Energy Transition Focussed Conversation

1. Recommended Service Outcome/ Investment Option

Based on our consultations with Focussed Conversation attendees (refer to section 6), SA Power Networks recommends investment in the following programs to continue to facilitate the transition to renewable energy in South Australia in the 2025-30 regulatory period.

	Total cost (per annum)
Enabling distributed energy – export capacity – 95% service level	$16.45 million
Encouraging flexible loads	$3.85 million
Transitioning our vehicle fleet to electric vehicles (EVs)	$1.70 million
Total cost of program (per annum)	**$22 million (pa)**
Total cost 2025-2030	**$110 million**

The numbers supplied are forecasts and will be updated in response 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. Note that the CAPEX and OPEX figures included here have been adjusted to 2025$.

An overview of the program initiatives and why they were included in our recommendation is provided below.

Initiative	Overview	Why included
Enabling distributed energy – export capacity	We propose upgrades to the network to add more **export capacity** so solar customers can continue to export (feed-in) their surplus energy to the grid. The proposed level of investment is enough to maintain a **service level** of 95% for solar customers. This means that they can export all their surplus energy to the grid 95% of the time, but may have their solar output reduced 5% of the time, when the network is congested. **Note:** under recent changes to the National Electricity Rules we expect to recover the cost of this program through **export tariffs.** This means that solar customers pay for this upgrade program, so it doesn't impact on bills for non-solar customers. This is reflected in the bill impact tables below.	• As more customers install rooftop solar, parts of the network are becoming congested during sunny times, when many customers are trying to feed in energy • We can use 'flexible export limits' to turn down customers' solar output at these times to stop the network becoming overloaded • This 'solar curtailment' reduces the feed-in-tariff benefits for solar customers and reduces the amount of low-cost green energy in the system for others • Today this happens in certain areas only, and for less than 2% of the time, but it will become increasingly common in future as solar uptake grows unless we invest in adding more network capacity to meet growing demand • Stakeholders were presented with a range of options around how much we should invest in new export capacity • The majority favoured investing to maintain a minimum service level of 95-98% for solar customers.

Initiative	Overview	Why included
Encouraging flexible loads	We propose new services and capabilities to help customers activate their smart devices like home batteries, smart Electric Vehicle (EV) chargers, hot water and smart appliances. This will help solar customers to consume more of their own energy in-house, which takes load off the network and saves money, and will also help non-solar customers take advantage of cheap off-peak electricity rates.	• Smart and flexible customer energy resources will play a key role in the future energy system • By supporting new technical standards for smart devices we can help customers shift household loads out of peak times and 'soak up' surplus solar power • This creates immediate opportunities for customers with smart devices to save money, but more importantly it reduces the need to upgrade the network and improves the efficiency of the energy system overall, which leads to lower costs for all customers in the long term.
Transitioning our vehicle fleet to EVs	We are planning for the progressive transition of our vehicle fleet, which is one of the largest in South Australia, to electric vehicles, including the installation of the associated charging stations in our regional depots. To avoid any material impact on customer bills we propose a cost-neutral transition, i.e. we will only replace a petrol or diesel vehicle with an EV if it costs the same or less than the vehicle being replaced.	• As signatories to the SA Government Electric Vehicle Fleet Pledge, we commit to look for opportunities to transition fleet vehicles to EVs when economic to do so, in line with the State's decarbonisation goals • The 2025-30 period will be a significant period in this transition as EV prices reduce and a broader range of EVs becomes available on the market • While we want to phase out procurement of new petrol and diesel vehicles as quickly as possible, we need to balance this against the cost impacts.

2. The combined impact on customers' bill of this investment option

	Residential (average $ annual)	Business (average $ annual)
Preferred investment option – export customer*	$16.50	$75.50
Preferred investment option – non-export customer	$3.30	$25.65
Total distribution bill	$505-$590	$3,980-$4,650

For reference, the current average distribution bill is $640 (2022-2023). The breakdown of bill impacts of the initiatives is provided below.

Program	Program cost	Residential bill impact (average $ annual)	Business bill impact (average $ annual)
Enabling distributed energy – export capacity – 95% service level (export customers only)*	$82.3 million	$13.20	$49.80
Encouraging flexible loads	$19.2 million	$2.70	$21.05
Transitioning our vehicle fleet to EVs	$8.5 million	$0.60	$4.65
Total bill impact – export customer		**$16.50**	**$75.50**
Total bill impact – non-export customer		**$3.30**	**$25.65**

***Note:** under recent changes to the National Electricity Rules, we expect to recover the cost of adding new export capacity through **export tariffs**. This means the cost of our first program is recovered only from customers who export energy to the network, e.g. solar customers. There is no bill impact from this expenditure for customers who do not export energy to the network (e.g. customers without their own solar).

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3. The other service offerings /initiatives that could be invested in (but that we haven't recommended) are as follows-

In assessing our proposed initiatives to support the continued transition to renewable energy in SA, stakeholders in our Energy Transition Focussed Conversations considered the following variations on the above work programs:

- Higher and lower grades of service for export customers, with correspondingly higher and lower bill impacts for those customers
- A trial of a web-based platform to help SA Power Networks to procure services from Virtual Power Plant operators and others, based on a product used in the UK
- An accelerated transition of our vehicle fleet to EVs, which would involve a higher bill impact but further reduce carbon emissions.

These did not receive majority stakeholder support during the Focused Conversations and have been removed from the work programs presented here as recommended to the People's Panel.

4. Areas of contention or concern

In arriving at our recommendation, Focussed Conversation participants explored the following key questions requiring further clarification:

Enabling distributed energy – export capacity

Should we try to maintain a minimum level of service for solar customers?	• Stakeholders did not want service levels to decline significantly – solar customers expect to be able to export their surplus energy without being limited frequently • Stakeholders felt we should engage with customers to determine how much to invest based on the level of service customers want.

What service level should we aim for?	• Stakeholders considered a range of service levels from 85% to 98%, where 98% means that most solar customers can expect to have the output of their systems reduced no more than 2% of sunshine hours annually (<60 hours)
	• The majority (52%) favoured the highest service level (98%). Reasons included:
	  • costs would only be paid by solar customers (hence not impact on non-solar and vulnerable customers)
	  • this bill impact of $14.90 (residential) is only a small proportion of the annual financial benefit solar customers receive from their systems
	• A significant cohort (33%) favoured a lower service level, 90%, because it had a lower bill impact for residential solar customers of $11.65
	• On that basis our recommendation to the People's Panel is the service level in between, 95%, with an estimated bill impact of $13.20.

What other information would help?	• More insight into impacts on solar customers' future feed-in-tariff revenues under different service levels / investment plans • Customer education needed to help solar customers understand the value in consuming their energy in-house where possible.

Encouraging flexible loads

Discussion	• Strong recognition that smarter and more flexible customer devices would play a key role in making the future energy system operate efficiently • Two possible levels of investment considered • Most stakeholders (57%) favoured the higher level, which included more advanced services for Virtual Power Plants, retailers and others to help them maximise their use of the network.
What other information would help?	• Consensus that we should invest to create a 'smarter' system, but difficult to judge whether the level of investment proposed was commensurate with the benefits • Need more insight into the long-term financial benefits that these investments would enable for all customers.
New web platform	• Some stakeholders could not see the value in a trial of a UK-style website for SA Power Networks to tender for network services • Maybe this was something that should be funded by SA Power Networks from the benefits, not paid for by customers • Based on this feedback this component has been removed from the work package recommended to the People's Panel.

Transitioning our vehicle fleet to EVs

Options considered	• Stakeholders considered two pathways to transition SA Power Networks' vehicle fleet to EVs over the next decade:
	  • 'cost optimised' - only replace a fleet vehicle with an EV at the point where the EV is equal or lower cost than the equivalent petrol or diesel vehicle
	  • 'accelerated' – replace some additional heavy vehicles with EVs in 2025-30 to avoid future carbon emissions rather than replace with new diesel vehicles, noting the 15-year life of these vehicles.
	• Most stakeholders felt in principle that SA Power Networks should aim to accelerate its fleet transition to EVs but most did not support the accelerated option proposed, due to customer bill impact ($2.20 for residential).

Alternative options	• Other acceleration options, e.g. focusing more on the passenger fleet rather than heavy vehicles, may provide a better overall outcome and should be explored. • One stakeholder felt SA Power Networks' business owners should fund an accelerated transition to avoid any customer bill impact.
Recommendation	• The 'cost-optimised' option has been recommended here, but we continue to explore alternative options for achieving greater decarbonisation benefits.

5. The People's Panel may choose to interview staff, stakeholders, or subject matter experts from the Focused Conversation, or requested to speak to the Peoples Panel in 2023

Name	Position / Organisation	What the person can speak about
Bryn Williams	Network Strategy Manager, SA Power Networks	Author of this document
Mark Borlace,	Senior Manager, Future Mobility RAA	Electric vehicles, new technology, engagement process
Jenny Paradiso	Managing Director - Suntrix; Community Advisory Board member	Solar industry, engagement process
To be confirmed		

6. The following stakeholders were part of the Focused Conversations

Name	Position / Organisation	Workshop 1 Friday 12 August (online)	Workshop 2 Tuesday 18 October (in person/online)	Workshop 3a Thursday 10 November (in person/online)	Workshop 3b Thursday 17 November (online 'catch up' for people unable to attend 10 Nov.)
Alistair McGrath-Kerr	Smart Energy	✓			
Andrew Mears	SwitchDin	✓	✓		
Andrew Schultz	Department of Energy & Mining	✓	✓		✓
Andrew Stock	Community Advisory Board	✓	✓	✓	
Anita Saunders	RAA		✓		✓
Ben Wilson	Engie	✓	✓		
Bethanie Adams	Australian Energy Regulator (AER)	✓		✓	
Bruce Davis	RAA		✓		
Caroline Valente	Energy Consumers Australia	✓			
Chris Marsden	Community Advisory Board	✓	✓	✓	
Con Hristodoulidis	AGL	✓			
Craig Norris	ChargeFox		✓		✓
Darren Gladman	SwitchDin			✓	
Emma Fagan	Tesla	✓	✓	✓	

Name	Position / Organisation	Workshop 1 Friday 12 August (online)	Workshop 2 Tuesday 18 October (in person/online)	Workshop 3a Thursday 10 November (in person/online)	Workshop 3b Thursday 17 November (online 'catch up' for people unable to attend 10 Nov.)
Greg McCarron	Central Irrigation Trust	✓			
Heather Merran	UnitingCare Wesley Bowden		✓		✓
Jane Kelly	AER	✓	✓		
Jason Huang	Community Advisory Board	✓	✓	✓	
Jen Bradley	Community Reference Group		✓		✓
Jenny Paradiso	Community Advisory Board	✓	✓		✓
Jo De Silva	Energy & Water Ombudsman SA	✓			
John Haskey	369 Labs	✓	✓		
Juris Kuznecovs	AER			✓	
Lara Daddow	City of Adelaide		✓	✓	
Mark Borlace	RAA		✓		✓
Mark Henley	Consumer Challenge Panel (CCP30)	✓		✓	
Mark Twidell	Tesla	✓			
Matthew Curnow	Community Advisory Board	✓	✓		✓
Peter Natrass	Department Energy & Mining	✓	✓		
Prianka Thomas	AER	✓			

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Richard Edwards	Department Energy & Mining		✓	✓	
Ron Shanks	Consumers SA		✓	✓	
Ross De Rango	Electric Vehicles Association	✓	✓		
Rowan McKeown	Essential Services Commission of SA	✓			
Sally Knight	AEVA	✓			
Sam Craft	Solar Industry Reference Group	✓	✓		
Sara Stark	AER	✓	✓		
Sarah Lumsden	Uniting Communities	✓	✓		
Slavko Jovanossi	AER	✓			
Tom Brdanovic	Tandem Energy	✓	✓	✓	
William Trott	Shine Hub	✓	✓		
Yarik Turianskyi	Business SA	✓	✓	✓	

7. Summary of options considered

Recommended options in blue

Enabling distributed energy – export capacity	Outcome	Annual bill impact: Residential	Annual bill impact: Business
Minimise investment, don't add any new additional export capacity	Increasing curtailment of solar exports over time	-	-
Upgrade in locations where there are wholesale market benefits	Service level varies across the network	$10.25	$38.60
Invest to maintain a consistent service level across the whole network 95% means that solar customers can expect to have their output limited no more than 5% of the time, or 140 hours per year	85% service level	$11.35	$42.80
	90% service level	$11.65	$43.90
	95% service level	**$13.20**	**$49.80**
	98% service level	$14.90	$56.15

Encouraging flexible loads	Outcome	Residential	Business
No new investment in systems, processes or staff to enable smart DER	No new services to customers or market participants	-	-
New services to reward small and large customers for shifting loads	Increase solar self-consumption and reduce peak demand, saving customers money and reducing future network investment	$2.00	$15.55
As above + advanced services including services for VPPs, retailers	**Help retailers and others to create additional customer value from innovative market offers**	**$2.70**	**$21.05**
As above + trial new web platform for network service procurement	Trial a streamlined online tender process for network services	$2.85	$22.20

Transitioning our vehicle fleet to electric vehicles	Outcome	Residential	Business
Business-as-usual, continue with internal combustion engine (ICE) vehicles	No abatement of carbon emissions	-	-
Cost-optimised transition – replace ICE with EV once an equivalent EV is equal or lower cost	**498 light vehicles (76%) and 14 heavy vehicles (5%) transitioned by 2030, 7,300 tonnes CO_2 avoided by 2030. Cost-neutral to customers over 10 year period**	**$0.60**	$4.65
Accelerated transition – as above + additional vehicle replacements	542 light vehicles (79%) and 106 heavy vehicles (38%) transitioned by 2030, 10,200 tonnes CO_2 avoided by 2030 plus another 14,000 tonnes over life of additional heavy vehicles	$2.20	$17.15

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