

AEMC - Five Minute Settlement Rule Change Request

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Scope of Works

Defined Scope of Works on the 5-minute settlement rule change request

Potential impact of the proposed rule change on:

- competition in markets for financial risk management instruments;
- financial intermediaries; and
- participant's risk management policies, banking obligations, accounting and/or corporate governance arrangements.

Financial Markets Contracts

Implications exist between 5-minute and 30-minute settlement periods when:

- There are different volumes for the six 5-minute periods; and there are different prices for the six 5-minute periods.
- If volumes are the same, there is no implication.
- If prices are the same, there is no implication.

Swap Contracts

Firm Swaps: Primary Financial Market Contract

- Swap: Fixed Price for Floating Price for a predefined volume for a time period (e.g. Quarter or Year; Flat or Peak)
- Rationale: rather than paying or receiving variable price, counterparties agree on a fixed price outcome
 - Gen: price risk management for high capacity factor
 - Retail: price risk management for base consumption
- Swaps have fixed volume for six 5-minute periods and therefore are **UNAFFECTED** by change of settlement period.

Cap Contracts

30–min Cap Contract: Alternative Financial Market Contract

- Cap: Automatically exercising half-hourly call options with associated Call Premium and \$300/MWh Strike Price
- Rationale: Contract that is exercised during periods of high price and therefore volume is aligned with “peaking” generation capacity.
 - Gen: price risk management for low capacity factor generators
 - Retail: price risk management for demand flex
- Cap have price dependent volume for each of the six 5-minute periods and therefore are **AFFECTED** by change of settlement period.

Cap Contract Payout

Cap Contracts only exercised during prices greater than \$300/MWh for the Settlement Period

- Contract Settlement Period will align to underlying electricity spot market otherwise there is market basis risk
- Therefore, **5-min Cap Contracts** will convert to auto-exercising five minute call options with associated Call Premium and \$300/MWh Strike Price

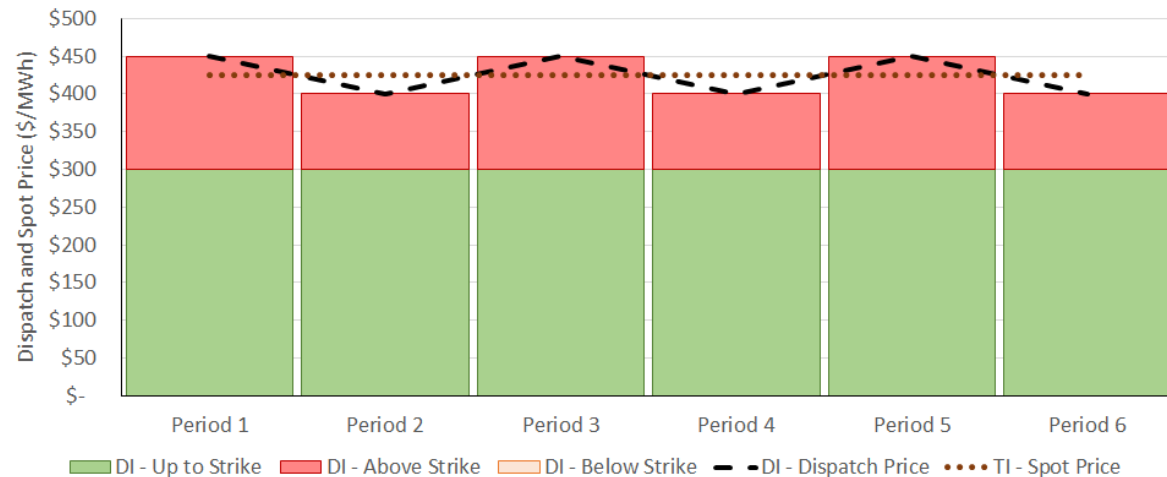
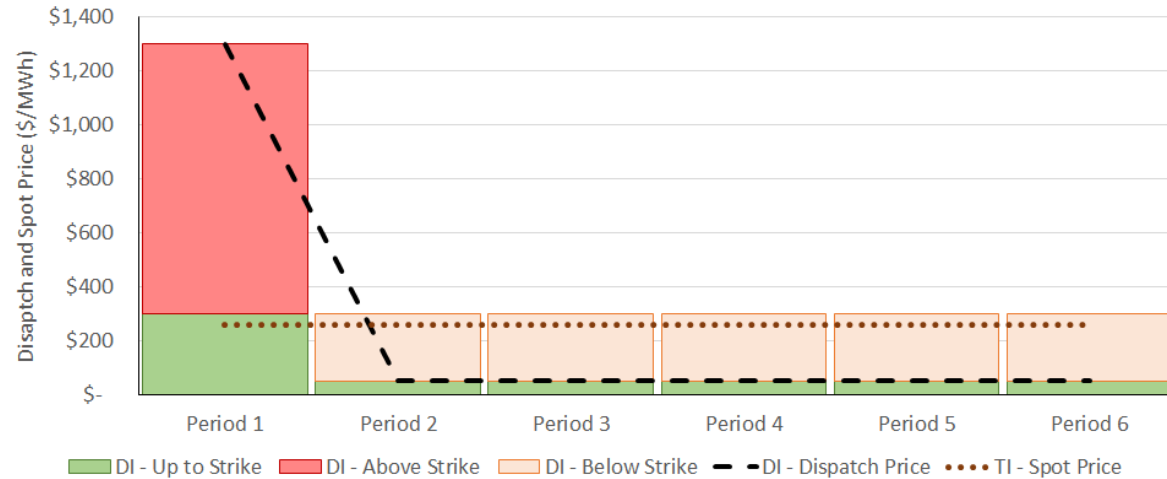
Cap Contracts Payoff

5-min Cap Contracts

\$1,300 dispatch price pays out for \$1,000 x 1/12MWh for \$300 5-min Caps

Whereas \$258/MWh does not payout

During half hour with six exercisers: same outcome because volumes consistent between 5 & 30



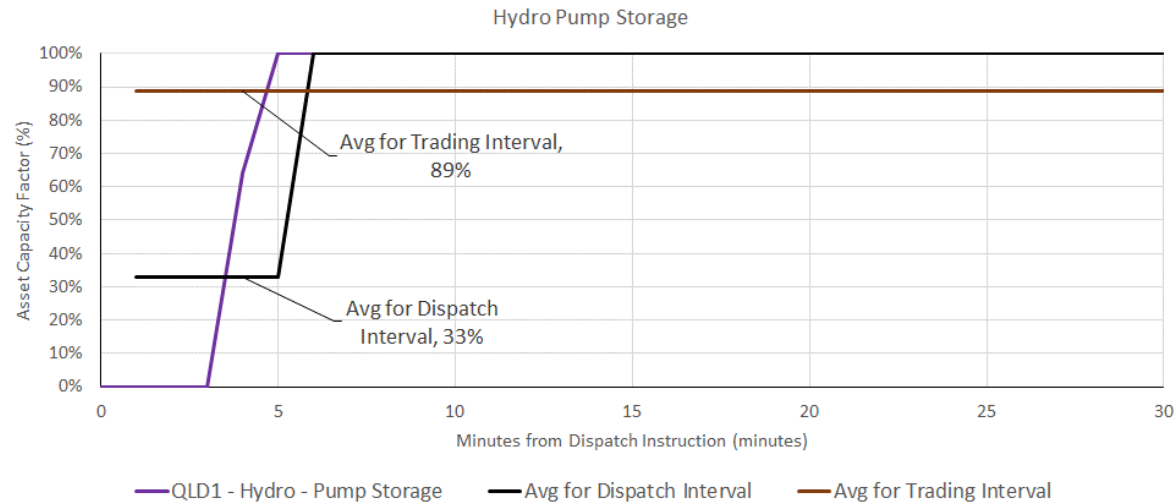
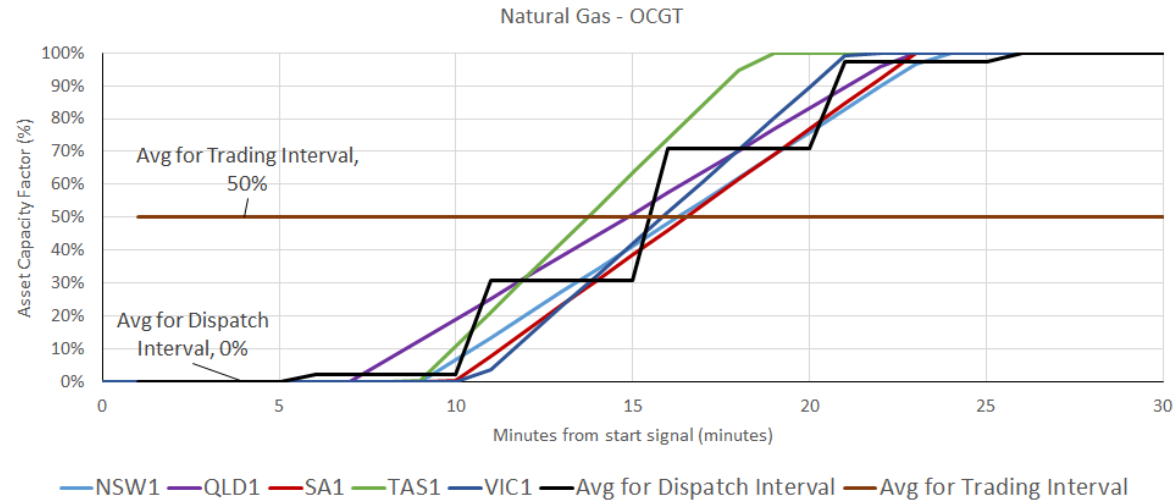
Generation Coverage of High Prices

OCGT from Rest

- 0% for first 5-minute
- 50% for 30-minute

Pump Storage from Rest

- 33% for first 5-minute
- 89% for 30-minute



Cap Contract Suppliers – By Region

Queensland ↖

- Dominated by OCGTs

New South Wales ↗

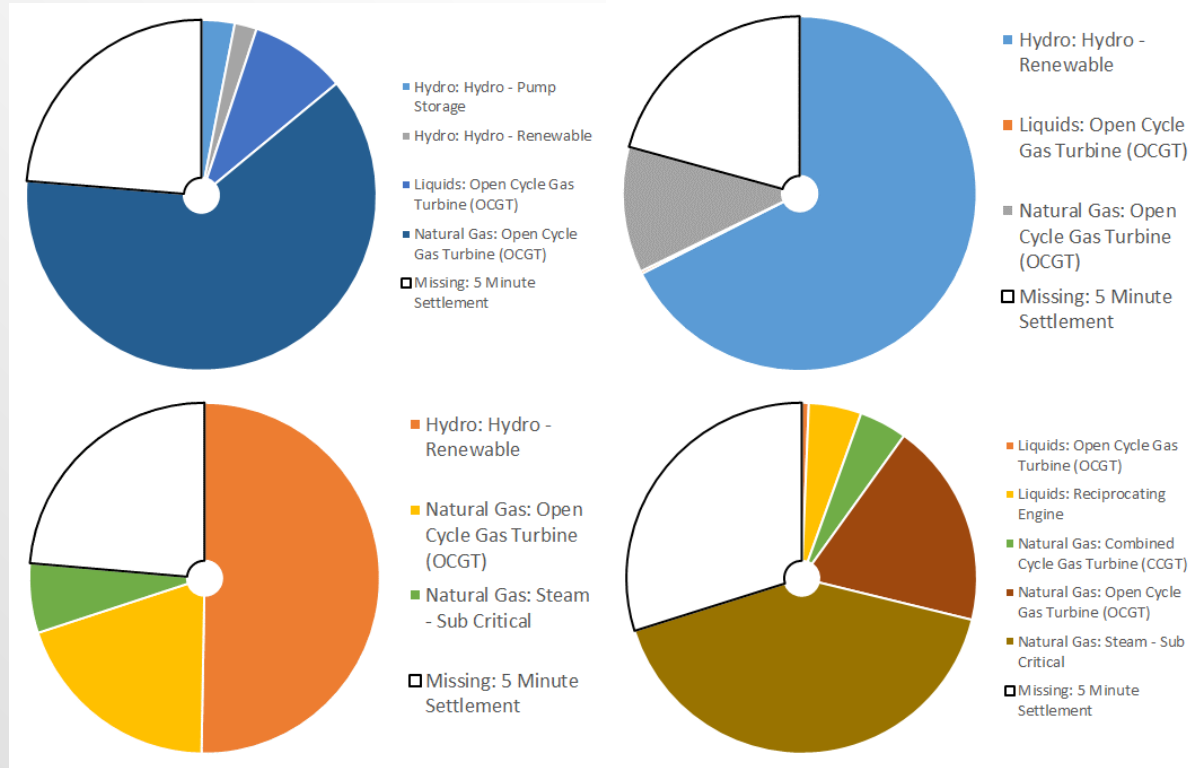
- Dominated by Hydros

Victoria ↙

- Dominated by Hydros

South Australia ↘

- Split across gas assets



Cap Contract Suppliers – By Region

Region	Calculated underlying traded volume of caps for FY 16 (MW flat equivalent)	Reduction in ability to sell caps under a 5-minute settlement (%)	Reduction in cap volume under a 5-minute settlement (MW flat equivalent)	Projected volume of caps sold by natural sellers (MW flat equivalent)
Queensland	900	24%	-215	685
NSW	1,000	21%	-210	790
Victoria	470	24%	-115	355
South Australia	280	30%	-85	195
Total	2,650	23%	-625	2,025

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