Reset Advisory Group Meeting

19 November 2025

SA Power Networks

Empowering South Australia



Acknowledgement of Country

SA Power Networks acknowledges the multiple Traditional Owners of the lands that host the South Australian electricity network and their connections to land, sea, and community. We would also like to pay our respects to all First Nations peoples past and present, acknowledging their deep connection to Country, Culture and Community.



Connection With Country, 2025 by Kelly Taylor & T'Keyah Ware

Item 1.3 – Copper Recovery



Salvage Report 2025

Total

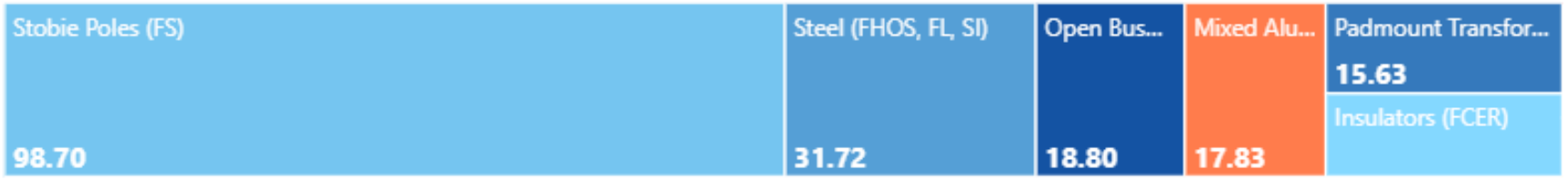
Month	Bare Copper (CB) tonnes	value/t	$$	LME	Clean Aluminium (AAC) tonnes	value/t	$$	LME	Copper Domestic (CD) tonnes	value/t	$$	LME	Copper Insulated Wire (CIW, LCA) tonnes	value/t	$$	LME
January													2.760	4,951.03	13,664.84	34%
February													3.700	5,277.77	19,527.76	34%
March					3.565	29,428.56	13,463.74	90%	0.394	13,150.00	5,181.10		3.768	16,194.75	20,340.61	34%
April													3.360	4,908.53	16,492.66	34%
May					1.400	3,280.61	4,592.86	90%					4.080	5,069.27	20,682.61	34%
June													3.292	5,151.86	16,959.94	34%
July					0.552	3,659.96	2,020.30	90%								
August	4.328	41,334.00	59,631.19	92%	0.416	3,614.09	1,503.46	90%					5.100	10,134.53	25,826.82	34%
September																
October																
November																
December																
Total	**4.328**	**41,334.00**	**59,631.19**	**92%**	**5.933**	**39,983.22**	**21,580.36**	**90%**	**0.394**	**13,150.00**	**5,181.10**		**26.060**	**51,687.74**	**133,495.24**	**34%**

Yearly Average ($)

Total Revenue excl Tax
$1,129,141.26

Monthly Average
$141,142.66

Monthly Average (Tonnes)



Salvage Report 2025

Total

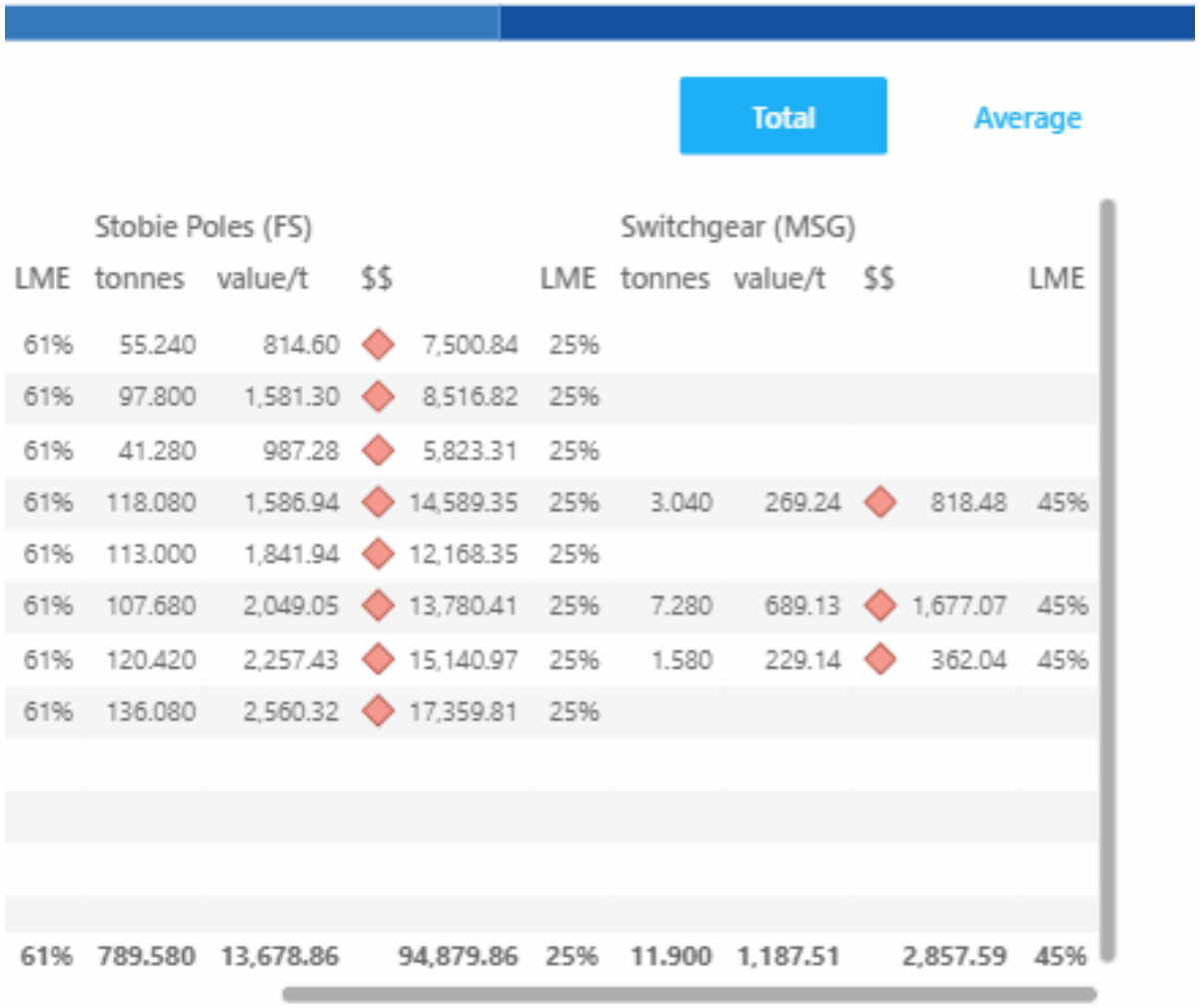
Month	High Grade Insulate Copper Conductor (CIH)				Insulators (FCER)				Lead (LL)				Mixed Aluminium (AIC, ACSR)		
	tonnes	value/t	$$	LME	tonnes	value/t	$$	LME	tonnes	value/t	$$	LME	tonnes	value/t	$$
January					12.300	243.94	1,530.62	20%					11.350	10,618.26	24,232.85
February	0.854	8,493.01	7,253.03	57%	9.780	219.00	1,070.44	20%					13.160	8,558.80	28,182.08
March	0.462	18,031.18	4,165.20	57%	20.650	788.48	2,336.73	20%					25.082	10,712.11	53,466.90
April	2.972	16,811.27	25,024.94	57%	17.060	326.13	1,849.00	20%					19.240	7,865.17	37,895.74
May					12.260	204.39	1,253.07	20%					28.480	9,656.91	54,986.60
June					9.700	206.24	1,001.01	20%					13.688	5,925.60	27,059.71
July	3.700	8,716.78	32,252.09	57%	5.980	101.87	609.18	20%	3.486	3,399.04	2,962.27	28%	20.560	10,240.63	41,974.45
August	3.894	33,804.64	32,908.83	57%	26.720	306.84	2,733.85	20%	2.720	3,352.16	2,279.48	28%	11.048	6,129.87	22,649.02
September															
October															
November															
December															
Total	**11.882**	**85,856.88**	**101,604.09**	**57%**	**114.450**	**2,396.89**	**12,383.90**	**20%**	**6.206**	**6,751.20**	**5,241.75**	**28%**	**142.608**	**69,707.35**	**290,447.35**

Salvage Report 2025

Total

	Mixed Commodity Range Aluminium (AI3)				Open Bush Transformers (TRC)				Padmount Transformers (TRA)				Steel (FHOS, FL, SI)			
Month	tonnes	value/t	$$	LME	tonnes	value/t	$$	LME	tonnes	value/t	$$	LME	tonnes	value/t	$$	
January	6.540	494.79	1,617.46	6%	16.428	45,201.68	23,942.58	10%	17.241	10,063.42	10,823.75	15%	28.798	5,614.58	9,499.84	
February	4.920	504.02	1,237.05	6%	9.861	32,700.91	14,673.80	10%	19.912	8,846.70	12,575.50	15%	34.325	5,669.35	11,491.60	
March	14.940	1,024.81	3,827.32	6%	12.349	46,672.45	19,250.62	10%	12.574	7,564.78	7,870.61	15%	30.918	6,192.25	10,615.10	
April	7.640	451.58	1,726.78	6%	20.779	58,273.98	30,410.36	10%	20.747	14,265.83	11,883.77	15%	28.598	5,618.25	9,912.95	
May	9.920	684.67	2,265.54	6%	43.058	68,096.28	63,683.57	10%	17.687	9,756.41	10,145.92	15%	51.086	7,809.53	15,966.97	
June					9.382	27,180.40	14,117.37	10%	7.916	5,203.23	4,568.86	15%	31.736	4,379.47	9,943.87	
July	9.740	714.01	2,319.18	6%	14.162	49,308.54	21,132.62	10%	13.996	7,203.11	8,402.54	15%	30.662	4,309.73	9,451.36	
August	6.320	483.88	1,529.08	6%	24.397	26,689.34	36,338.20	10%	14.951	5,990.53	8,956.45	15%	17.642	3,451.56	5,539.65	
September																
October																
November																
December																
Total	**60.020**	**4,357.76**	**14,522.41**	**6%**	**150.416**	**354,123.58**	**223,549.12**	**10%**	**125.024**	**68,894.01**	**75,227.40**	**15%**	**253.765**	**43,044.72**	**82,421.34**	

Salvage Report 2025



Total | Average

Stobie Poles (FS)					Switchgear (MSG)				
LME	tonnes	value/t	$$	LME	tonnes	value/t	$$		LME
61%	55.240	814.60	7,500.84	25%					
61%	97.800	1,581.30	8,516.82	25%					
61%	41.280	987.28	5,823.31	25%					
61%	118.080	1,586.94	14,589.35	25%	3.040	269.24	818.48		45%
61%	113.000	1,841.94	12,168.35	25%					
61%	107.680	2,049.05	13,780.41	25%	7.280	689.13	1,677.07		45%
61%	120.420	2,257.43	15,140.97	25%	1.580	229.14	362.04		45%
61%	136.080	2,560.32	17,359.81	25%					
61%	**789.580**	**13,678.86**	**94,879.86**	**25%**	**11.900**	**1,187.51**	**2,857.59**		**45%**

2. SEC Newgate Report – key findings



SECNewgate Research



Review of the 2025-30 Regulatory Reset Engagement Approach

Final Report

Prepared for SA Power Networks | August 2025

Background, objectives and methodology

This report presents results from a review of SA Power Network's (SAPN) engagement approach for its 2025-30 regulatory reset process.

We began with an internal workshop with senior members of the SAPN regulatory team (Craig Parsons, Richard Sibly, Bruno Coelho, Alex Lewis and Megan Grey) as well as three internal interviews with Jessica Morris, Andrew Bills and Mark Vincent.

This was followed by a series of 11 external interviews with stakeholders who were involved in the 2025-30 regulatory recess. These participants were nominated by SAPN, and their names and organisations are noted on the right. Interviews were typically around 60 minutes long and were conducted on an unattributable basis.

Results will be used to inform development of SAPN's 'Road to 2030' plans, and the 2030-35 Reset Strategy. Specific objectives included understanding:

1. Overall perspectives on SAPN's review process including things that went well as well as opportunities for improvement.
2. Attitudes to the outcome as well as the quality of the SAPN's regulatory submission.
3. Feedback on the People's Panel and other parts of the engagement program.
4. Perspectives on their own involvement and the amount of time and effort they were required to devote to the process.
5. Attitudes to SAPN streamlining and focusing future engagements.
6. Future trends that SAPN will need to consider in future resets and their final advice on what SAPN should focus on most.

Participant	Organisation	SAPN AG Role
Andrew Nance	SAPN Advisory Group	Chairperson/Director - Community Advisory Forum
Chris Marsden	SAPN Advisory Group	Chair - Reset Advisory Group
Georgina Morris	SAPN Advisory Group	Chair - Vulnerable Customers Advisory Group
Michael Leane	SAPN Advisory Group	Member - Community Advisory Forum
Davis Veremu	SAPN Advisory Group	Chair - Asset Condition and Risk Advisory Group
Lachlan Newman	SAPN Advisory Group	Independent Community Members
Kate Symons	AER	
Andreas Blahous	AER	
Kris Funston	AER	
Mark Henley	AER	
Andrew Schultz	Department of Energy and Mining (SA)	

Executive summary

Stakeholders and internal leaders typically rated SAPN's regulatory reset process highly (mostly 8/10), noting steady improvement across resets. SAPN is widely regarded as a sector leader, with strong engagement, technical capability, and a trusted brand. The AER considers SAPN among the most advanced and least problematic networks they regulate.

THE PRIMARY STRENGTHS HIGHLIGHTED INCLUDE:

- **A high-quality engagement process:** The regulatory process was well-organised, proactive, inclusive, and supported by a detailed plan.
- **Genuine customer focus:** Stakeholders saw that SAPN listened, made changes, and treated engagement as meaningful.
- **Visible leadership involvement:** Senior leaders and technical experts were directly engaged in this process, although there is scope for more meaningful and regular Board engagement.
- **An inclusive process:** SAPN's process spanned diverse customer groups, including industry, First Nations and vulnerable customers.
- **The People's Panel:** It was well-run, credible, and influential in shaping outcomes.
- **Strong documentation and technical capability:** The AER praised SAPN's submission as the best they receive and that it is clear, consistent, evidence-based. This is a core strength to maintain.
- **A trusted leader in your sector:** Overall, SAPN is seen as innovative, reliable, and customer-focused.

THE MAIN AREAS FOR IMPROVEMENT INCLUDE:

- **Affordability focus:** This was clearly a significant concern for customers, and stakeholders did not believe that the proposal adequately reflected this.
- **Scenario design:** "Three scenarios" approach taken at the People's Panel was seen as steering toward the middle option; stakeholders want more transparent trade-offs and cumulative bill impacts. This approach undermined the overall feeling of genuine and open engagement.
- **Engagement scope vs. impact:** Stakeholders felt the process was intensive and could be streamlined. It was a significant time and effort commitment for participants, who felt there should be more focus on engaging on the topics that can truly be influenced by stakeholder feedback.
- **Board visibility:** Absence of SAPN Board members in engagement was seen as a gap compared to best practice.

IMPLICATIONS FOR FUTURE RESETS AND CONCLUSION

Participants expect future regulatory processes to address the twin challenges of affordability and equity, while managing the transition to a 100% renewable future and the challenges that will pose. They also emphasised the need for customer-focused innovation and transparent management of ageing assets and costs.

We have provided an assessment of the challenges and some recommendations in this document. Our feedback can be summarised as follows: SAPN has delivered a very high-quality sector-leading reset process engagement program that was well regarded by the AER and stakeholders, and it should be proud of the significant effort the team put in to deliver this outcome.

Looking ahead, SAPN must continue to refine its engagement craft – with a focus on more overtly balancing competing stakeholder and internal priorities, demonstrating how those trade-offs are made, and creating space for meaningful input without overburdening participants. Success will depend on presenting bill impacts and scenarios in clear, co-designed ways, while carefully managing heightened expectations following strong past results.

The challenge for future resets will be to sustain excellence while streamlining effort, deepening focus on affordability and customer outcomes, and enhancing transparency in decision-making and governance visibility.

Emerging issues and trends that stakeholders believe SAPN will need to factor in for its next reset…

Toward the end of the interviews, we asked participants what they felt are the key emerging issues and trends that SAPN will need to factor in for its next reset. They spoke of…

1. **Electrification and the shift from households moving away from gas** with related implications for infrastructure planning, customer engagement, and transition management.
2. **Growing consumer energy resources and distributed energy (solar, batteries, EVs),** including the need to orchestrate and integrate these things in order to manage affordability, fairness, and system reliability. There was also comment about equitable access to batteries and the need to building trust in their uptake. One spoke of the "need for clear frameworks to separate SAPN's remit from areas beyond their responsibility, while still leading in CER integration".
3. **Distribution System Operator (DSO) evolution** with related comment about SAPN taking some lessons learned from the UK on creating a DSO model as well as opportunities to streamline, unify, and reduce costs while ensuring benefits are measurable. One also noted the importance of building the narrative around DSO and showing the tangible impact.
4. **Challenges of 100% renewables & related market uncertainty.** Participants spoke of technological and market challenges, that flexibility will be needed as technologies evolve quickly, that South Australia's high renewable penetration has created significant wholesale price volatility, hedging, and inequities in tariff structures. One noted that continued rapid change and uncertainty in energy markets will remain a constant backdrop.
5. **The ongoing challenge of affordability & equity.** This includes the issue of cost recovery inequities between households with solar/batteries and those without as well as the need to make the energy transition simple for consumers and help them access the best electricity deals.
6. **Innovation, EVs & other future opportunities** with related comments about opportunities for SAPN in sandboxing and piloting innovative approaches, "big opportunities in EV charging and integration", particularly aligning with Federal solar and electrification initiatives, as well as a comment around the importance of ensuring innovation is outcome-driven and not just experimentation.
7. **The aging network & asset management** and the need to manage it through incremental improvements to delay replacement. Also, that this will require transparent communication about costs, risks, and the value of incremental approaches.
8. **Regulatory & accountability shifts** involving a focus on promised consumer outcomes with measurable accountability and transparent reporting (apparently as done in the water sector). There was also comment on the ECA rule changes on integrated systems plans being welcomed, with calls for more public reporting and monitoring of data (e.g., solar vs. non-solar households).
9. **Two-way energy flows & smarter system** and this includes the transition from one-way to two-way electricity distribution, the need for smart meters, feed-in tariffs, and pricing mechanisms that reflect new system dynamics.
10. **Balancing ROI, safety & reliability,** noting that a fundamental tension remains between ensuring safe, reliable electricity supply and providing acceptable ROI. There was comment that this will remain the anchor even as complexity and innovation grow.

Participant's final advice to SAPN for the next revenue rest process

At the end of the interview's participants provided the following final advice on what they felt that SAPN should focus on most.

1. **Continue to focus on the voice of the customer** as the central element of the process.
2. **Focus on customer outcomes and demonstrate accountability** to them.
3. **Better utilise customer engagement as a BAU process** – including continuous engagement on current and future expenditure.
4. **Develop better scenarios** via ongoing customer engagement for the next reset.
5. **Keep affordability as the primary concern** and demonstrate how this has been considered and how it has influenced the proposal.
6. **Build trust with stakeholders** – by "taking them on the journey".
7. **Engage on the broader energy market** – not just on distribution issues (e.g. working with retailers on how vulnerable customers can be supported and ensure that they are on the best deal).
8. **Focus on vulnerable customers** and truly understand the impacts that high energy costs have on their lives.
9. **Show a genuine long-term strategy about the real replacement costs in relation to the aging network** (i.e. don't game the system and take an underspend dividend unless it's earned).
9. **Ensure the transition is equitable for solar and non-solar customers** – make sure you engage with younger people, renters and vulnerable groups on the real impact of the transition.
10. **Pursue greater collaboration with other networks (e.g. ElectroNet) and government** to create efficiencies and reduce costs.
11. **Ensure SAPN ELT members remain involved in the next reset** to maintain continuity and leverage the background knowledge they now have.
12. **Provide a Board member delegate** to demonstrate that SAPN care about the process, and so they can answer some of the questions that perhaps the leadership might be able to.
13. **Remove the jargon from engagement activities** and ensure that SME's are communicating without jargon and at an appropriate level of detail.
14. **Be more receptive and open to constructive criticism.**
15. **Engage early with the AER on the refined engagement approach** as this will enabling the AER to provide better guidance on it.

In their words...

"How do customers fit into this increasingly complex environment? How do you make it simpler for customers? SAPN has the relationship with customers, the retailers aren't the brains of the operation, it's the distributor. Got to wrestle with how customers will interact with the environment to improve the experience. Overall trust needs to be built. Made simpler in the respect of how to choose the best deal. Making choices on retailers, will get more complex with VPP's, how do you help customers make reasonable choices or handing that choice over to third party trusted advisors?"

"For future processes there would be more time required by AER to engage with SAPN. The AER wants assurance on how consumer interests have shaped investment decisions. This includes understanding where consumer views were pivotal, how they were validated, and ensuring reliability in representing those interests. Ongoing communication and opportunities for direct observation by consumer-focused bodies will support this."

"SAPN should plan early, revisit the risks you are trying to manage periodically, be holistic. Don't wait to undertake work on an exciting and new topic with the AER during the revenue reset periods only, and engage early with the AER on the structure of the approach being taken - this would enable the AER to offer better guidance.

"Increase the level of engagement with retailers, who do have the contact with vulnerable consumers. There needs to be much more effort put into "together we influence the price". Together working out some way for vulnerable customers to be on the best deal or perhaps advisors provided."

"Consistency is key - and by that I mean there are some really good ELT members that have been part of the recent process that I would like to see continue their involvement. Continue on the work that they have done and they've got really good background knowledge and could be of immense value for the next regulatory session."

"Affordability should be the primary concern; SAPN needs to demonstrate how they have considered it and how it has influenced their proposal."

"SAPN does a good job, keep doing what they are doing, their analysis and packaging of this is good, the engagement process is good and can be better."

Implications for future regulatory processes

As noted throughout this document, SAPN has delivered a very successful engagement program and achieved an excellent outcome. The team should be proud of the outcome and the dedication that this required over a long period of time.

The next two pages look ahead to the next regulatory process and seek to synthesise what we believe the core challenges will be and how these might be addressed.

Internal challenges for future processes

1. Maintaining a high-performance culture that values excellence and precision ***and*** delivers the "art and science" that is needed when weighing competing stakeholder views with SAPN's own priorities.

2. Developing clear and impartial trade off options and questions for use with stakeholders.

3. Allowing time for broad and deep engagement on issues that matter and can be influenced, while also reducing the overall engagement burden.

4. Finding ways to better explore the cumulative impacts of bill changes and the implications of these changes on different groups.

5. Considering the positive regulatory results, managing heightened expectations and demonstrating that this reset delivered value.



Strategic recommendations

Based on feedback from stakeholders and participants, and our experience delivering regulatory engagement in the energy, water and telecommunications sectors, we provide the following recommendations.



SEEK CONSTRUCTIVE EXTERNAL CHALLENGE:

SAPN's team is highly capable, but selective external advice—such as a "fresh eyes" review of trade-off questions—could sharpen design and reduce blind spots during a long, high-stakes process.



CO-DESIGN THE ENGAGEMENT APPROACH

We have found there to be significant value in formally commencing a regulatory process with a co-design session that brings together SAPN Executives, Board members, SMEs and members of your CAB.

At this kind of workshop, you can share internal and external challenges, outline the proposed engagement plan, and invite constructive challenge.

This helps reduce risk, secure buy-in, clarify what is and isn't open to influence, and ensure the engagement approach is targeted and efficient.



INCREASE MEANINGFUL BOARD INVOLVEMENT:

Stakeholders want more visible Board participation. Identify key moments early, and ensure involvement is meaningful—for example, having a Board member close sessions by reflecting on feedback received.



SHARE TRADE-OFF CONSIDERATIONS MORE TRANSPARENTLY:

As noted in this report, there was some feedback that suggested SAPN was not fully considering or weighing stakeholder feedback where it diverged from the businesses' interest.

To avoid this perception, we recommend adopting a clearer, topic-based approach to presenting feedback.

We have recommended a "pillars of evidence" model in the past and this visibly shows feedback from different groups and explains why a decision was made.



CAREFULLY CALIBRATE STATE GOVERNMENT ENGAGEMENT:

Consider whether stronger or earlier engagement with the SA Government could help secure buy-in and reduce the risk of late, disruptive interventions.

Five year Reset Plan



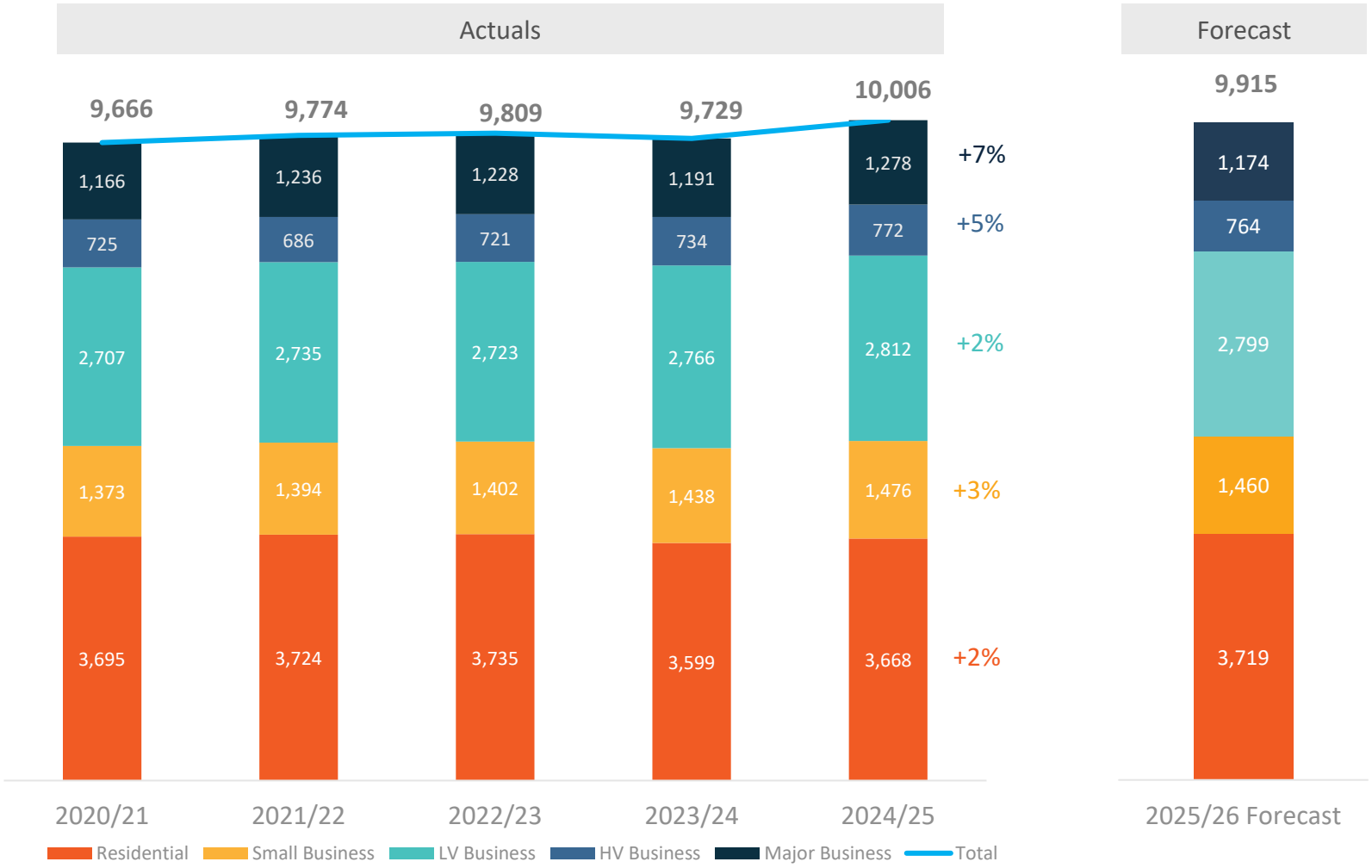
★ Proposal submissions

3. 2024/25 Revenue and Quantity outcomes.

Helen White

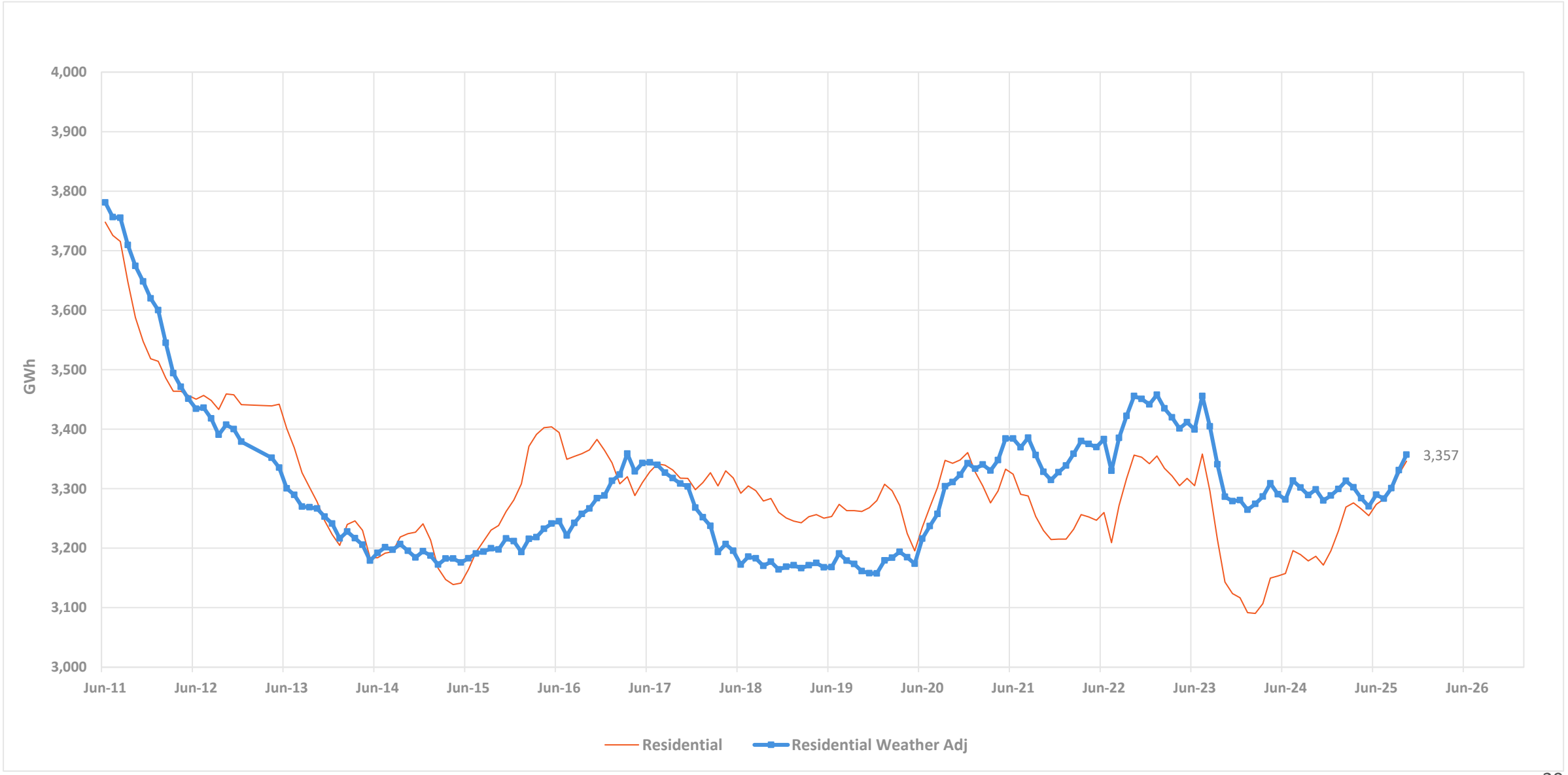


2020-25 Consumption Quantities | GWh

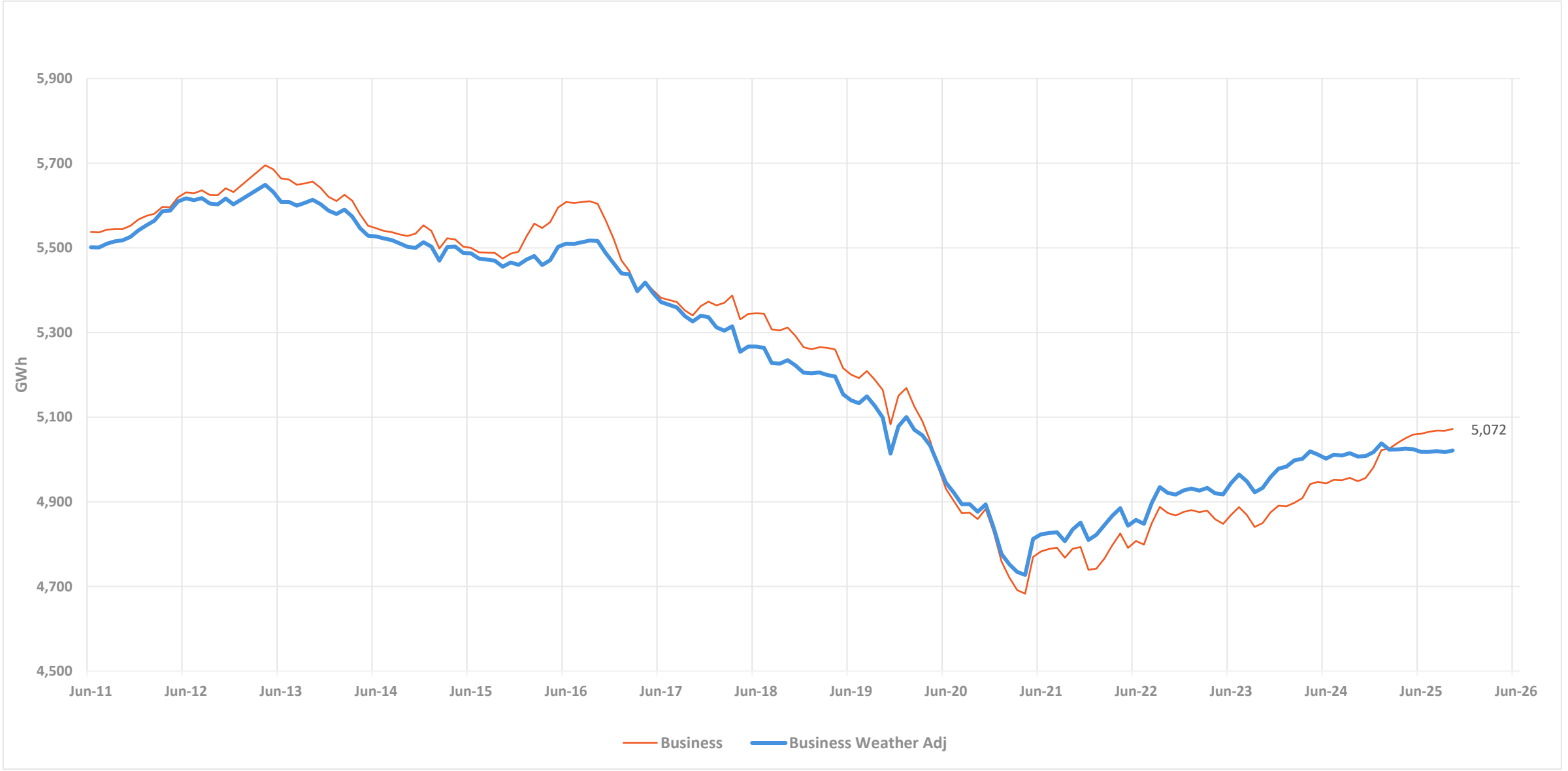


- **2023-24**: Quantities fell due to retail price elasticity from a 24% DMO price rise and mild weather.
- **2024-25**: Quantities rose across all tariff classes, with the largest increase in Major Business driven by the SA Water Desalination Plant.
- **2024-25 (Residential)**: Quantities rebounded from 2023-24 lows, supported by cooler winter conditions and a 2% retail price decrease in the DMO.

Residential 12 Month Rolling Billings Import GWh



Business excluding Major 12 Month Rolling Import Billings GWh



2020-25 Over/(Under) Recovery DUoS Positions | $M Nominal



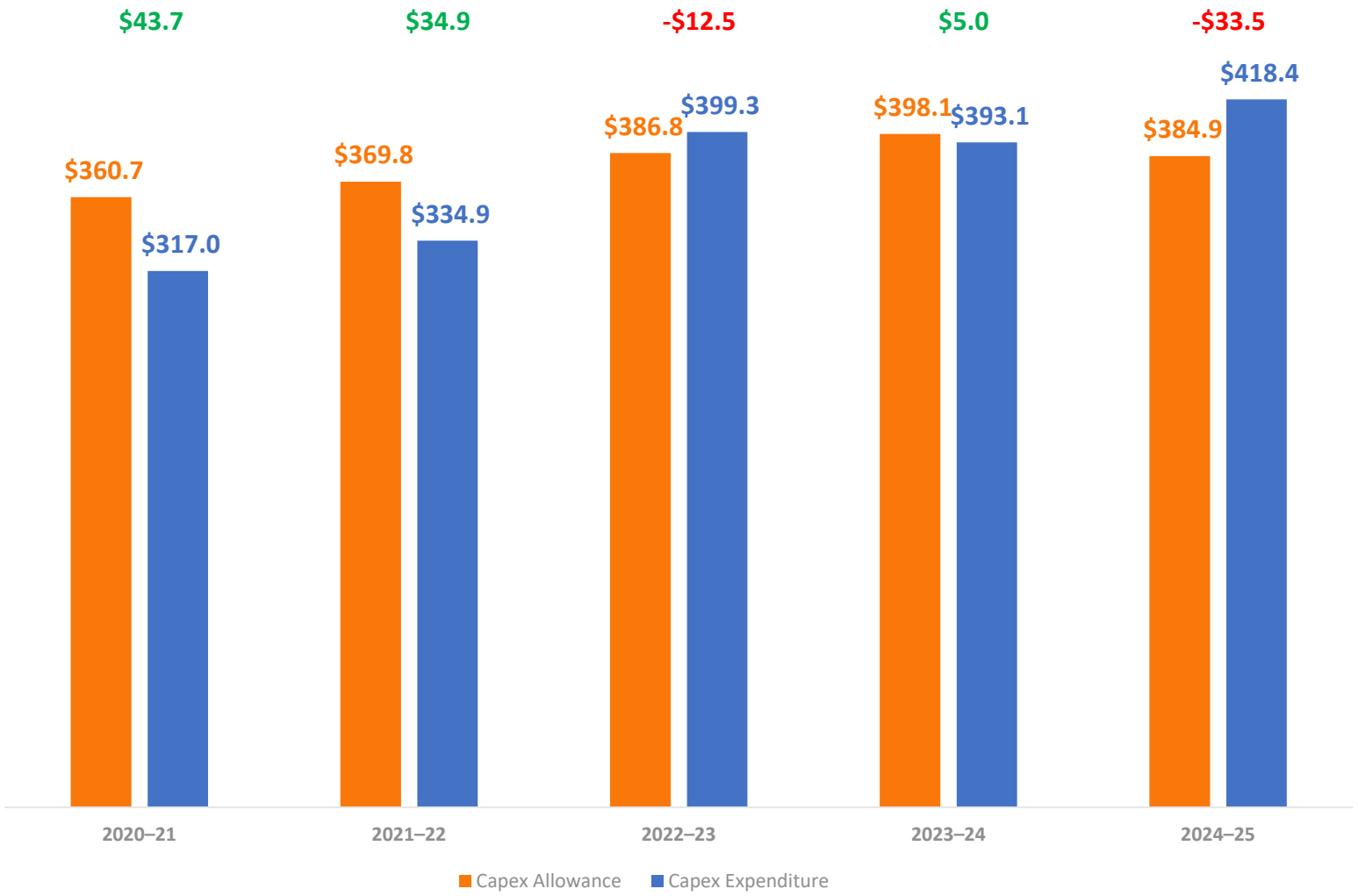
- **2023-24**: Under recovery driven by decline in Residential quantities.
- **2024-25**: Prices increased to recover under recovery
- **2025-30**: Commencing the new regulatory control period in a neutral/over recovery position

2020-25 Service Target Performance Incentive Scheme | STPIS $M Nominal



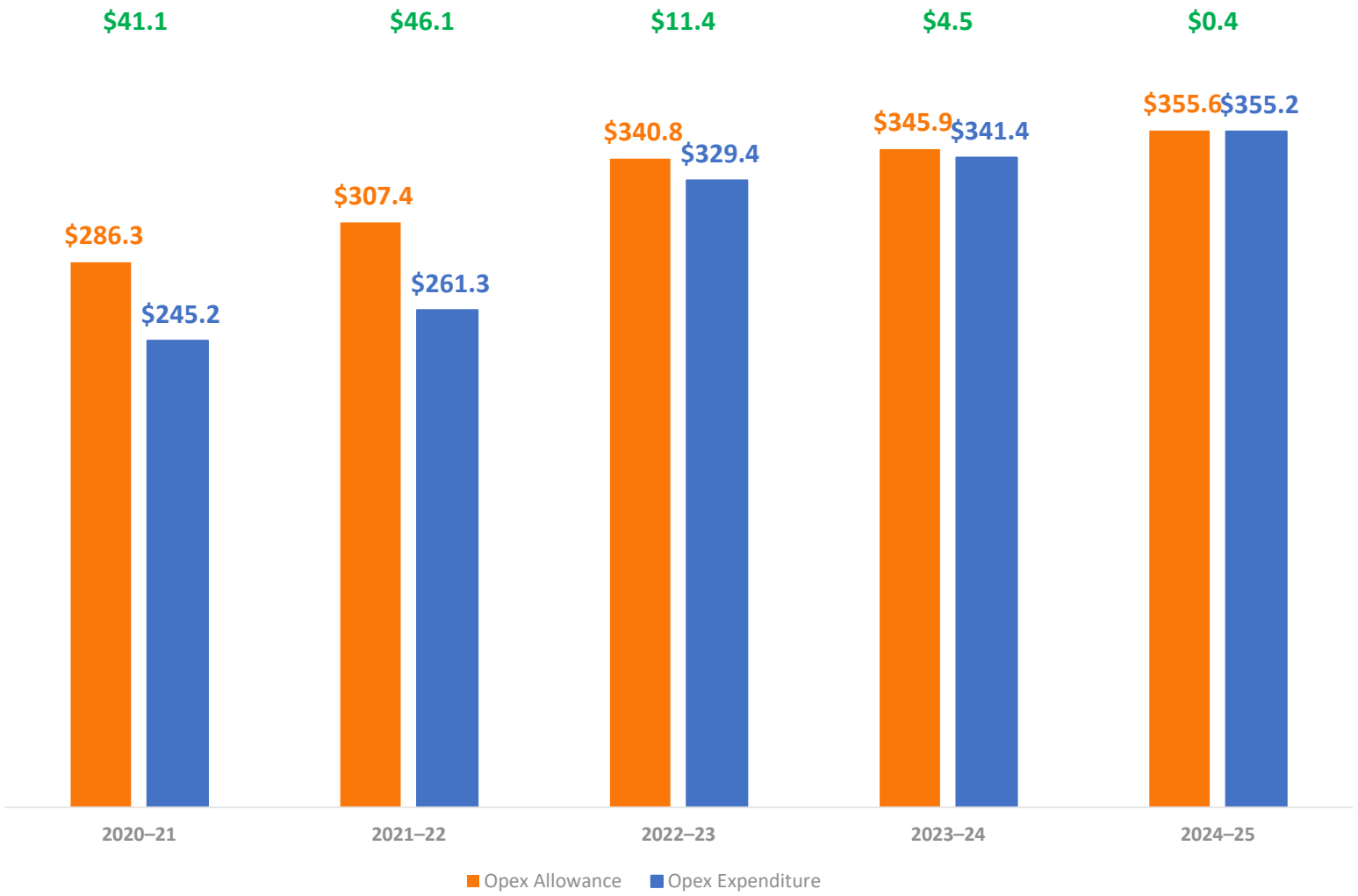
- Performance targets are reset each Regulatory Control Period.
- STPIS measures service performance for:
  - Reliability and Quality of Supply
  - Customer Service - % of calls answered within 30 seconds

2020-25 Capital Expenditure Sharing Scheme | CESS $M Nominal



- Total 5 year Out Performance: $37.6m 1.98%
- Total CESS Bonus $4.0m
  - $1.1m in 2025-30
  - $2.9m in 2030-35

2020-25 Efficiency Benefit Sharing Scheme | EBSS $M Nominal



- Total 5 year Out Performance: $103.5m 6.33%
- Total EBSS Penalty -$120.1m
  - -$121.7m in 2025-30
  - +$1.6m in 2030-35



Morning Tea Break

4. Energy Masters & IAG Update

Michelle Howie
Innovation Development Manager

SA Power Networks



Innovation Update

Key milestones in 2025:

- Introduction of two new Innovation Portfolios
- Development of enterprise-wide Innovation Framework & delivery partnership model
- Additional “Innovation Fund” allowance granted from AER
- Established Innovation Advisory Group: 3x meetings
- Research & Knowledge Sharing Lead appointed



SA Power Networks

New funding source and customer voice for innovation activities

Potential funding sources for Innovation:

- Reg business cases (e.g. CER, AUGEX)
- Diversion of BAU funds (via investment committee)
- DMIAM/DMIS*
- Innovation Fund
- Grants & partnerships (e.g. ARENA)

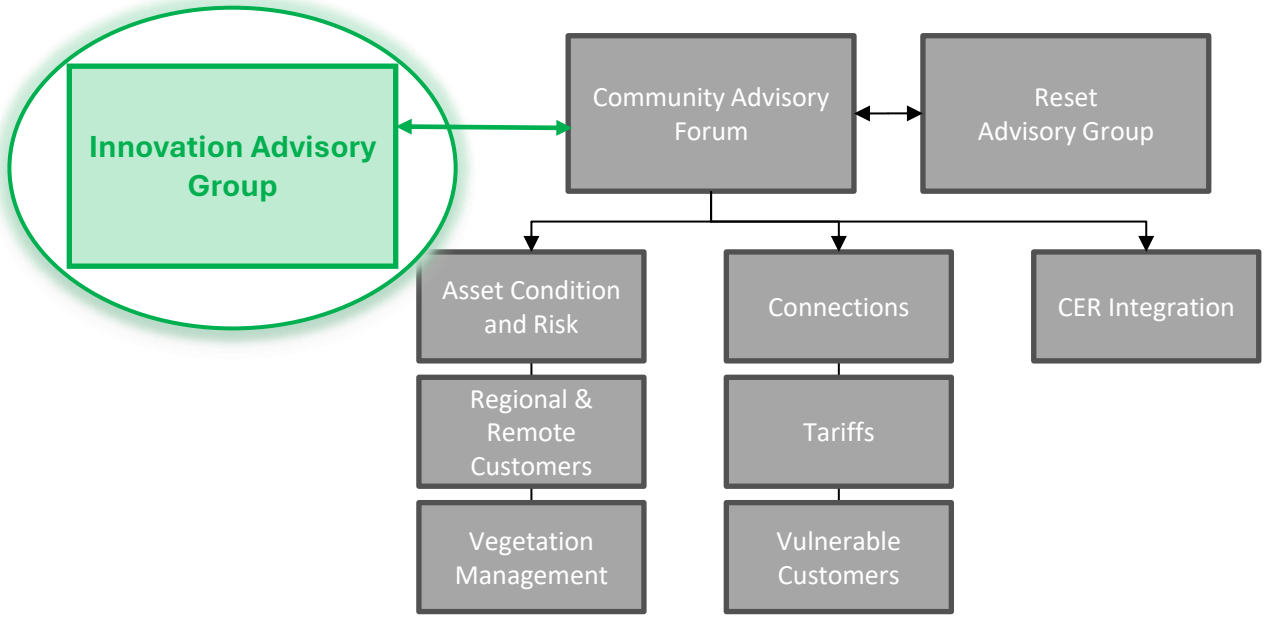
Innovation Fund

- $20 million for the 5-year period
- Use it or lose it
- Knowledge sharing requirements
- Principles-based IAG governance

IAG Purpose

1. Provide customer and industry input to the prioritisation, and delivery of SAPN-proposed Innovation Fund projects.

2. Prioritise problem statements or ideas for innovation arising from other Advisory Groups.



*Demand management incentive scheme and innovation allowance mechanism

SAPN Innovation Portfolio Snapshot*

Backlog	Exploring	Delivering	Operationalising
Flexibility Market pilot	Medium Scale Flexible Exports	Market Active Solar	Residential Solar Flexible Exports
Coordinating with Market Operator & Transmission	Major Customer Load Flex Connections Phase 2	Community Batteries	Major Customer Load Flex Connections Phase 1
Capacity Map	Vulnerable Customers	Energy Masters	
Energy Masters for Commercial & Industrial	Stand-Alone Power Systems	LIDAR specification	
Drones for inspections	Digital Twin		

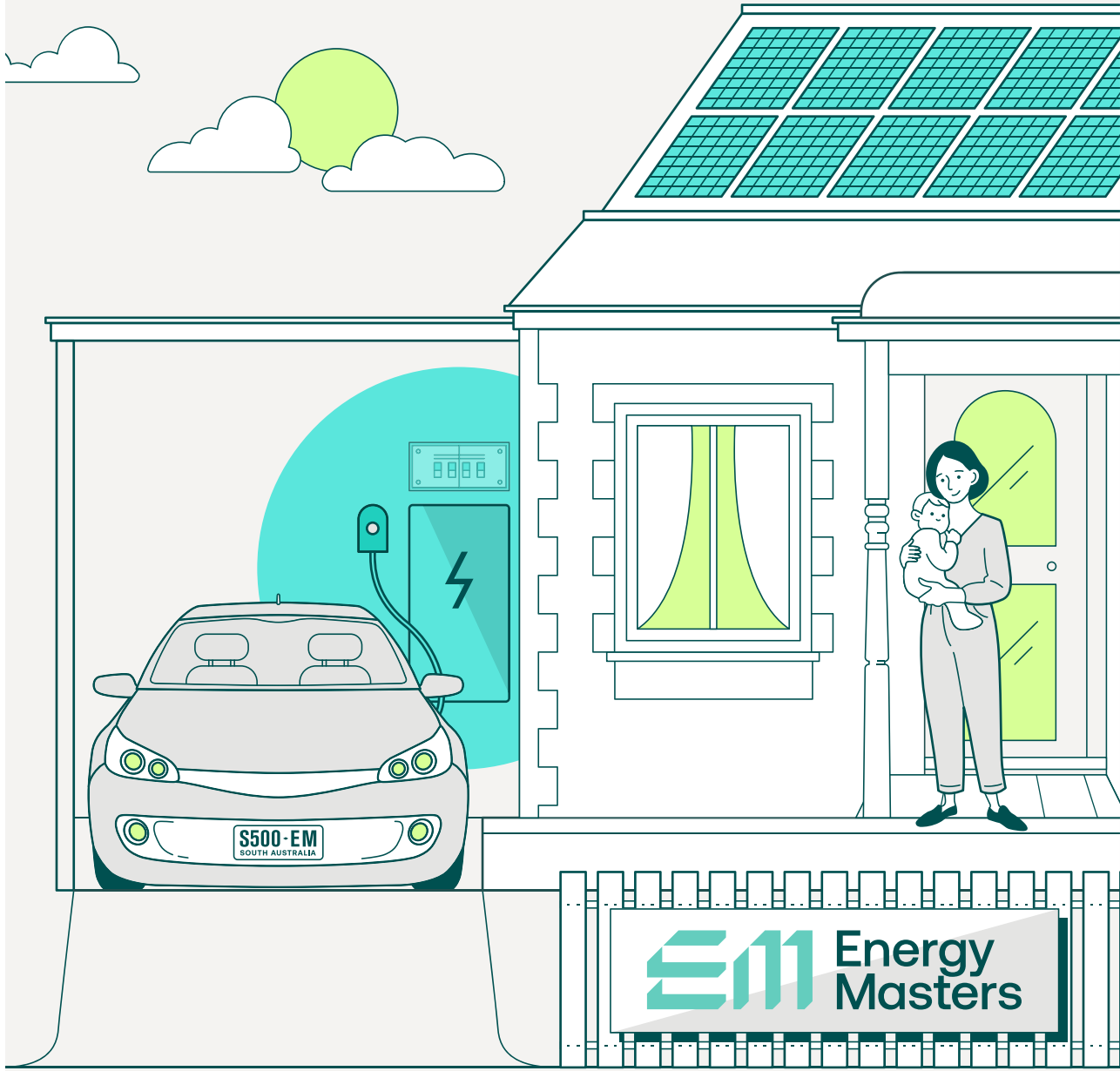
Portfolio:

- Customer
- Asset Management & Operations
- Future Networks

*not exhaustive

Energy Masters Pilot

Overview for Reset Advisory Group
Nov 2025



What if?

…you could build an army of energy-aware households?

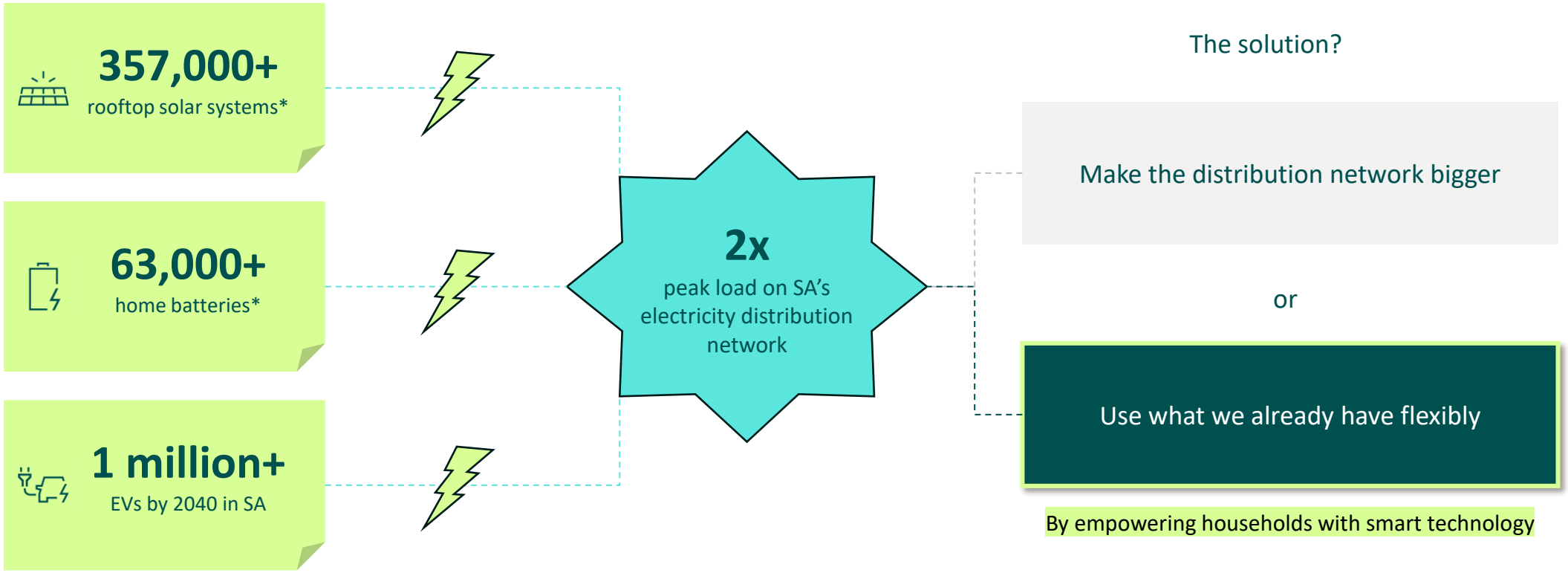
Households willing to share their experience for the benefit of others?

To deliver true data-driven policies for the future of residential energy?



But why?

South Australians are already undertaking their own shift to renewables and electric appliances. This means electricity demand is expected to increase. How do we manage this?



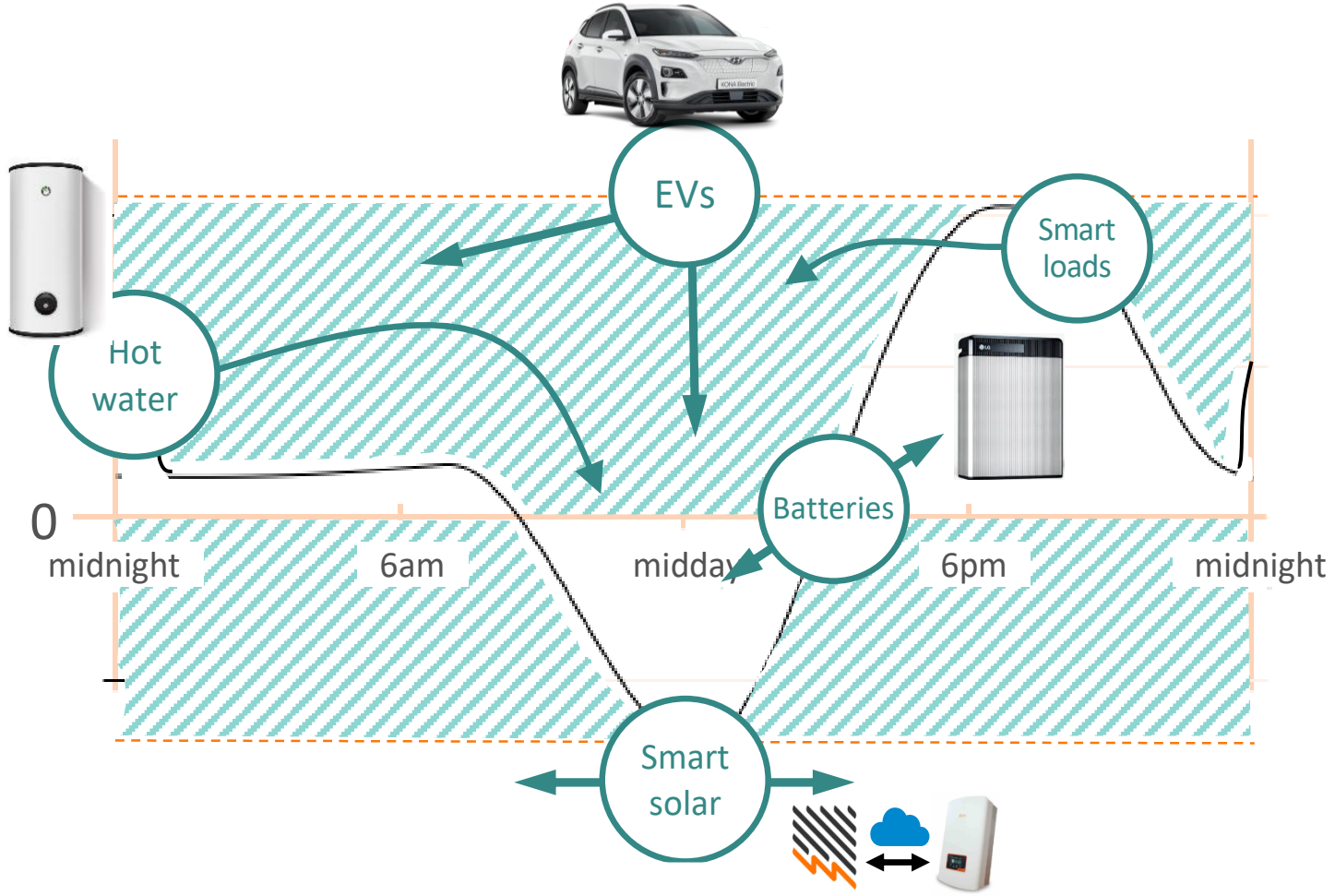
** As of 10 Oct 2025. Source: SA Power Networks*

Demand-side flexibility is key

Our network has **tremendous spare capacity** for these new applications – most of the time

This spare capacity can be unlocked through **tariffs** and **incentives** that reward flexibility

If we get it right, we can **optimise energy use** within the home, significantly **increase asset utilisation** and **lower costs for all customers**



Enabling **flexibility** is key to an **efficient** renewable energy power system

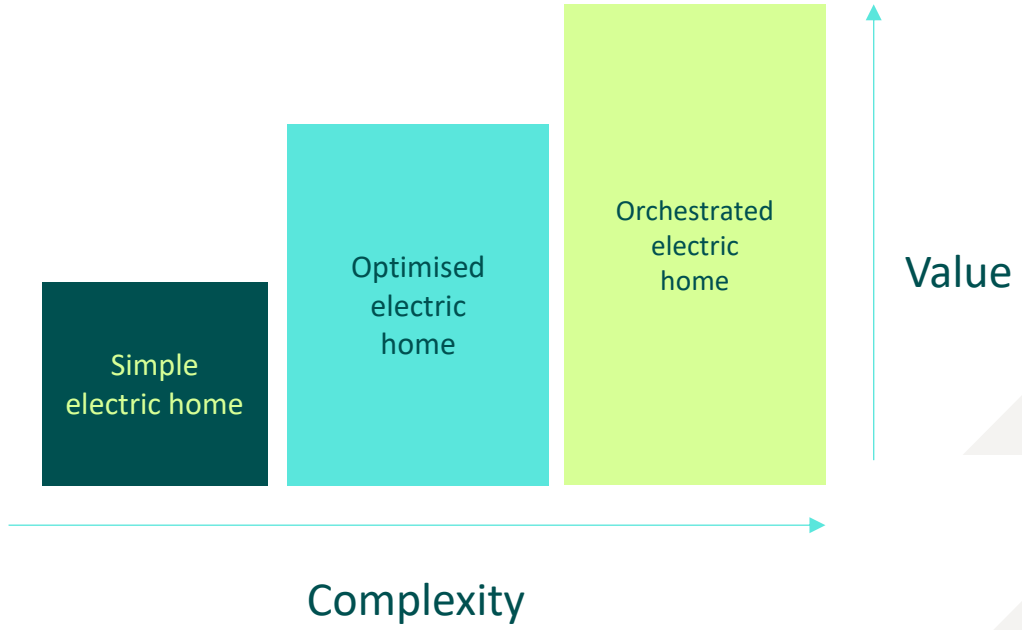
Scope

134 installed so far

- Recruit 500 homes
- Install HEMS and electric appliances with subsidy support
- Develop and trial new energy offers and demand flexibility technologies
- Run an 18-month research program exploring technical, policy and behavioural barriers
- Inform the design of interoperability standards for national adoption
- Deliver knowledge sharing to stimulate industry and accelerate scale up

Demand flexibility will unlock new customer, electricity market, and network values, but these bring added complexity and cost

We are searching for the ‘sweet-spot’ between complexity, cost, value and customer acceptance

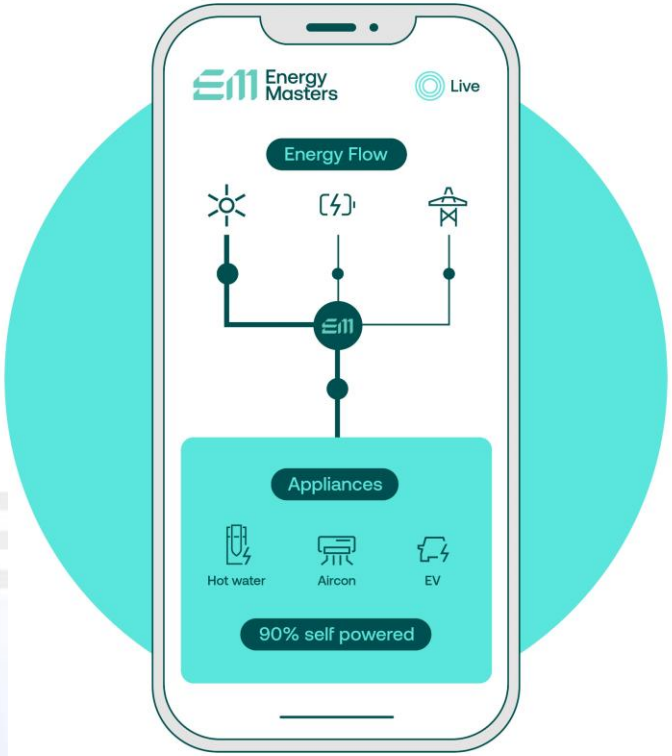


The central cog

- A **Home Energy Management System** (HEMS).
- Combination of hardware and software to monitor and display energy usage and optimise the operation of smart appliances around the home.
- Each household receives a free Clipsal Cortex HEMS, tailored for Energy Masters to maximise the flexibility and minimize the running costs of their electricity
- May be connected to any or all of:
  - Rooftop solar system
  - Home battery storage
  - Heat pump or electric hot water system
  - Split system air-conditioning units
  - Smart electric EV charger



Hardware



Software

Research & Knowledge Sharing are critical

Hypothesis: Smart electric homes have the potential to unlock significant benefits for customers and industry

Research Partner

RACE for 2030
RELIABLE AFFORDABLE CLEAN ENERGY

Delivered by

UNSW AUSTRALIA

UTS

University of South Australia

Research Framework

Pilot objective: demonstrate the customer and industry benefits of demand flexibility and smart homes and accelerate their deployment at scale

Research Pillars

Networks

- Management of grid impacts

Households

- Costs and benefits
- decisions and behaviours
- Understanding, sentiments and broader representativeness

Industry readiness

- Pilot suppliers
- Skills and workforce

Policy and Standards

- Policy, regulatory, standards and other interventions

Research activities

Knowledge sharing

5. SAPN as DSO

James Brown
Senior Manager Enterprise Innovation

SA Power Networks



South Australia's (SA) Consumer Energy Resource (CER) context

72% of net annual demand met by renewables in 2024



Nearly 50% of homes have rooftop solar



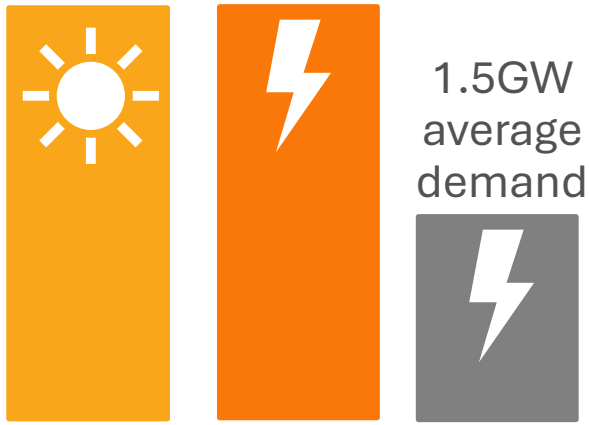
~415MW of home batteries with ~200 installations per day*



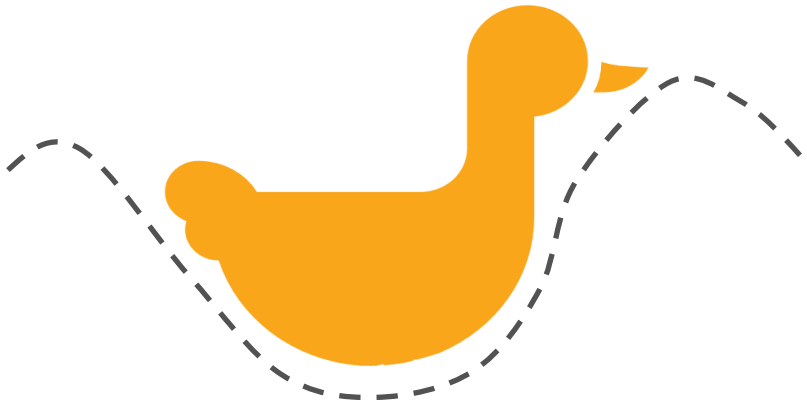
3GW+ rooftop PV

3.3GW peak demand

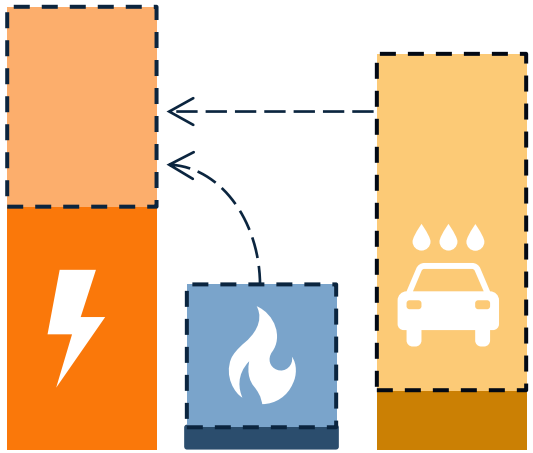
1.5GW average demand



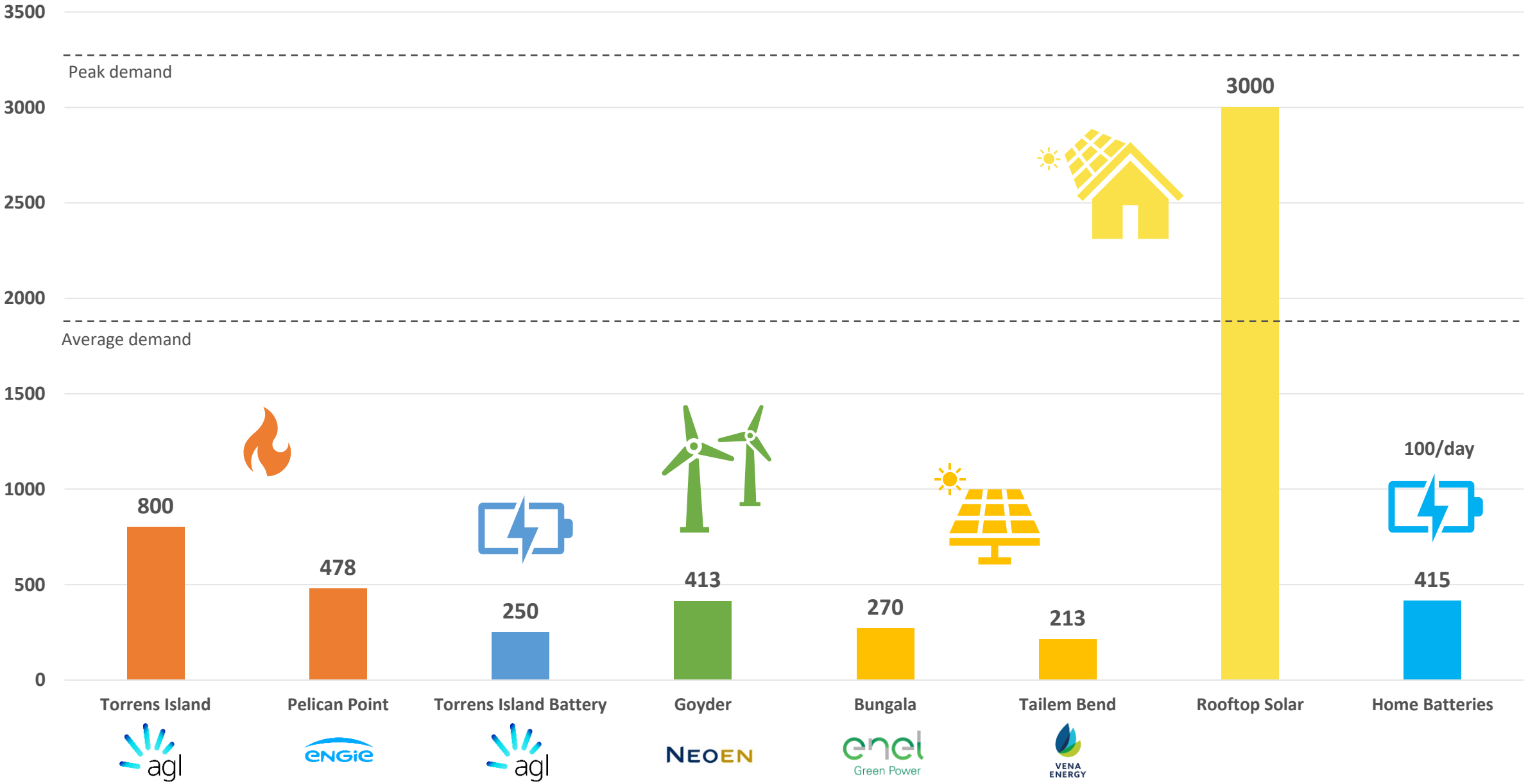
Record -205MW Operational Demand with 113% Rooftop PV penetration in Oct 2024



Electrification could double energy throughput of the distribution network



Generators in South Australia (MW)



SA's rapid decarbonisation has challenged our grid, which has been a catalyst for innovation

By 2035, we could have up to[1]:

4GW
rooftop solar

1.1GW & **2.2GWh**
small-scale battery storage

684MWh additional demand
from 385k electric vehicles

1.39TWh additional electricity use
from electrifying (excl. transport)

... all on a power system designed for **3GW peak demand**

Posing challenges...

World leading rooftop solar uptake is causing distribution network overloads and record minimum demand is putting pressure on System Security

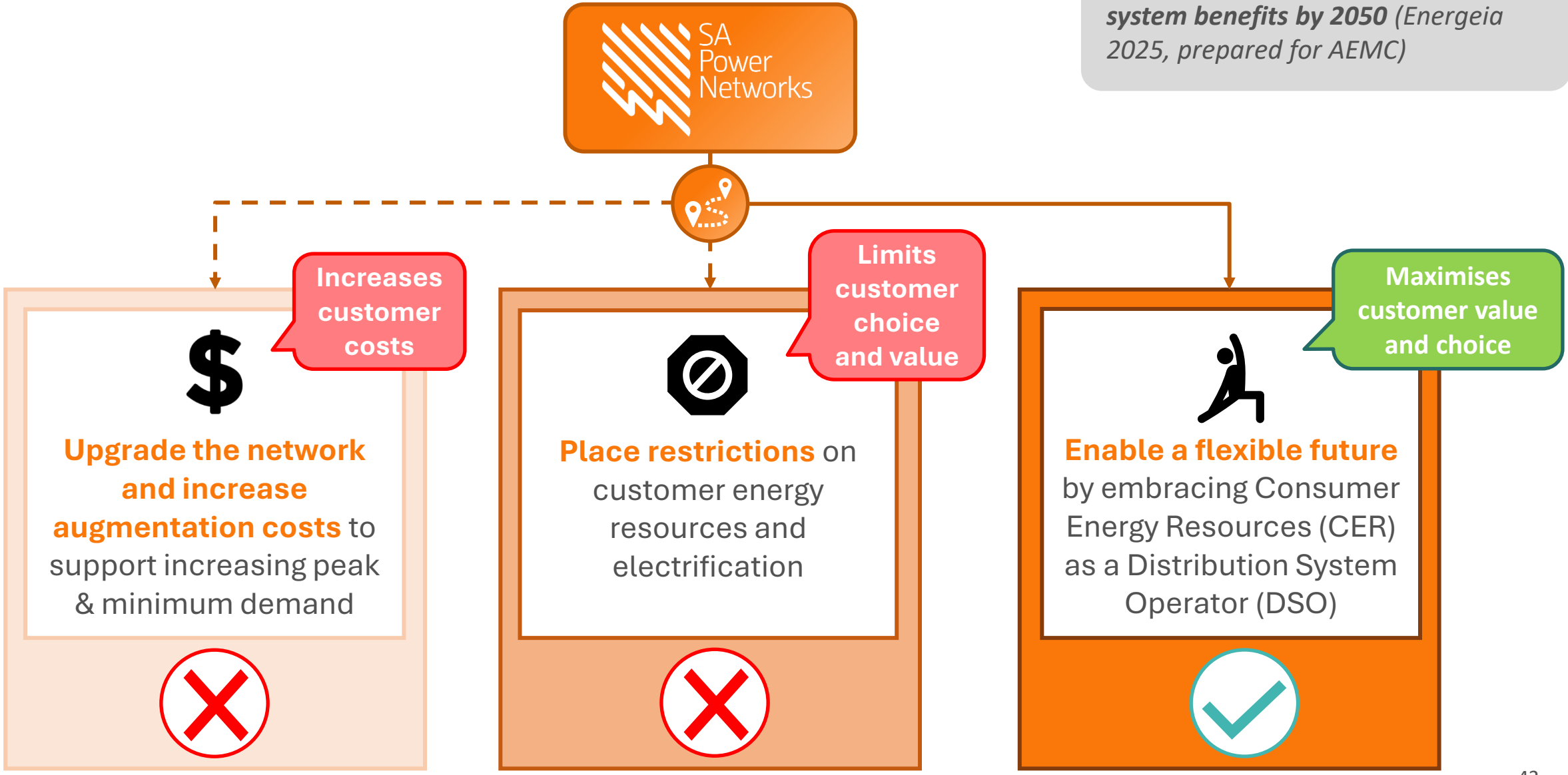
EVs and electrification could cause a doubling of South Australia's peak demand by 2050 and widespread network constraints if not managed

.... so what are our options?

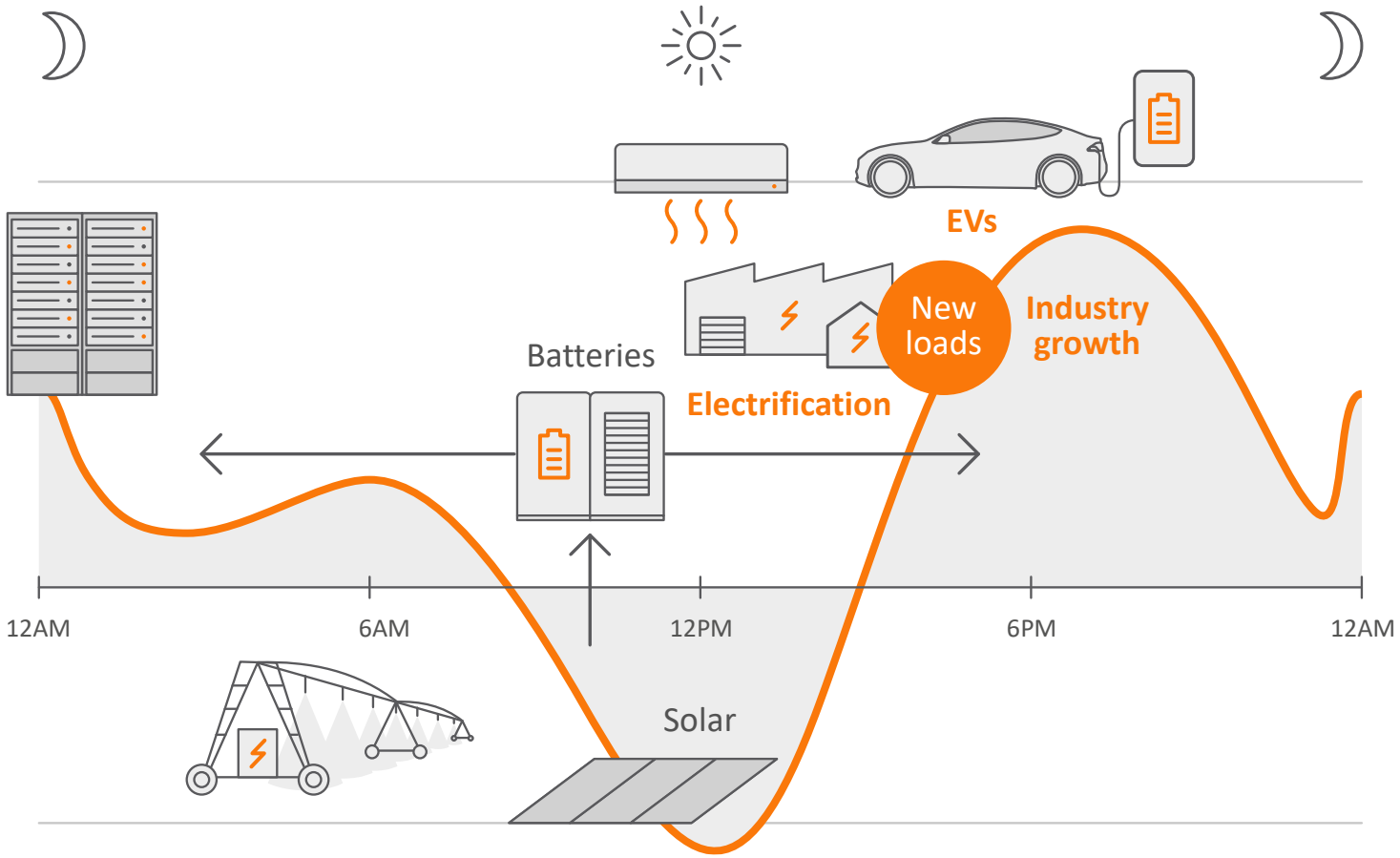
[1] AEMO 2025 Inputs, Assumptions and Scenarios Report, Step Change Scenario, 2034-35

What are our options?

CER integration (retailer VPP and DNSP flex) could deliver $45B of system benefits by 2050 *(Energeia 2025, prepared for AEMC)*



Flexibility: the DSOs tool to increase network utilisation



Network reliability has generally been improving through time, but network asset utilisation has decreased...

*it is vital that **before we build more network, we use more network**.*

Claire Savage AER Chair 31 July 2024.

- The network has **spare capacity** outside peak times for new applications, which can be unlocked through **'flexibility'**
- **Flexibility** is enabled through smart CER (solar, batteries, EVs, smart appliances) responding to **internet-based signals** from SA Power Networks to **time-shift usage** out of **peak and minimum demand periods**
- This can be through **curtailing solar**, charging or **discharging a battery** or **delaying EV charging,** for example
- If we get it right, we can significantly **increase asset utilisation** and **lower costs for all**

Our DSO journey

As DSO, we:

Manage CER with

DSO 1: Flexible Connections

that reward customers' for maintaining their CER within the **'guard rails', or Dynamic Operating Envelopes (DOEs), of the network**

Example initiatives:

- Solar backstop mechanism
- Flexible exports
- Flexible connections for C&I
- Energy Masters (flexible load connections)

In flight

Leverage CER by procuring

DSO 2: Flexibility Services

from CER **to resolve network constraints**, as an alternative to 'poles and wires' solutions

Example initiatives:

- Flexibility marketplace

Trials 2026

Optimise CER through

DSO 3: System Integration

to ensure CER can be deployed and **co-ordinated efficiently** across all system participants

Example initiatives

- TSO-DSO interface
- Market active solar
- 2026 AEMO ISP distribution inputs

2024-30+

.. to support the energy transition at least-cost to all customers

DSO is an *evolution* of our existing role

SA Power Networks

SA Power Networks

Customer support

Network design

Construction

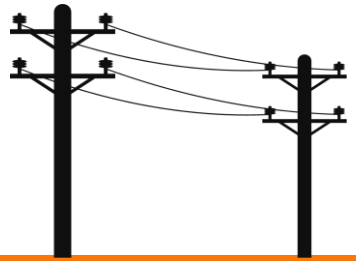
Supply restoration

Billing

Connect customers

Plan the Network

Operate the network



New functions:

DSO 1: Flexible connections

DSO 2: Flexibility services

DSO 3: System integration

Evolve the core

Enable the future

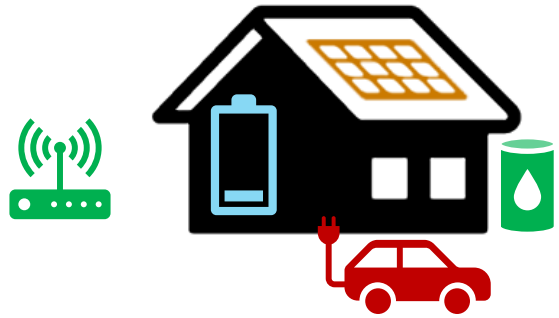
In-flight

DSO 1.0: Flexible Connections

How they work

SA Power Networks DSO

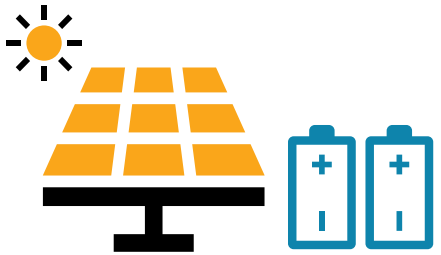
Dynamic Operating Envelope sent over Internet comms



Residential customers
- Opt-in
- Greater export
- $/day rebate for flex load
- Only smart devices respond



C&I customers
- Cheaper upfront connection
- Ongoing discount on network tariff



We’re already well progressed with Flexible Connections

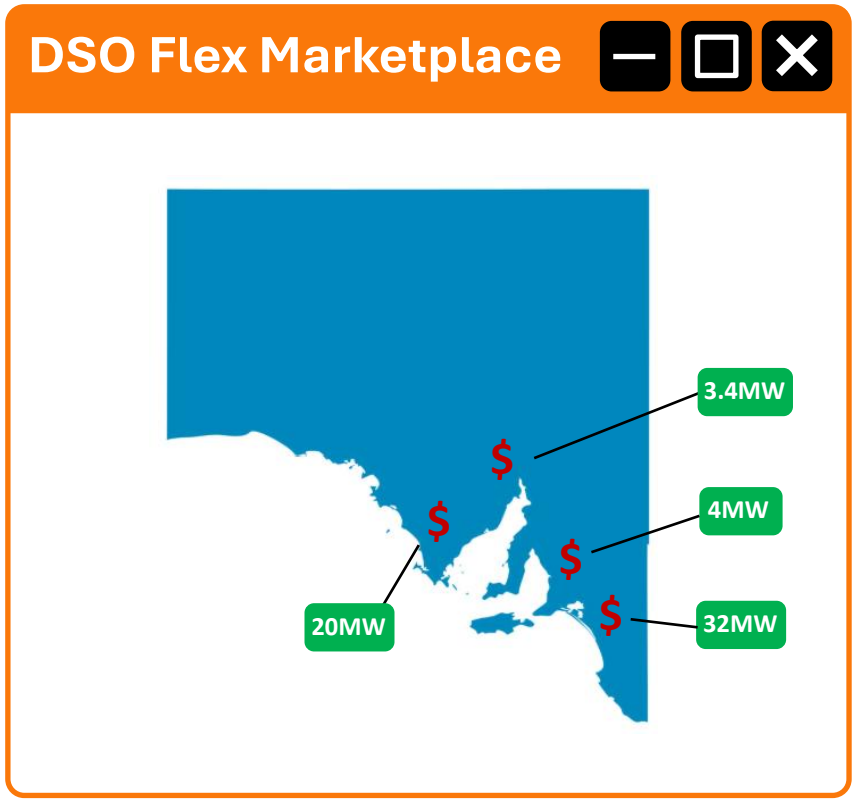
Example initiatives:
- **Solar Backstop** 200k+ customers
- **Flexible Exports** 29k+ signups
- **Flexible connections for C&I** 30+ sites in pipeline
- **Energy Masters** 130+ installed

Trials in 2026+

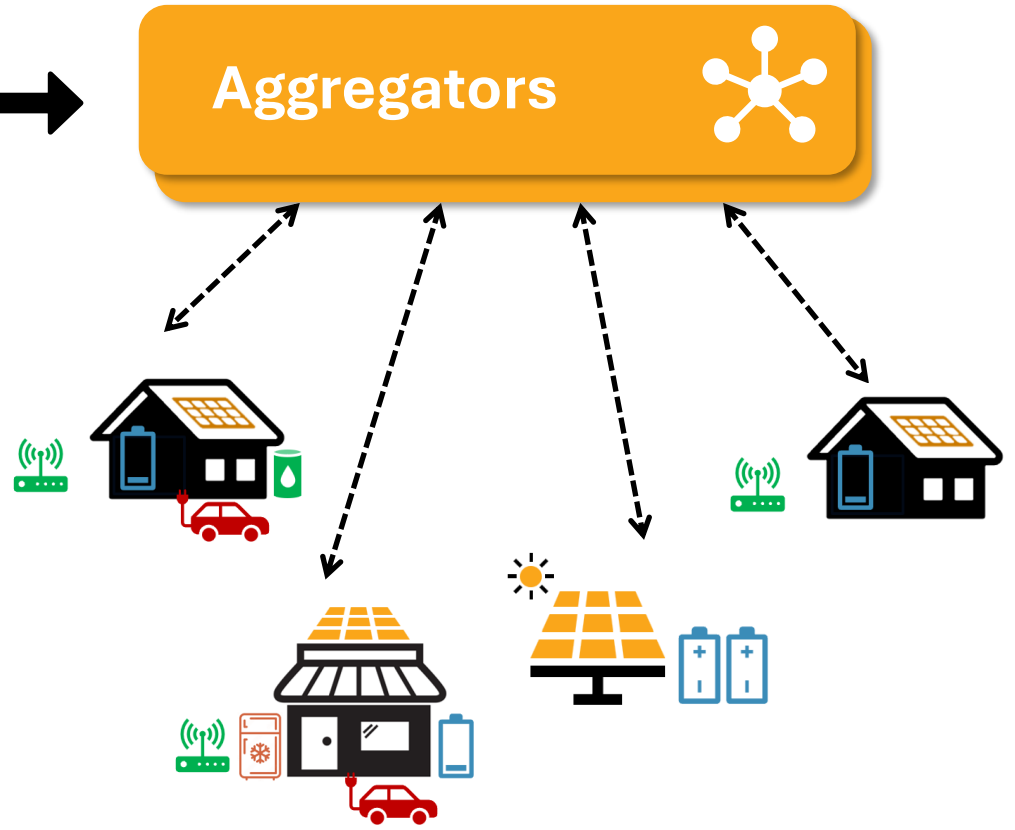
DSO 2.0: Flexibility Services

Our next priority

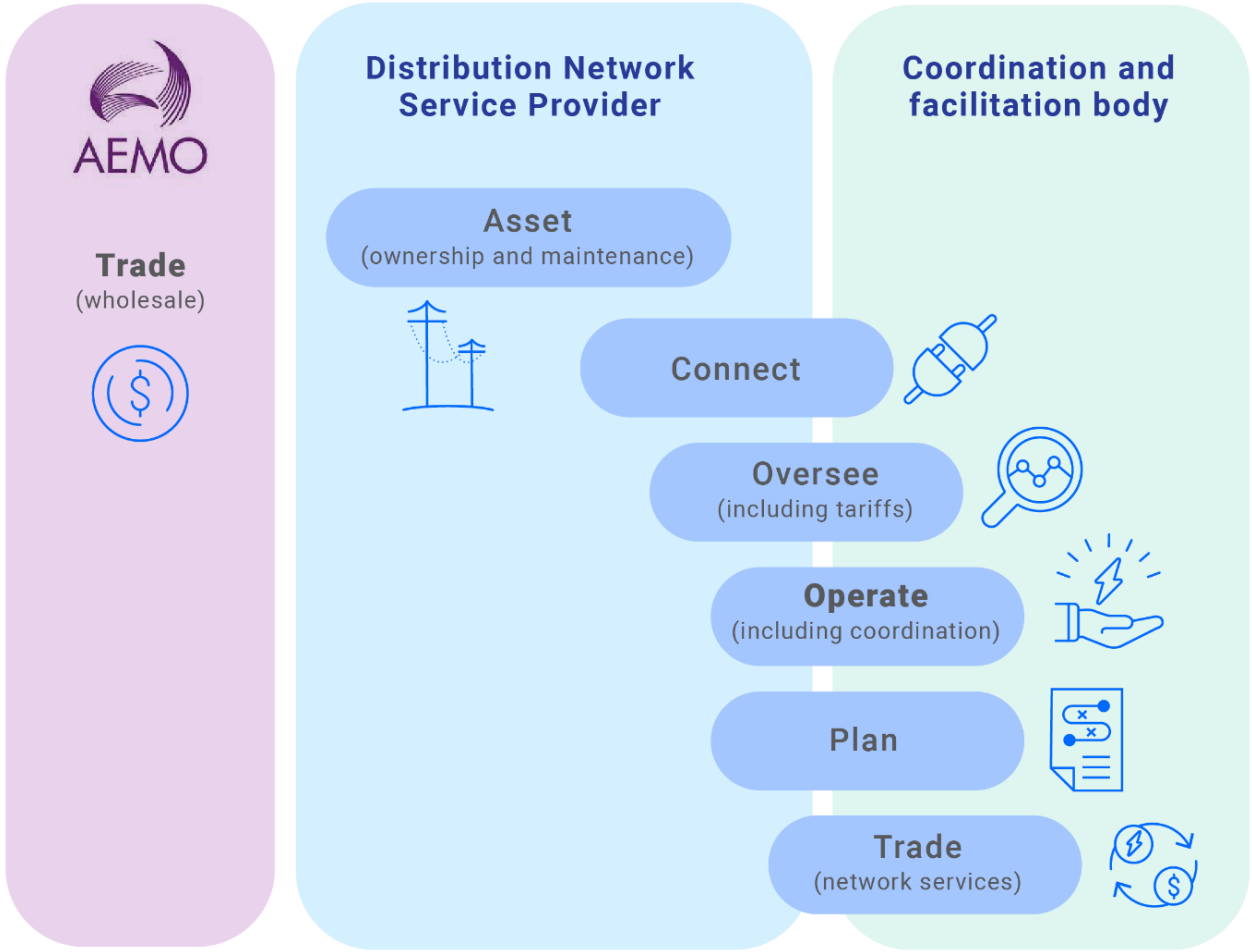
We will develop a new marketplace that publishes network capacity constraints



Aggregators & large customers ‘bid’ to provide network services
New value stream for VPPs



DSO roles and responsibilities



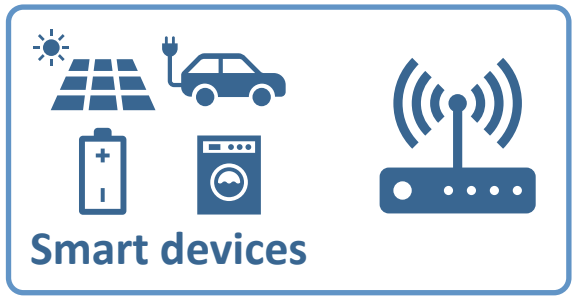


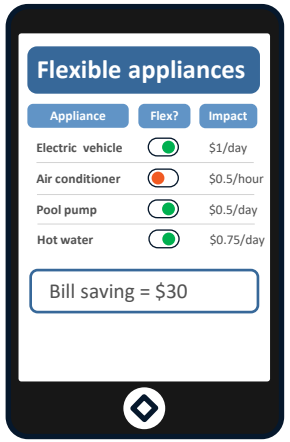
This **important consultation** is seeking to codify **DSO and other CER actor roles and responsibilities** in the Rules.

This must be simple for customers… and TRUST is key

What the customer sees

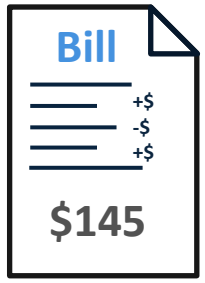
Freedom to churn between offers





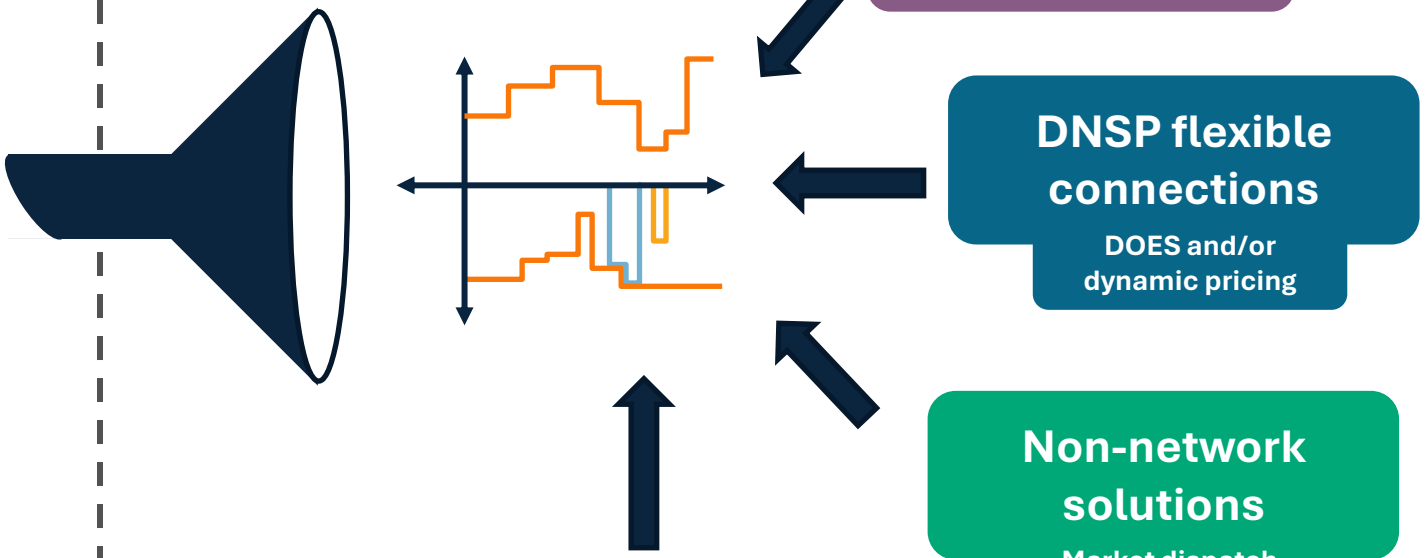
Single app view

Set and forget



Single, unified bill with simple pricing

What the customer doesn't see



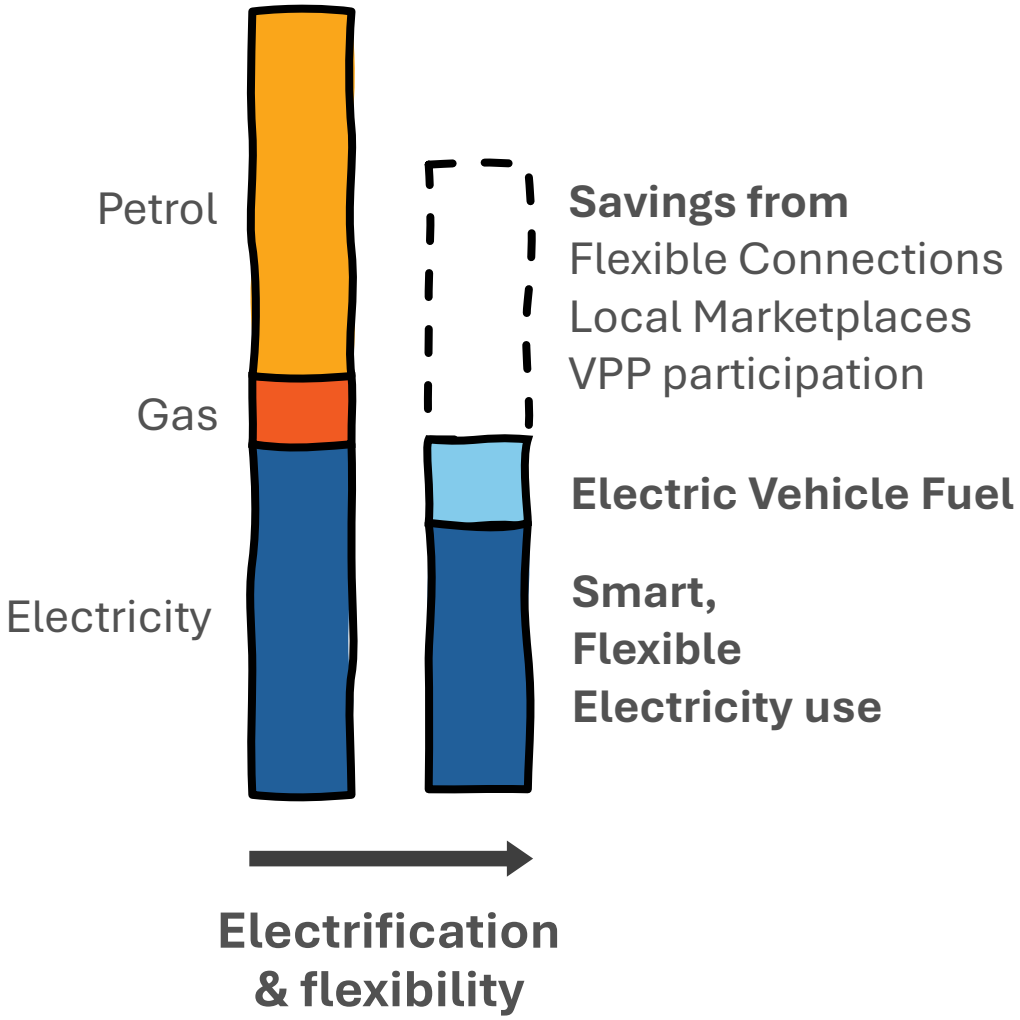
Retailer management
Demand response
Wholesale market dispatch & FCAS

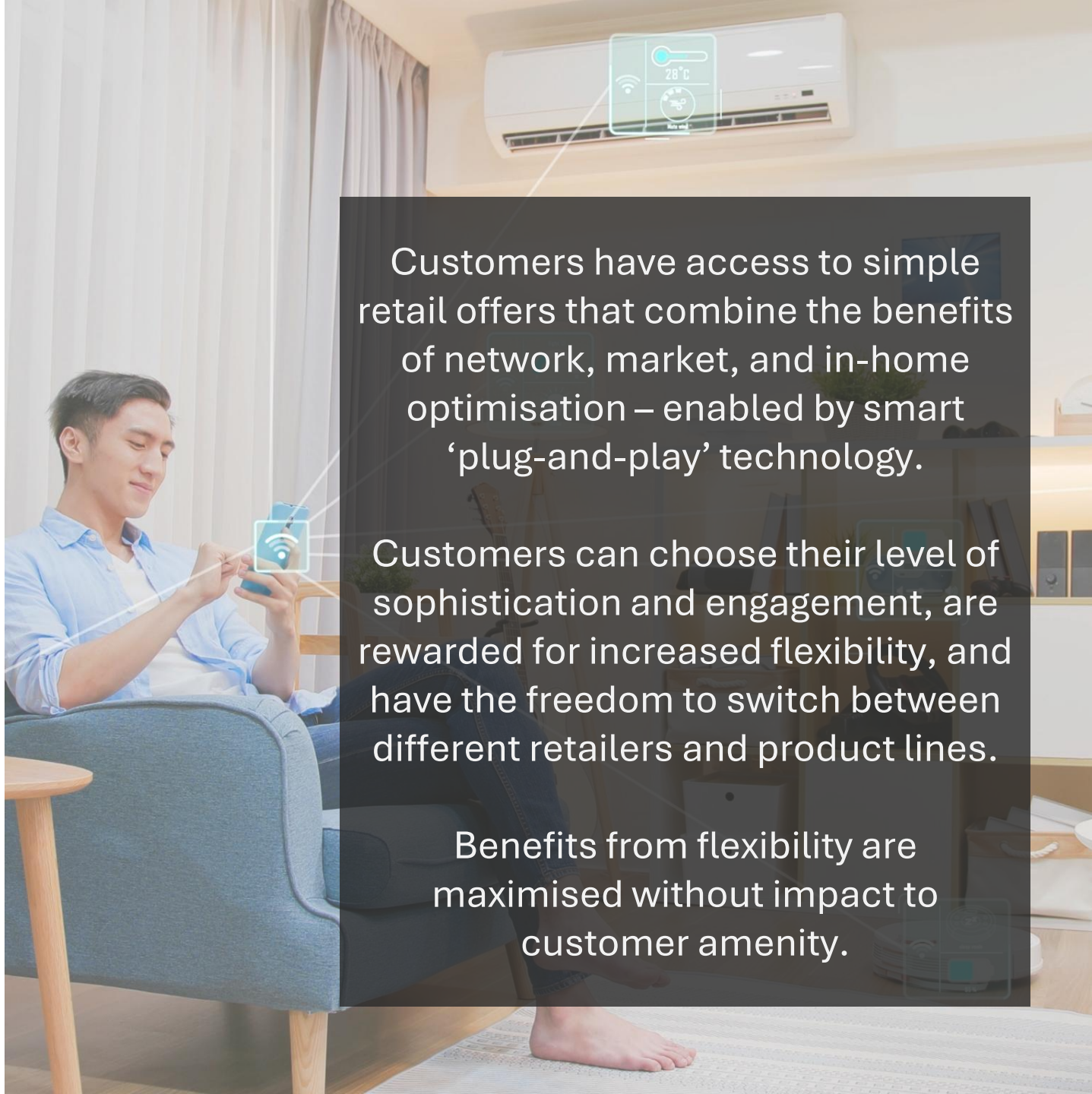
DNSP flexible connections
DOES and/or dynamic pricing

Non-network solutions
Market dispatch signals

Behind-the-meter tariff optimisation

Customer outcomes





Customers have access to simple retail offers that combine the benefits of network, market, and in-home optimisation – enabled by smart 'plug-and-play' technology.

Customers can choose their level of sophistication and engagement, are rewarded for increased flexibility, and have the freedom to switch between different retailers and product lines.

Benefits from flexibility are maximised without impact to customer amenity.

6. Other Business

- CAF / Advisory Group Survey and consultative group review
- ECA update

