AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

WEM Relaxed Constraints

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Q4 2024

A summary of the total number, frequency and type of Constraints that were relaxed in order to resolve infeasible dispatch solutions

Important notice

Purpose

Under clause 7.2.7 of the WEM Rules, AEMO must as soon as practicable after the end of each quarter, publish on the WEM Website a report summarising the total number, frequency and type of Constraints that were relaxed under clause 7.2.6 during that quarter.

Disclaimer

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Relaxed Constraints

1.1 Introduction

Under clause 7.2.6 of the Wholesale Electricity Market (WEM) Rules, AEMO may "relax" Constraints used in the Central Dispatch Process in order to resolve infeasible dispatch solutions. If the WEM Dispatch Engine (WEMDE) is not able find a feasible solution, it determines which Constraints to relax[1] and by how much using the concept of Constraint Violation Penalty (CVP[2]), whereby the cost of relaxing a Constraint depends on its associated CVP value.

Under clause 7.2.7(b) of the WEM Rules, AEMO must as soon as practicable after the end of each quarter, publish on the WEM Website a report summarising the total number, frequency and type of Constraints that were relaxed under clause 7.2.6 during that quarter.

1.2 Summary of relaxed Constraints

Table 1 shows the breakdown of relaxed constraints by category and trading month. Note that a constraint that was relaxed in multiple intervals has been counted multiple times.

Table 1 – Breakdown of category and trading month of relaxed Constraints for Q4 of 2024

Constraint Type	Description	October	November	December	Total
Ramp Up	Formulation[3] Constraint used to limit Facility ramping. See section 2.4.13 of WEM Procedure: Dispatch Algorithm Formulation.	775	868	365	**2008**
Minimum Enablement for ESS (Essential System Services)	Formulation Constraint used to prevent a Facility being dispatch below its ESS Enablement Minimum value. See section 2.2.15 of WEM Procedure: Dispatch Algorithm Formulation.	16	3	0	**19**
Defined Contingency	Constraints used to calculate the Largest Credible Supply Contingency. See section 2.4.8 of WEM Procedure: Dispatch Algorithm Formulation.	4	2	2	**8**
Network Constraint	Constraint corresponding to a Network Limit. See WEM Rule 7.2.4(e).	175	188	172	**535**
Non-Co-optimised ESS (NCESS)	Constraint related to NCESS contracts. See WEM Rule 7.2.4(iA).	0	0	0	**0**
Other	Constraint used to meet Power System Security and Power System Reliability requirements, that do not form part of the above categories. See WEM Rule 7.2.4(f).	20	10	0	**30**
Total		**990**	**1071**	**539**	**2600**

[1] In the context of the WEM Dispatch Engine, relaxed Constraints are also called violating Constraints.

[2] For more information about Constraint Violation Penalties see WEM Procedure: Dispatch Algorithm Formulation

[3] Formulation constraints are included in the formulation of the Dispatch Algorithm (see WEM Procedure: WEM Dispatch Algorithm Formulation) and hence do not form part of the Constraints Library.

Table 2 contains a summary of the number of Primary Dispatch Intervals in which Constraints were relaxed.

Table 2 – Amount of Primary Dispatch Intervals with various numbers of relaxed Constraints for Q4 of 2024

N	0	1	2	3	4	5	6	7	8	9	10	>10
Number of Primary Dispatch Intervals with N relaxed Constraints	24,218	2075	136	34	22	3	8	0	0	0	0	0
Percentage of Dispatch Intervals with N relaxed Constraints	91%*	8%	<1%	<1%	<1%	0%	0%	0%	0%	0%	0%	0%

*The majority (91%) of intervals had no relaxed Constraints (N = 0) meaning that the Dispatch Algorithm found a feasible solution without violating any Constraints.