

Consultation Update

Updates to the 2019 Electricity Forecasting Process

Agenda

1. Purpose
2. Scenario and consultation process update
3. Connections and Price Update
4. Consultancy Update

Purpose

- AEMO is in the process of updating forecasts of NEM consumption and max/min demand.
- This involves review and updates to primary drivers of energy use, through a combination of internal research and consultancy work.
- The aim of this session is to:
 - outline the scope of proposed updates,
 - present preliminary consultant forecasts for feedback.

Consultants engaged

Economic Forecast Update

- Long term economic forecasts are a key input into AEMO's electricity and gas demand forecasts for the business sector.
- AEMO has engaged **Deloitte Access Economics** for economic forecasts across AEMO's Neutral, Fast Change and Slow Change scenarios.
 - AEMO has also sought a view of economic outcomes with a stronger outlook for commodity sectors

DER

- A key input into AEMO forecasting process is projected uptake of Distributed Energy Resources:
 - Rooftop Solar PV (<100 kW for the residential and business sectors)
 - Battery storage
 - Electric vehicles.
 - PV non-scheduled generation (between 100 kW and 30 MW)
- AEMO has engaged two consultants, **Energeia** and the **CSIRO**, to provide forecasts of these technologies.
 - AEMO has also sought a view of High and Low DER sensitivities, and the impact of Federal emissions policy to the core Planning scenarios

Scenarios Update

Scenarios update

Scenario Background

- AEMO adopts a scenario analysis approach to identify the future needs of the power system, to encapsulate the multitude of potential futures that could influence consumer demand and system development over the medium to long term:
- AEMO has recently sought broad consultation on the methods, data, inputs and assumptions for AEMO's 2019 Planning and Forecasting approach:
 - Consultation on the electricity demand forecasting methods ([NEM Demand Forecasting Methodology – Final Report and Determination](#)) - closed
 - Consultation on the scenarios, inputs, assumptions and material issues ([Planning and Forecasting Consultation Paper](#)) - open,
 - Workshops and general consultation through the FRG and one-on-one discussions
- Based on feedback-to-date AEMO has proposed the following changes to the demand settings for use in 2019 forecasts, detailed in the following slide:

Draft demand settings 2019

Consultation continues on the appropriate policy and technology settings

- *DER drivers have been revised to positively correlate uptake with economic growth*

Demand Settings	Neutral	Slow change	Fast change	High DER	Low DER
Economic growth and population outlook	Neutral	Weak	Strong	Neutral	Neutral
Rooftop PV	Neutral	Proportionally less household and commercial installations than the Neutral	Proportionally more household and commercial installations than the Neutral	Strong, relatively stronger than "Fast Change", per capita	Weak, relatively weaker than "Slow Change" per capita
Electric vehicle uptake	Neutral	Weak	Strong, with EVs more rapidly reaching cost parity with ICE	Strong, with EVs more rapidly reaching cost parity with ICE	Weak, relatively weaker than "Slow Change" per capita
Electric Vehicle Charging Times	Central Estimate	Slower adoption of consumer energy management opportunities, leading to less controllable charging times	Greater adoption of consumer energy management opportunities, leading to more controllable charging times	Greater adoption of consumer energy management opportunities, leading to more controllable charging	Slower adoption of consumer energy management opportunities, leading to lesser controllable charging
Battery storage installed capacity	Neutral	Proportionally less household installations than the Neutral	Proportionally more household installations than the Neutral	Strong, relatively stronger than "Fast Change", per capita	Weak, relatively weaker than "Slow Change" per capita
Battery storage aggregation by 2050	Central Estimate	Slower adoption of energy aggregator opportunities, leading to lesser aggregation	Faster adoption of energy aggregator opportunities, leading to more aggregation	Fast, relatively faster than "Fast Change" per capita	Slow, relatively slower than "Slow Change" per capita
Battery cost trajectories (utility and behind the meter)	Neutral	Relatively weaker cost reductions than neutral	Relatively stronger cost reductions than neutral	Relatively stronger cost reductions than neutral	Relatively weaker cost reductions than neutral
Tariff arrangements	No significant change to existing / proposed tariff arrangements.	No significant change to existing / proposed tariff arrangements.	Significant change to existing / proposed tariff arrangements to foster and support a prosumer future, with customers embracing digital trends to take advantage of new tariff structures that lower consumer costs.	Significant change to existing / proposed tariff arrangements to foster and support a prosumer future, with customers embracing digital trends to take advantage of new tariff structures that lower consumer costs.	No significant change to existing / proposed tariff arrangements.

Forecast Inputs Update

Scenarios update

Connections

- The residential consumption model that AEMO uses requires a forecast of active residential electricity connections (dwellings)
- The electricity connections forecast considers:
 - Annual Housing Industry Association (HIA) research on short-term construction trends
 - ABS Population Forecasts (ABS Issue: 3222.0 - Population Projections, Australia, 2017)
 - ABS Household Forecasts (ABS Issue: 3236.0 - Household and Family Projections, 2015)
 - ABS 2016 Census results
 - AEMO National Meter Identifier (NMI) counts across all jurisdictions
- The spread of high, medium and low electricity connections used in the Fast Change, Neutral and Slow Change scenarios respectively follow ABS population projections, scenarios A,B,C

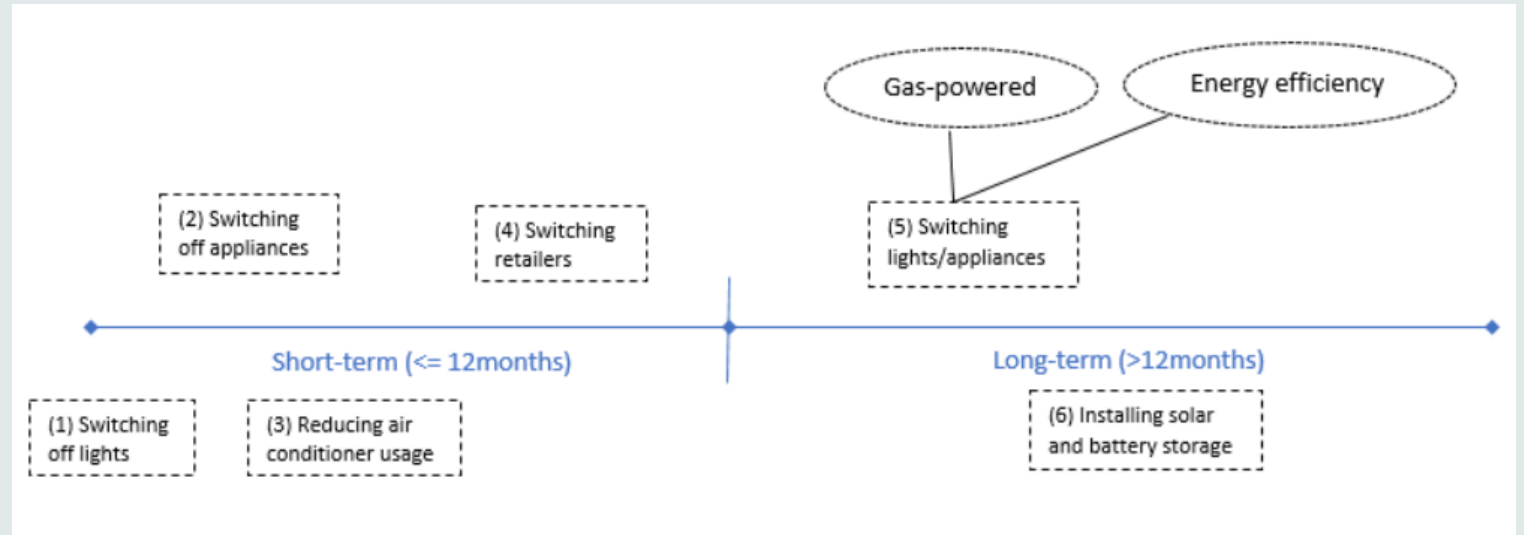
Connections

Previous incorporation of the HIA construction data and census data in last year's forecast result only in a minor change in this year's outlook



Retail Pricing

- AEMO's forecasting process accounts for the impact of customer price changes arising from consumers adjusting behaviour (short term) or investment decisions (longer term) resulting in changes to consumption trends.



- Forecast retail prices are based on:
 - Wholesale price forecasts provided by an external consultant, reviewed by AEMO, and adjusted by transmission price trajectories based on AEMO's Integrated System Plan central development plan.
 - Other components (retail, distribution, environmental) based on forecast values from AEMC's [Residential Electricity Price Trends 2018](#) report

Retail Pricing

- Increasing development of large scale renewable generation is forecast to put downward pressure on wholesale spot prices
- Generator retirements and increasing transmission developments to support new supply options increases long term retail prices

