

Demand Forecasting

Winter Strategy Presentation 2021

Important Notice

Purpose

AEMO has prepared this presentation material to provide information about the operation of the Victorian gas transmission system and the market operational strategies for Winter 2021, as at the date of publication.

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Agenda

1. Overview of demand forecasting issues in 2020
2. Demand changes in 2020
3. Demand forecasting challenges in 2020
4. Weather outlook for winter 2021
5. Expectations for 2021

Overview of demand forecasting issues in 2020

1. Impact of COVID-19 **changed the demand profile**, reducing linepack at 10pm
2. Demand profile changes meant **forecasting was more difficult** for both AEMO and MPs, particularly on high demand days
3. **MP demand profiles weren't fully updated** to account for COVID-19 driven changes

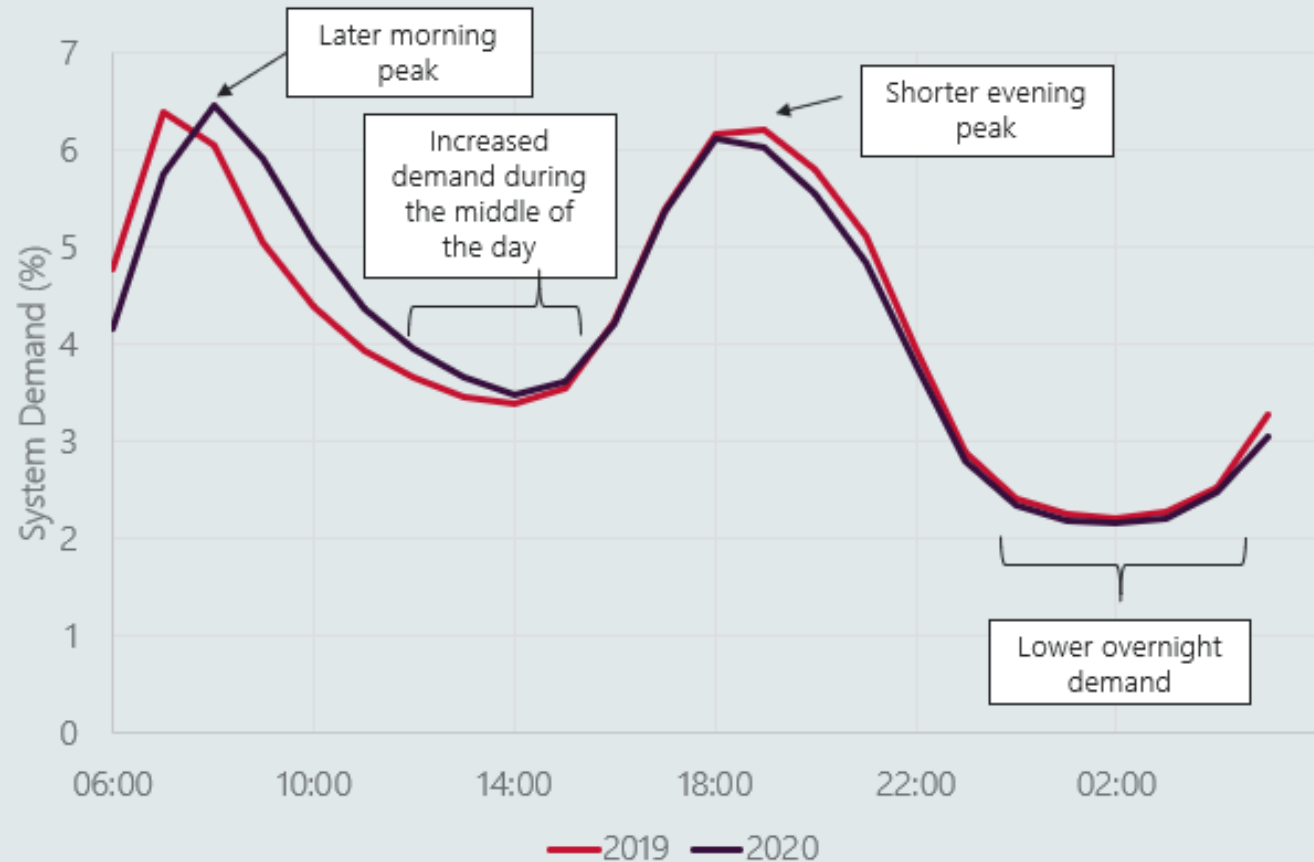
5 threats to system security in winter 2020. The changed demand profile all greatly contributed to the threats.

Demand changes in 2020

Impact of COVID-19

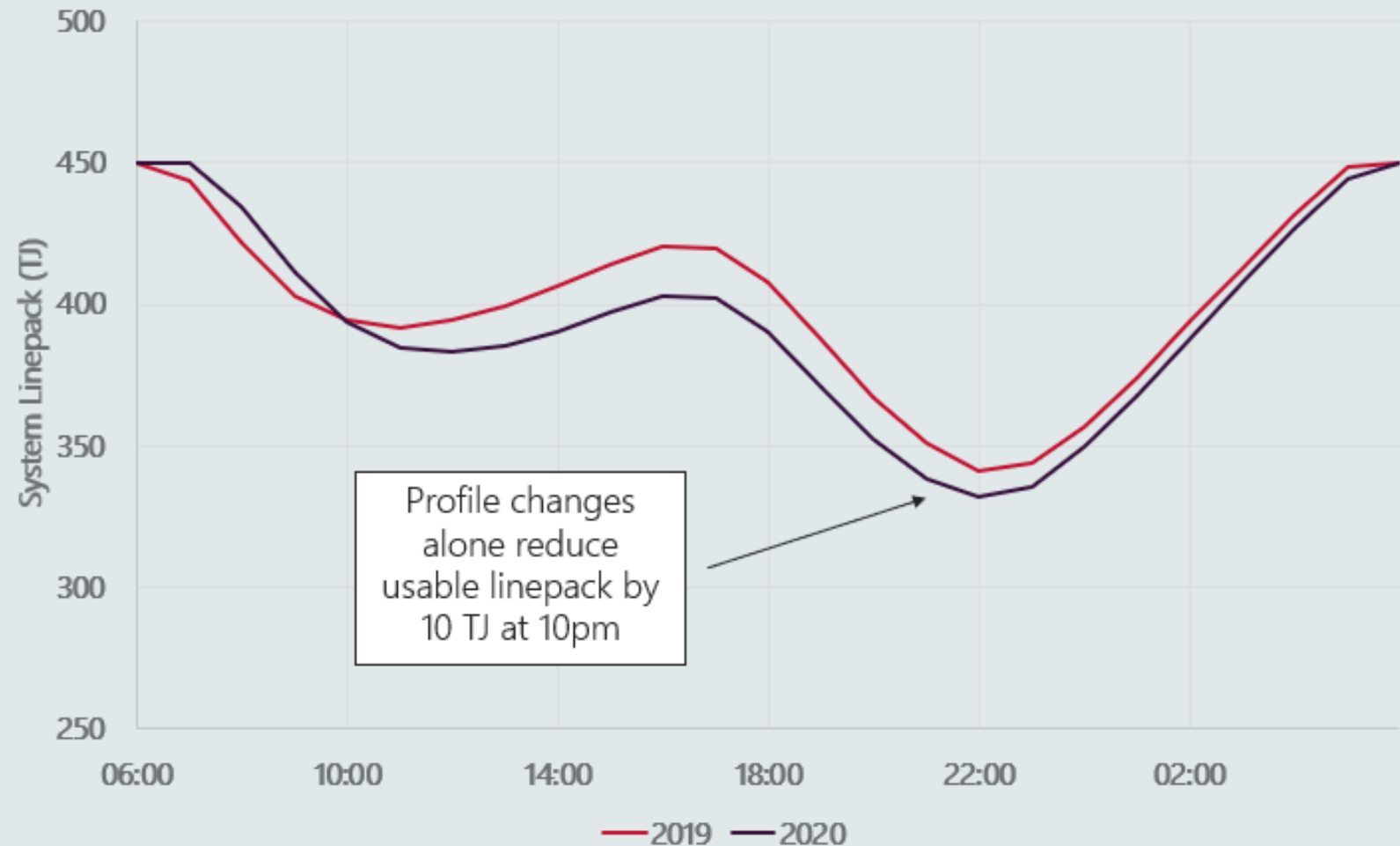
Demand profile impact

- Movement restrictions led to changes in social and commercial behaviour in winter 2020
- This had notable effects on the demand profile, but did not impact the daily demand



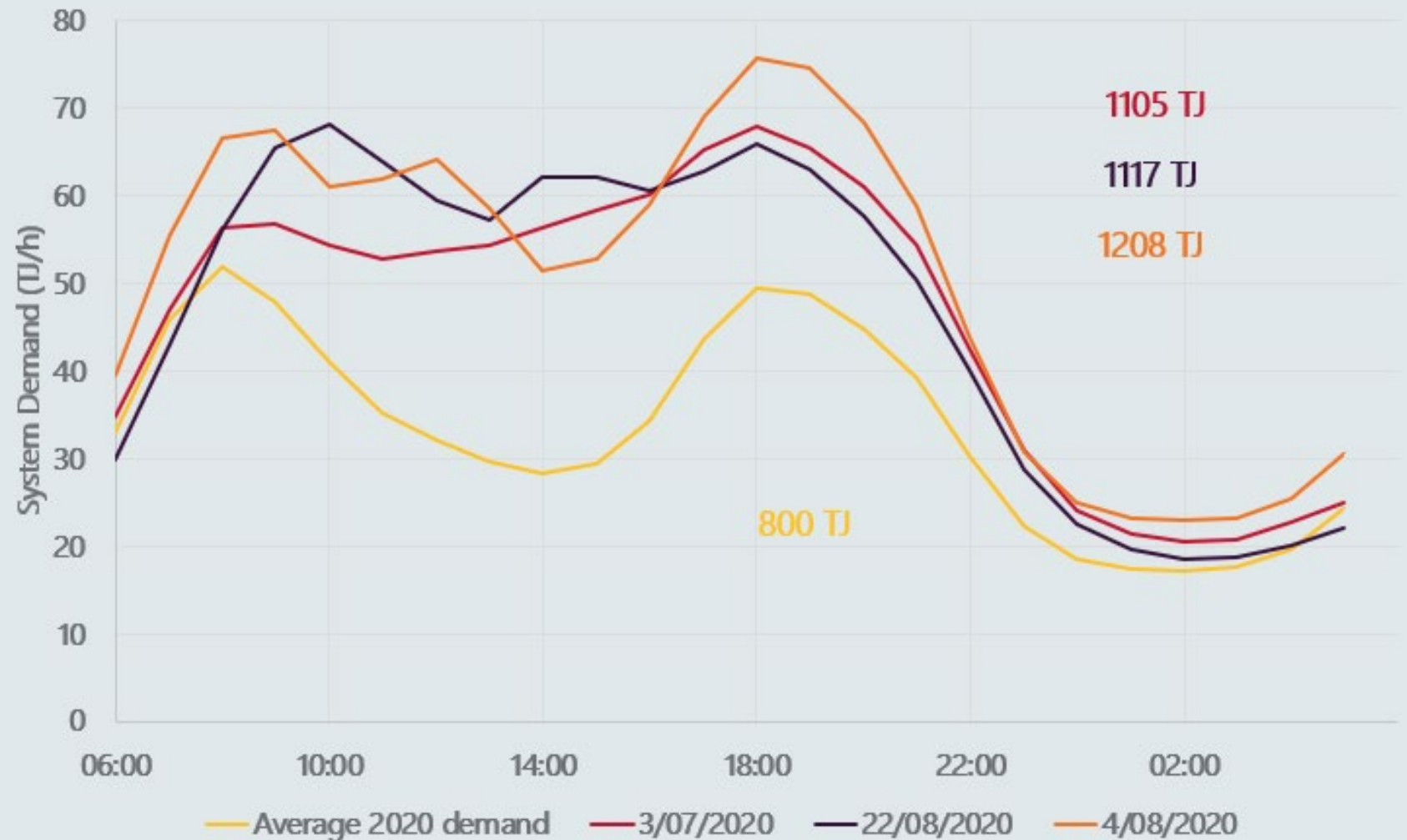
Linepack Impact

- For a 1000 TJ day, that is perfectly forecast
- Impact will be greater if demand larger, or there is more demand through the middle of the day



High demand days in 2020

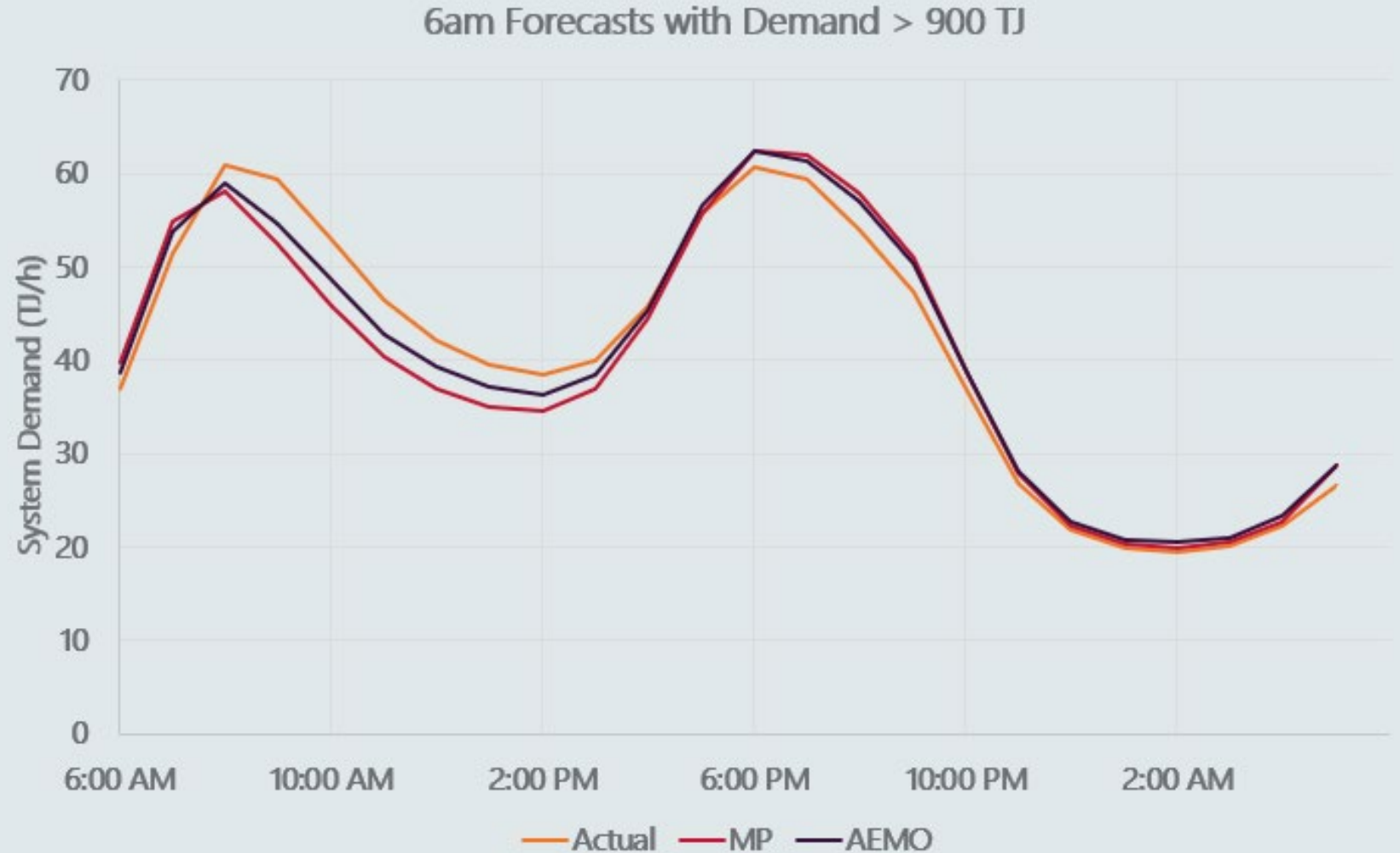
- Profiles on high demand days drastically different, particularly in the middle of the day
- High middle-of-day troughs are typically very hard to forecast, and greatly reduce linepack at 10pm



Demand forecasting challenges in 2020

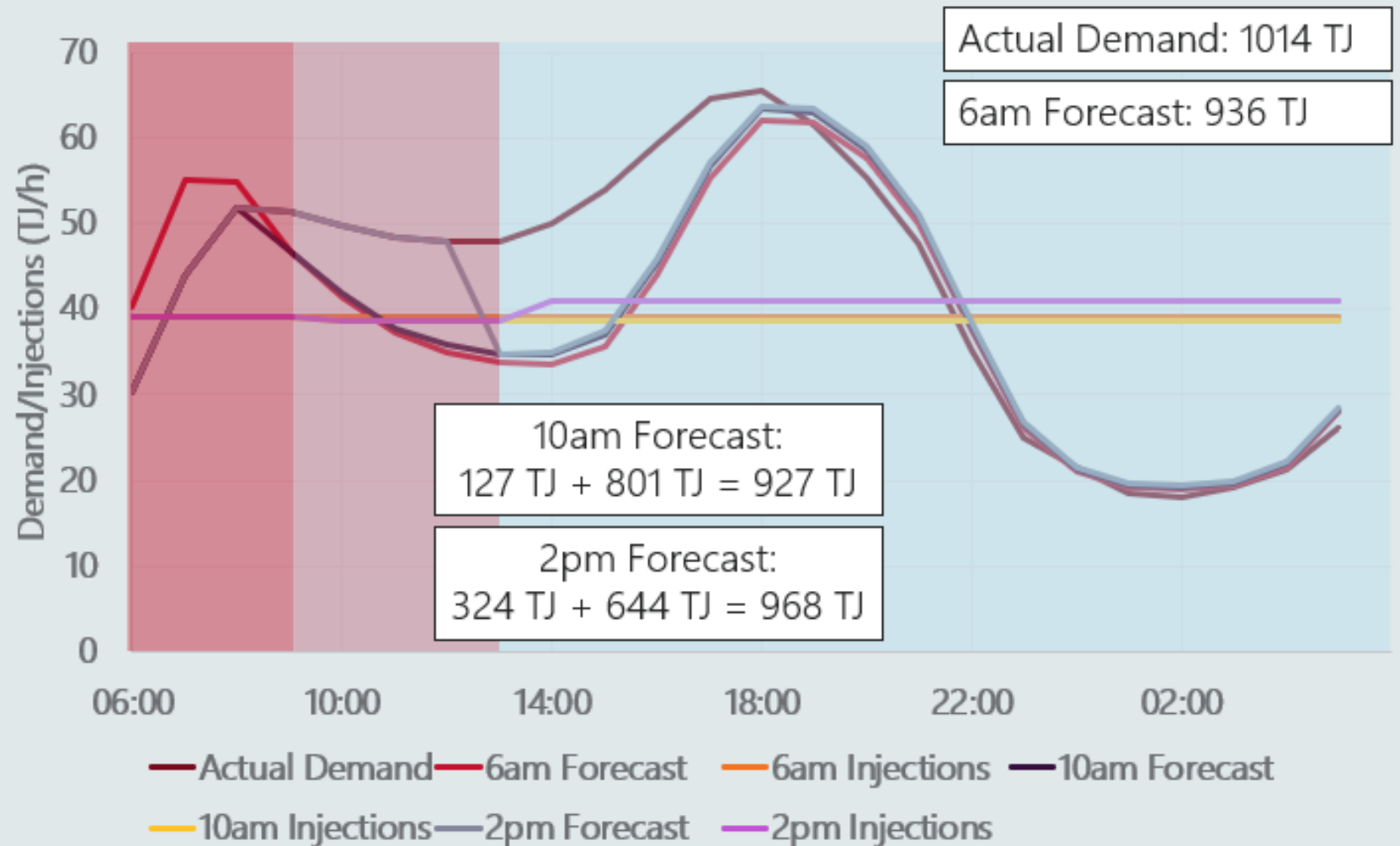
Forecasting Profiles has been challenging

- Forecasting on a daily basis has generally improved
- Forecasting profiles has been challenging



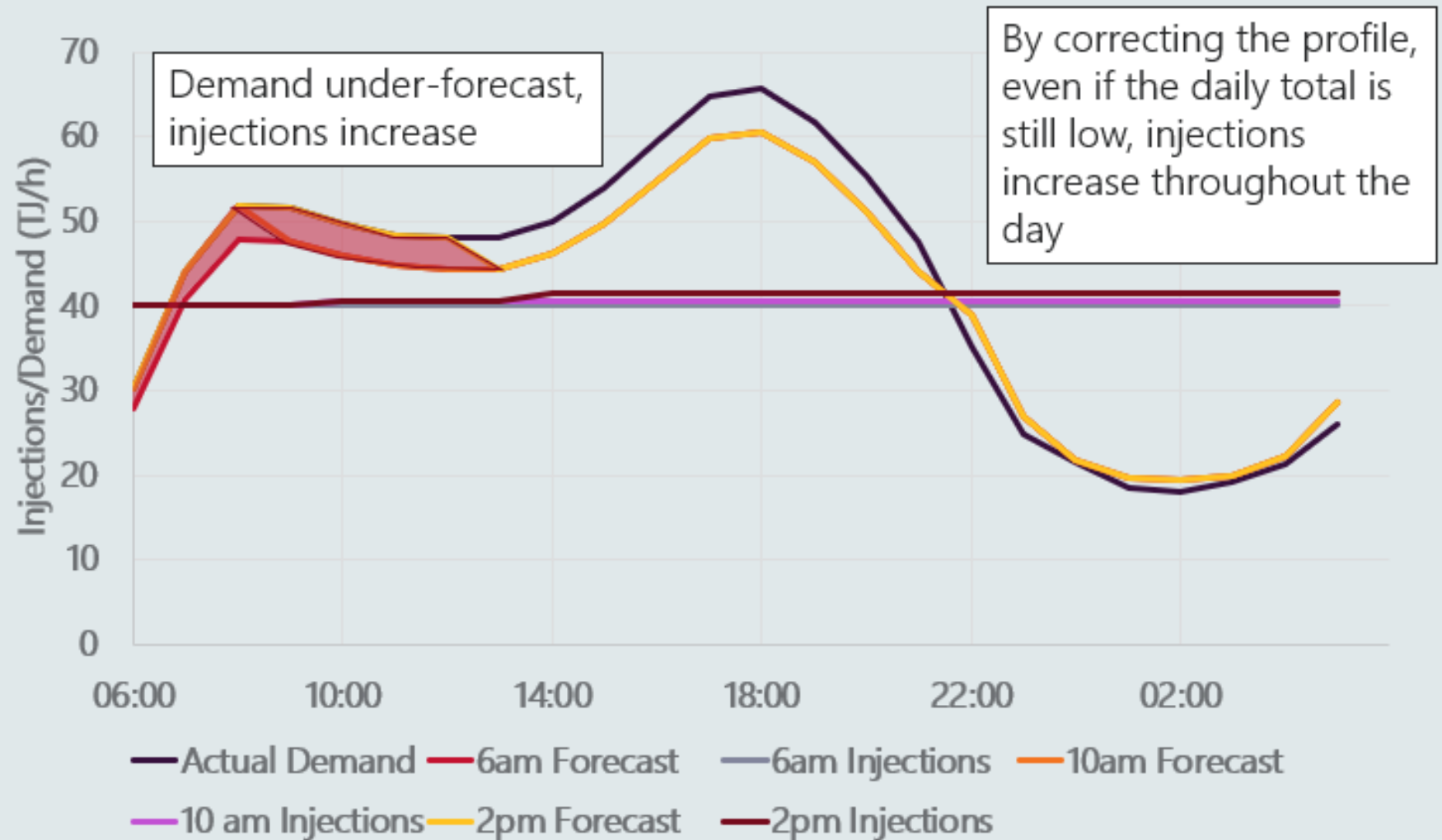
Why is forecasting profiles accurately important?

- Injections scheduled to meet daily demand
- Intra-day demand calculated from actual demand in previous hours, plus forecast demand in future hours
- Injections reduced at 10am, negative linepack impact



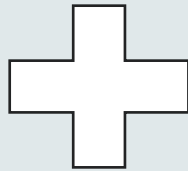
Why is Forecasting Profiles Accurately Important?

- Profile more accurate
- Total demand still under-forecast
- Injections always increasing throughout the day
- Minimum linepack level increased



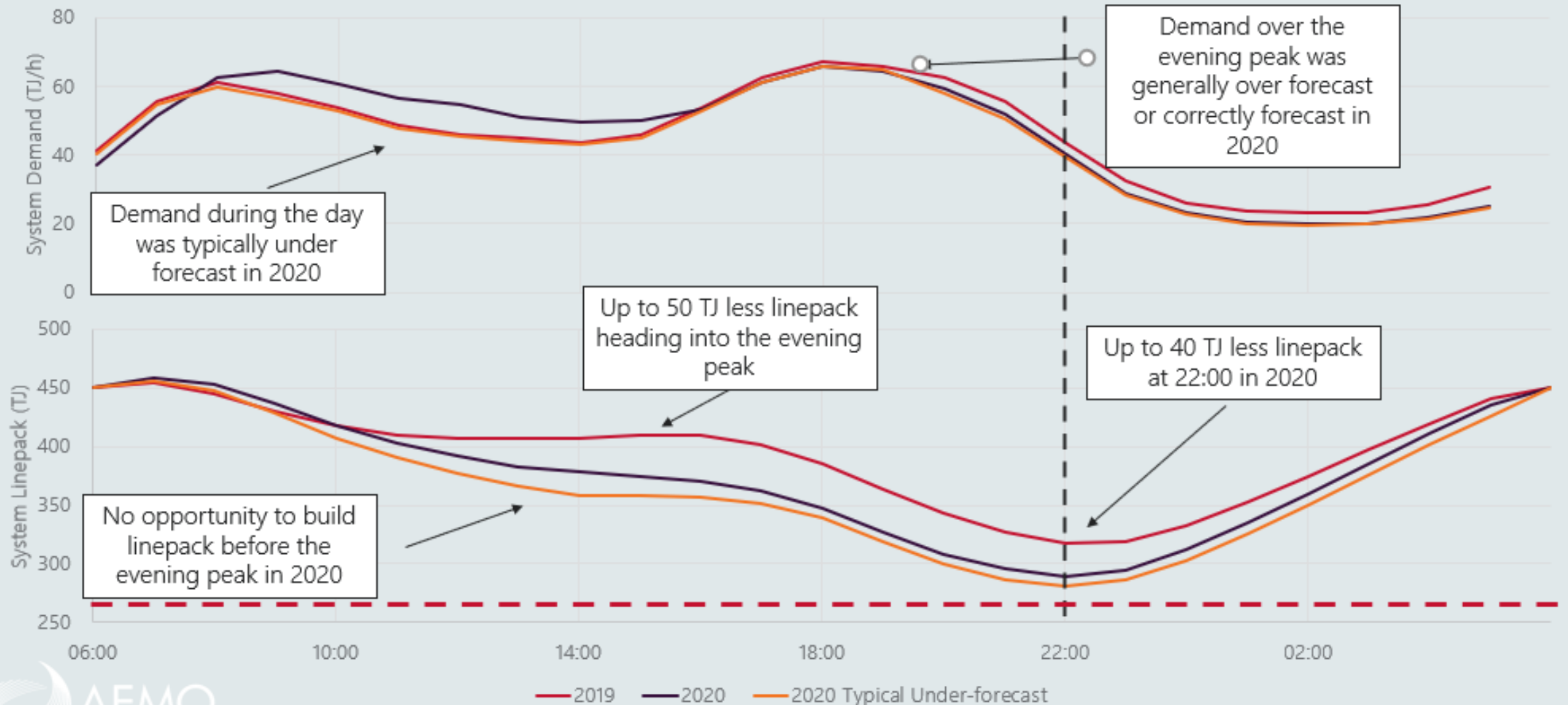
Combining the impacts

COVID-19
impacts on
demand
profile



Forecast
Profile Errors

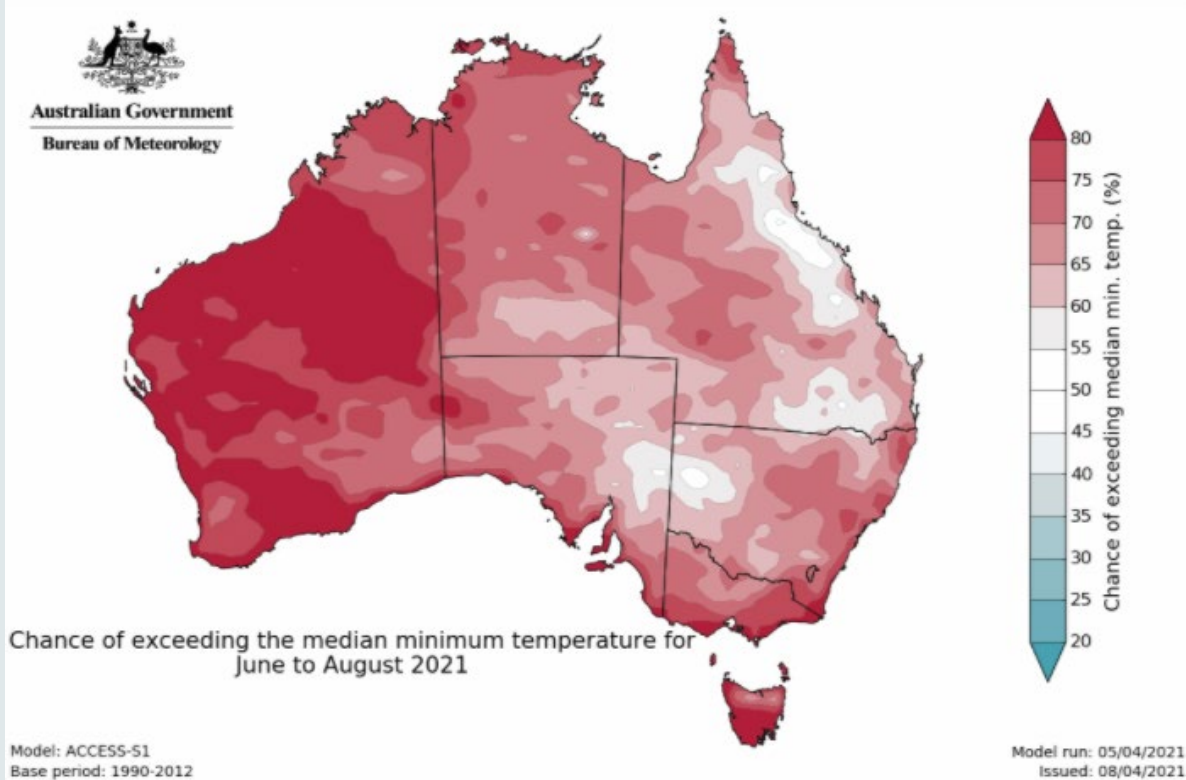
Linepack Impact on a High Demand Day



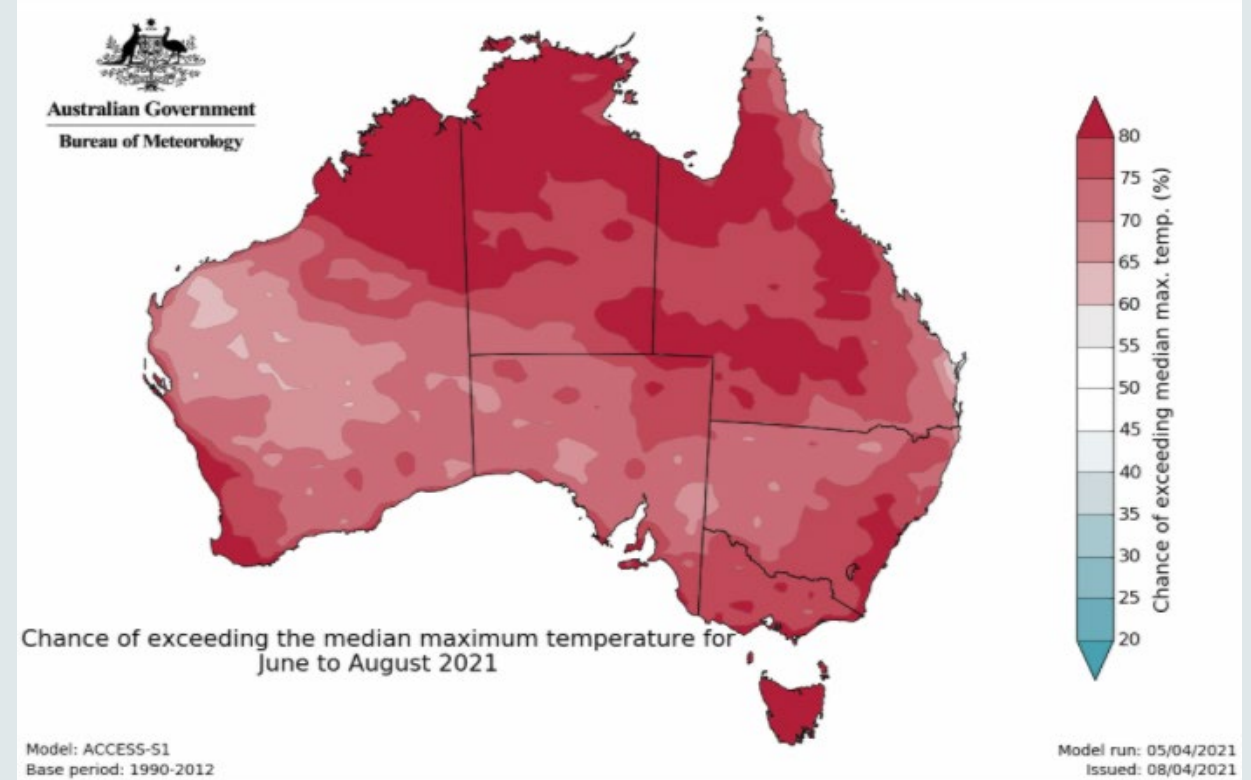
Weather outlook for winter 2021

2021 winter weather outlook

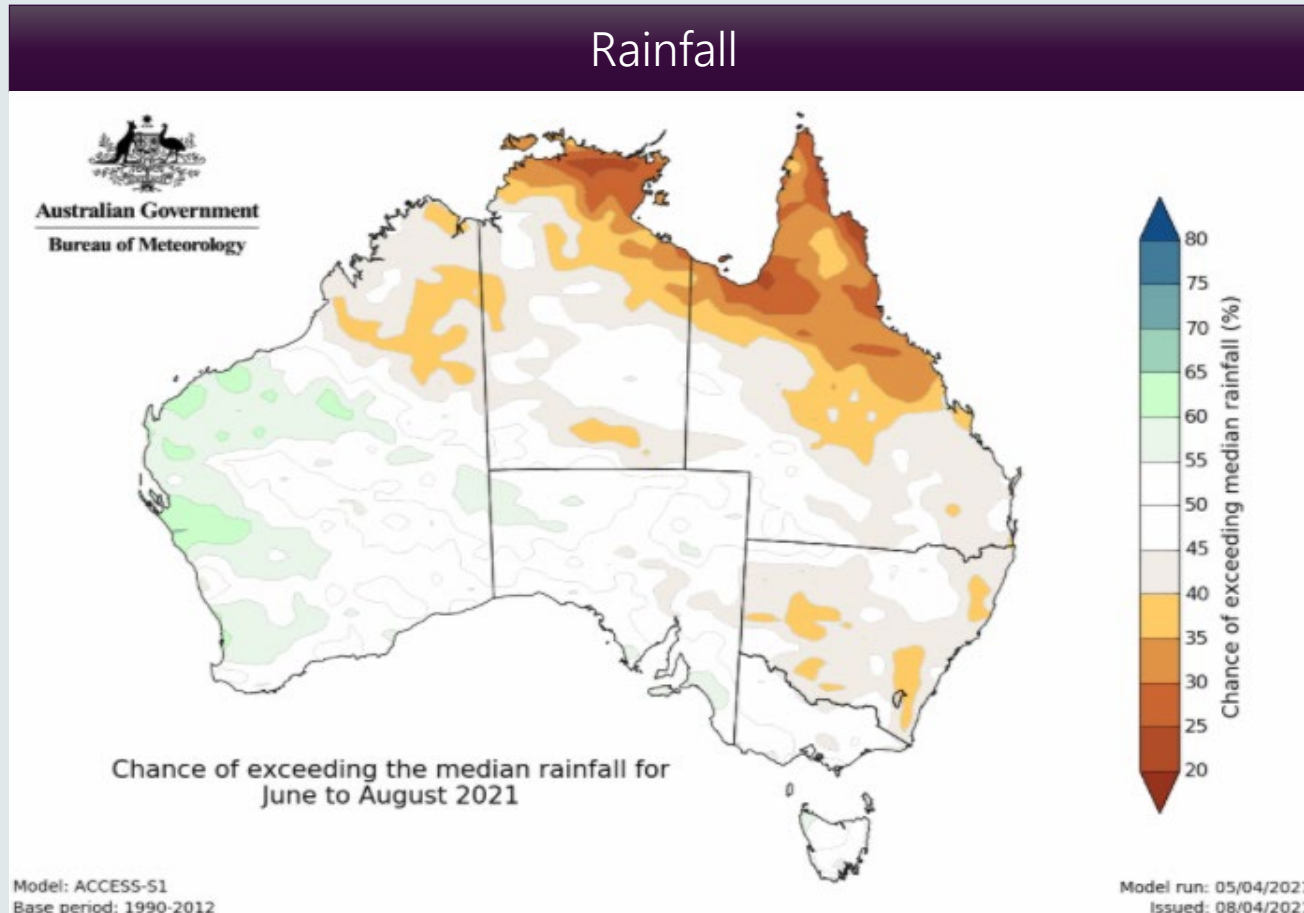
Minimum temperature



Maximum temperature



2021 winter weather outlook



- Warmer winter on average
- Lower rainfall
- There is still the risk of significant cold fronts bringing significant cold days in short bursts
- Forecast for number of days below 12°C similar to last year

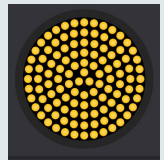
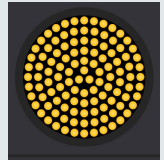
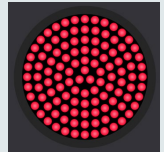
Expectations for 2021

Demand forecasting issues in 2021?

2020 Impacts

1. Impact of COVID-19 changed the demand profile, reducing usable linepack at 10pm
2. Demand profile changes meant **forecasting was more difficult** for both AEMO and MPs, particularly on high demand days
3. **MP demand profiles weren't updated** to account for COVID-19 driven changes

Impacting in 2021?



Key takeaways

Demand forecasting will remain challenging

Make demand profile as accurate as possible

Monitor demand profile changes