2025 WEM ESOO – WA Forecasting Reference Group (FRG) Meeting

27 March 2025

AEMO

We acknowledge the Traditional Owners of country throughout Australia and recognise their continuing connection to land, waters and culture.

We pay our respects to Elders past and present.

AEMO Competition Law – Meeting Protocol

AEMO is committed to complying with all applicable laws, including the Competition and Consumer Act 2010 (CCA). In any dealings with AEMO regarding proposed reforms or other initiatives, all participants agree to adhere to the CCA at all times and to comply with this Protocol. Participants must arrange for their representatives to be briefed on competition law risks and obligations.

Participants in AEMO discussions must:

- Ensure that discussions are limited to the matters contemplated by the agenda for the discussion.
- Make independent and unilateral decisions about their commercial positions and approach in relation to the matters under discussion with AEMO.
- Immediately and clearly raise an objection with AEMO or the Chair of the meeting if a matter is discussed that the participant is concerned may give rise to competition law risks or a breach of this Protocol.

Participants in AEMO meetings must not discuss or agree on the following topics:

- Which customers they will supply or market to.
- The price or other terms at which Participants will supply.
- Bids or tenders, including the nature of a bid that a Participant. intends to make or whether the Participant will participate in the bid
- Which suppliers Participants will acquire from (or the price or other terms on which they acquire goods or services).
- Refusing to supply a person or company access to any products, services or inputs they require.

Under no circumstances must Participants share Competitively Sensitive Information. Competitively Sensitive Information means confidential information relating to a Participant which if disclosed to a competitor could affect its current or future commercial strategies, such as pricing information, customer terms and conditions, supply terms and conditions, sales, marketing or procurement strategies, product development, margins, costs, capacity or production planning.

AEMO Forum and Meeting Expectations

This charter explains expectations regarding participation and behaviour in the AEMO's stakeholder forums.

Meeting Expectations

All participants will:

- Respect the diversity of the group.
- Speak one at a time – refrain from interrupting others.
- Share the oxygen – ensure that all attendees who wish to have an opportunity to speak are afforded a chance to do so.
- Maintain a respectful stance towards all participants.
- Listen to others' points of view and try to understand others' interests.
- Share information openly, promptly, and respectfully.
- If requested to do so, hold questions to the end of each presentation.
- Remain flexible and open-minded, and actively listen and participate in meetings.
- Abide by COVID-Safe workplace guidelines, if attending a meeting on AEMO's premises.

Roles and Responsibilities

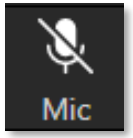
Forum stakeholders agree to:

- Be specific and fact-based in their feedback on a specific workstream or emerging issue;
- Review and provide feedback on papers and reports;
- Relay information to their colleagues or constituents after each meeting and gather information/feedback from their colleagues or constituents, as practicable, before each meeting;
- Maintain a focus on solutions or outcomes that benefit all energy consumers.

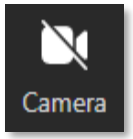
AEMO agrees to:

- Provide technical expertise in a manner that is considerate of the audience and their level of expertise;
- Assist participants in understanding issues enough to represent their views;
- Provide all participants the opportunity to voice their views.

Online housekeeping



- Please mute your microphone during the presentation.



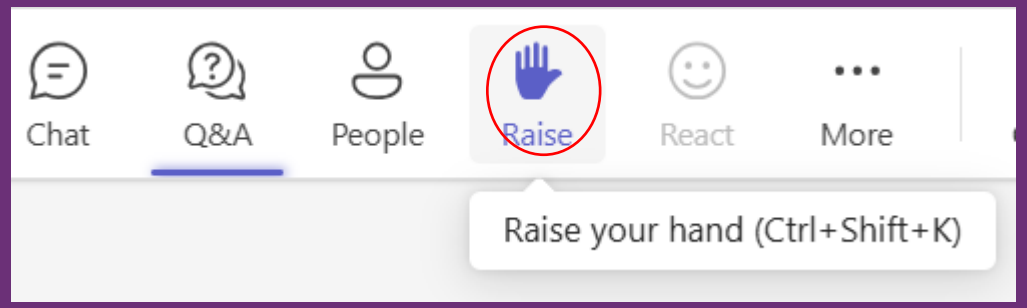
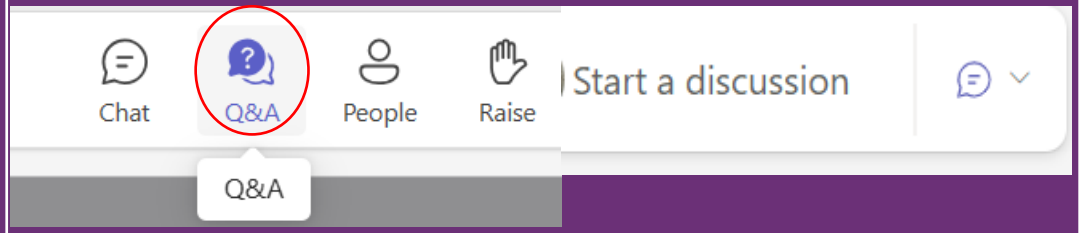
- Please leave your camera off as well, but we'd love to see you during Q&A.

- Please avoid using AI-powered note-taking tools in this session.

- We will be using the **Q&A function in today's session**. We will pause regularly to give you time to post your question or raise your hand to ask a question.

- We also have a Q&A session with all presenters at the end of today's session.

Interacting in TEAMS webinar

Raise hand – request to join discussion	Chat function – share comments, ask a question, or raise discussion point
	
Click the Raise hand icon to contribute to the current discussion. Please unmute when you're welcomed to join. When finished, please lower your hand by clicking the icon again and mute your microphone.	Click the Q&A icon to go to the Meeting Discussion interface. Type your message and send. Please note that your message can be viewed by everyone attending the meeting. Please standby while AEMO either writes a response or queues for discussion.

Please state your name and organisation when you start speaking.

Meeting agenda (27 March 2025)

#	TIME (AWST)	TOPIC	PAPERS	RESPONSIBLE	ACTION
1.	11:00am – 11:10am	Welcome and introduction	Welcome slides	Sandy Ng (AEMO)	**Note**
2.	11:10am – 11:50am	Draft energy forecasts	Presentation 1	Energy Forecasting Jay Stein, Mathew Horne (AEMO)	**Consult**
3.	11:50am – 12:10pm	Q&A	None	Sandy Ng (AEMO)	**Consult**
4.	12:10pm – 12:15pm	Next steps and meeting close	None	Sandy Ng (AEMO)	**Note**

- *Please be aware that this meeting will be recorded for the purpose of creating minutes.*
- *To make the most of our time, we'll ask the presenters to finish their presentations before taking any questions.*
- *If you have any questions after the session, you're welcome to email them to us at WA.FutureSystemDesign@aemo.com.au . Please ensure that they reach us by **COB Tuesday, 1 April 2025**.*

Presentation #1 Draft Energy Forecasts

Presented by Jay Stein & Mathew Horne
Energy Forecasting

WEM scenario settings

WEM scenarios

- The 2025 WEM ESOO considers three scenarios, consistent with WEM Rules 4.5.10(a)
- Scenarios have been adopted from AEMO's Draft 2025 Input, Assumptions and Scenarios Report Stage 2 (IASR)
- These scenarios are consistent with last year's WEM ESOO and are allocated as follows:

WEM ESOO scenario as per WEM Rules	2025 WEM ESOO IASR Scenarios
Low demand growth	Progressive Change
Expected demand growth	Step Change
High demand growth	Green Energy Exports

WEM scenarios

Low scenario

- Adopts the ***Progressive Change*** 2025 IASR scenario which features slower economic growth and lower investment in Distributed Energy Resources (DER) compared to the other scenarios

Expected scenario

- Adopts the ***Step Change*** IASR scenario which features higher DER investment, stronger electrification and wider adoption of energy efficiency measures compared to the low scenario

High scenario

- Adopts the ***Green Energy Exports*** IASR scenario which reflects much stronger decarbonisation activities, stronger electrification, higher economic growth, and higher global demand for green energy exports (such as green hydrogen and green steel) compared with the other scenarios

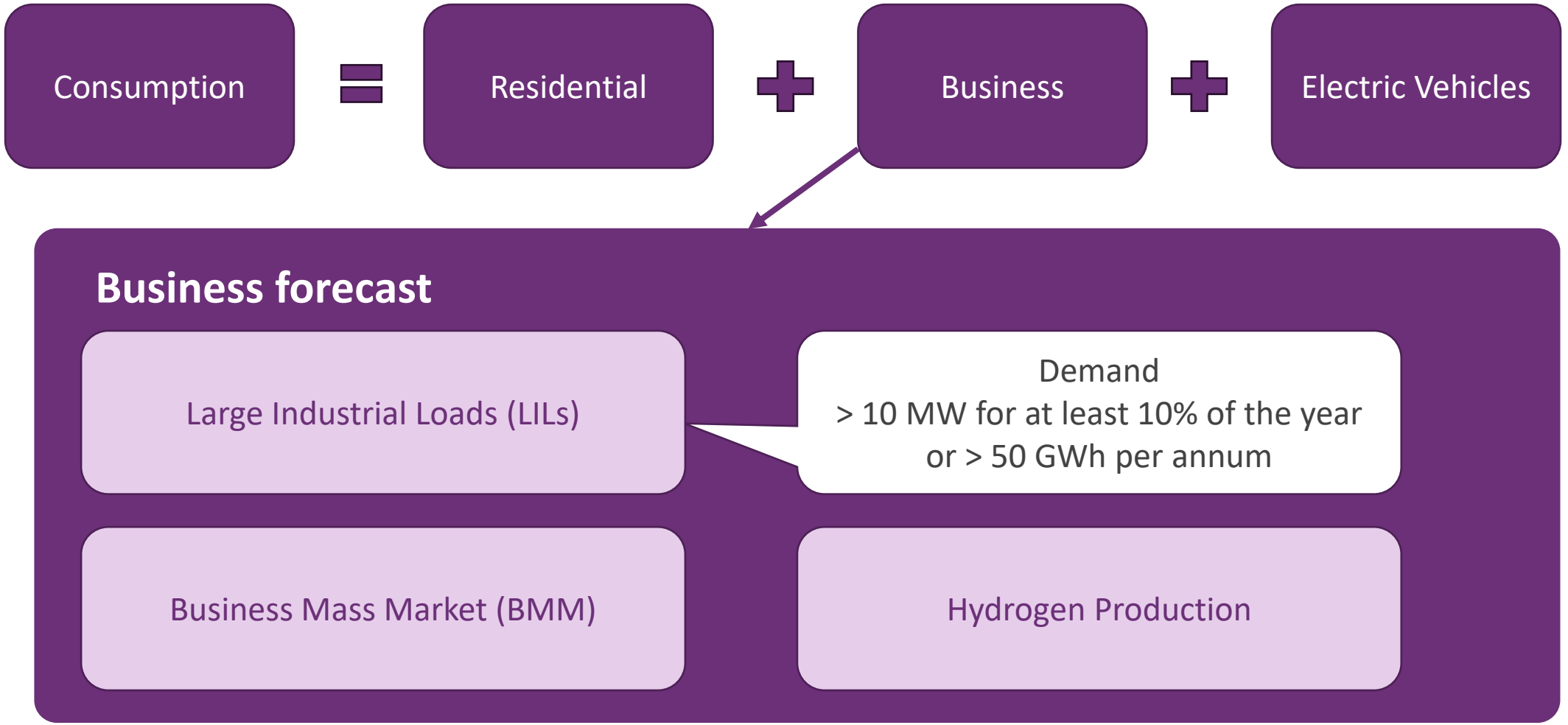
All scenarios

- Target at least 43% emissions reductions by 2030 in line with Australia's legislated emissions reduction target

Note: This 2025 WEM ESOO uses the updated scenarios from AEMO's Draft 2025 Inputs, Assumptions and Scenarios Report (IASR)

Draft consumption forecasts

Consumption sectors



Refer to Forecasting Approach – Electricity Demand Forecasting Methodology for modelling approach

Modelling improvements
PV Rebound Effect

Rebound effect – *A widely observed phenomenon where **underlying household consumption increases** for households once rooftop PV systems are installed and resulting lower bills change consumption behaviour or trigger investments in equipment that uses more electricity*

Method in previous WEM ESOOs		Updated method*	
Rebound is linked to installed PV system size. Leads to unreasonably-large underlying demand increases *	X	Rebound is linked to household consumption	✓

*Further details about this change can be found in the 2024 Electricity Demand Forecasting Methodology Consultation. The final determination of the consultation will be published shortly.

Modelling improvements

PV Rebound - Old Method

Rebound is proportional to installed system generation

House Consumption
Before rebound
(6 MWh)

House installs small PV

PV Generation

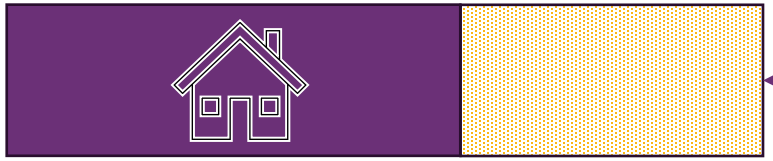
Rebound impact 0.8 MWh

Forecast House Consumption
Following Year
(6 MWh + Rebound impact = 6.8 MWh)

House installs large PV

PV Generation

Forecast House Consumption
Following Year
(6 MWh + Rebound impact = 10 MWh)



Rebound impact 4 MWh

Modelling improvements

PV Rebound - Updated Method

Rebound is proportional to historical consumption

House Consumption
Before rebound
(6 MWh)

House installs small PV

PV Generation

Forecast House Consumption
Following Year
(6 MWh + Rebound impact = 7.2 MWh)

Rebound impact 1.2 MWh

Same impact

House installs large PV

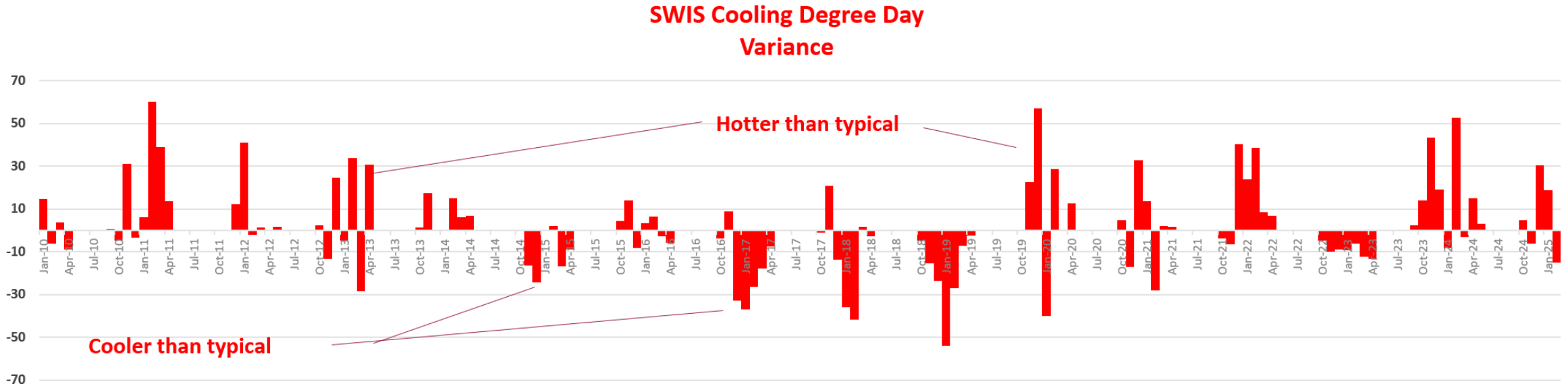
PV Generation

Forecast House Consumption
Following Year
(6 MWh + Rebound impact = 7.2 MWh)

Rebound impact 1.2 MWh

Modelling challenges
Changing weather patterns

- Business Mass Market and (particularly) Residential forecasts are temperature-sensitive loads.
- 5 of the 6 most recent summers have been **hotter than typical** (referenced back to 2000)
- Elevated temperatures have increased cooling loads over these summer periods, which is evident in the recent historical consumption data.



Model component status

Updated Energy efficiency forecasts*
Strategy. Policy. Research

Updated DER forecasts* – Distributed PV, EV and Battery
CSIRO (all) & Green Energy Markets (except EV)

Updated Economic forecasts*
Deloitte Access Economics

New LILs - connection level estimates and commencement dates
Western Power

Components are finalised

LIL forecasts - 38 LILs surveyed to determine future site level forecasts and decarbonisation plans, covering > 90% of SWIS industrial loads

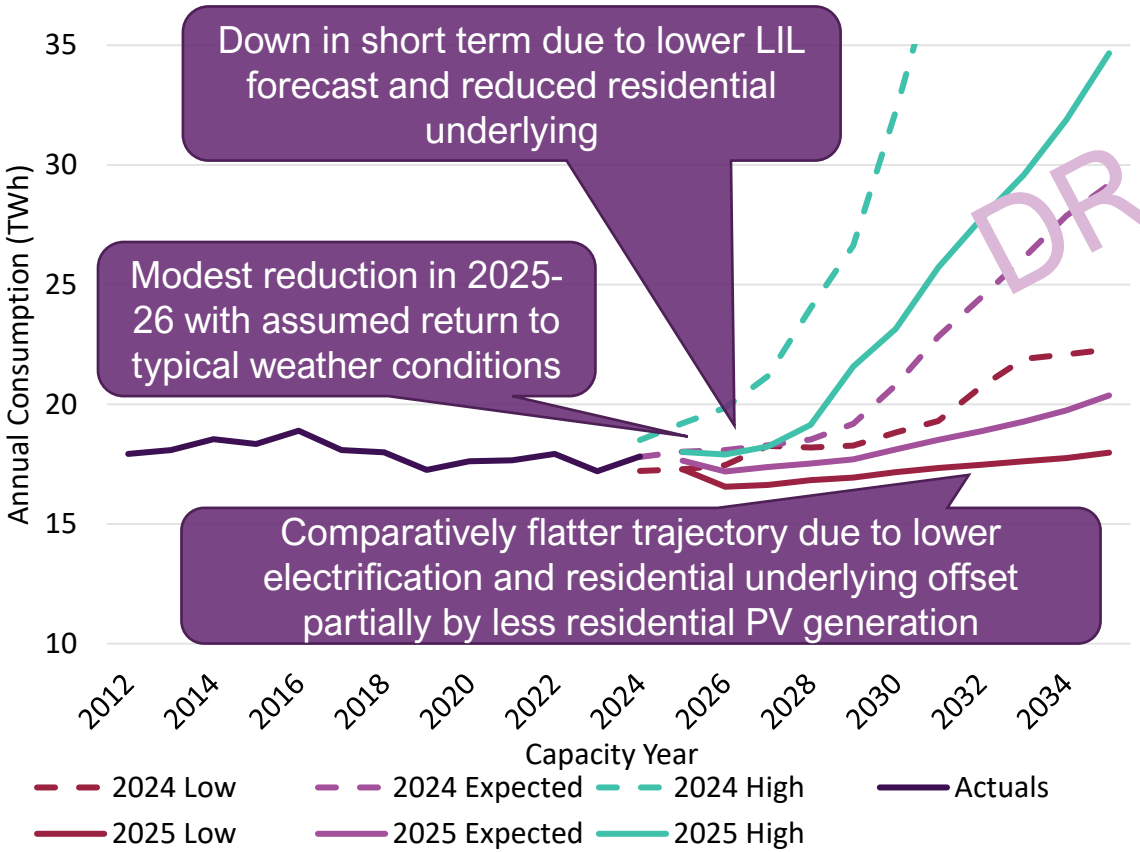
Updated Multi-sectoral modelling forecasts*
CSIRO

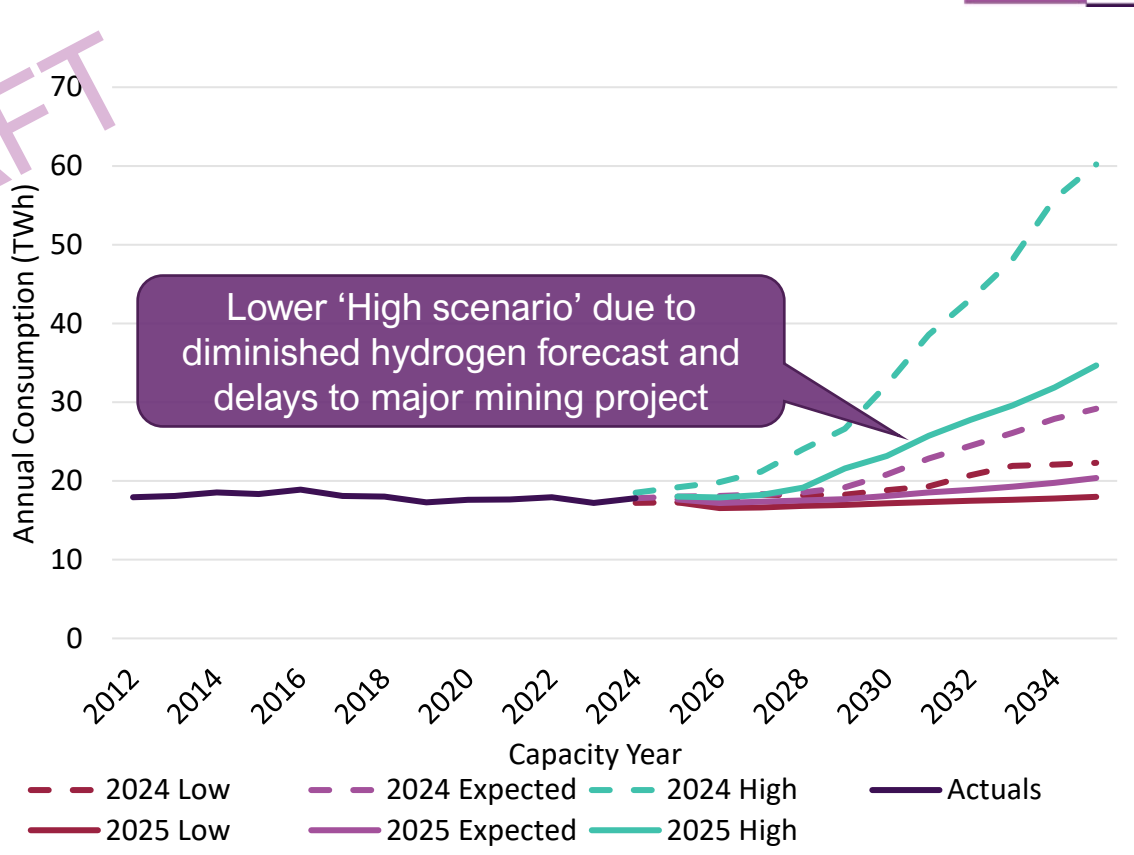
Interim forecast – subject to update

*Refer to Draft 2025 Inputs, Assumptions & Scenarios Report (Feb 2025) for further information. Note that the Final 2025 IASR will be published in July 2025 following the publication of the 2025 WEM ESOO.

SWIS Operational Forecast (sent-out)

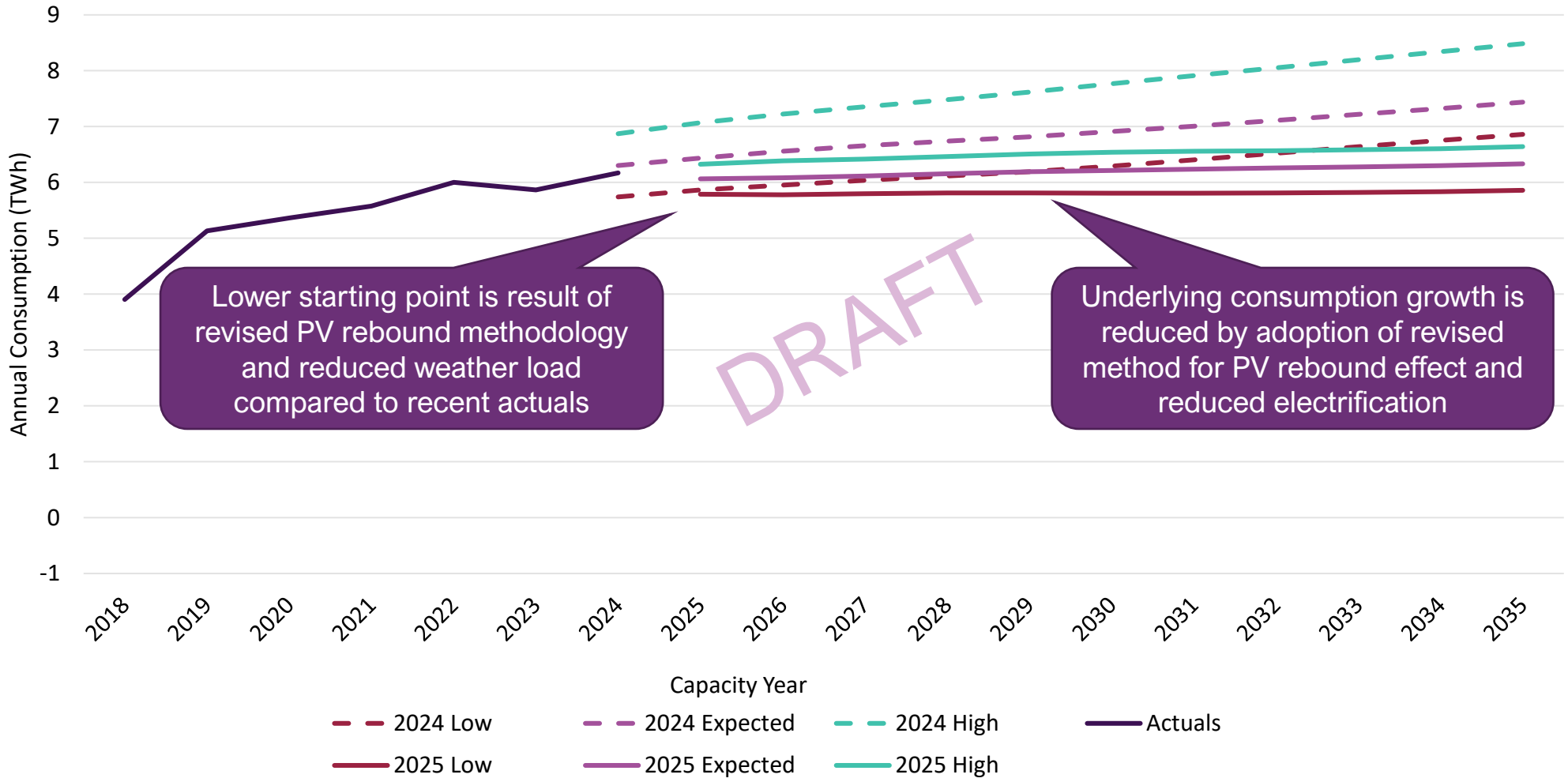
Chart resized to show full *High* scenario





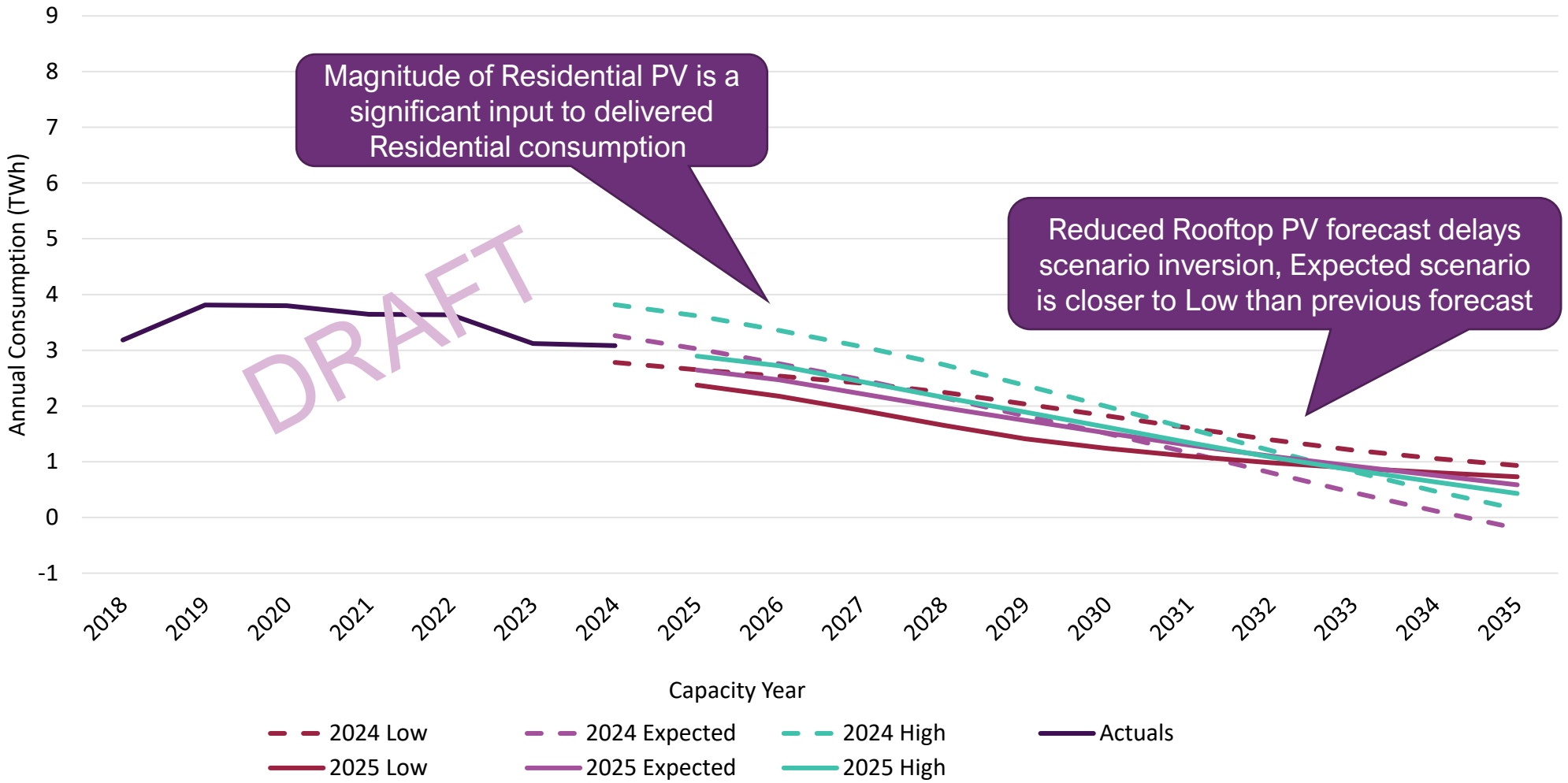
Residential

Underlying (includes electrification)



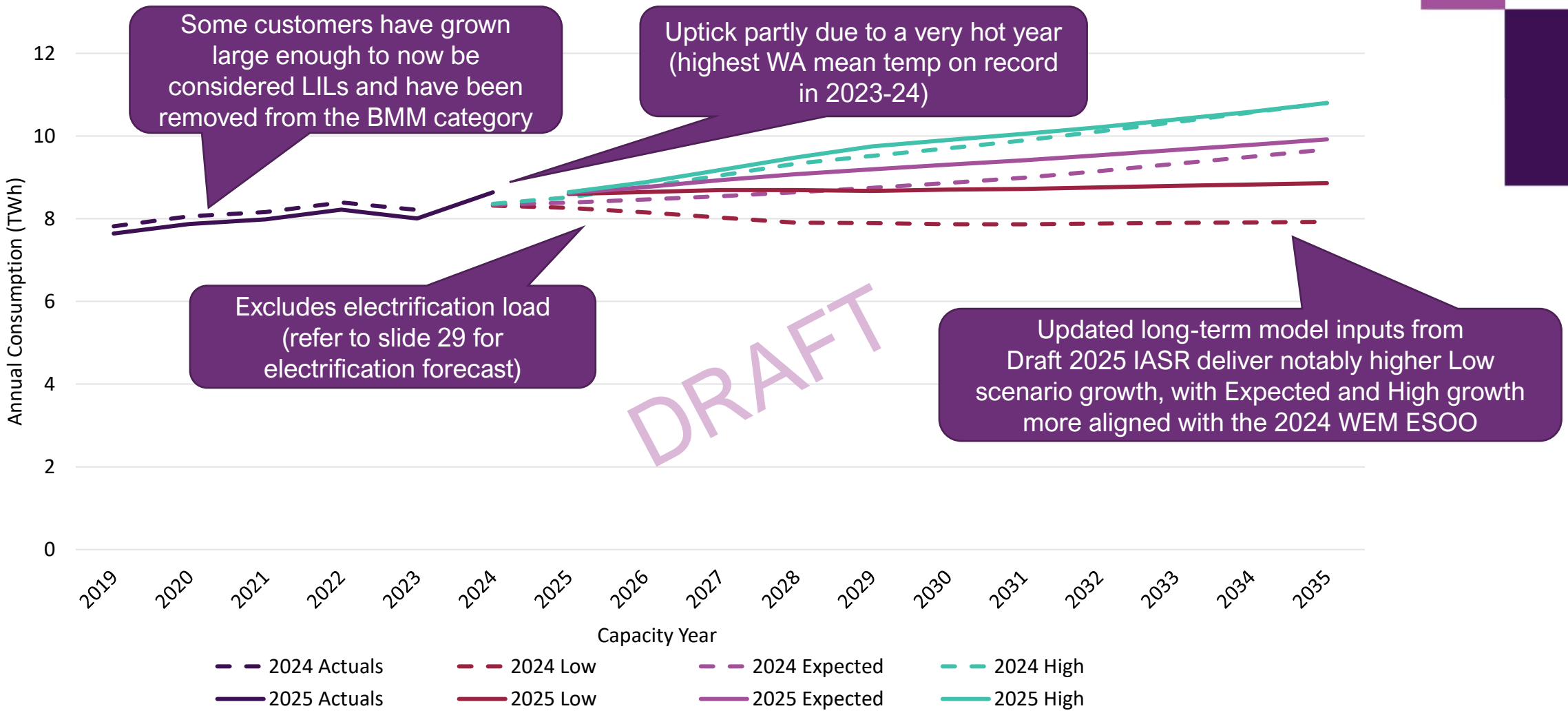
Residential

Delivered (underlying minus residential PV)



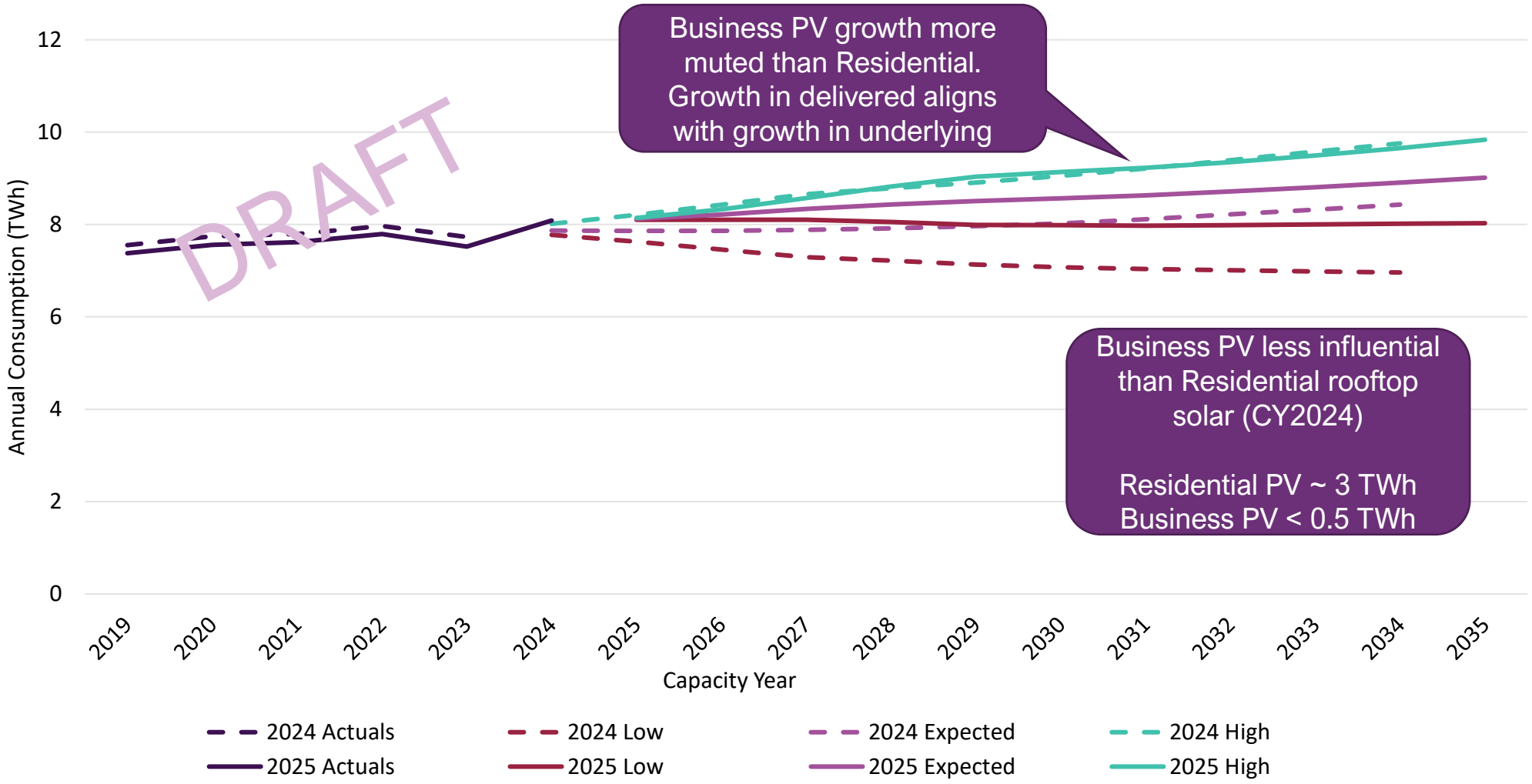
Business Mass Market

Underlying (excludes electrification)



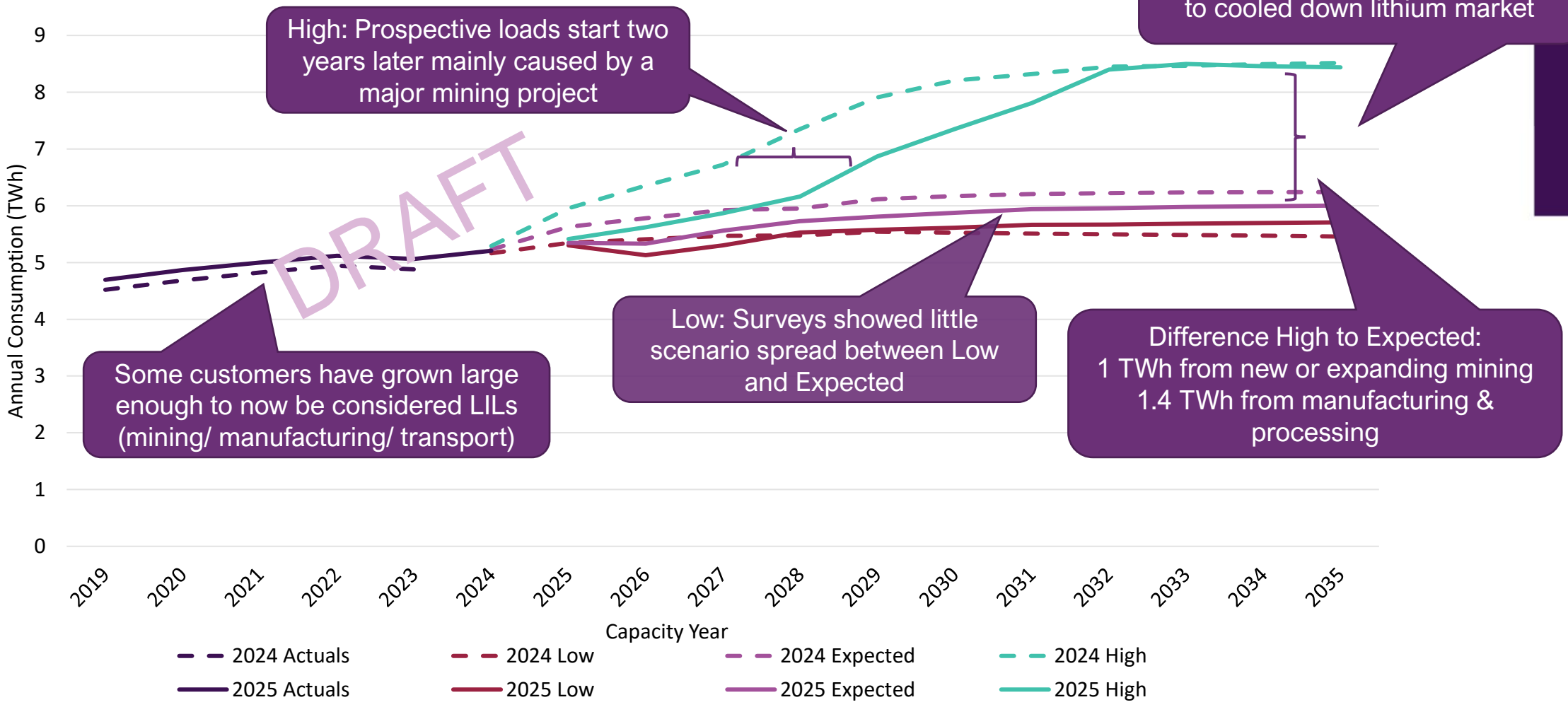
Business Mass Market

Delivered (underlying minus business PV)



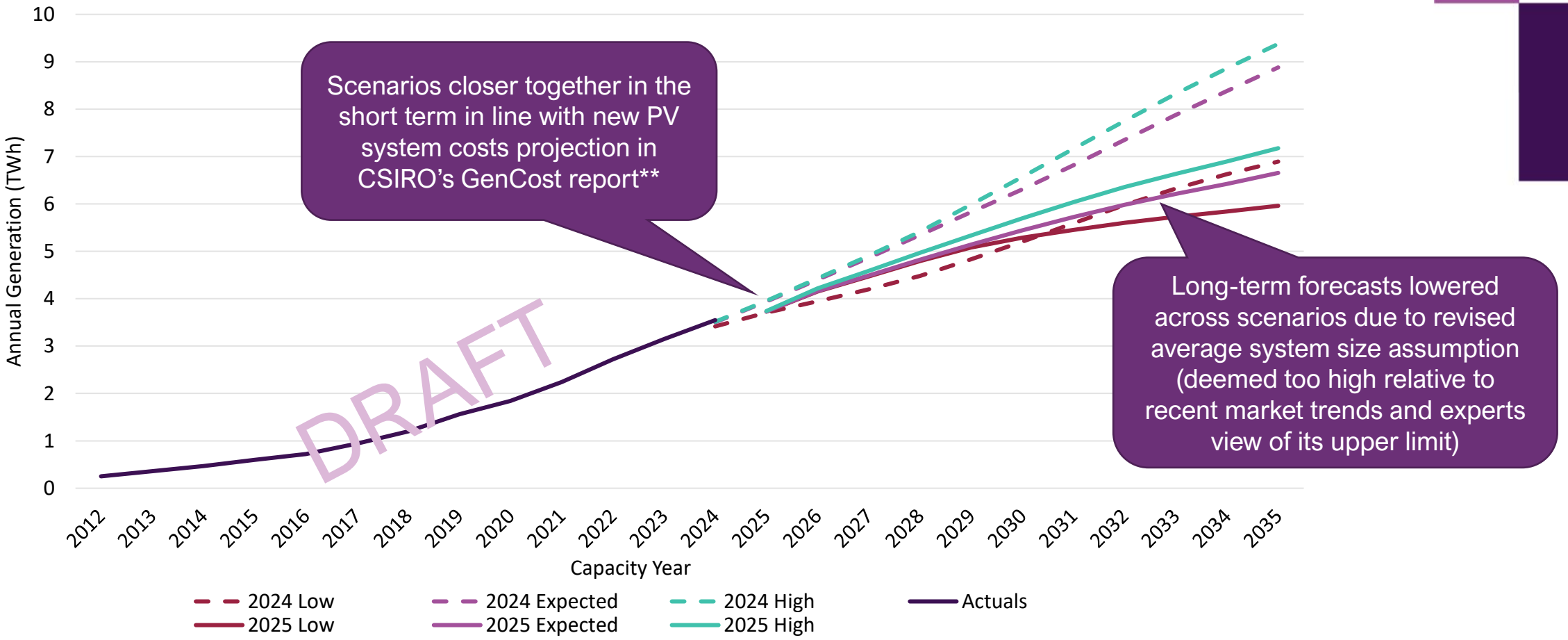
Large Industrial Loads

Excluding Hydrogen Loads and Electrification



Draft consumption model inputs

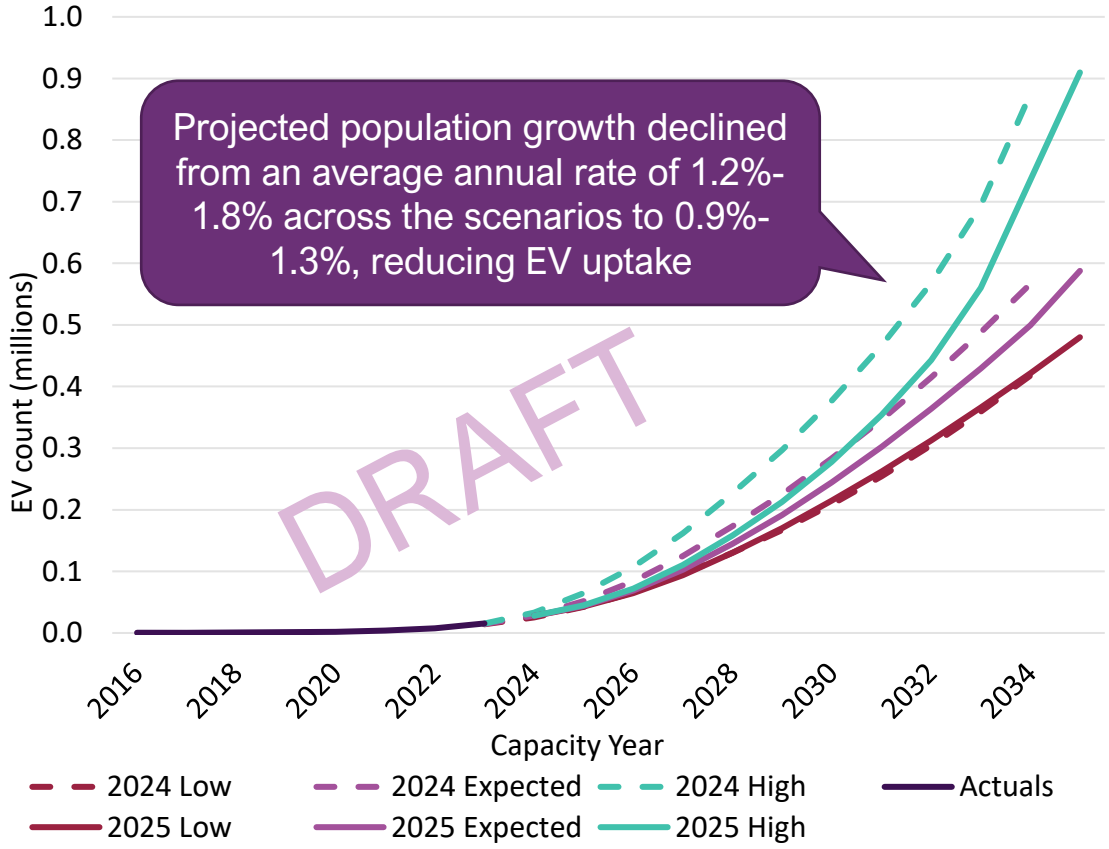
Rooftop PV Generation Forecast



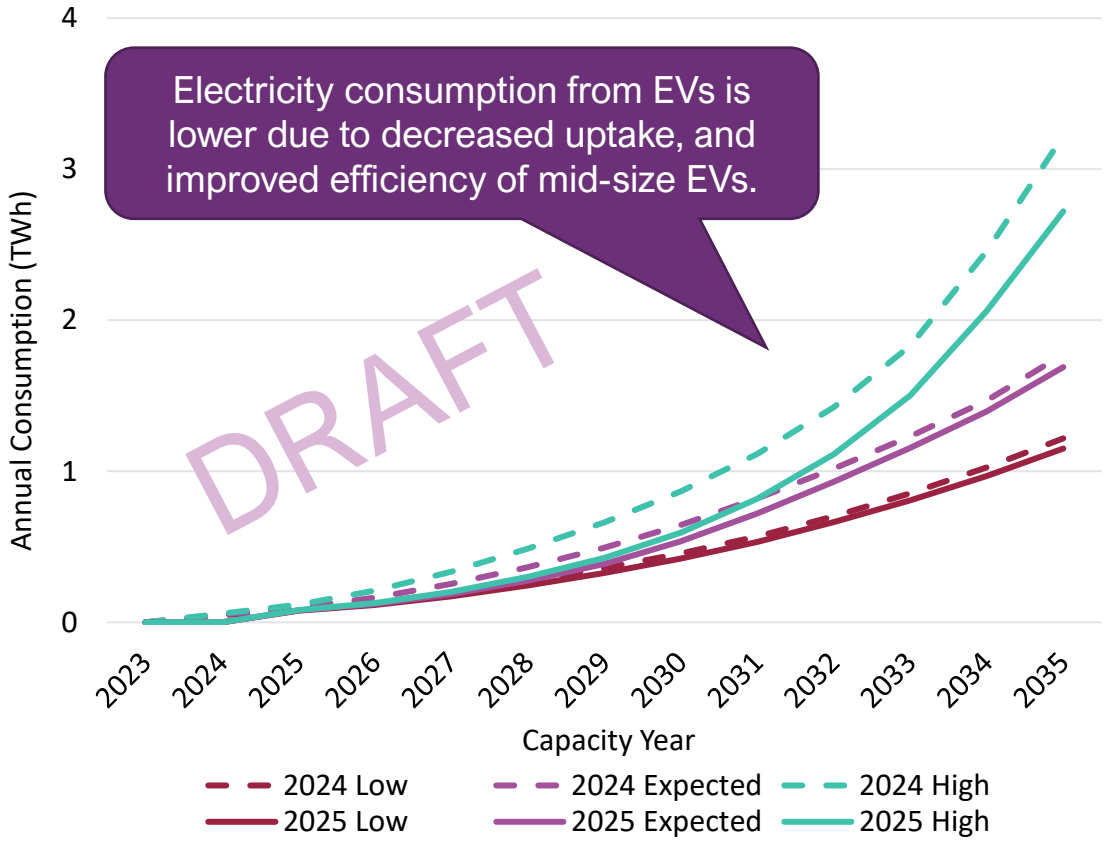
*Refer to Draft 2025 Inputs, Assumptions & Scenarios Report (Feb 2025) for further information.
**GenCost 2024-25 report: https://www.csiro.au/-/media/Energy/GenCost/GenCost2024-25ConsultDraft_20241205.pdf.

EV Forecast

EV Numbers



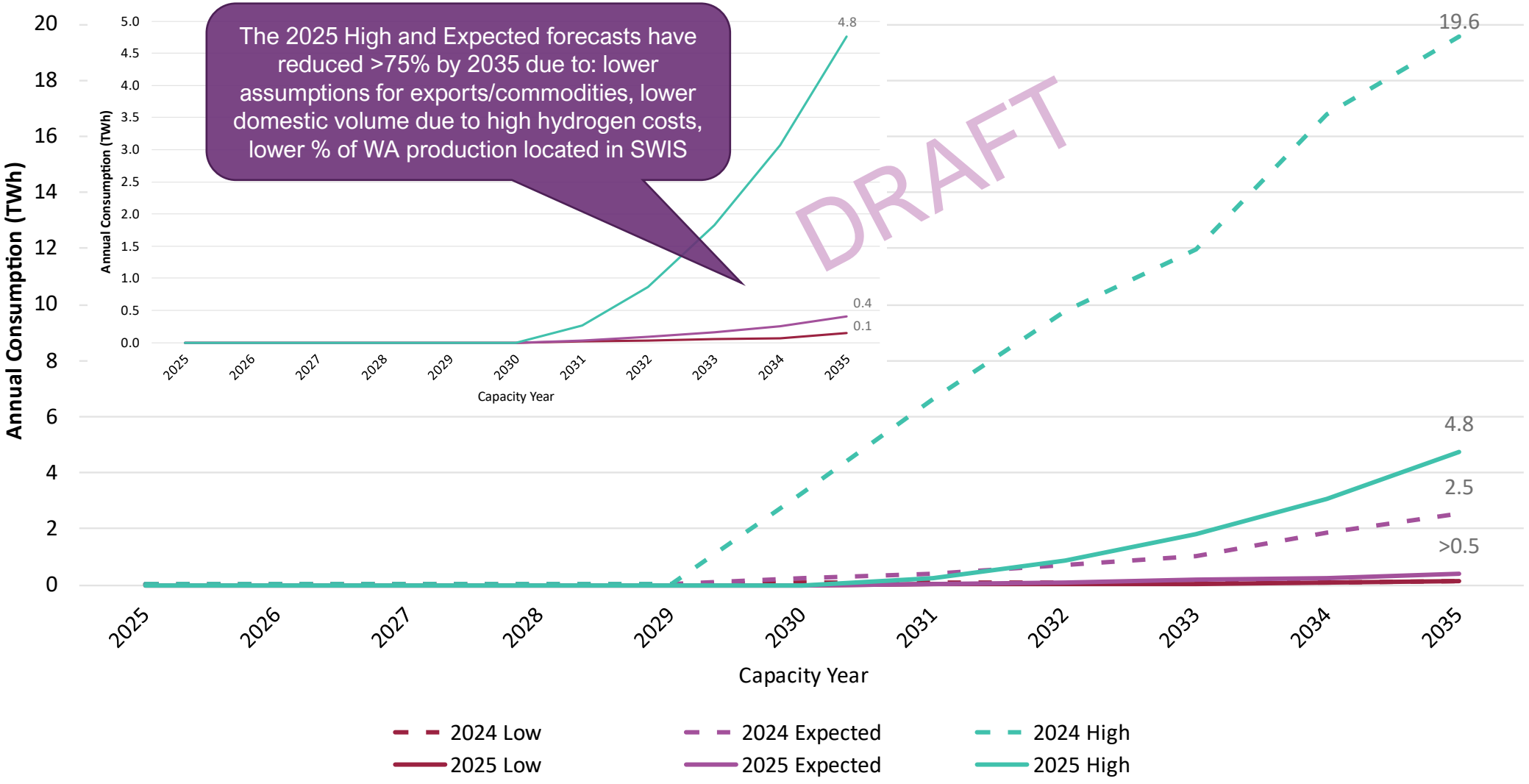
Consumption



*Refer to Draft 2025 Inputs, Assumptions & Scenarios Report (Feb 2025) for further information.

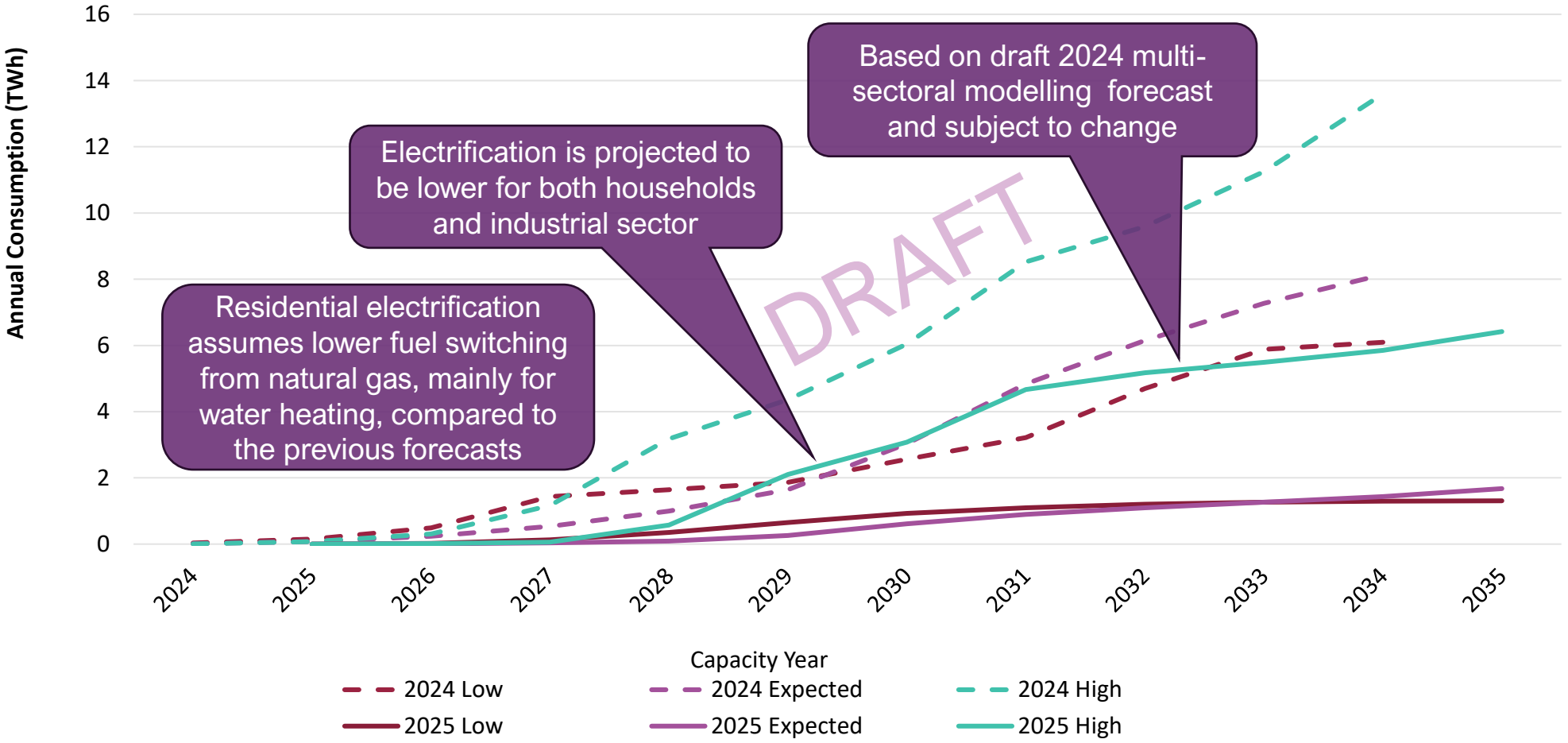
Hydrogen Production Forecast

The forecast electricity requirement to produce the aggregate green hydrogen required across all sectors



Electrification Forecast

*Subject to update



*Refer to Draft 2025 Inputs, Assumptions & Scenarios Report (Feb 2025) for further information.

Questions and Feedback

Next Steps

- Second FRG on Friday 11 April 2025
  - Draft demand forecasts
  - Reliability assessment methodology and assumptions
  - System Strength framework

AEMO

AUSTRALIAN ENERGY MARKET OPERATOR

For more information visit

aemo.com.au

Any comments or feedback can be sent to

WAElectricityforum@aemo.com.au or *WA.FutureSystemDesign@aemo.com.au*