Consumer Advisory Panel Meeting 33

Thursday, 16 May 2024

ElectraNet

Acknowledgement of Country

We acknowledge the Traditional Owners of the land on which we meet and pay our respects to their Elders past and present. We extend that respect to other Aboriginal and Torres Strait Islander people who are present today.

Agenda Outline

1. Welcome
2. General updates and action items
   - Meeting #32 - 20 November 2023
   - PEC Timing update
   - ISP Update
3. CAP top of mind issues
4. Presentation on Social License
5. CAP engagement on ElectraNet's Program Outlook
6. South Australia Energy Transformation (based on ENA conference)

Action Items & General Update

#	Action Item	Status
1	ElectraNet to provide an update on AER application for inertia service costs	In Progress
2	ElectraNet to share the Network Transition Strategy for feedback prior to release	Completed
3	SA Business Chamber to share the full quarterly business survey results with CAP Members	In Progress

3. CAP top of mind issues

Leanne Muffet + All
Independent Facilitator

ElectraNet

4. Presentation on Social License

Michael Bails
Lead Land and Approvals

ElectraNet

Social License

Michael Bails – Lead Land and Approvals

16 May 2024

ElectraNet

Purpose

To discuss ElectraNet's approach to building and maintaining a social license to operate

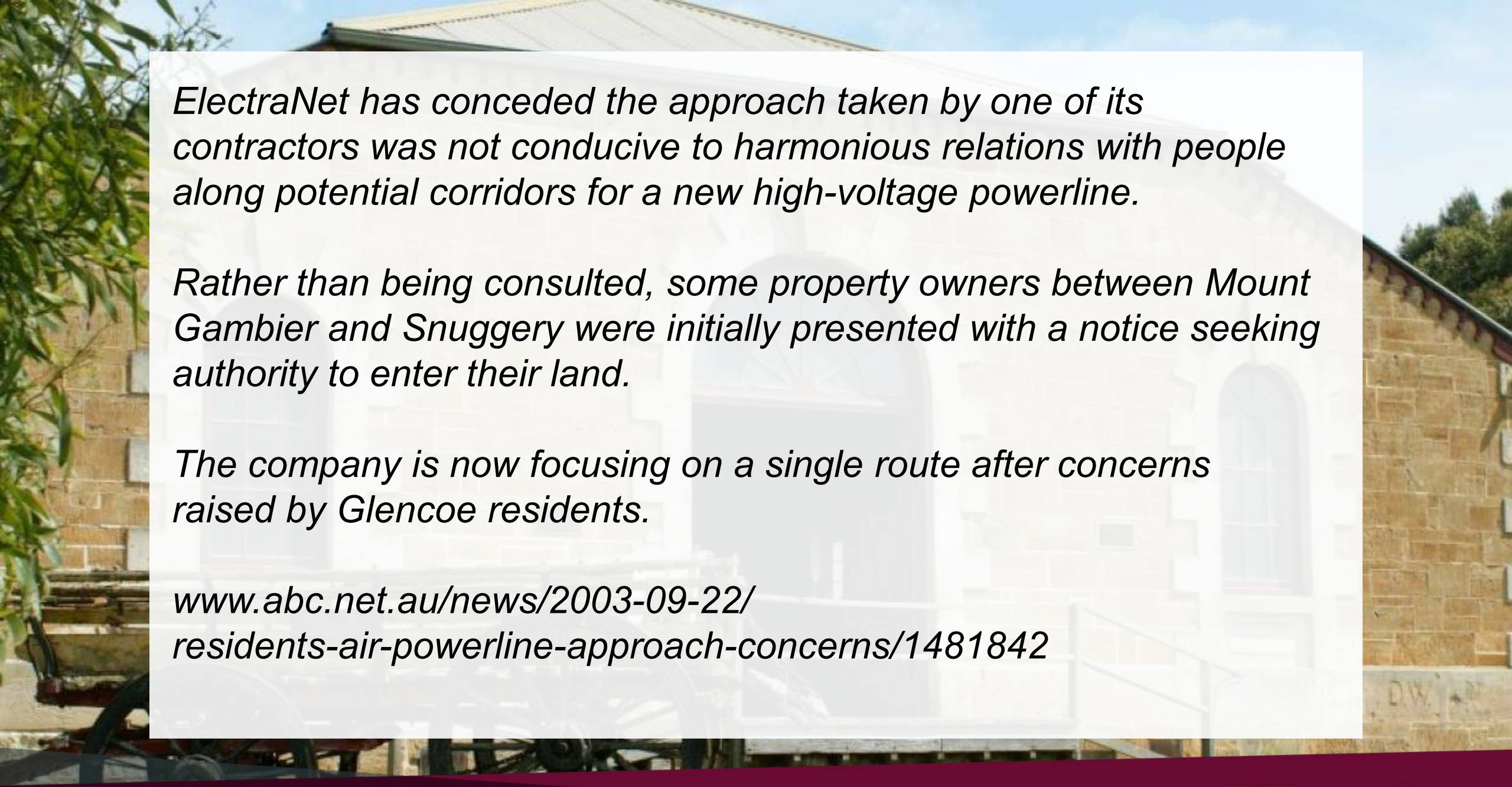
Social License to Operate

"At its simplest, it refers to the acceptance granted to a company or organization by the community."

The Ethics Centre

AAP Image supplied by traditional owners, the Puutu Kunti Kurrama and Pinikura (PKKP) Aboriginal Corporation.


STOP
AUSNET'S
TOWERS
STOPAUSNETSTOWERS.COM.AU
AusNet
OVERHEAD POWER? THAT'S NOT GREEN!

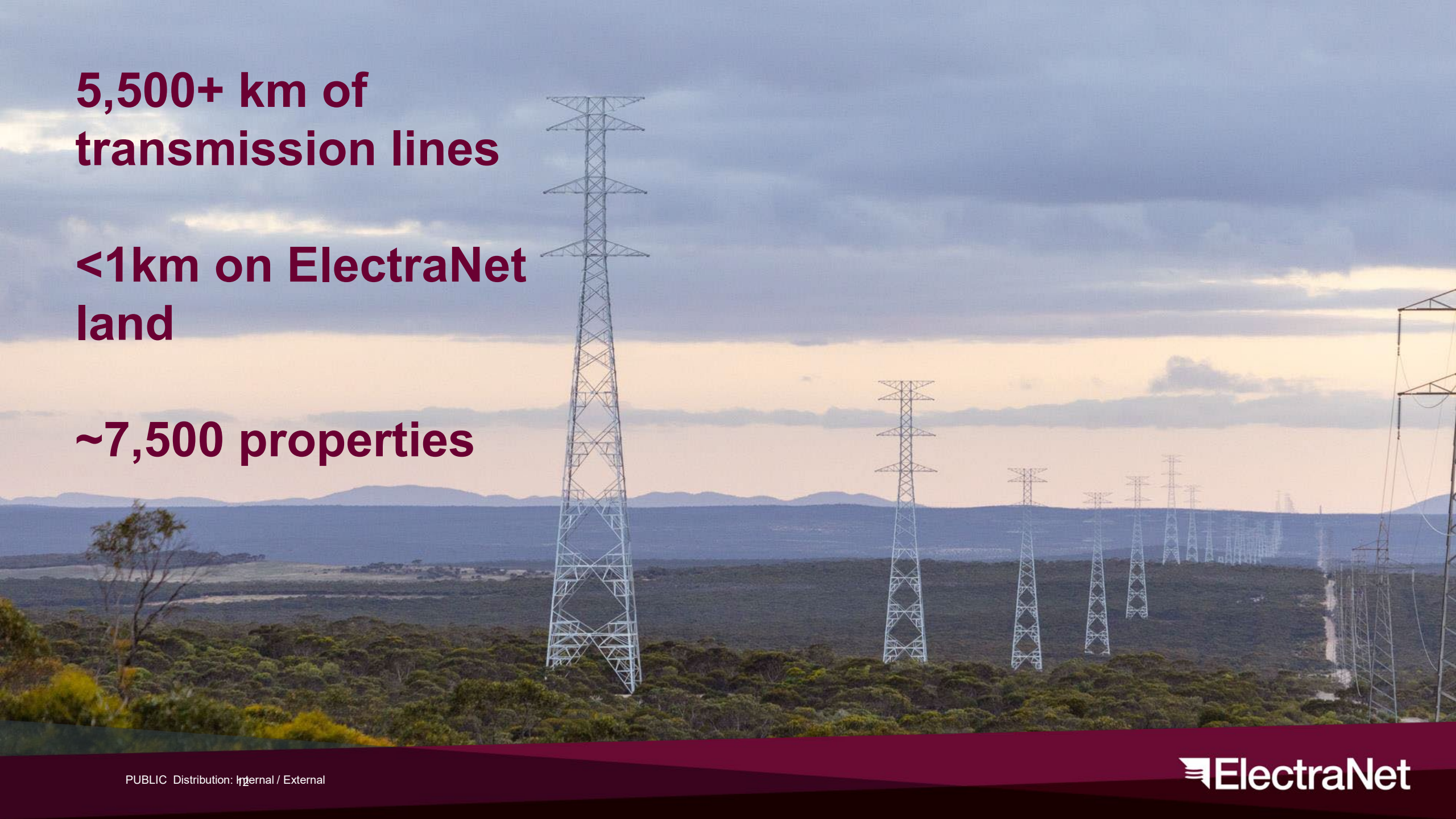


ElectraNet has conceded the approach taken by one of its contractors was not conducive to harmonious relations with people along potential corridors for a new high-voltage powerline.

Rather than being consulted, some property owners between Mount Gambier and Snuggery were initially presented with a notice seeking authority to enter their land.

The company is now focusing on a single route after concerns raised by Glencoe residents.

www.abc.net.au/news/2003-09-22/residents-air-powerline-approach-concerns/1481842


5,500+ km of transmission lines
<1km on ElectraNet land
~7,500 properties

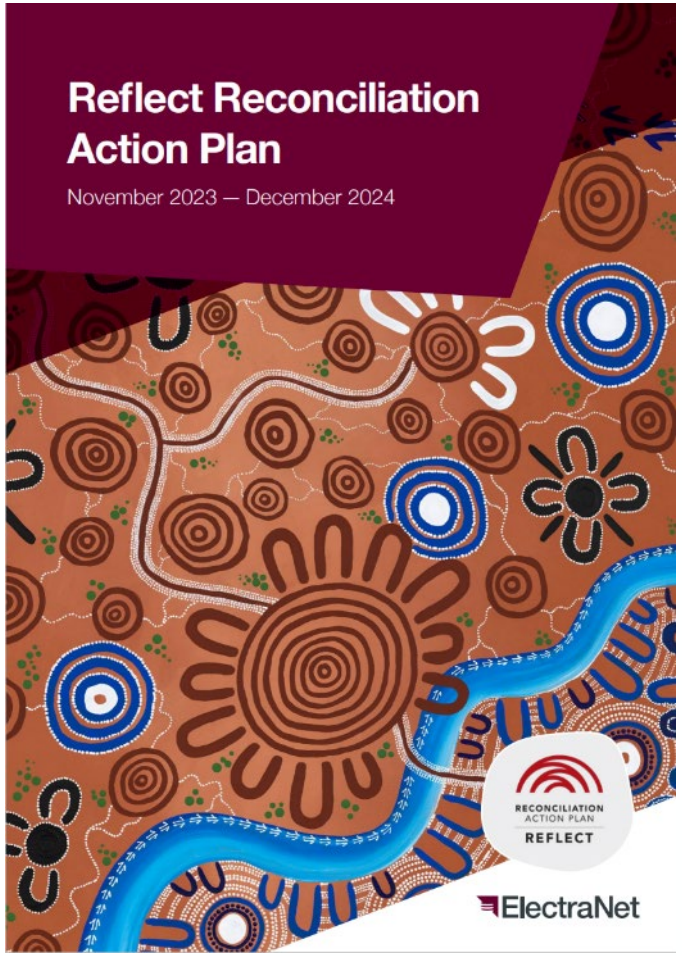
Our Approach

Barka Park – Mt Barker South Substation

Respect

Landholders
Community
Environment
Traditional Owners

Leading Positive Change



Project empPower

2023 ENERGY & MINING PREMIER'S AWARDS

GRESB

ISO 45001 HEALTH & SAFETY

Learning & Innovation

Questions

ElectraNet

Thank You

For more information please contact:

Michael Bails, Lead Land and Approvals +61 405 147 206
E bails.michael@electranet.com.au

Network Transition Strategy

Ongoing Energy Transformation

Threefold increase in rooftop PV capacity over the past 6 years

Source: AEMO

764MW (2017) → 2,200+MW (2023)

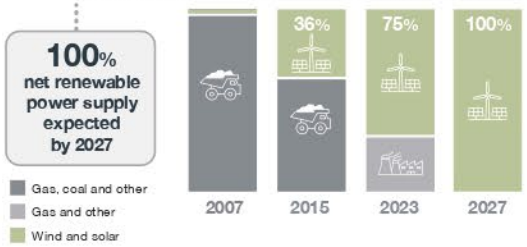
SA has solar panels on about 40% of residential customers rooftops

106% decrease in minimum grid demand over the past 6 years

Source: AEMO half hourly data

546MW (2017) → −26MW (2023)

100% net renewable power supply expected by 2027



4,190MW (2035) ← 3,150MW (2024)

32% increase in maximum grid demand expected by 2030

Source: AEMO forecast

Challenges and opportunities

- Unlocking demand growth and renewables
- Supply and demand variability
- System security services
- Voltage control
- Protection adequacy
- Increasing system complexity and risk
- Harnessing customer energy resources
- Extreme events
- Underlying Network Challenges

How we are Responding

Our Objectives | Safety | Affordability | Reliability | Sustainability

This Network Transition Strategy is guided by our asset management objectives and underpinned by three key themes.

Energy Reliability

Eyre Peninsula Link
Delivered in 2023 providing improved reliability and unlocking future growth on the Eyre Peninsula

Project EnergyConnect
Completed in SA in 2023 to improve reliability, enable more renewable energy and deliver price savings for customers

Pursuing priority network developments
- Mid-North (Southern and Northern) Expansion
- South-East Expansion
- Eyre Peninsula upgrade

Power System Security & Resilience

Synchronous condensers
Installed in 2021 to meet system strength and inertia requirements

System Security
Procured inertia support services to protect SA when electrically islanded
Implemented Wide Area Protection Scheme
Implemented an automated Voltage Control Scheme at Davenport

System Strength
Developing solutions to meet forward-looking system strength requirements

Voltage Control
Developing solutions to manage voltage across the changing network

Protection
Ensuring system protection and emergency control schemes are effective for changing system conditions

Connection Arrangements
Optimising distribution and customer contributions to system security

Operability

Control Room Capability
Replaced Energy Management System to improve capability to operate the network

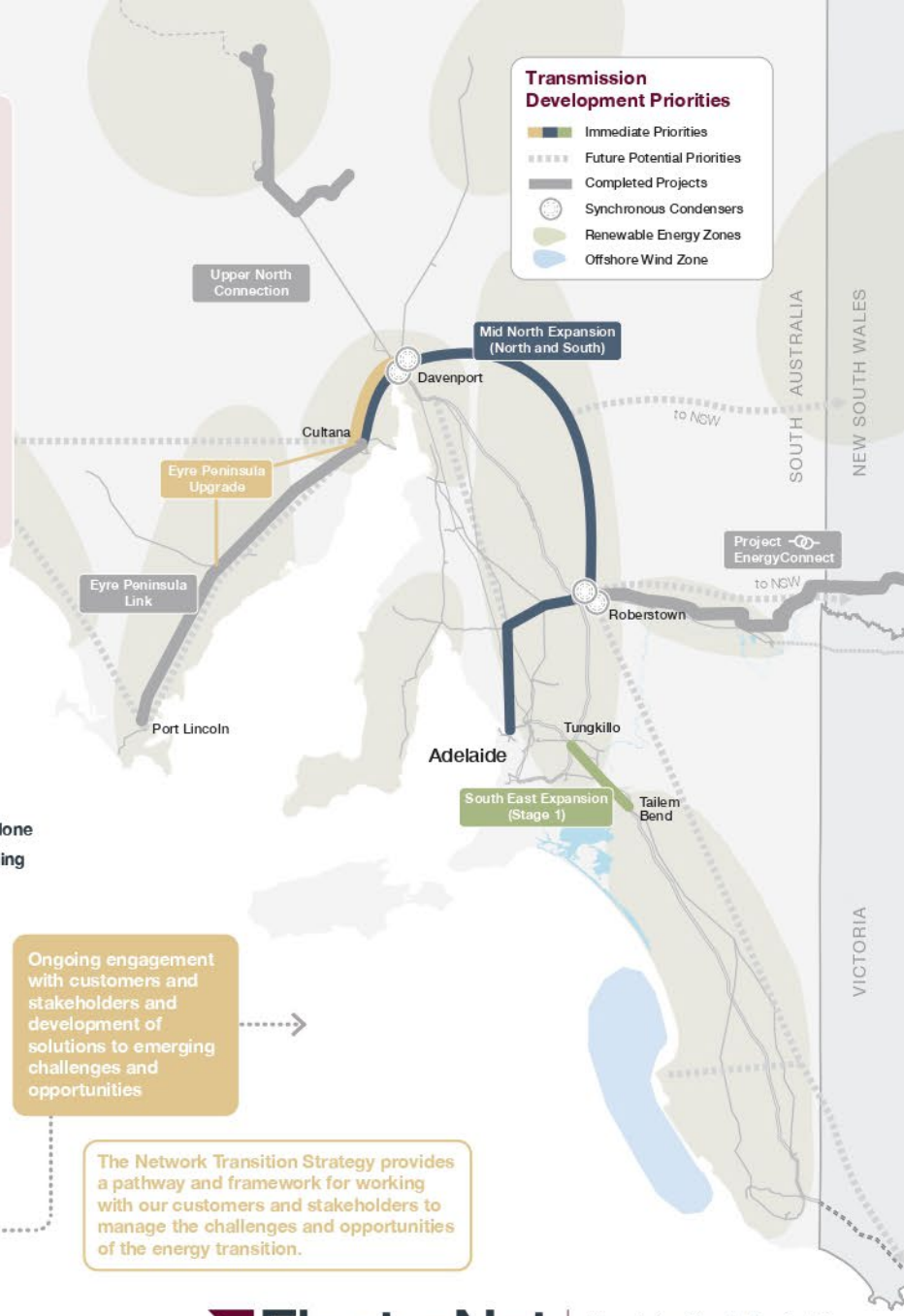
Wide Area Monitoring
Implemented a new system for improved power system monitoring

Network planning and operations capability uplift
- Realtime operations
- Near real-time planning
- Outage planning
- Longer-term planning

Operational Systems
Expand operational system capabilities to manage increasing network complexity and risk

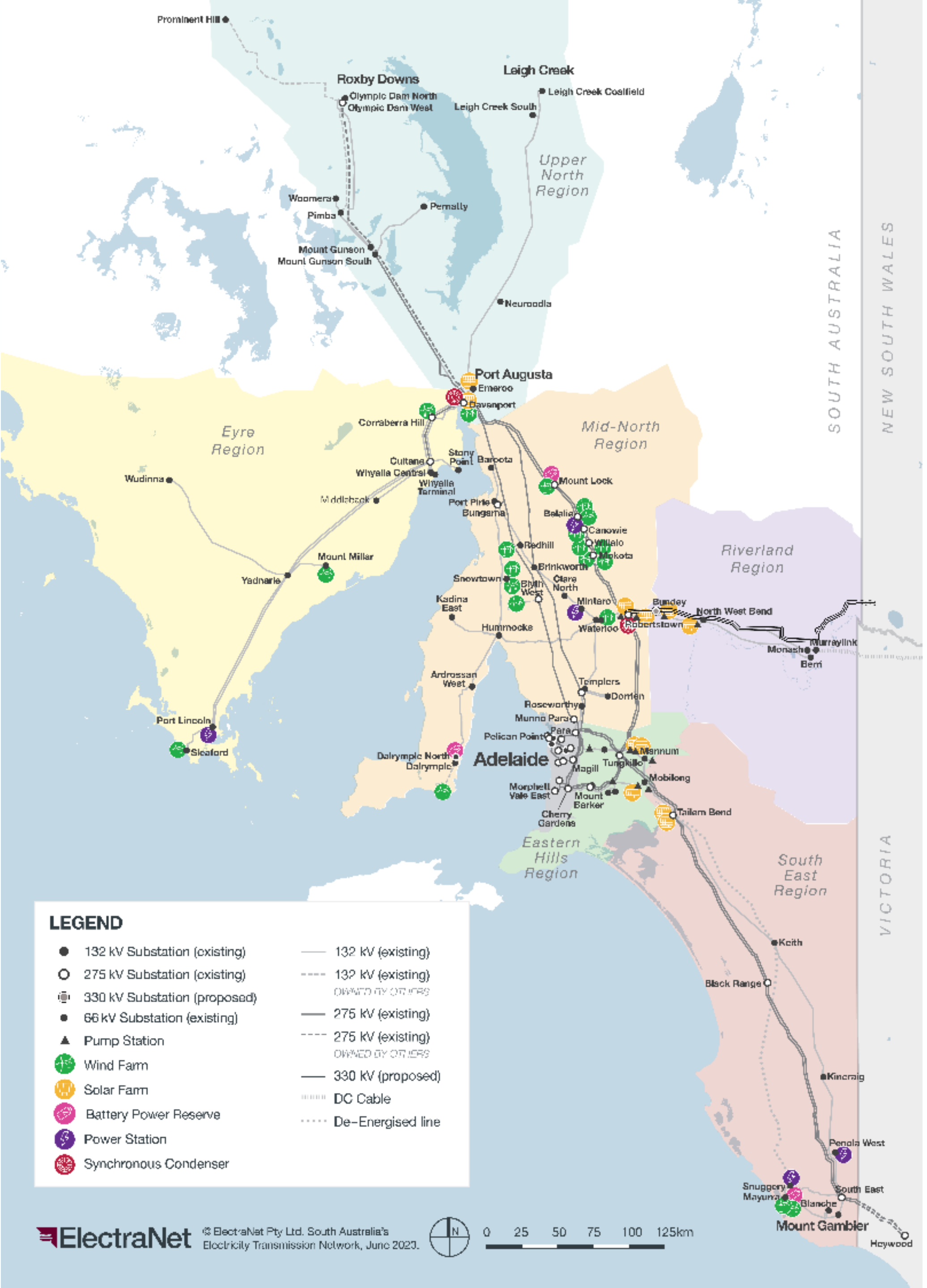
Ongoing engagement with customers and stakeholders and development of solutions to emerging challenges and opportunities

The Network Transition Strategy provides a pathway and framework for working with our customers and stakeholders to manage the challenges and opportunities of the energy transition.



Last updated March 2024

ElectraNet | Energising South Australia's Clean Energy Future™



Prominent Hill
Roxby Downs
Olympic Dam North
Olympic Dam West
Leigh Creek
Leigh Creek Coalfield
Leigh Creek South
Upper North Region
Woomera
Pimba
Pernatty
Mount Gunson
Mount Gunson South
Neuroodla
Port Augusta
Emeroo
Davenport
Cultana
Corraberra Hill
Eyre Region
Wudinna
Whyalla Central
Whyalla Terminal
Stony Point
Baroota
Middleback
Mount Millar
Yadnarie
Port Lincoln
Sleaford
Mid-North Region
Mount Lock
Belalie
Canowie
Willalo
Mokota
Port Pirie
Bungama
Redhill
Brinkworth
Snowtown
Blyth West
Clare North
Kadina East
Mintaro
Hummocks
Waterloo
Robertstown
Bundey
North West Bend
Riverland Region
Murraylink
Monash
Berri
Ardrossan West
Templers
Dorrien
Roseworthy
Munno Para
Pelican Point
Para
Dalrymple North
Dalrymple
Adelaide
Magill
Tungkillo
Mannum
Mobilong
Morphett Vale East
Mount Barker
Cherry Gardens
Tailem Bend
Eastern Hills Region
South East Region
Keith
Black Range
Kincraig
Penola West
Snuggery
Mayurra
South East
Blanche
Mount Gambier
Heywood
SOUTH AUSTRALIA
NEW SOUTH WALES
VICTORIA
LEGEND
132 kV Substation (existing)
275 kV Substation (existing)
330 kV Substation (proposed)
66 kV Substation (existing)
Pump Station
Wind Farm
Solar Farm
Battery Power Reserve
Power Station
Synchronous Condenser
132 kV (existing)
132 kV (existing)
275 kV (existing)
275 kV (existing)
330 kV (proposed)
DC Cable
De-Energised line
ElectraNet
© ElectraNet Pty Ltd. South Australia's Electricity Transmission Network, June 2023.
N
0 25 50 75 100 125km

5. CAP engagement of ElectraNet's Capital Program Outlook

Jeremy Tustin
Manager, Regulations

ElectraNet

ElectraNet's Engagement Objectives

Mid North ISP Projects

Regulated Investment Test for Transmission (RIT-T)

CAP make supportive submissions to the Mid North RIT-T outcomes (PADR + PACR + CPAs)

Revenue Proposal

ElectraNet's 2029-2033 Revenue Proposal

CAP make a submission that ElectraNet's Revenue Proposal is capable of acceptance by the AER

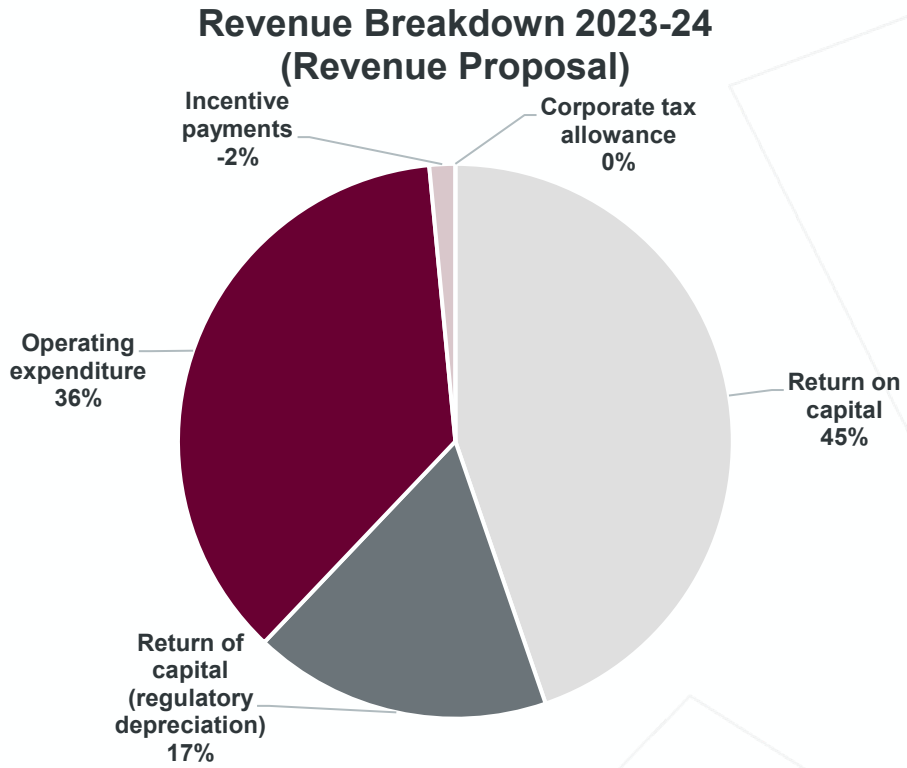
Revenue setting framework - Revisited

Capital Costs

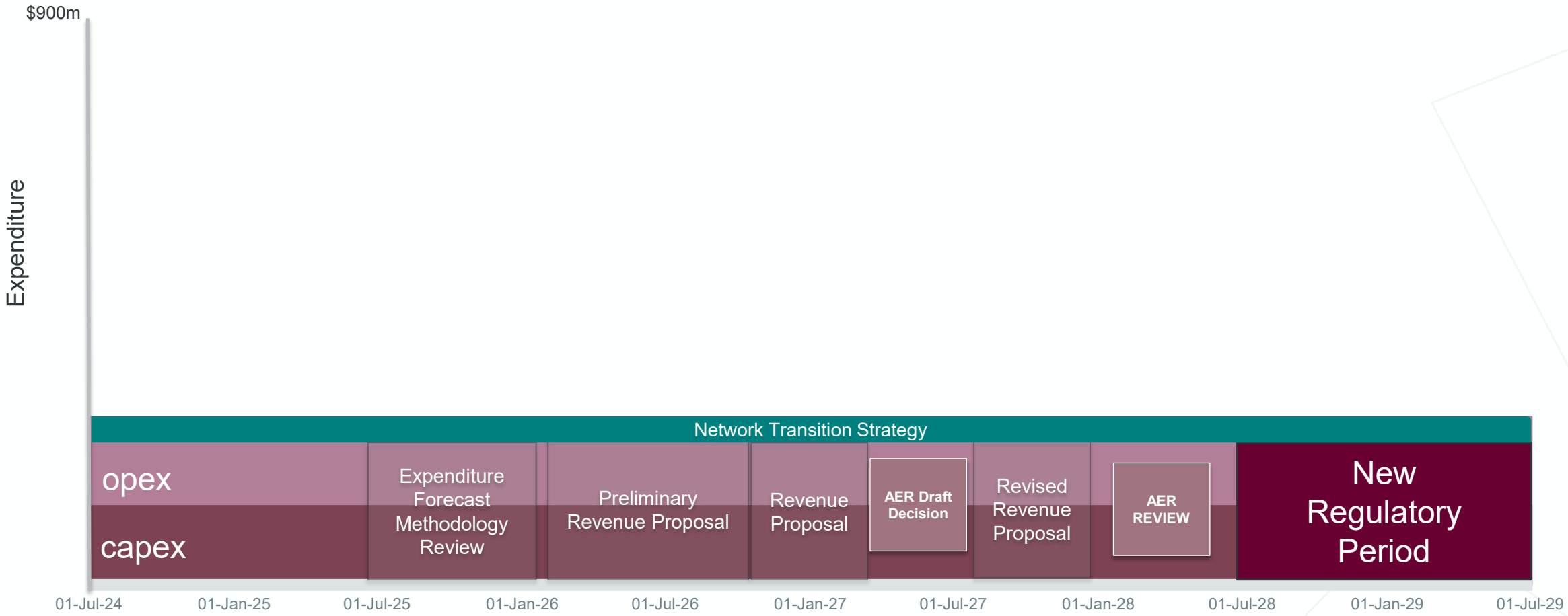
- **Return on capital** (forecast capital base × rate of return)
- **Regulatory depreciation** (depreciation net of indexation applied to capital base)

- **Operating Expenditure** (OPEX)
- **Incentive Mechanisms** (increment or decrement)
- **Corporate Income Tax** (net of value of imputation credits)

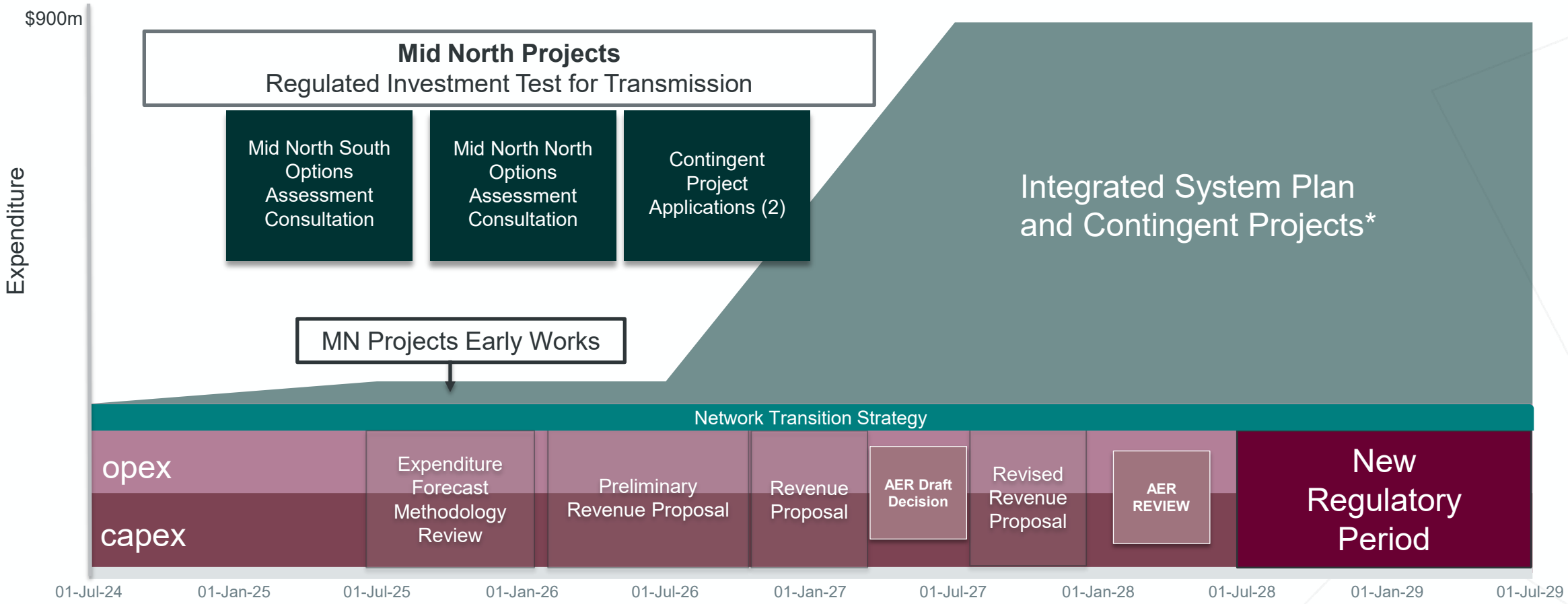
Maximum Allowed Revenue



CAP Engagement Windows

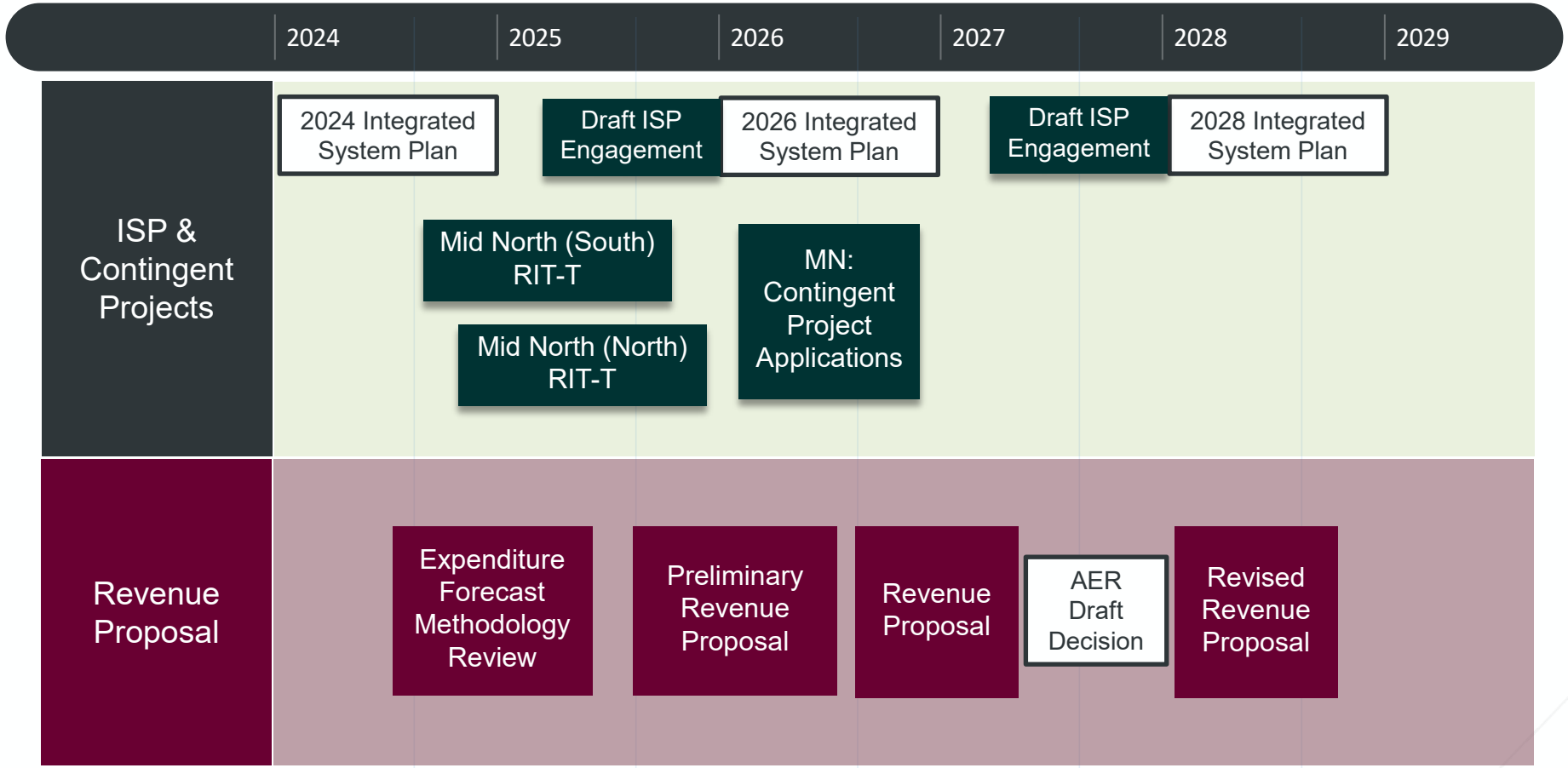


CAP Engagement Windows



*MN Projects being made actionable in 2024 ISP

Major Engagement Milestones



Other Engagement Considerations

- Transmission Annual Planning Report – Release Every October
  - Engage with the CAP every August/September for October Release
  - Provides current capacity and limitations of transmission network over a 10-year period
  - Full list of project updates/status

- Other Potential Major Projects/RIT-Ts
  - Network Voltage Control RIT-T
  - South-East Expansion
  - EP Upgrade
  - IMB300s

ElectraNet's Engagement Objectives

We are here

How do we get here?

Special Purpose Engagement?

- Workshop(s)
- Working Group(s)
- Committee(s)

Mid North ISP Projects

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6. South Australia Energy Transformation (based on ENA Conference)

James Brown +
Head of Network Strategy, SAPN

Hugo Klingenberg
Manager, Network Transformation

ElectraNet

SA Showcase:
Leading Australia's Energy Transition

SA Power Networks | ElectraNet

Objective:
Demonstrate how we collaborate in addressing challenges & opportunities of the energy transition in SA

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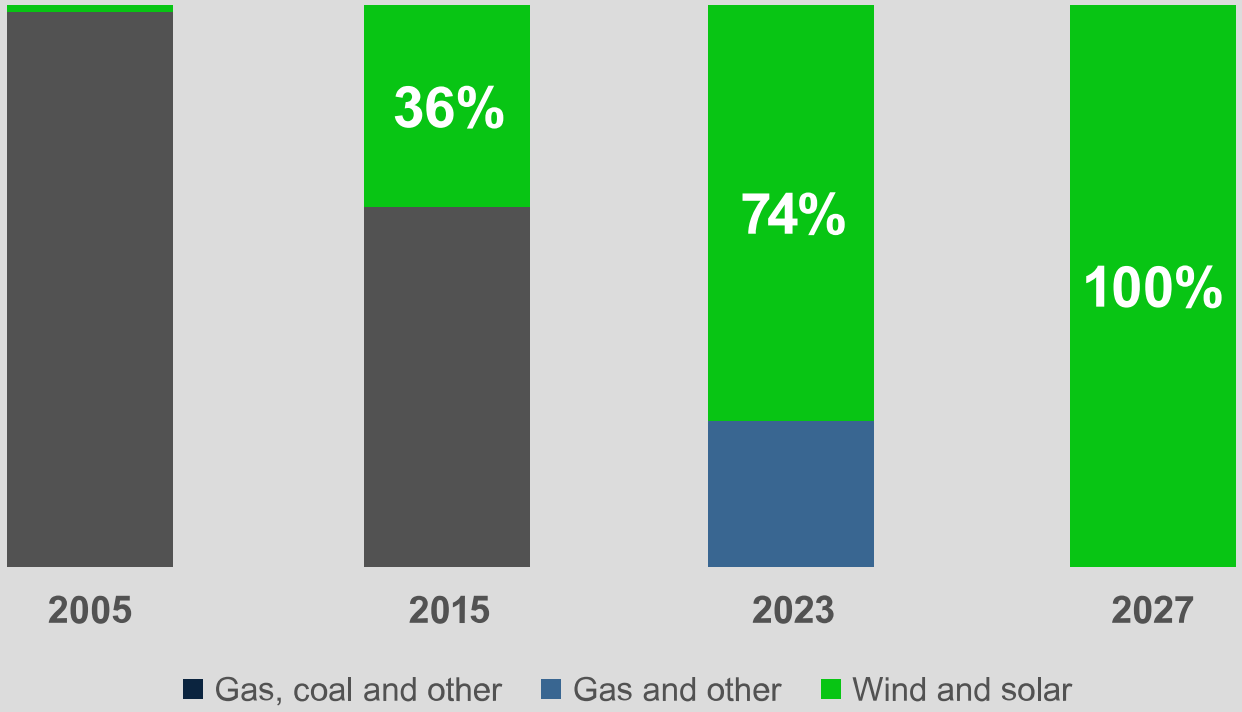
South Australia's profound transition to renewable electricity

Demand met by renewables



Highest penetration of **variable renewable energy** globally

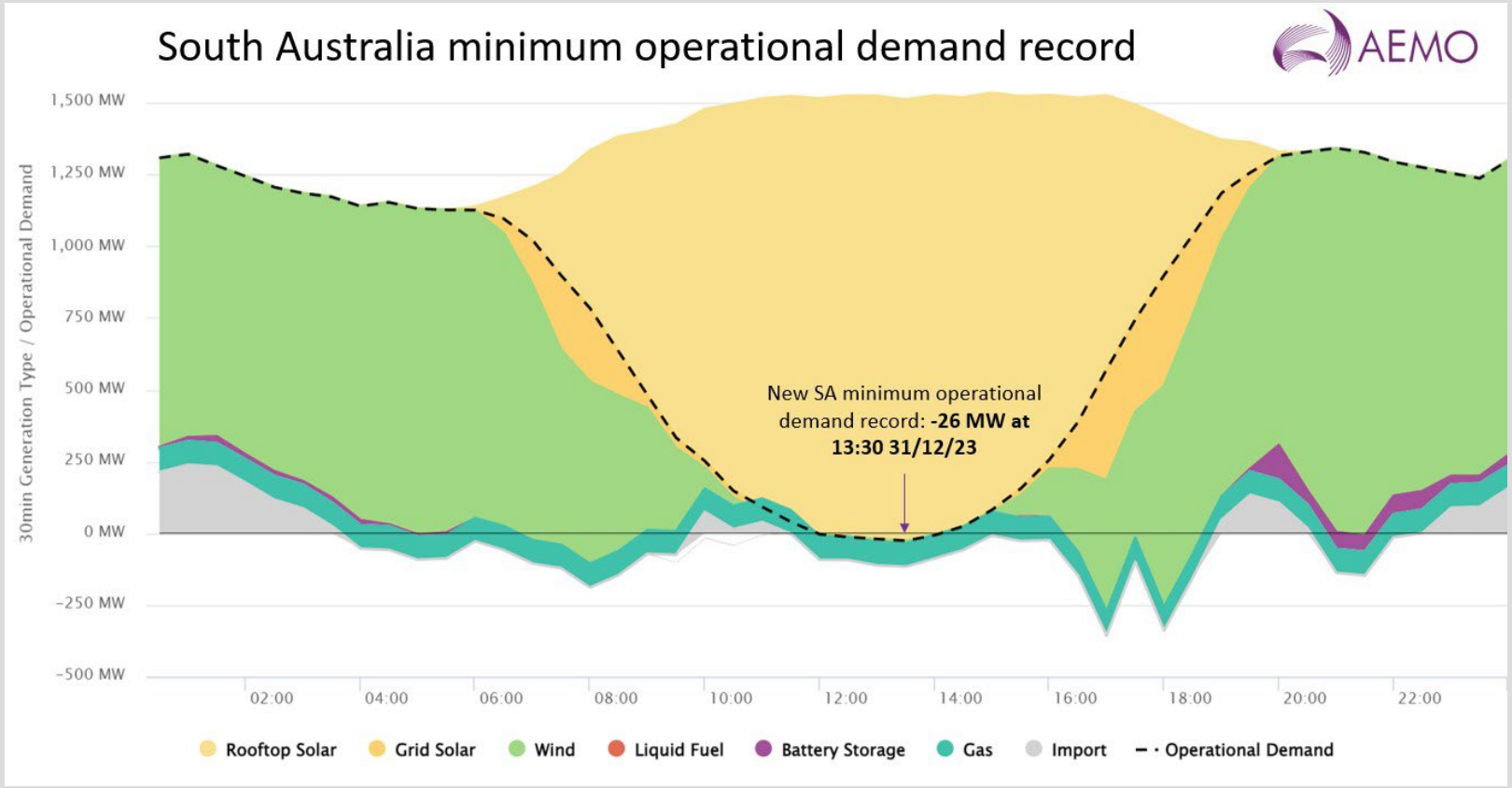
SA exceeded **net 100% renewables for 31 days** in the last 12 months.

82% renewables in December quarter.

Reached **100% renewables** on **289 days** over 2023

SA Power Networks | ElectraNet

South Australia minimum operation demand (AEMO)



Rooftop solar can now supply over **100%** of state demand in the middle of the day

No other gigawatt scale power system in the world has operated at this level

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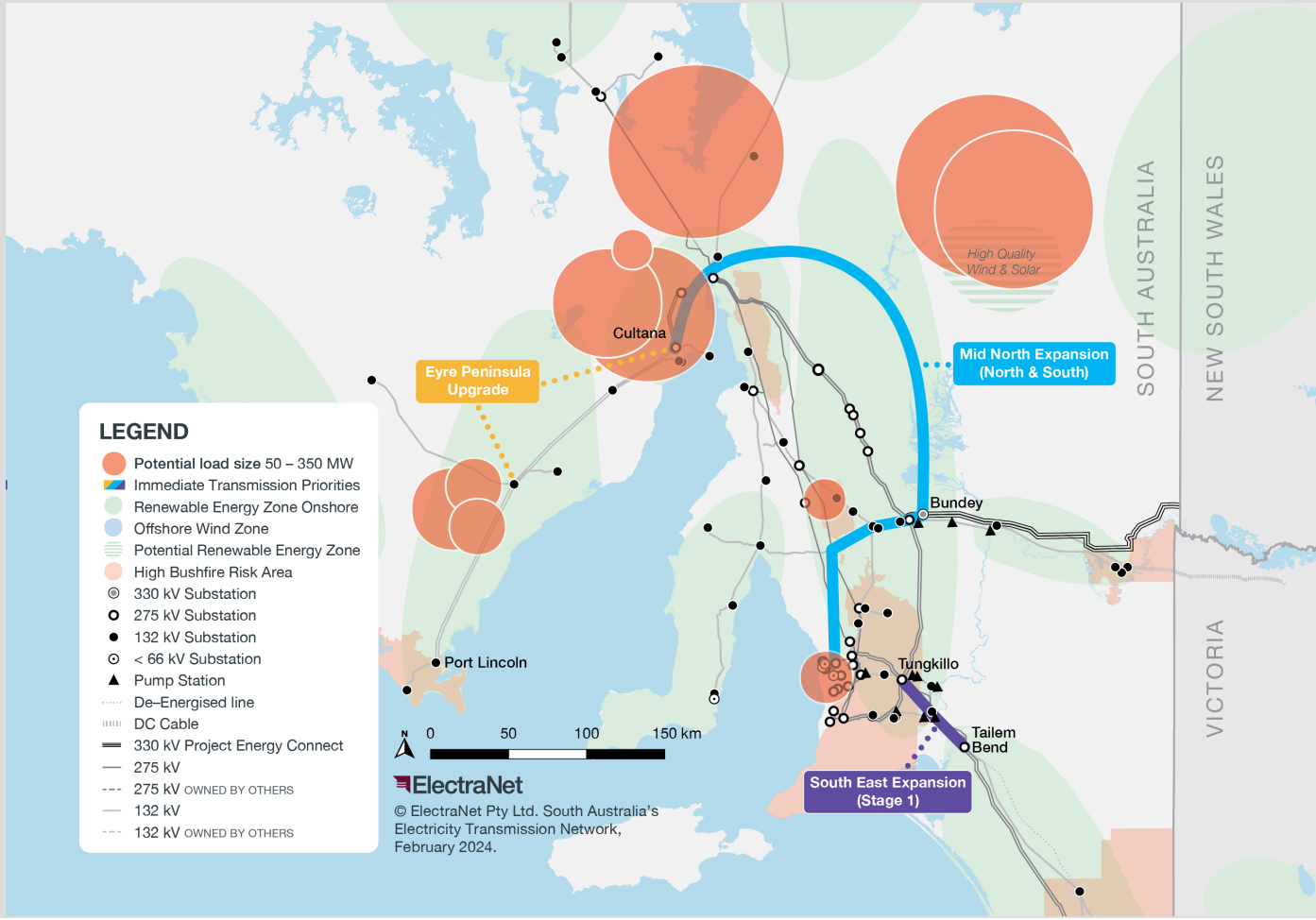
South Australia's green reindustrialisation opportunity

Electrified energy consumption in South Australia is rapidly approaching a 100% net renewable energy future.

14 Active projects seeking transmission connection. Additional projects seeking distribution connection

A **diverse range of industries** under consideration including green steel, minerals extraction and hydrogen exports

Over **2,000 MW potential demand**, would more than double existing energy consumption



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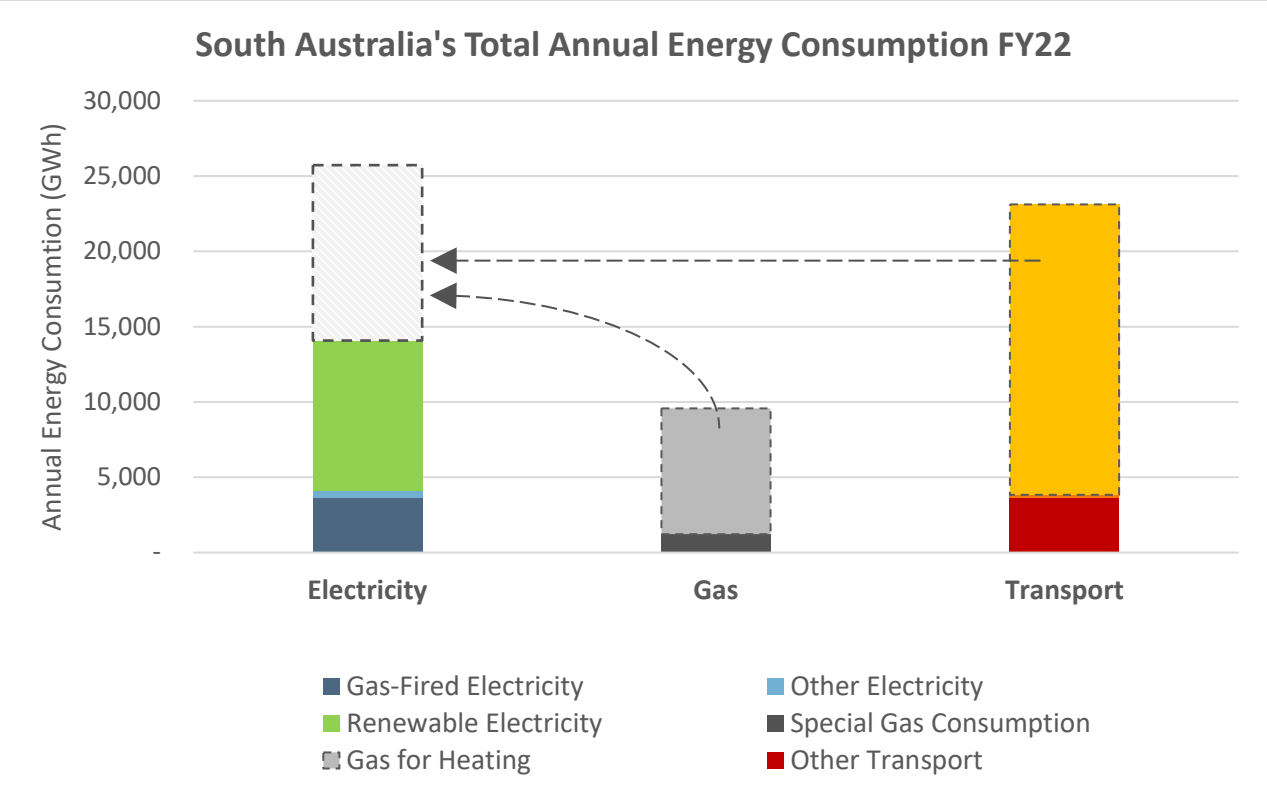
Electrification will require the distribution network to carry vastly more energy



SA's electricity network currently delivers ~22% of its end-use energy

As we decarbonise, the distribution network could ultimately supply up to 60% of the state's energy needs

Without intervention, this could ~double the peak load on the electricity network and drive $billions of unnecessary investment

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Network transition and operating a 100% renewable grid

South Australia Showcase

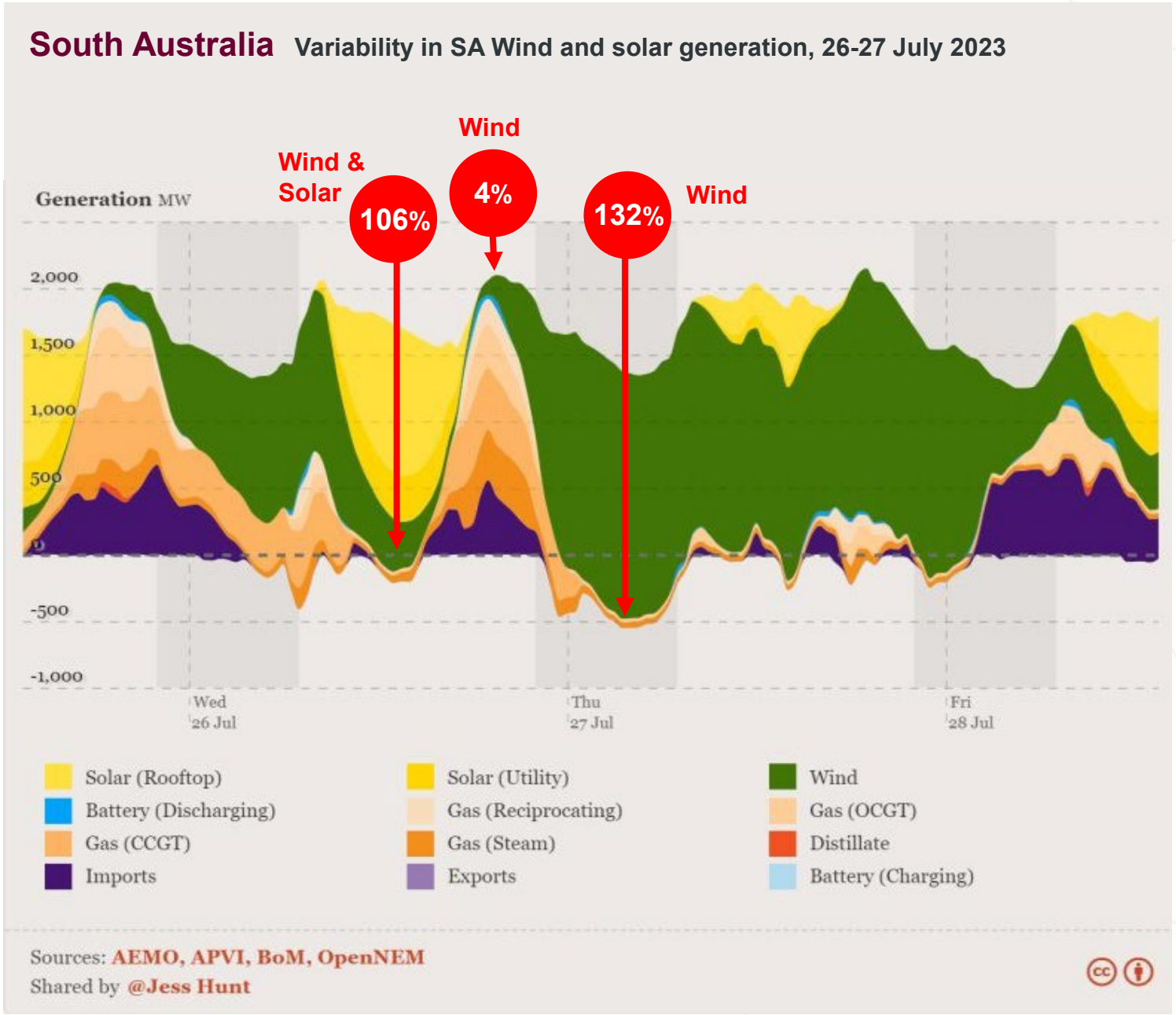
May 2024

ElectraNet

South Australian Context

Dealing with variability

- Regular wide range of demand at transmission & distribution interface points
- Distributed weather dependent generation
- Grid has to cater for a variety of generation technologies
- Dispatchable generation has to be able to service an increasing ramp rate



Challenges of the transition

200% increase in rooftop PV capacity over the past 6 years

Source: AEMO

764MW (2017) → 2,200+MW (2023)

SA has solar panels on about 40% of residential customers rooftops

106% decrease in minimum grid demand over the past 6 years

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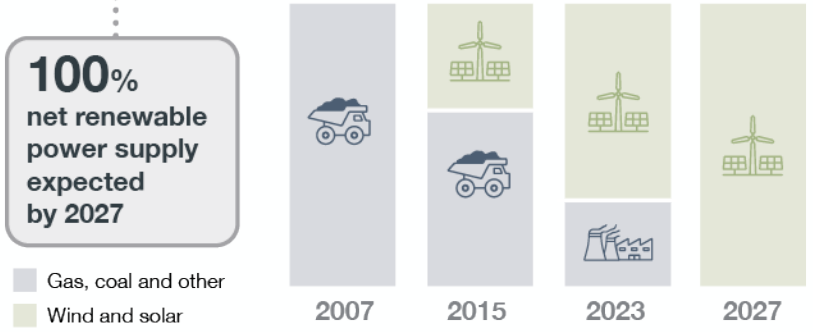
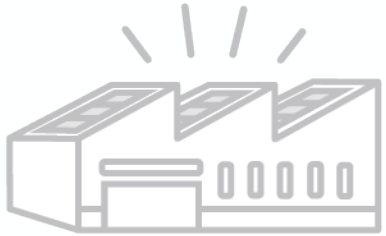
100% net renewable power supply expected by 2027





3,154MW (2024) → 4,188MW (2035)

32% increase in maximum grid demand expected by 2030

Challenges

- Supply variability
- Demand volatility
- System security
- Voltage control
- Frequency management
- Protection adequacy
- Increasing system complexity and risk
- Outage Management
- Harnessing customer energy resources
- Extreme events

What we are doing

Current focus

Energy reliability

- PEC system integration
- Priority network developments

Operability

- Implementing a Wide Area Monitoring System (WAMS)
- Operational systems enhancements

Power system security and resilience

- Developing the SA Interconnector Trip Remedial Action Scheme (SAIT RAS)
- Developing solutions to meet forward-looking system strength requirements
- Developing and delivering solutions for voltage control across the changing network
- Grid batteries assisting with frequency response in SA - becoming too fast for interstate contingencies
- UFLS dynamic arming
- Expanding OFGS

What is coming

Next steps / Future

Energy reliability

- Sufficient infrastructure to maintain system reliability and security

Operability

- Improve network planning and operations capabilities to manage power system changes
- Integrate WAMS learnings
- Dispatchable demand

Power system security and resilience

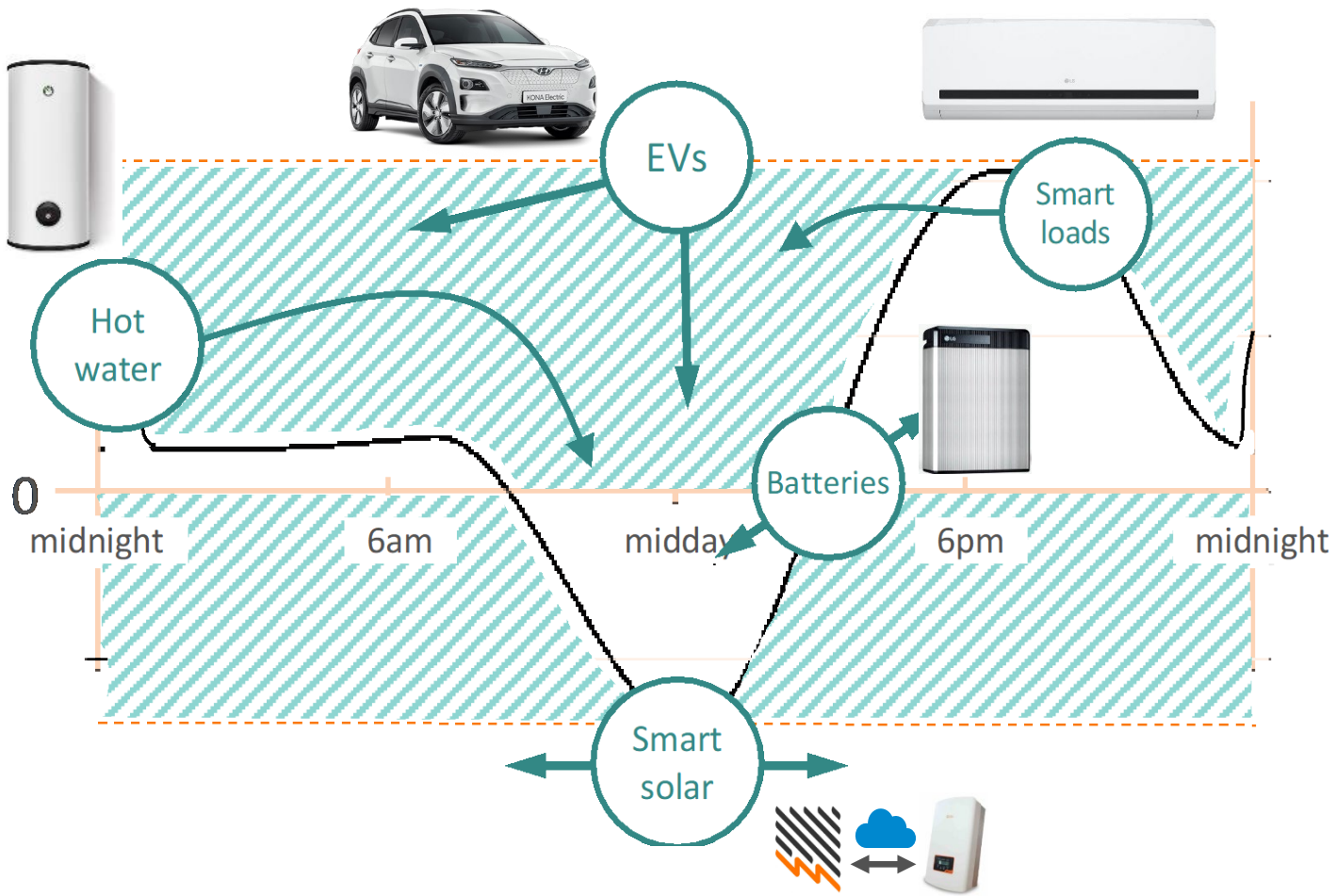
- Deliver solutions to meet forward-looking system strength requirements
- Ensure system protection and emergency control systems are effective for changing system conditions
- Connection arrangements - coordinate distribution and customer contributions to system security
- Innovation and new technologies
- Anticipate and prepare for high impact low probability events
- Manage collective response from IBR embedded functionality

Activating demand side flexibility

James Brown

SA Power Networks

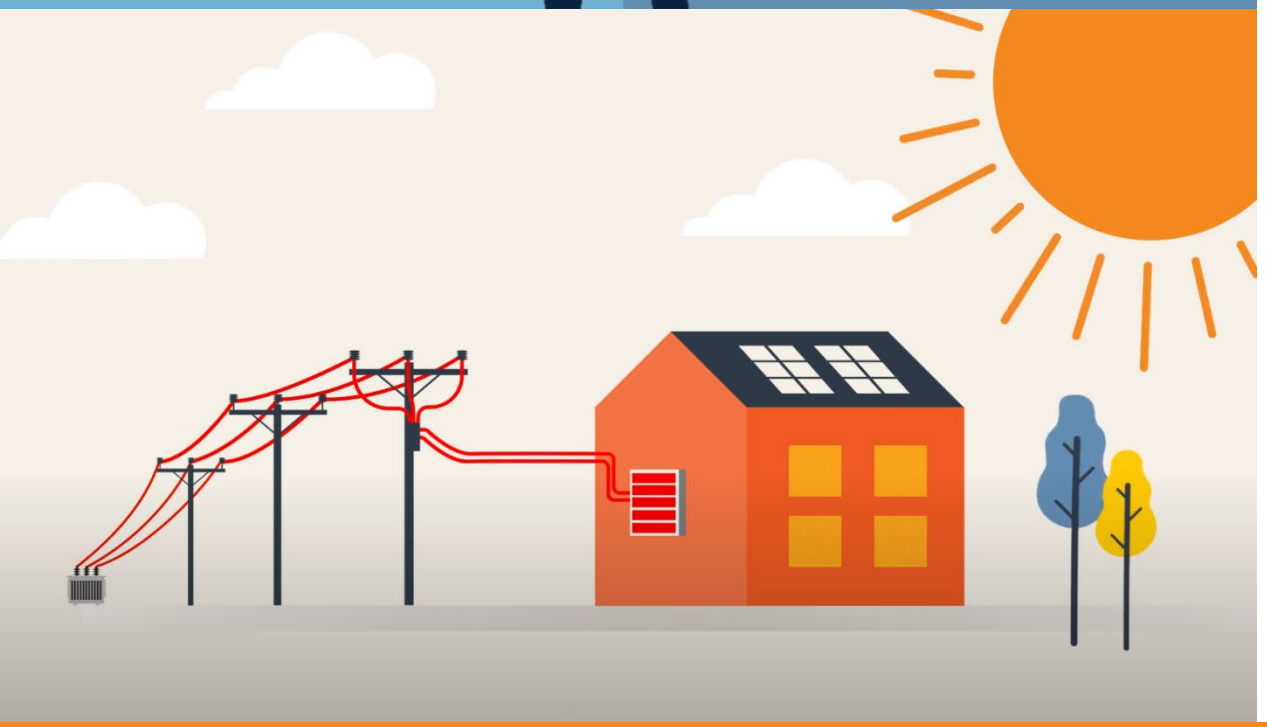
Demand-side flexibility is key



- The network has **tremendous spare capacity** outside peak times for new applications
- We can unlock this capacity, and significant customer value, through **'flexibility'**
- If we get it right we can significantly **increase asset utilisation** and **lower costs for all**
- **'Flexible'** connections will enable customers to **save money,** both **upfront and** in **ongoing energy costs**

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

Flexible exports



86%
Opt-in rate

Max export
95%
Of the time for 90% of customers

87%
Response rate during system emergencies

Key insight

CER integration offers must be win-win for all parties

- *Customers = More return from solar*
- *Installers = Sell bigger systems*
- *Network = Avoid network investment*
- *All = greater energy reliability and security*

CER compliance improvement

Transformed our process

Apply

Install

Commission

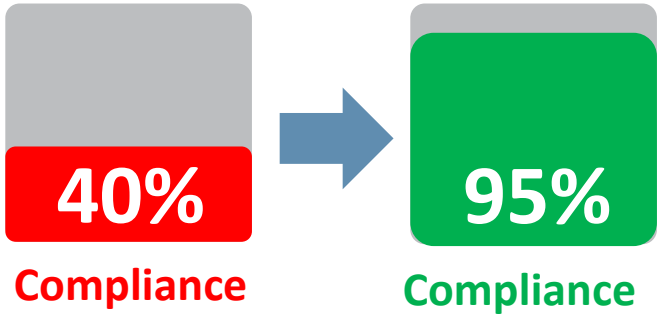
Closeout

Introduced automated compliance program

>90%

Of a solar retailers sites must be compliant

Has led to…



- *Once installers are engaged, they generally want to do the right thing*
- *Compliance incentives and penalties must be aligned to the right parties*

Unlocking value through whole-of-home flexibility

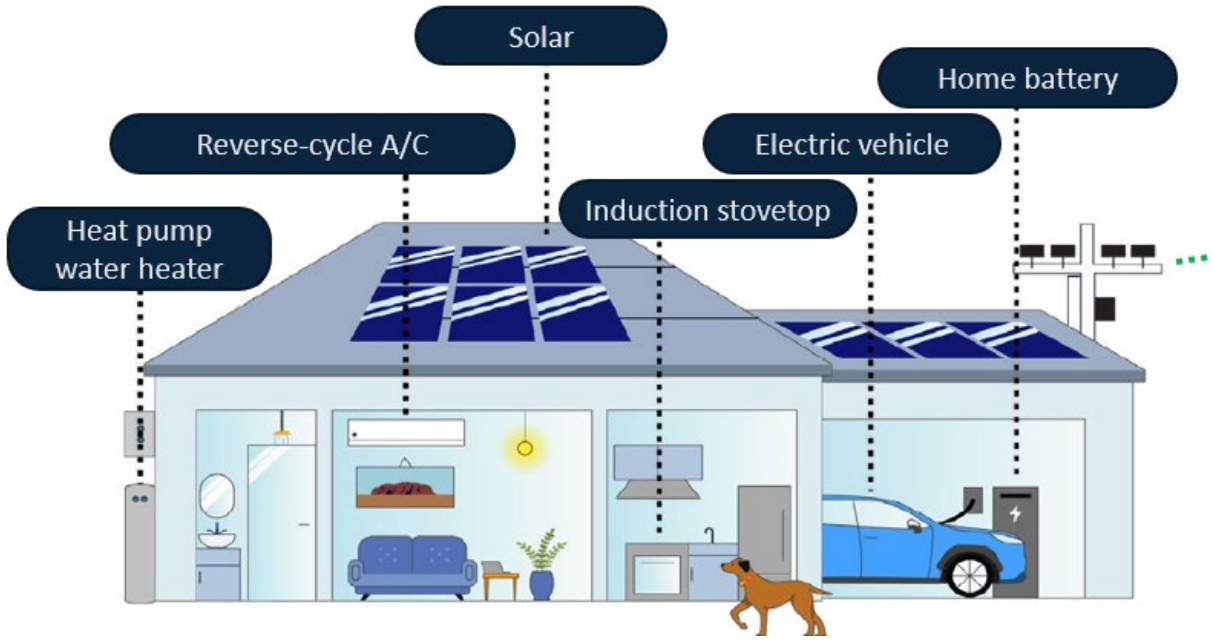
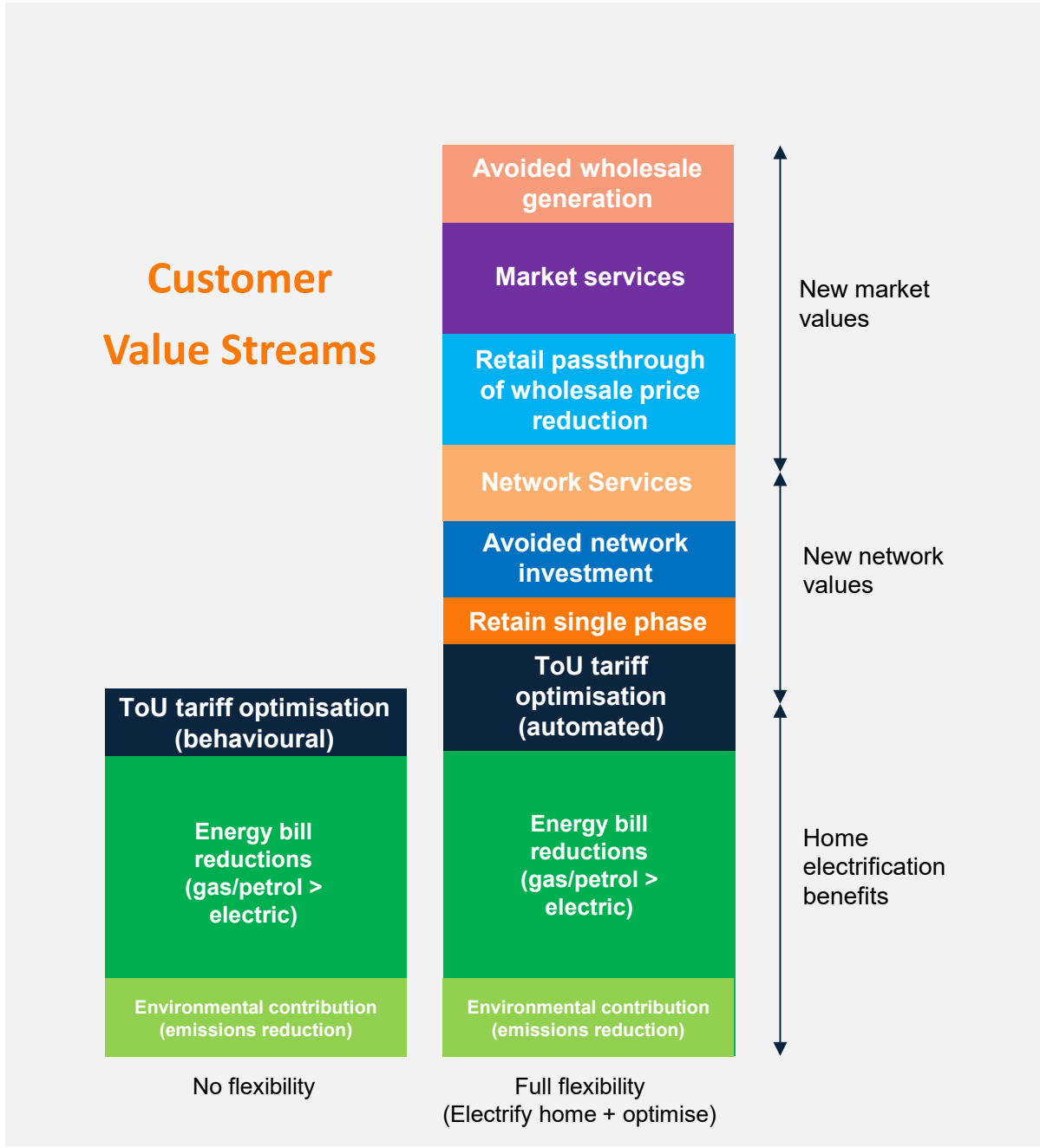
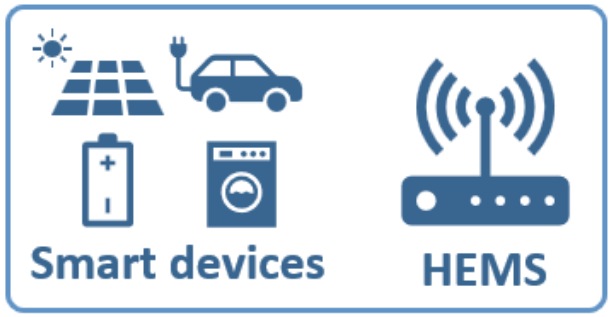


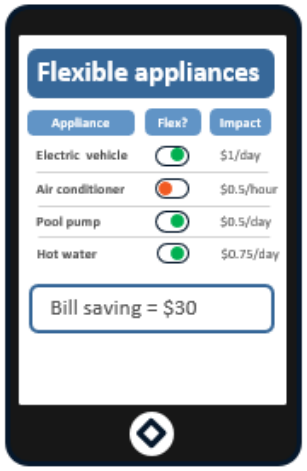
Image source: *Rewiring Australia*



*value scale indicative only

Our Smart Home Vision





Single app view

Single, unified bill

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

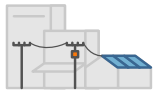
Customers can choose their level of sophistication and engagement, are rewarded for increased flexibility, and have the freedom to switch between different retailers and product lines.

Benefits from flexibility are maximised without impact to customer amenity.

A unique opportunity: clean, reliable, affordable energy

SA is uniquely positioned to realise the full benefits of the energy transition, thanks to:

Vast **renewable** resources and world-leading **rooftop solar take-up**



Leveraging the network to support new applications, increase utilisation and drive down cost

Community and stakeholders aligned on long-term vision

Vast mineral resources, low-cost **clean energy processing**

Clean energy exports

Benefits

- Lower household energy bills
- Access to abundant clean energy
- Foundation for decarbonisation
- Growth of new industries
- A prosperous economy

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SA
Power
Networks


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7. CAP only session:

Leanne Muffet
Independent Facilitator

ElectraNet

CAP Meeting Schedule 2024

#	Date	Time
1	Thursday, 22 February 2024	10:00am – 12:30pm
2	Thursday, 16 May 2024	9:30am – 12:30pm
3	Thursday, 15 August 2024	9:30am – 12:30pm
4	Wednesday, 27 November 2024	9:30pm – 1.30pm *Includes lunch with ElectraNet Board*

Thank You

Next meeting: Thursday, **15 August 2024**, ElectraNet HQ