MONTHLY OVER-RIDING CONSTRAINTS HIGHLIGHTS

26 December 2023 to 25 January 2024

SUMMARY OF OBSERVATIONS

- Commissioning test of Luzon plants accounted for 51% of the total impositions for the billing period, followed by the resumption of performance test of natural gas related to the shifting to LNG fuel, making Luzon plants imposed with majority or 92% of the total imposition.

- Keeping up with the trend from the previous billing period, OC impositions in Mindanao were mostly attributable to the designation of Oil-based plants as Must-Run Units (MRUs) to address system voltage requirement of the region.

AT A GLANCE

Total Over-riding Constraints Imposition

89,734

▲ **11.6%** increase from previous billing period

LUZON
82,621

- **NATURAL GAS** plants have the HIGHEST # of OC imposition
- **NATURAL GAS** plants, on average, had the LARGEST MW scheduled due to COMMISSIONING TEST
- MOST impositions were due to COMMISSIONING TEST of various plants

VISAYAS
462

- **OIL-BASED** plants have the HIGHEST # of OC imposition
- **BESS** plants, on average, had the LARGEST MW scheduled due to ERC AUDIT
- MOST impositions were due to the conduct of **EMISSION TEST** of OIL-BASED PLANTS

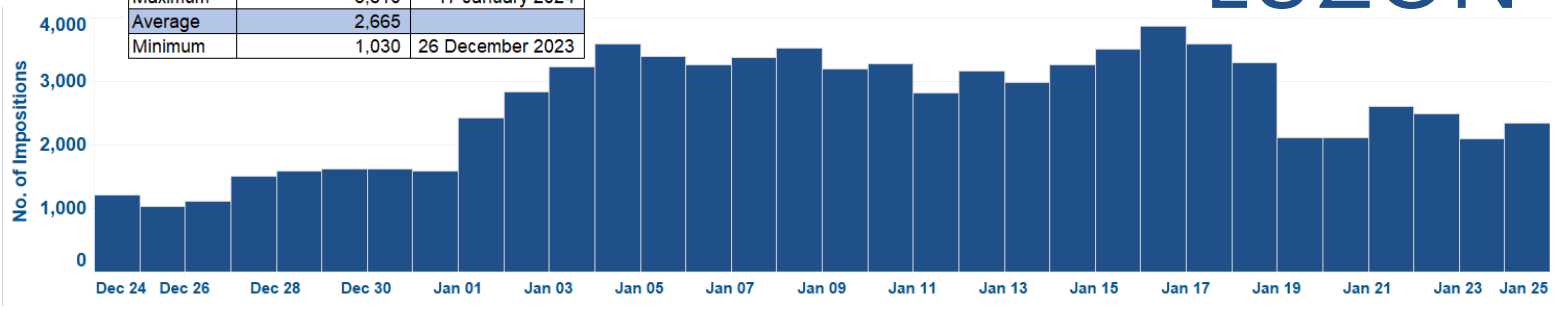
MINDANAO
6,651

- **OIL-BASED** plants have the HIGHEST # of OC imposition
- MOST impositions were due to **MUST-RUN UNIT**

OC IMPOSITIONS

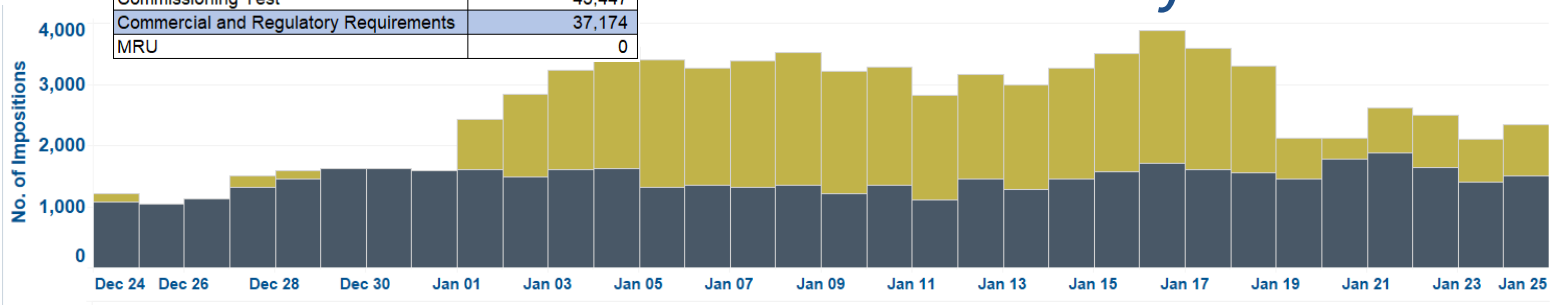
LUZON

	No. of Impositions	Date
Maximum	3,810	17 January 2024
Average	2,665	
Minimum	1,030	26 December 2023



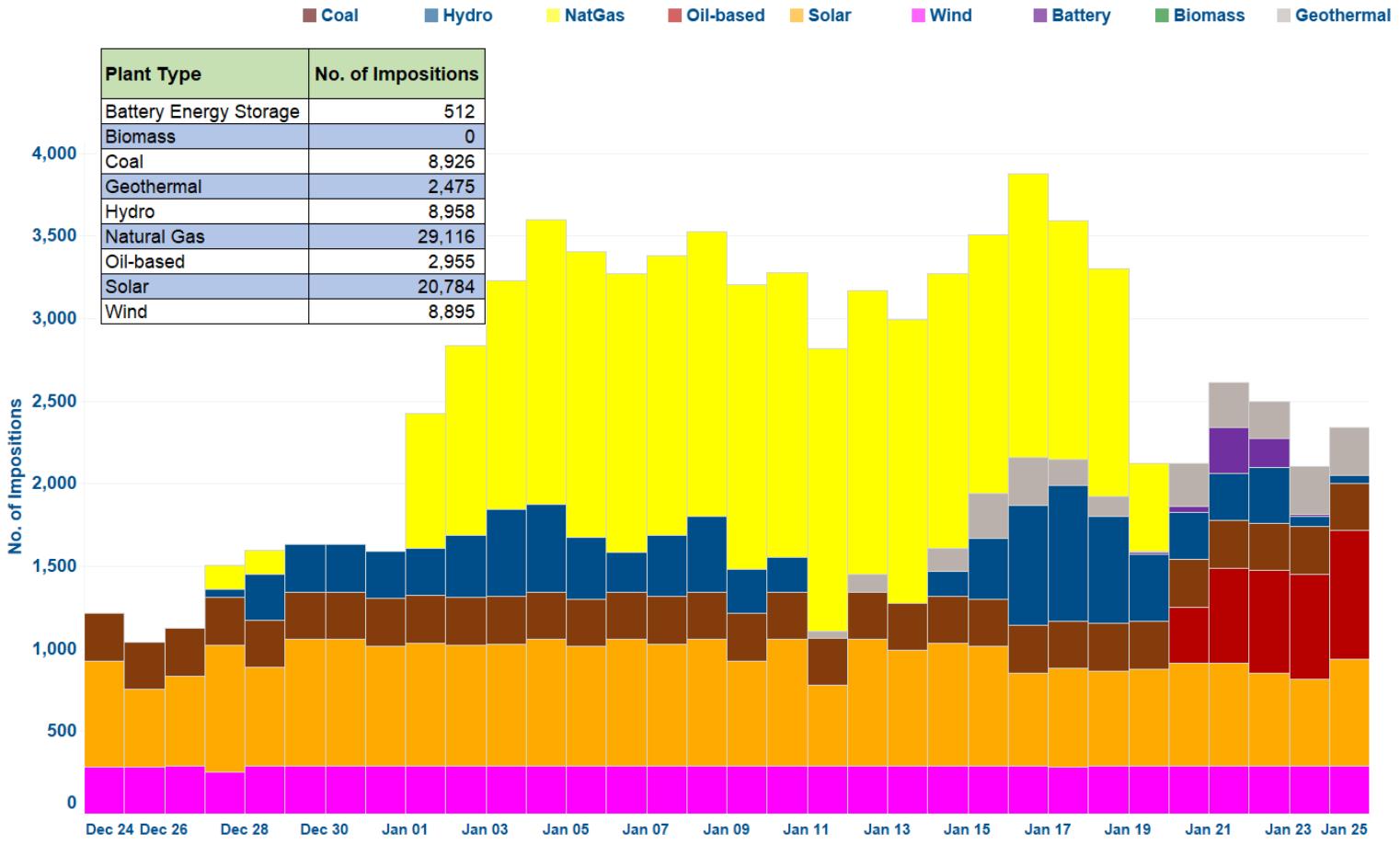
by incident

Incident	No. of Impositions
Commissioning Test	45,447
Commercial and Regulatory Requirements	37,174
MRU	0



by plant type

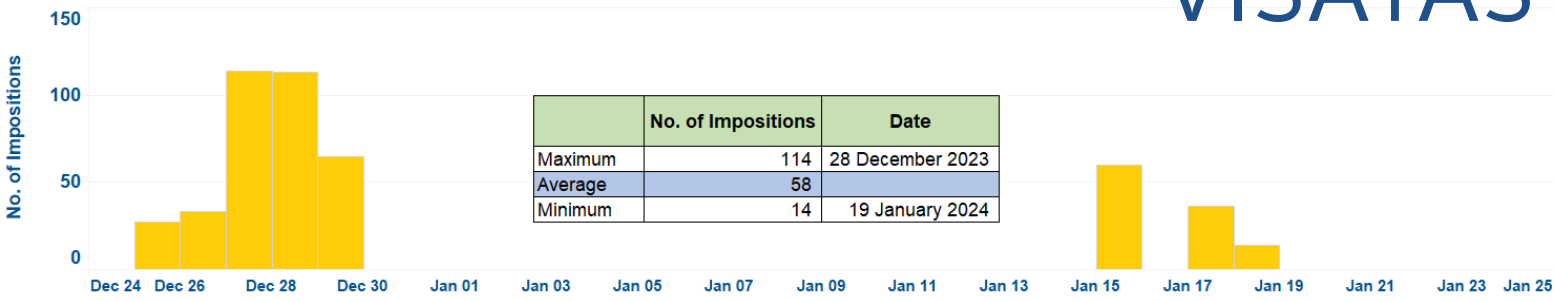
Plant Type	No. of Impositions
Battery Energy Storage	512
Biomass	0
Coal	8,926
Geothermal	2,475
Hydro	8,958
Natural Gas	29,116
Oil-based	2,955
Solar	20,784
Wind	8,895



Majority of the OC impositions accounted to **Luzon grid plants** were attributable to the conduct of **performance tests** of **natural gas plants** which resumed during the start of 2024 until 20 January 2024.

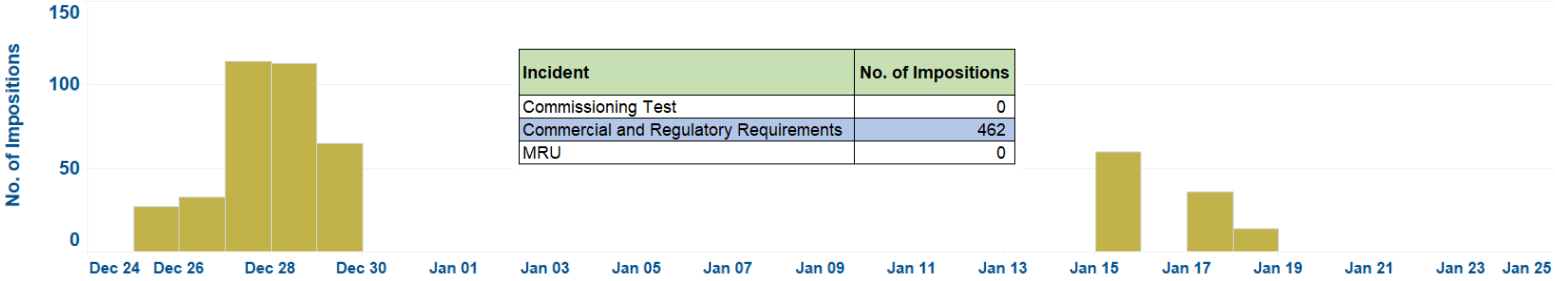
OC IMPOSITIONS

VISAYAS



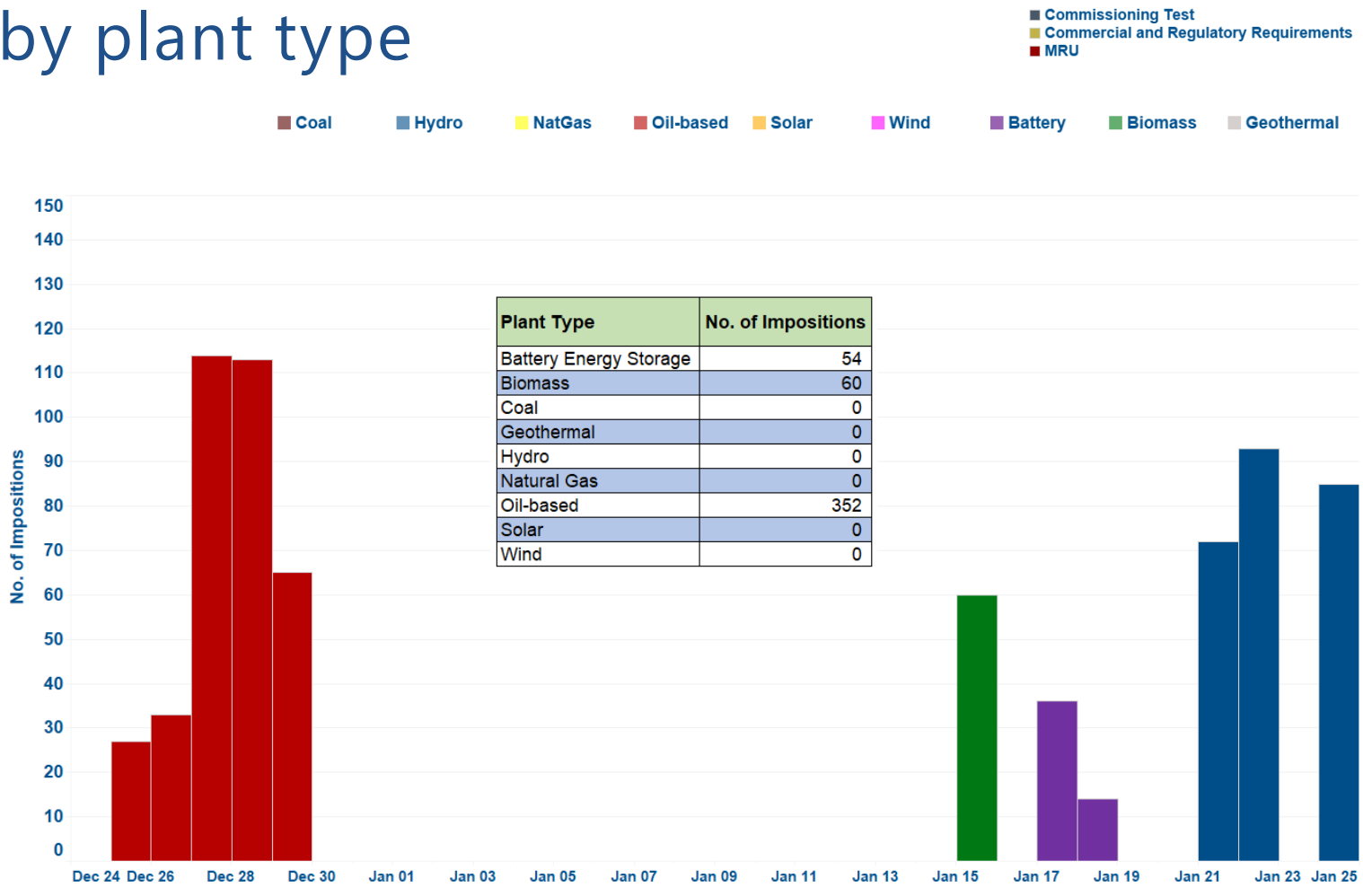
	No. of Impositions	Date
Maximum	114	28 December 2023
Average	58	
Minimum	14	19 January 2024

by incident



Incident	No. of Impositions
Commissioning Test	0
Commercial and Regulatory Requirements	462
MRU	0

by plant type



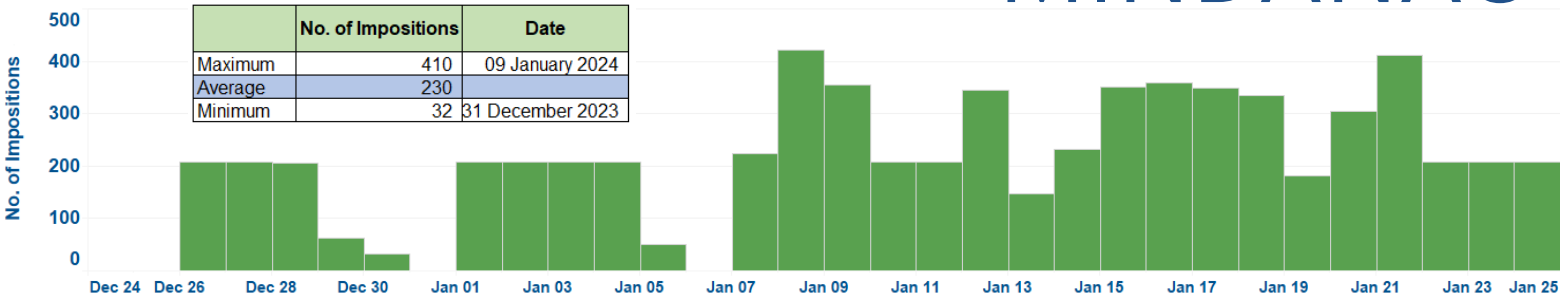
Plant Type	No. of Impositions
Battery Energy Storage	54
Biomass	60
Coal	0
Geothermal	0
Hydro	0
Natural Gas	0
Oil-based	352
Solar	0
Wind	0

Small shares of OC impositions were observed in the **Visayas region**. Most of which were related to **oil-based plants** due to the conduct of **emission tests** during the last week of December 2023.

OC IMPOSITIONS

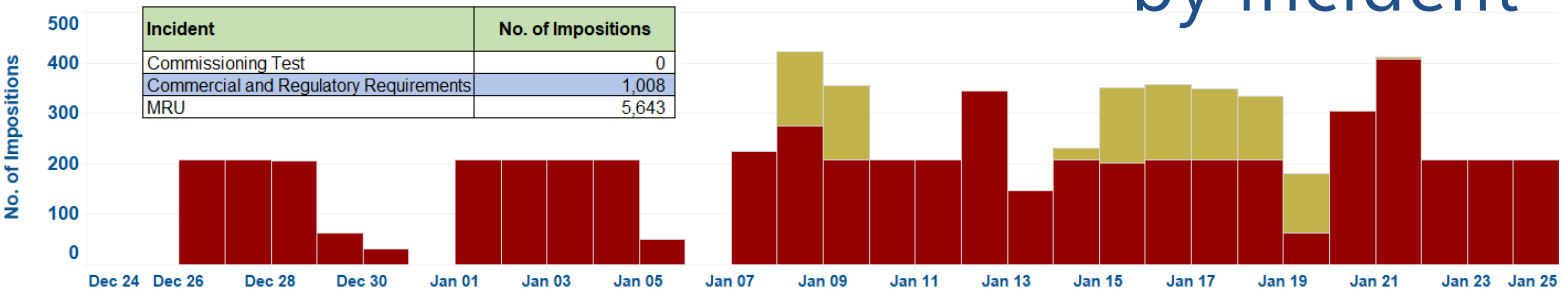
MINDANAO

	No. of Impositions	Date
Maximum	410	09 January 2024
Average	230	
Minimum	32	31 December 2023



by incident

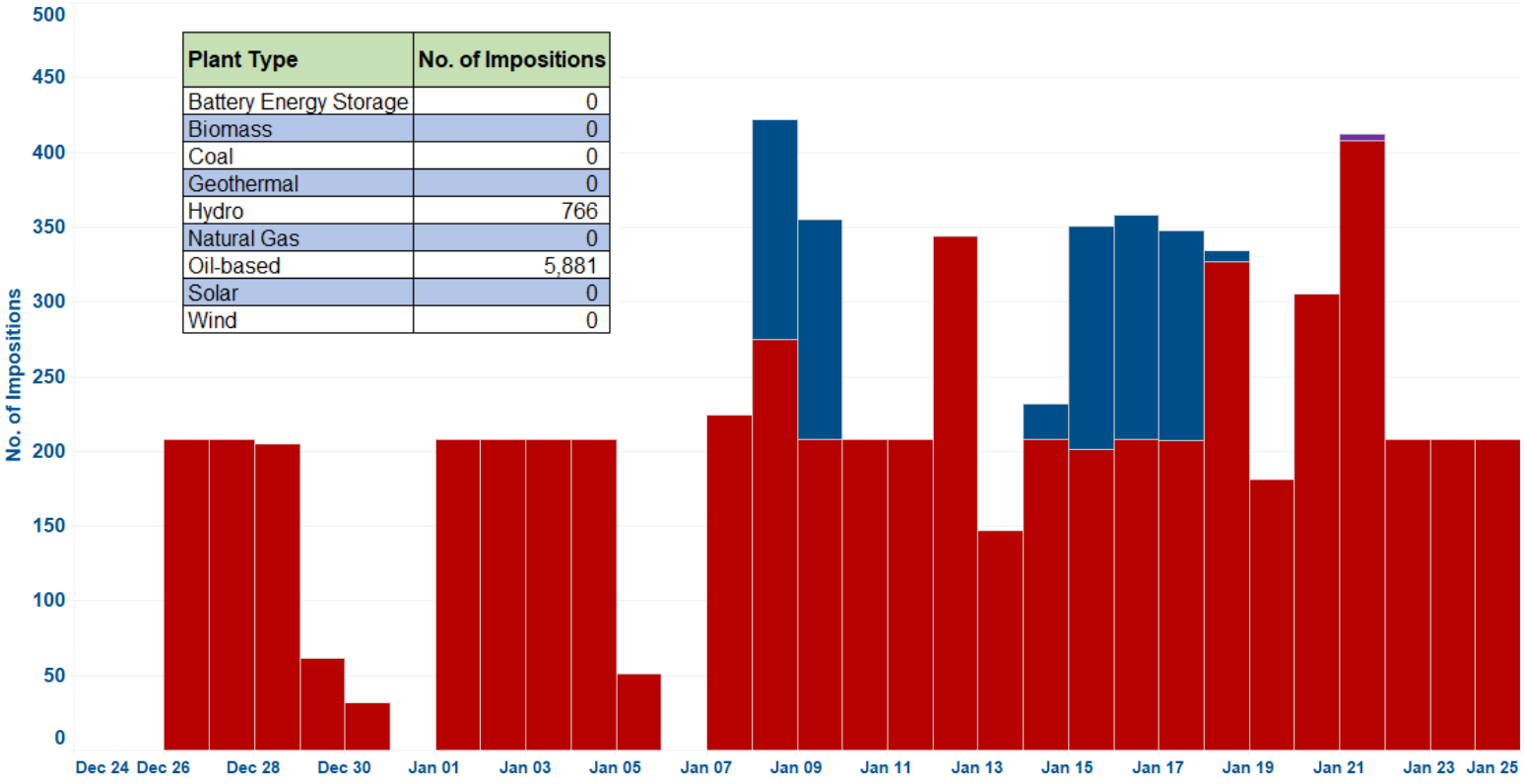
Incident	No. of Impositions
Commissioning Test	0
Commercial and Regulatory Requirements	1,008
MRU	5,643



by plant type

a

Plant Type	No. of Impositions
Battery Energy Storage	0
Biomass	0
Coal	0
Geothermal	0
Hydro	766
Natural Gas	0
Oil-based	5,881
Solar	0
Wind	0

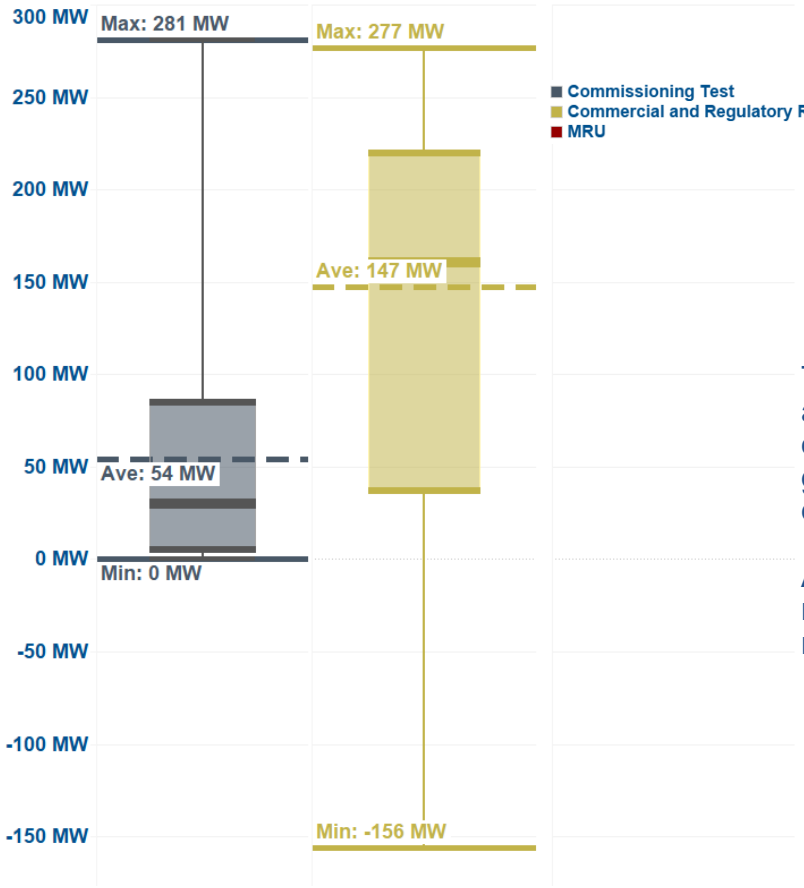


In Mindanao, **oil-based** plant was dispatched **mostly (85% of the time) as MRU** during the January 2024 billing period to address system voltage requirement of the region. It was likewise observed that OC impositions decreased during the weekends and holidays. In addition, conduct of ancillary service test of hydro was observed during the billing period.

MW SCHEDULES

LUZON

by incident



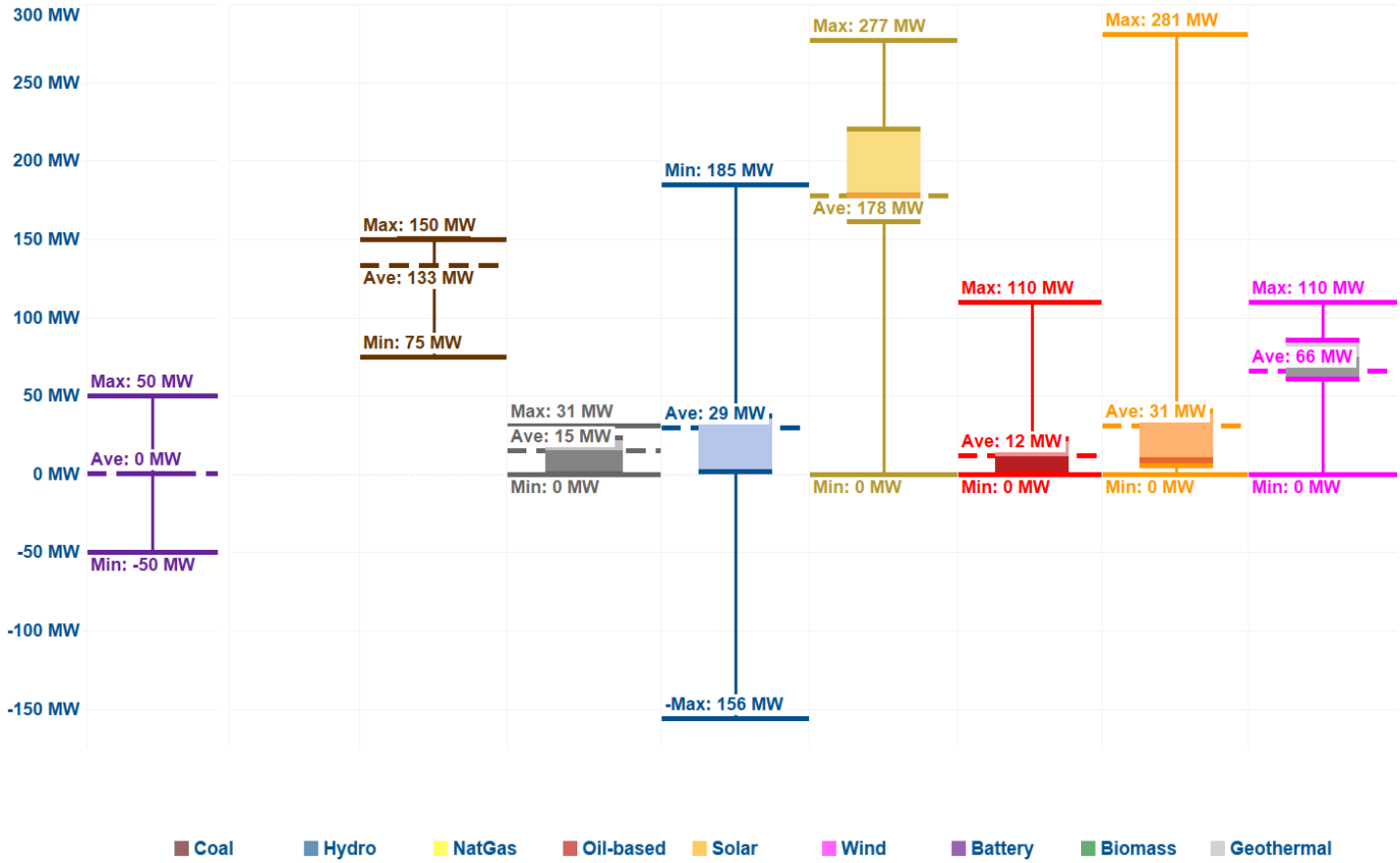
Incident	Average	Minimum	Maximum
Commissioning Test	54 MW	0 MW	281 MW
Commercial and Regulatory Requirements	147 MW	-156 MW	277 MW
MRU	-	-	-

The highest average MW scheduled in Luzon was at 281 MW due to conduct of commissioning tests of a solar plant and 277 MW scheduled to natural gas attributable to the conduct of performance test during the billing period.

Also, a hydro plant was scheduled with -156 MW related to its commercial and regulatory requirements.

by plant type

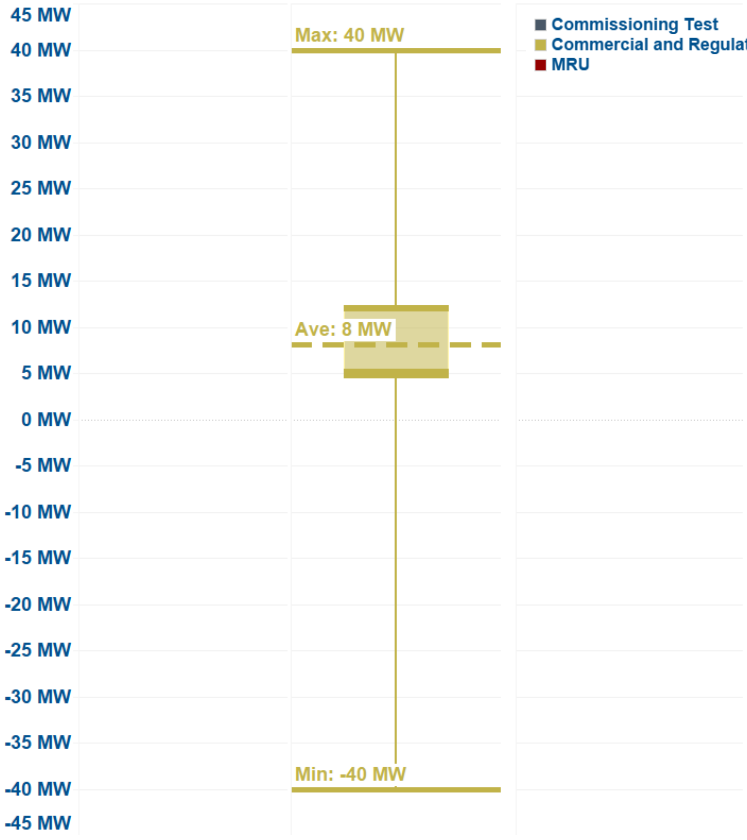
Plant Type	Average	Minimum	Maximum
Battery Energy Storage	0 MW	-50 MW	50 MW
Biomass	-	-	-
Coal	133 MW	75 MW	150 MW
Geothermal	15 MW	0 MW	31 MW
Hydro	29 MW	-156 MW	185 MW
Natural Gas	178 MW	0 MW	277 MW
Oil-based	12 MW	0 MW	110 MW
Solar	31 MW	0 MW	281 MW
Wind	66 MW	0 MW	110 MW



MW SCHEDULES

VISAYAS

by incident



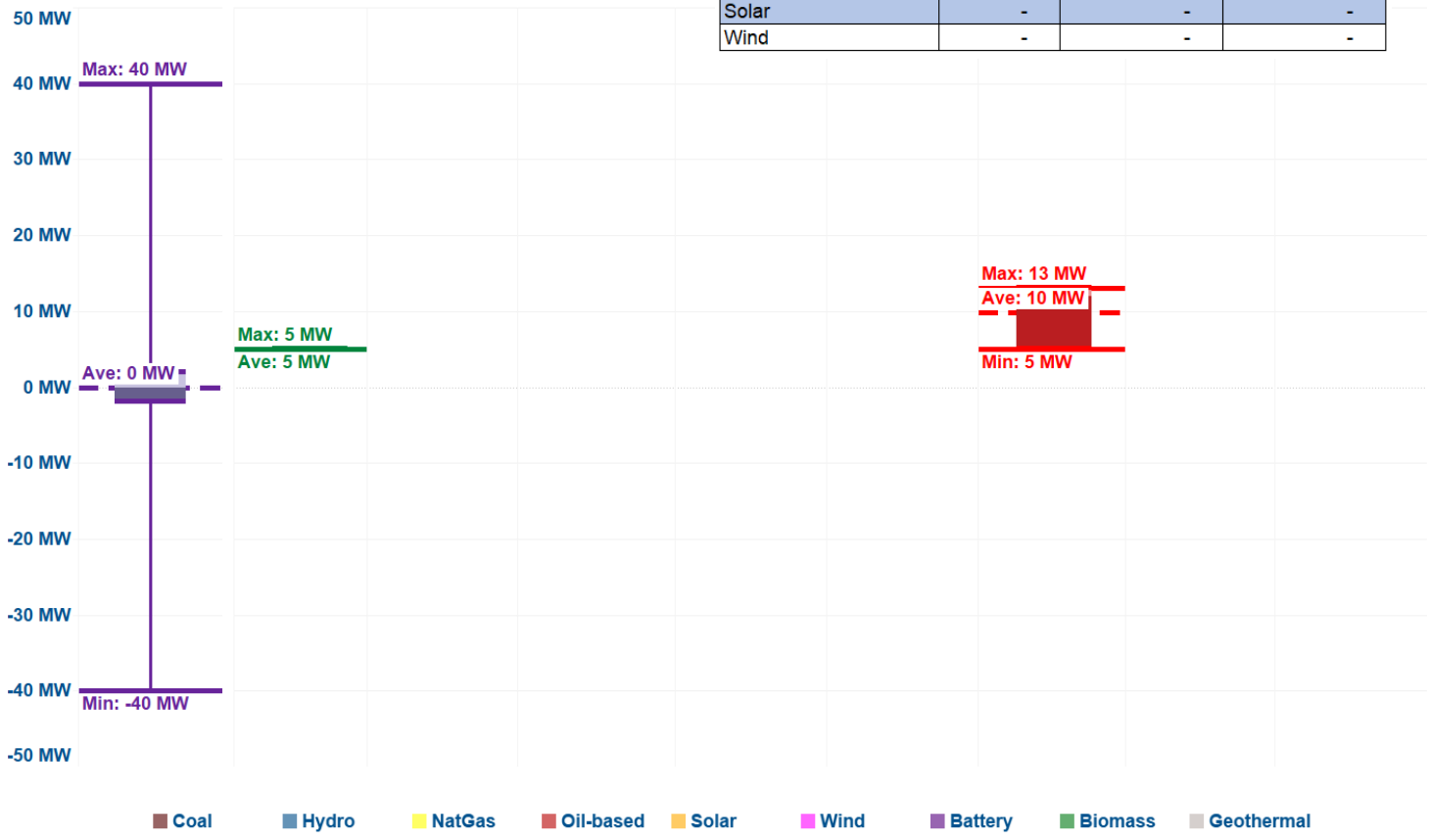
Incident	Average	Minimum	Maximum
Commissioning Test	-	-	-
Commercial and Regulatory Requirements	8 MW	-40 MW	40 MW
MRU	-	-	-

All impositions related to Visayas plants were associated with activities related to commercial and regulatory requirements, with the majority of the MW scheduled attributed to the conduct of emission tests for oil-based plants.

During the billing period, an ERC audit of a battery plant was conducted, which explains the negative MW schedule observed.

by plant type

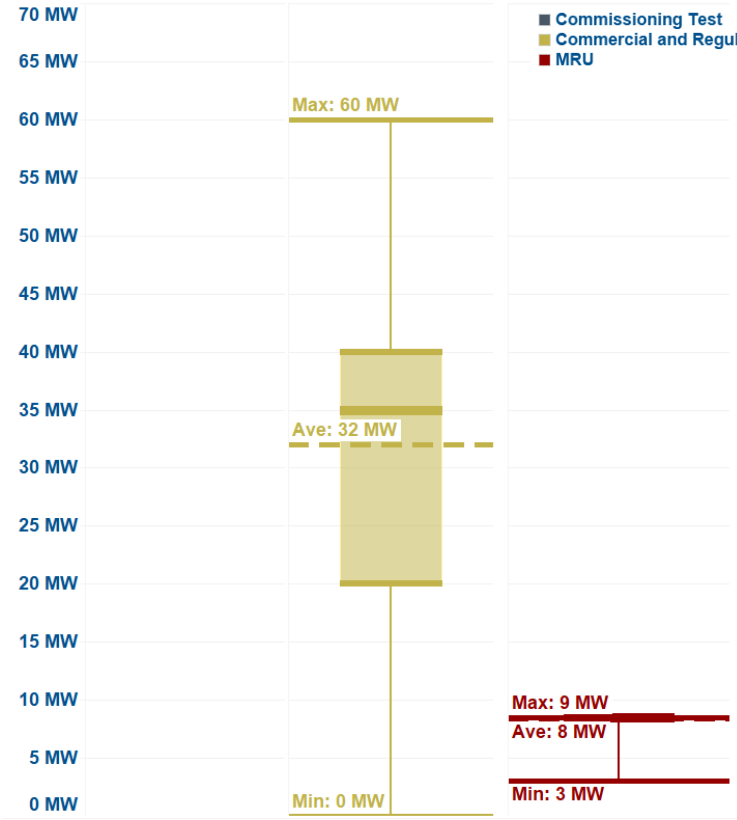
Plant Type	Average	Minimum	Maximum
Battery Energy Storage	0 MW	-40 MW	40 MW
Biomass	5 MW	-	5 MW
Coal	-	-	-
Geothermal	-	-	-
Hydro	-	-	-
Natural Gas	-	-	-
Oil-based	10 MW	5 MW	13 MW
Solar	-	-	-
Wind	-	-	-



MW SCHEDULES

MINDANAO

by incident

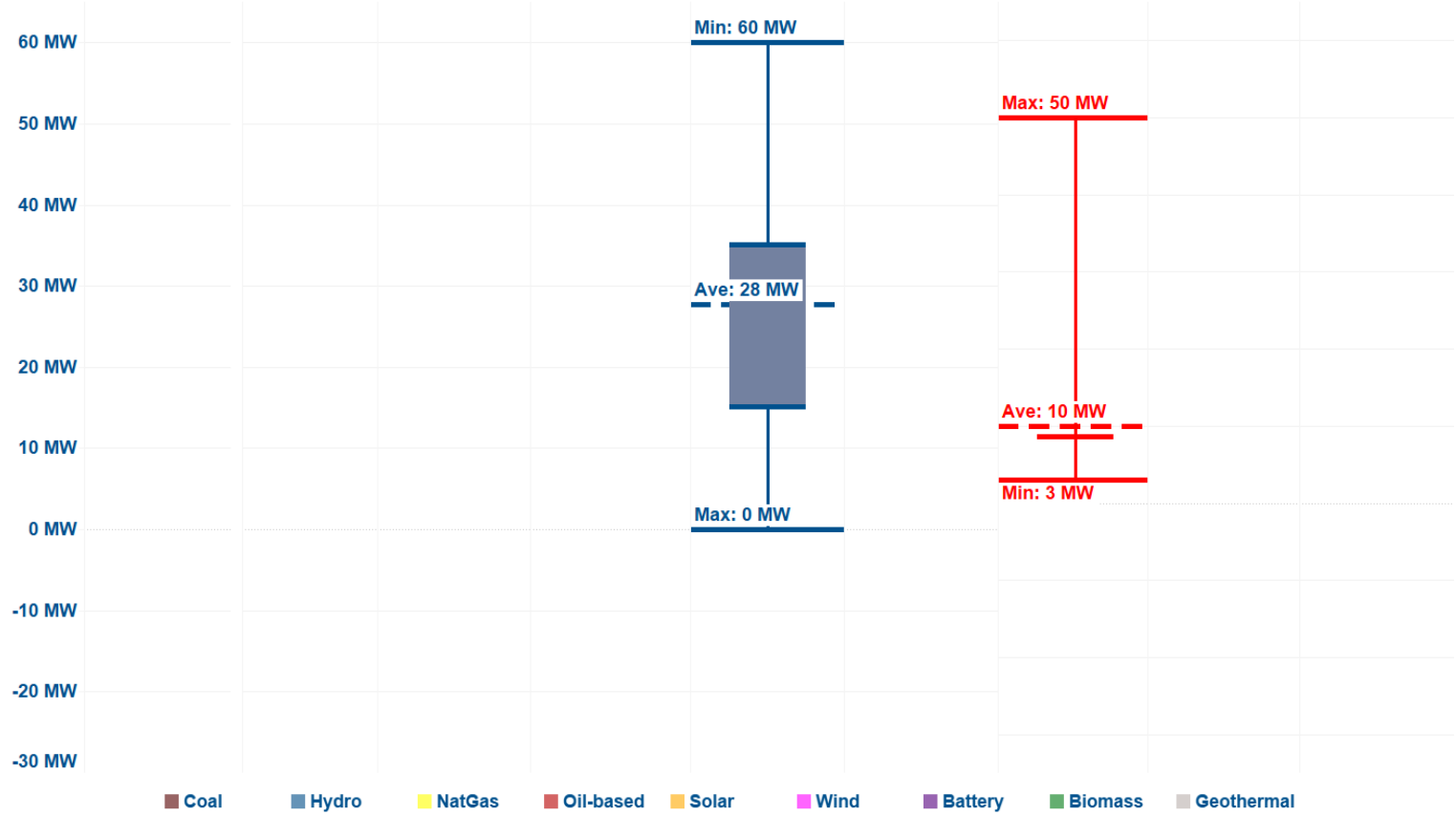


Incident	Average	Minimum	Maximum
Commissioning Test	-	-	-
Commercial and Regulatory Requirements	32 MW	-20 MW	60 MW
MRU	8 MW	3 MW	9 MW

The majority of impositions in Mindanao were still related to oil-based plants dispatched as MRU to address system voltage requirements, averaging at 8 MW. Additionally, emission and ancillary service tests were observed to be conducted by oil-based and hydro plants, respectively.

by plant type

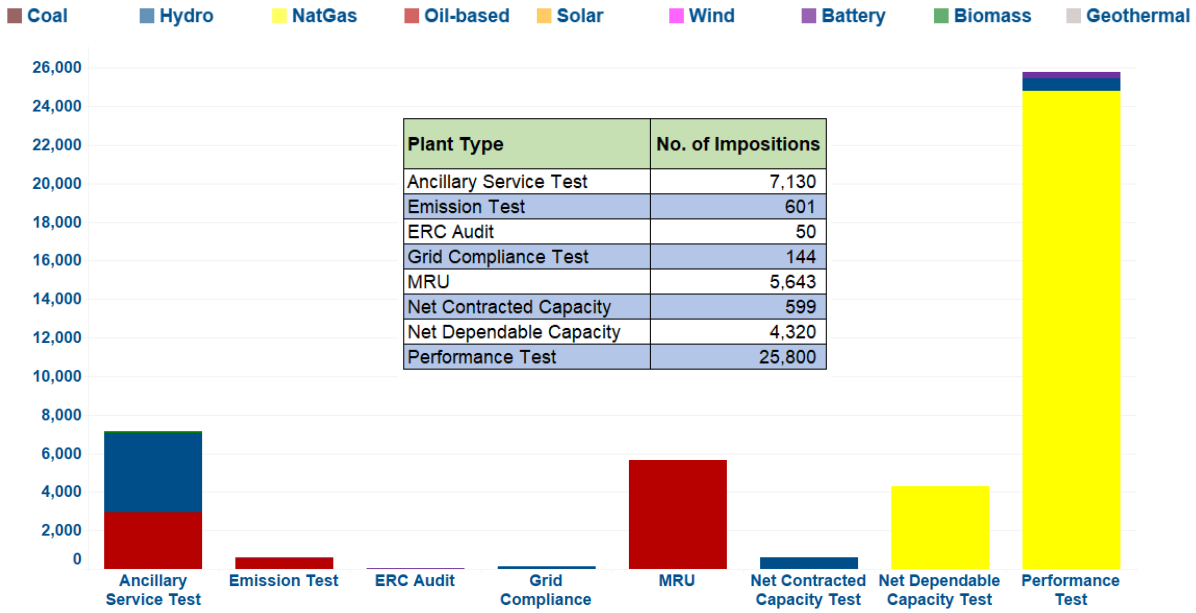
Plant Type	Average	Minimum	Maximum
Battery Energy Storage	-	-	-
Biomass	-	-	-
Coal	-	-	-
Geothermal	-	-	-
Hydro	28 MW	0 MW	60 MW
Natural Gas	-	-	-
Oil-based	10 MW	3 MW	50 MW
Solar	-	-	-
Wind	-	-	-



OC IMPOSITIONS

by incident

(excluding commissioning test)

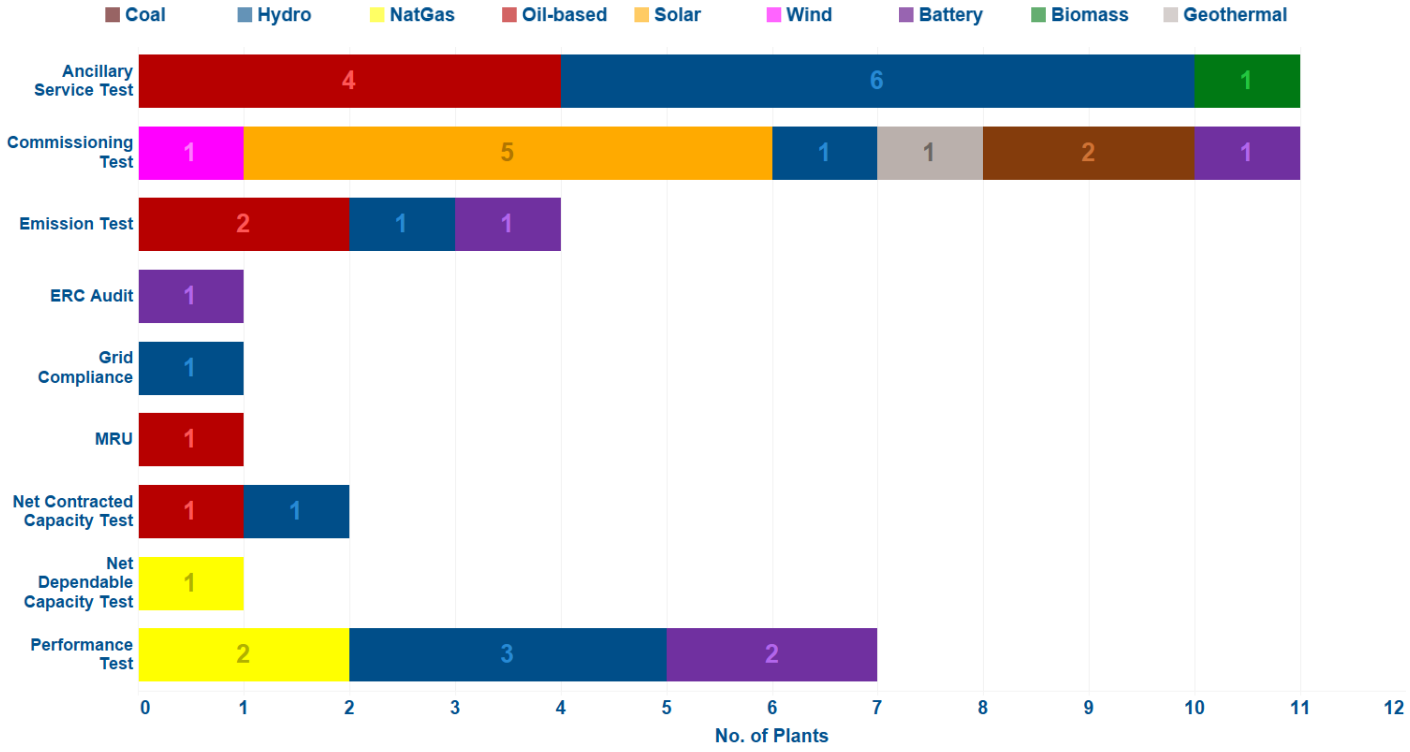


Plant Type	No. of Impositions
Ancillary Service Test	7,130
Emission Test	601
ERC Audit	50
Grid Compliance Test	144
MRU	5,643
Net Contracted Capacity	599
Net Dependable Capacity	4,320
Performance Test	25,800

Picking up from the trend of the previous billing period, majority of impositions were imposed to natural gas plants attributable to the conduct of performance test in relation to the shifting to LNG fuel. This was followed by oil-based plants dispatched as MRU, then ancillary service test of hydro and oil-based plants.

NUMBER OF PLANTS

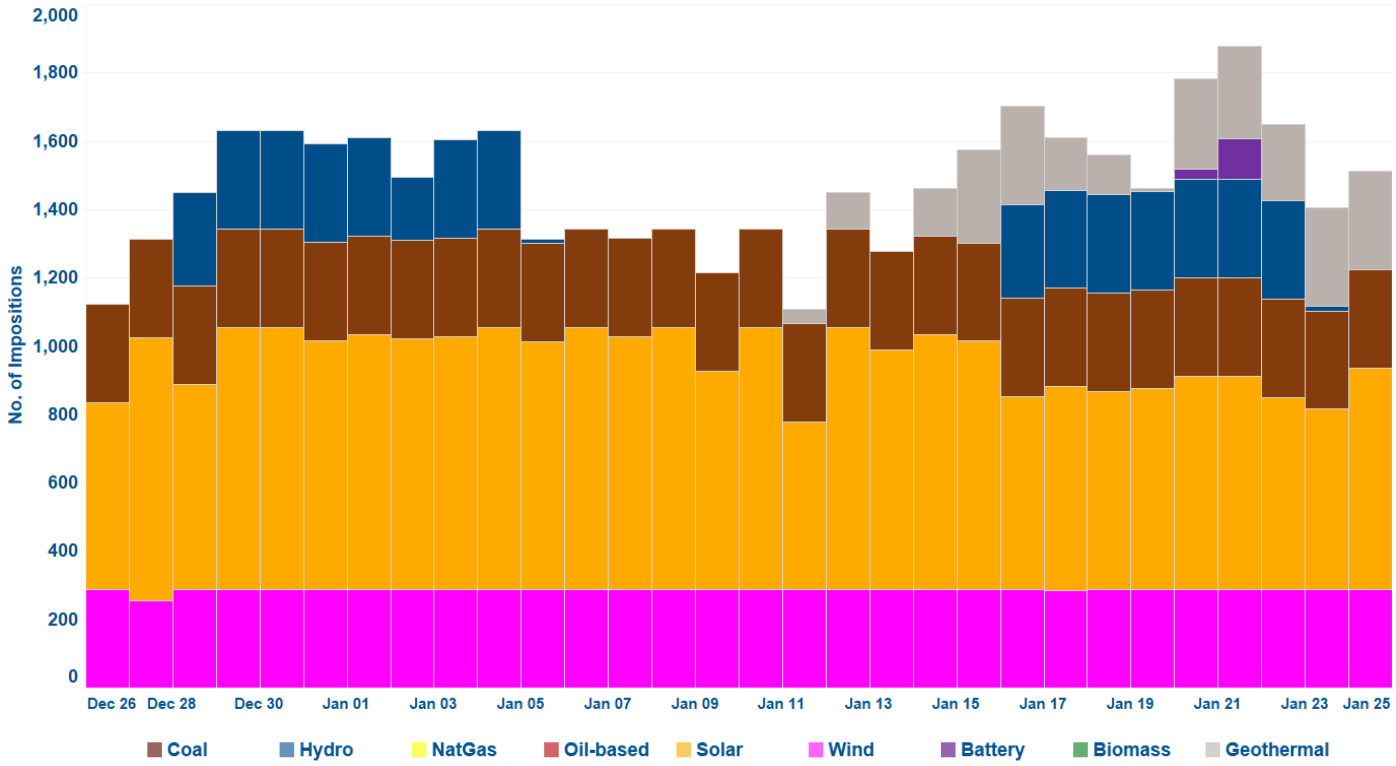
by incident



During the billing period, a total of thirty-nine (39) plants were imposed with over-riding constraints (as compared to 38 plants during the previous period). Eleven (11) of these were related to ancillary service and commissioning tests while, performance tests were imposed to nine (9) plants. Additionally, a few plants were involved in other specific tests: four (4) conducted emission tests, two (2) conducted net contracted capacity tests, and one (1) plant underwent each of the following – ERC audit, grid compliance test, MRU, and net dependable capacity test.

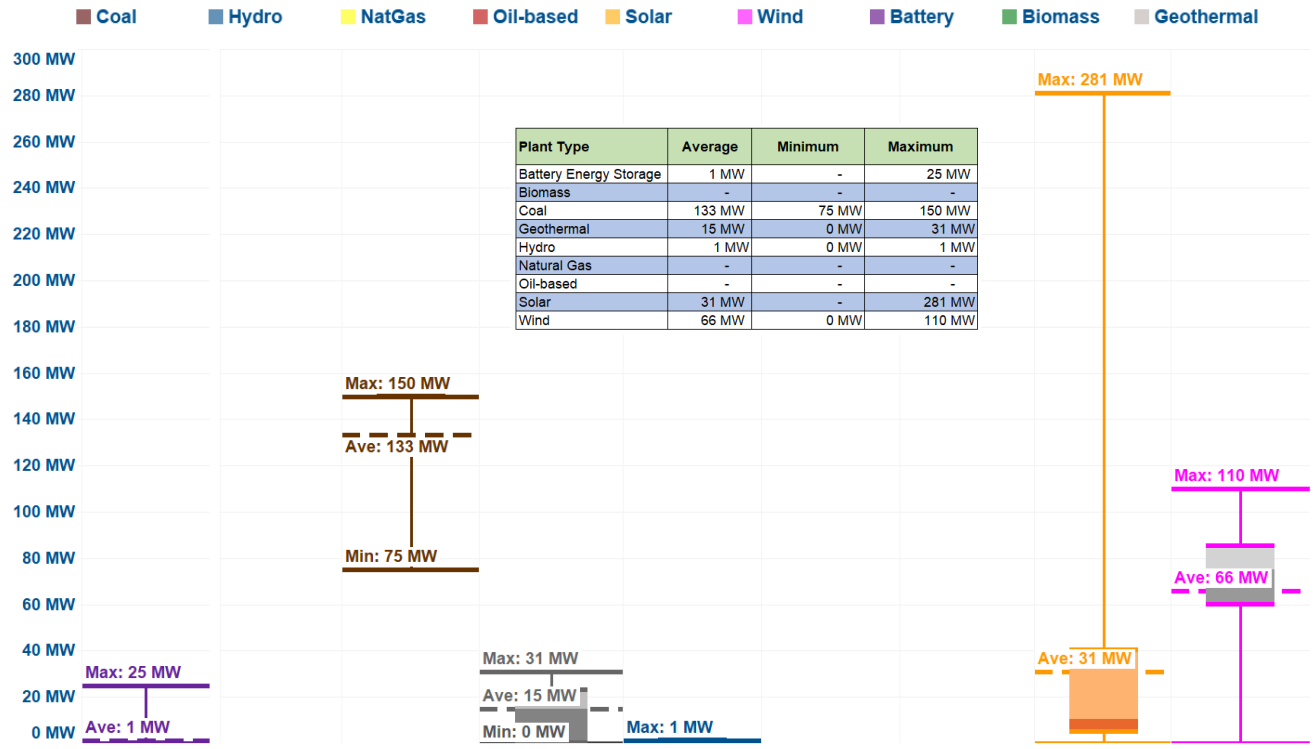
OC IMPOSITIONS

PLANTS UNDER COMMISSIONING TESTS



MW SCHEDULE

PLANTS UNDER COMMISSIONING TESTS



Plant Type	Average	Minimum	Maximum
Battery Energy Storage	1 MW	-	25 MW
Biomass	-	-	-
Coal	133 MW	75 MW	150 MW
Geothermal	15 MW	0 MW	31 MW
Hydro	1 MW	0 MW	1 MW
Natural Gas	-	-	-
Oil-based	-	-	-
Solar	31 MW	-	281 MW
Wind	66 MW	0 MW	110 MW

In terms of the number of occurrences, renewable plants such as solar and wind plants experienced the highest number of OCs related to commissioning tests during the billing period, accounting for thirty-three percent (33%) of the total occurrences.

A solar plant, boasting a substantial capacity, had the highest scheduled MW during the billing period. However, on average, this plant is only scheduled at 31 MW, which may be a result of the variability of the technology. In contrast, a coal plant saw an almost consistent schedule at a high level throughout its testing period.

ANNEX

Plants with Over-riding Constraints

Plant/Unit Name	Plant Type	Registered Capacity (MW)[1]
LUZON		
Ambuklao Hydroelectric Power Plant Unit 1	Hydro	37.5
Ambuklao Hydroelectric Power Plant Unit 2	Hydro	37.5
Ambuklao Hydroelectric Power Plant Unit 3	Hydro	37.5
Balaoi and Caunayan Wind Power Project Phase 1	Wind	80
Binga Hydroelectric Power Plant - Unit 1	Hydro	35
Binga Hydroelectric Power Plant - Unit 2	Hydro	35
Binga Hydroelectric Power Plant - Unit 3	Hydro	35
Binga Hydroelectric Power Plant - Unit 4	Hydro	35
Cagayan North Solar Power Plant	Solar	115
Cayanga-Bugallon Solar Power Plant	Solar	75.1
Concepcion Battery Energy Storage System	Battery	60
Bataan Combined Cycle Power Plant Unit 1	Oil-Based	60
Bataan Combined Cycle Power Plant Unit 2	Oil-Based	60
Bataan Combined Cycle Power Plant Unit 3	Oil-Based	60
Bataan Combined Cycle Power Plant Unit 5	Oil-Based	60
Bataan Combined Cycle Power Plant Unit 6	Oil-Based	60
Bataan Combined Cycle Power Plant Unit 7	Oil-Based	60
Magat Battery Energy Storage System	Battery	24
Mariveles Coal-fired Thermal Power Plant Unit 2	Coal	150
Orion Solar Power Plant	Solar	16.2
Bunker-C Fired Thermal Power Plant (BCFDPP)	Oil-Based	110
San Marcelino Solar Power Project	Solar	326.4
San Roque Hydro Electric Power Plant Unit 1	Hydro	145
San Roque Hydro Electric Power Plant Unit 2	Hydro	145
San Roque Hydro Electric Power Plant Unit 3	Hydro	145
PPGC Diesel Power Plant	Oil-Based	50
Trust Solar Power Plant	Solar	15.4
Botocan Hydro Electric Power Plant	Hydro	20.8
Caliraya Hydro Electric Power Plant	Hydro	28
Pililla Diesel Power Plant Sector 1	Oil-Based	28
Pililla Diesel Power Plant Sector 2	Oil-Based	22
Pililla Diesel Power Plant Sector 3	Oil-Based	22
Pililla Diesel Power Plant Sector 4	Oil-Based	28
Pililla Diesel Power Plant Sector 5	Oil-Based	22
Pililla Diesel Power Plant Sector 6	Oil-Based	28

[1] As of 05 February 2024

Plant/Unit Name	Plant Type	Registered Capacity (MW)[1]
Kalayaan Hydro Electric Power Plant 1	Hydro	183
Kalayaan Hydro Electric Power Plant 2	Hydro	183
Kalayaan Hydro Electric Power Plant 3	Hydro	184.6
Kalayaan Hydro Electric Power Plant 4	Hydro	185
Lower Labayat Hydroelectric Power Plant	Hydro	1.5
Palayan Binary Power Plant	Geothermal	31
San Gabriel Power Plant	Natural Gas	420
Sta. Rita Natural Gas Power Plant 1	Natural Gas	257.3
Sta. Rita Natural Gas Power Plant 2	Natural Gas	255.7
Sta. Rita Natural Gas Power Plant 3	Natural Gas	265.5
Sta. Rita Natural Gas Power Plant 4	Natural Gas	264
San Lorenzo Combined-Cycle Gas Turbine Power Plant Unit 50	Natural Gas	265
San Lorenzo Combined-Cycle Gas Turbine Power Plant Unit 60	Natural Gas	265
VISAYAS		
Ormoc Battery Energy Storage System	Battery	40
Kabankalan Bagasse-Fired Biomass Power Plant	Biomass	20
Panay Diesel Power Plant 1 (Unit 2)	Oil-Based	5
Panay Diesel Power Plant 1 (Unit 3)	Oil-Based	5
Panay Diesel Power Plant 1 (Unit 5)	Oil-Based	5
Panay Diesel Power Plant 3 (Unit Charlie)	Oil-Based	12
Panay Diesel Power Plant 3 (Unit Echo)	Oil-Based	12
Panay Diesel Power Plant 3 (Unit Golf)	Oil-Based	13
Panay Diesel Power Plant 3 (Unit Hotel)	Oil-Based	13
MINDANAO		
Bunker-C Fired Diesel Power Plant Unit 1	Oil-Based	10.2
Bunker-C Fired Diesel Power Plant Unit 3	Oil-Based	10.2
Bunker-C Fired Diesel Power Plant Unit 4	Oil-Based	10.2
Bunker-C Fired Diesel Power Plant Unit 5	Oil-Based	10.2
Bunker-C Fired Diesel Power Plant Unit 6	Oil-Based	10.2
Bunker-C Fired Diesel Power Plant Unit 7	Oil-Based	10
Bunker-C Fired Diesel Power Plant Unit 8	Oil-Based	10.1
Bunker-C Fired Diesel Power Plant Unit 10	Oil-Based	10.2
Agus II Hydroelectric Power Plant Unit 2	Hydro	60
Agus II Hydroelectric Power Plant Unit 3	Hydro	60
Agus VI Hydroelectric Power Plant Unit 3	Hydro	50
Agus VI Hydroelectric Power Plant Unit 4	Hydro	25
Agus VI Hydroelectric Power Plant Unit 5	Hydro	43.8
Agus VII Hydroelectric Power Plant Unit 1	Hydro	26.1
Jasaan Battery Energy Storage System	Battery	20
Mobile 2 Bunker C-Fired Power Plant Unit 1	Oil-Based	50
Mobile 2 Bunker C-Fired Power Plant Unit 2	Oil-Based	50

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