

WEM Relaxed Constraints

April 2024

Q1 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 clause 7.2.7, 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.

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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 relax¹ and by how much using the concept of Constraint Violation Penalty (CVP²), 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 2023

Constraints (#)	January	February	March	Total
Ramp Up	322	197	233	752
Generic Network	331	2641	630	3,602
Other Generic	56	395	120	571
Minimum Enablement for ESS*	3	58	3	64
Defined Contingency	3	1058	1	1,062
Non-Co-optimised ESS (NCESS)	88	0	22	110
Total	803	4,349	1,009	6,161

*Essential System Services (ESS)

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 2023

N	0	1	2	3	4	5	6	7	8	9	10	>10
Number of Primary Dispatch Intervals with N relaxed Constraints	23,574	1,805	263	122	111	63	34	47	53	36	20	80
Percentage of Dispatch Intervals with N relaxed Constraints	90%*	7%	1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%	<1%

*The majority (90%) of intervals had no relaxed Constraints (N = 0) meaning that the Dispatch Algorithm found a feasible solution without violating any Constraints.

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](#)