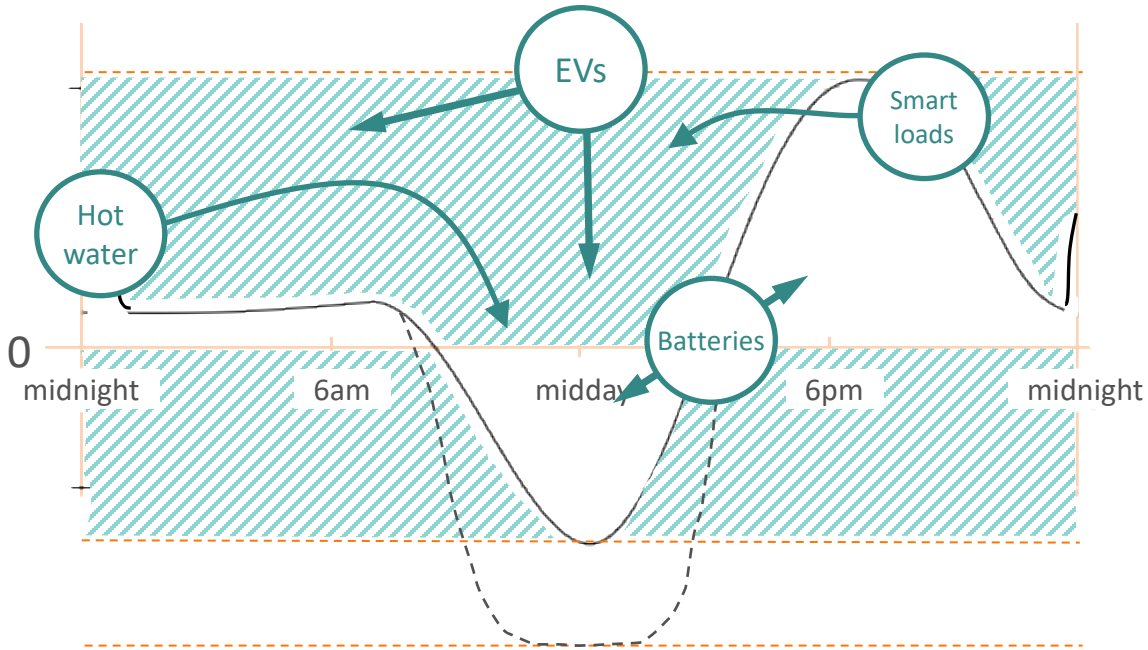
Activating customer energy resources

How do we provide the right rewards, incentives, opportunities and information to empower our customers to get the most value from their flexible resources?





Fill the spare capacity with flexible DER and loads

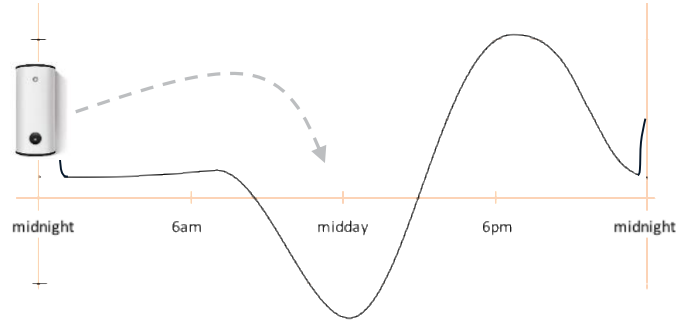




Hot water load program

We are considering a targeted program to facilitate the transition of remaining electric hot water loads to the daytime

- Since introducing time-of-use tariffs for customers with smart meters in 2020 we have seen retailers shift ~20% of overnight hot water load to the daytime and this is growing
- Shifting hot water to the daytime enables customers and/or retailers to save money through lower daytime network tariffs, lower wholesale energy costs and using in-house solar
- It also benefits other customers by:
    - helping absorb surplus daytime solar energy in residential areas
    - creating a more efficient electricity market
    - in the long term, freeing up overnight capacity for EV charging
- In this program we would:
    - Forecast the number of homes with electric hot water still without smart meters in 2025
    - Run a targeted program early in the 2025-30 period to accelerate the rollout of smart meters to these customers, which could include subsidies to retailers to bring forward meter replacements



At the present time the AEMC is reviewing the metering market and considering options to accelerate the rollout, with initial recommendations due by end 2022. This could alleviate the need for us to undertake a program of our own

Enabling greater demand-side participation

We are considering several initiatives to facilitate greater demand-side participation in the post-2025 market

The Energy Security Board's national *Post-2025 Market Review* is proposing market reforms to suit a high-renewables future

We are considering upgrades to our customer and market systems to help South Australian customers make the most of their own flexible resources in the future electricity market:

- **Flexible load enablement**

  New systems to support flexible load connections for small customers with smart appliances and for large grid-connected loads like grid batteries or data centres

- **Support post-2025 market reforms**

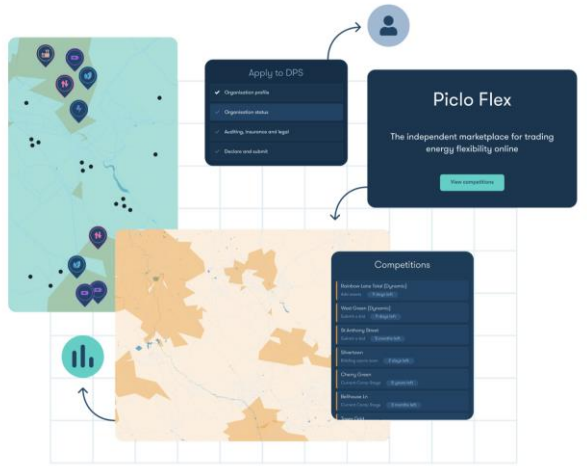
  New systems and interfaces to AEMO's future market platforms and to support market participants like VPP operators

- **Network support service procurement**

  New systems to publish data on the network to the market and streamline the procurement of network support services, e.g. like the Piclo platform used by UK networks

Details of these initiatives are still under development

piclo®



Department for Business, Energy & Industrial Strategy

UK Power Networks

nationalgridESO

eso

SP ENERGY NETWORKS

electricity north west

LONDON July 4, 2019 10:00 AM

Piclo Announces Milestone Auction Result with UK Power Networks

New customer services

We are looking at enhancing our service offerings for small and large customers

- We are looking into enhanced online tools and processes to streamline the connection process for small and large customers
- This includes
    - Self-service applications
    - Automated online quotes
    - Easy access to information on connection choices and offers including flexible connections
- We’re also considering other ways we can improve the customer experience through self-service, easy access to information and more personalised services

These initiatives will be explored in detail in our Customer Experience focussed conversations



Other opportunities

Solar for rental properties

The concept of a 'Solar for renters' initiative received strong support in our broad and diverse engagement

Solar on rental properties has been difficult to achieve due to the 'split incentive' for landlords and tenants:

- Landlords are often reluctant to pay for an asset that only benefits the tenant and doesn't provide sufficient 'additional value' to the property
- Tenants are reluctant to pay for an asset that has a long payback period and ultimately owned by the landlord (asset stays with house)

SA Power Networks is currently considering a number of proposed models that seek to improve access to solar for renters

These options are being canvassed in detail in our *Equity and Vulnerable Customers* focussed conversations.

Examples include:

'Solar as a service' proposed *concept*

- Solar is installed at rental property
- Tenant pays for the solar through an additional charge added to the electricity service charge (zero up front)
- Solar and liability for payment remains with house if tenant leaves
- Payments continue until system 'paid off', with system left on house once fully paid

Subsidy for landlord purchase of solar (*existing* Victorian scheme)

- Landlord provided a subsidy to install solar on their rental property
- Landlord can cover remaining cost or take out an interest-free loan
- Landlord can share loan repayments with the Tenant (up to 50% of the residual cost)
- Solar remains on property when tenant leaves

Other opportunities

Community Energy Fund

- Consultation has identified interest in SA Power Networks support for community-led energy initiatives
- SA Power Networks is exploring establishing a **Community Energy Fund** in 2025-30 to provide a pathway for it to support community-led energy initiatives, particularly those that are in their early stages of maturity such as community batteries, community solar, community EV chargers, microgrids
- Governance could be established to enable community-governed processes to allocate funding and criteria to projects and encourage co-funding from councils and community organisations

This concept is being canvassed in detail in our *Equity and Vulnerable Customers* focussed conversations.

Other opportunities

Energy advisory services

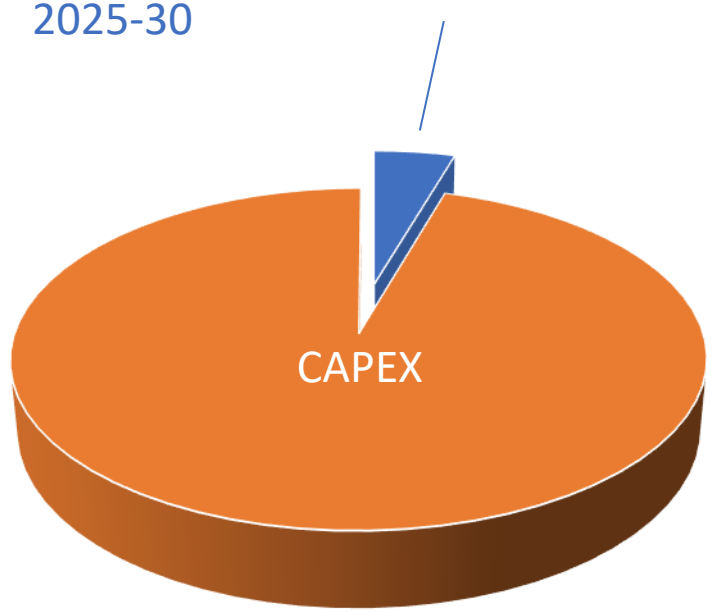
- A recurring theme in our earlier stakeholder consultation was that customers are finding it hard to navigate the complex and changing nature of the energy system and the new choices available to them
- Customers expressed strong support for the idea that SA Power Networks could play a greater role in providing **Energy Advice** in 2025-30
- While we are not an advisory body, we do already provide advice to customers on an ad-hoc basis, and it is in our interest, and the long-term interest of all electricity customers, that customers have the information they need to make good decisions around their own energy resources and to use the electricity system efficiently

This concept is being canvassed in detail in our *Customer Experience* focussed conversations.

DER integration initiatives – empowering our customers

Initiative	Value	
Flexible load enablement *Supporting customers with flexible load technology, e.g. smart appliances, to maximise the benefits*	$	*
Hot water load program *Targeted program to facilitate the transition of remaining electric hot water loads to the daytime*	$$	*
Market integration systems enhancements *Supporting aggregators and others to engage with AEMO's future market platforms, as well as new platforms for network services*	$$	
New connection services *Including new information resources like 'opportunity maps'*	$	
Community energy program *Potential fund to support community energy schemes such as community batteries*	$	*
Energy advisory *Taking a greater role in providing impartial energy advice to customers*	$	

DER integration initiatives expected to account for 2% - 7% of total CAPEX for 2025-30



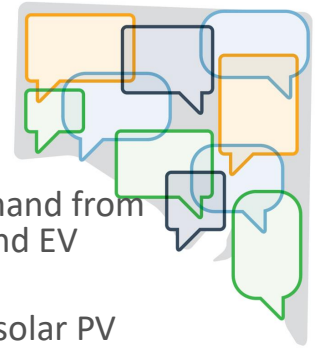
* **Proposed key topic areas for focussed conversations**
Note: some of these topics will be discussed in *Customer Experience* and *Equity and Vulnerable Customers* streams

Discussion

- What are the key topics to carry forward for detailed discussion?
- Should we consider subsidising the roll out of smart meters where there are benefits to all customers?
- What risks do you see with these approaches?
- Are there other ways to achieve outcomes?
- What evidence do you need to see to form an opinion?
- What's missing?



Discussion & notes

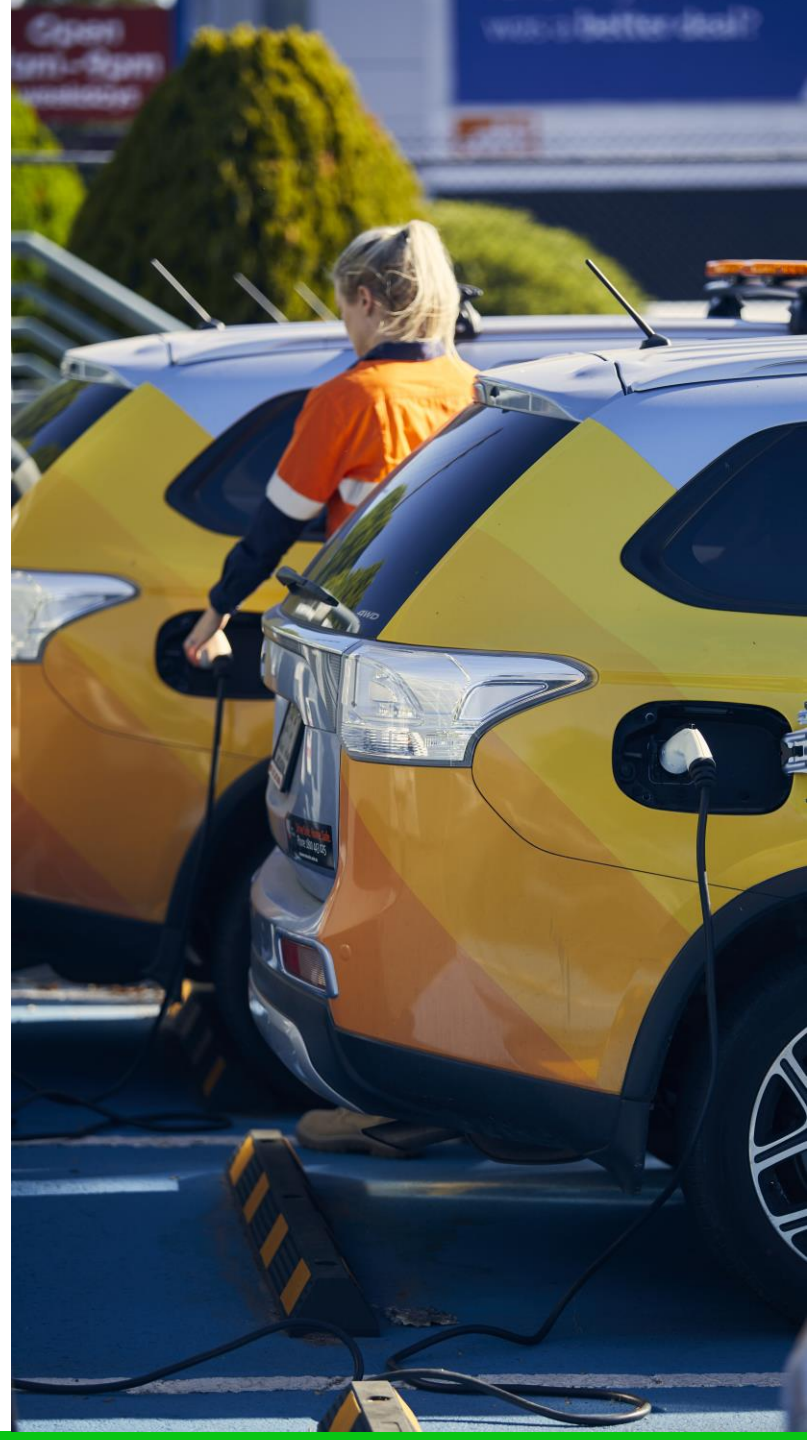


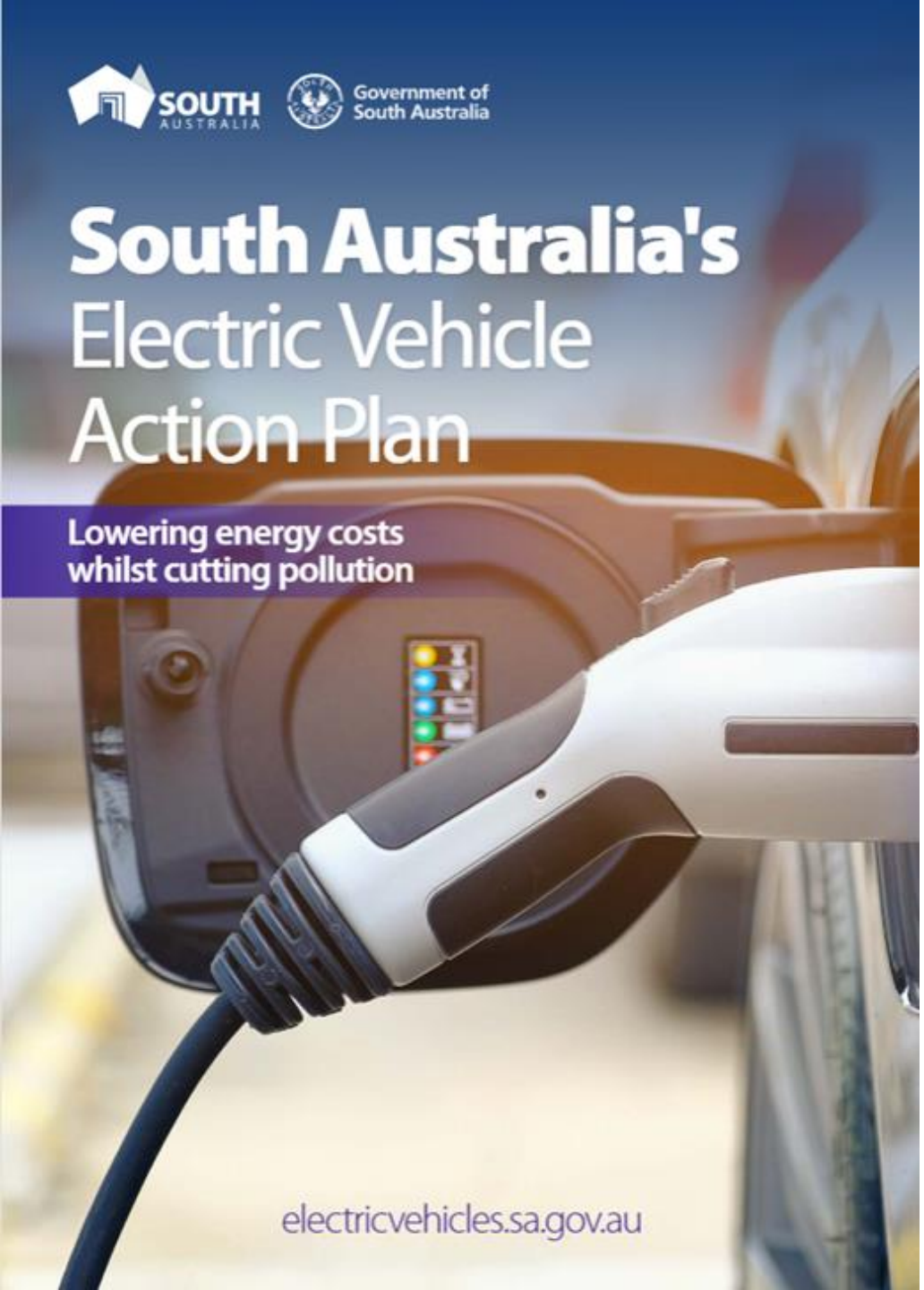
- Will the network support service procurement platform be linked to AEMO (and the Project Edge work) or separate?
- What is the actual benefit of a community battery - is it designed to allow access to power during blackouts i.e. in a library/community centre?
- Would rolling out more smart meters give you better access to data and hence allow for better decision making in the future?
- What about energy efficiency programs? Are there opportunities there? Home insulation etc. Should SAPN do this? Or advocate for it?
- Show modelling of benefits of load shifting e.g. hot water – can we quantify this?
- Solar for renters – consider Building Upgrade Finance model (recover costs through council rates)?
- Solar for renters – is it our role to provide, or to advocate?
- Is ‘solar for rentals’ the best approach or would ‘batteries for rentals’ be better? Batteries could provide network support also.
- What is ‘equity’ – is it equal access to resources, or equal savings overall?
- Isn’t it more about reducing cost to customers than solar per se? Is solar (for renters) just a means to that end?
- What about renters who can’t have solar because they have no suitable roof? Should we consider ‘solar gardens’?
- Is it also about zero emissions, not just cost savings?
- Solar for rentals is of significant interest
- Have we considered how to purchase network services to offset any capex spend, such as voltage management and min. demand from retailers and/or aggregators with solar, solar & battery and EV customers?
- Why not go the whole hog and simply subsidize modest solar PV systems completely for rental properties, i.e. free 3kW systems for rental properties?
- Is the hot water program also targeting houses with gas hot water, to get them to change over?
- Do you think customers resist smart meters due to a fear of being forced onto time of use billing when they (like renters, low income) do not have the means to mitigate their costs?
- Will you be revisiting Time-of-Use Network Tariffs for community programs; solar, battery, micro-grid?
- Solutions for 'community batteries' and solar PV in community titled sites would be good.
- Note City of Adelaide did Solar Savers where the cost of installing Solar PV on concession and rental households was placed as a 10 year separate charge on participating property



Topic 3

Enabling the EV transition



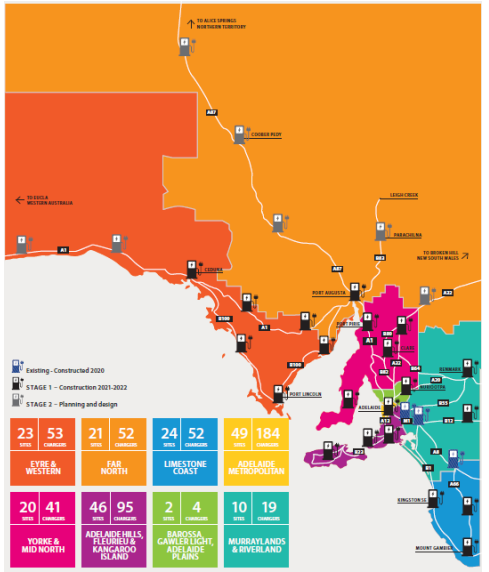


Vision

We will be a national leader in electric vehicle uptake and smart charging by 2025: harnessing renewable energy to reduce motoring costs, lower air, noise and carbon pollution, and reduce electricity costs for all South Australians.

Key elements

- EVs to be default choice by 2030
- No new ICE sales by 2035
- $15m statewide charging network
- $3m smart charging trials
- Fleet pledge

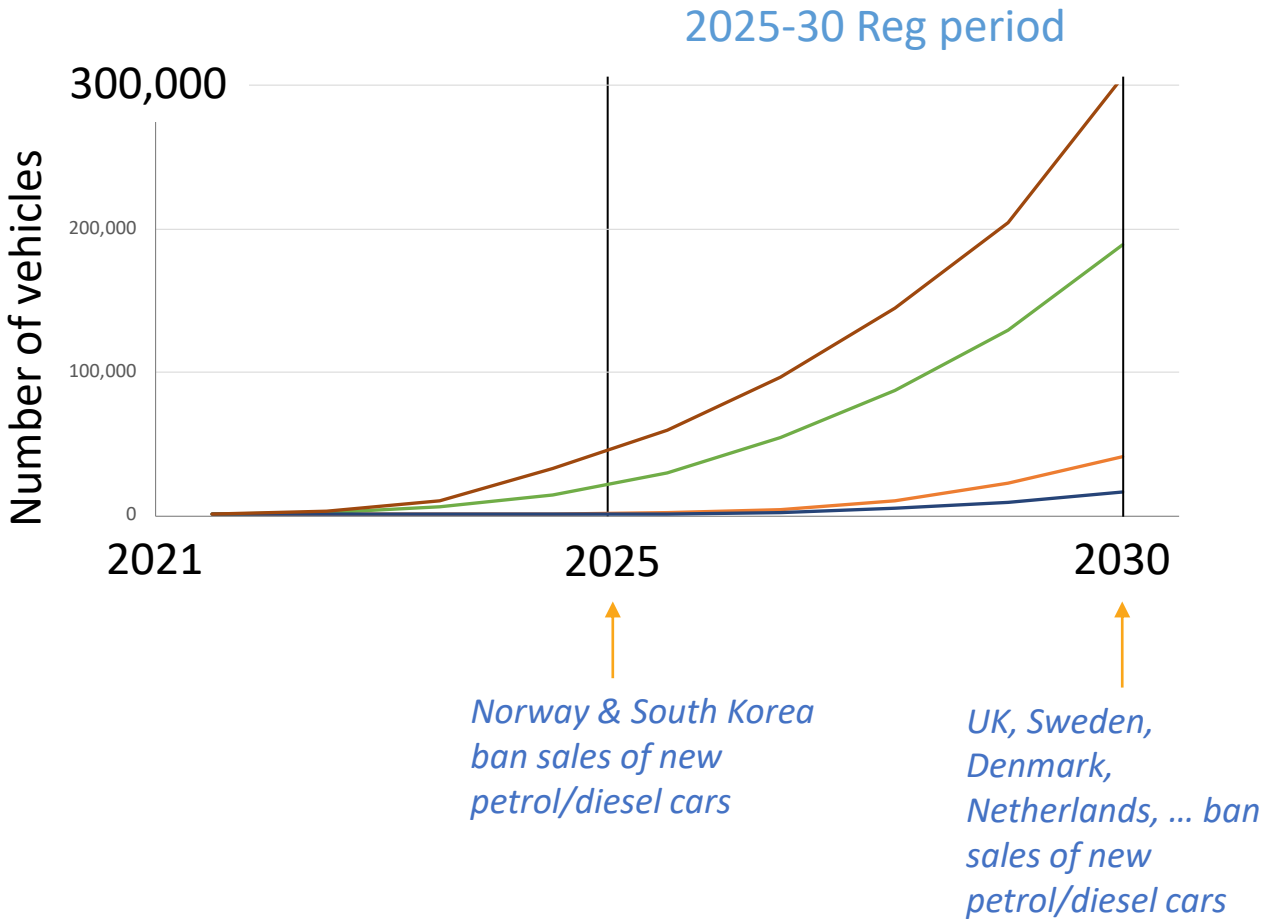


Also…

- $3,000 subsidy for 7,000 EVs (<$68,750)
- Registration waiver for 3 years
- EV Road tax to kick in at 30% of sales or 2027
  - Bill now before parliament to repeal

The transition to EVs is the ‘next big thing’ for our sector

We expect significant growth in EV uptake in 2025-30. The transition to EVs presents a material opportunity to increase network asset utilisation and reduce prices, so long as charging occurs predominantly outside peak times



Our EV strategy is to **actively support the transition to electric vehicles**, by:

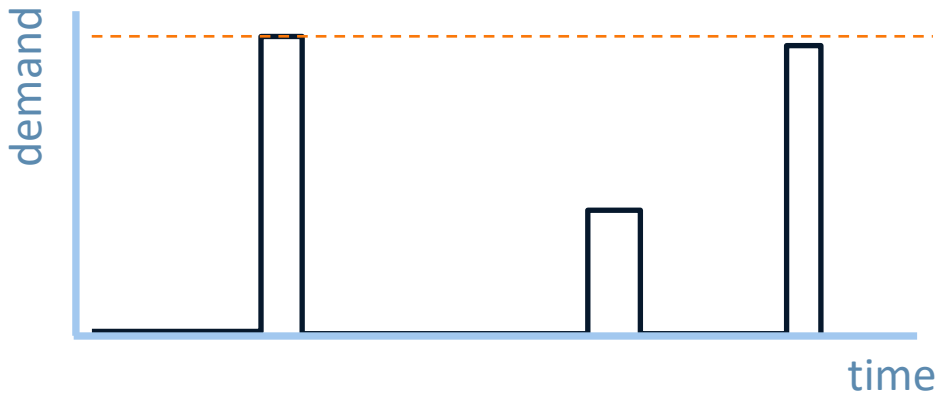
- ensuring that our network is both ‘**EV ready**’ and ‘**EV friendly**’;
- actively **supporting** councils and others in **the rollout of EV charging infrastructure**;
- maximising **EV use within our own fleet**; and
- publicly **advocating for policy support** to stimulate EV uptake.

Source: South Australia EV forecasts – AEMO ESOO 2021

Connecting large highway superchargers

- Highway superchargers present very significant loads on the network
    - A single 350kW supercharger has the same peak demand as more than 70 homes
- Network tariffs for large loads are based on maximum demand and can be a significant cost for charging station operators
- We want to support charging network operators in managing their network costs but we cannot give EV chargers special treatment under the rules
- In 2020 we updated our large business demand tariff to use a 4-hour average, not a 30 minute interval, to calculate peak demand, significantly reducing demand charges for sites with occasional short peaks in demand

We are exploring other options around tariffs and flexible connections







Enabling smart home charging

- We believe most EV charging for private vehicles in South Australia will occur at home
- A home EV charger is a significant load for the home and on the network – comparable to adding an air conditioner or electric hot water system
- We have developed a trial tariff for smart home loads such as home EV chargers called **‘diversify’**
    - It works like ‘flexible exports’ but for flexible loads
    - Customer can receive a bill credit each month if they enrol their smart charger to receive a maximum demand profile
    - Can be combined with any other tariff, e.g. solar sponge TOU

We will continue to develop options for EV drivers to save money using smart home charging

Do we have a role in providing public charging infrastructure?

- It’s not our role to provide public EV charging infrastructure generally
- However, some distribution networks have deployed charging stations in certain circumstances where clear customer benefits have been identified
    - E.g. Ausgrid in NSW has partnered with commercial charging network Jolt to install Jolt charging stations on Ausgrid network infrastructure
- There could also be circumstances where there is a need for a ‘provider of last resort’ in rural locations that are not economical for private charging network operators to serve
    - We could potentially play a direct role here, or we could support the community by advocating for another party such as the SA Government or local council to provide charging services

We will seek feedback from our customers and stakeholders on the extent to which we should investigate these options.



NEWS

Jolt and Ausgrid partner to roll out free EV charging stations

by **Deborah Jackson**
September 16, 2021

Jolt plans to roll out 500 charging kiosks across the Ausgrid network.







Transitioning our own vehicle fleet to EVs

- We operate a significant fleet of **690 light vehicles** and **281 heavy vehicles** in **35 locations** across South Australia
- We are founding signatories to the SA Government's **EV Fleet Pledge.** This commits us to seek opportunities to transition fleet vehicles to EVs as equivalent EVs become available at the same or lower cost
- We have begun introducing EVs into our passenger vehicle fleet on a trial basis
- We are currently developing our fleet transition plan, as well as our plans for rolling out the necessary charging infrastructure across our depots and offices
- We expect to see significant replacement of internal combustion engine (ICE) vehicles with EVs during 2025-30

Fleet transition scenarios

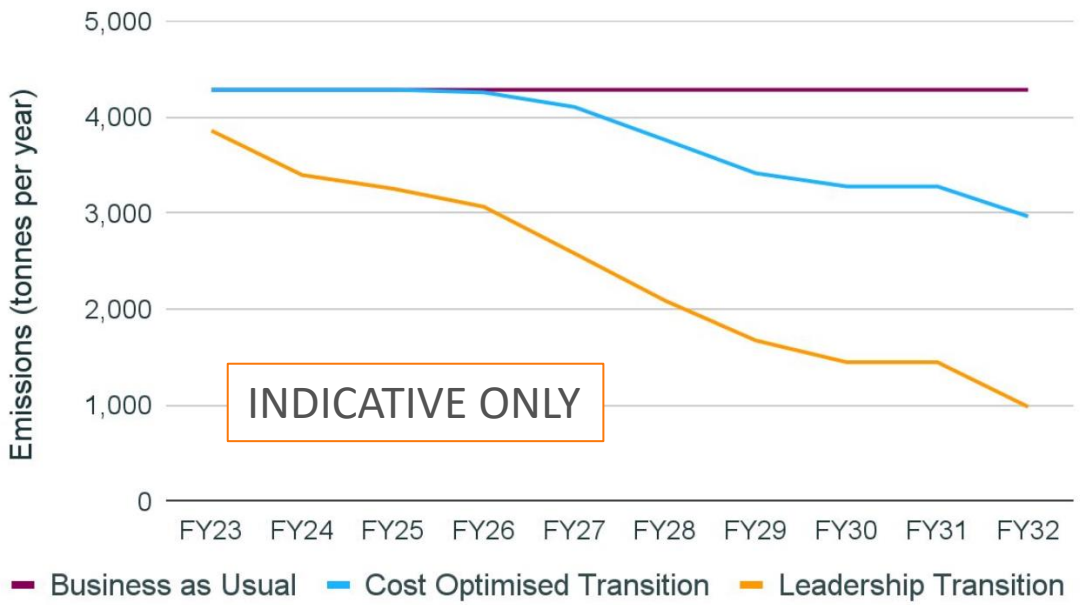
We are modelling three scenarios

- **Business-as-usual** – replace ICE with ICE
- **Cost-optimised** – replace ICE with EV when lower cost
- **Leadership** – accelerate the transition beyond the purely economic

Accelerating the transition of our fleet would incur additional costs, but could lead to increased benefits

- Greater reduction in CO2 emissions
- Help drive demand for manufacturers to bring new models to Australia
- Increase flow of affordable EVs to the second-hand market
- Promote greater awareness of EVs and help lead the transition more broadly

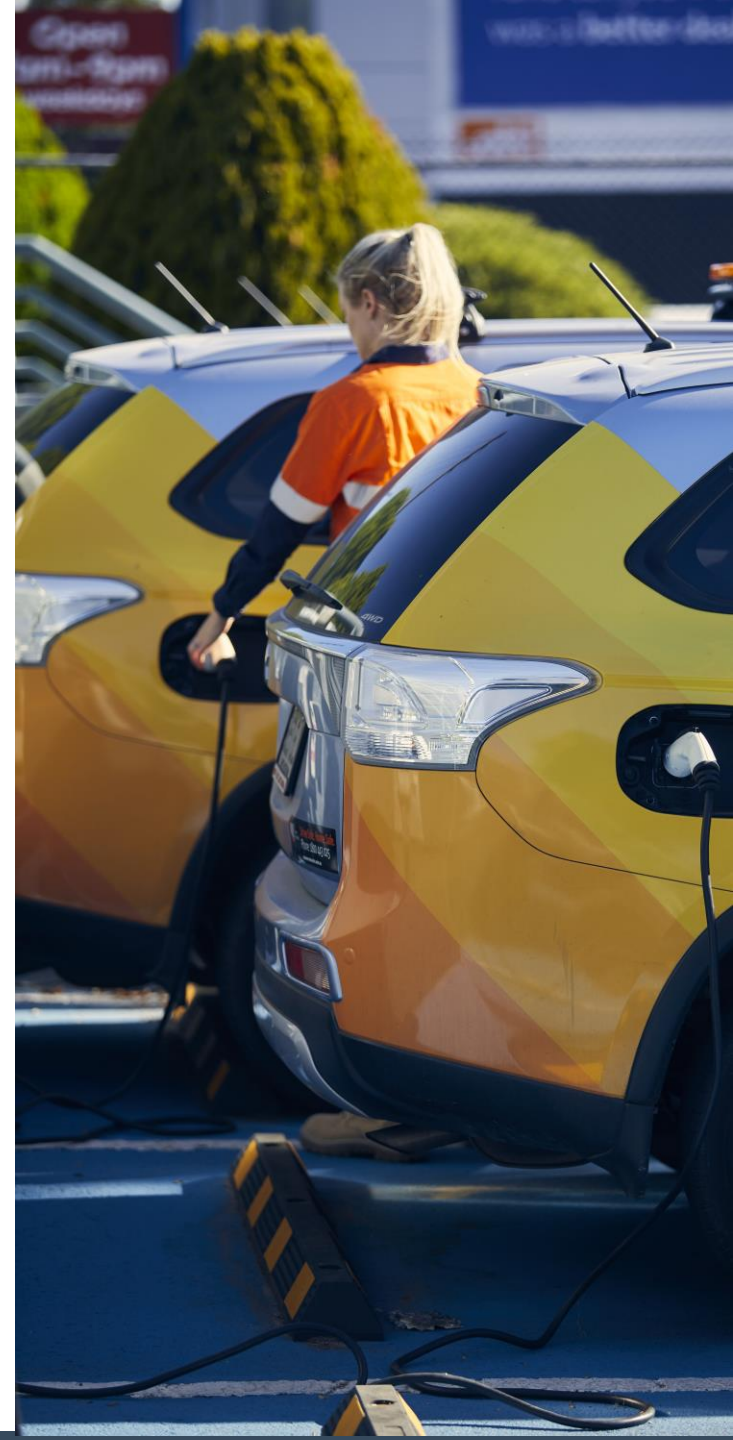
We are seeking customer and stakeholder views on whether we should propose an accelerated fleet transition in our regulatory proposal



Example of preliminary analysis – CO2 reduction for heavy fleet vehicles under different transition scenarios

Initiatives: enabling the EV transition

Initiative	Value	
Enhanced connection options for large loads *To support significant new loads such as highway EV charging stations*	$	
Smart EV charging *Activate and incentivise smart EV charging for homes and businesses*	$	
Hosting public EV charging infrastructure *Potential for SA Power Networks to host public charging infrastructure, e.g. co-located with network assets and/or in under-served locations*	$	
Fleet EV transition program *Progressively transitioning our own vehicle fleet to EVs, including deploying associated charging infrastructure*	$$	*



* **Proposed key topic areas for focussed conversations**

Discussion

- What are the key topics to carry forward for detailed discussion?
- Should we be accelerating our fleet transition to EVs?
- Do we have a role in the provision of public charging infrastructure?
- What risks do you see with these approaches?
- Are there other ways to achieve outcomes?
- What evidence do you need to see to form an opinion?
- What's missing?



Discussion & notes



- How to help superchargers locate in the best places to keep costs down for all?
- Role of network in controlling EV charging to ensure the system is used efficiently and keep costs down?
- We could show leadership in our EV transition
- Opportunities for community energy schemes including solar, backup and EV charging?
- How to encourage and support workplace or other daytime charging? (away from home)
- Customers can face difficulties going through retailers to access off-peak rates for EV charging – it's complex
- What about the 20A limit for home chargers?
- How do people make the right decisions around the size of charger(s) they need at home? Will it cause problems if people want two 32A chargers at home? Should SAPN set standards and/or give guidance?
- What about V2G vs home batteries? Customers are wondering whether to invest in a battery or wait until they have an EV and can use that instead.
- How do renters / apartment tenants access home charging?
- Note that 'solar sponge' TOU tariff is well suited to EVs …but retailers need to offer it. How does SAPN engage with retailers to encourage this?
- Are our tariffs less friendly for big EV chargers than other DNSPs'?
- Agree with benefits of fleet transition
- Need to consider ring-fencing issues with SAPN providing charging infrastructure
- What about public transport, e.g. bus electrification? Are there opportunities for SAPN to collaborate on public transport electrification?
- SAPN already has a role in public lighting – could we use street lights for access for public charging, like in EU?
- Can we provide a simple, provider-agnostic connection point for EV chargers on the network?
- The difficulty finding/using bidirectional EVs is a big factor today
- With the rail electrification, has planning/thought/capacity been allowed for charging units in the train station car parks?
- What about apartment EV charging? Apartments are looking at chargers that link to their electricity meters to manage load.
- Specialised trial tariffs are all very well, but typically see very little uptake (100-200 people is normal). The standard RTOU tariff currently applies to ~260,000 connections. Getting the signals associated with the ~260,000 passed through to a greater degree will likely be more impactful than a new trial tariff.
- Often customers may not have sufficient supply at home for fast EV charging due to other appliances and the 63A limit
- Comment on scope: assume we will focus these discussions on the need for investment in 2025-30 – not beyond that

Next Steps – Engagement

Date	Description
August 2022	• Online survey • Opportunity for participants to provide further thoughts and inputs
September 2022 (TBC)	• Online customer survey being undertaken by Marsden Jacobs • Diverse sample of different customer demographics • Test customer views on levels of service and willingness to pay across a range of topics
Workshop 2 - 22 September 2022	• More detailed information and modelling on key topics • Cost and price implications of options under consideration • Interrogate key topics and make preliminary recommendations
Workshop 3 - 1 November 2022	• Address outstanding questions and issues from Workshop 2 • Confirm preferred approaches • Identify any questions to take to deliberative people's panel (Feb/ March 2023)


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