Power System Update

Presented to WA Electricity Consultative

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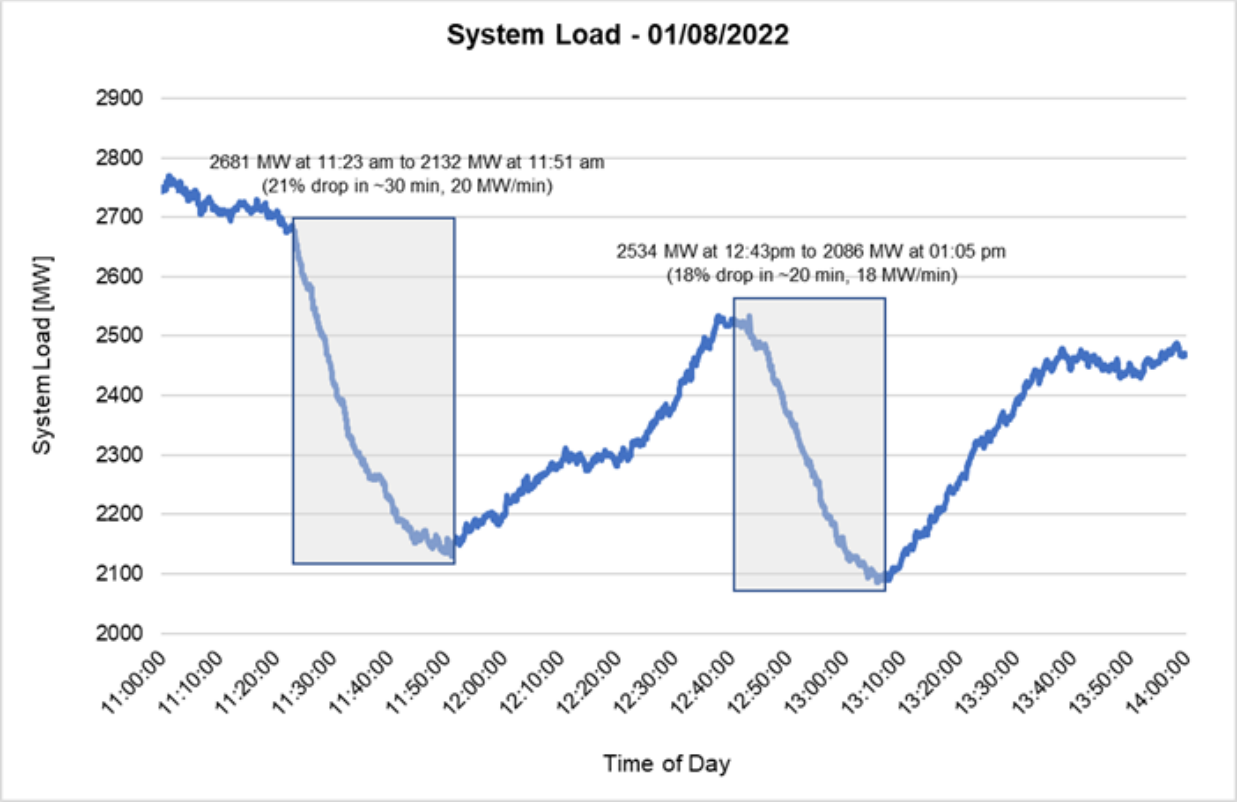
24 August 2022

Overview

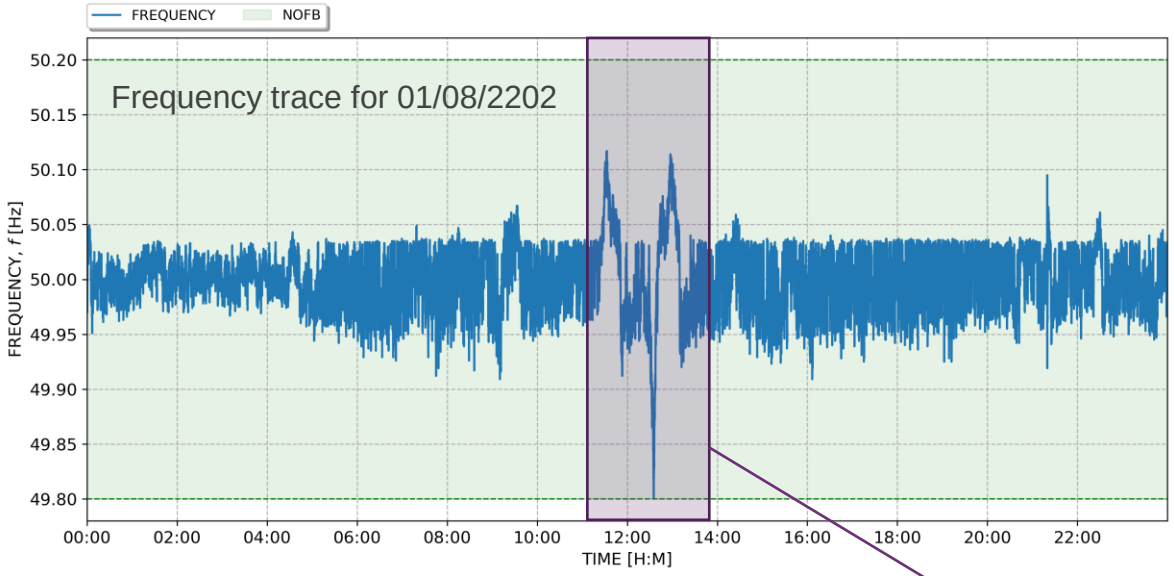
1. Events of first week in August
2. Tight Reserves
3. Dispatch Advisories relating to Generation Constraints
4. Winter Peak
5. Unusual Peak Loads

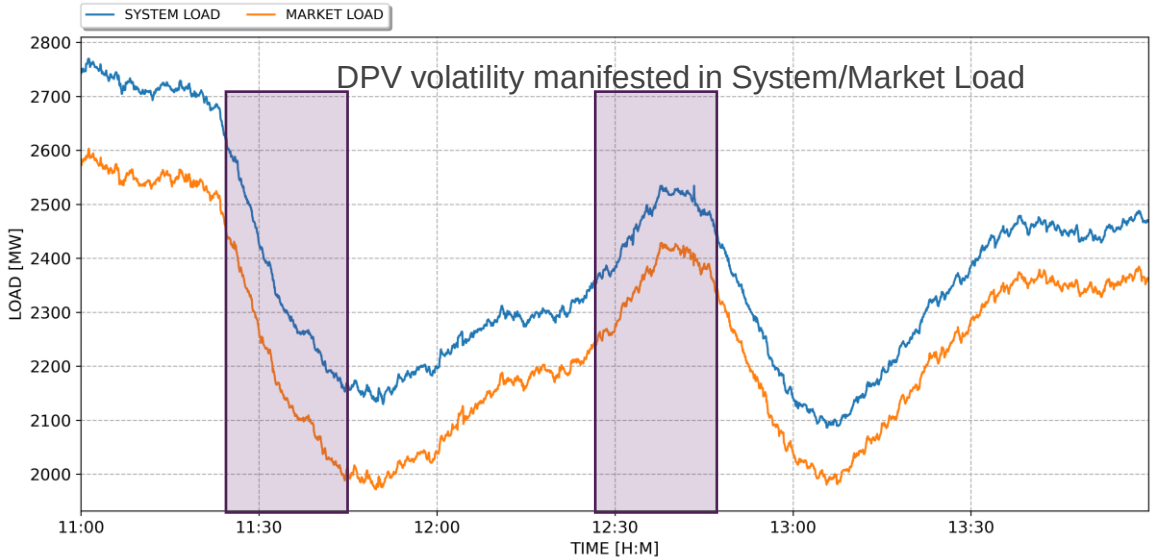
Load volatility on 1 August 2022



- ± 80MW Backup LFAS was enabled due to prevailing weather conditions.
- Commitment of additional GT's were required to manage high ramp rates and, in turn, to maintain sufficient Ancillary Services due to the movement of other units on AGC.

Frequency Trace on 1 August 2022



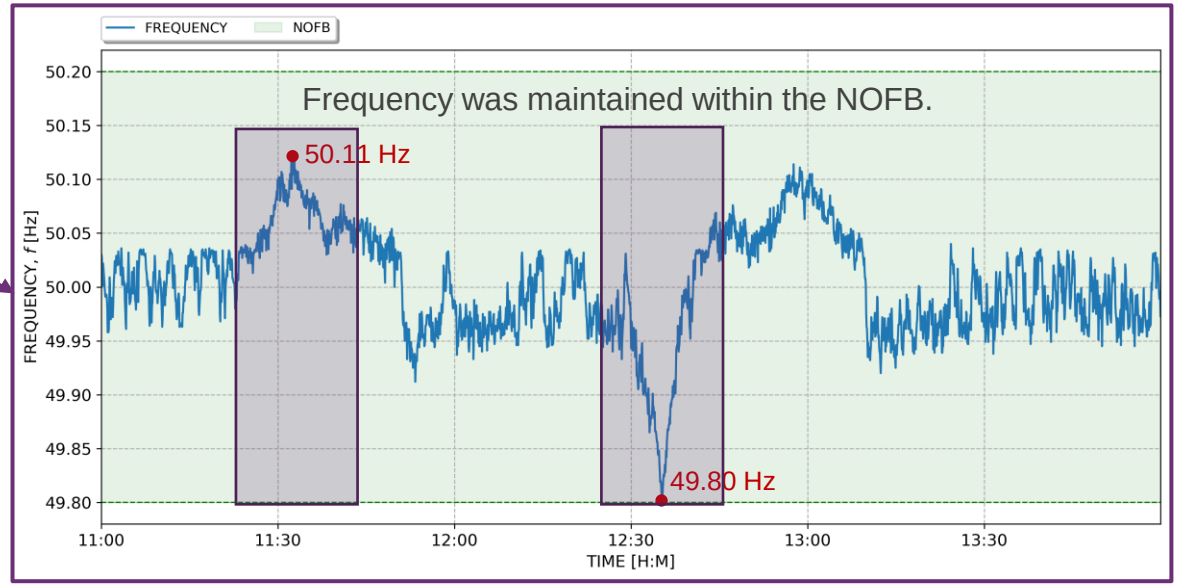


Appendix 13: Frequency Operating Standards System Frequency Outcomes

TABLE 1 – SUMMARY OF SYSTEM FREQUENCY OUTCOMES FOR THE SOUTH WEST INTERCONNECTED SYSTEM

Condition	Contain Band (Hz)	Stabilise (Hz)	Recover (Hz)
Normal Operating Frequency Band	49.8 to 50.2 Hz (99% of the time over any rolling 30-day period)	N/A	N/A
Normal Operating Frequency Excursion Band	49.7 to 50.3 Hz	49.8 to 50.2 Hz within 5 minutes	N/A

Appendix 13, pg 723 WEM Rules 1 july 2022



Damaging Weather 2nd August

- 6 Transmission Lines Forced Out of Service due to severe storm fronts
- Power System Remained Secure whilst Western Power repaired and returned the lines to service

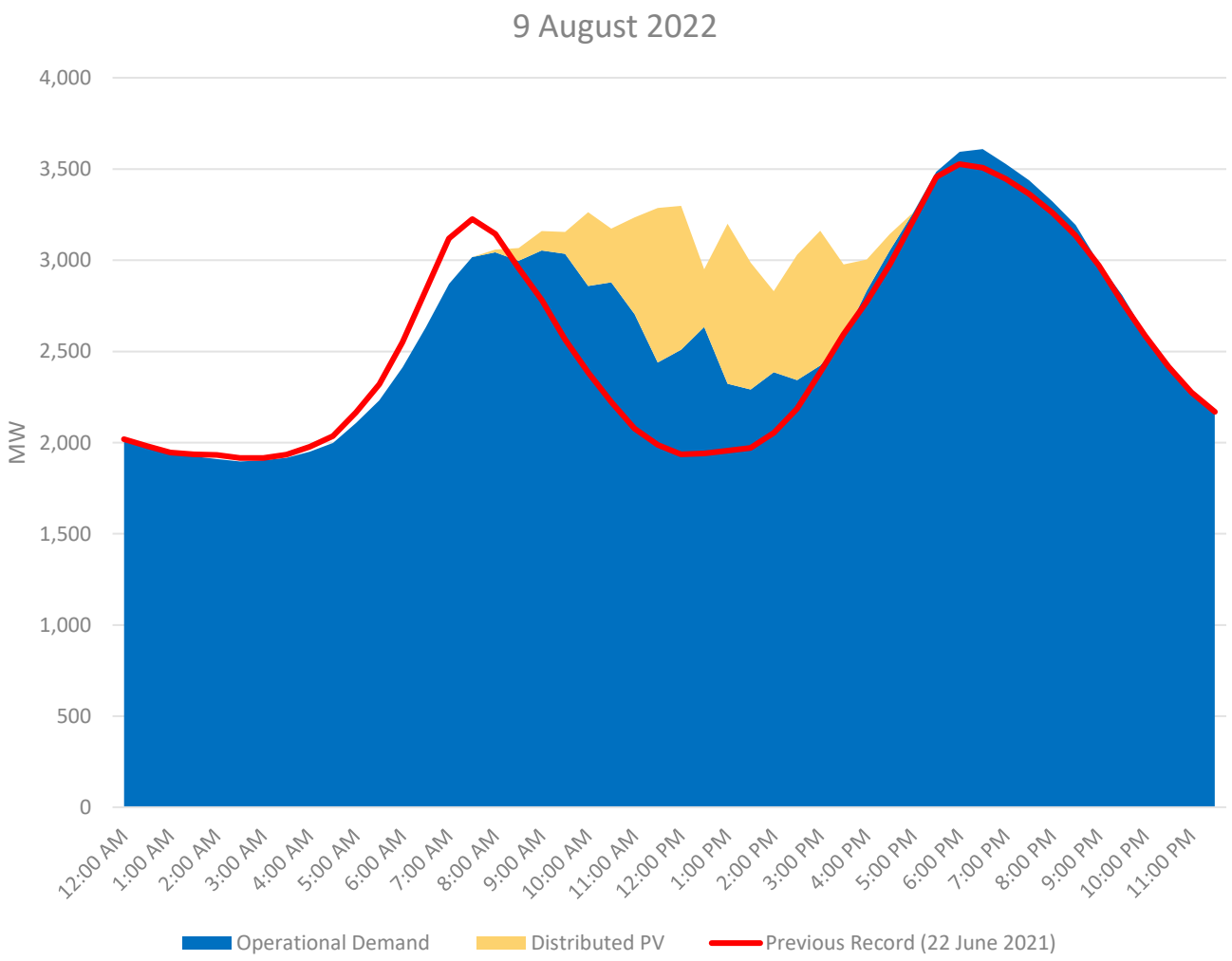
Tight operating conditions

- A number of forced outages resulted in tight operating conditions on the 4th and 5th of August.
- 4th August had strong reliance on wind, resulted in DA being issued.
- Total synchronous generation outages (Planned and Forced) in the order of 1400MW

Recent DA's related to Generation Constraints

- To maintain power system security and reliability AEMO has identified the need to constrain the Synergy Portfolio to a maximum level of output. This was required to avoid a shortfall of Ancillary Services and a subsequent High Risk Operating State.
- AEMO calculates this constraint based on current and forecast conditions impacting the power system, Ancillary Service requirements and Facility availability.
- AEMO will issue Dispatch Instructions to the next Facility in the Balancing Merit Order to provide the shortfall in generation in accordance with the Dispatch Criteria. Some Out of Merit Generation may occur.

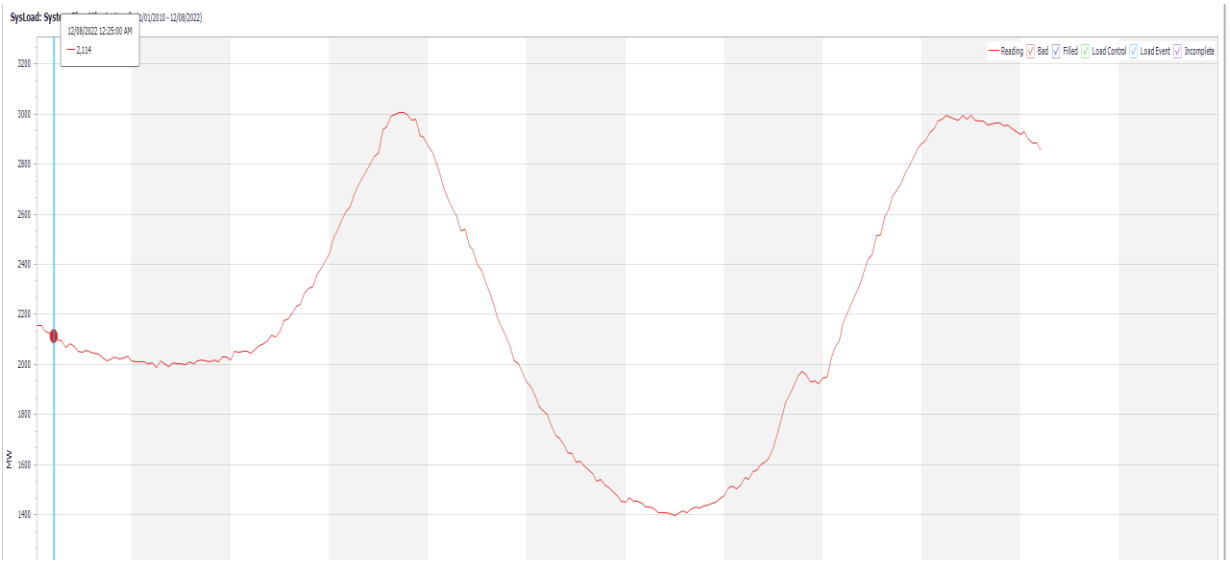
Record Winter Demand

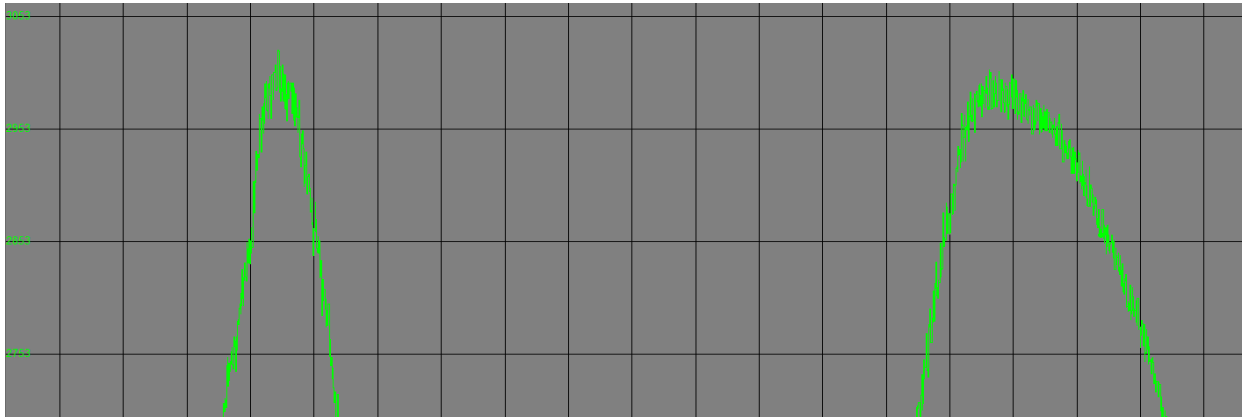


New winter Operational Demand Record of 3,609 MW over the 6:30 pm interval on 9th August

Lowest monthly recorded o vernight and daytime tempe ratures of
12.4 degrees contributed to the record demand.

Unusual Peak Loads





- 12th August the morning peak was larger than the evening peak
- Morning instantaneous peak ~3029 MW Evening instantaneous peak ~3008 MW

Questions and Feedback?

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