MONTHLY OVER-RIDING CONSTRAINTS HIGHLIGHTS

26 February to 25 March 2024

SUMMARY OF OBSERVATIONS

- Commissioning tests accounted for 83% of the total impositions for the billing period. The noted decrease in the number of impositions was due to the completion of performance tests of natural gas plants commissioning their new liquefied natural gas fuel in Luzon. Meanwhile, most of the impositions in the Visayas region are attributed to ancillary service tests of oil-based plants.

- In Mindanao, majority of the Over-riding Constraints (OC) impositions were due to the commissioning test of a new biomass plant. Oil-based plants dispatched as MRU is still observed in the region to address the system voltage requirement in the grid.

AT A GLANCE

Total Over-riding Constraints Imposition

84,255

▼ 21.8%

decrease from previous billing period

LUZON
68,063

SOLAR plants had the HIGHEST # of OC impositions

NATURAL GAS plants, on average, had the LARGEST MW scheduled due to PERFORMANCE TEST

MOST impositions were due to COMMISSIONING TEST of various plants

VISAYAS
7,365

OIL-BASED plants had the HIGHEST # of OC impositions

COAL plants, on average, had the LARGEST MW scheduled due to ANCILLARY SERVICE TEST

MOST impositions were due to the conduct of COMMISSIONING TEST of geothermal and hydro plant

MINDANAO
8,827

BIOMASS plants had the HIGHEST # of OC impositions

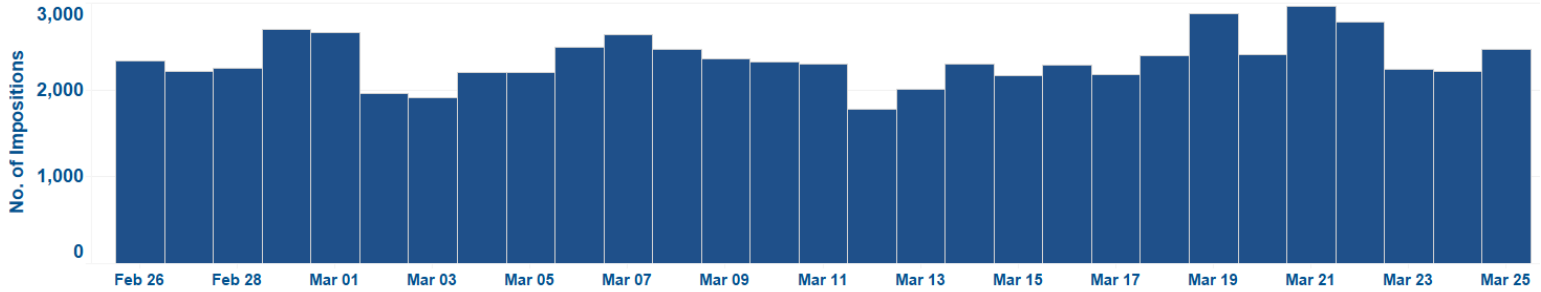
GEOTHERMAL plants, on average, had the LARGEST MW scheduled due to CAPABILITY TEST

MOST impositions were due to COMMISSIONING TEST of biomass plant

OC IMPOSITIONS

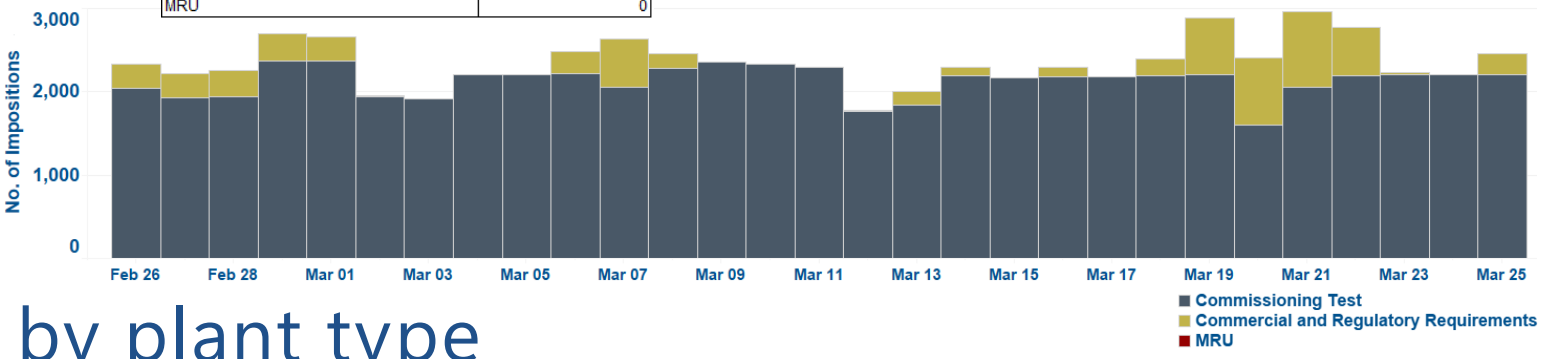
LUZON

	No. of Impositions	Date
Maximum	2,968	21 March
Average	2,345	
Minimum	1,781	12 March

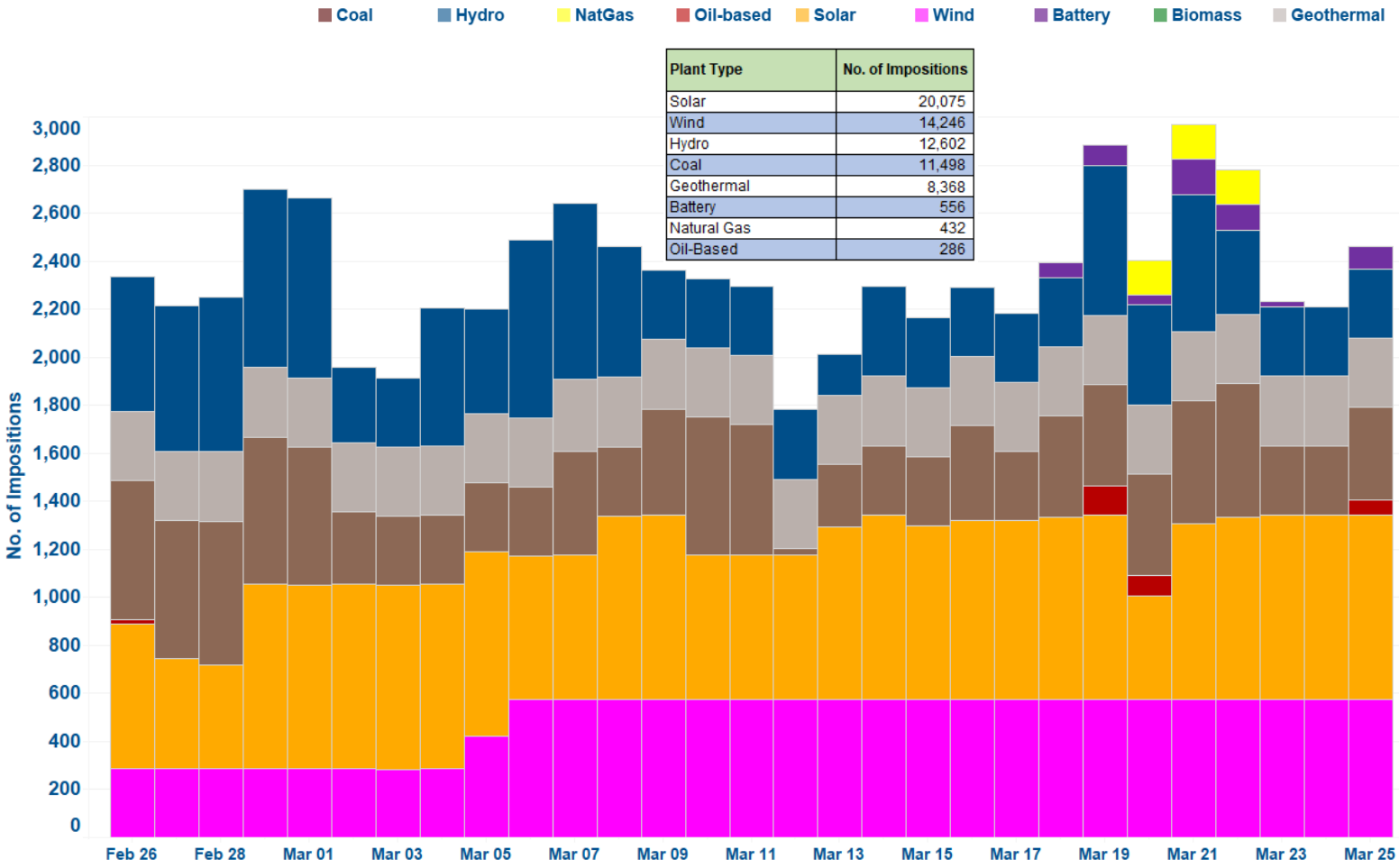


by incident

Incident	No. of Impositions
Commissioning Test	61,668
Commercial and Regulatory Requirements	6,395
MRU	0



by plant type

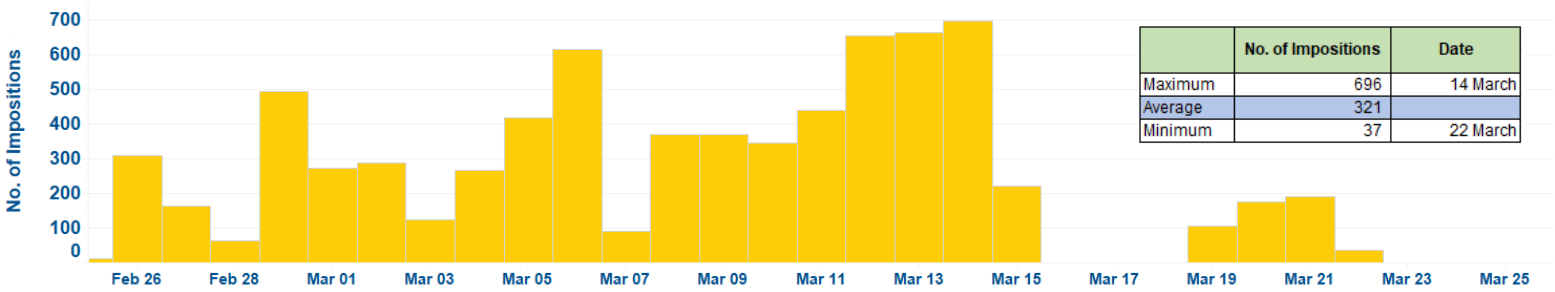


Plant Type	No. of Impositions
Solar	20,075
Wind	14,246
Hydro	12,602
Coal	11,498
Geothermal	8,368
Battery	556
Natural Gas	432
Oil-Based	286

Majority of the OC impositions accounted to **Luzon grid plants** were attributable to the conduct of **commissioning tests** of **various plants** during the billing period.

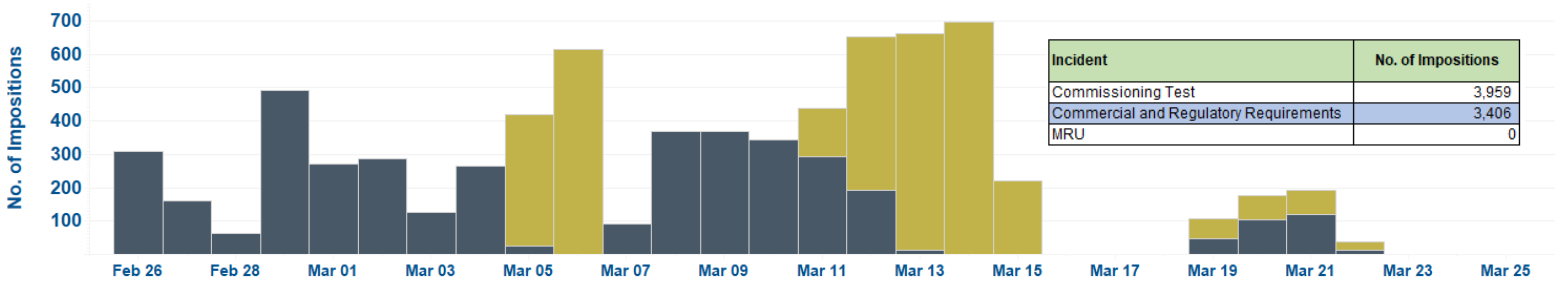
OC IMPOSITIONS

VISAYAS



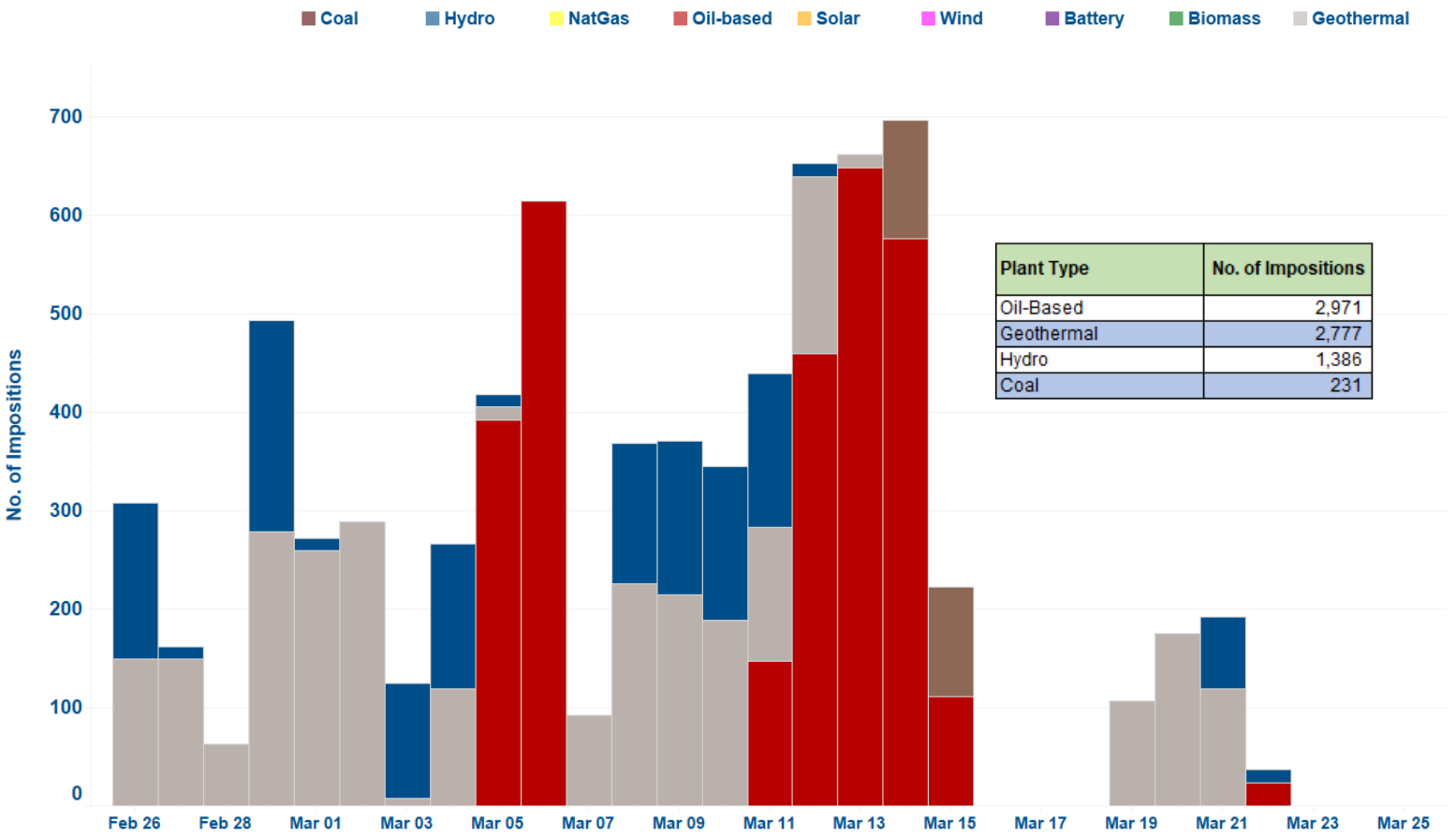
	No. of Impositions	Date
Maximum	696	14 March
Average	321	
Minimum	37	22 March

by incident



Incident	No. of Impositions
Commissioning Test	3,959
Commercial and Regulatory Requirements	3,406
MRU	0

by plant type



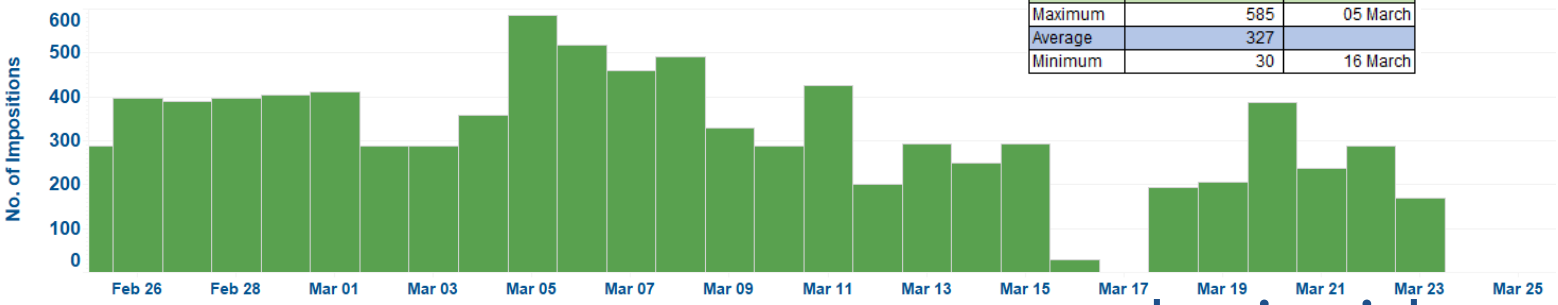
Plant Type	No. of Impositions
Oil-Based	2,971
Geothermal	2,777
Hydro	1,386
Coal	231

The highest number of observed impositions in the Visayas region was attributed to the **ancillary service tests of oil-based plants**. **Commissioning tests** of **geothermal plants** continued during the billing period and were observed to be the second-highest plant type imposed with OC.

OC IMPOSITIONS

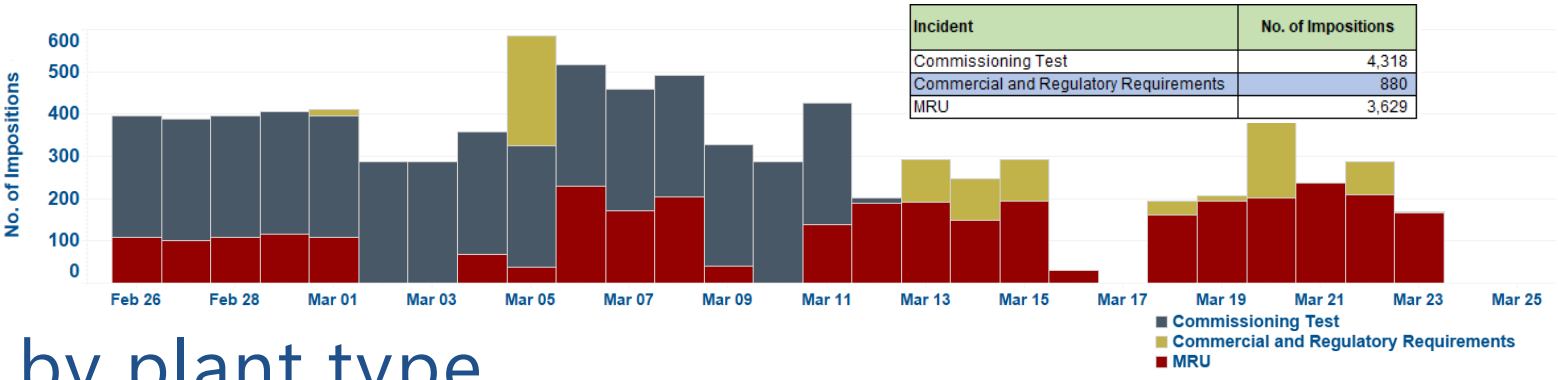
MINDANAO

	No. of Impositions	Date
Maximum	585	05 March
Average	327	
Minimum	30	16 March

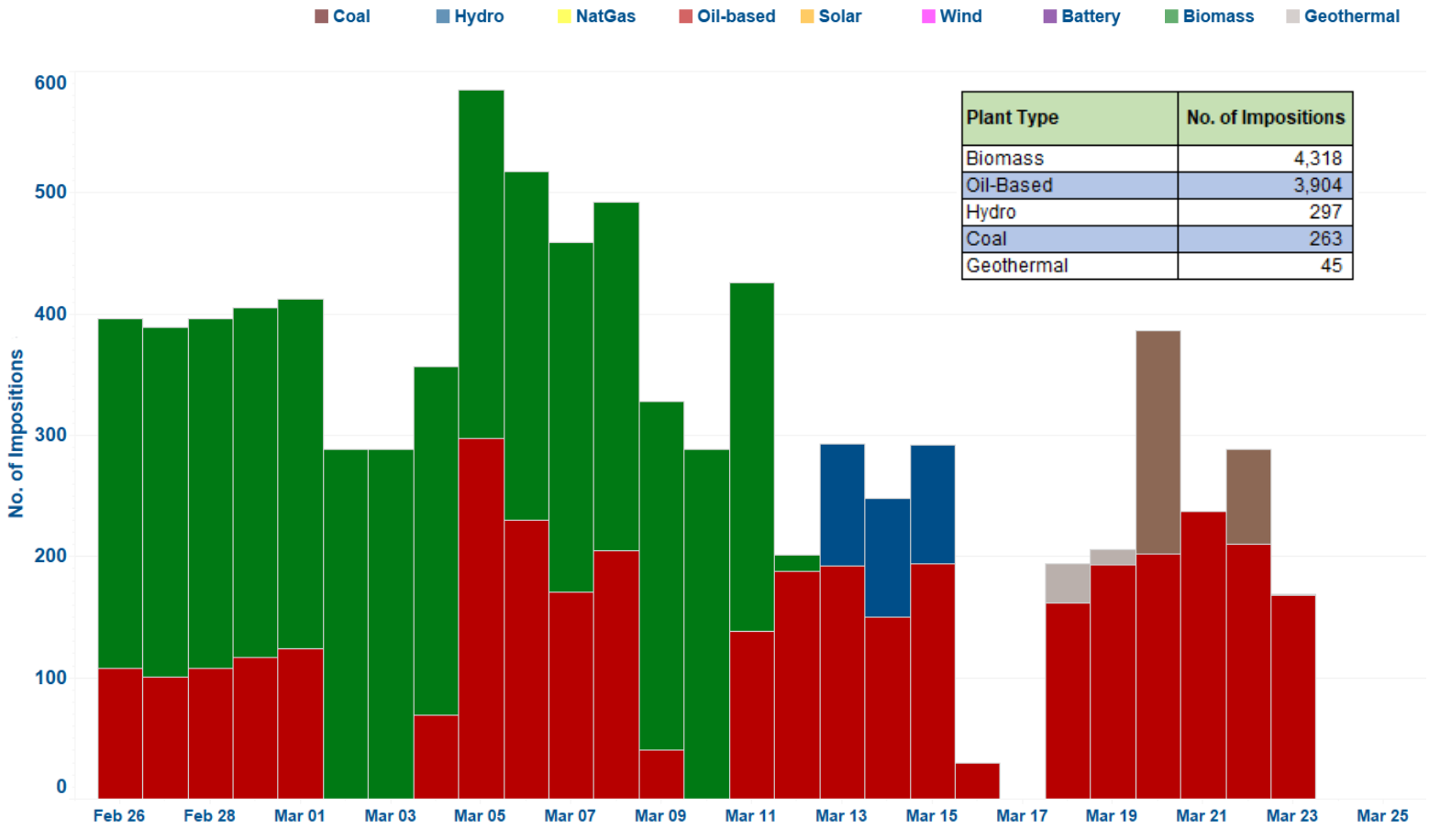


by incident

Incident	No. of Impositions
Commissioning Test	4,318
Commercial and Regulatory Requirements	880
MRU	3,629



by plant type



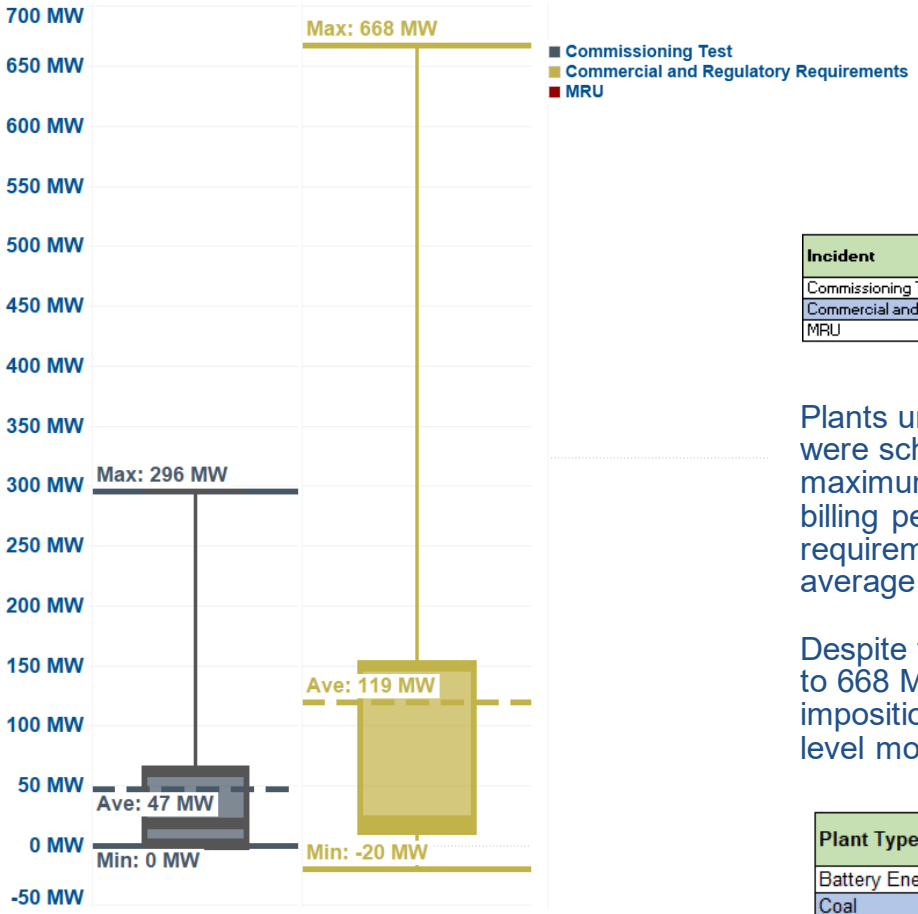
Plant Type	No. of Impositions
Biomass	4,318
Oil-Based	3,904
Hydro	297
Coal	263
Geothermal	45

In Mindanao, majority of the OC impositions were imposed to **biomass plant type** due to the conduct of commissioning test during the billing period. Keeping with the trend from the previous month, oil-based plants continue to be dispatched as MRUs to address the system voltage requirement in the region.

MW SCHEDULES

LUZON

by incident



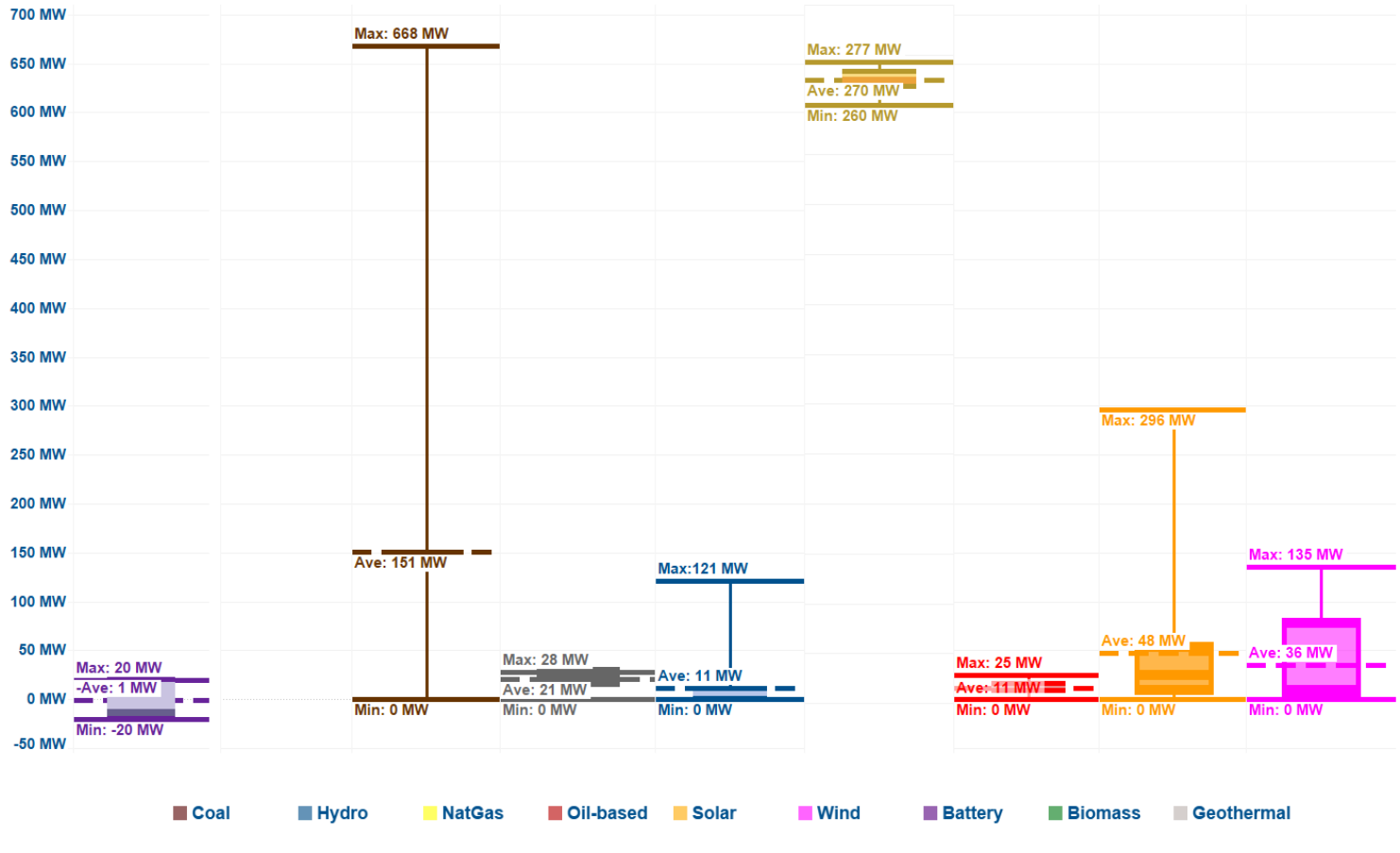
Incident	Average	Minimum	Maximum
Commissioning Test	47 MW	0 MW	296 MW
Commercial and Regulatory Requirements	119 MW	-20 MW	668 MW
MRU	-	-	-

Plants undergoing commissioning tests in Luzon were scheduled, on average, at 47 MW, reaching a maximum of 296 MW at some point during the billing period. Commercial and regulatory requirement testing is mostly scheduled at an average of 119 MW, peaking at 668 MW.

Despite the maximum MW scheduled reaching up to 668 MW (scheduled on a coal plant), OC impositions are typically scheduled at a lower MW level most of the time, as shown in the graph.

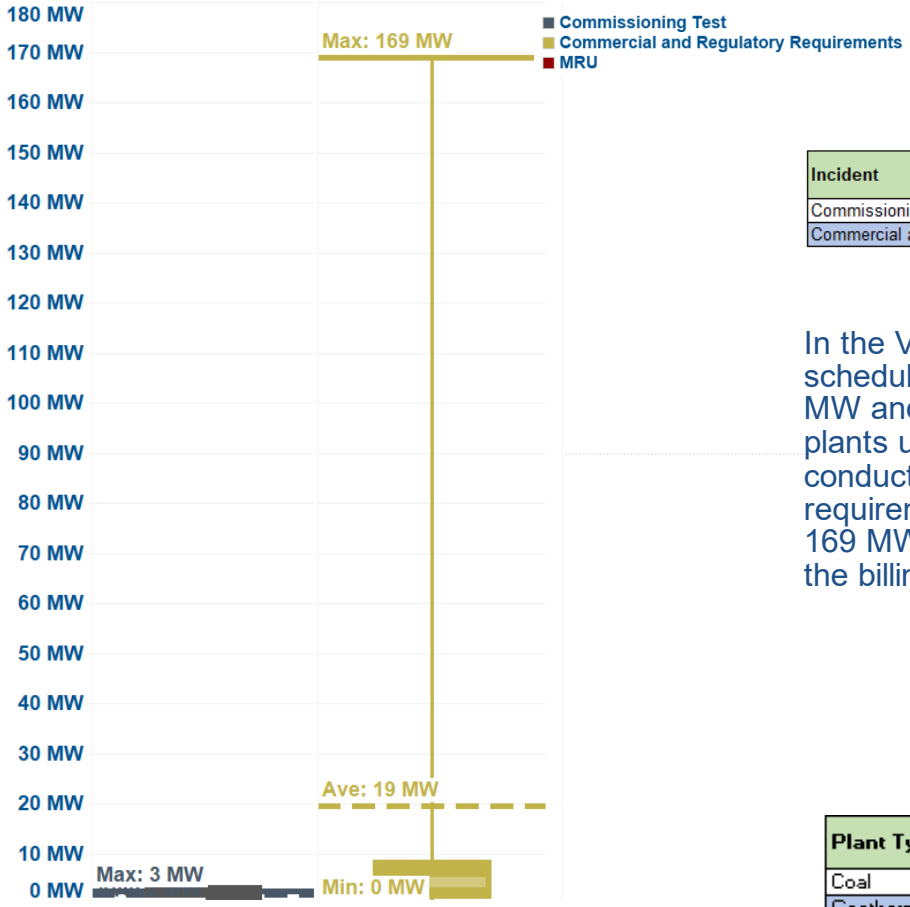
by plant type

Plant Type	Average	Minimum	Maximum
Battery Energy Storage	-1 MW	-20 MW	20 MW
Coal	151 MW	0 MW	668 MW
Geothermal	21 MW	0 MW	28 MW
Hydro	11 MW	0 MW	121 MW
Natural Gas	270 MW	270 MW	277 MW
Oil-based	11 MW	0 MW	20 MW
Solar	48 MW	0 MW	296 MW
Wind	36 MW	0 MW	135 MW



VISAYAS

by incident

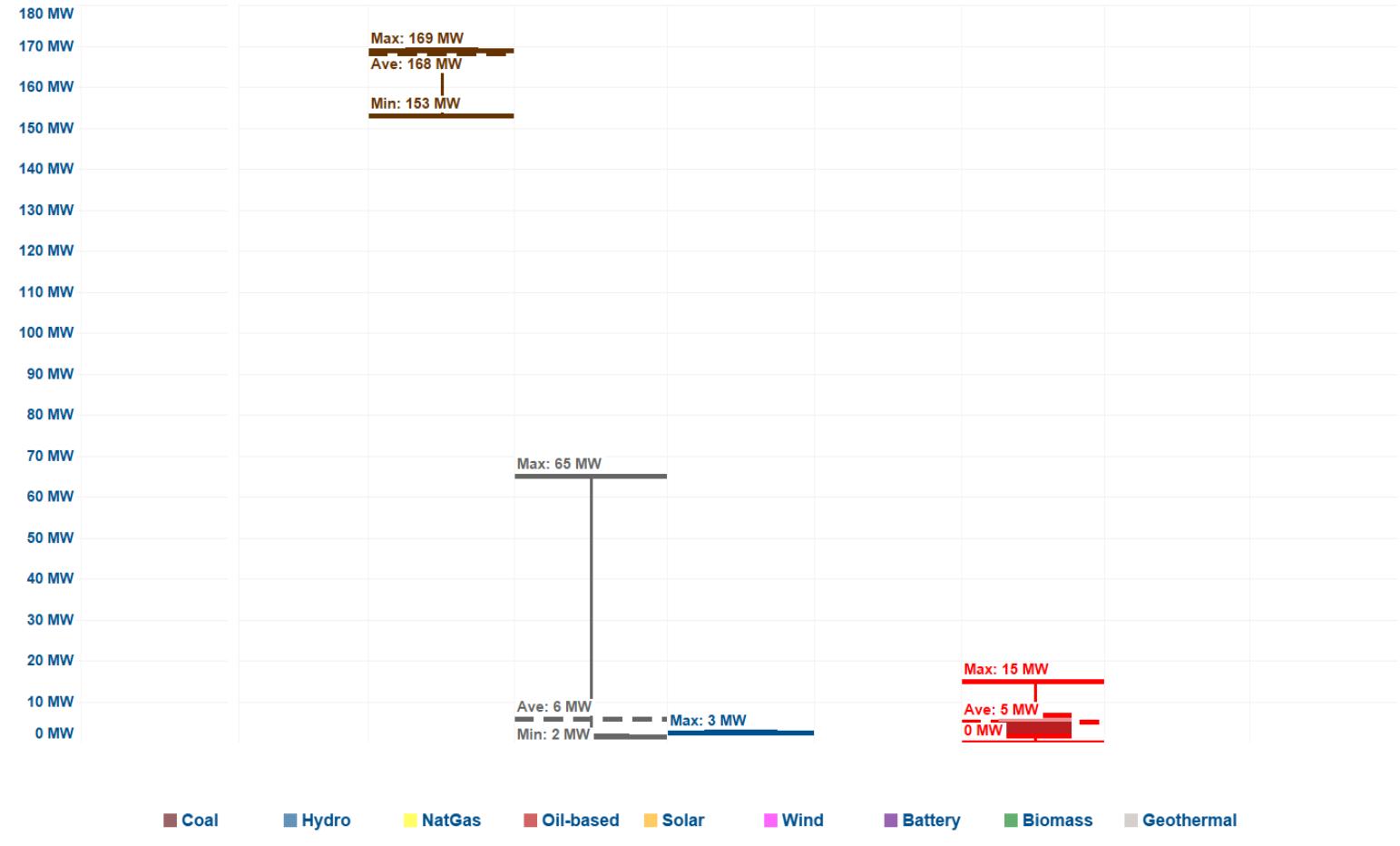


Incident	Average	Minimum	Maximum
Commissioning Test	3 MW	3 MW	3 MW
Commercial and Regulatory Requirements	19 MW	0 MW	169 MW

In the Visayas region, OC impositions were scheduled at a low MW level, averaging at 3 MW and 19 MW scheduled dispatches for plants under commissioning and those conducting commercial and regulatory requirement testing, respectively. A maximum of 169 MW was observed to be scheduled during the billing period for a short period of time.

by plant type

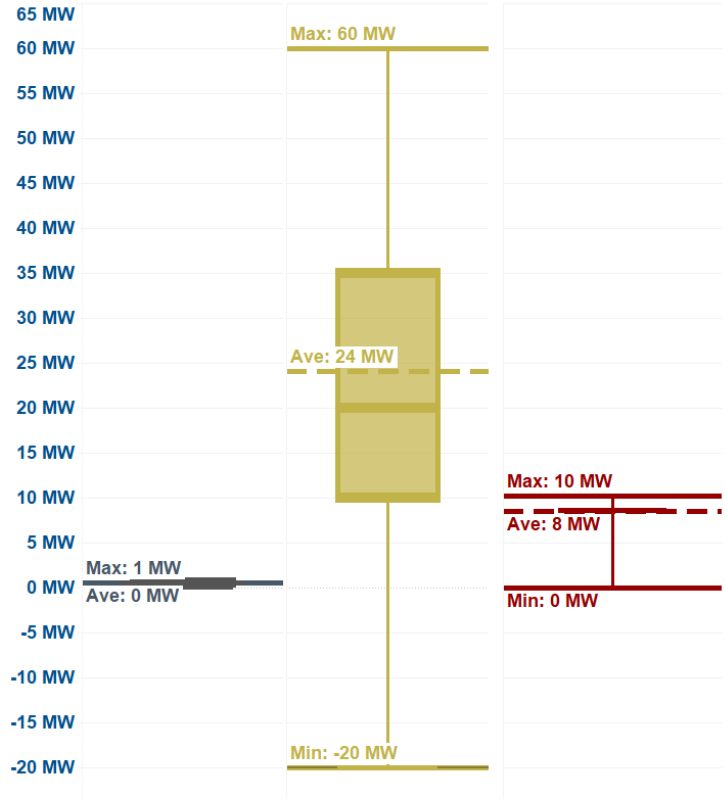
Plant Type	Average	Minimum	Maximum
Coal	168 MW	153 MW	169 MW
Geothermal	6 MW	2 MW	65 MW
Hydro	3 MW	3 MW	3 MW
Geothermal	6 MW	2 MW	65 MW
Oil-based	5 MW	0 MW	15 MW



MW SCHEDULES

MINDANAO

by incident



Commissioning Test
Commercial and Regulatory Requirements
MRU

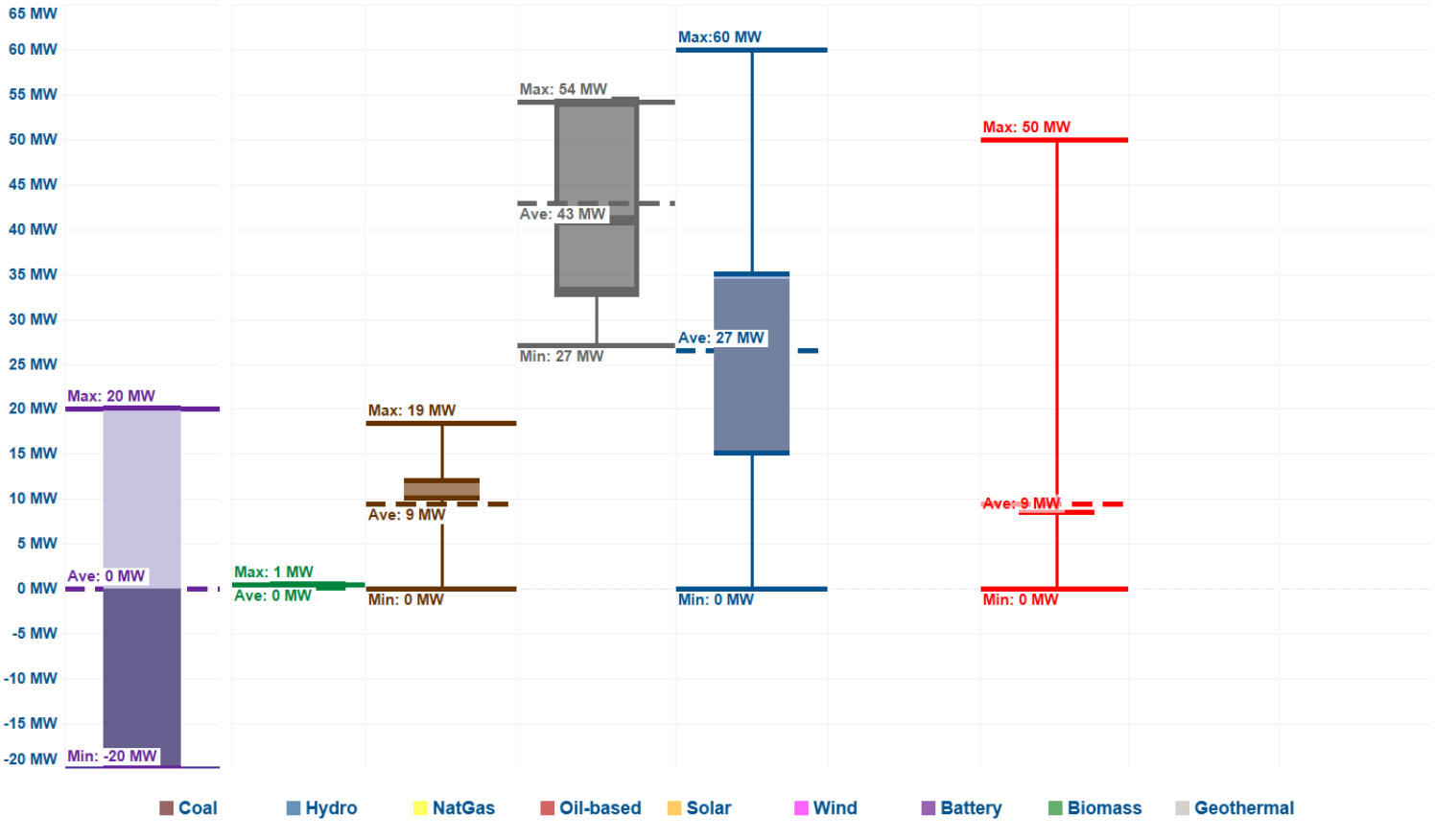
Incident	Average	Minimum	Maximum
Commissioning Test	0 MW	0 MW	1 MW
Commercial and Regulatory	24 MW	-20 MW	60 MW
MRU	8 MW	0 MW	10 MW

Despite biomass plants having the majority of OC impositions in the region during the billing period, their commissioning tests were observed to have low MW schedules. Commercial and regulatory requirement tests conducted by hydro and geothermal plants had the largest MW schedules, on average, during this period.

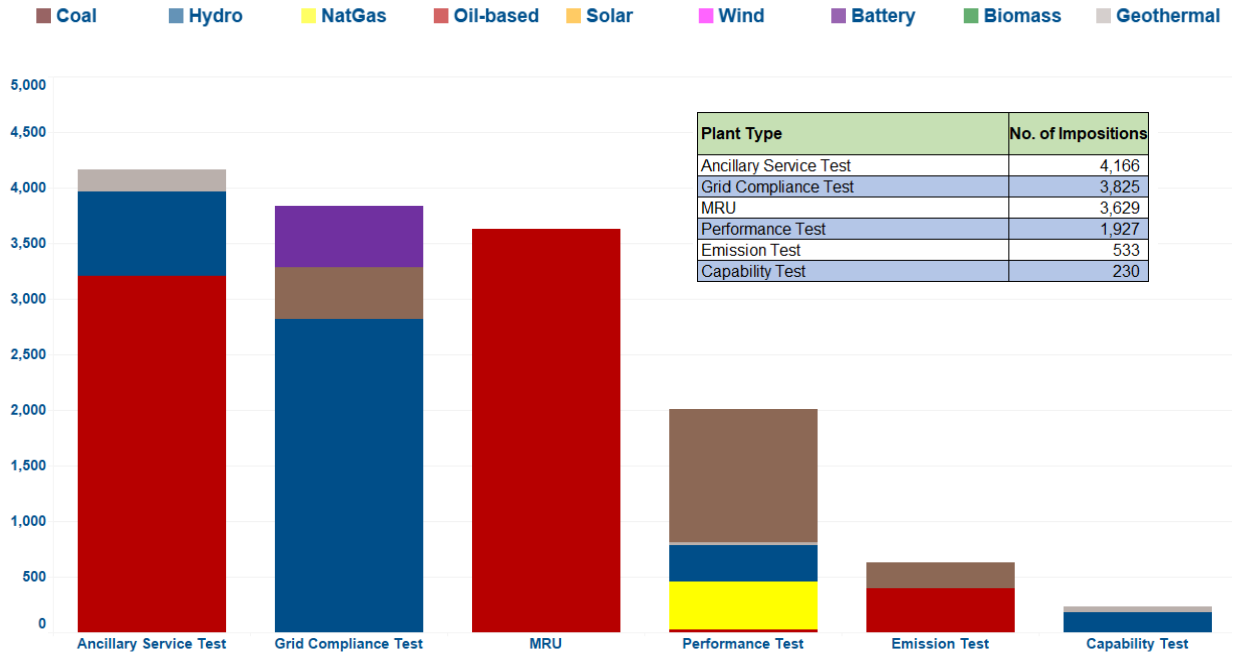
Additionally, scheduled dispatches to plants as MRUs were observed to be at 8 MW, on average, consistent with the previous month.

by plant type

Plant Type	Average	Minimum	Maximum
Battery Energy Storage	-20 MW	0 MW	20 MW
Biomass	1 MW	1 MW	1 MW
Coal	9 MW	0 MW	19 MW
Geothermal	43 MW	27 MW	54 MW
Hydro	27 MW	0 MW	60 MW
Oil-based	9 MW	0 MW	50 MW



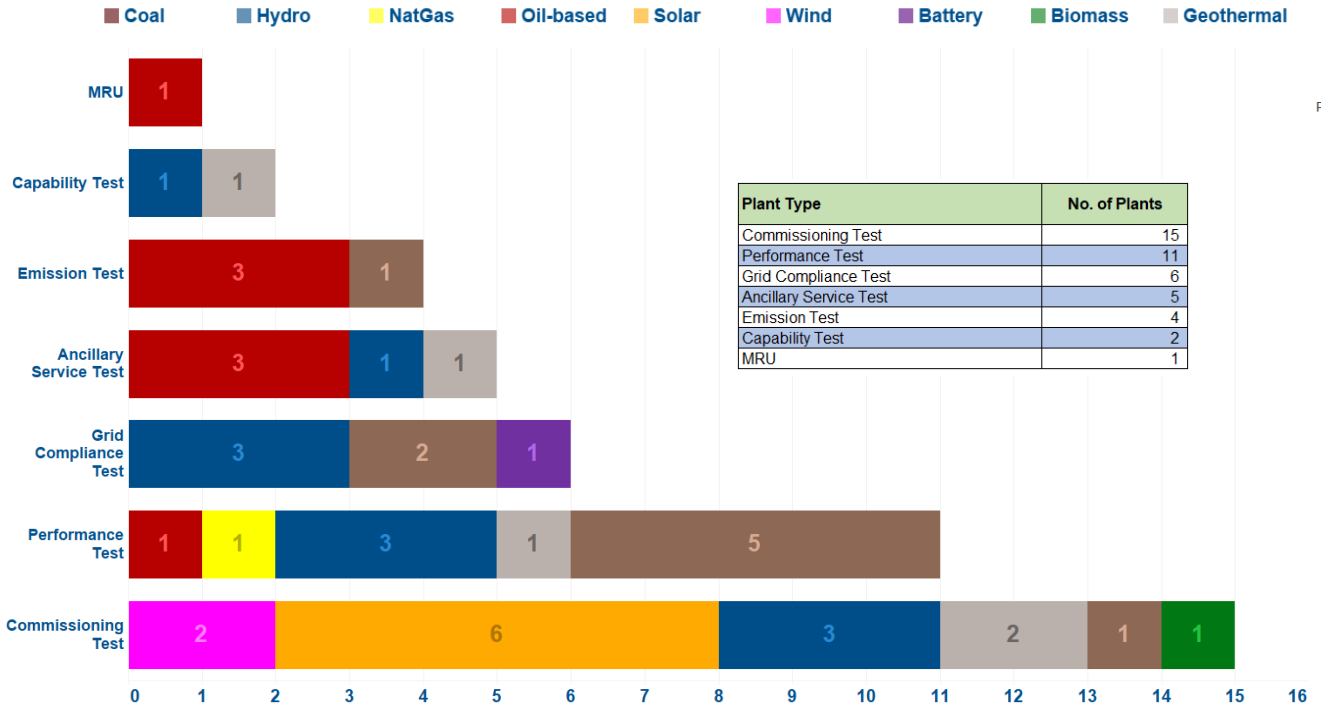
OC IMPOSITIONS
by incident
(excluding commissioning test)



Plant Type	No. of Impositions
Ancillary Service Test	4,166
Grid Compliance Test	3,825
MRU	3,629
Performance Test	1,927
Emission Test	533
Capability Test	230

Excluding commissioning tests, incident comparison reveals that ancillary service tests, grid compliance tests, and MRUs were also among the main reasons for the majority of OC impositions during the billing period.

NUMBER OF PLANTS
by incident

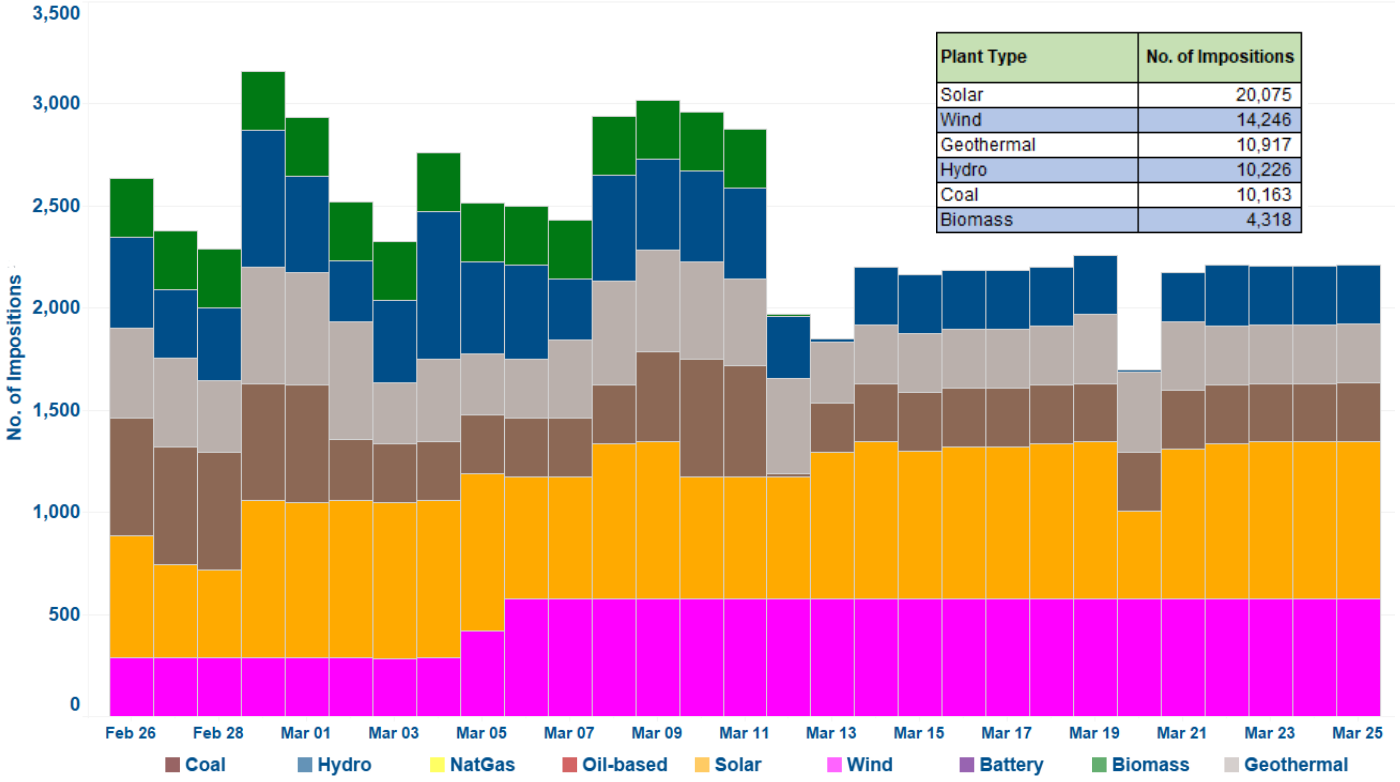


Plant Type	No. of Plants
Commissioning Test	15
Performance Test	11
Grid Compliance Test	6
Ancillary Service Test	5
Emission Test	4
Capability Test	2
MRU	1

During the billing period, a total of forty-four (44) plants were imposed with over-riding constraints, as compared to 45 plants during the previous period. Fifteen (15) of these were related to commissioning tests, while impositions related to performance were imposed on eleven (11) plants. Additionally, a few plants were involved in other specific tests: six (6) conducted grid compliance tests, five (5) conducted ancillary service test, four (4) conducted emission tests, and two (2) plants underwent capability test. Meanwhile, the remaining one (1) plant were dispatched as MRU during the billing period.

OC IMPOSITIONS

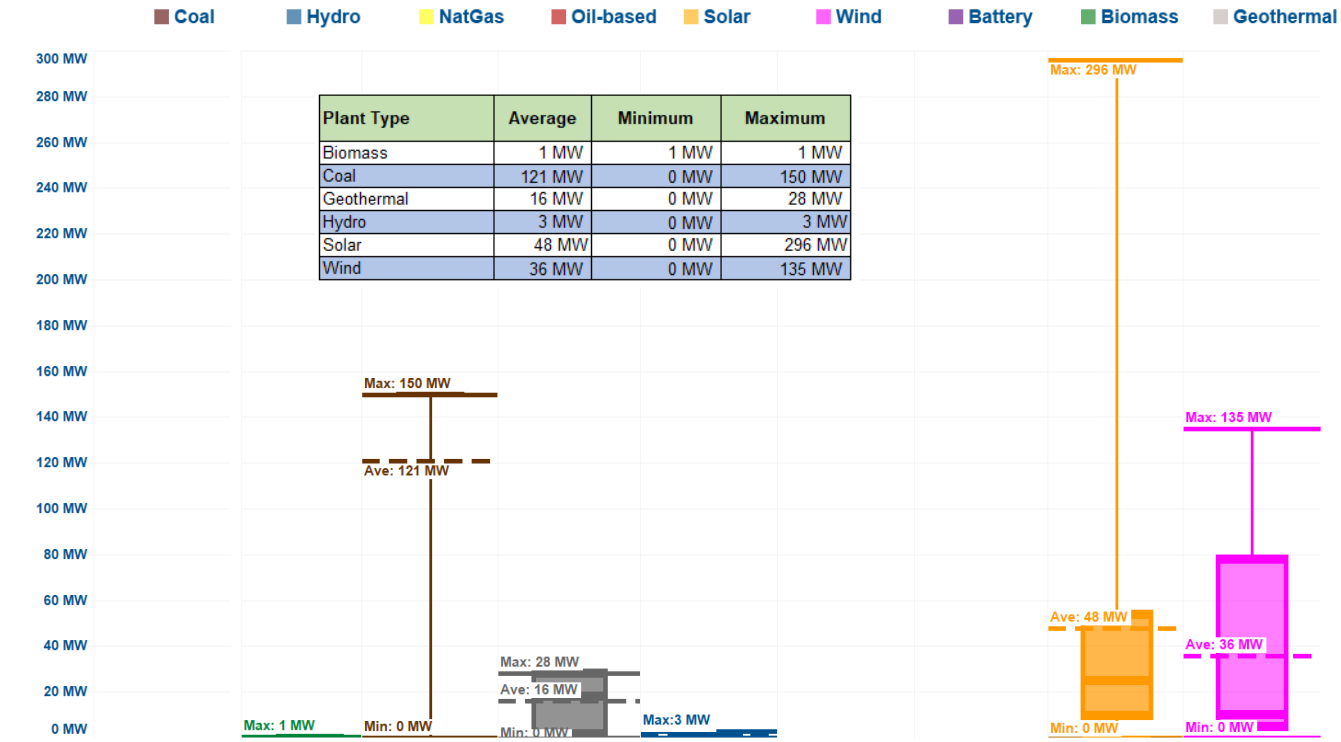
PLANTS UNDER COMMISSIONING TESTS



Plant Type	No. of Impositions
Solar	20,075
Wind	14,246
Geothermal	10,917
Hydro	10,226
Coal	10,163
Biomass	4,318

MW SCHEDULE

PLANTS UNDER COMMISSIONING TESTS



Plant Type	Average	Minimum	Maximum
Biomass	1 MW	1 MW	1 MW
Coal	121 MW	0 MW	150 MW
Geothermal	16 MW	0 MW	28 MW
Hydro	3 MW	0 MW	3 MW
Solar	48 MW	0 MW	296 MW
Wind	36 MW	0 MW	135 MW

In terms of the number of OC impositions, renewable plants such as solar, geothermal, and wind plants experienced the highest number of OCs related to commissioning tests during the billing period, accounting for fifty-one percent (51%) of the total impositions.

A solar plant, boasting a substantial capacity, had the highest scheduled MW during the billing period. However, on average, this plant was mostly scheduled at 48 MW, which may be a result of the variability of its technology. In contrast, a coal plant saw an almost consistent schedule at a high level of MW capacity throughout its testing period averaging at 121MW.

ANNEX

Plants with Over-riding Constraints

Plant/Unit Name	Plant Type	Registered Capacity (MW)[1]
LUZON		
Angat Hydroelectric Power Plant Unit A	Hydro	19.6
Balaoi and Caunayan Wind Power Project Phase 1	Wind	80
Cagayan North Solar Power Plant	Solar	115
Caparispisan II Wind Power Project	Wind	50
Cayanga-Bugallon Solar Power Plant	Solar	75.1
GNPower Dinginin Coal Plant - Unit 2	Coal	668
Magat Hydroelectric Power Plant Unit 2	Hydro	97
Mariveles Coal Fired Thermal Power Plant Unit 2	Coal	316
Matuno River Hydroelectric Power Plant	Hydro	8.7
Mariveles Coal-fired Thermal Power Plant Unit 2	Coal	150
Mariveles Coal-fired Thermal Power Plant Unit 3	Coal	150
Orion Solar Power Plant	Solar	16.2
Refinery Solid Fuel-Fired Boiler Power Plant	Coal	140
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
Subic New PV Power Plant Project	Solar	62.7
Navotas Bunker C-Fired Diesel Power Plant Power Barge 1 / Mobile 3	Oil-Based	63.8
Navotas Bunker C-Fired Diesel Power Plant Power Barge 2 / Mobile 4	Oil-Based	51.5
Navotas Bunker C-Fired Diesel Power Plant Power Barge 3 / Mobile 5	Oil-Based	55.2
Subplant 1 Alaminos Battery Energy Storage System	Battery	20
Bacman Geothermal Power Plant Unit 3	Geothermal	20
Botocan Hydro Electric Power Plant	Hydro	20.8
Caliraya Hydro Electric Power Plant	Hydro	28
Kalayaan Hydro Electric Power Plant 1	Hydro	183
Kalayaan Hydro Electric Power Plant 2	Hydro	183
Kalayaan Hydro Electric Power Plant 4	Hydro	185
Lower Labayat Hydroelectric Power Plant	Hydro	1.5
Palayan Binary Power Plant	Geothermal	31
QPPL Coal-Fired Power Plant	Coal	460

[1] As of 05 February 2024

Plant/Unit Name	Plant Type	Registered Capacity (MW)[1]
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 (San Lorenzo CCGTPP)	Natural Gas	265
VISAYAS		
Biliran Geothermal Power Plant Project Phase 1	Geothermal	2
Isabel Modular Diesel Power Plant Sector 1	Oil-Based	10
Isabel Modular Diesel Power Plant Sector 2	Oil-Based	10.1
Isabel Modular Diesel Power Plant Sector 3	Oil-Based	15.1
Isabel Modular Diesel Power Plant Sector 4	Oil-Based	10.2
Isabel Modular Diesel Power Plant Sector 5	Oil-Based	15.1
Isabel Modular Diesel Power Plant Sector 6	Oil-Based	10.2
CPPC Bunker C-Fired Diesel Power Plant Unit 1	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 2	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 3	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 4	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 5	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 6	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 7	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 8	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 9	Oil-Based	6.5
CPPC Bunker C-Fired Diesel Power Plant Unit 10	Oil-Based	6.5
Circulating Fluidized Bed Coal-Fired Power Plant Unit 1	Coal	169
Circulating Fluidized Bed Coal-Fired Power Plant Unit 2	Coal	169
Palinpinon Geothermal Power Plant I	Geothermal	110.5
BOHECO I Sevilla Mini Hydro Power Plant	Hydro	2.5
Panay Diesel Power Plant 3 (Unit Echo)	Oil-Based	12
MINDANAO		
Misamis Occidental Bunker C-Fired Diesel Power Plant 3 Unit 2	Oil-Based	8
Bunker-C Fired Diesel Power Plant Unit 1	Oil-Based	10.2
Bunker-C Fired Diesel Power Plant Unit 2	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 9	Oil-Based	10.2
Bunker-C Fired Diesel Power Plant Unit 10	Oil-Based	10.2

Plant/Unit Name	Plant Type	Registered Capacity (MW)[1]
Agus VI Hydroelectric Power Plant (HEPP) Unit 1	Hydro	31.5
Agus VI Hydroelectric Power Plant Unit 2	Hydro	31.1
Agus VI Hydroelectric Power Plant Unit 4	Hydro	25
CFB Coal-Fired Thermal Power Plant	Coal	20
Cotabato Cogeneration Power Plant	Biomass	3.4
Mindanao I Geothermal Power Plant	Geothermal	51.4

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