2021 WEM
Draft Consumption Forecasts

Monday, 29 March 2021

We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.
We pay our respects to their Elders past, present and emerging.

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Purpose

- Review WEM scenario settings
- Outline AEMO's methodology for forecasting electricity consumption
- Present the draft consumption forecasts
- Seek stakeholder feedback on the draft consumption forecasts
  - Do you think that 'High' Distributed PV should be assumed for the High scenario?
  - Are there elements of the consumption forecasts that you would like more detail on?

WEM scenarios

Three scenarios consistent with WEM Rules 4.5.10(a):

- Low demand growth
- Expected demand growth
- High demand growth

WEM scenario settings

Scenarios	Expected	Low	High
Economic growth and population outlook	Expected	Low	High
New LIL forecast	Expected	Low	High
Residential connections	Expected	Low	High
Energy efficiency improvement	Moderate	Low	High
Distributed PV	Moderate	Moderate, but elevated in short term (Moderate in 2020 ESOO)	High (Moderate in 2020 ESOO)
Battery storage installed capacity	Moderate	Low (Moderate in 2020 ESOO)	High (Moderate in 2020 ESOO)
Battery electric vehicle (BEV) uptake	Moderate	Low	High
Decarbonisation target	26-28% reduction by 2030 Further decarbonisation influenced by technology and economic improvements	No explicit decarbonisation target	Economy-wide net zero by early 2040s, exceeding Consistent with limiting temperature rise to 1.5 degrees

2021 ESOO assumes different scenario settings for *Distributed PV* and *Battery storage installed capacity* compared to the 2020 ESOO

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Understanding the language of forecasting electricity consumption

Underlying Consumption

The “power point” consumption of consumers, irrespective of where that power is generated (from the grid or within the home)*

Delivered Consumption

Consumption that is met from the transmission grid, net of any distribution-generated energy such as rooftop PV and network losses

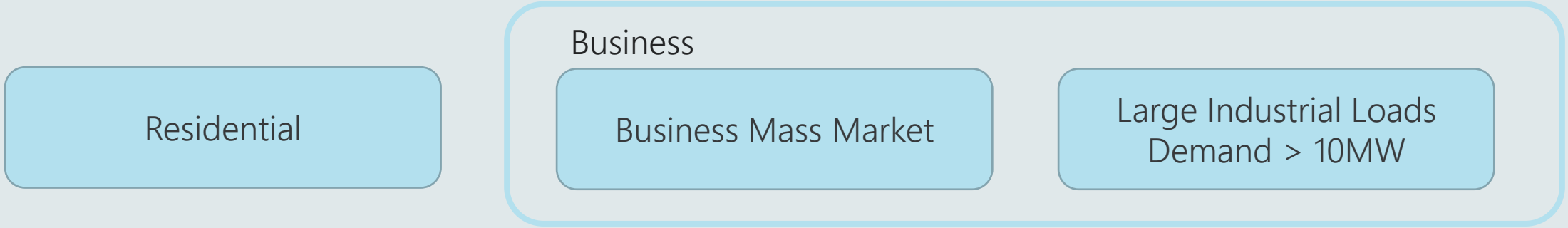
Operational Consumption

Consumption that is met by all utility-scale generation

* Some industrial load onsite generation is not currently captured in this definition.

AEMO's Forecasting methodology

Similar methodology applied to the WEM and NEM



Refer to Electricity Demand Forecasting Methodology Information Paper

AEMO's Forecasting Methodology

Residential

* Available in Meeting Pack

Base year per connection
Baseload/ Heating/ Cooling

Forecast per connection
Baseload/ Heating/ Cooling

Adjusted forecast per connection

Adjusted total forecast

Underlying demand
Delivered demand

Scenario-specific adjustments

Forecast annual heating and cooling degree days

Energy efficiency forecast (base/heating/cooling)
Appliance uptake
Solar PV rebound effect
Climate change (heating/cooling)

Connections forecast*

Electric Vehicle forecast
Solar PV*
Battery loss*

AEMO's Forecasting Methodology

Business Mass Market

* Available in Meeting Pack

Short term model

Trend model
Baseload/ Heating/ Cooling

Long term structural model

Base year
Baseload/ Heating/ Cooling

Forecast
Baseload/ Heating/ Cooling

Underlying demand

Delivered demand

Model transition

Year 1: 100% Short term model 0% Long term model
Year 5: 0% Short term model 100% Long term model

Scenario-specific adjustments

Gross State Product (GSP) forecast *

Energy efficiency forecast (base/heating/cooling)
Commercial price forecast

Electric Vehicle forecast
Solar PV*
Battery loss*

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AEMO Forecasting methodology

Large Industrial Loads

Prepare list of industrial users to interview/survey

Prepare survey template and interviews

Review surveys and validate against meter data

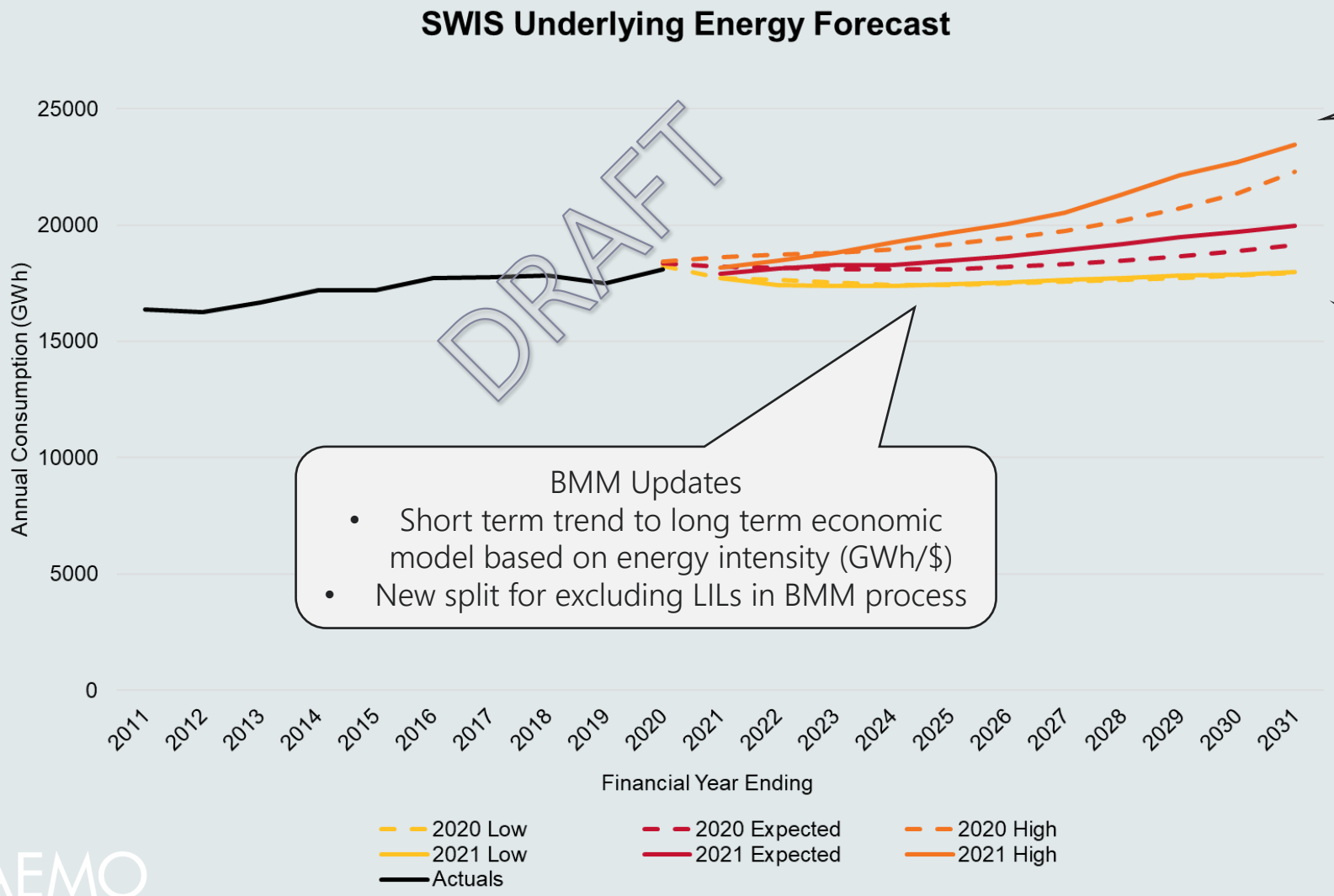
Produce forecast

Delivered demand

Scenario-specific adjustments

Model Prospective loads for the High scenario

SWIS Underlying forecast



LIL Update
New prospective loads compared to 2020 ESOO

EV Update
Strong EV uptake especially in the High scenario

BMM Updates
- Short term trend to long term economic model based on energy intensity (GWh/$)
- New split for excluding LILs in BMM process

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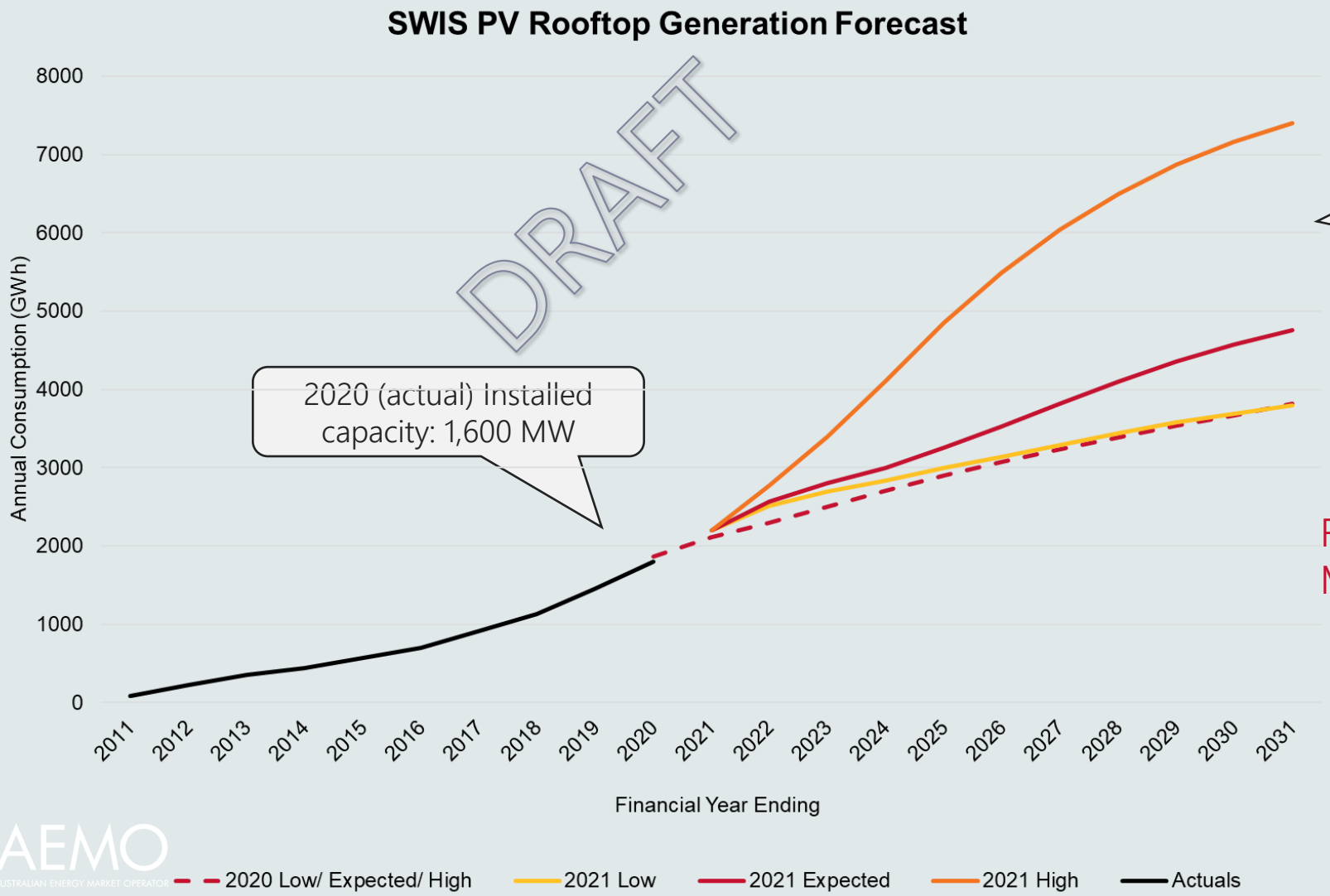
Rooftop PV generation forecast



2030 Installed capacity:
Low: 2,600 MW
Expected: 3,300 MW
High: 5,200 MW

Refer to consultants' slides in Meeting Pack for more details

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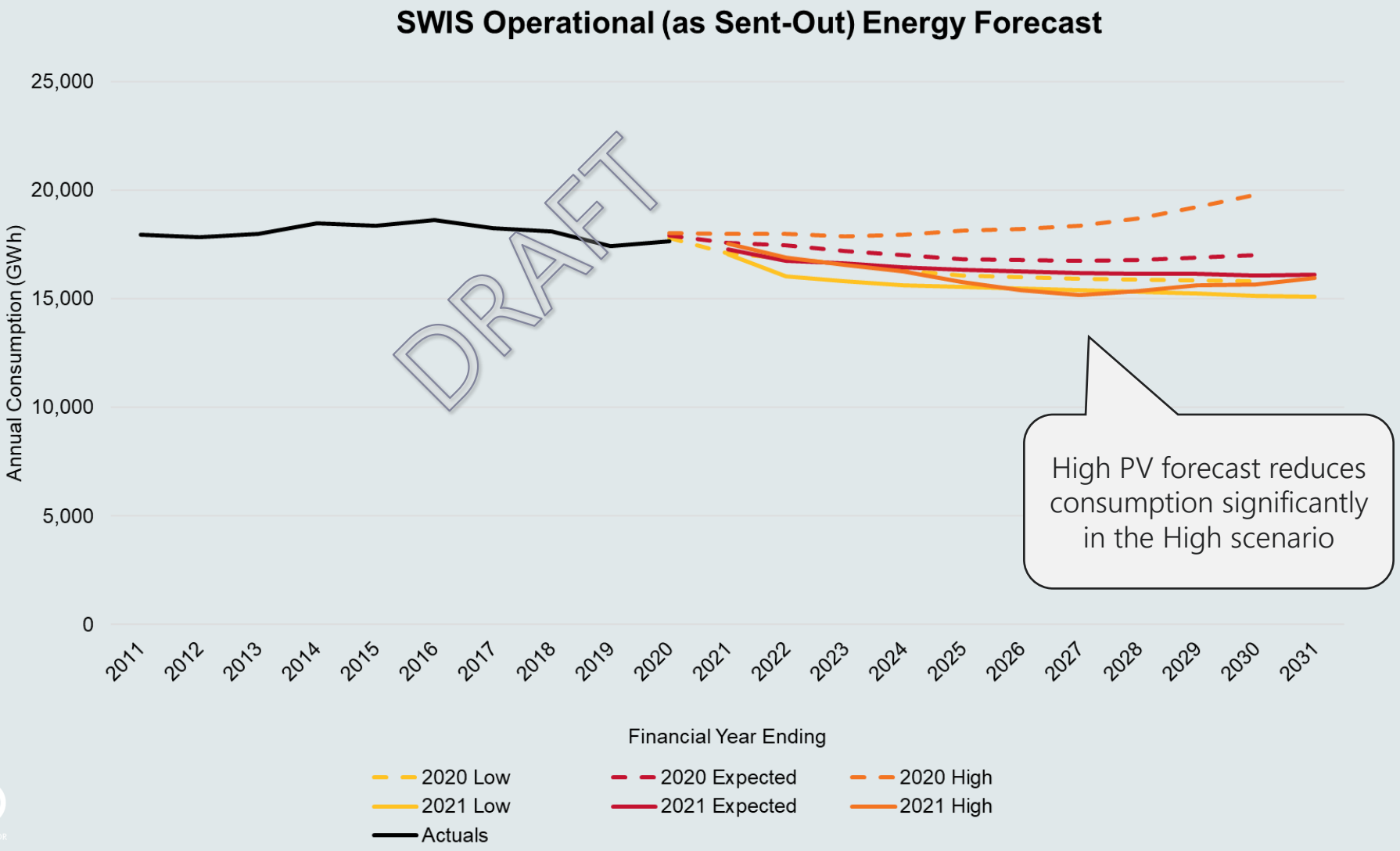
SWIS Operation Forecast (Sent out)



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Feedback

- Do you think that ‘High’ Distributed PV should be assumed for the High scenario?
- Are there elements of the consumption forecasts that you would like more detail on?
- Any other questions?