

SA Power Networks People's Panel Export tariffs in context

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Recap: where does the expenditure come from?

We are in transition from the 'one way' electricity grid of the past to the 'two way' network of the future

The network was not designed to work backwards, and has limited capacity to carry electricity in the reverse direction

As rooftop solar has increased since 2010 we've been using up that capacity, and it's now mostly used up

This means we're starting to have to turn solar down in the middle of the day at certain times

As customers continue to connect new solar through to 2030 we'll need to upgrade parts of the network to add more 'upstream' capacity to maintain a reasonable level of performance for solar customers

If we don't, future solar customers will be increasingly limited in how much power they can feed in



Recap: where does the tariff come from?

Today, all the costs of the network are recovered from electricity customers via the bill, some through the fixed daily charge but mostly through a c/kWh charge on energy supplied

As it's only solar customers who use this upstream capacity, we propose to fund the cost of these particular upgrades via a charge on energy fed in (above a free daily allowance) – an 'export tariff'

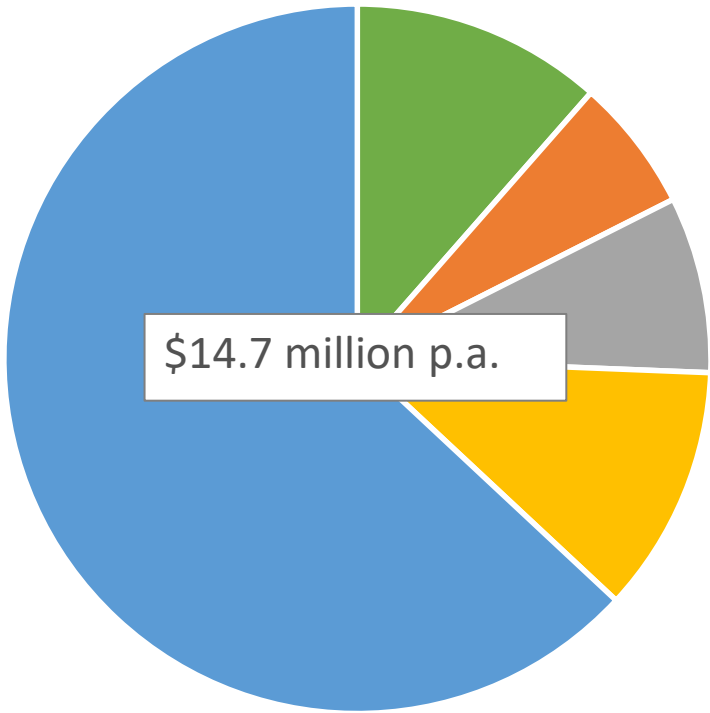
The alternative is that we have a two-way network but stick with one-way pricing. If we do that:

- Non-solar customers have a bill increase to pay for capacity they don't use
- Solar customers have no incentive to use the network efficiently, and this tends to cost everyone more in the long term



Export capacity expenditure

We propose to invest \$14.7 million p.a. in 2025-30 to maintain service levels for customers exporting energy to the network

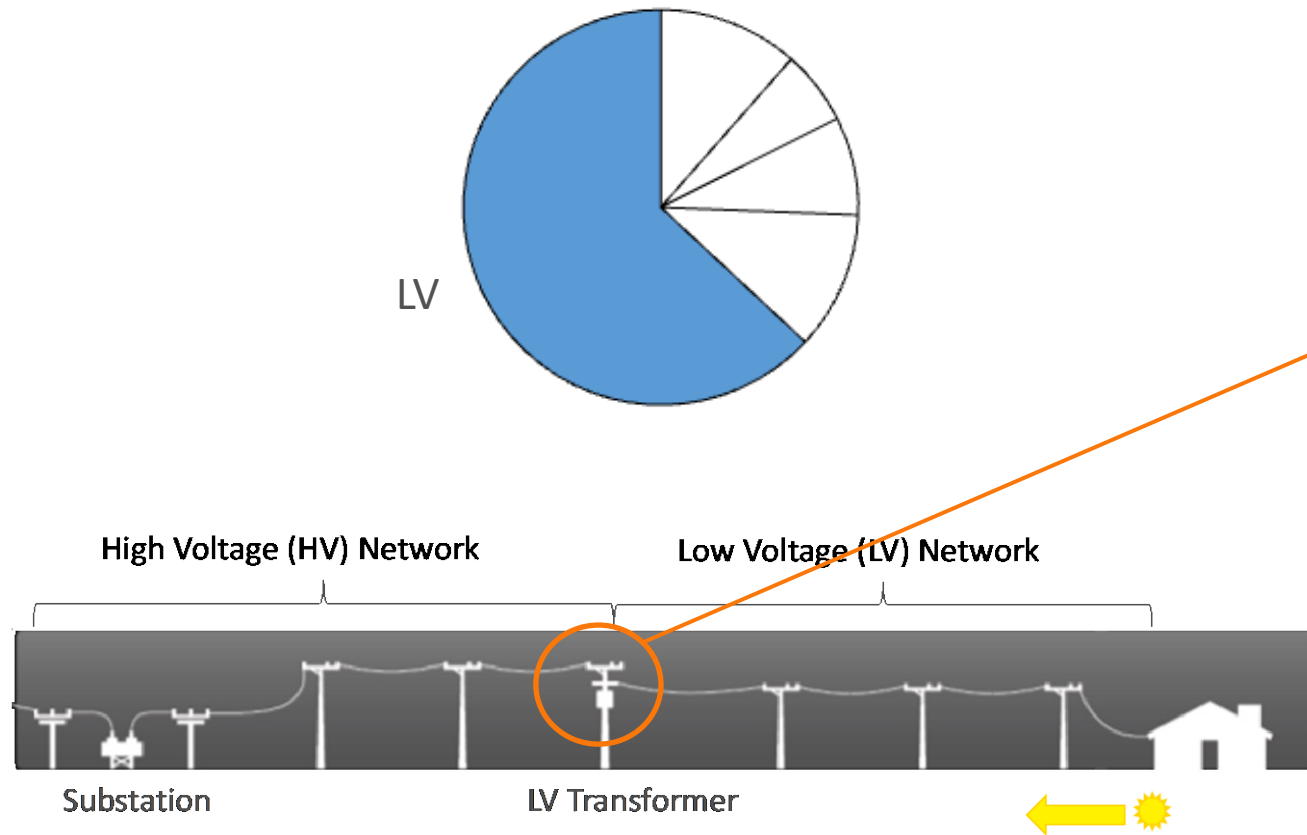


*All numbers supplied are forecasts and will be updated due to stakeholder input and external market influences over time. Our final numbers will be provided in our 2025-30 Regulatory Proposal to be lodged with the AER in January 2024



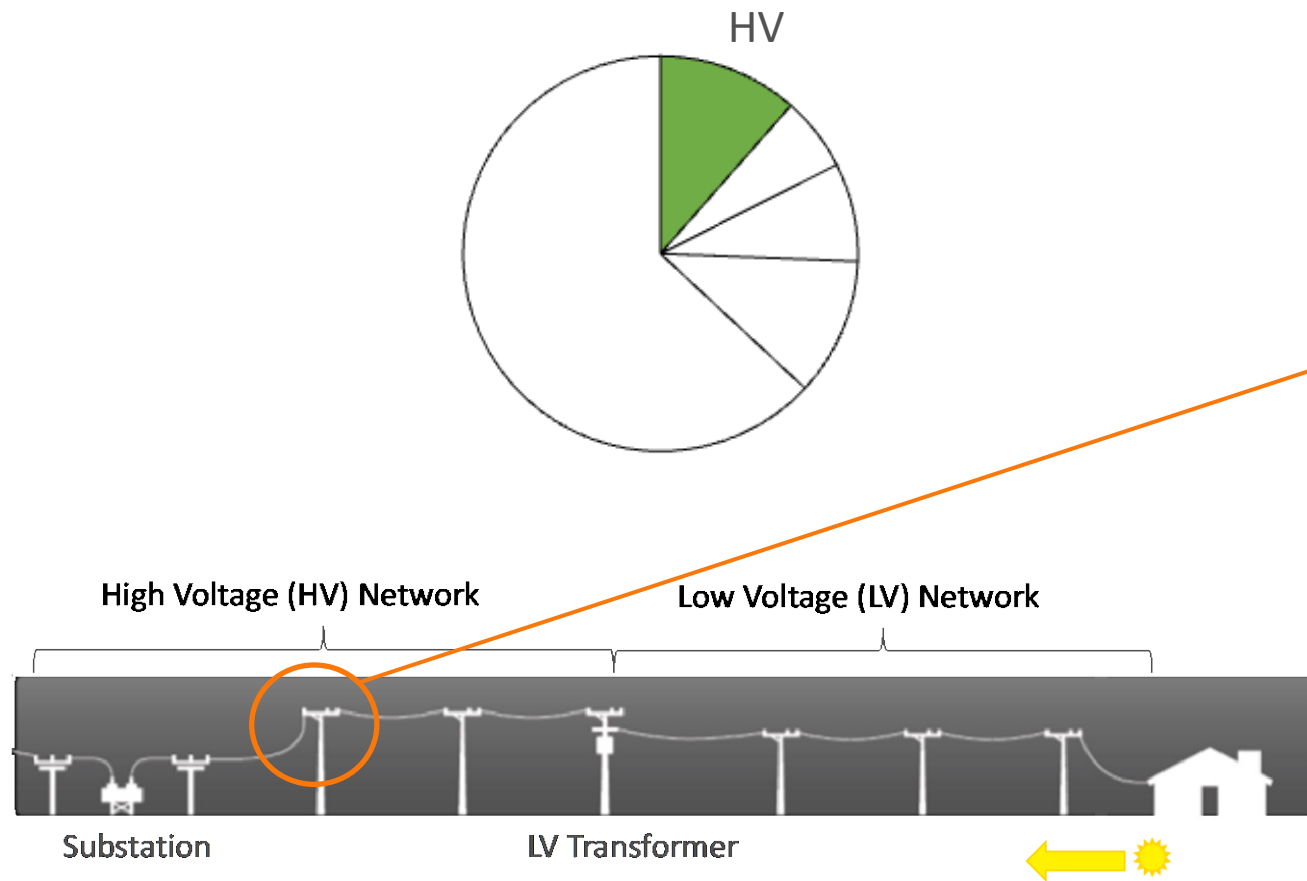
Export capacity expenditure

Most of this expenditure will be in upgrading the Low Voltage (LV) part of the network, e.g. replacing or upgrading pole-top transformers to fix emerging voltage issues or overloads due to reverse power flows



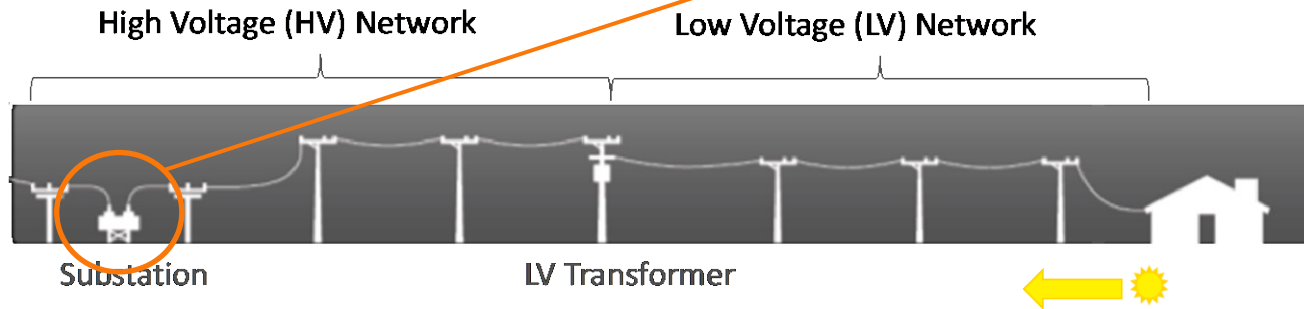
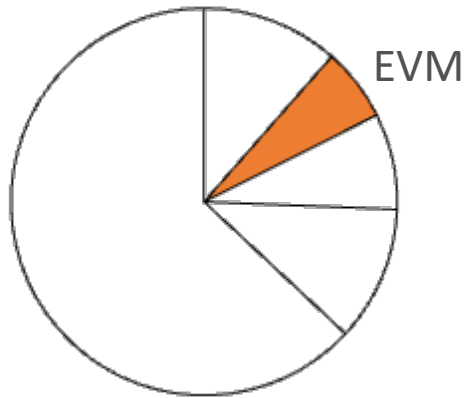
Export capacity expenditure

A few specific upgrades are required at the High Voltage (HV) level



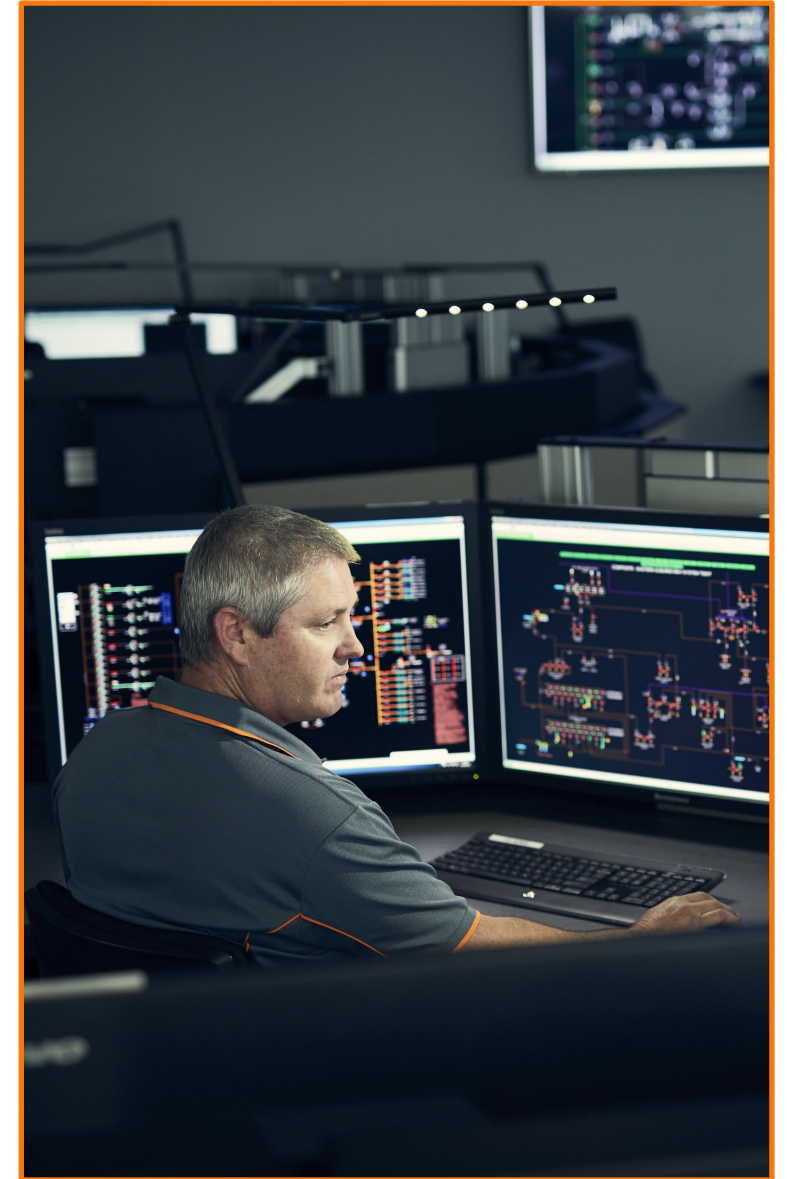
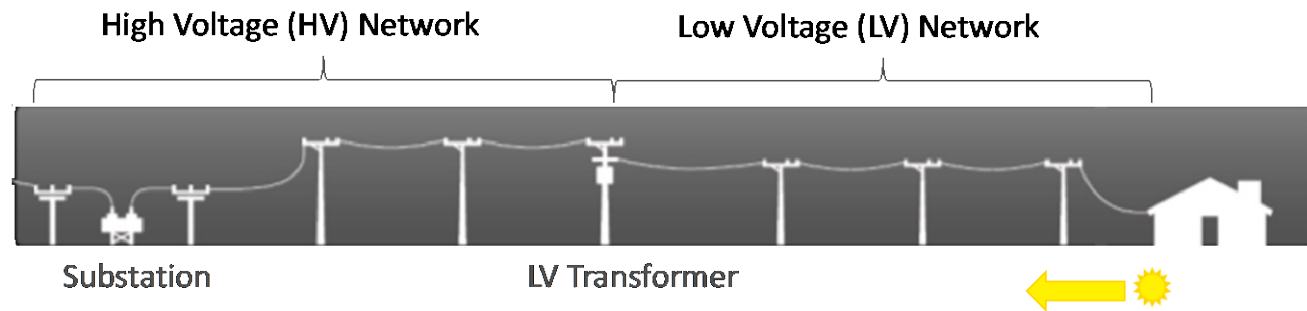
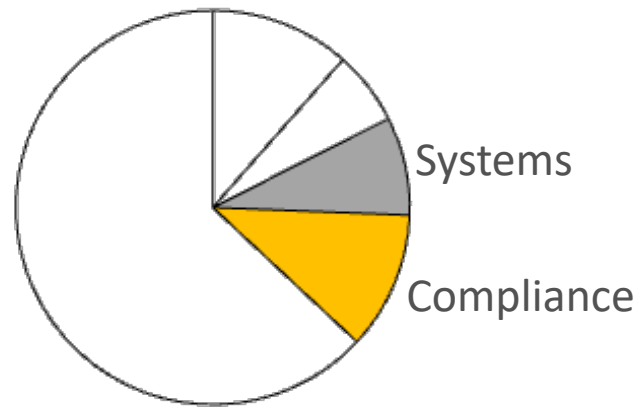
Export capacity expenditure

We'll need to roll out smarter voltage control across more of our substations ('Enhanced Voltage Management', or EVM)



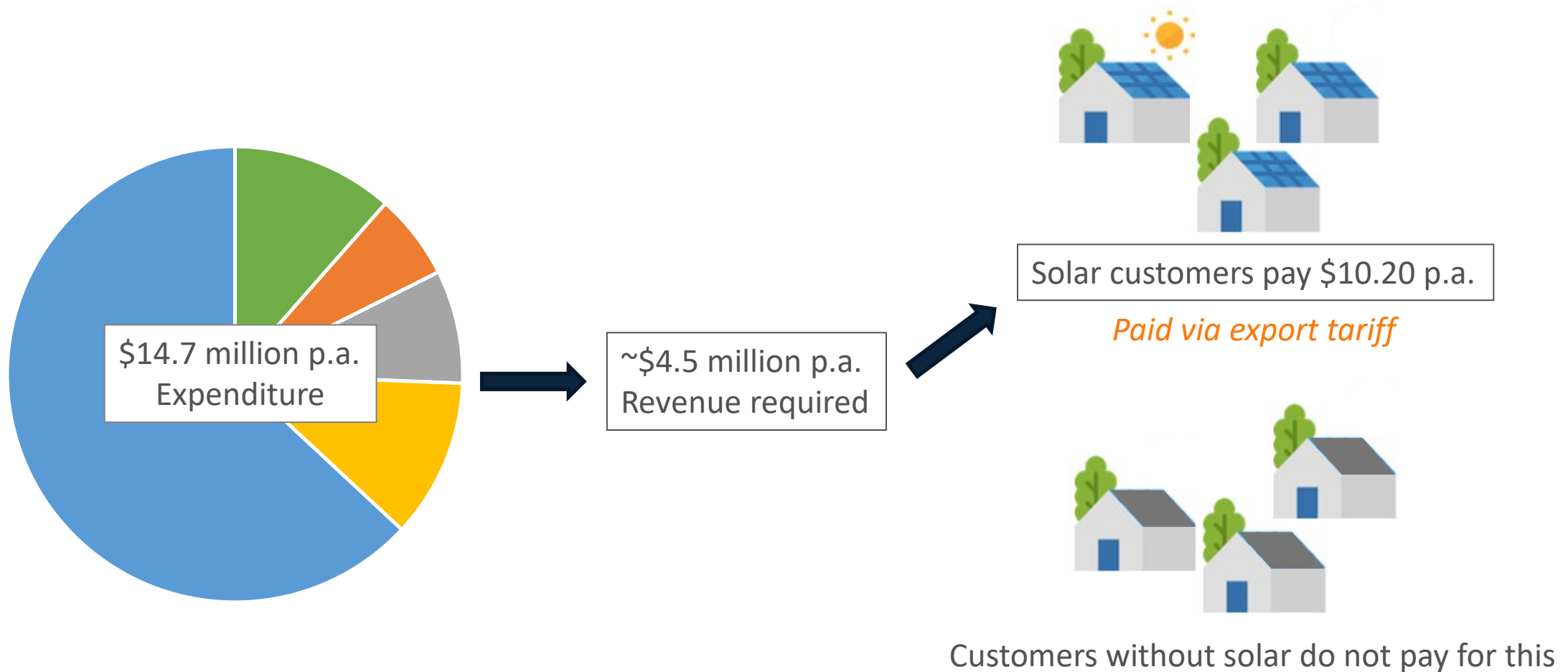
Export capacity expenditure

There are specific supporting IT systems and staff to manage reverse power flows and support the solar industry in compliance to new technical standards



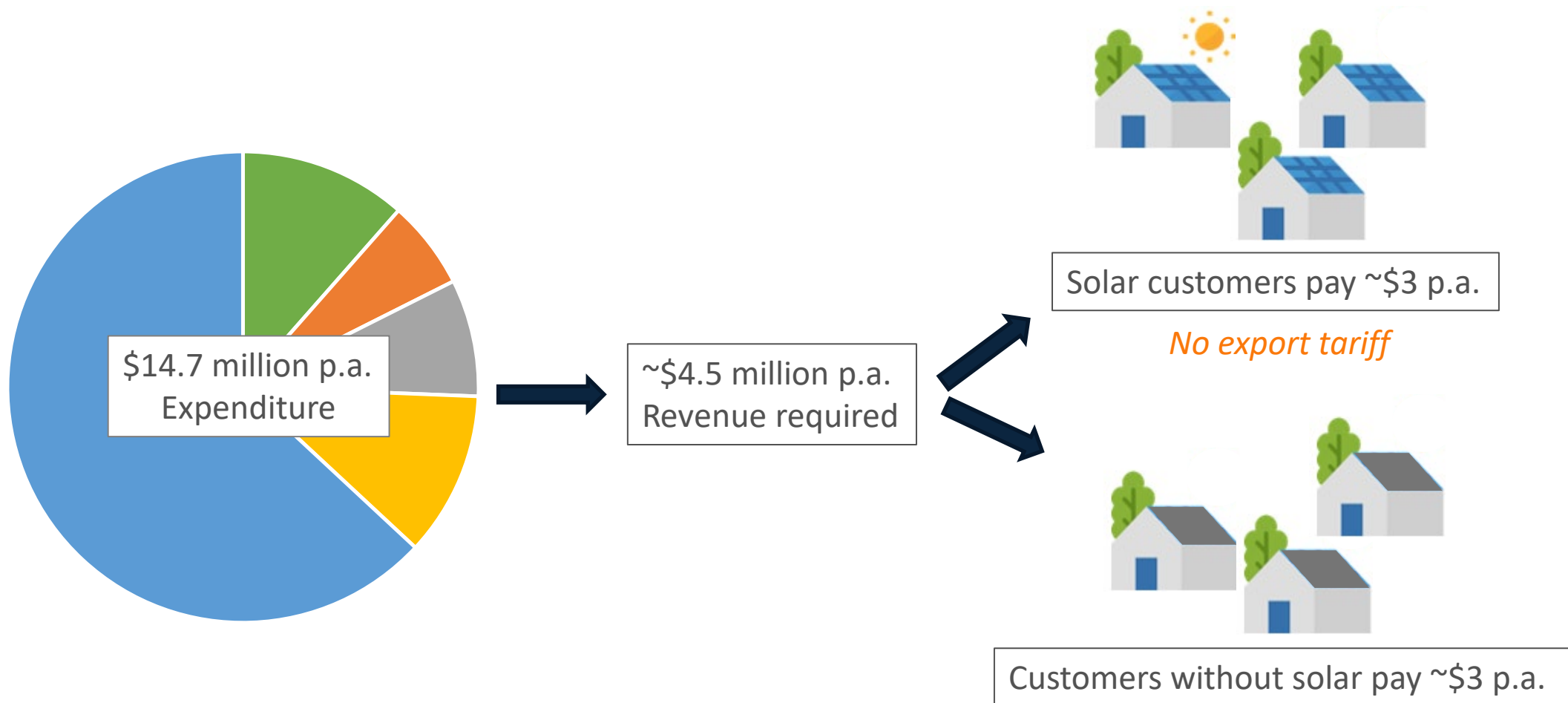
Recovering the cost through tariffs

The recommendation from our Focussed Conversations was to introduce export tariffs for all solar customers from 2025 to recover the cost of our solar enablement program



Recovering the cost through tariffs

If, on the other hand, we decided to delay introducing export tariffs until 2030 then the cost would be shared across all customers



How does this affect the value a solar customer gets from their system?

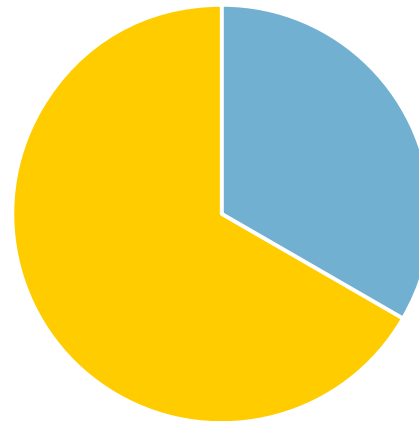
Simple example for illustration only. Based on:

- 5kW solar customer, 35% self-consumption
- ToU tariff, 40c peak / 20c Solar Sponge, 6c FiT
- 95% service level
- Example export tariff ~1c/kWh, 9kWh per day basic export level

5 kW solar PV system

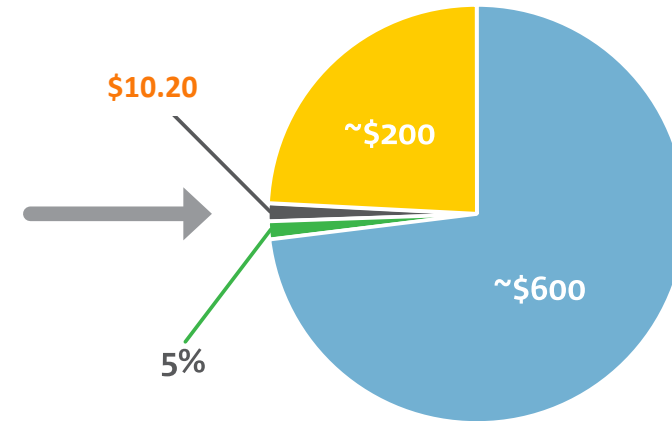


Energy produced



- Exported to grid
- Used in house

Customer value



- Export income
- Savings from in house use
- Export tariff
- Impact of **5%** export curtailment¹



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SA Power Networks People's Panel Export Tariffs Transition

Helen White

Revenue & Pricing Manager

4 March 2023



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Question for the People's Panel

Regulation requires SA Power Networks to consider export tariffs that reflect the cost of providing the service. How can the transition be phased in to maximise fairness and equity for all?



Defining Customers

	Commissioned BEFORE 1 July 2023	Commissioned AFTER 1 July 2023
New Export Customer	x	✓
Existing Export Customer	✓	x
All Export Customers	✓	✓
Non Export Customer	x	x

Transition Options

Option 1

1 July 2025 – All Export Customers (New and Existing) are assigned to an export tariff at the beginning of the 2025-30 period.

Option 2

1 July 2030 – No export tariffs introduced in the 2025-30 period.

Option 3

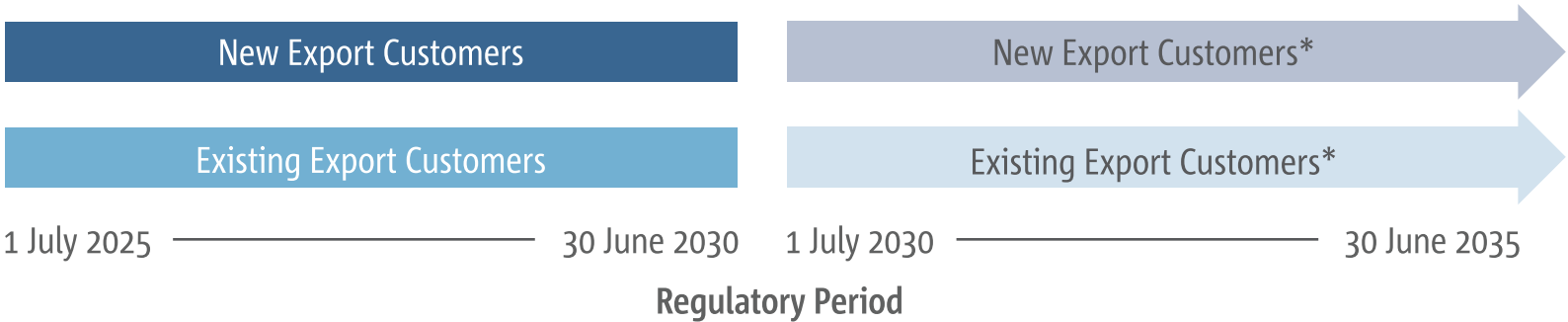
All New Export Customers are assigned to an export tariff from 1 July 2025. No export tariffs for Existing Export Customers introduced in the 2025-30 period.

*Panel members have the opportunity to modify one of these options.

Option 1

1 July 2025 – All Export Customers (New and Existing) are assigned to an export tariff at the beginning of the 2025-30 period.

Indicative Annual Charges	All Export Customers	Non Export Customers
	New Export Customers Existing Export Customers	
Residential	\$10.20 p.a. average	\$ -
Business	\$38.40 p.a. average	\$ -



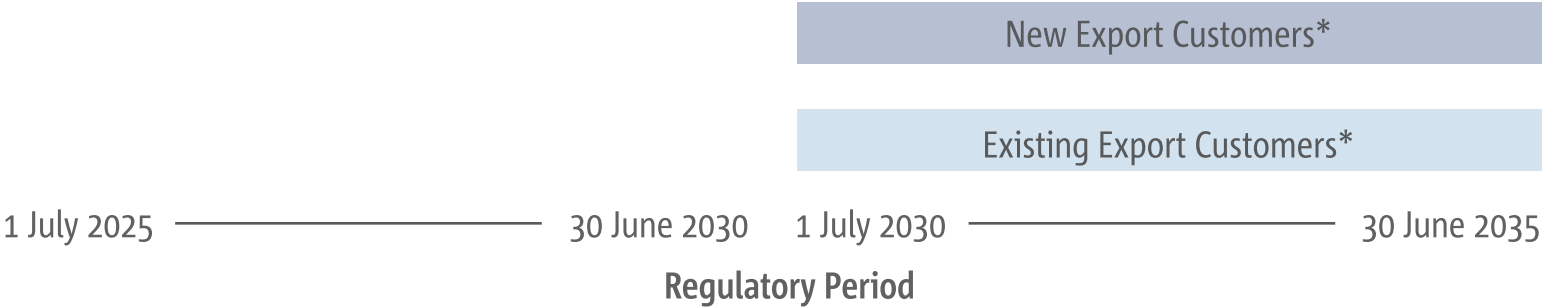
*Ultimately determined by 2030-35 stakeholder engagement process which takes place next period. The Panel can not impose a binding outcome on the 2025-30 period.

Option 2

1 July 2030 – No export tariffs introduced in the 2025-30 period.

Indicative Annual Charges	Export Customers	All Customers
		New Export Customers
		Existing Export Customers
		Non Export Customers
Residential	\$ -	\$3 p.a. average
Business^	\$ -	0.5% p.a. average distribution charges

*^ 20MWh p.a. customer such as a retail shop would pay an additional \$10 p.a.
100MWh p.a. customer such as a primary school would pay an additional \$50 p.a.*



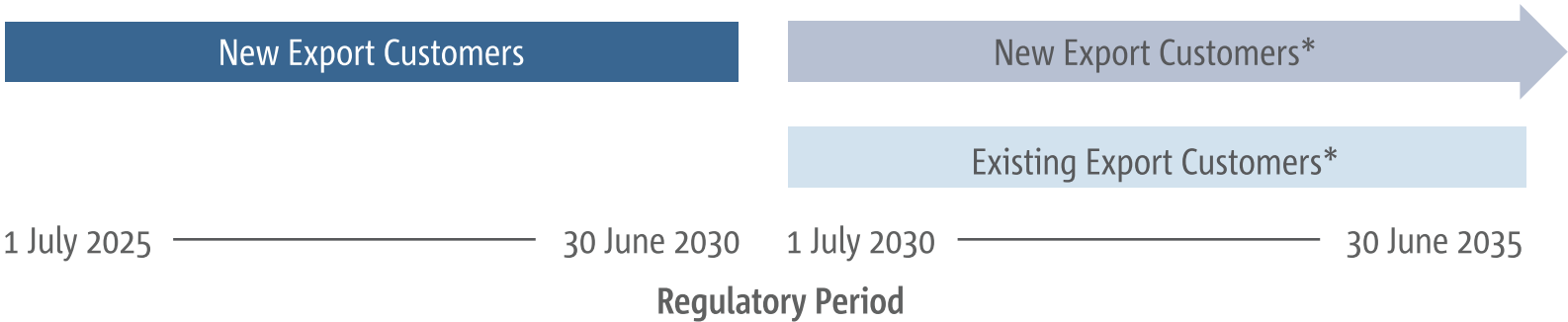
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Option 3

All New Export Customers are assigned to an export tariff from 1 July 2025.
No export tariffs for Existing Export Customers introduced in the 2025-30 period.

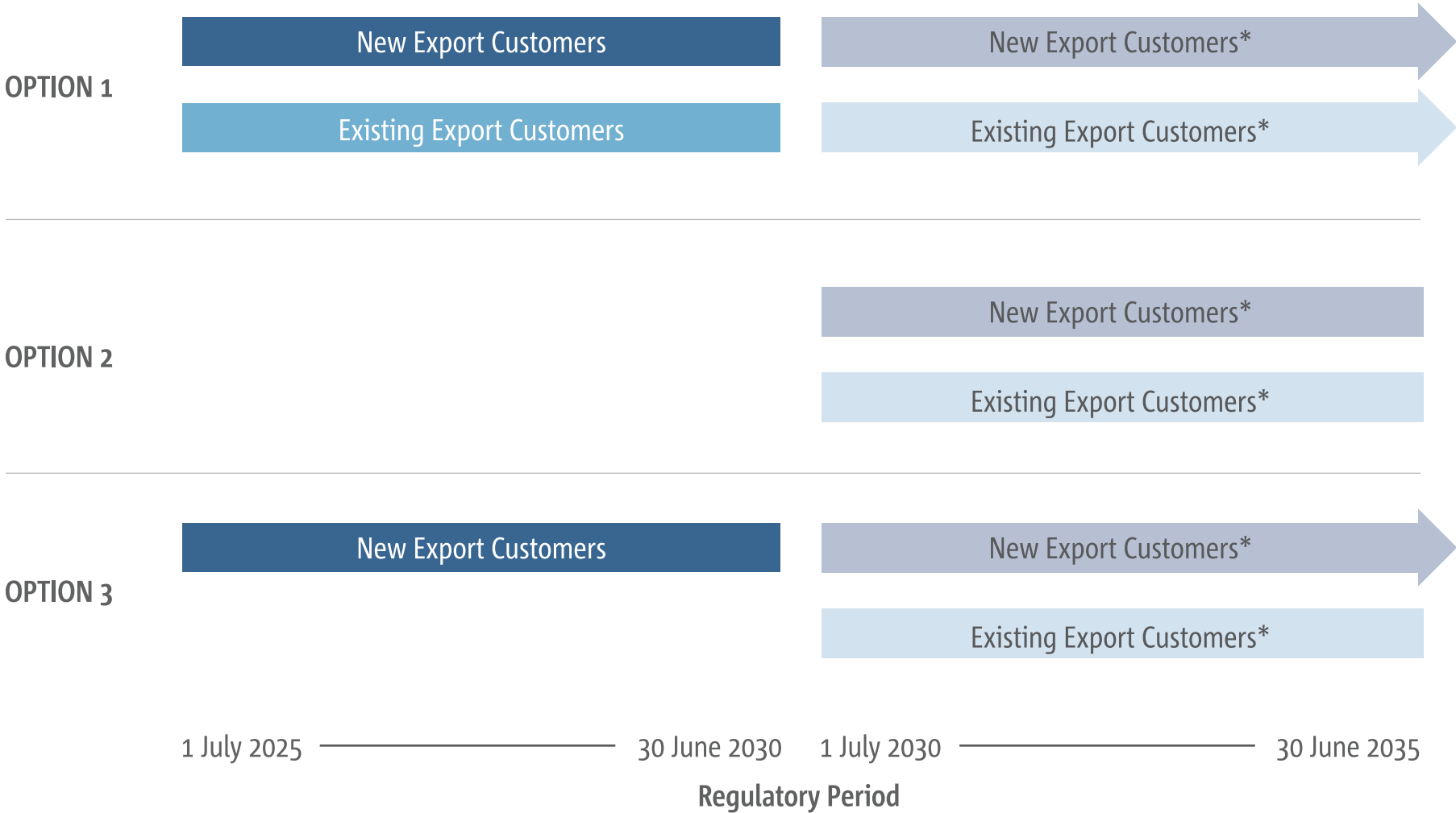
Indicative Annual Charges	New Export Customers	Existing Export Customers	Non Export Customers
Residential	\$10.20 p.a. average + \$2 p.a. average	\$2 p.a. average	\$2 p.a. average
Business	\$38.40 p.a. average + 0.33% p.a. average distribution charges	0.33% p.a. average distribution charges	0.33% p.a. average distribution charges

*^ 20MWh p.a. customer such as a retail shop would pay an additional \$7 p.a.
100MWh p.a. customer such as a primary school would pay an additional \$33 p.a.*



*Ultimately determined by 2030-35 stakeholder engagement process which takes place next period. The Panel can not impose a binding outcome on the 2025-30 period.

Option Summary



*Ultimately determined by 2030-35 stakeholder engagement process which takes place next period. The Panel can not impose a binding outcome on the 2025-30 period.

Focussed Conversation Recommendation

- Stakeholders participated in a series of export tariff conversations to develop transition options
- Stakeholders were selected to ensure broad and diverse representation
- **Option 1** selected as the preferred option:
 - More equitable outcome for Non Export Customers
 - Simple and concise messaging for customers



Question for the People's Panel

Regulation requires SA Power Networks to consider export tariffs that reflect the cost of providing the service. How can the transition be phased in to maximise fairness and equity for all?





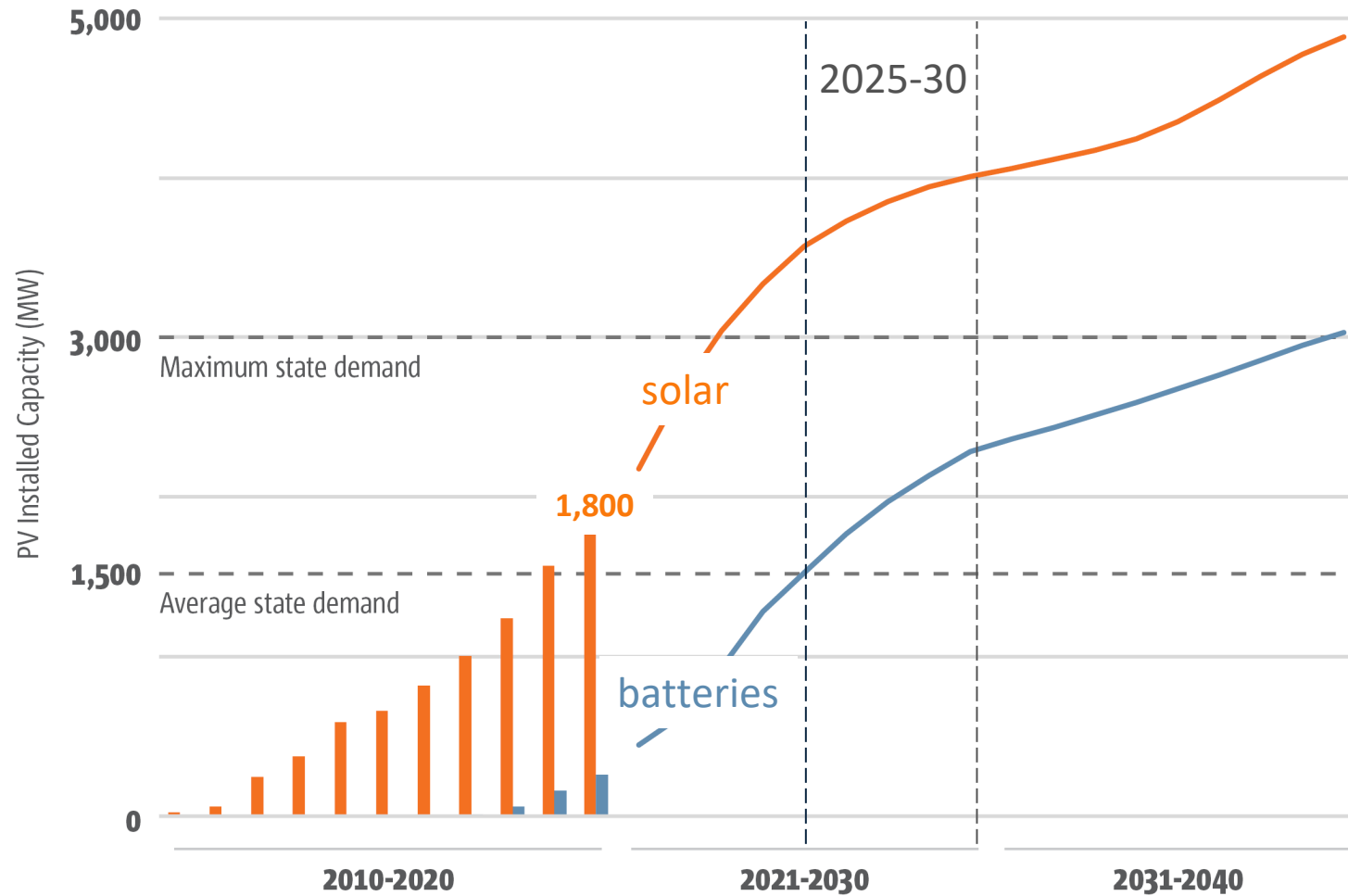
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Case Studies

Average Daily Outcome – kWh	Customer 1 • Small solar system (4kW) • At home during the day	Customer 2 • Average solar system (5kW) • Typical in house use	Customer 3 • 6.2kW solar system • Low in house use	Customer 4 • Large solar system (10kW) • Swimming pool	Customer 5 • Large solar system (30kW) • Small business - 5 days • Office and warehouse
In house use	6.1	6	4.5	13.0	68.5
Free export 10am – 4pm	6.1	8.1	9.0	9.0	8.3
Free export outside of 10am – 4pm	1.4	2.6	6.1	6.7	14
Export 10am – 4pm above the free threshold subject to export tariff	1.2	2.8	8.4	11.9	31.3
Total energy produced kWh/day	14.8	19.2	28.0	40.6	122.1
Export 10am-4pm above the free threshold subject to export tariff @1c/kWh inc GST	\$0.012	\$0.028	\$0.084	\$0.119	\$0.313
Export tariff charge per year	\$4.38	\$10.22	\$30.66	\$43.44	\$114.25

South Australia leads the nation in the energy transition

SA Forecasts AEMO ESOO 2021



~300,000 Rooftop solar systems

>1 in 3 customers, world's highest
State's largest generator

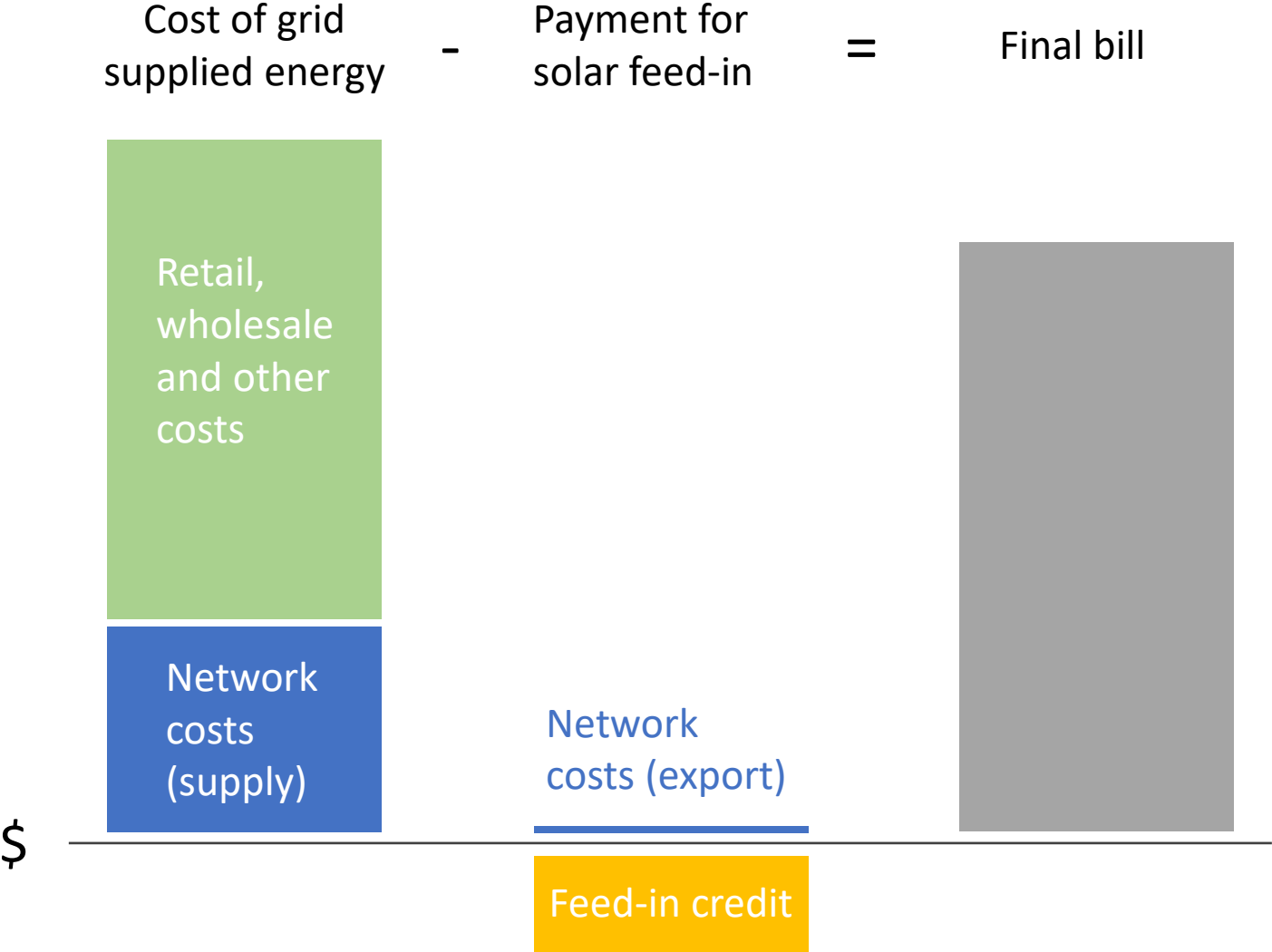
Growth forecast to continue through
2030 and beyond



~30,000 Home batteries

9 Virtual Power Plants
operating in SA

How does this affect the total annual bill for a solar customer?



Doesn't solar provide benefits to other customers?



**Average underlying electricity price by time of day
SA – Q1 2021 and Q1 2020**

Source: Australian Energy Council

- Yes, solar energy exported to the grid displaces more expensive generators and tends to lower prices for non-solar customers
- The value that solar customers' exported energy provides to the broader market is reflected in the price paid to them by retailers – their retail feed-in tariff. We have no role in this.
- Our role – and obligation – is to provide all customers with a reliable network service for a price that reflects the long-term efficient cost to provide that service

