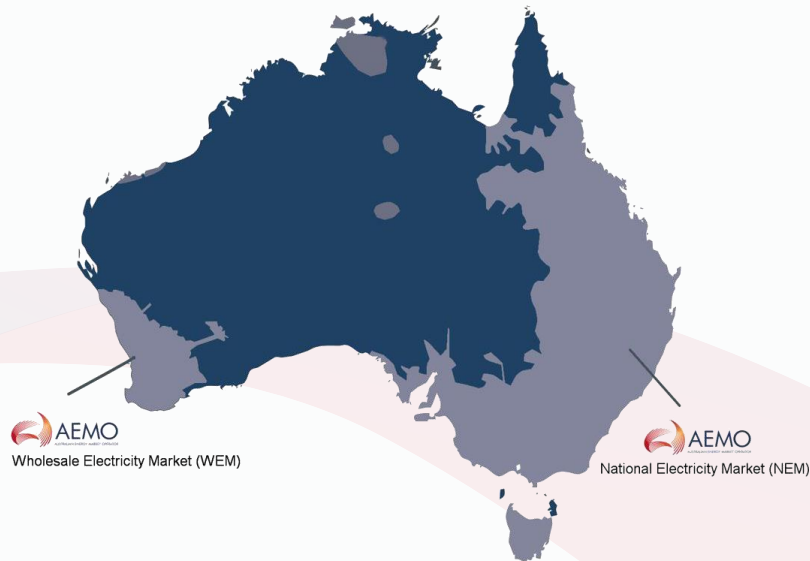


# Australia towards a post-2025 market design

Audrey Zibelman  
Managing Director and Chief Executive Officer

# About AEMO



We operate Australia's National Electricity Market and power grid in Australia's eastern and south-eastern seaboard, and the Wholesale Electricity Market and power grid in south-west WA.



Both markets supply more than 220 terawatt hours of electricity each year.



We also operate retail and wholesale gas markets across south-eastern Australia and Victoria's gas pipeline grid.



Collectively traded more than A\$20 billion in the last financial year.



## Ownership

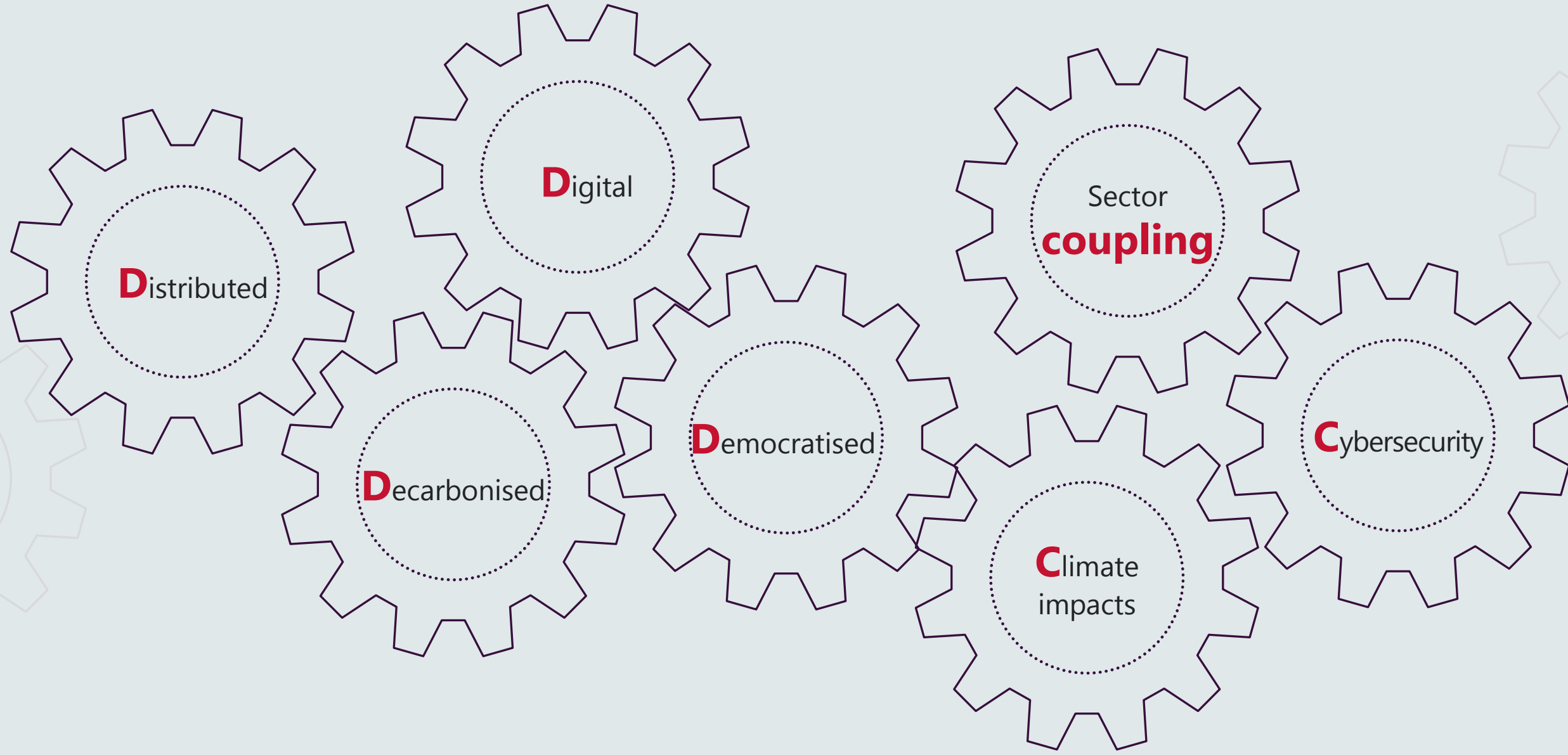
**40%**

Market participants

**60%**

Governments of Australia

# Universal trends (4Ds) and Australian additions (3Cs)



# The modern consumer centric power system

Increase complexity/low marginal energy expense



## Capacity

45,000 MW to 90,000 MW to serve relatively the same load



## Size

Creating additional capacity to connect 35 GW of new large-scale renewable generators in the best locations in the network



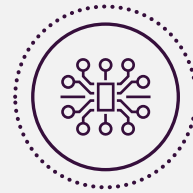
## Individual units

300 generators to over 4 millions of units



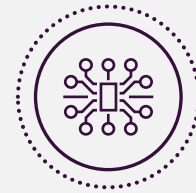
## Granularity

From minutes to milliseconds



## Disruption

From energy intensive and individual units to capability and flexibility valued/ portfolio based



## Data

From 6 data points to over 100,000 data points per customer meter read

# Prudent approach to industry change

- Stabilise the near term
- Measured approach to the transition
- Enable the future

## The Goldilocks approach to transitioning sectors



# What we the Australian industry needs to do collectively



**Ensure** reliable and secure system operations



**Design** and **implement systems** for the **future of energy**



**Promote and pursue** adaptive markets and regulation



**Insist on** consumer empowerment



**Deploy** digital and data solutions



**Look for** and **promote talent**

# Security and reliability



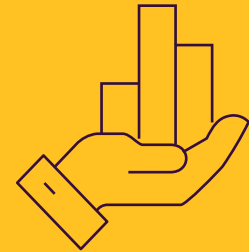
## Stabilise

- Fit for purpose
- Reliability
- System strength
- Frequency and voltage Requirements



## Transition

- Managed exits
- Transmission investments
- Market enhancements



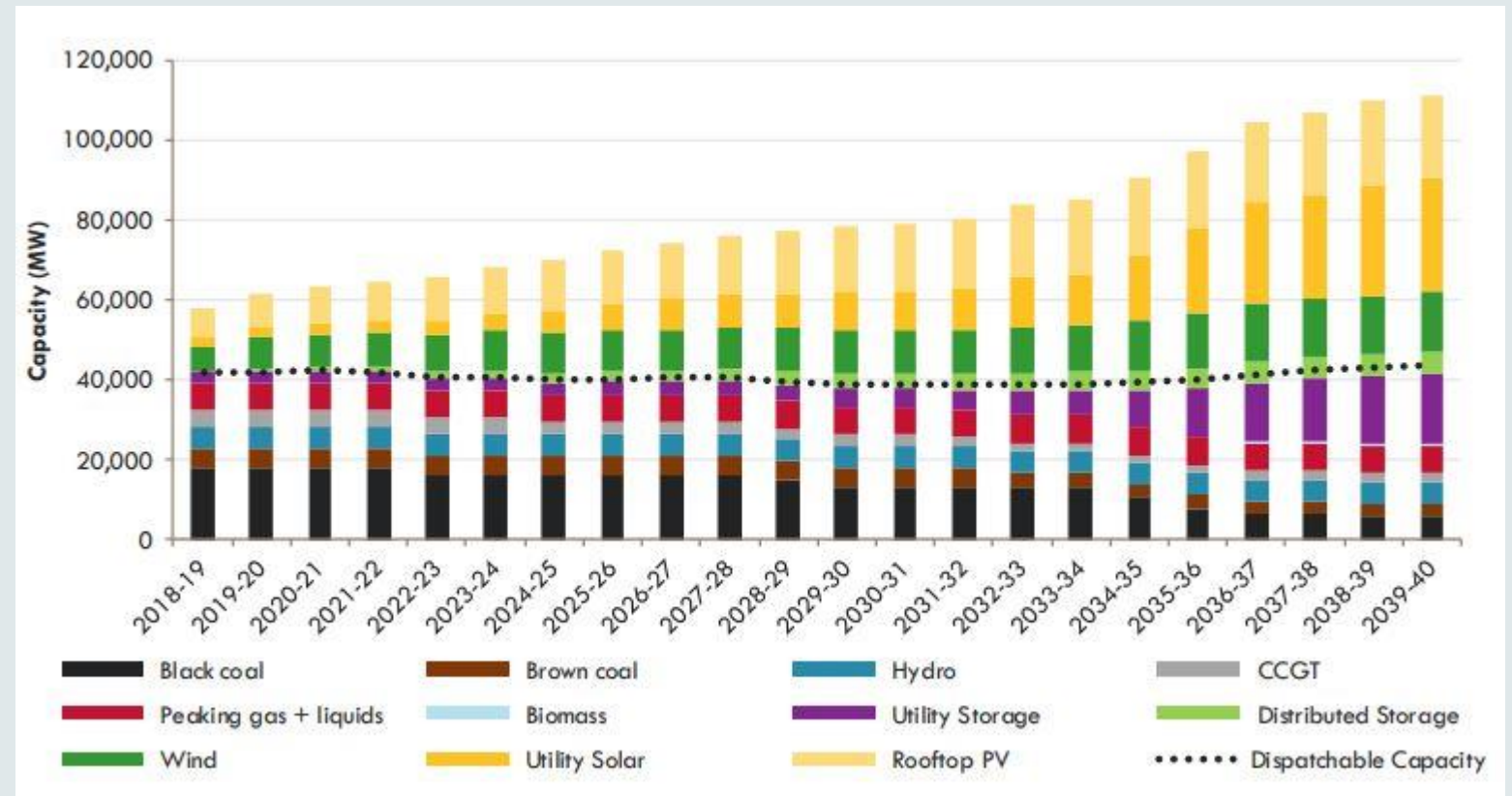
## Enable

- Digitalisation and advanced computing with digital twin
- Apply new technologies and approaches to solving system requirements

# Future System Design

- Scenario analysis and testing
- Increased competition
- Sector coupling
- Integrated and secure investment pathway

Forecast generation capacity for the National Electricity Market – neutral case



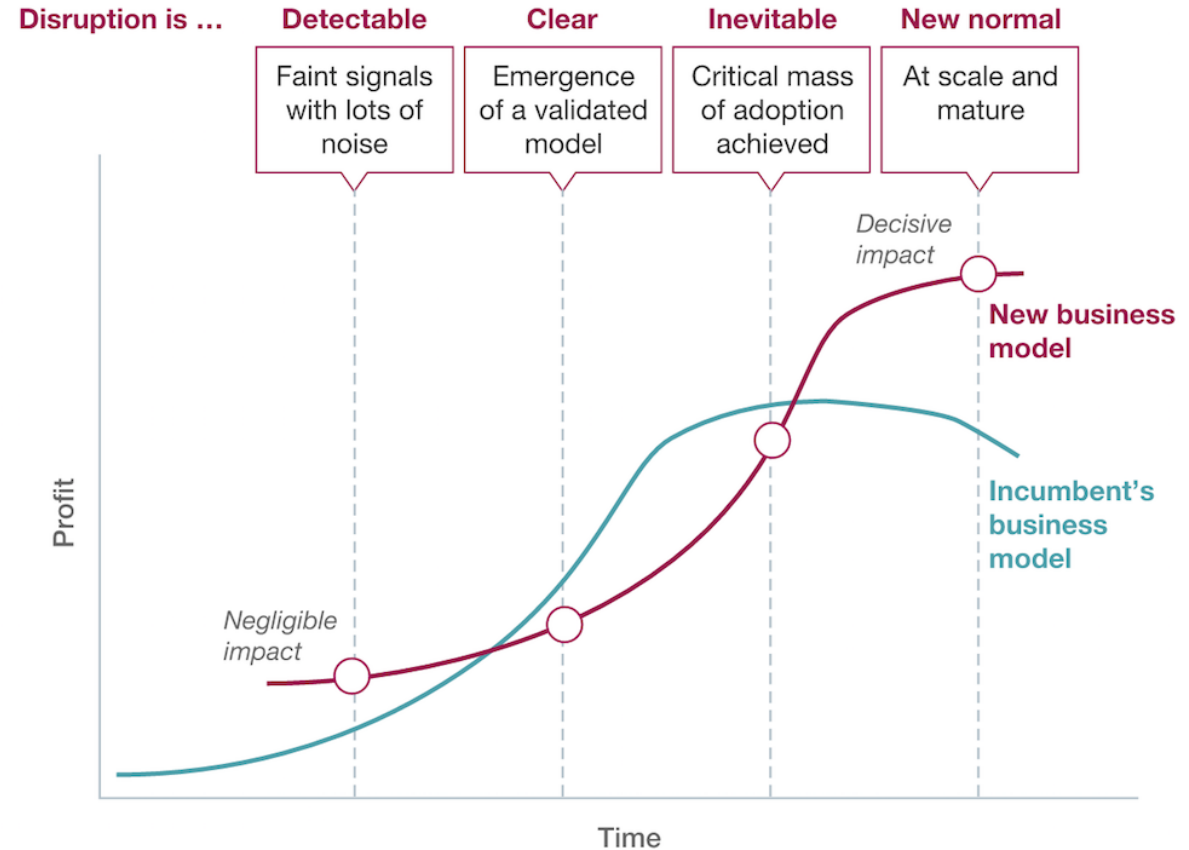
Source: AEMO's 2018 Integrated Systems Plan, July 2018



# Adaptive Markets and Regulation

- Pursue productivity and consumer value through a two way system
- Ensure the markets are designed to value performance
- Pursue regulatory change to align to support technology transition

Disruption introduces an incumbent to a new journey.



Incumbent's move	Acuity	Action	Acceleration	Adaptation
Common barrier	Myopia	Avoidance of pain	Inertia	Fit

McKinsey&Company

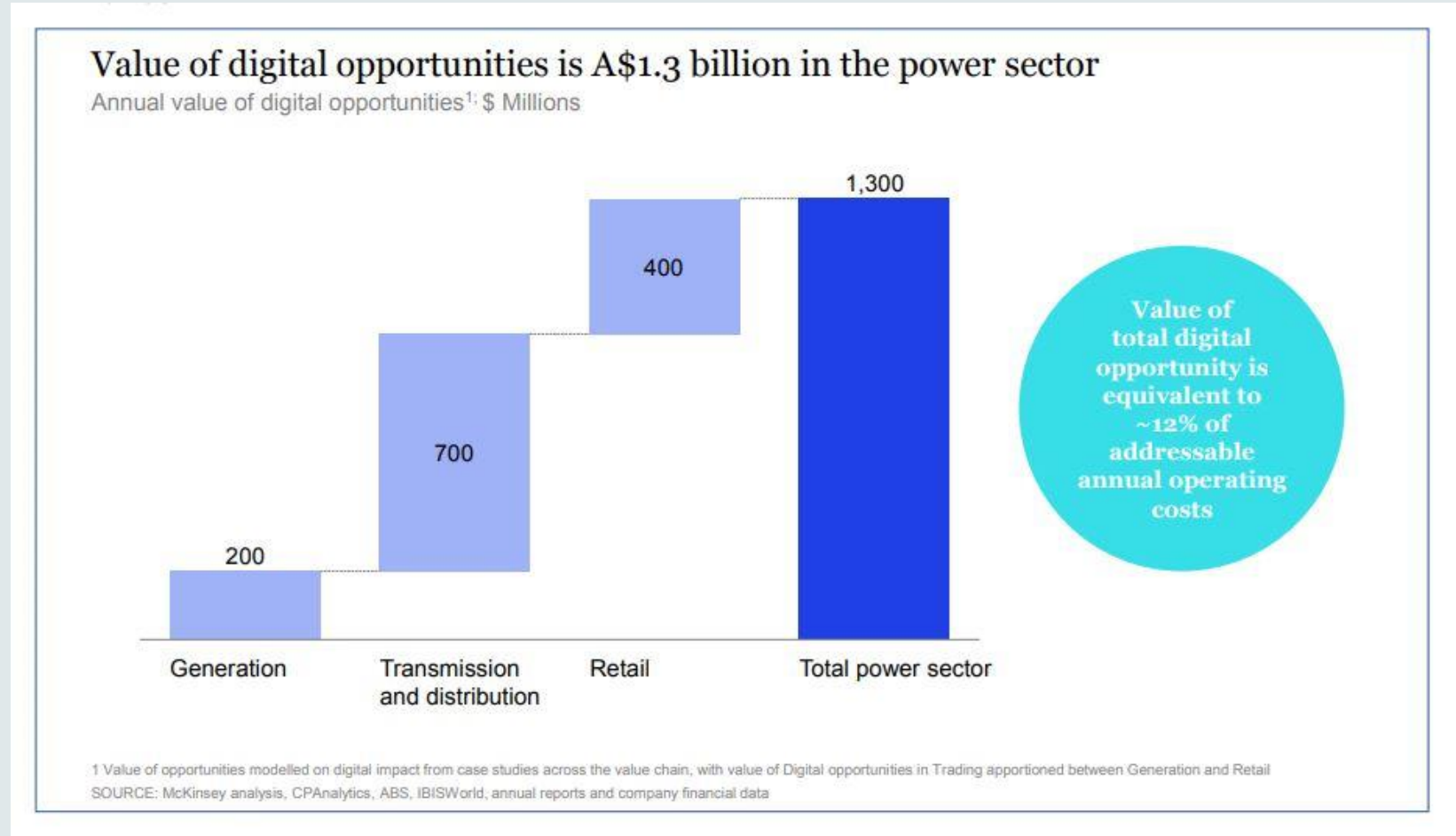
Source: *An incumbent's guide to digital disruption*, May 2016  
(McKinsey report)

# Consumer Engagement



# Digital and Data

- Digital platforms - reduced costs and competitive entry
- Speed and granularity
- Consumer engagement and empowerment



Source: *Digital Australia*, March 2017 (Mckinsey report)

# People, Culture and Capabilities

- Enabling and encouraging different skillsets
- Building collaboration across the industry
- Enhanced cross-sector collaboration



# Managing the future

*"The greatest danger in times of turbulence is not the turbulence – it is to act with yesterday's logic."*

– Peter Drucker

Thank you