6 October 2015

How does ElectraNet propose to engage with Consumers?

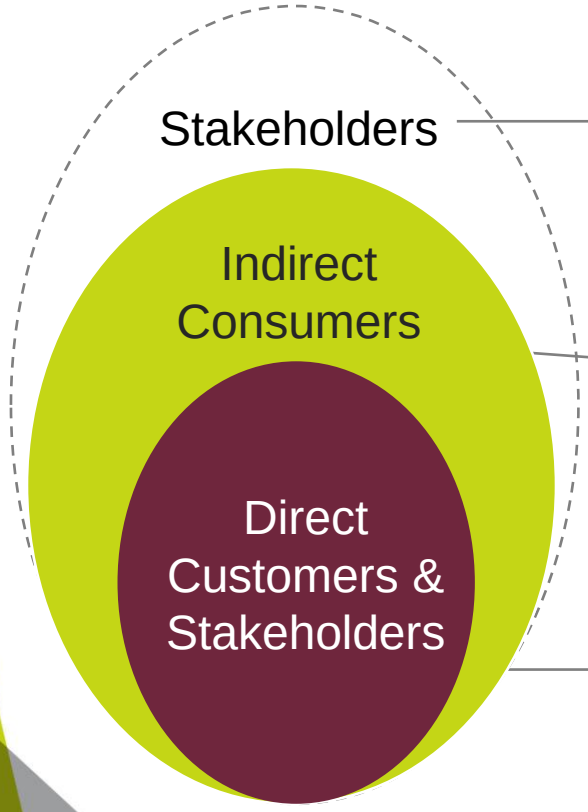
Consumer Advisory Panel Meeting #2

Simon Appleby
Senior Manager Regulation and Land Management

Purpose

- Discuss proposed consumer engagement approach
  - Stakeholder and consumer groups identified
  - Proposed engagement methods for the groups
  - Overall engagement timetable
  - Issues most important to consumers
- Discuss next steps

Who will we be talking to?



Stakeholder Ecosystem	Group	Examples of Consumers

Stakeholders	Stakeholders representing the interests of consumers	• Business Advisory (examples)
		  • Business SA
		  • Primary Producers SA
		• Consumer Advisory (examples)
		  • Uniting Care Australia
		  • SACOSS
		  • COTA
		  • St Vincent de Paul
		• Local and State Government
		• Regulators and AEMO

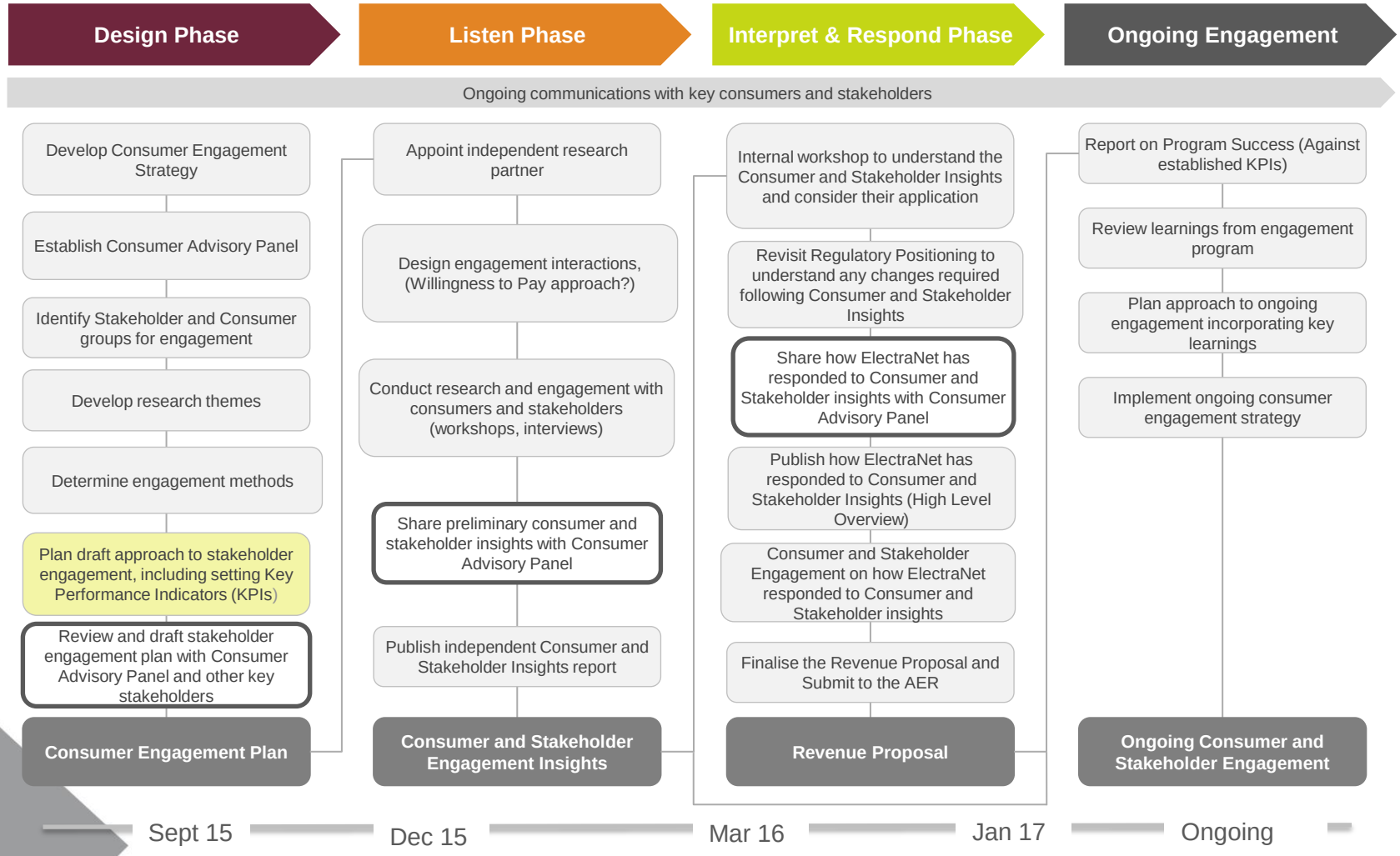
Indirect Consumers	Consumers who are not physically connected to the ElectraNet network	• 745,000 residential consumers • 99,000 business consumers • 8,500 stakeholders with transmission towers on their properties
Direct Customers & Stakeholders	Directly connected customers to the ElectraNet network or key stakeholders directly affected by ElectraNet	• 15 regulated directly connected customers • 20 sub-transmission customers • 14 retailers in SA • 20 businesses that made submissions on the SA Power Networks revenue and revised revenue proposal

How should we engage?

	Research method				
Stakeholder group	Leverage SAPN & other TNSPs Research	Initial consultation	Ongoing communication (eg website)	One on One interviews	Consultation workshops
Stakeholders					
Advisory Groups	X	X	X	X	X
Government			X	X	X
Regulators		X	X		Observers
AEMO			X		
Indirect Consumers	X		X		
Direct Customers		X	X	X	
Direct Stakeholders	X	X	X	X	X

Groupings and proposed approaches are indicative only

Draft ElectraNet Consumer Engagement Plan



Timetable

- Revenue determination process:
  - AER Framework & Approach paper – Jul 2016
  - ElectraNet Revenue Proposal – Jan 2017
  - AER Draft Decision – Sep 2017
  - ElectraNet Revised Revenue Proposal – Dec 2017
  - AER Final Decision – Apr 2018
- Panel to meet quarterly throughout (and otherwise as required)

Next Steps

- Produce Draft Consumer Engagement Plan
- Appoint independent research partner
- Transmission network stakeholder forum late November 2015 (TBC)

Questions?

Thank you

Simon Appleby

Senior Manager Regulation and Land Management

6 October 2015

How Does the Regulatory Framework Operate?

Consumer Advisory Panel Briefing

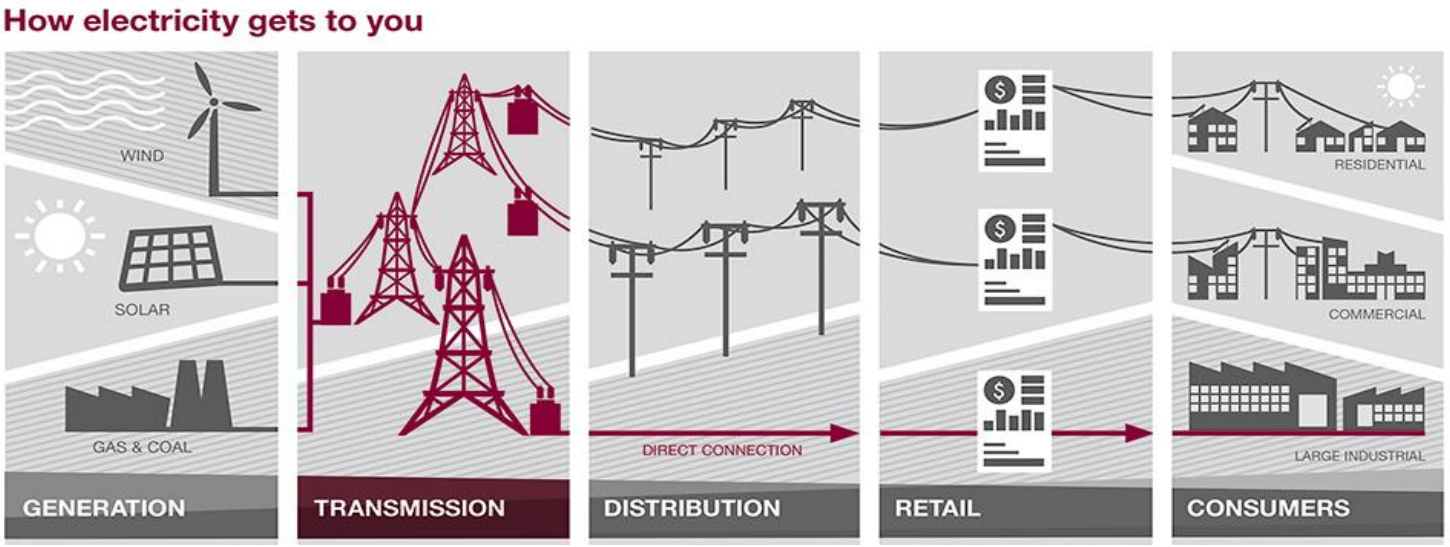
Simon Appleby
Senior Manager, Regulation & Land Management

Presentation Outline

- Provide an overview of the regulatory framework applicable to ElectraNet
  - Revenue determination process
  - Regulatory incentive schemes
  - Framework and Approach process
  - Transmission Reliability Standards

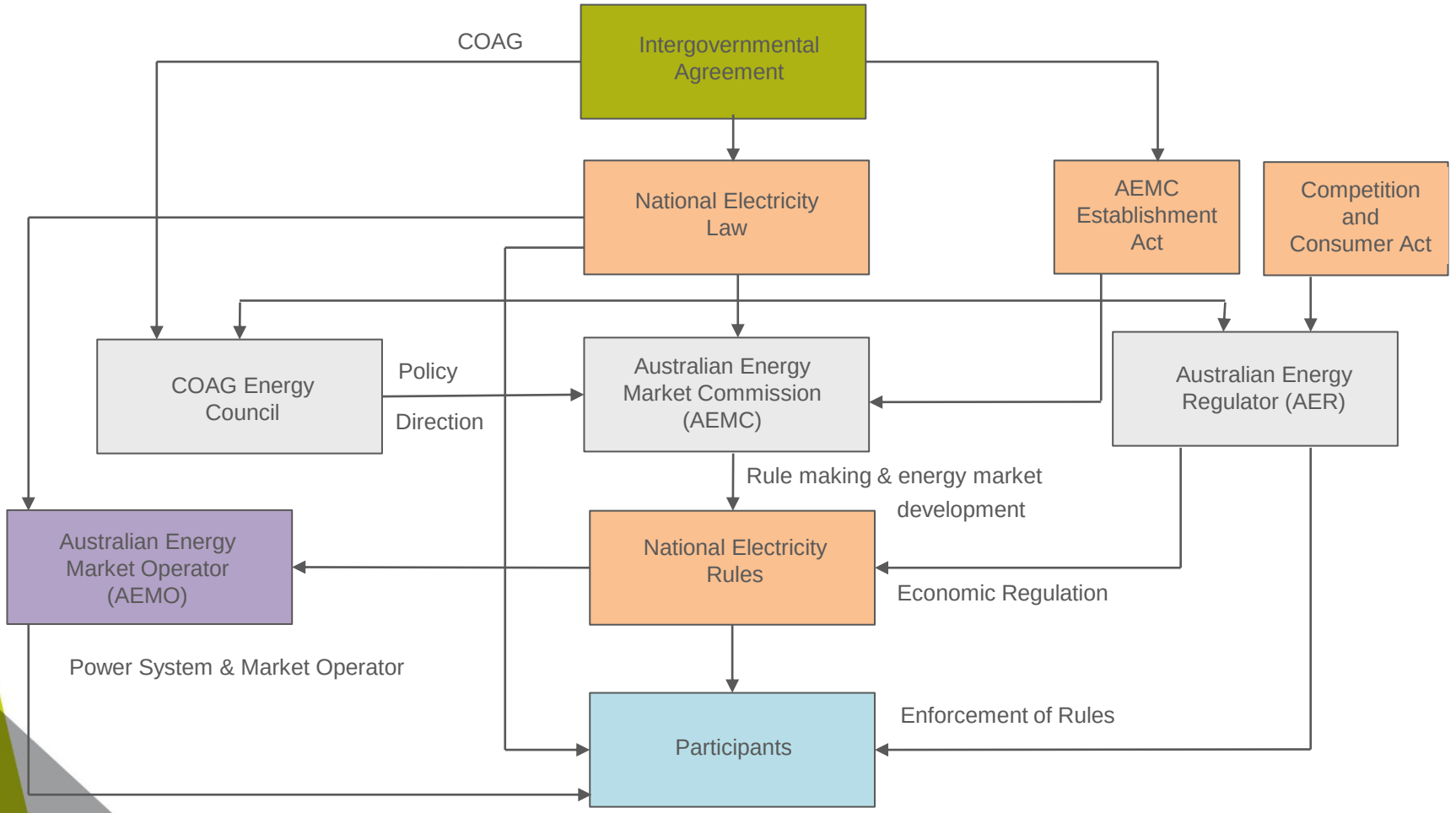
Market overview

Market driven **Regulated** **Regulated** **Market driven**



- National Electricity Market provides competitive generation and retail sectors
- Natural monopoly network sectors (transmission and distribution) are subject to independent regulation and financial incentives to drive efficient behaviours

National Electricity Market governance



A key feature of the market governance arrangements is the clear separation of policy making, Rule making and Rule enforcement roles

Categories of Transmission Services

Prescribed Transmission Services	Negotiated Transmission Services*	Non-Regulated Transmission Services
Shared network services that ElectraNet provides and cannot be provided by others	Services ElectraNet must provide, but are negotiated commercially with the customer	Contestable services that ElectraNet is not obliged to provide
The Australian Energy Regulator (AER) sets a revenue cap for these services	Commercial negotiation sets terms and conditions including price (customer can access commercial arbitration if not satisfied)	Commercial negotiation sets terms and conditions including price

* The definition of transmission services and how they are provided is currently under review by the Australian Energy Market Commission

Revenue Determination Process

- The Australian Energy Regulator (AER) sets a revenue cap for the business using the revenue building block approach
  - This is normally for a 5-year regulatory period
  - The business makes a Revenue Proposal setting out its capital and operating expenditure and revenue forecasts, which is published
  - The AER assesses the proposal and undertakes a public consultation process before making a Draft Determination
  - The business responds to the Draft Determination and public submissions with a revised Revenue Proposal
  - The regulator reviews the revised Revenue Proposal and public submissions and makes a Final Determination
- ElectraNet's current revenue cap was set for the 2013-14 to 2017-18 regulatory period in 2013

National Electricity Objective

- To promote efficient investment in, and efficient operation and use of, electricity services for the long term interests of consumers of electricity with respect to
  - price, quality, safety, reliability and security of supply of electricity, and
  - the reliability, safety and security of the national electricity system
- This overarching objective in the law provides a clear framework of guidance to processes for Rule making and transmission revenue determinations

AER Assessment Techniques

Revenue building block approach

Maximum Allowed Revenue (MAR)

(revenue cap)

=

Return on capital
=
weighted average cost of capital (WACC)
x
written down (depreciated) value of asset base (RAB)

+

Return of Capital

=

Depreciation Allowance

+

Opex

=

Operating expenditure

+

Tax

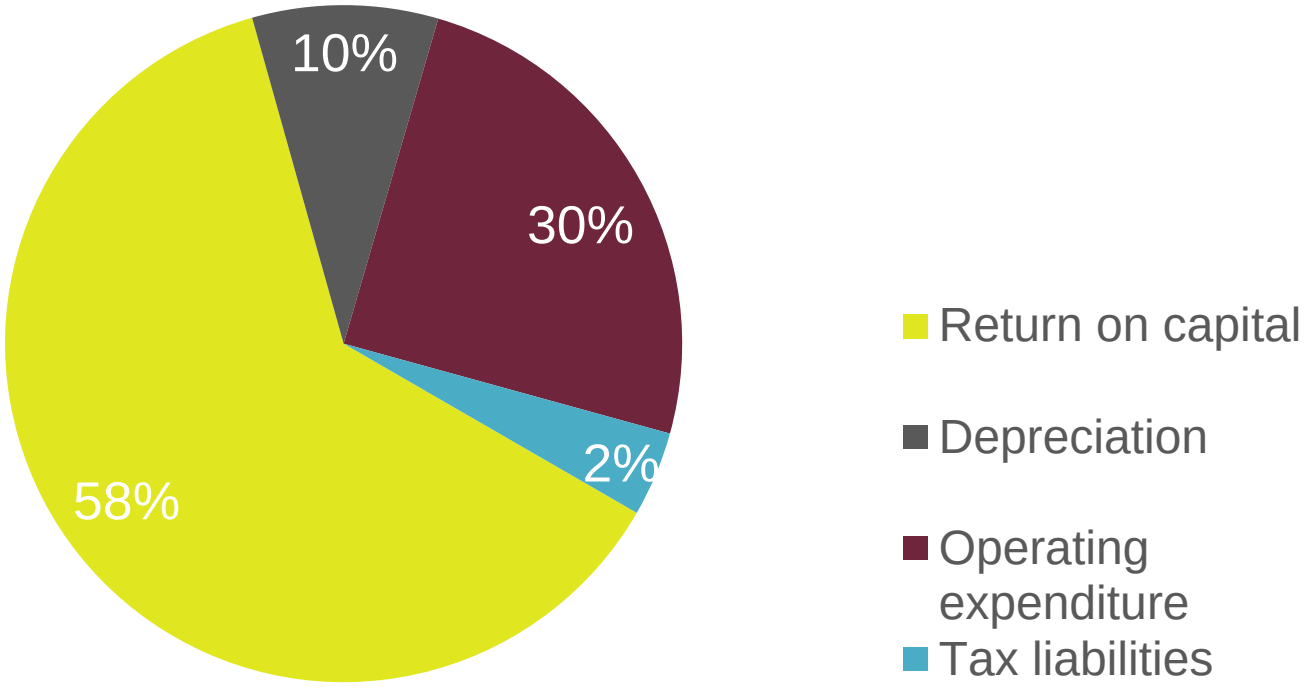
=

Tax Liability allowance

± **CESS and EBSS payments or penalties**

± **Performance incentive payment or penalty**

Composition of Revenue Cap



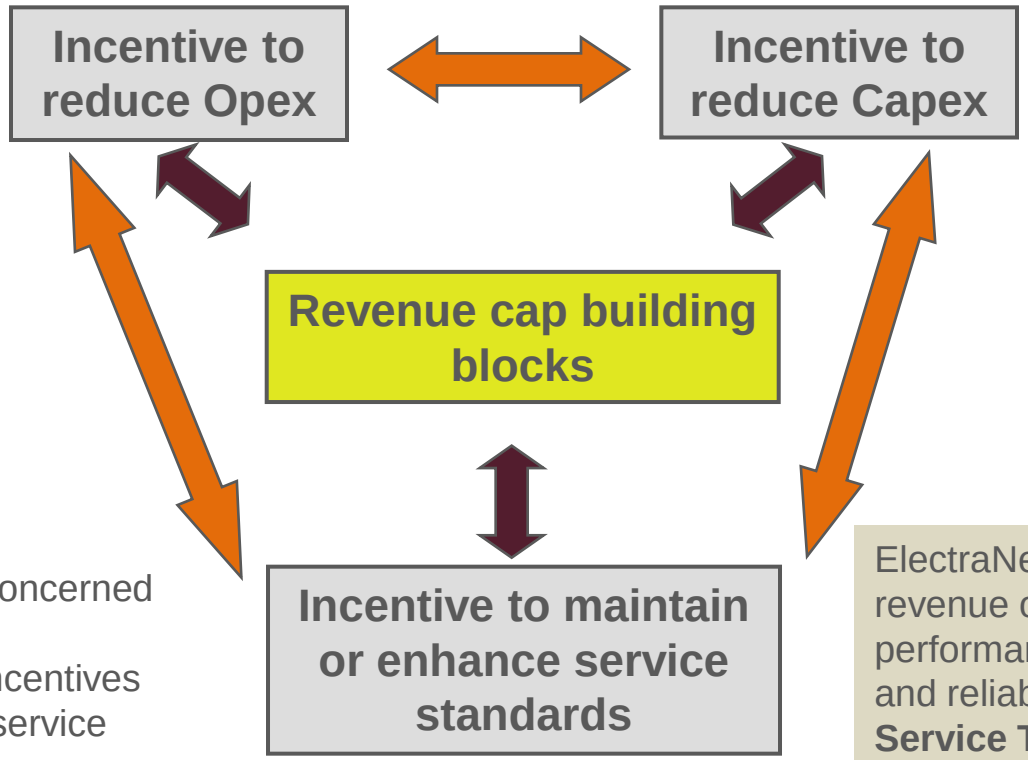
Nearly 70% of the revenue cap relates to capital costs

Source: Final AER revenue determination for 2013-14 (April 2013)

Regulatory incentive framework

ElectraNet keeps savings within regulatory period and earns an efficiency carry forward payment in the next period under **Efficiency Benefit Sharing Scheme (EBSS)**

Regulator monitors substitution between Capex and Opex



ElectraNet keeps savings within regulatory period and earns an efficiency carry forward payment in the next period under **Capital Expenditure Sharing Scheme (CESS)**

Regulator is concerned to ensure that expenditure incentives do not erode service quality

ElectraNet can earn additional revenue of +3%/-1% based on performance against availability and reliability targets under **Service Target Performance Incentive Scheme (STPIS)**

Incentive to reduce financing costs below benchmark costs in allowed cost of capital

Service Target Performance Incentives

The AER Service Target Performance Incentive Scheme (STPIS) provides a financial incentive for ElectraNet to improve network service performance

Component	Purpose	Maximum bonus/penalty	
		% of MAR	$
Service Component	To improve service outcomes	+/- 1%	+/- $3m
Market Impact Component	Minimise market impact of transmission operations	+2% to 0%	+$6m to $0
Network Capability Component	Improve network capability	1.5%	$4.5m

- Performance targets are based on historical performance levels
- The Network Capability Component applied to ElectraNet from 1 July 2015 under which the business undertakes approved initiatives valued at up to 1% of MAR in return for an incentive payment of up to 1.5% of MAR

Framework and Approach Process

The revenue determination process commences with a Framework & Approach stage

Milestone	Timing
ElectraNet notifies AER of the need for a Framework & Approach stage	Oct 2015
AER consults on need for Framework & Approach	Nov / Dec 2015
Notice on need for Framework & Approach	Dec 2015
AER publishes a position paper	Feb 2016
ElectraNet submits expenditure forecasting methodology to the AER	June 2016
AER publishes the Framework and Approach paper	**Jul 2016**

Framework and Approach Process

- The AER is required to publish a (non-binding) Framework and Approach paper which sets out its proposed approach to applying the following elements of the regulatory framework to ElectraNet:
  - the Service Target Performance Incentive Scheme (STPIS)
  - the Efficiency Benefit Sharing Scheme (EBSS)
  - the Capital Expenditure Efficiency Scheme (CESS)
  - any small scale incentive scheme (currently not in operation)
  - the Expenditure Forecast Assessment Guidelines
  - the establishment of the asset base based on forecast or actual depreciation in the following regulatory period
- ElectraNet may also identify any variations it proposes to the application of the above

Framework and Approach Application

Element	TransGrid & TasNetworks (Final Jan 14)	AusNet (Final Apr 15)	Powerlink (Final Jun 15)	ElectraNet Proposed Approach 2018-2023
STPIS	STPIS v4 applied (transition from v2)	New STPIS v5 to apply		New STPIS v5 to apply
EBSS	New EBSS applied (v2)			New EBSS to apply (v2)
CESS	New CESS applied (v1)			New CESS to apply (v1)
Small Scale Incentive Scheme	None developed by AER			N/A
Forecast Expenditure Assessment	Forecast Expenditure Assessment Guidelines applied		Top-down forecasting proposed by Powerlink	Guidelines to apply
Basis of Depreciation	Forecast depreciation applied to establish closing RAB			Forecast depreciation to apply

> No departures from applicable Guidelines being proposed by ElectraNet

Local Regulators

- Essential Services Commission of SA (ESCOSA)
  - administers transmission (and other) licences
  - responsible for Electricity Transmission Code (ETC) which sets out reliability standards for development of the transmission network
- Office of the Technical Regulator (OTR)
  - responsible for safety and technical regulation (e.g. veg clearance)
  - advises ESCOSA on ElectraNet's Safety, Reliability, Maintenance and Technical Management Plan (SRMTMP)
- ElectraNet has quarterly and annual compliance and operational performance reporting obligations to these regulators (in addition to annual reporting to the AER)

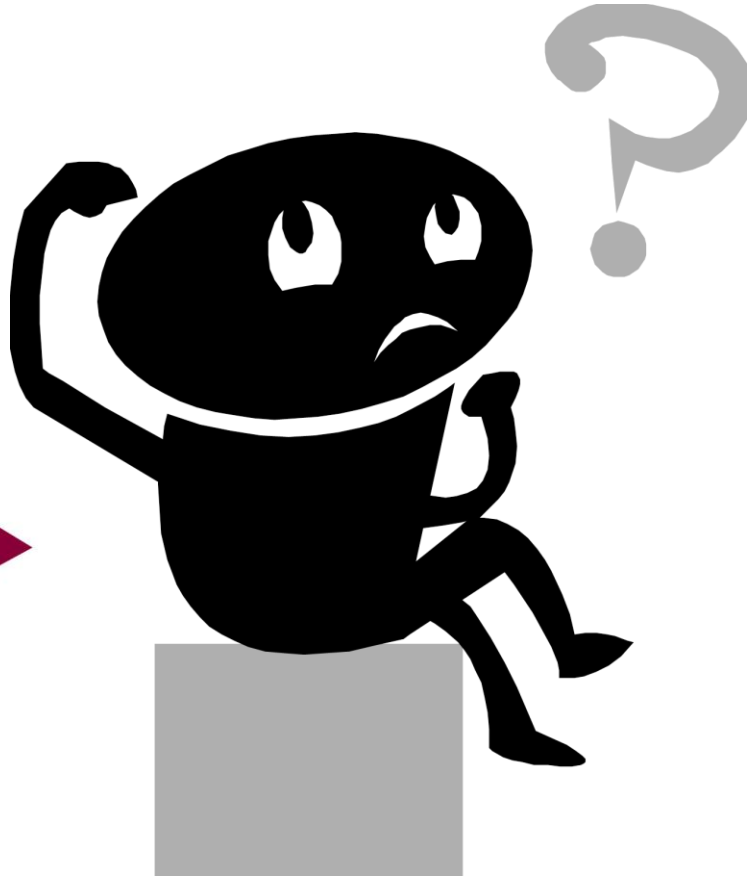
Reliability Standards in South Australia

- Established by ESCOSA under the Electricity Transmission Code
- Specify reliability requirements at exit points (i.e. where transmission network connects to distribution network or major customers)
- Reviewed every five years to align with regulatory cycle
- Determined economically with AEMO through public consultation process based on:
  - Estimates of Value of Customer Reliability
  - Demand forecasts
  - Equipment failure rates
  - Network upgrade costs
- Expressed deterministically (N, N-1, N-2 etc.)
- Currently under review by ESCOSA (no major changes proposed)
- Baroota connection point currently being reclassified to defer uneconomic upgrade

Contingent projects

- The AER's Revenue Determination may include contingent projects that are considered too uncertain to include in setting the revenue cap but may still occur during the forecast period
- The projects must have clearly defined trigger events
- When the trigger events occur during the regulatory period the TNSP must apply to the AER for funding of these projects on a project by project basis
- The AER sets an additional revenue allowance for the contingent project which is added to the 5-year revenue allowance

Questions?



Thank you

Simon Appleby

Senior Manager Regulation and Land Management

6 October 2015

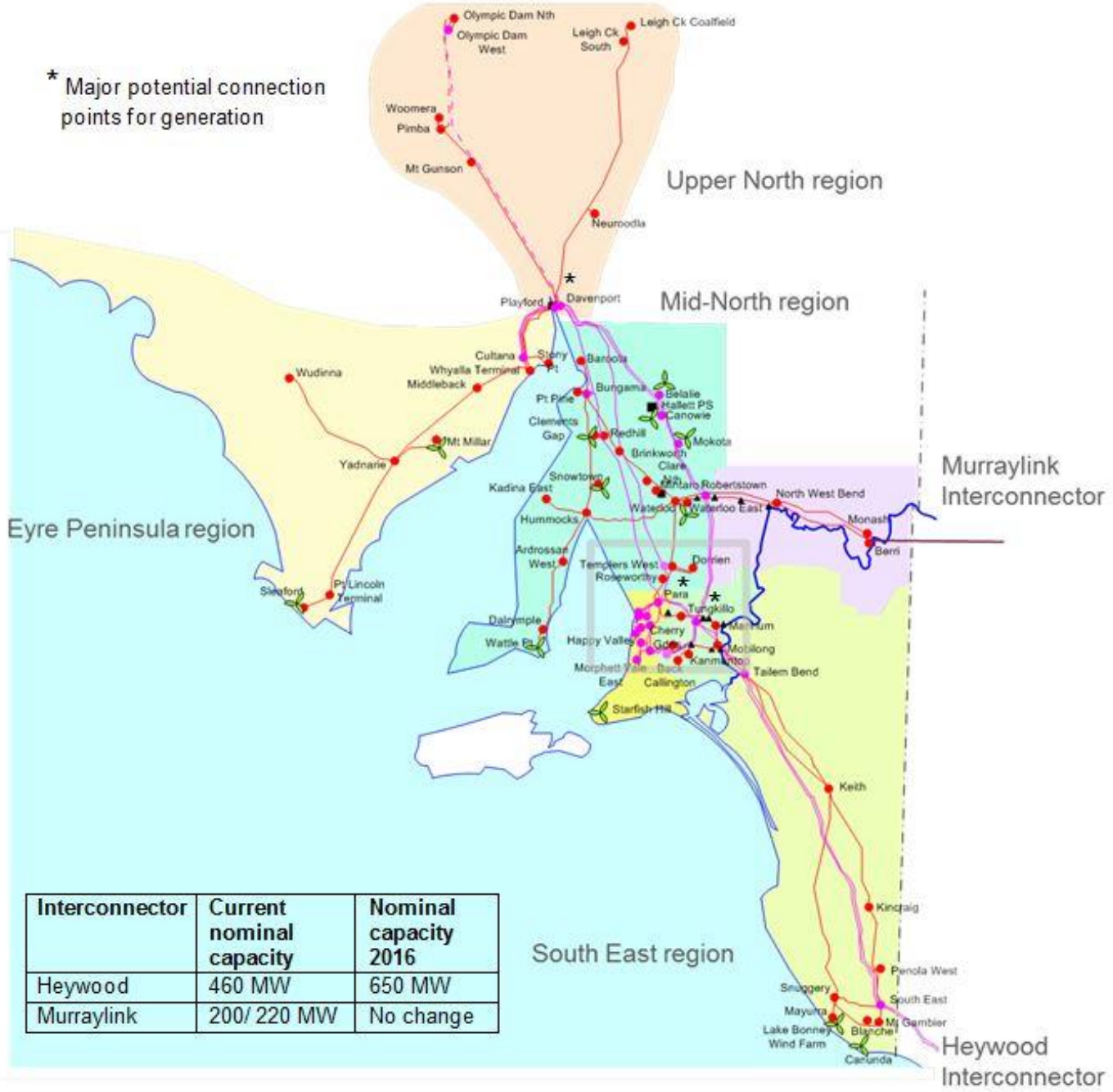
Directions and priorities for transmission services in SA

Consumer Advisory Panel Briefing

Rainer Korte
Executive Manager Asset Management

Presentation Outline

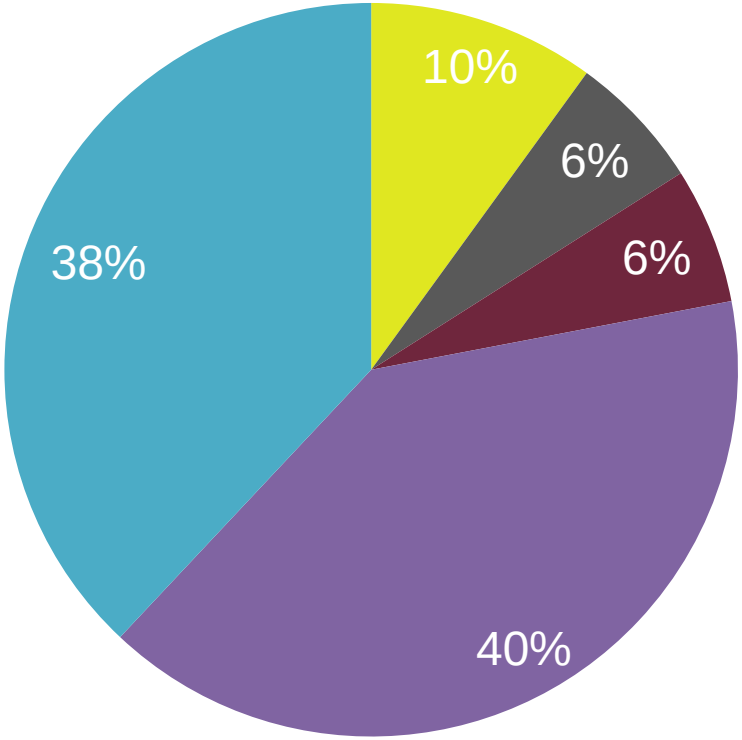
- Provide an overview of the directions and priorities for regulated transmission services provided by ElectraNet:
  - Network overview
  - Customer profile and revenue breakdown
  - Network reliability performance and benchmarking
  - External developments and implications
  - Directions emerging for regulatory proposal for the 1 July 2018 to 30 June 2023 regulatory period



Interconnector	Current nominal capacity	Nominal capacity 2016
Heywood	460 MW	650 MW
Murraylink	200/ 220 MW	No change

Figure 1: The South Australian transmission system

Customer and revenue breakdown



- Directly Connected customers
- SAPN - Sub-transimission
- SAPN - HV Business
- SAPN - LV Business
- SAPN - Residential

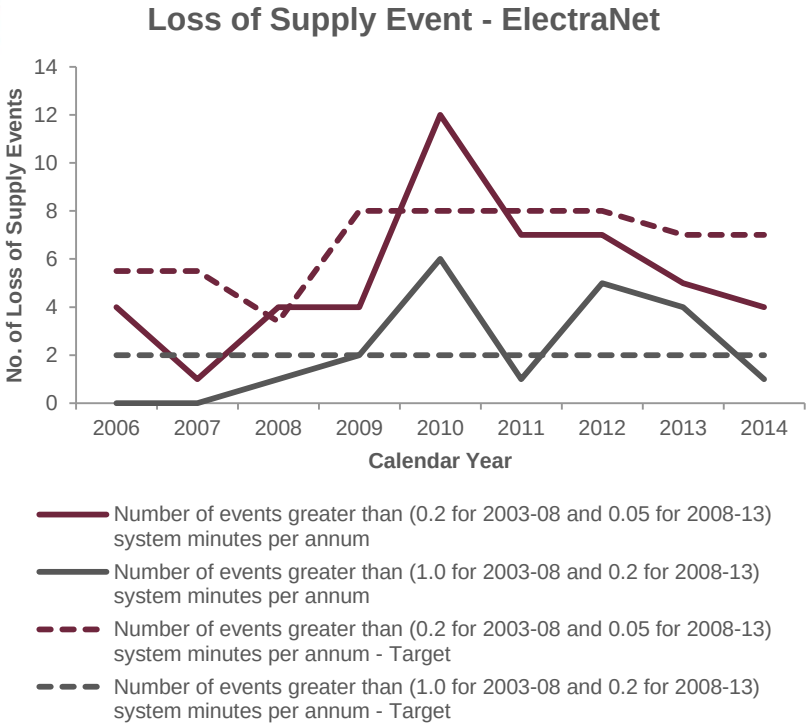
Directly connected customers comprise:

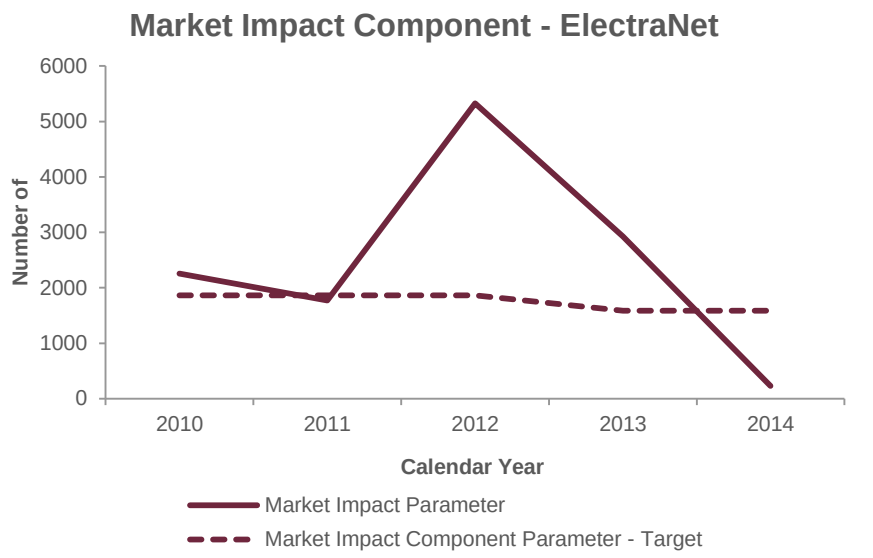
- BHP Billiton
- Defence Centre Woomera
- Alinta Energy
- Arrium
- Orora
- SA Water
- Hillgrove Copper
- Santos
- Grandfathered generator connections (various)

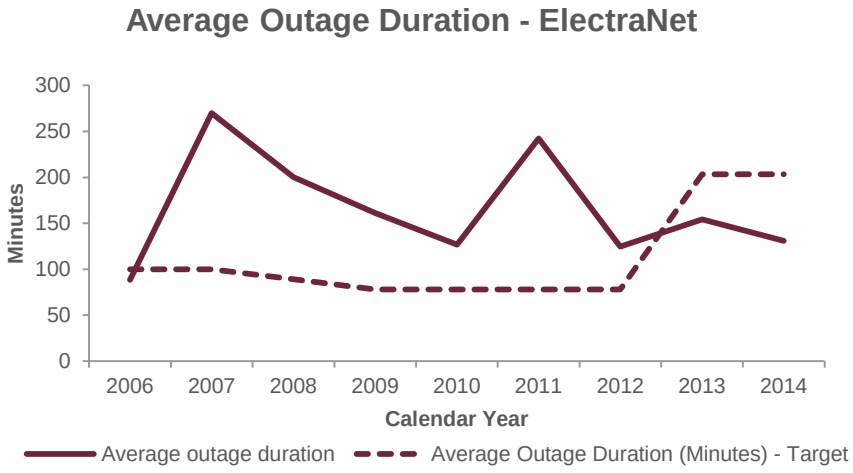
Approximately 10% of ElectraNet's revenue is recovered from directly connected customers with the remaining 90% recovered via SA Power Networks

Source: Estimated charges based on 2015-16 transmission prices

Network Reliability Performance

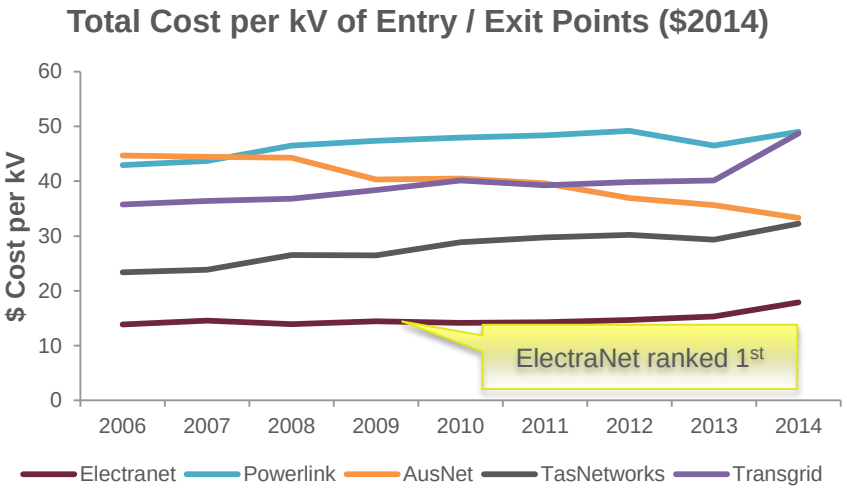




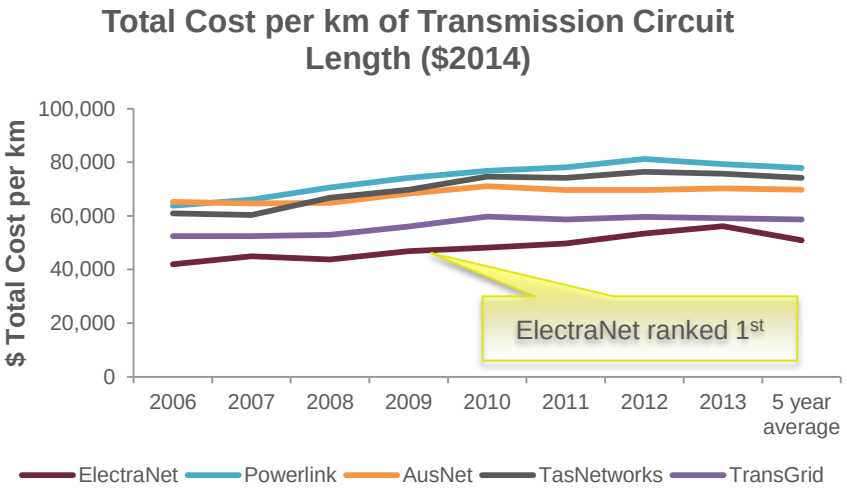


- Overall performance has generally been maintained or improved based on the key performance measures under the Service Target Performance Incentive Scheme

Benchmarks - Partial productivity indicators



ElectraNet performs well on this measure as the network has a relatively higher number of entry and exit points for its size, reducing unit costs compared to other networks

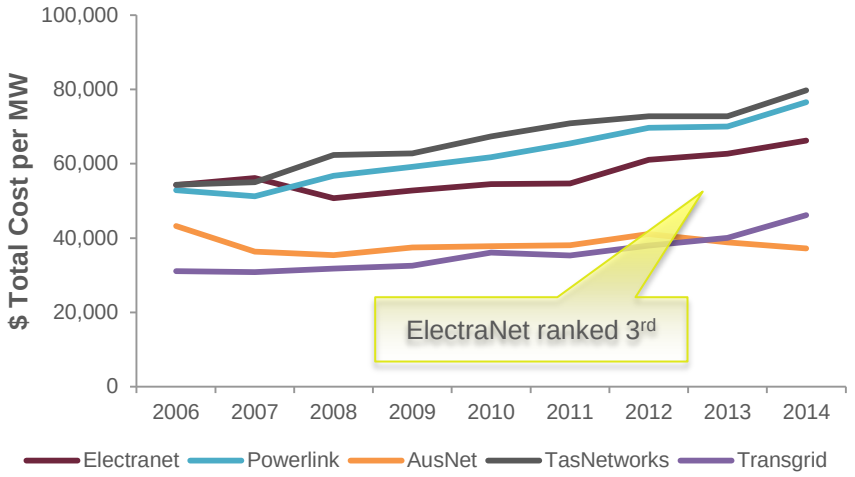


ElectraNet performs well on this measure given it requires relatively longer line length to serve customers over a large geographical area, reducing costs per circuit kilometre compared to other networks

Source: AER Draft Annual Benchmarking Report - Electricity Transmission Service Providers, September 2015

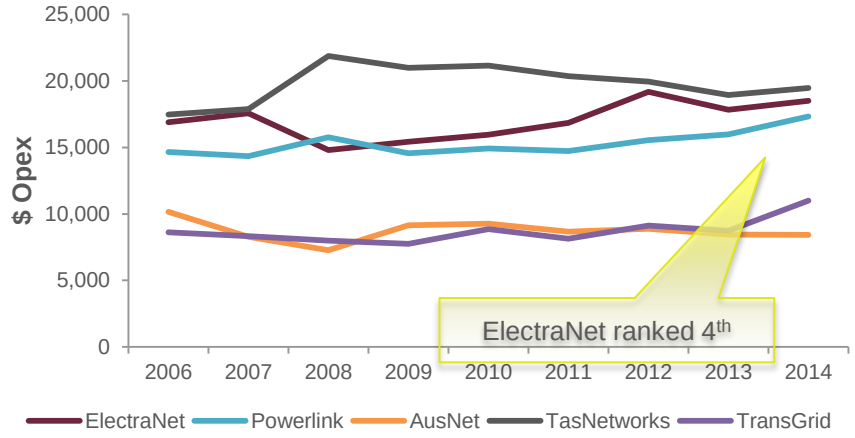
Benchmarks - Partial productivity indicators

Total Cost per MW max demand ($2014)



ElectraNet performs less strongly against this measure, despite the relatively 'peaky' demand in South Australia, due to the cost of a relatively large network compared to the demand served

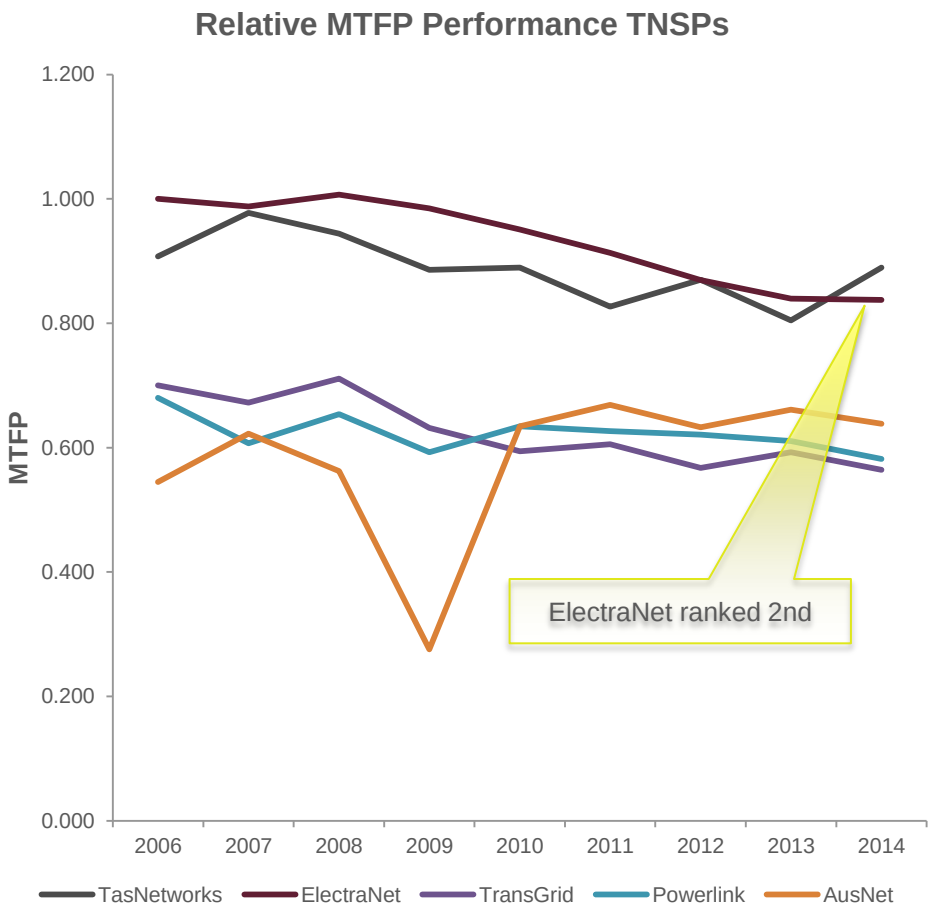
Opex per MW MD ($2014)



ElectraNet performs less strongly against this measure, despite the relatively 'peaky' demand in South Australia, due to the cost of maintaining a large network relative to the demand served

Source: AER Draft Annual Benchmarking Report - Electricity Transmission Service Providers, September 2015

Benchmarks - Multilateral total factor productivity



ElectraNet and TasNetworks perform well in overall productivity terms

The overall downward trend in productivity for all TNSPs reflects the impact of historic investment followed by declining demand and energy throughput, driven by changes in economic conditions, technology and consumer choices

Source: AER Draft Annual Benchmarking Report - Electricity Transmission Service Providers, September 2015

External environment change drivers

- Global environmental policy drivers for de-carbonisation of the economy
- Community / consumer preferences for renewable energy
- Economic slow down and shift from manufacturing to more services based economy
- Energy efficiency policy measures
- Falling cost of distributed energy resources allowing consumers to generate and export their own energy (e.g. rooftop solar photovoltaic)

Brown Hill Wind Farm

Solar PV installation

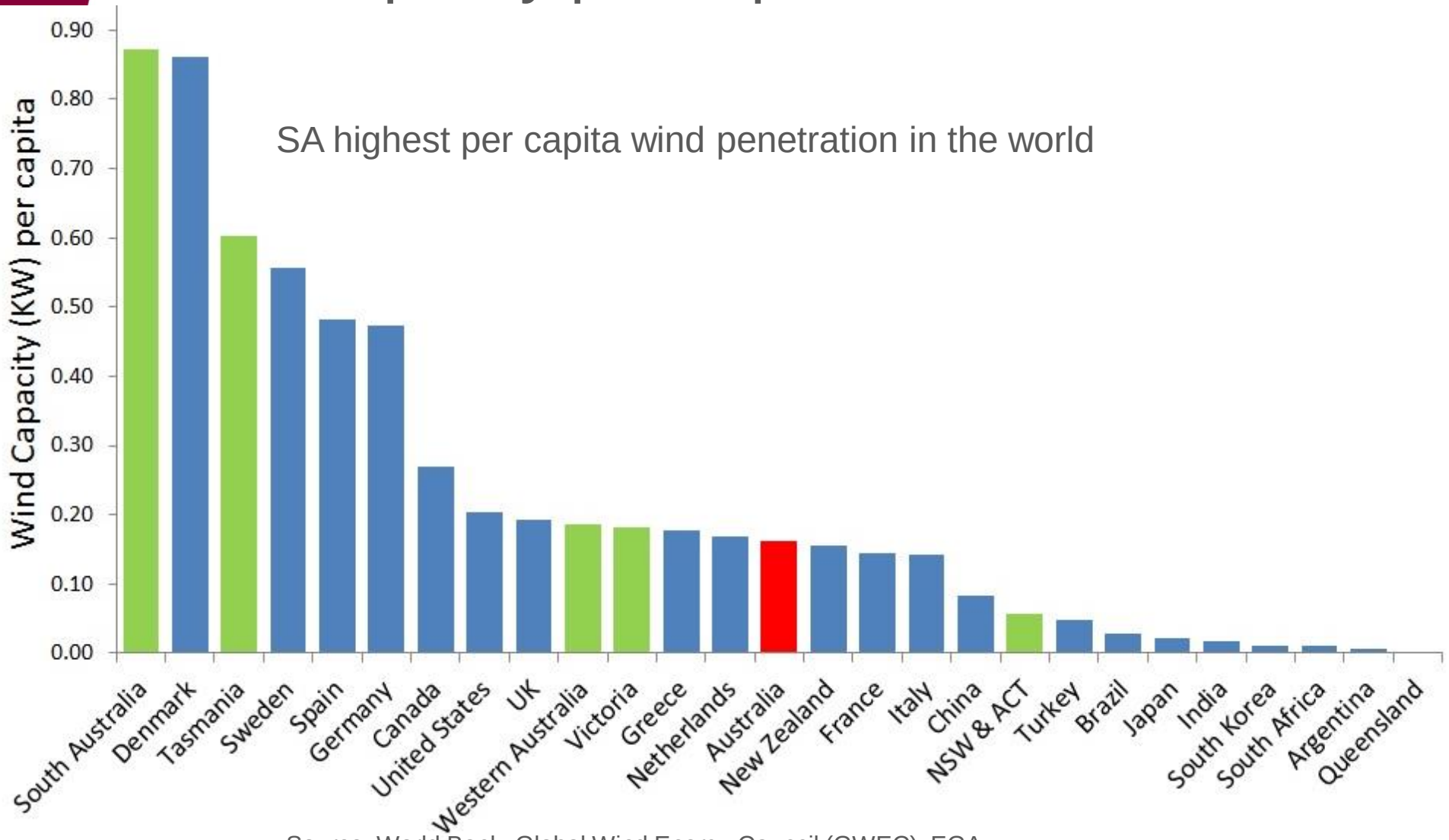
South Australia wind penetration metrics

Metric	Value
Total installed wind generation capacity at 30 June 2015	1477 MW *
Maximum instantaneous wind generation (28 July 2015 at 10pm when SA instantaneous demand was 1833 MW)	1291 MW (87% of capacity)
Energy penetration – ratio of annual (daily) wind energy to annual (daily) total energy demand	> 30% (85%)
Maximum instantaneous penetration (excluding exports) – maximum observed ratio of wind energy to demand (Wind generation of 1138 MW, SA demand 1122 MW and SA export 487 MW on 27 June 2014 at 5am)	101%
Maximum possible instantaneous penetration – ratio of installed capacity to minimum demand (809 MW on 26 December 2014 at 3pm)	183%
Average possible instantaneous penetration – ratio of installed capacity to average demand (1504 MW in 2014-15)	98%

* Hornsdale WF has committed 102.4 MW of 270 MW that will increase total to 1579 MW

Source: ElectraNet data

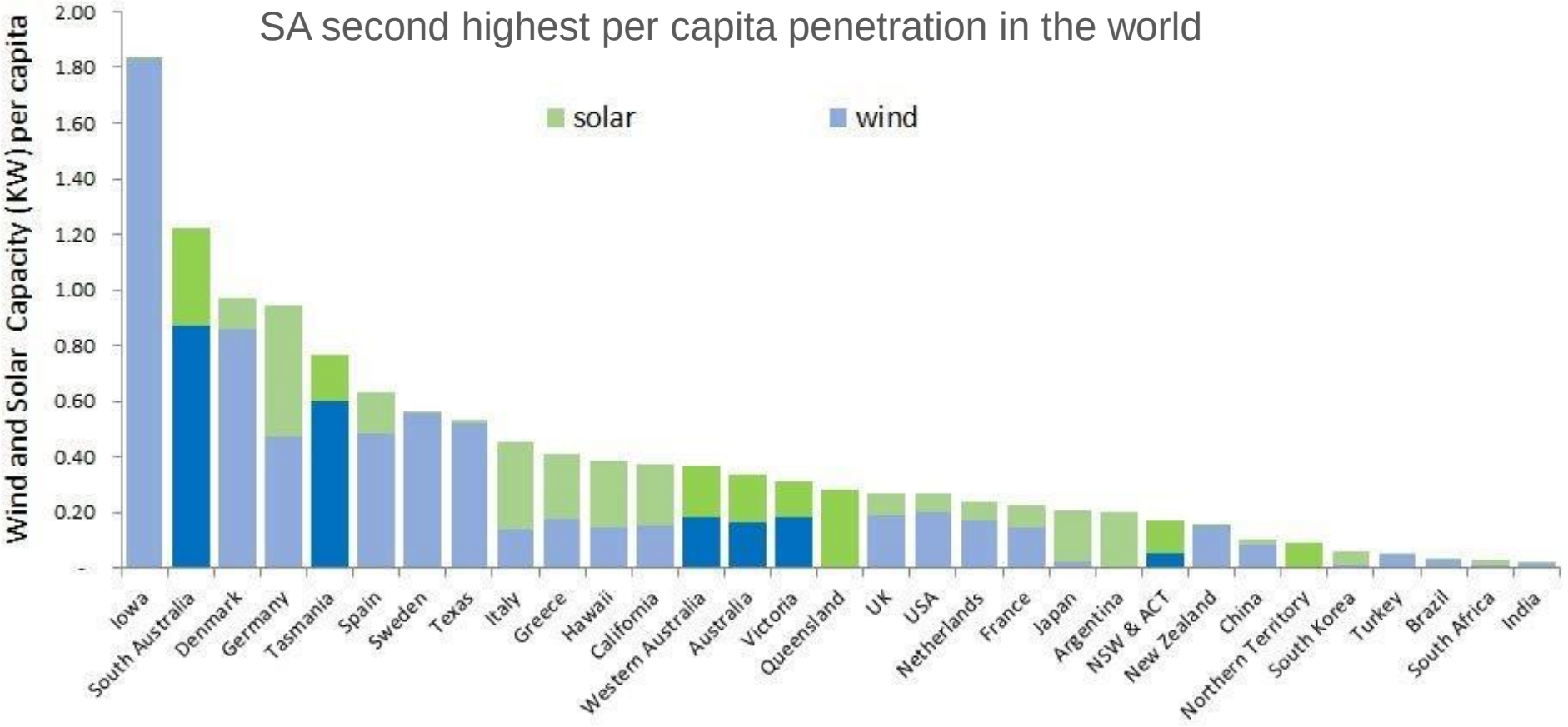
Wind capacity per capita at Dec 2014



Source: World Bank, Global Wind Energy Council (GWEC), EGA

Wind and solar capacity per capita

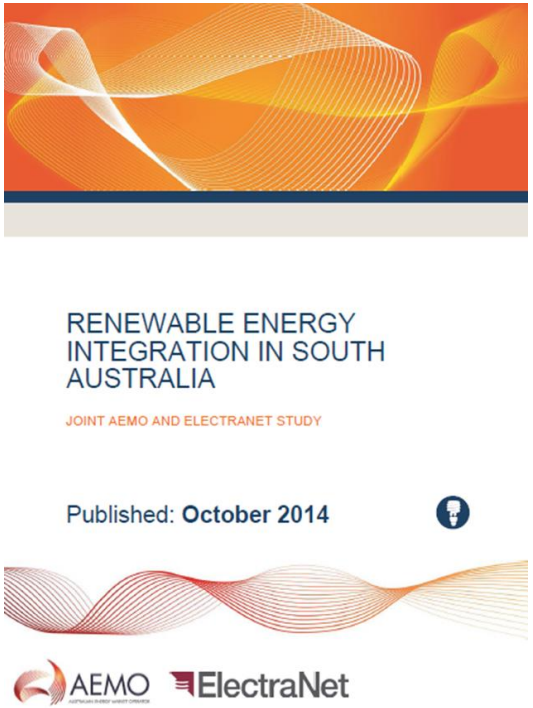
SA second highest per capita penetration in the world



Source: World Bank, International Renewable Energy Agency (IRENA), Global Wind Energy Council (GWEC), EGA

Renewable energy integration in SA

- SA power system can operate securely and reliably with a high percentage of wind and PV generation provided that:
  - The Heywood Interconnector linking SA and Victoria is operational OR
  - Sufficient conventional synchronous generation is connected and operating on the SA power system
- A very low probability but worst-case high-impact scenario is a state-wide power outage should the Heywood Interconnector lines be disconnected when insufficient conventional synchronous generation is online



Future network vision and roadmap

- ElectraNet is developing a network vision to guide the evolution of the transmission network to 2030
- Major drivers include future economic growth, renewable generation investment, carbon policy, commodity prices, and uptake of solar, storage, electric vehicles
- The key challenge is managing more complex power quality, stability and reliability issues to accommodate more variable load and intermittent generation sources
- Further challenges include declining network utilisation, increasing unit cost pressures, generation retirements, and asset management pressures in an aging network

SA grid-supplied demand forecasts

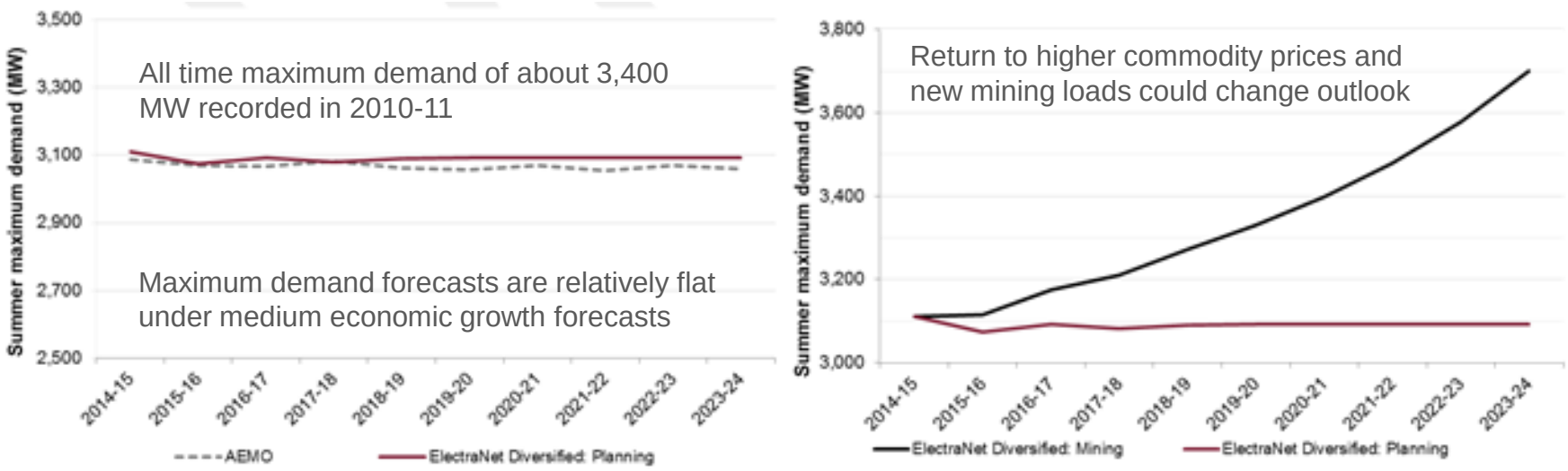


Figure 2: ElectraNet and AEMO state-wide demand forecasts[4]

- Minimum demand is declining with rooftop solar PV systems increasingly offsetting grid-supplied demand
- Minimum 2014-15 demand was 790 MW on 26 Dec 2014 – End user demand of 1,235 MW was offset by 445 MW generated by rooftop PV

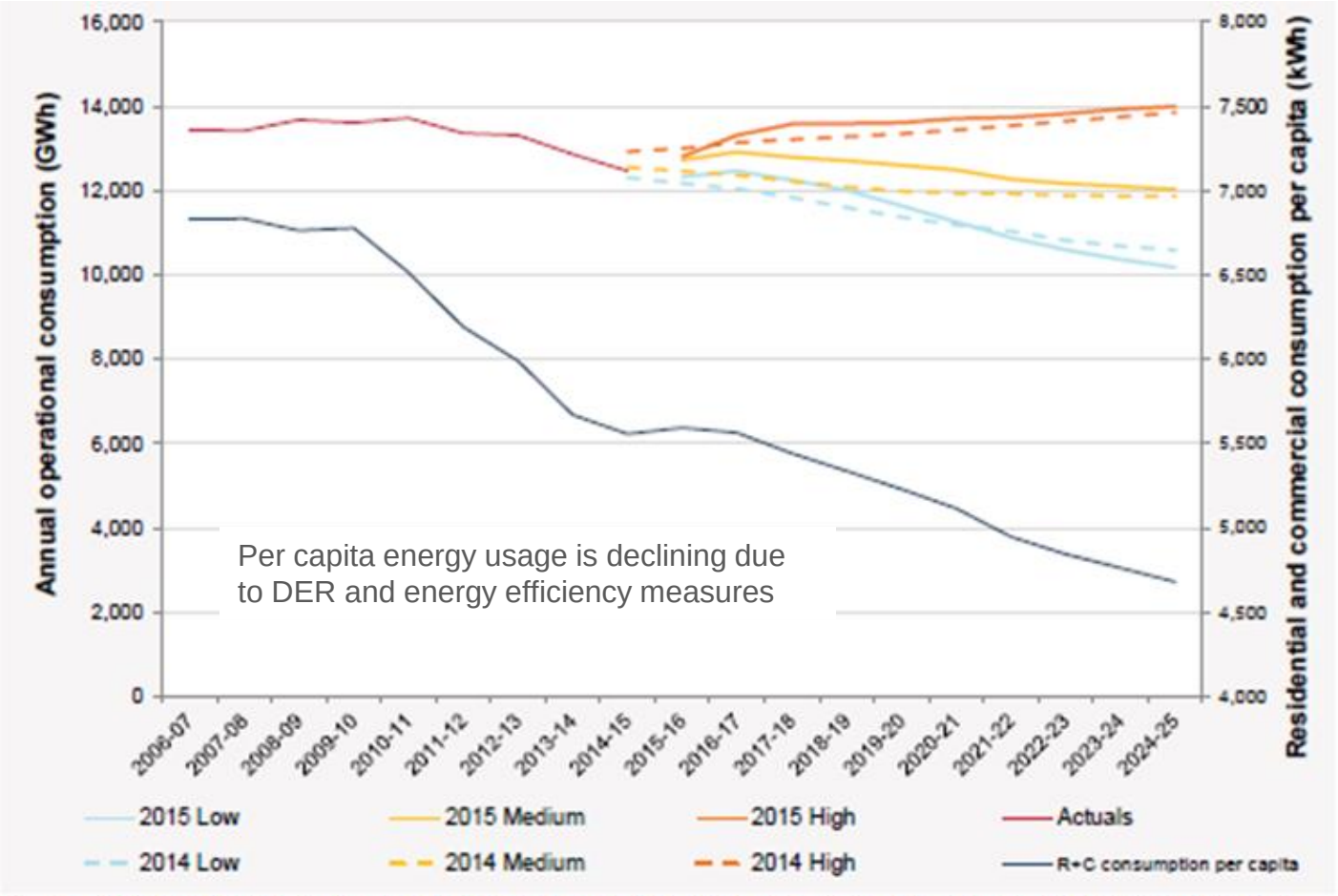
2014-15 demands (MW)

Max – 2,900

Avg – 1,500

Min - 790

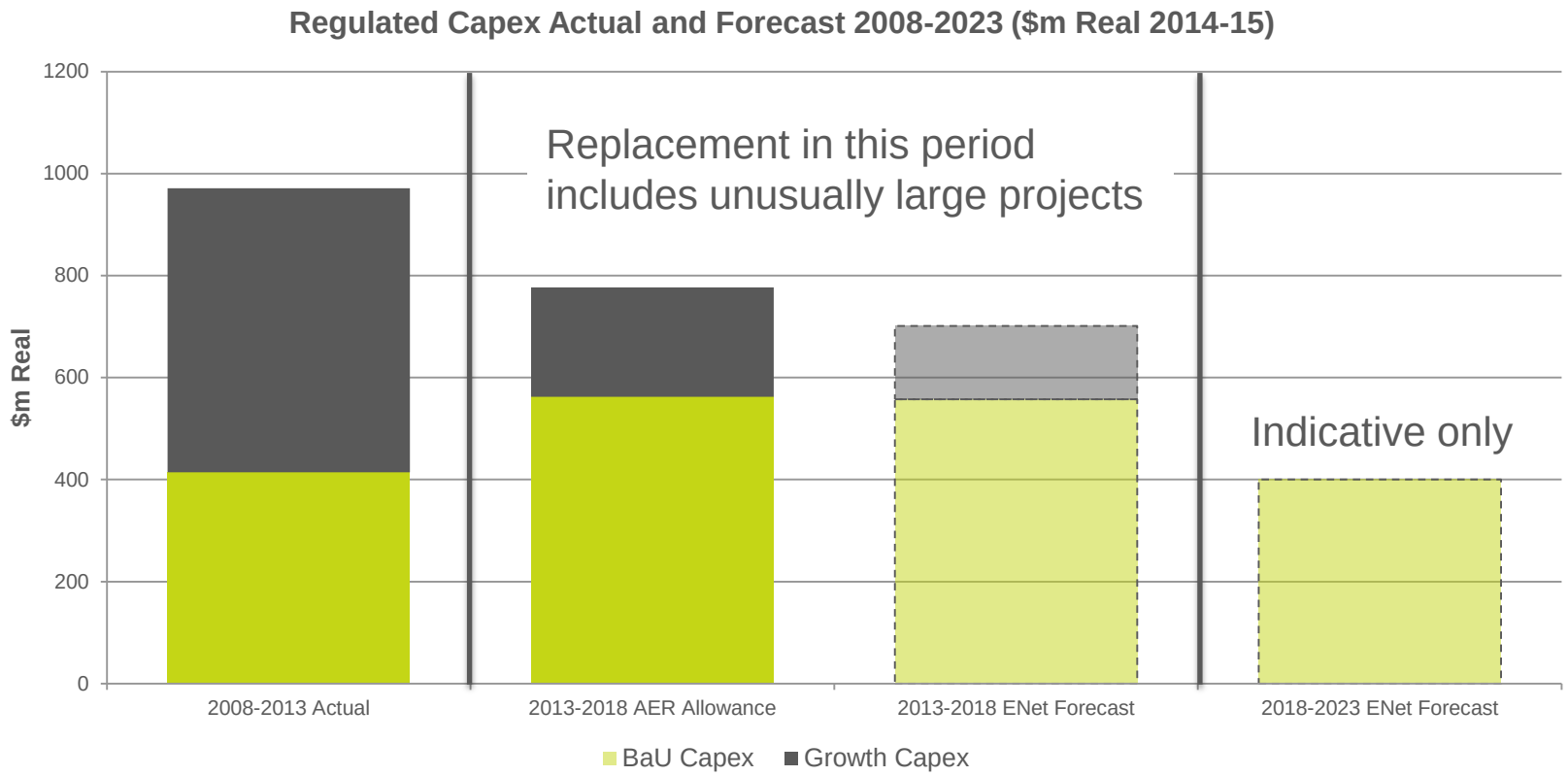
SA grid-supplied energy forecasts



Note: The 2014–15 residential and commercial per capita data point is an estimate (population data was not available at the time of publication).

Figure 3: South Australian annual energy consumption forecasts

Capital investment program 2008-2023



- No material growth capex expected in 2018-2023 (augmentation and connection expenditure)
- Forward investment requirements reflect continuation of historic asset replacement requirements (including recurrent IT, facilities and inventory)

Operational expenditure outlook

Opex Category ($m Nom)	Revised Revenue Proposal 2013-2018	AER Allowance 2013-2018	Funding Shortfall	Comments
Routine Maintenance	87.4	87.4	-	Reflects continuation of maintenance program across network assets
Corrective Maintenance	78.7*	53.0*	(25.7)	The allowance did not include funding to address corrective maintenance backlogs
Operational Refurbishment	71.9	52.7	(19.2)	The allowance did not include funding to address all high priority asset risk and condition issues
Total Maintenance	**238.0**	**193.1**	**(44.9)**	**Overall maintenance funding shortfall of 19%**
Corporate expenditure	205.9	199.1	(6.8)	The allowance did not include all cost escalation or provision movements
TOTAL	**443.9**	**392.2**	**(51.7)**	

* Includes corrective line remediation expenditure of $5.2m

- ElectraNet is working hard to deliver its maintenance program within the reduced allowance through efficiencies and other improvements
- Expect to contain need for increased operational expenditure in 2018-2023

Overall outlook for 2018-2023

- Reduced capital program based on flat demand outlook
- Working to avoid need for opex increases, despite current funding shortfall
- WACC to be determined based on AER Guidelines (and any changes resulting from merits appeal processes)
- No departures being proposed by ElectraNet from the standard AER Guidelines under the Framework and Approach process
- Real price reductions expected over 2018-2023 based on preliminary outlook
- Savings passed on to consumers in current period through relatively low historic WACC level (7.5%) limits scope for further major reductions (compared to recent regulatory decisions)

Choices to consider for revenue proposal

- Pursue change in asset classes to enable capital treatment of increasing transmission line component asset replacements (and thereby avoid price impacts)
- Explore scope for less deferral of depreciation to protect consumers from future price shocks
- Funding for removal of unused assets rather than maintaining

Questions

Thank you

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