Retailer Pricing Forum

POWER AND WATER CORPORATION

powerwater.com.au

Agenda and timing for presenters (note there are questions allowed for at the end of each topic)

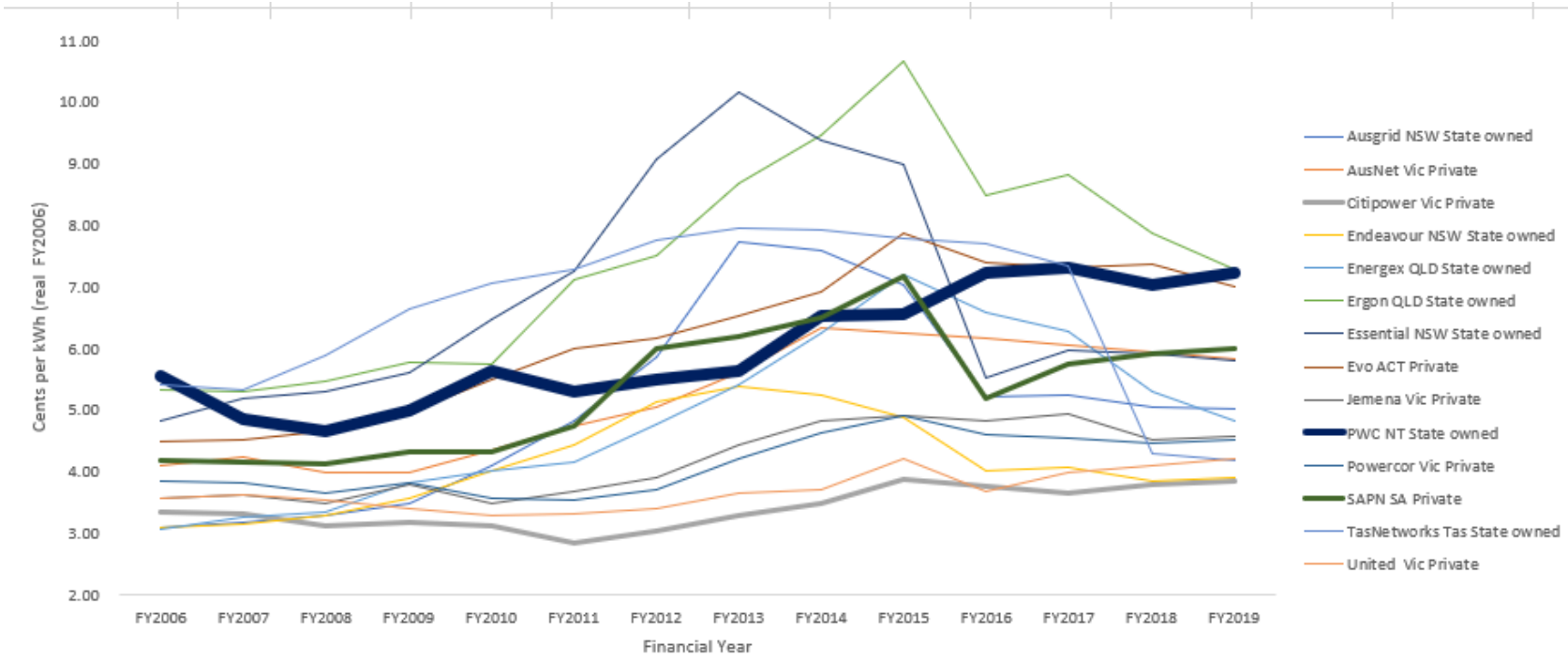
Time	Presenter	Topic
9 am	LCE	Intro and welcomes
9.05 – 9.15	Jodi Triggs	Welcome
9.15 – 9.30	Brendon Crown	TSS
9.30 – 9.45	Andy Ferreira	TSS and Pricing
9.50 – 10.30	Ezra Beeman	Challenges
10.35 – 10.50	BREAK	
10.50 - 11.50	Ezra Beeman	Pricing
11.50 – 12.25	All	Hearing from retailers
12.25	LCE	Close

Welcome and Introductions

Jodi Triggs – Executive General Manager – Customer Strategy and Regulation

Progress on Implementing our Tariff Structure Statement

Background: Current pricing outcomes



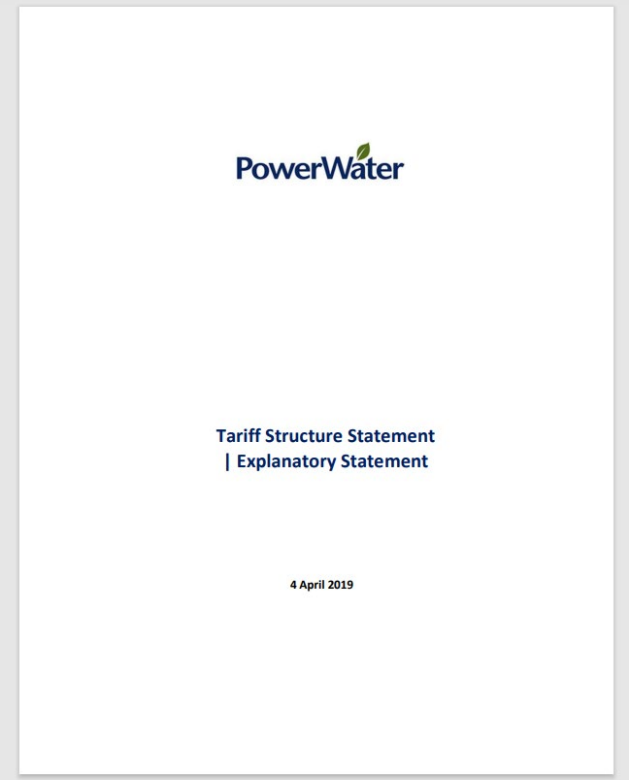
Background: Tariff Structure Statement 2019-24

Tariff class	Description of tariffs
LV <750MWh	1 Residential customers consuming <750MWh pa with standard accumulation meters
	2 Non-residential customers consuming <750MWh pa with standard accumulation meters
	3 Customers consuming <750MWh pa with smart meters (i.e. type 4 meters)
	4 Unmetered supply (for street lighting, traffic lights and other unmetered devices)
LV >750MWh*	5 Customers connected to the LV network consuming >750MWh pa
HV*	6 Customers connected to the HV network consuming <750MWh pa
	7 Customers connected to the HV network consuming >750MWh pa

* For sufficiently large and unique new customers for whom a bespoke tariff would best meet the NT NER pricing principles and protect the interests of our existing customers, Power and Water may confidentially determine individually calculated tariffs in accordance with the eligibility arrangements and tariff setting approach set out in this TSS, and would seek AER approval of these in the annual tariff variation process.

Tariff	System Access Charge (SAC)	Anytime kWh (c/kWh)	Peak Demand ($/kVA)
Tariff 1 Residential	X	X	-
Tariff 2 Non Residential	X	X	-
Tariff 3 LV Smart Meter	X	X	x
Tariff 4 Unmetered Supply	X	X	-
Tariff 5 LV<750MWh	X	X	x
Tariff 6 HV<750MWh	X	X	x
Tariff 7 HV>750MWh	X	X	x

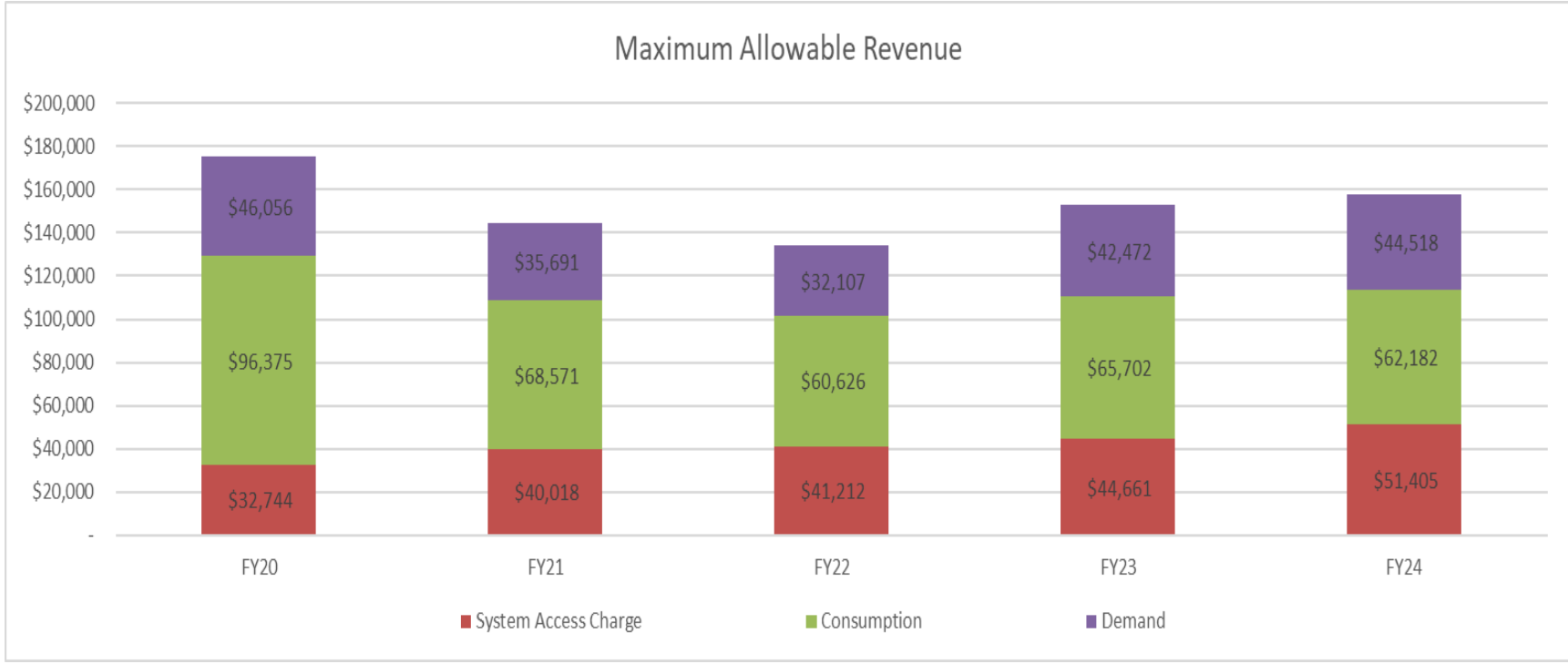
Background: Tariff Structure Statement 2019-24



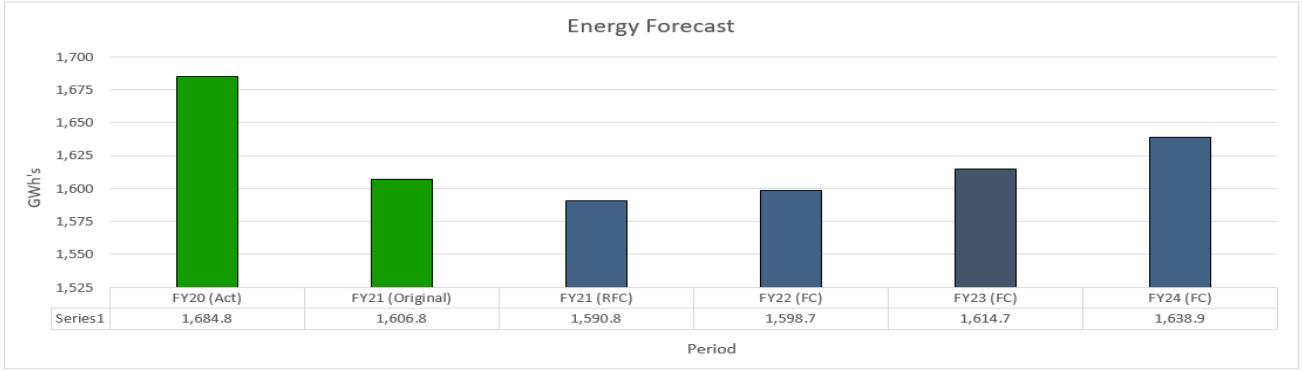
- Fairer split of revenue
- Rebalance energy, demand and fixed charges.
- Increasing the demand charge for large customers.
- Adjusted peak charging period.
- excess kVAr charge.
- individually calculated tariffs

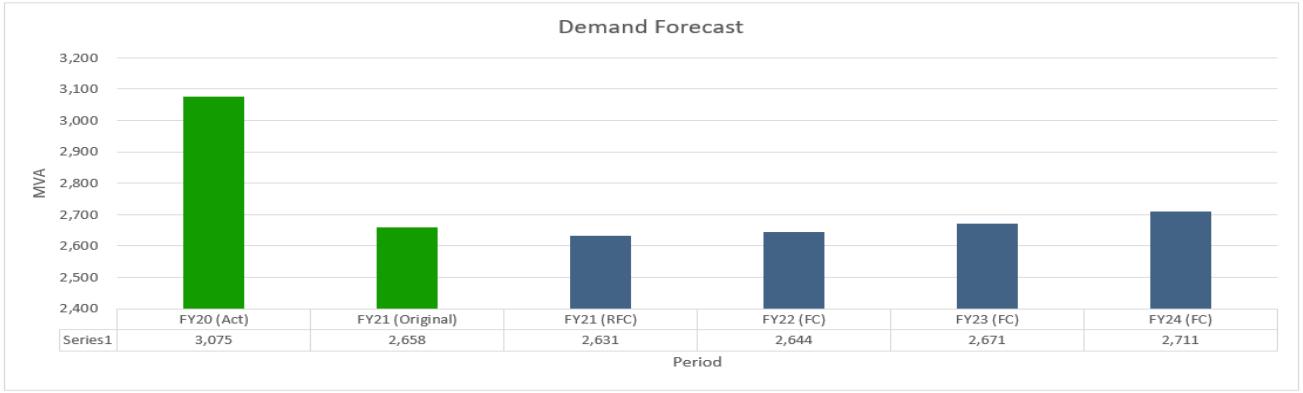
Progress against current pricing proposal

Background: Network Prices 2020-21



Background: Current pricing outcomes

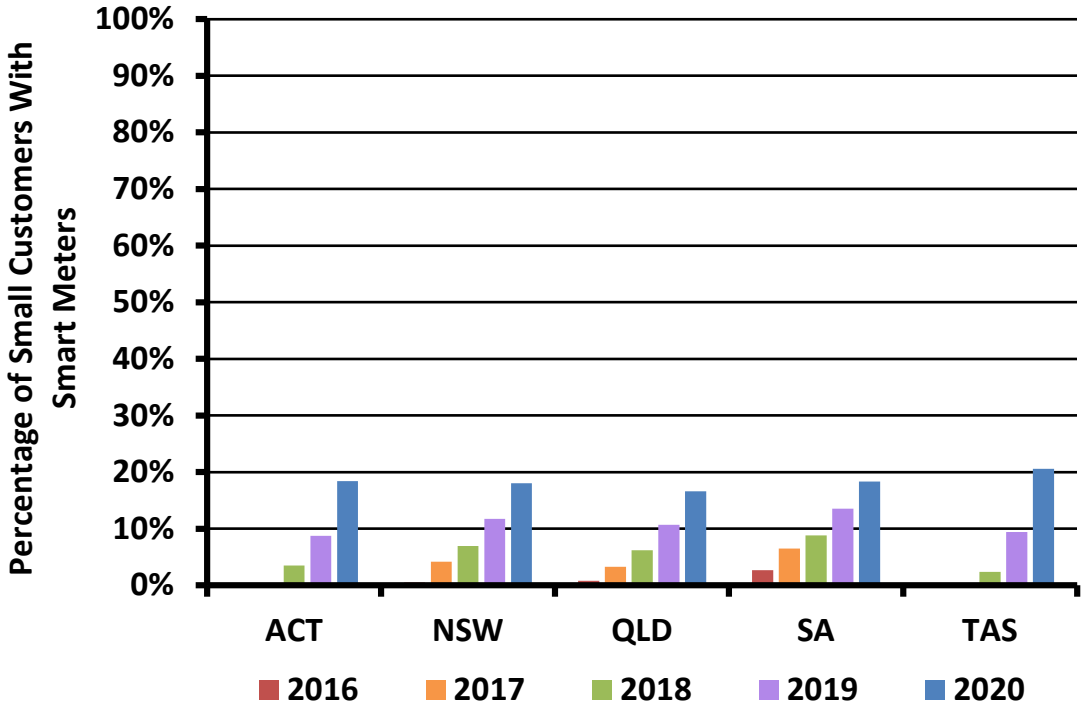




Our Challenges as an Industry

Key Challenge: Incomplete Customer Data

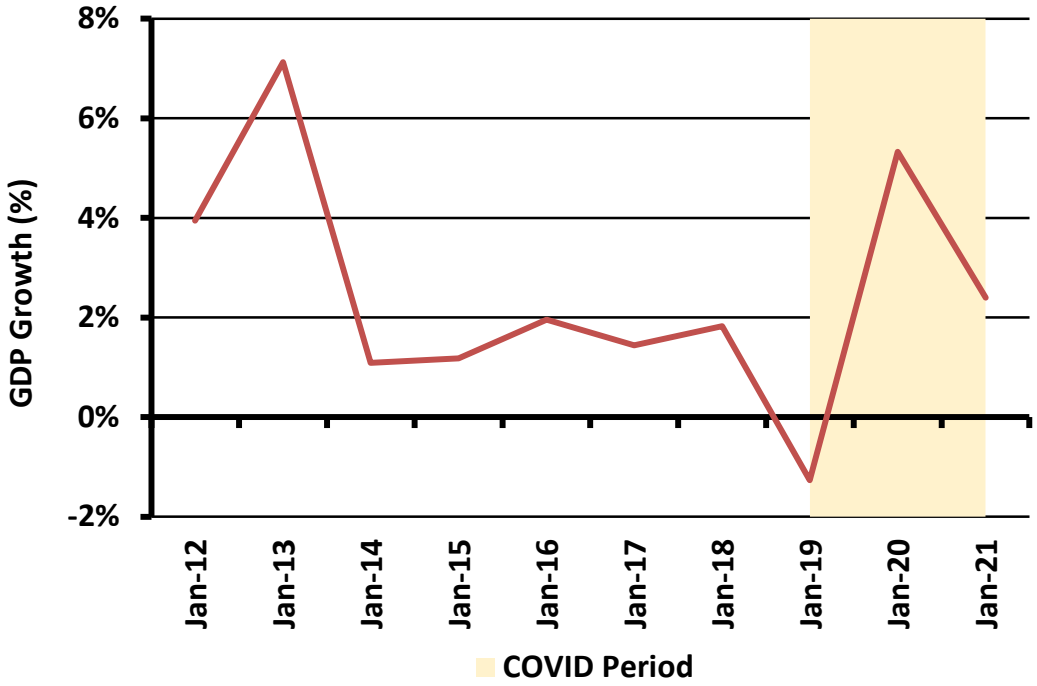
Percentage of customers with smart meters



Source: AEMO (2020), Note: Data represents small customers only

COVID impact on economic growth - NT

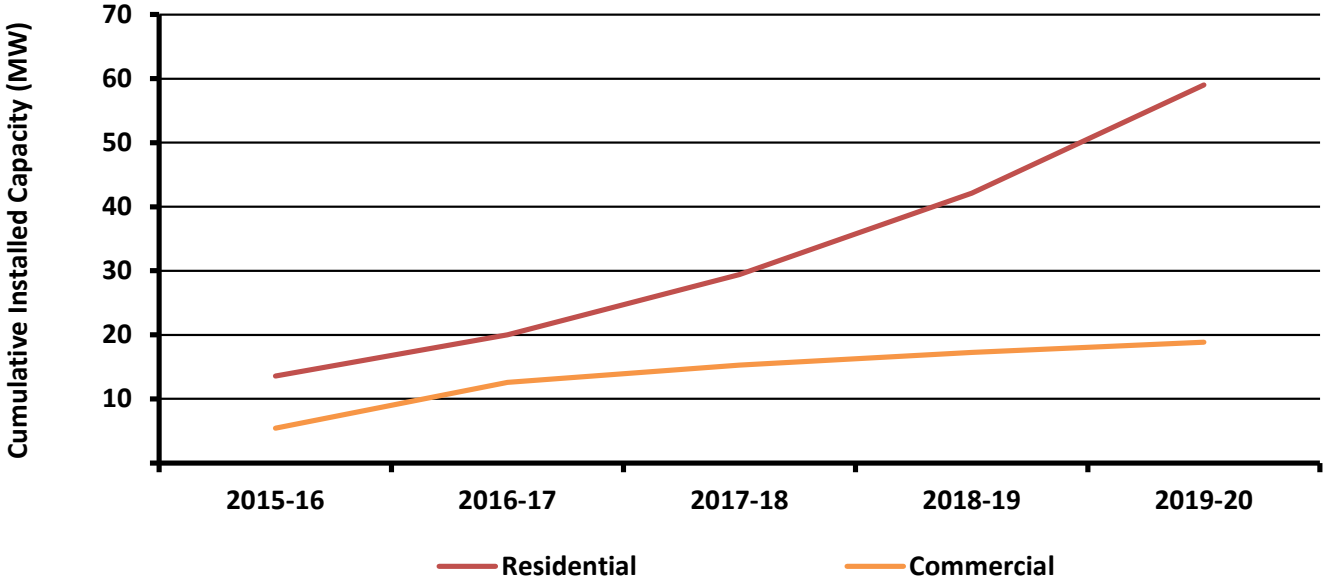
GDP Growth



Source: ABS (2021)

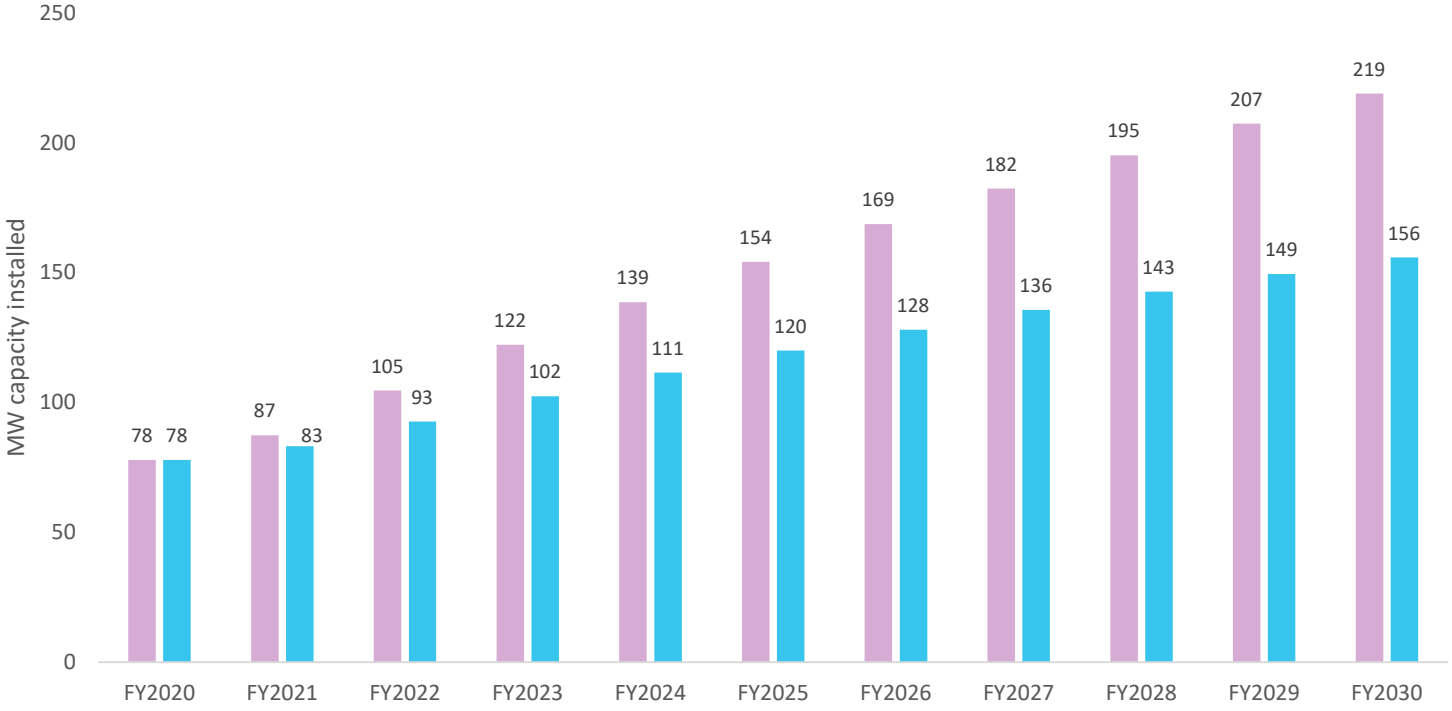
Solar impacts on consumption

Darwin Cumulative Solar PV Capacity

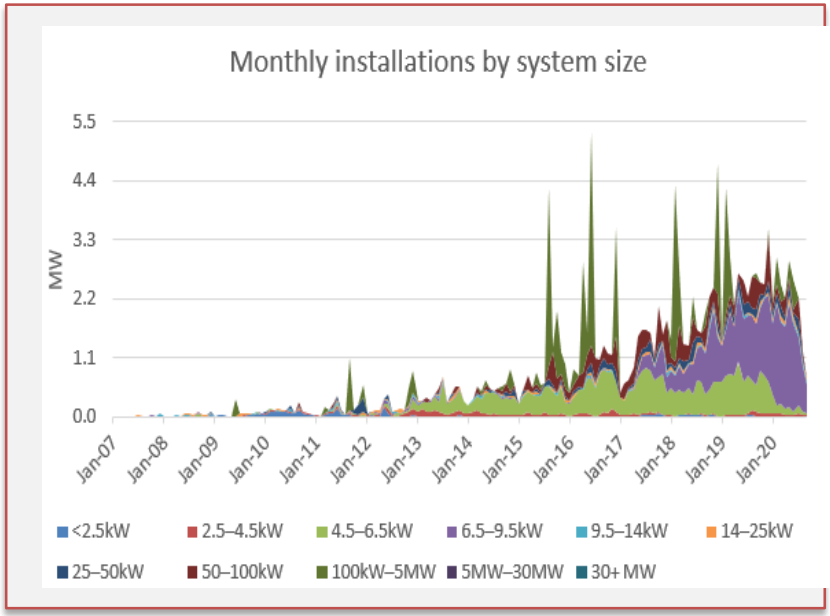


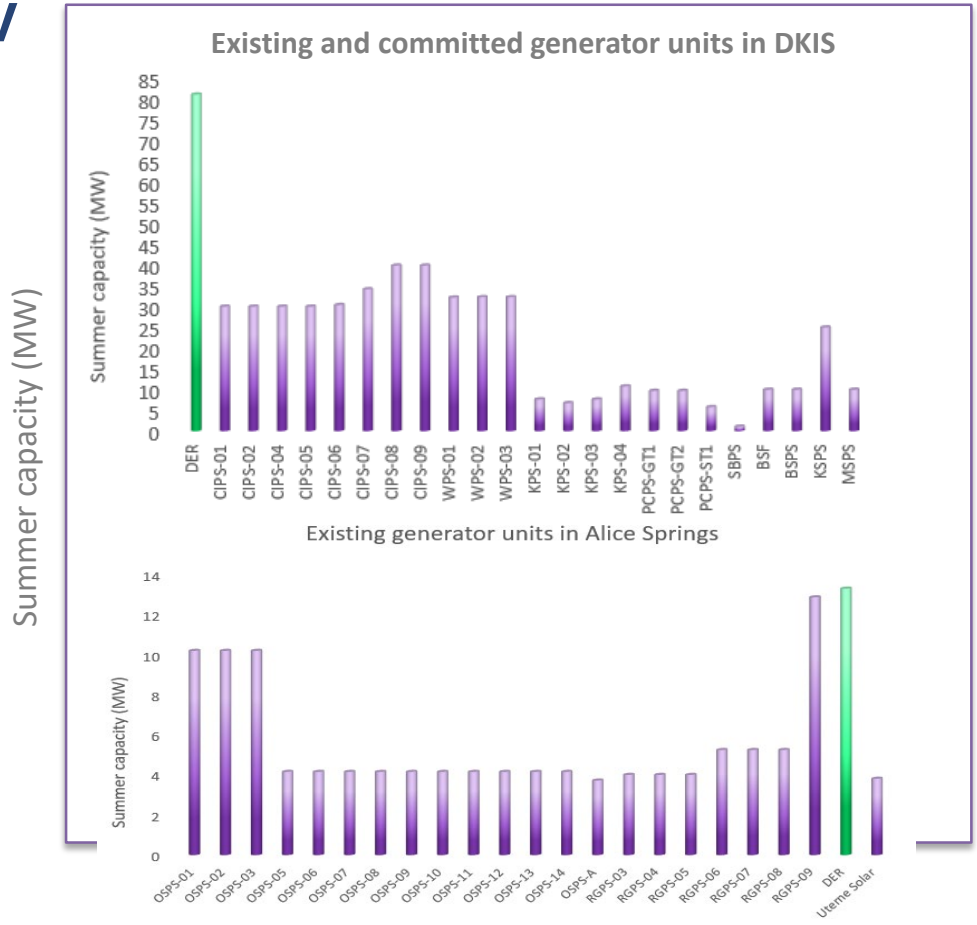
Source: Utilities Commission (2021)

Solar PV uptake and outlook – Darwin Katherine electricity system plan



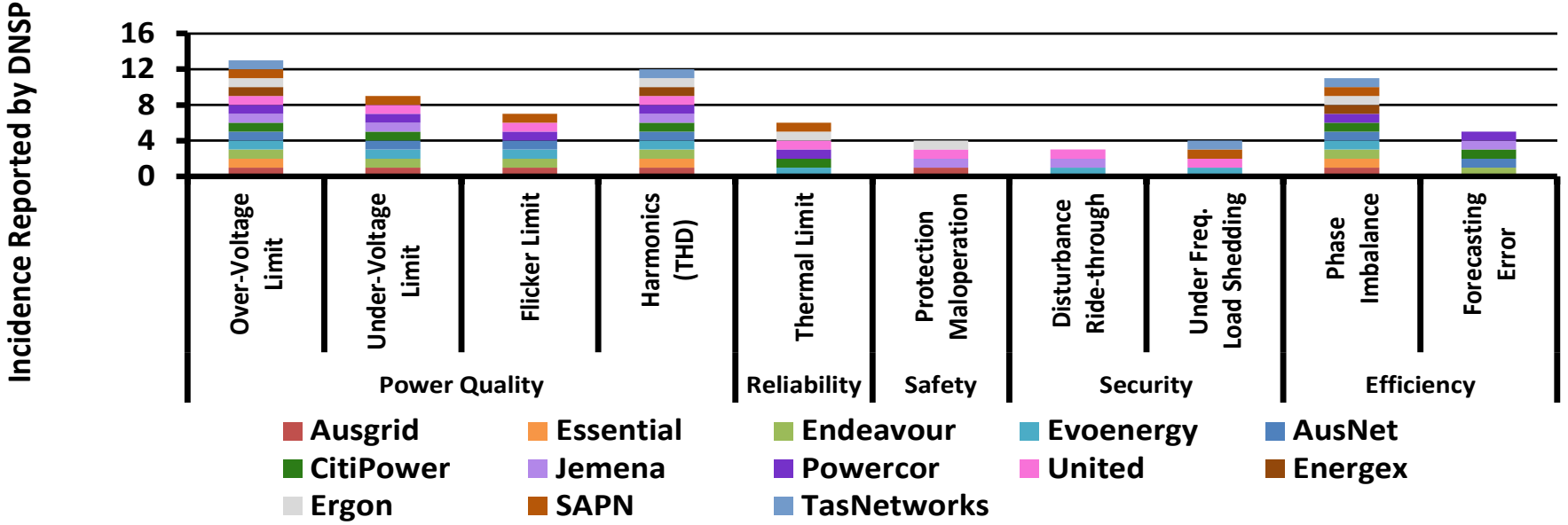
Unprecedented growth in rooftop PV





Solar PV impacts on revenues and costs

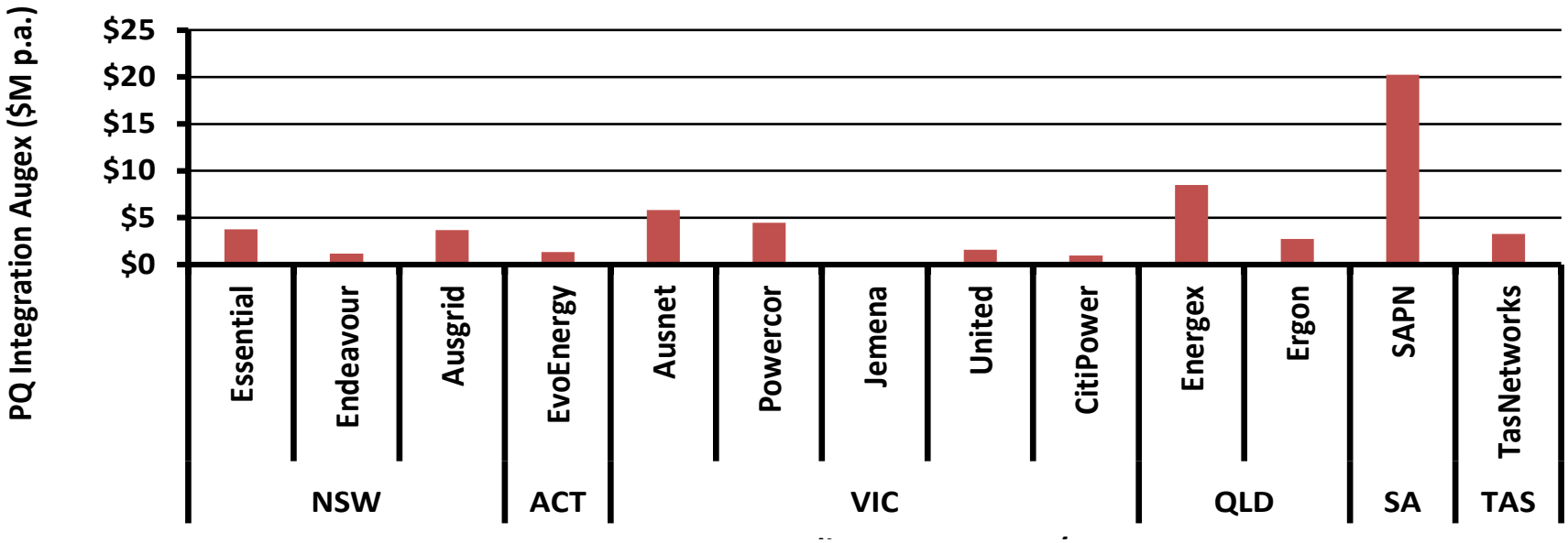
DNSP Reported PV- Driven Cost Drivers



Source: DNSP Determinations

Solar PV impacts on revenues and costs

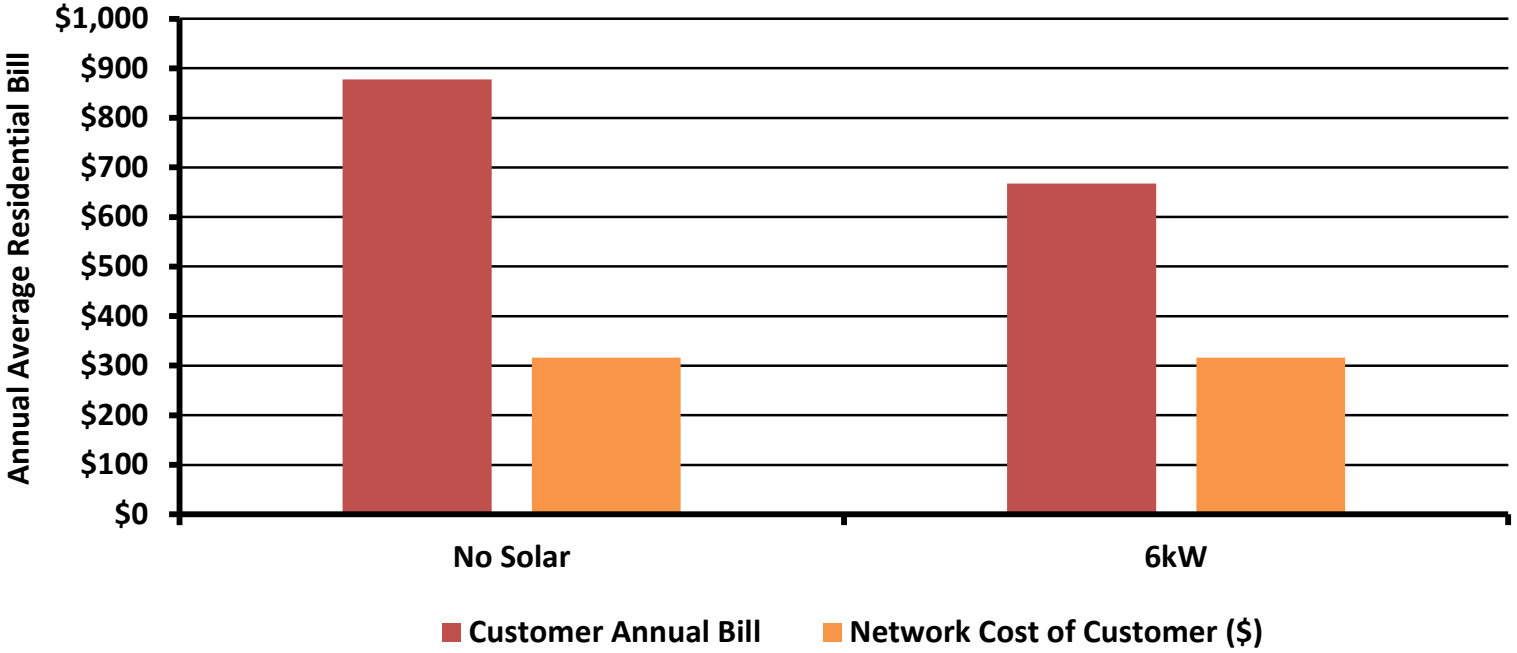
DNSP Reported PV- Driven Integration Augex



Source: Energeia Research

Solar PV impacts on cross-subsidies

Customer annual bill vs network cost



Source: Energeia Analysis

DNSP examples

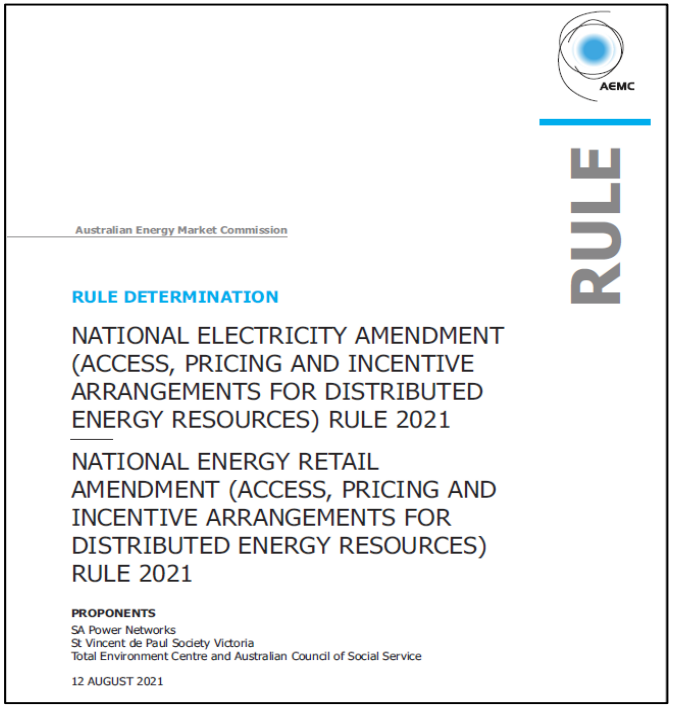
Solar sponge initiatives

DNSP	Tariff	Solar PV implementation
SAPN	Residential ToU	5-Hour Off-Peak Period at 25% of single-rate price
	Residential Prosumer	5-Hour Off-Peak Period at 15% of single-rate price
	Controlled Load (Residential and Small Business)	Based on usage between 9:30am and 3:30pm, at 25% of single-rate price
AusNet	Small Residential ToU	Off-Peak Rates Before 3pm
Ergon, Energex	Residential Tariffs	Incorporation of solar sponge into proposed cost reflective tariffs for residential customers based on solar-impacted load in the Energex area

Source: Energeia Research

New AEMC rules governing export pricing

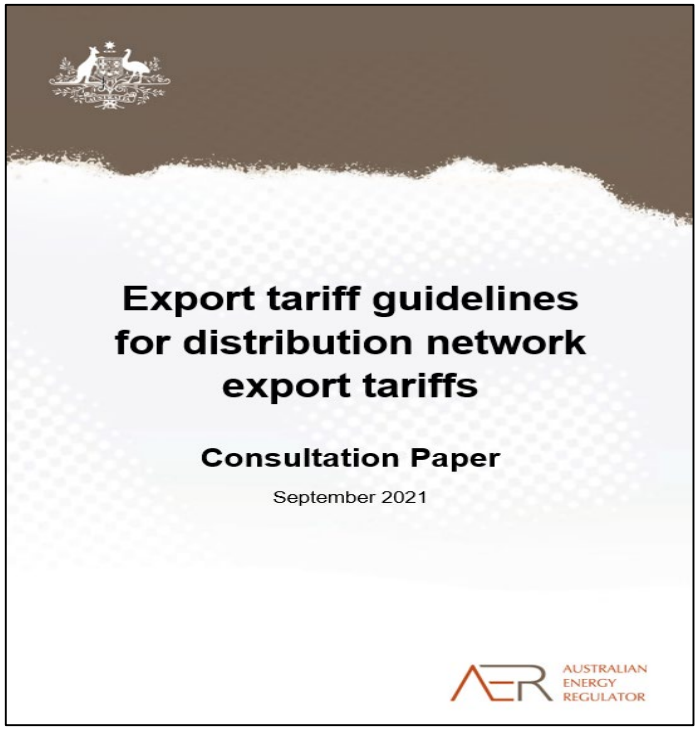
Access, pricing and incentive arrangements for distributed energy resources



Source: AEMC (2021)

Draft AER Export Pricing Guidelines

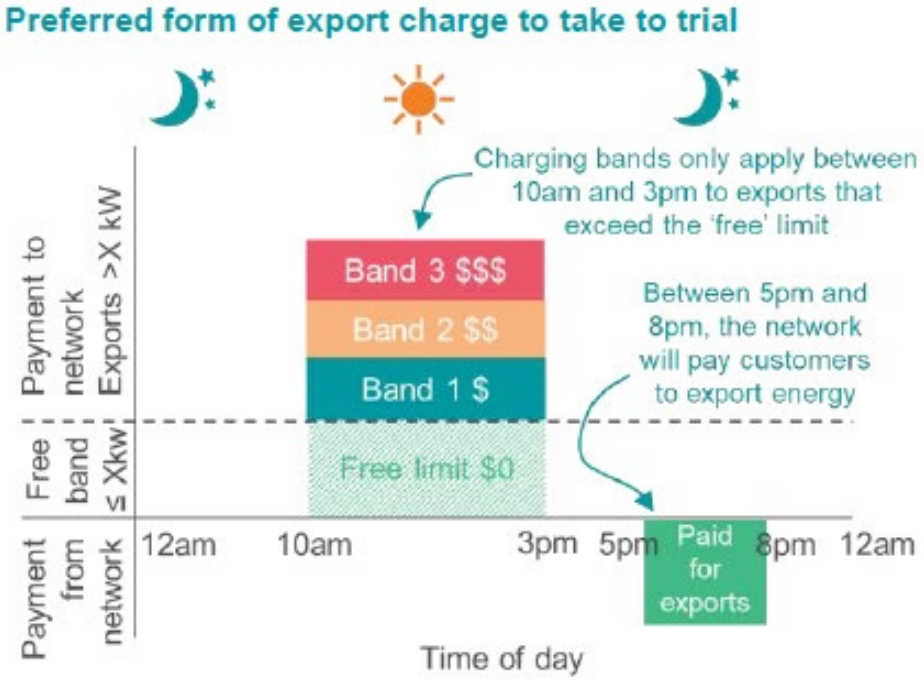
Export Tariff Guidelines



Source: AER (2021)

Australian DNSP Example

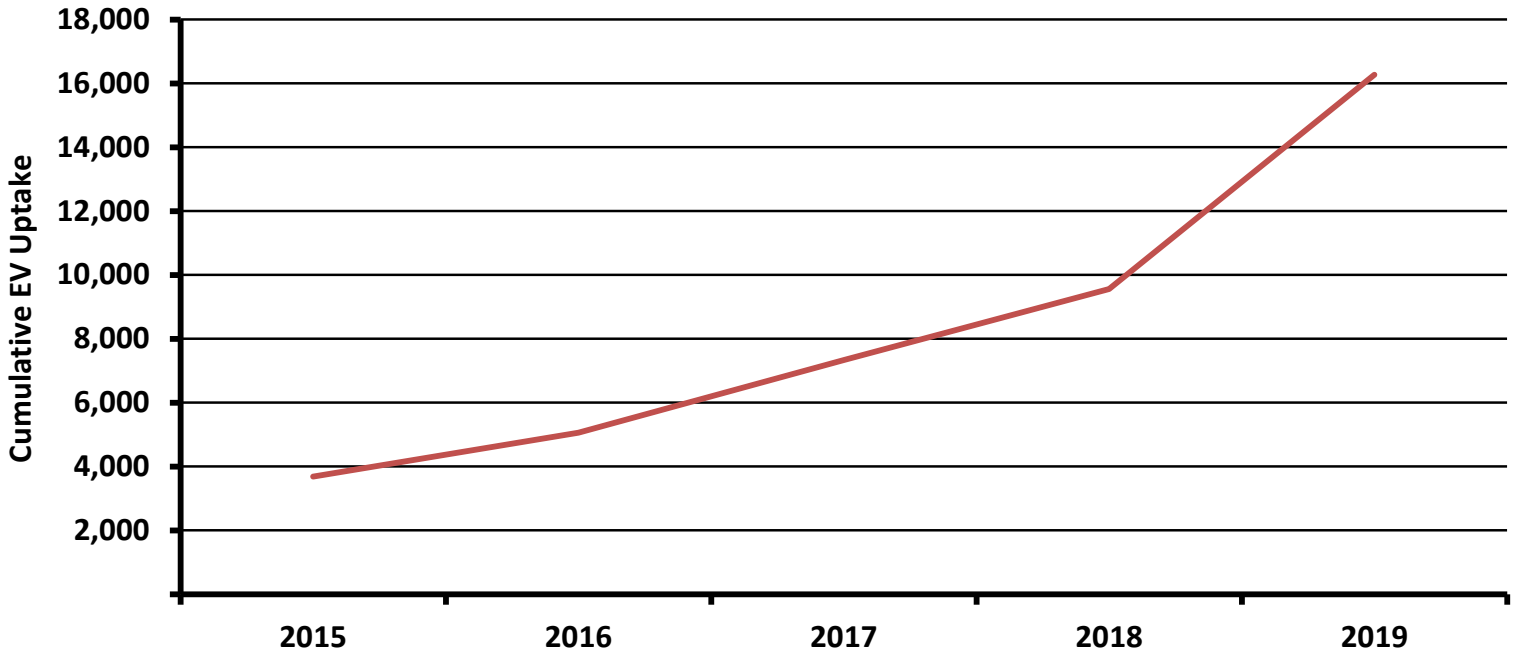
Essential Energy Export Tariff Trial Design



Source: Essential Energy

Electric Vehicle Uptake and Outlook

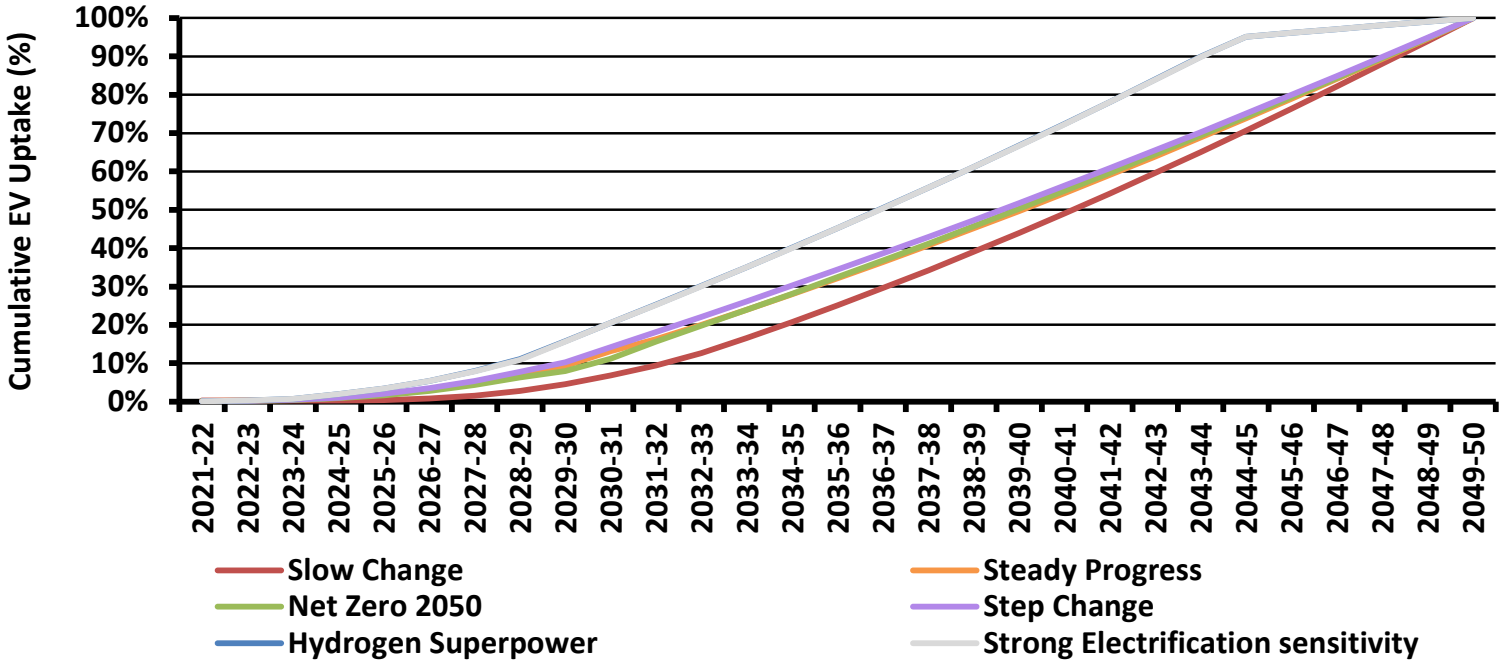
Historical EV Uptake



Source: Electric Vehicle Council (2020)

Electric vehicle uptake and outlook

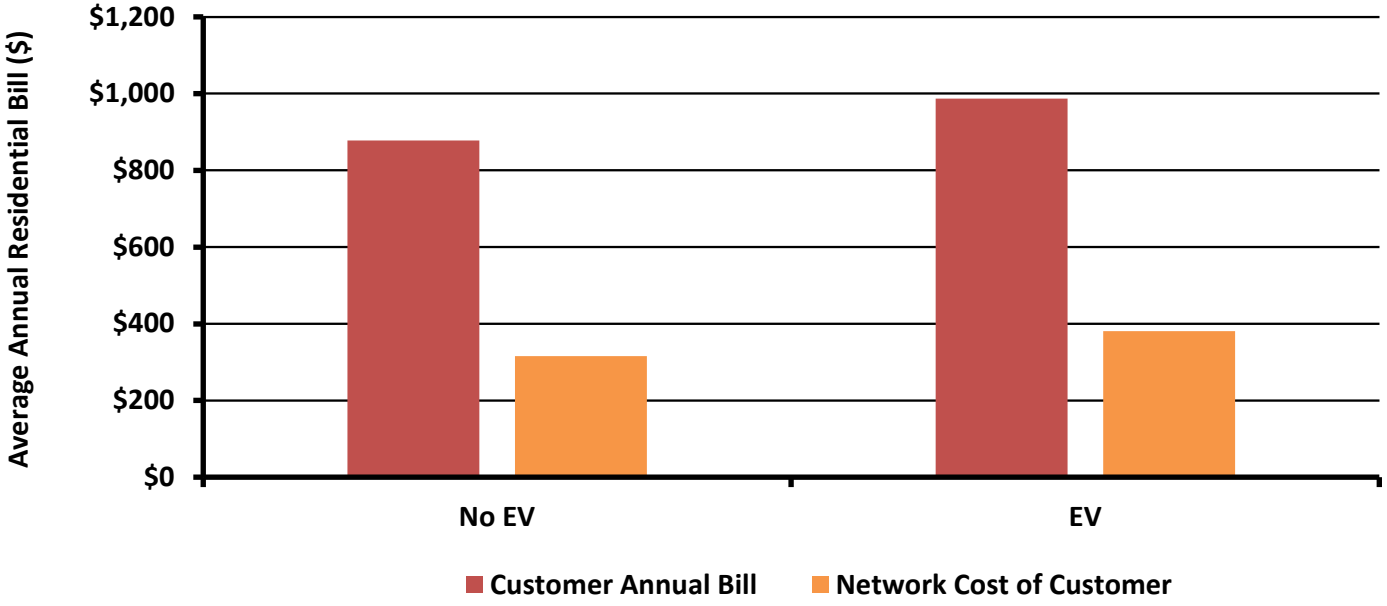
NEM EV uptake - AEMO



Source: AEMO (2021)

Electric vehicle impacts on revenues, costs and cross-subsidies

Customer annual bill vs network cost



Source: Energeia Analysis

Big batteries and individually calculated tariffs

Tesla's big battery at Hornsdale, SA

Source: Tesla

1. A number of big batteries are being planned in the NT, including by the NT Government
2. A battery has a unique connection profile in that it is both a source and a sink
3. Current tariffs may disadvantage a battery where not cost reflective
4. An individually calculated tariff may be more appropriate until more is known

NT's Retail Pricing Order

Regional QLD (Ergon Energy)

Source: QCA (2021)

NT’s retail pricing order

Western Australia (Western Power)

Household electricity pricing

Regulated electricity prices are determined by the State Government annually as part of the State Budget process.

Business and Government Electricity Pricing

Regulated electricity prices are determined by the State Government as part of the annual State Budget process.

Uniform Tariff Policy Show less

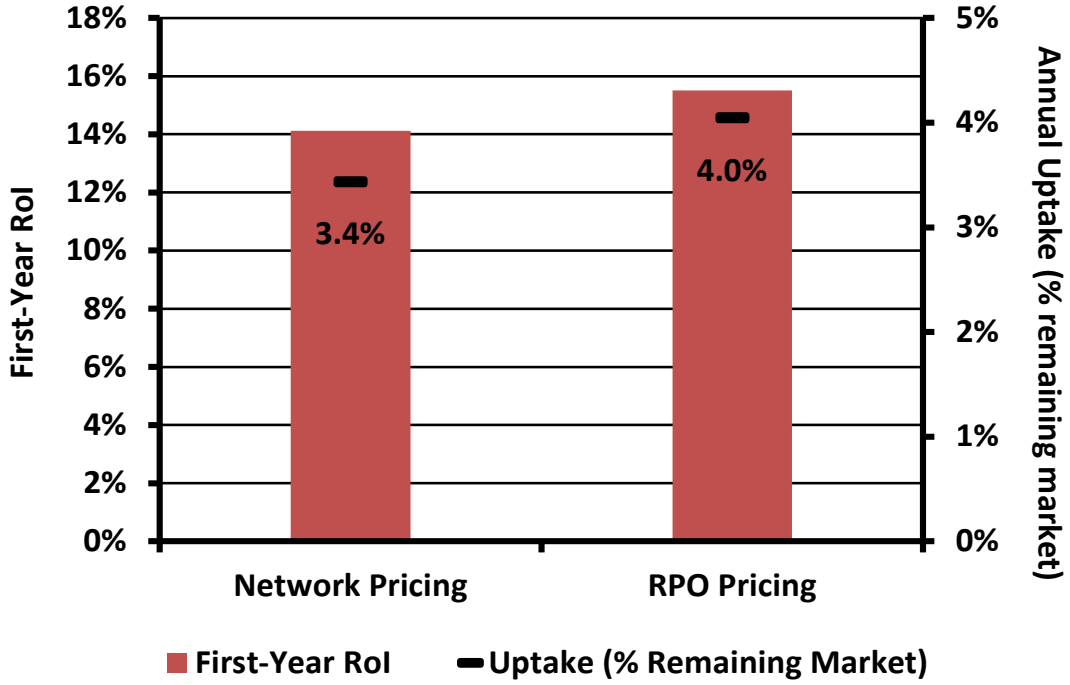
The Uniform Tariff Policy means that small use Synergy and Horizon Power customers are all charged the same rate. This includes customers in remote regions, where the costs to supply electricity are considerably higher.

The extra costs of supplying electricity to these areas are partially funded by the Tariff Equalisation Contribution through electricity network charges in the South West Interconnected System (SWIS).

Source: WA Government (2021)

Impacts on customer behavior and cross-subsidies

Ergon Example



Source: Energeia Analysis

Key pricing opportunities and Options we are Exploring

Peak demand periods vs defined peak - Darwin

Darwin Weekday Peak Period Congestion

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
8:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
9:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
11:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
12:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
13:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14:00	0.00%	0.00%	0.00%	0.00%	4.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15:00	0.00%	0.00%	0.00%	0.00%	9.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
16:00	0.00%	0.00%	0.00%	0.00%	25.58%	2.33%	0.00%	2.33%	0.00%	0.00%	0.00%	0.00%
17:00	0.00%	0.00%	0.00%	2.33%	2.33%	9.30%	2.33%	2.33%	0.00%	0.00%	0.00%	0.00%
18:00	0.00%	0.00%	0.00%	2.33%	0.00%	0.00%	0.00%	4.65%	0.00%	0.00%	0.00%	0.00%
19:00	0.00%	0.00%	2.33%	4.65%	2.33%	0.00%	0.00%	9.30%	0.00%	0.00%	0.00%	0.00%
20:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
21:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
23:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: PWC, Energeia analysis

PWC Network Tariff Weekday Peak Periods

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00												
1:00												
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19:00												
20:00												
21:00												
22:00												
23:00												

Source: PWC TSS (2019) – tariff 1 and 2, Note: Red represents peak

Darwin Weekend Peak Period Congestion

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
8:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
9:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
11:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
12:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
13:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
16:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
17:00	0.00%	0.00%	0.00%	0.00%	6.98%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
18:00	0.00%	0.00%	0.00%	0.00%	4.65%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
19:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
21:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
23:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: PWC, Energeia Analysis

PWC Network Tariff Weekend Peak Periods

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00												
1:00												
2:00												
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17:00												
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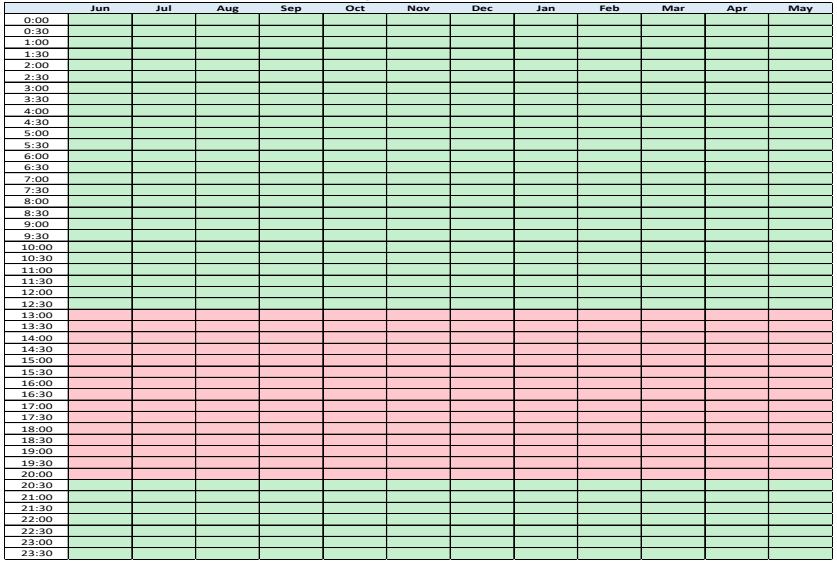
19:00												
20:00												
21:00												
22:00												
23:00												

Source: PWC TSS (2019) – Tariff 1 and 2

Change in Peak Periods - Endeavour

Residential Weekday Peak Period - Old



	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
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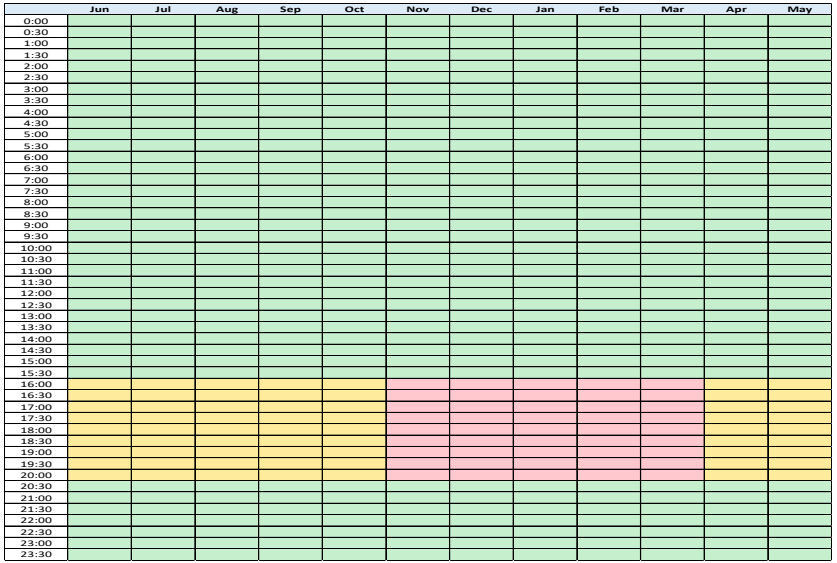
Source: Endeavour TSS (2016), Note: Red represents peak

Residential Weekday Peak Period - New



	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
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Source: Endeavour TSS (2019), Note: Yellow represents low peak, red represents high peak

Min Demand Periods vs Defined Peak - Darwin

Darwin Weekday Min Period Congestion

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1:00	8.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2:00	5.41%	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3:00	13.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4:00	8.11%	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%
5:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
8:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
9:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
11:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
12:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
13:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
16:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
17:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
18:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
19:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
21:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
23:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: PWC, Energeia

PWC Network Tariff Weekday Off-Peak Periods

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00												
1:00												
2:00												
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21:00												
22:00												
23:00												

Source: PWC TSS (2019) – Tariff 1 and 2, Note: Red represents off-peak

Darwin Weekend Min Period Congestion

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2:00	0.00%	5.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4:00	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
5:00	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
6:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
7:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
8:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
9:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%	0.00%	0.00%
10:00	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%	8.11%
11:00	5.41%	5.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%	5.41%	8.11%
12:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.70%
13:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
14:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
16:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
17:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
18:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
19:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
20:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
21:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
22:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
23:00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Source: PWC, Energeia

PWC Network Tariff Weekend Off-Peak Periods

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00												
1:00												
2:00												
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21:00												
22:00												
23:00												

Source: PWC TSS (2019) – Tariff 1 and 2

Min Demand Periods vs Defined Off Peak - SAPN

SA Weekday Min Period Congestion

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00	3.8%	4.5%	12.1%	8.9%	8.9%	10.8%	8.3%	7.6%	10.2%	9.6%	5.1%	3.2%
1:00	7.6%	7.0%	15.9%	10.8%	20.4%	14.6%	9.6%	9.6%	9.6%	17.2%	13.4%	5.7%
2:00	14.0%	12.7%	23.6%	17.2%	18.5%	26.1%	19.7%	15.3%	16.6%	20.4%	14.6%	10.2%
3:00	15.3%	14.6%	25.5%	19.1%	17.8%	28.7%	21.0%	15.9%	19.7%	22.3%	16.6%	12.7%
4:00	15.3%	12.1%	26.1%	17.8%	17.8%	30.6%	21.0%	15.9%	20.4%	24.8%	17.2%	13.4%
5:00	10.8%	8.9%	21.7%	16.6%	13.4%	28.0%	20.4%	14.0%	19.1%	22.3%	15.9%	9.6%
6:00	2.5%	1.9%	13.4%	7.0%	7.6%	29.3%	17.2%	5.7%	16.6%	17.8%	12.7%	6.4%
7:00	2.5%	0.6%	7.6%	1.3%	1.3%	24.2%	12.7%	0.6%	9.6%	14.6%	5.7%	2.5%
8:00	3.2%	0.6%	6.4%	1.9%	1.3%	21.0%	12.1%	0.6%	6.4%	19.1%	4.5%	1.3%
9:00	2.5%	1.3%	8.3%	6.4%	7.0%	33.1%	18.5%	3.2%	4.5%	29.9%	2.5%	1.9%
10:00	2.5%	8.3%	27.4%	31.2%	33.8%	55.4%	38.9%	12.7%	12.1%	49.7%	10.8%	2.5%
11:00	3.8%	22.3%	48.4%	49.7%	51.6%	67.5%	58.6%	39.5%	31.8%	65.6%	29.3%	10.2%
12:00	7.0%	24.8%	48.4%	52.9%	53.5%	71.3%	60.5%	46.5%	42.7%	64.3%	36.3%	9.6%
13:00	5.7%	30.6%	52.2%	54.1%	52.2%	72.0%	61.1%	46.5%	47.1%	67.5%	39.5%	12.7%
14:00	5.1%	22.9%	46.5%	56.1%	51.0%	68.8%	61.1%	48.4%	43.9%	60.5%	30.6%	11.5%
15:00	5.1%	8.3%	25.5%	51.0%	49.7%	65.0%	56.1%	43.9%	42.7%	37.6%	14.0%	4.5%
16:00	0.6%	2.5%	21.0%	35.0%	36.9%	52.9%	33.8%	28.7%	19.1%	10.8%	5.1%	2.5%
17:00	0.6%	0.6%	14.6%	5.1%	3.8%	10.8%	7.0%	3.2%	5.1%	4.5%	2.5%	2.5%
18:00	0.6%	0.6%	14.6%	1.9%	1.3%	5.1%	2.5%	1.3%	1.9%	4.5%	1.9%	1.3%
19:00	0.6%	0.6%	12.7%	1.3%	2.5%	5.1%	1.3%	0.6%	1.9%	3.8%	2.5%	3.2%
20:00	1.9%	0.6%	13.4%	1.9%	1.9%	5.1%	1.3%	0.6%	1.9%	3.8%	3.2%	3.2%
21:00	2.5%	1.3%	12.7%	2.5%	2.5%	3.8%	1.9%	0.6%	3.2%	5.1%	4.5%	3.8%
22:00	1.9%	1.9%	12.1%	3.2%	3.8%	5.1%	2.5%	3.2%	4.5%	7.0%	5.7%	3.8%
23:00	3.2%	2.5%	14.0%	6.4%	7.0%	10.2%	3.2%	7.0%	7.6%	8.3%	5.7%	5.1%

Source: SAPN ZS Load Profiles, Energeia Analysis

SAPN Network Tariff Weekday Off-Peak Periods

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00												
1:00												
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20:00												
21:00												
22:00												
23:00												

Source: SAPN TSS (2020), Note: Red represents peak

SA Weekend Min Period Congestion

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00	2.5%	3.2%	5.7%	7.0%	8.3%	8.3%	3.2%	5.1%	8.3%	8.3%	7.0%	5.7%
1:00	5.7%	7.6%	9.6%	7.6%	10.2%	10.8%	7.0%	7.6%	9.6%	15.9%	12.7%	8.9%
2:00	8.3%	9.6%	15.3%	15.3%	18.5%	19.1%	16.6%	15.9%	17.8%	19.7%	14.6%	12.1%
3:00	10.8%	13.4%	18.5%	19.1%	19.7%	22.9%	18.5%	17.8%	17.8%	22.9%	17.8%	13.4%
4:00	14.6%	13.4%	19.1%	20.4%	22.9%	23.6%	20.4%	19.1%	21.7%	24.8%	17.8%	14.0%
5:00	13.4%	13.4%	17.8%	21.7%	22.9%	23.6%	19.7%	18.5%	21.0%	23.6%	17.2%	13.4%
6:00	7.0%	8.3%	15.9%	19.7%	21.7%	25.5%	17.8%	16.6%	19.7%	20.4%	14.6%	10.2%
7:00	6.4%	8.3%	15.9%	17.8%	19.7%	26.1%	18.5%	15.3%	17.8%	19.1%	10.2%	8.3%
8:00	5.7%	6.4%	12.7%	19.1%	24.2%	30.6%	19.1%	14.0%	14.6%	19.7%	8.9%	7.0%
9:00	4.5%	10.2%	27.4%	22.3%	36.9%	40.8%	26.8%	17.2%	15.9%	26.1%	9.6%	7.0%
10:00	3.8%	21.0%	57.3%	47.1%	58.0%	58.0%	46.5%	34.4%	25.5%	40.8%	21.0%	7.6%
11:00	4.5%	42.7%	68.8%	66.9%	68.8%	70.1%	61.8%	56.1%	44.6%	58.0%	35.0%	12.1%
12:00	9.6%	54.1%	71.3%	69.4%	72.0%	72.6%	65.6%	64.3%	49.7%	54.1%	40.8%	12.1%
13:00	10.8%	59.2%	67.5%	71.3%	72.6%	72.6%	63.1%	63.7%	54.8%	59.2%	43.9%	16.6%
14:00	8.9%	49.7%	63.1%	72.0%	72.0%	72.6%	63.1%	65.6%	54.1%	51.0%	33.8%	13.4%
15:00	5.7%	24.8%	36.3%	70.7%	66.9%	71.3%	61.1%	63.7%	54.1%	29.3%	12.7%	7.6%
16:00	3.2%	3.8%	11.5%	45.9%	53.5%	62.4%	45.9%	45.9%	31.2%	10.8%	3.2%	5.1%
17:00	2.5%	2.5%	6.4%	11.5%	15.3%	29.3%	8.3%	15.9%	9.6%	5.7%	2.5%	2.5%
18:00	1.9%	3.2%	5.7%	7.0%	7.0%	9.6%	1.9%	5.7%	5.1%	4.5%	3.2%	3.2%
19:00	2.5%	3.2%	4.5%	5.1%	7.6%	7.0%	1.9%	4.5%	4.5%	5.1%	3.2%	5.1%
20:00	2.5%	3.2%	4.5%	3.2%	5.1%	7.6%	1.9%	3.2%	3.2%	7.0%	3.2%	4.5%
21:00	3.2%	3.2%	4.5%	3.2%	3.2%	5.1%	1.9%	3.2%	5.7%	7.6%	3.8%	4.5%
22:00	3.2%	3.8%	5.1%	3.8%	7.0%	7.6%	2.5%	5.1%	5.7%	8.9%	4.5%	4.5%
23:00	3.2%	3.2%	5.1%	7.6%	10.8%	12.1%	3.2%	9.6%	8.3%	8.3%	4.5%	5.1%

Source: SAPN ZS Load Profiles, Energeia Analysis

SAPN Network Tariff Weekend Off-Peak Periods

	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
0:00												
1:00												
2:00												
3:00												
4:00												
5:00												
6:00												
7:00												
8:00												
9:00												
10:00												
11:00												
12:00												
13:00												
14:00												
15:00												
16:00												
17:00												
18:00												
19:00												
20:00												
21:00												
22:00												
23:00												

Source: SAPN TSS (2020), Note: Red represents peak

Australian DNSP Approaches to LRMC

LRMC Methodology Summary

		VIC			NSW			ACT	SA
		AusNet	Jemena	CitiPower / Powercor	Ausgrid	Endeavour	Essential	Evoenergy	SA Power
Demand incl. in LRMC	P10/P50/Raw	P50	Raw	Raw	P50	P50	Raw	Raw	P10
	NCMD/CMD	NCMD	CMD	NCMD	-	NCMD	CMD	CMD	CMD
	NCMD Basis	ZS	-	ZS	-	ZS	-	-	-
% Expenditure incl. vs. AER FD	Repex	10%	0%	0%	1%	142%	10%	0%	9%
	Augex	0%	6%	174%	40%	27%	18%	89%	69%
	Connex	0%	21%	0%		43%		109%	0%
	Opex %	1.0%	4.3%	0.5%	2.0%	2.0%	-	2.0%	1.5%-2%
Time	LRMC Start Year	FY20	FY19	CY16	FY19	FY19	FY18	CY18	FY16
	Actual Years in LRMC	FY20	CY19-20	CY16-20	FY19-20	FY19	FY17-19	CY18	FY16-20
	Forecast Years in LRMC	FY21-30	FY22-29	CY21-25	FY21-38	FY20-28	FY20-32	CY19-27	FY21-38
	Total Years in LRMC	11	11	10	20	10	15	10	23

Source: DNSP LRMC Methodology Papers

DNSP Approaches

DNSP Pricing Trends

DNSP	Old Default Tariff			New Default Tariff			Reasons for Change		
	Flat/BT	ToU	Demand	Flat/BT	ToU	Demand	PV	BESS	EV
Ausgrid	×	✓	×	×	×	✓	✓	✓	✓
Essential	×	✓	×	×	×	✓	✓	✓	✓
Endeavour	×	✓	×	×	×	✓	✓	✓	✓
Energex	✓	×	×	×	×	✓	×	×	×
Ergon	✓	×	×	×	×	✓	×	×	×
United	×	×	✓*	×	✓	×	?	?	?
Jemena	×	✓	×	×	✓	×	?	?	?
Citipower	×	×	✓*	×	✓	×	?	?	?
Powercor	✓	×	×	×	✓	×	?	?	?
Ausnet	×	✓	×	×	✓	×	✓	✓	✓
SAPN	✓	×	×	×	✓	×	?	?	?
TasNetworks	✓	×	×	×	✓	×	?	?	?

Source: DNSP TSSs, Note: ✓* = Transitional Tariff

Hearing from Retailers

Retailer Top 3 Issues

1. Please add to the team chat

Next Steps

Appendix

PowerWater

Bibliography

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Misc

DNSP Examples

DNSP Tariff Reforms

DNSP	Tariff Reform Summary
Ausgrid	Closure of non-TOU tariffs for residential and small business customers. Demand tariff made to be default tariff
Essential	New customers automatically assigned to ToU tariff. Demand charge for residential and small business customers will only apply 5pm-8pm on weekends, previously being 7am-10pm on all days
Ergon, Energex	Incorporation of solar sponge into proposed cost reflective tariffs for residential customers. Narrower non-seasonal evening peak period (4pm-9pm) to encourage mass-market adoption of demand and ToU tariffs
Ausnet	Introduction of a solar component to tariffs that corresponds to but differs slightly from SAPN's solar sponge, with a very low off-peak charge 10pm-3pm and a peak charge between 3pm and 9pm
Citipower/ Powercor/ United Energy	Introduction of new ToU tariff, in which peak period is now 3pm-9pm every day compared to the previous legacy ToU which was 7am-11pm weekdays. All small business ToU tariffs discontinued and replaced, with peak period shifting from 7am-11pm weekdays to 9am-9pm weekdays
Jemena	All existing residential ToU tariffs discontinued and replaced by new ToU tariffs, in which the peak period has been modified from 7am-11pm weekdays to 3pm-9pm every day
Evoenergy	Proposed to replace flat energy charges with a ToU component in the Residential Demand tariff (this was rejected by the AER)
SAPN	Introduction of solar sponge component in ToU tariffs for residential and small business customer. Closure of residential flat rate tariffs
Tasnetworks	Introduction of two new DER tariffs available to DER customers, in which the off-peak charge is discounted by 50%

Source: Energeia Research

1. Australian distribution networks are undertaking a range of pricing reforms to respond to the above challenges

New Tools: Tariff Design Tool

1. Key Pricing Challenges
    1. Incomplete Customer Data
    2. Plethora of Pricing Design Options
    3. Understanding Customer Impacts
    4. Understanding Impacts on Customer Behavior, e.g. Solar PV, EVs and Batteries
2. Introducing our Pricing Design Tool
3. Grounded in a Robust Customer Sample
4. Key Benefits of New Tool
    1. Increased ability to work with retailers in real-time

Agenda

1. **Welcome and Introductions**
   1. Acknowledgement of Country
   2. Challenges we are Facing as a Network
   3. Regulatory Objectives
   4. What We Need from You
2. **Progress Implementing our Tariff Structure Statement**
   1. Tariff Structure Statement 2019-24
   2. Network Prices 2021-22
3. **Our Challenges as an Industry**
   1. Revenue Volatility
   2. Solar PV
   3. Export Pricing Rule
   4. Electric Vehicles
   5. Retail Pricing Order
4. **What we have Heard from Customers**
   1. Customer Consultation
5. **Key Pricing Opportunities and Options**
   1. AER Feedback
   2. Periods
   3. LRMC
   4. Existing Tariffs
6. **New Tools we will be Using**
   1. Smart Meters
7. **Hearing from Retailers**
   1. Issue and Opportunity Capture
8. **Next Steps**
   1. Annual Pricing Proposal 2022-23
   2. Tariff Structure Statement 2024-29
   3. Retailer Consultation