SUPPORTING ENERGY SECTOR TRANSITION

THE ROLE OF MARKETS AND REGULATORY FRAMEWORKS

LODDON MALLEE FUTURE ENERGY FORUM
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ED CHAN
DIRECTOR, AUSTRALIAN ENERGY MARKET COMMISSION

AEMC

Who we are

We are the rule maker for Australian electricity and gas markets

What we do

We make and amend the:

National Electricity Rules

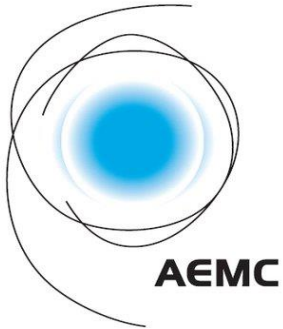
National Gas Rules

National Energy Retail Rules

We also provide market development advice to governments

Energy market institutions

ENERGY SECURITY BOARD



AEMC

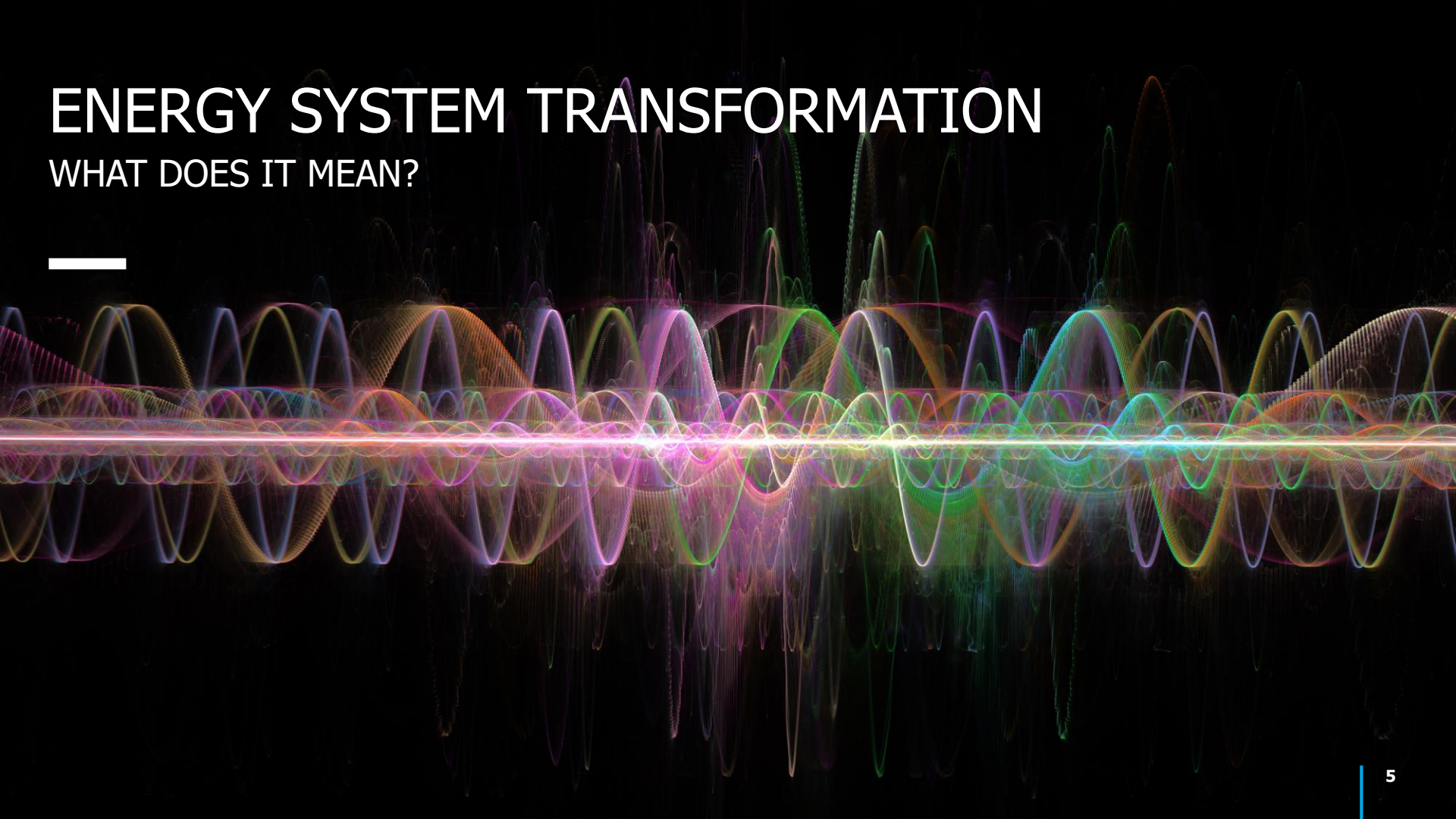
AUSTRALIAN ENERGY REGULATOR

AEMO

AUSTRALIAN ENERGY MARKET OPERATOR

ENERGY SYSTEM TRANSFORMATION

WHAT DOES IT MEAN?

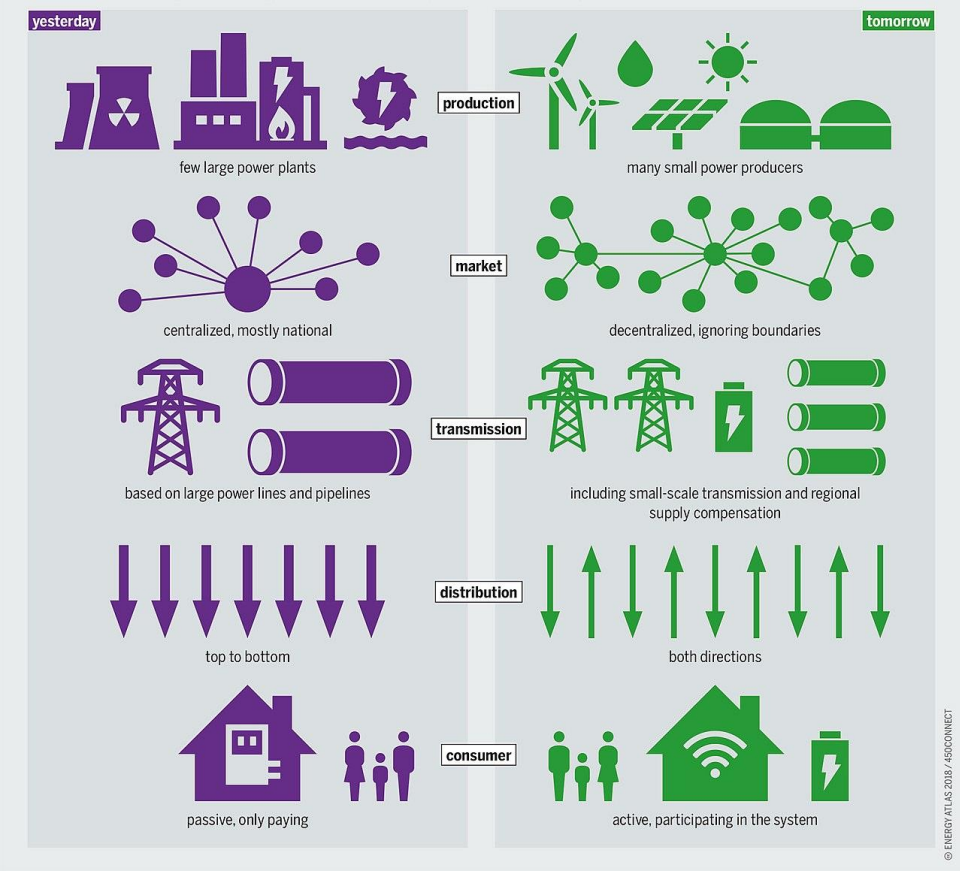


Electricity sector transformation

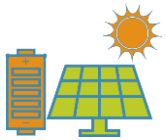
Changing generation mix
- Replacement of generation fleet
- Thermal → Renewable

Decentralisation of supply
- A few large → many small
- Central → distributed

Technological advances
- Different customer interactions
- New market opportunities



Transformation implications and our areas of focus

Generator access and transmission pricing		Shift from large geographically concentrated to small geographically dispersed generation
System security		Unbundling of energy and essential system services
Integrating decentralised energy resources		Increased adoption of small-scale solar and energy storage technologies
Digitalisation of energy supply		Increased adoption of digital technologies
Aligning financial incentives with the physical needs		More variable demand and supply creating volatility

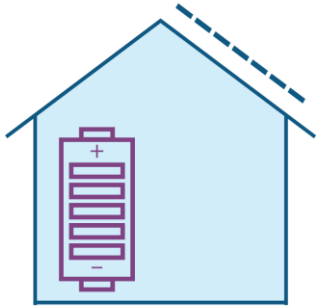
THE GRID OF THE FUTURE

A DECENTRALISED SYSTEM

By 2039, Australia is forecast to have approximately …

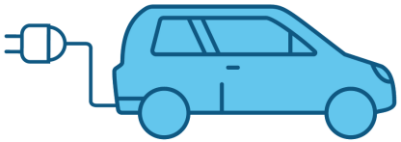
16 GW

Residential rooftop capacity



7.5 GW

Residential battery storage



25%

Vehicles will be electric vehicles (including hybrids)

By 2050 …

2 of 3

electricity customers are expected to have some form of decentralised energy resources.

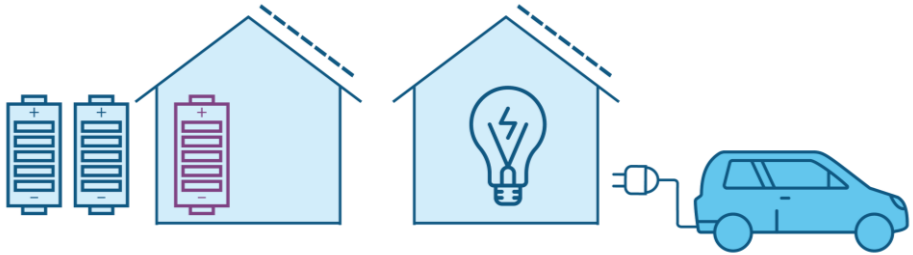
What does a decentralised system look like?

- **Benefits for all users**
  A fully integrated system delivering benefits for all users
- **A consumer-centric system**
  A flexible system responding to consumer preferences
- **Dynamic and resilient**
  New technologies and business models creating different dimensions of system usage

Decentralised energy resources plays an important role in the future grid

Opportunities, benefits and challenges

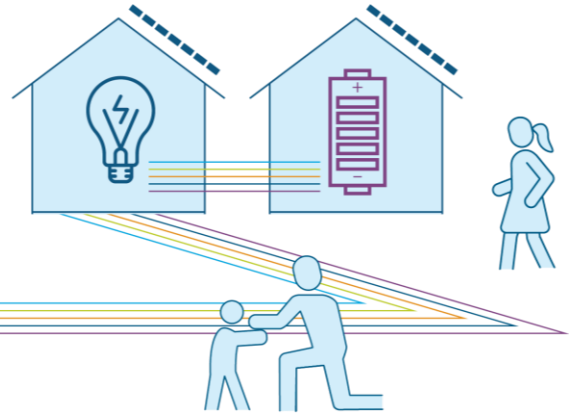
- Opportunities and benefits:
  - Lower cost, renewable energy
  - Better control of how and when electricity is used
  - Community-based initiatives
- But … there are challenges (that can be overcome)
  - Technical issues
  - Distributional issues
- Efficient integration is the key



Decentralised energy resources can deliver benefits to all users – if they are integrated into the electricity system efficiently

Key reform packages facilitating transitions

- Grid of the future review
- Standalone power systems review
- Regulatory sandboxes
- Wholesale demand response rule change
- Coordination of generation and transmission investment review
- System security and reliability program

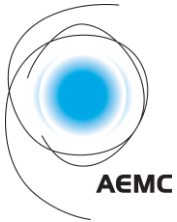


A SMALL ADVERTISEMENT

BECOME PART OF THE DECISION MAKING PROCESS

A unique set of arrangements

- ‘Open source’ regulation making
- Anyone can make a rule change request … except the AEMC
  - Individuals
  - Corporations/Interest groups
  - Governments and Ministers
- We evaluate rule change requests against statutory objectives – in the long term interests of consumers



Office address
Level 6, 201 Elizabeth Street
Sydney NSW 2000

ABN: 49 236 270 144

Postal address
PO Box A2449
Sydney South NSW 1235

T (02) 8296 7800
F (02) 8296 7899