

Capital expenditure

Presentations to the Customer Forum

7 June 2018



Overview

- ▶ **Topic significance and objective of presentation**
- ▶ **Overview of the capex building block**
- ▶ **Individual presentations on capex categories**
 - › 9.45 – 10.45: Augmentation expenditure
 - › 10.45 – 11.30: Replacement expenditure (overview and major projects)
 - › 11.30 – 11.45: Replacement expenditure (other programs and projects)
 - › 11.45 – 12.30: Safety expenditure
 - › 1.30 – 2.00: Connections and customer contributions
 - › 2.00 – 2.30: IT expenditure
- ▶ **Next steps**

Topic significance and objective

▶ **Key capex categories in scope of Customer Forum negotiation**

- › Agreed in scope:
 - Augmentation expenditure that influences price/reliability trade-offs
- › Proposed to be in scope:
 - Repex (major projects – station rebuilds) that influences price/reliability trade-offs; DER integration expenditure and DER connections policy; innovation expenditure

▶ **Objectives of presentation**

- › Provide information on:
 - Methodologies used to forecast key capex categories
 - Key drivers and forecasts of capex in the 2021-25 period
 - Customer benefits/outcomes
- › Identify key questions and options for consideration by the Customer Forum and how these are linked to the customer research program

Overview of capex building block



Key capex categories

- › Augmentation expenditure (augex): to expand the capacity of the network
 - Augmentation to meet load growth; to manage DER integration
 - Network and non-network solutions

- › Replacement expenditure (repex): to replace or upgrade aging or obsolete assets

- › Safety: to meet safety obligations such as bushfire safety (incl. REFCLs)

- › Connections: to connect customers to the shared network
- › Capital contributions: significant proportion of the connections capex is funded by connecting customers

- › IT/non-network: including IT, plant and equipment, motor vehicles and buildings

Total capex (gross) 2006 to 2025



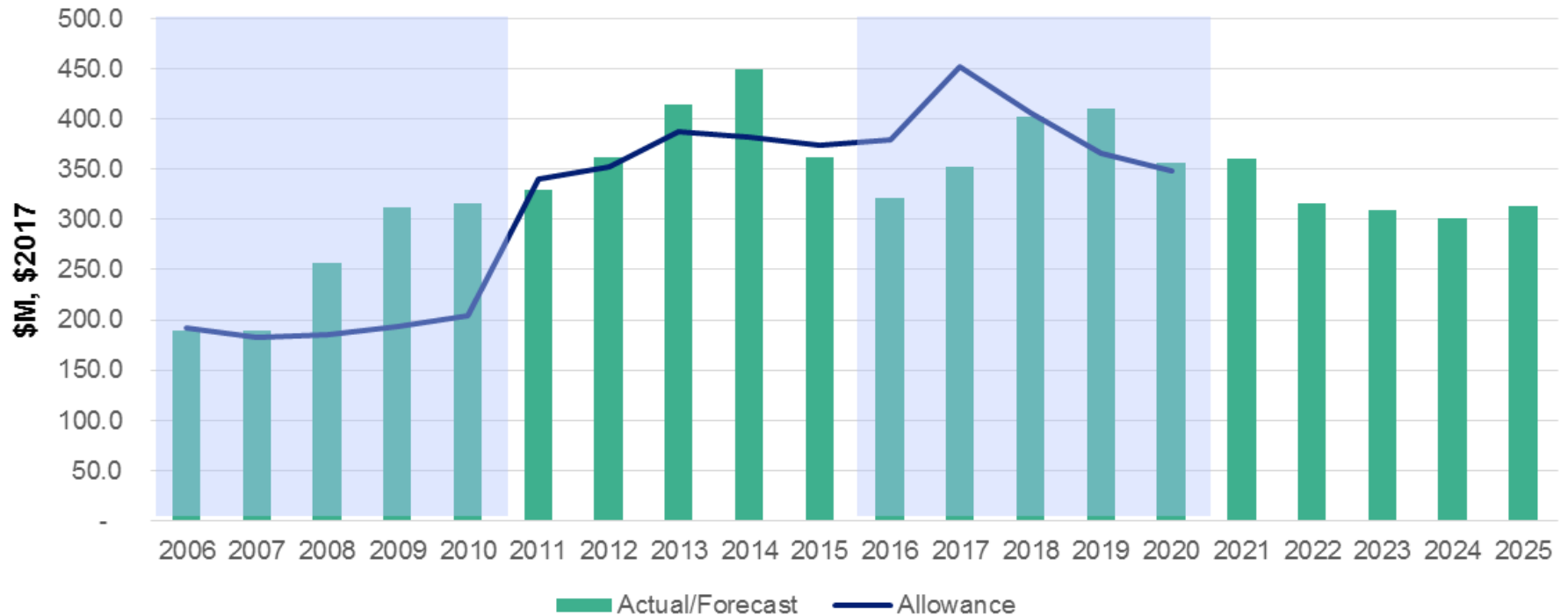
Expenditure to meet higher than expected peak demand growth

Step up in safety expenditure

Delivering on the REFCL program

Placeholder values
Falling safety expenditure, other capex assumed at current levels

Total Gross Capex 2006-25 (\$m, Real \$2017)



Note: Includes capitalised overheads

Total capex (net) 2006 to 2025



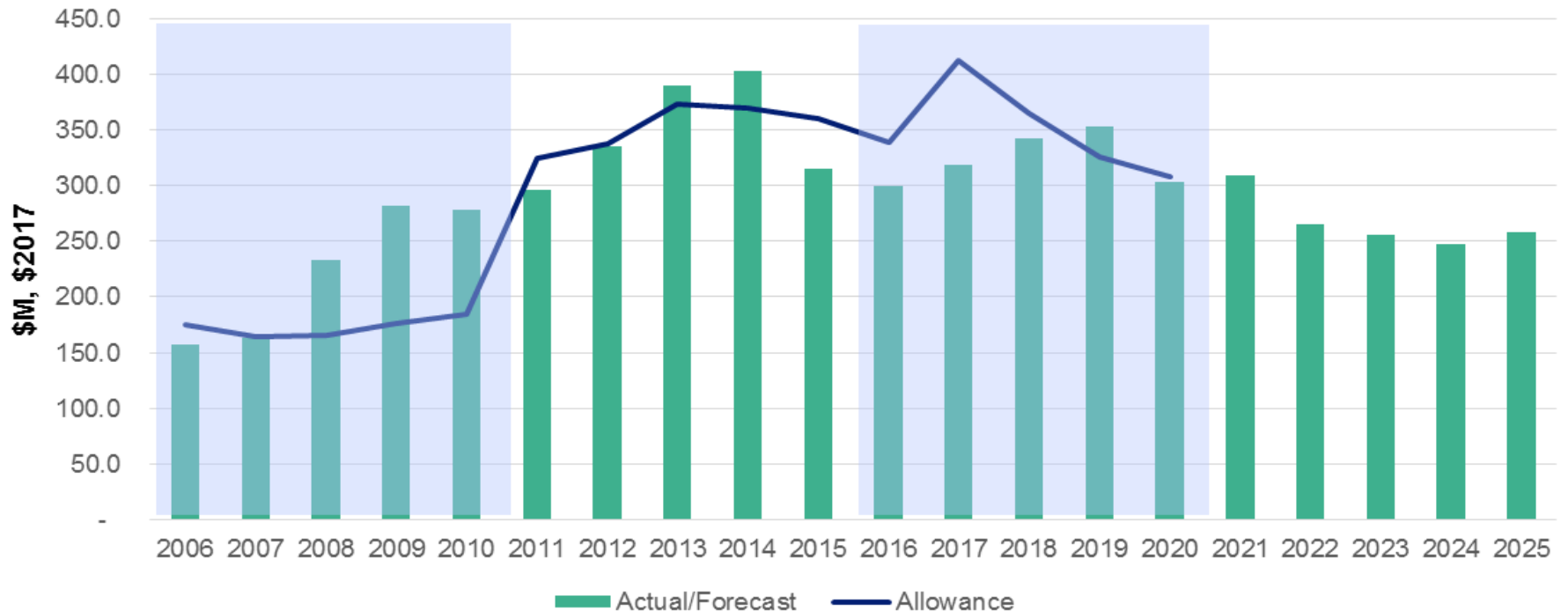
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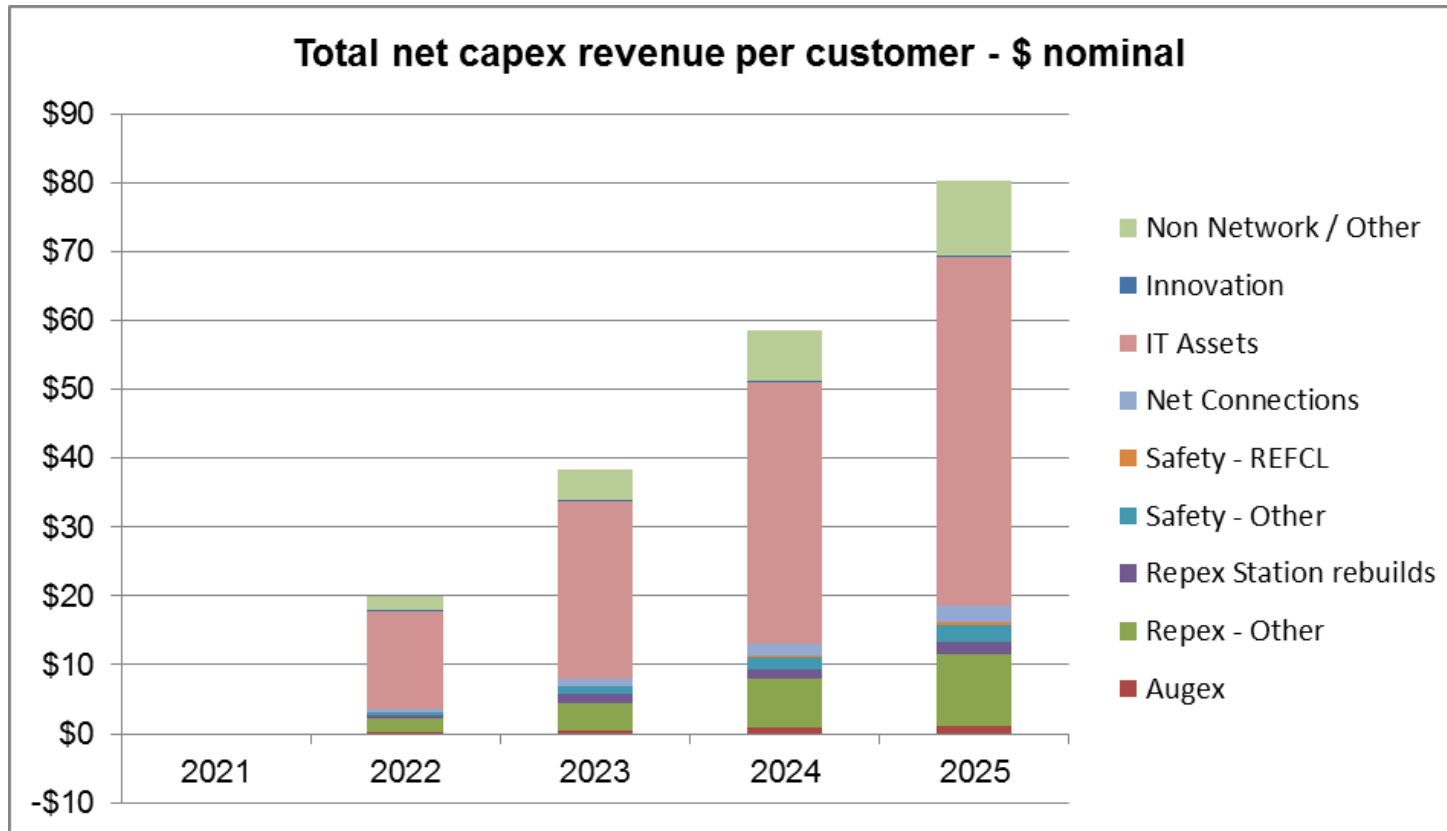
Placeholder values
Falling safety expenditure, other capex assumed at current levels

Total Net Capex 2006-25 (\$m, Real \$2017)



Note: Includes capitalised overheads

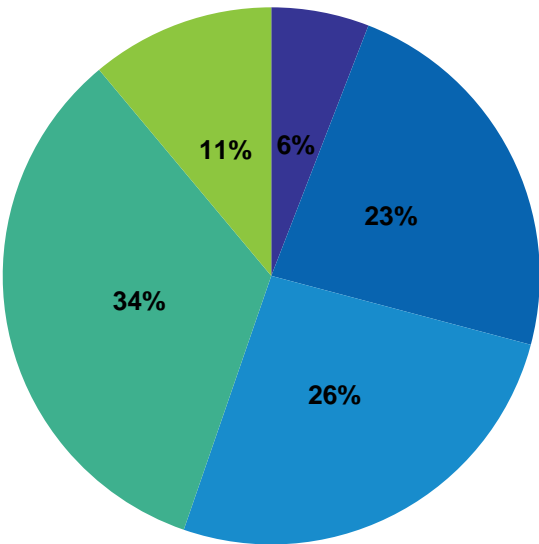
Bill impact: Revenue per customer 2021-25 (placeholder values)



Capex composition and customer outcomes/benefits

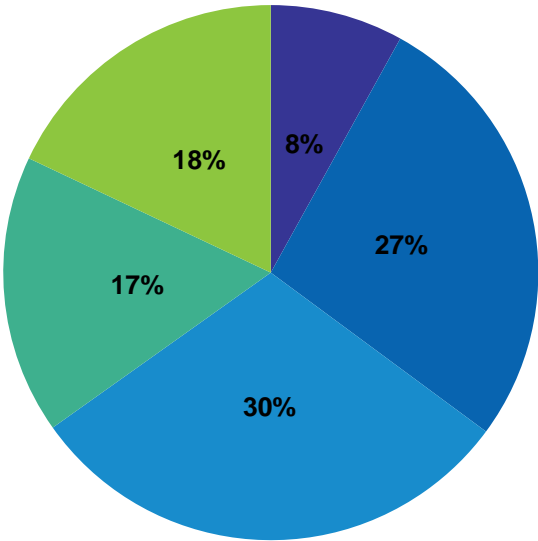


2016-20



- Augmentation (6%) - managing growth
- Connections (23%) - managing growth
- Replacement (26%) - reliable supply
- Safety (34%) - safety obligations incl bushfire safety
- Non-network (11%) - supporting customer services incl efficient data & billing

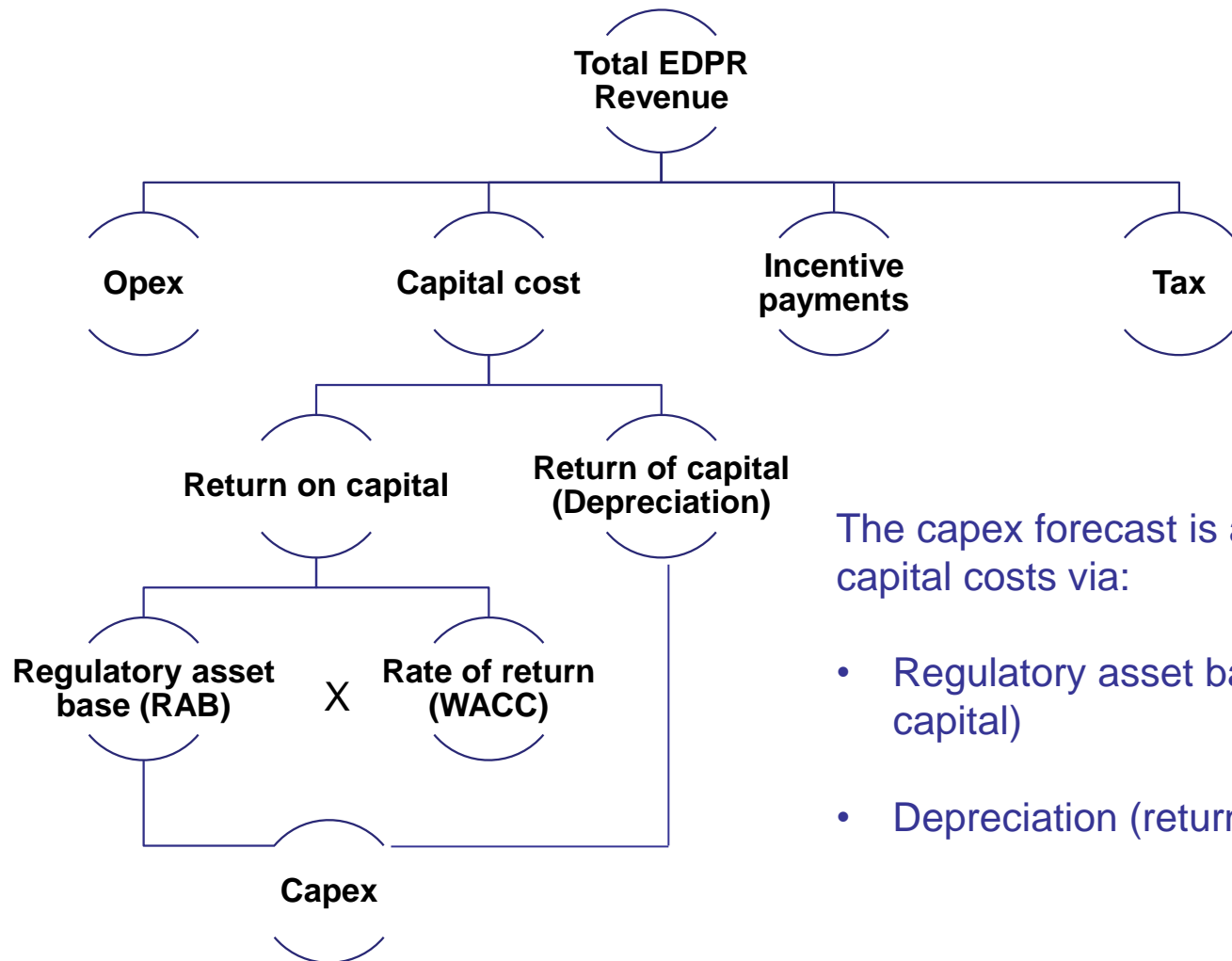
2021-25



- Augmentation (8%) - managing growth
- Connections (27%) - managing growth
- Replacement (30%) - reliable supply
- Safety (17%) - safety obligations incl bushfire safety
- Non-network (18%) - supporting customer services incl efficient data & billing

Note: Includes capitalised overheads

How does capex impact revenue and prices?



The capex forecast is an input to capital costs via:

- Regulatory asset base (return on capital)
- Depreciation (return of capital)

Overview of forecasting methodologies



Overview of forecasting methodologies

- › Bottom up forecasts are produced for each capex category
- › Each methodology is relevant to the nature of the capex and relevant drivers – for example
 - Augmentation driven by (peak) demand growth and DER penetration (future)
 - Replacement driven primarily by asset conditions, risk-based asset management
- › Designed to respond to customer’s needs and preferences
 - Aligned to customer input and customer-centric business plans
 - Responds to changing observed behaviour such as lower energy use, solar PV penetration and exports, changing business models/services to customers
 - Economic analysis that incorporates measures of customer’s willing to pay (such as VCR)
- › Economic modelling framework ensures positive economic value to customers
 - Identification of the best available solution, consideration of both network and non-network solutions

**Augmentation expenditure (augex)
9.45 – 10.45 am**



Replacement expenditure (repex)

10.45 – 11.30: Overview and major projects

11.30 – 11.45: Other programs and projects



Safety expenditure

11.45 – 12.30 pm



Connections and customer contributions

1.30 – 2.00 pm



What is connections expenditure?

- ▶ **Expenditure to connect new customers to the network at customer request**
 - › Expected average around 16,000 new connections per year
 - › Can vary: 2017 actual high at over 18,000

- ▶ **Customer contributions are paid in some circumstances**

- ▶ **The remaining costs are recovered from all customers**

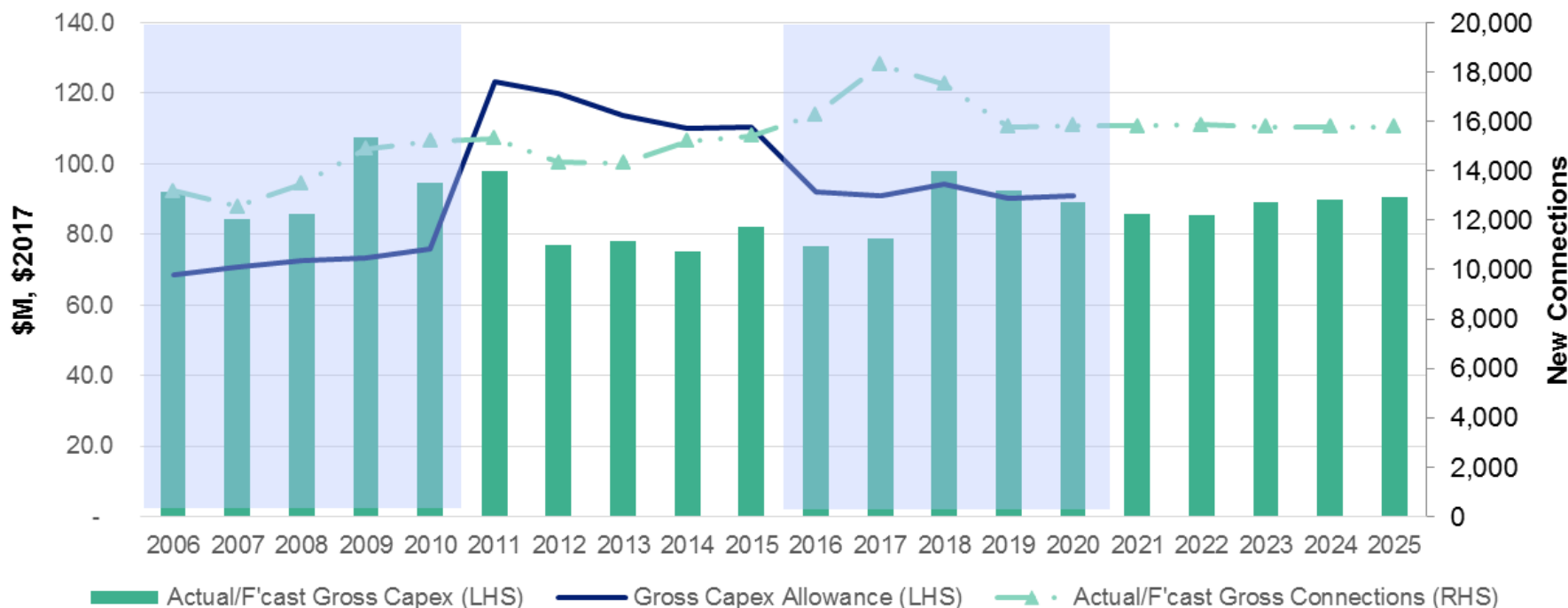
Connections expenditure

Industrial and commercial connections lower than expected

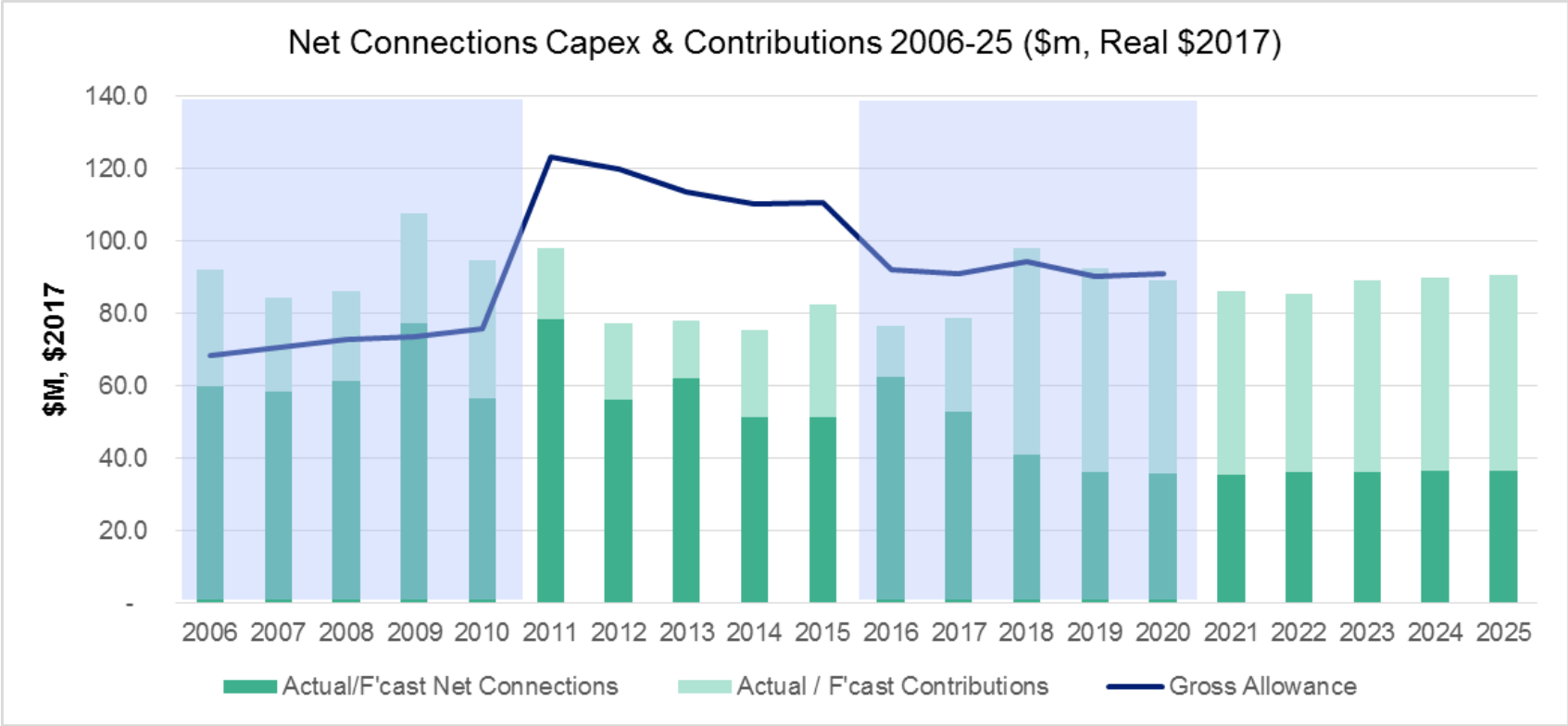
2018 higher due to connections policy change – underground residential developments

Placeholder values
Slowing residential customer growth
Higher growth in commercial customers

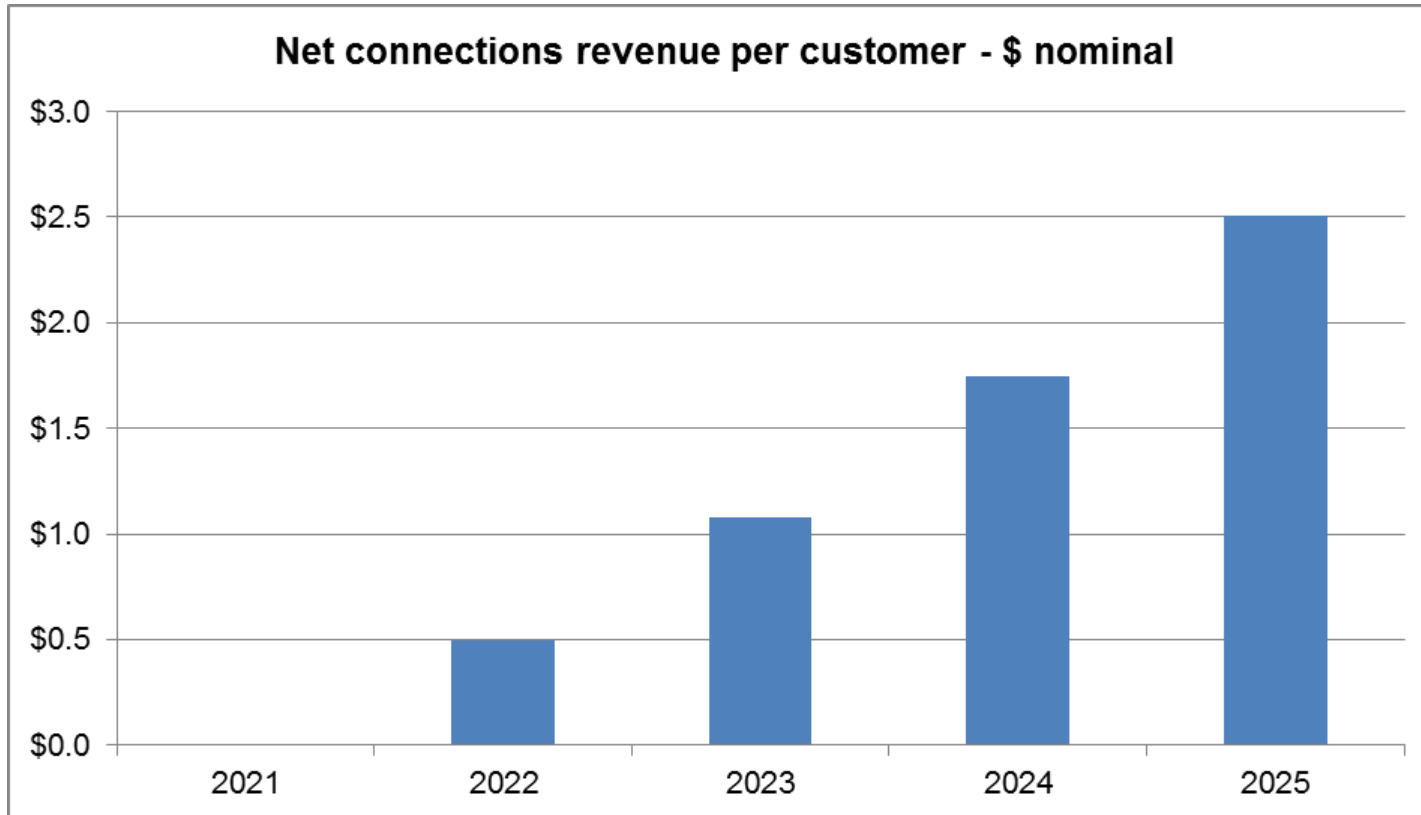
Gross Connections Capex 2006-25 (\$m, Real \$2017)



Net connections capex and customer contributions



Bill impact: Revenue per customer 2021-25 (placeholder values)



Forecasting methodology

1. Develop forecast of customer growth

- › Residential customers
- › Business customers
- › Commercial and industrial customers

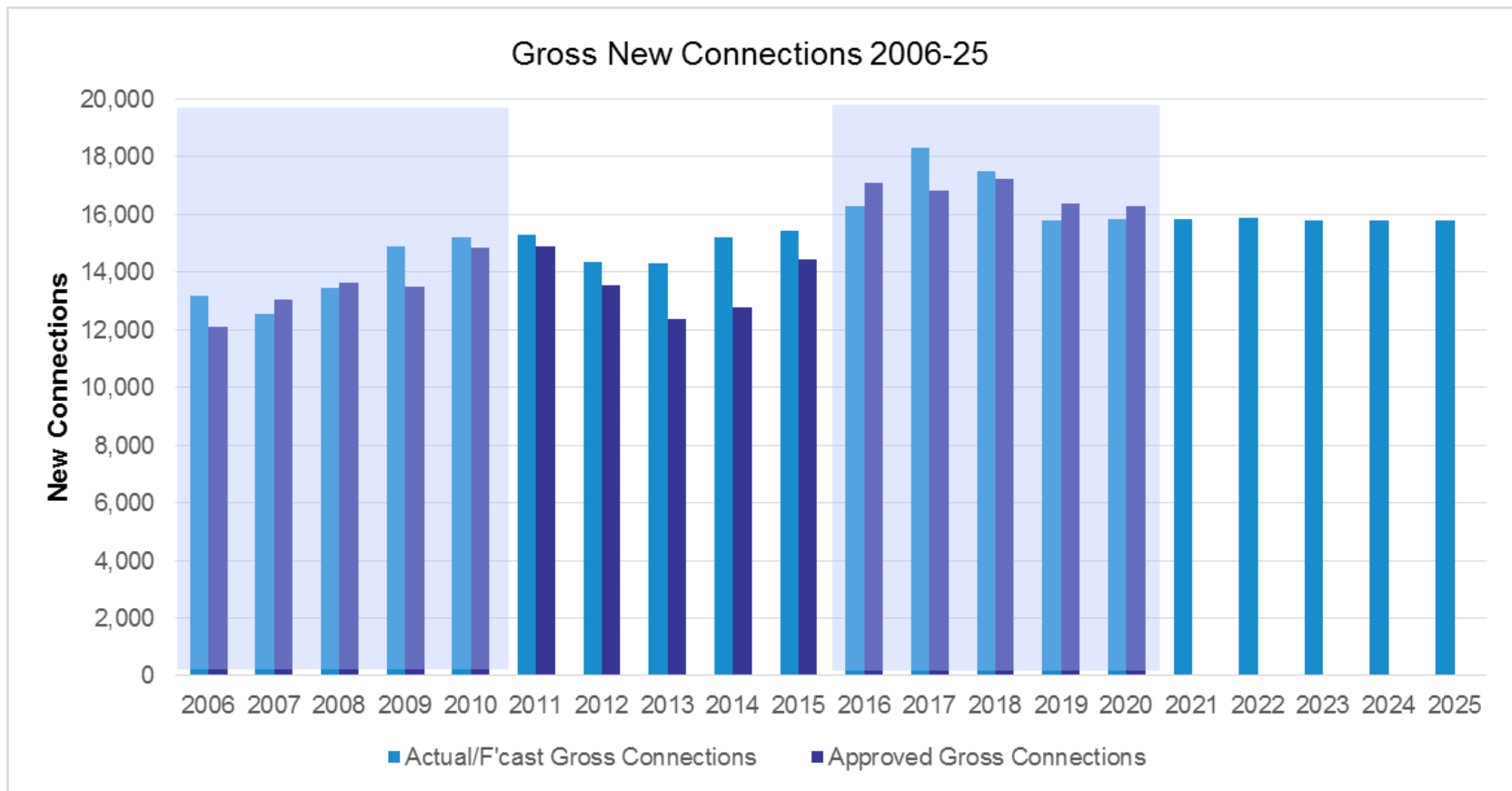
2. Estimate unit rates for each type of connection

- › Typically based on recent actual costs
- › Adjustments for any one-off factors

Customer outcomes/benefits



▶ Approximately 79,000 connections over 2021-25



Customer Contributions Policy

- ▶ Change from the Victorian to national framework governing customer contributions (or the amount a customer contributes to the cost of their connection) implemented in 2016-20 price review.
- ▶ New framework better reflects the true costs borne by AusNet Services (and other customers) when a new customer connects.

To qualify for BASIC		To qualify for BASIC EMBEDDED GENERATION		To qualify for STANDARD		To qualify for NEGOTIATED (1 or more)*	
Connection factors	Yes/No	Connection factors	Yes/No	Connection factors	Yes/No	Connection factors	Yes/No
Network changes needed - eg new poles, lines, pits	No	Network changes needed - eg new poles, lines, pits	No	Network changes needed - eg new poles, lines, pits	Yes	Network changes needed - eg new poles, lines, pits	Yes
Metering/technical issues	No	Metering/technical issues	No	Metering/technical issues	Yes	Metering/technical issues	Yes
Special power needs	No	Special power needs	No	Special power needs	No	Special power needs	Yes
Connection to a SWER powerline	No	Connection to a SWER powerline	No	Connection to a SWER powerline	No	Connection to a SWER powerline	Yes
Generating renewable energy eg via solar/wind supply	No	Generating renewable energy eg via solar/wind supply	Yes	Generating renewable energy eg via solar/wind supply	-	Generating renewable energy eg via solar/wind supply	Yes
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maximum capacity more than 4.6 kVA (or more than 3.5 kVA if connected to a SWER powerline)	-	maximum capacity more than 4.6 kVA (or more than 3.5 kVA if connected to a SWER powerline)	No	maximum capacity more than 4.6 kVA (or more than 3.5 kVA if connected to a SWER powerline)	-	maximum capacity more than 4.6 kVA (or more than 3.5 kVA if connected to a SWER powerline)	Yes
inverter has special technical needs	-	inverter has special technical needs	No	inverter has special technical needs	-	inverter has special technical needs	Yes
Model Standing Offer information Basic		Model Standing Offer information Basic Micro Embedded Generation		Model Standing Offer information Standard		Model Standing Offer information not applicable	

Contributions Policy

For negotiated connections:

- ▶ Introducing an **Incremental Cost of the Shared Network** – the marginal cost of upgrading the shared network (i.e. network which is not used solely by the connecting customer)
- ▶ This is the ‘average cost’ per KW of reinforcing AusNet Services’ shared electricity distribution network as a result of connecting new customers
- ▶ For every additional KW of load placed on the network this takes up spare capacity which in most cases will lead to AusNet Services incurring additional augmentation costs either immediately, or sometime in the future

$$\text{Customer Contribution} = \text{ICCS} + \text{ICSN} - \text{IR (n=X)}$$

Where:

- ICCS = Incremental Cost Customer Specific – incremental costs used solely by the connecting customer. This may include extensions and augmentation of connection assets at the customers connection point.
 - ICSN = Incremental Cost Shared Network – the incremental costs incurred for shared network. This may include any augmentation (insofar as it involves more than an extension) attributable to the new connection.
 - $\text{IR}(n=X)$ = Incremental revenue expected to be received from the new connection.
- ▶ Opex now has no net impact on capital contributions payable

Turnkey Projects

- ▶ Where a developer requires either new or additional power supply
- ▶ Typically design and construct the assets (e.g. poles), then gift to AusNet Services on commissioning – we become responsible for maintaining them
- ▶ Design and construction contractors must be accredited by AusNet Services
- ▶ Developer pays one-off Project Fee for each development proposal

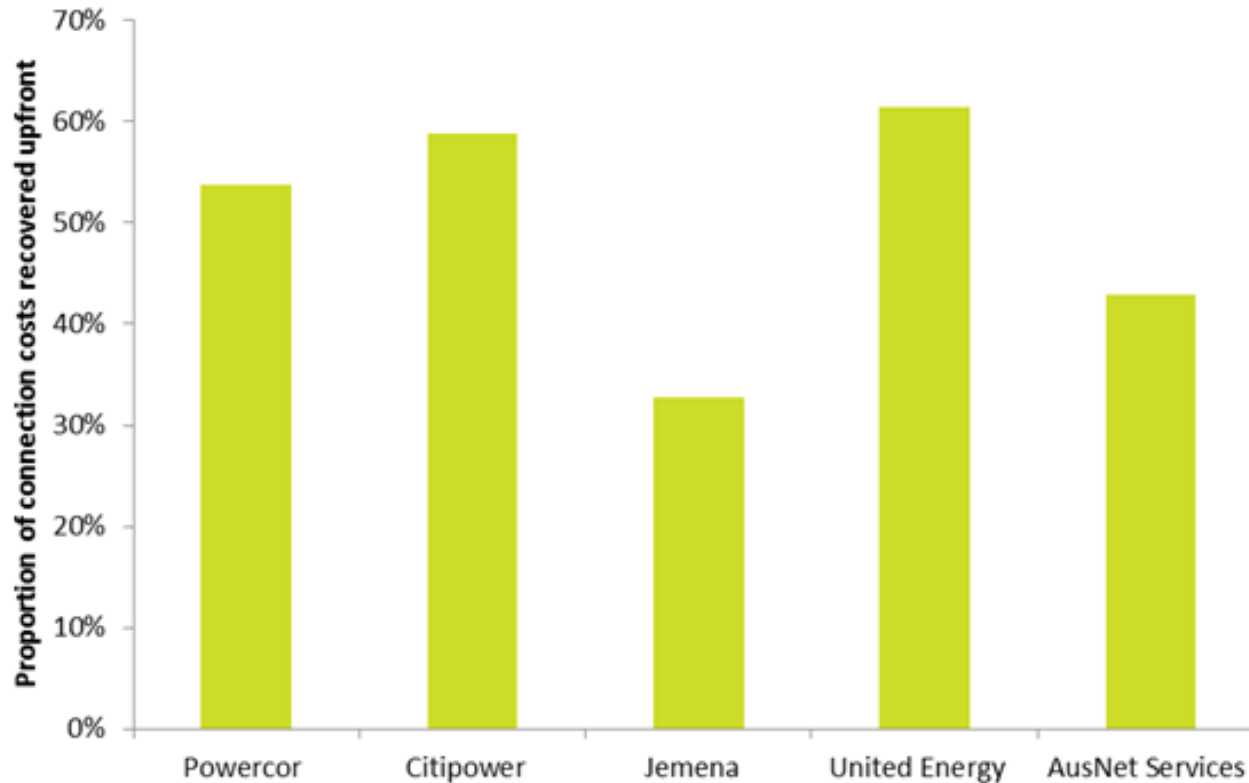
ESC Review

- ▶ Focussed on the connections process for new housing developments and timeframes
- ▶ Examines effectiveness of existing regulations and ways to improve timeliness of connections, mitigating risk of additional costs passing through to customers
- ▶ Due to report by 18 September

Mix between upfront and ongoing charges for load customers



This mix varies significantly across the Victorian networks, based on 2017 data.



IT expenditure

2.00 – 2.30 pm



What is IT expenditure?

- › Information, communication and technology capabilities for the electricity distribution network
- › Hardware and software solutions
- › Integrated communications system

IT capital expenditure

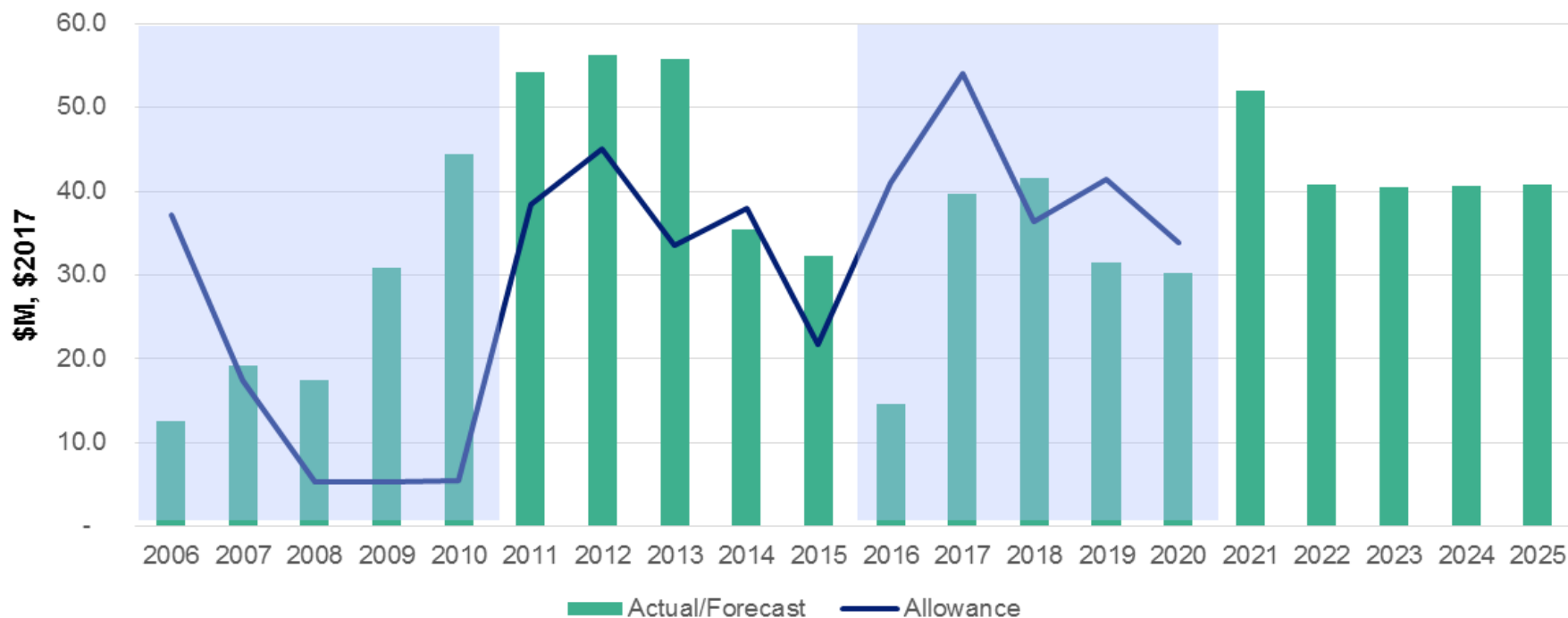
Maintenance of legacy IT systems, commencement of consolidation & ICT investment in AMI

Delivery of consolidated, modernised ICT (enterprise asset mgt & resource planning)

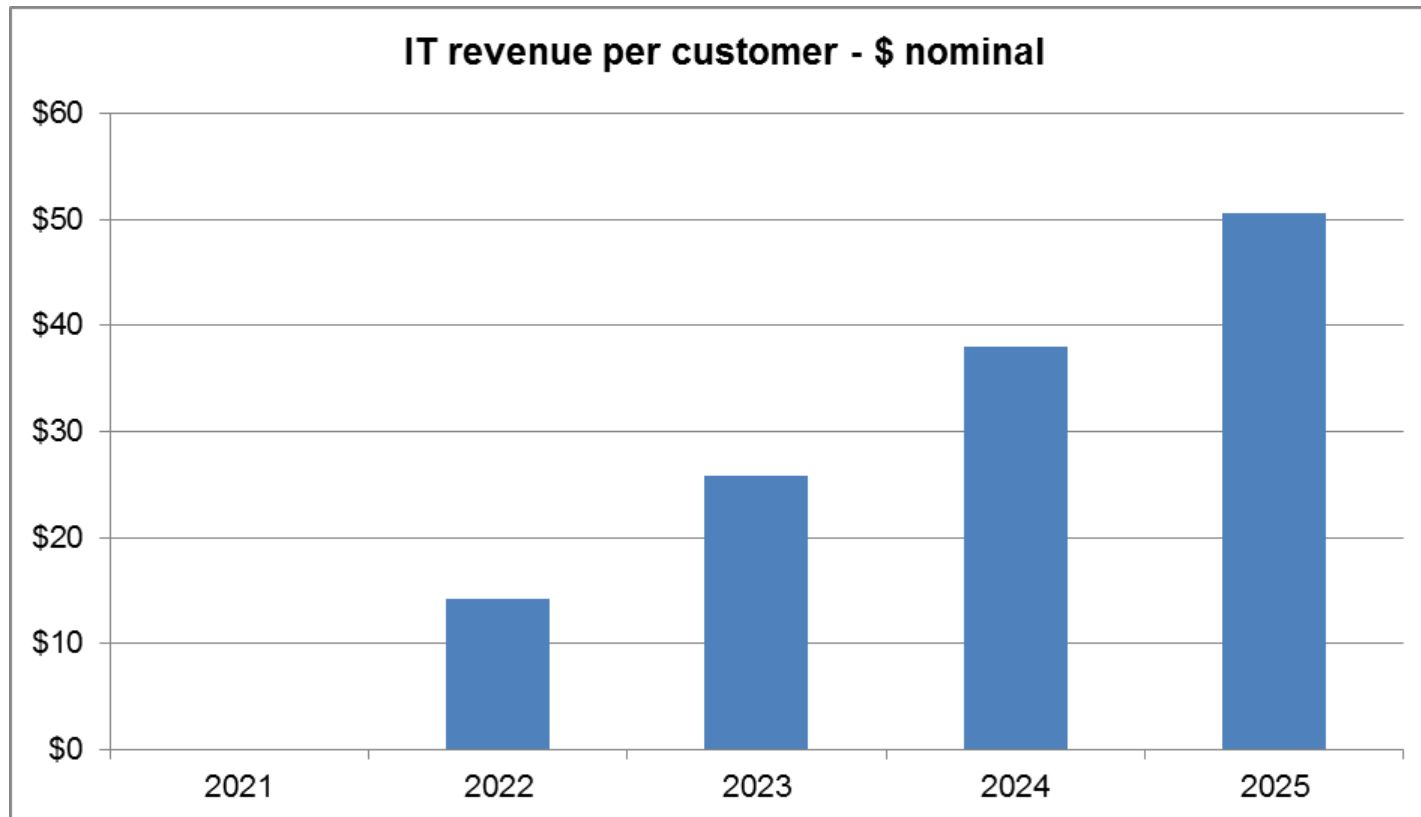
Completion of ICT modernisation for network mgt, information mgt & customer services

Placeholder values in line with historic expenditure - reflecting life cycle expenditure, network & data management

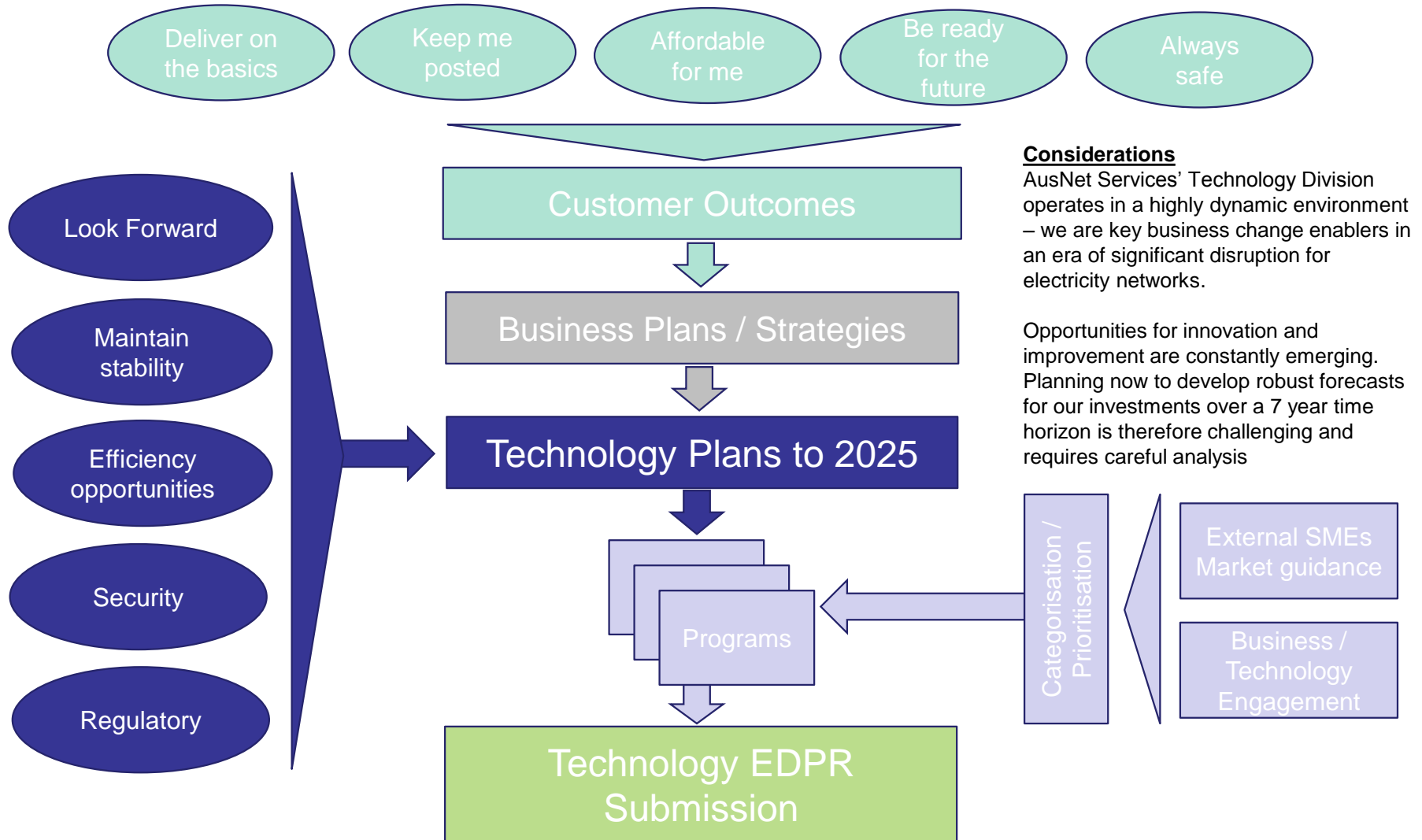
IT Capex 2006-18 (\$m, Real \$2017)



Bill impact: Revenue per customer 2021-25 (placeholder values)



Technology EDPR Capex Development - Methodology



Drivers in the 2021-25 period

- ▶ Lifecycle management of various software and hardware systems
- ▶ ERP update/cloud solutions
- ▶ Preparation for the future (analytics, automation)
- ▶ Cyber security

Customer outcomes/benefits

- ▶ **Investment continues to drive lower corporate and operational costs**
- ▶ **Network automation improves reliability and response times for emergency maintenance**
- ▶ **Data management/availability**
- ▶ **Improved security of data and systems**

Next steps

- ▶ **We will respond to feedback received today from the AER and the Customer Forum**
- ▶ **Customer views expressed at the June Focus Groups will be reflected in expenditures**
- ▶ **First cut capex forecast will be presented for further discussion at the July meetings**