



MONTHLY OVER-RIDING CONSTRAINTS HIGHLIGHTS

26 June to 25 July 2024

Document Information Classification: Public

The information contained in this document is based on data that are subject to continuous verification by the Philippine Electricity Market Corporation (PEMC). The same information is subject to change as updated figures come in.

SUMMARY OF OBSERVATIONS

- A **2.74% net increase** in Over-riding Constraints during the billing period was observed due to:
 - Increase in impositions for Luzon plants attributable to the conduct of commissioning tests, with the entry of three (3) new plants (1 coal, 1 geothermal, and 1 natural gas); and
 - Surge in the number of impositions related to ancillary service, performance, and emission tests.
- Despite the increase in emission tests in the Visayas plants, the decline in over-riding constraints in the region may be attributable to the decrease in impositions related to commissioning tests of geothermal plants.
- The decrease in over-riding constraints for oil-based plants in Mindanao was due to the lesser dispatching of plants as Must-Run Units (MRUs) for system voltage requirement, conversely, the increase in Luzon was due to real power balancing and frequency control.

AT A GLANCE

Total Over-riding
Constraints
Imposition

124,656

▲ **2.74%**
increase from
previous billing
period



LUZON
101,961



Solar plants had the highest no. of over-riding constraints

Coal plants, on average, had the largest capacities scheduled due to performance test



Most over-riding constraints were due to commissioning test of solar plants



VISAYAS
10,670



Geothermal plants had the highest no. of over-riding constraints

Coal plants, on average, had the largest capacities scheduled due to ancillary service test



Most over-riding constraints were due to the conduct of commissioning test of geothermal plants



MINDANAO
12,025



Hydro plants had the highest no. of over-riding constraints

Coal plants, on average, had the largest capacities scheduled due to ancillary service test



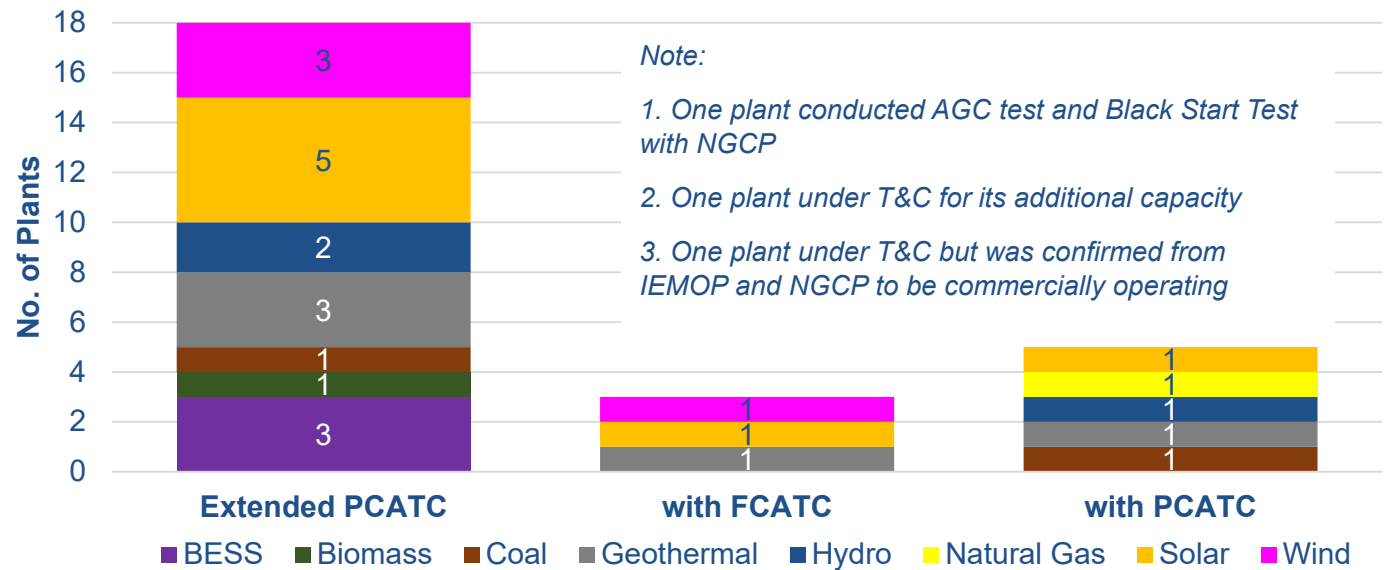
Most over-riding constraints were due to the conduct of commissioning test of hydro plants

STATUS OF PLANTS UNDER COMMISSIONING TEST

No. of Plants Under Commissioning Test

26

Status of Plants under Commissioning Test



Ave. no. of days under commissioning test per plant type

Noted no. of extension of commissioning test period

BESS

113.7

2 - Gamu BESS
1 - Lumban BESS
5 - Limay BESS

Biomass

148

3 - Trust Biomass

Coal

90

3 - MPGC U3

Geo

105.8

6 - Palayan Binary GPP
1 - Tiwi Binary GPP
3 - Biliran GPP

Hydro

136.5

10 - Matuno HEPP
3 - Ibulao HEPP

Nat Gas

6

Solar

193.9

6 - Cagayan North SPP
1 - Laoag SPP
7 - Orian SPP
3 - Subic PV SPP
2 - Calabanga SPP

Wind

188.8

14 - Balaoi Caunayan Wind
3 - Caparispisan Wind
2 - Pwei Nabas Wind

OVER-RIDING CONSTRAINTS

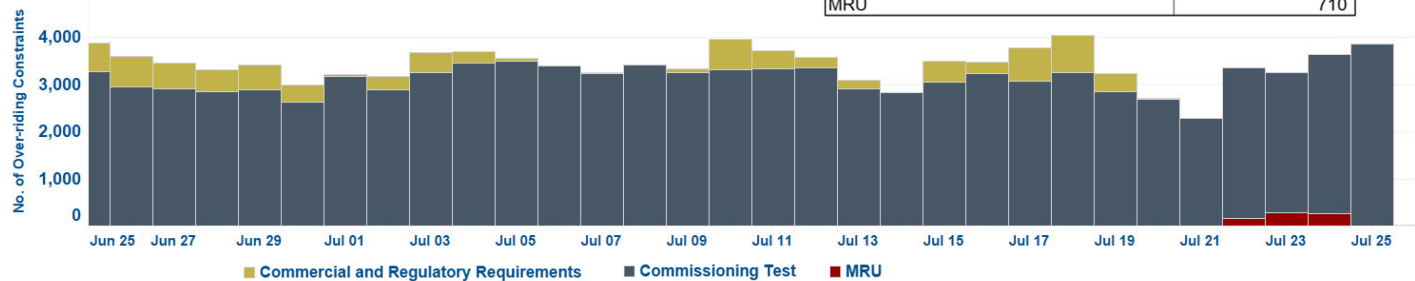
LUZON

	No. of Over-riding Constraints	Date
Maximum	4,042	18 July
Average	3,399	
Minimum	2,280	21 July



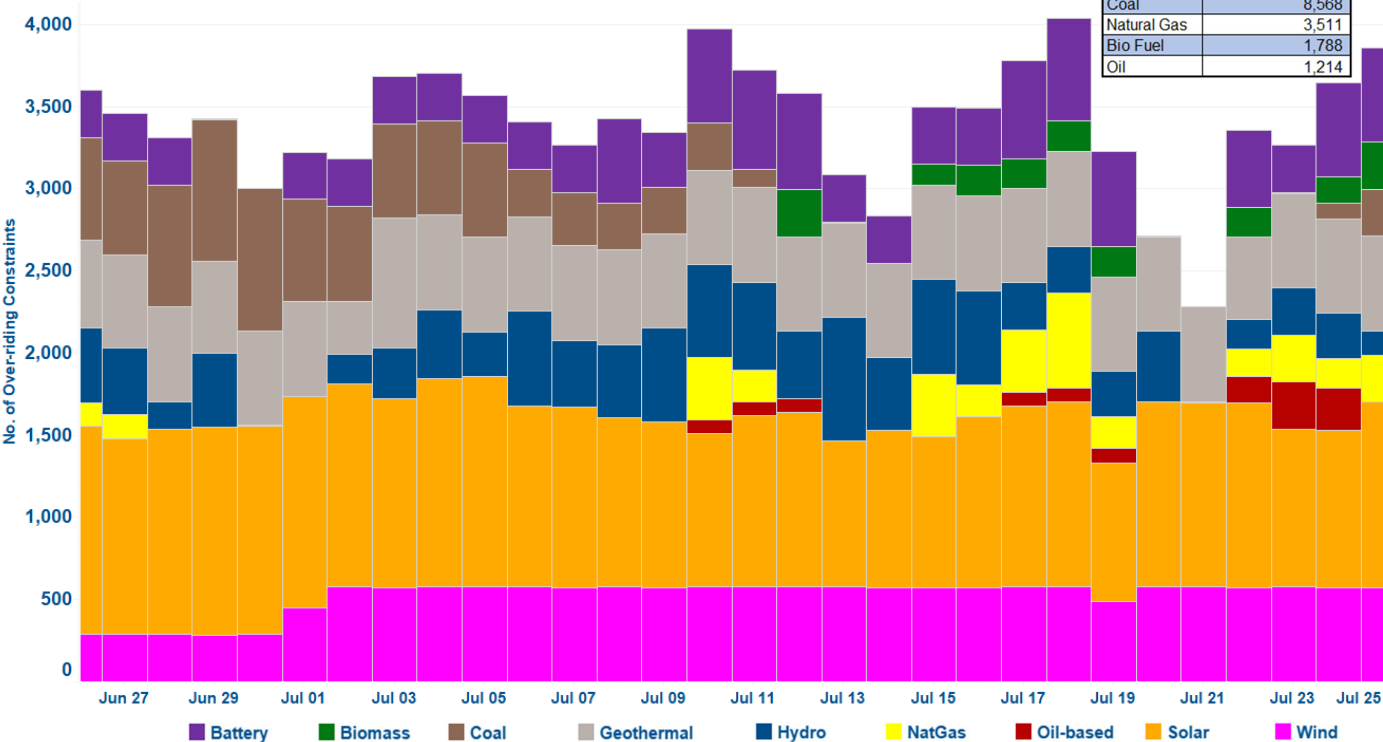
by incident

Incident	No. of Over-riding Constraints
Commissioning Test	93,488
Commercial and Regulatory Requirements	7,763
MRU	710



by plant type

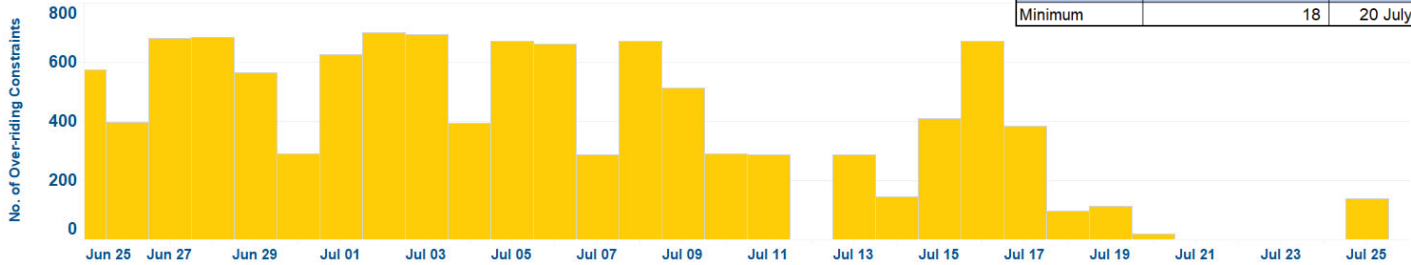
Plant Type	No. of Over-riding Constraints
Solar	33,053
Geothermal	17,080
Wind	15,602
Hydro	10,686
BESS	10,459
Coal	8,568
Natural Gas	3,511
Bio Fuel	1,788
Oil	1,214



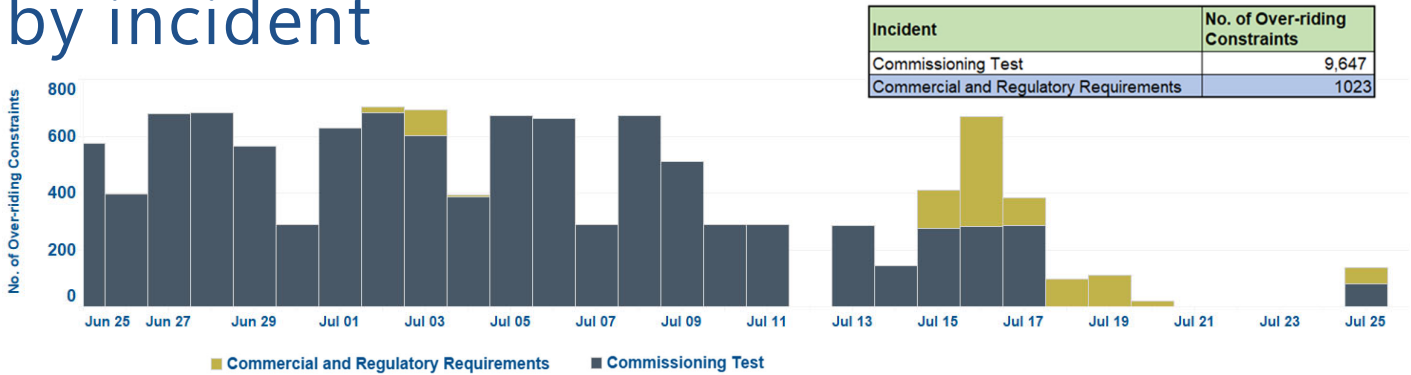
Most of the over-riding constraints in Luzon plants were due to the conduct of commissioning tests of solar, geothermal, and wind plants during the billing period. An FCATC was issued to Cagayan North Solar effective 28 June 2024 after six (6) extended PCATCs. Meanwhile, it was confirmed from NGCP that Pinugay Solar and Concepcion Solar was under commissioning test for the additional 5 MW and 12 MW capacities, respectively.

OVER-RIDING CONSTRAINTS

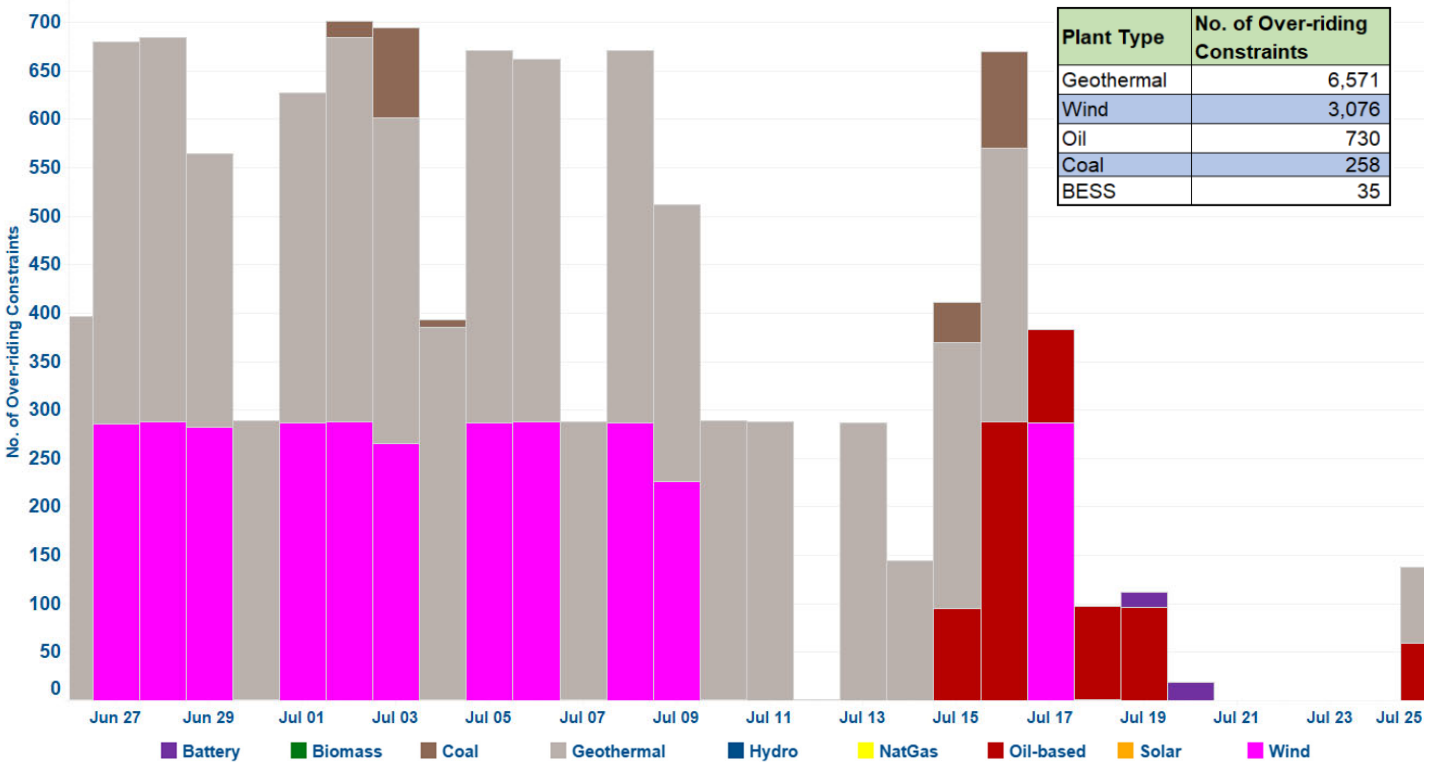
VISAYAS



by incident



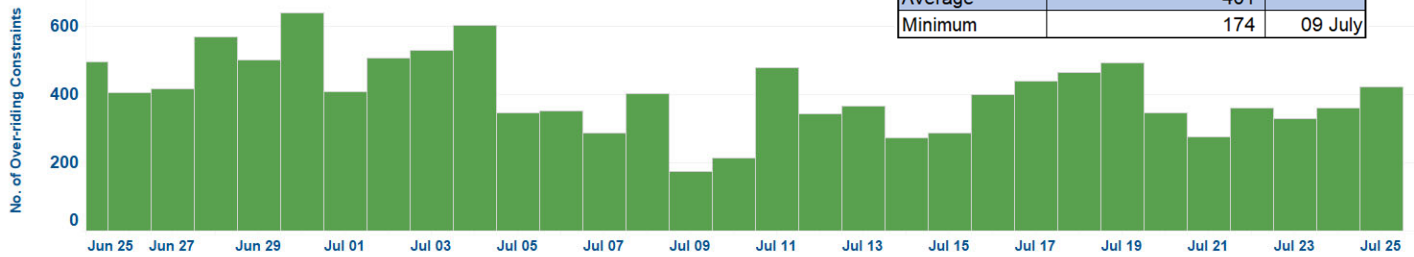
by plant type



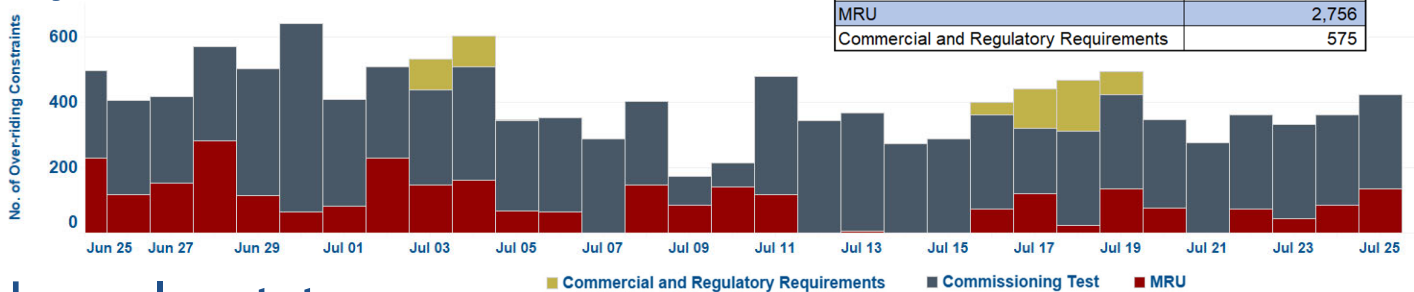
In Visayas, commissioning tests of geothermal and wind plants were the primary reasons for most of the over-riding constraints in the region. The conduct of commissioning test of wind plant was scheduled intermittently during the billing period.

The commissioning test of Biliran GPP and PWEI Nabas Wind contributed to the over-riding constraints due to their extension of PCATCs. It was noted that PWEI Nabas Wind_G01 was conducting commissioning test despite being confirmed by NGCP and IEMOP that the plant was commercially operating.

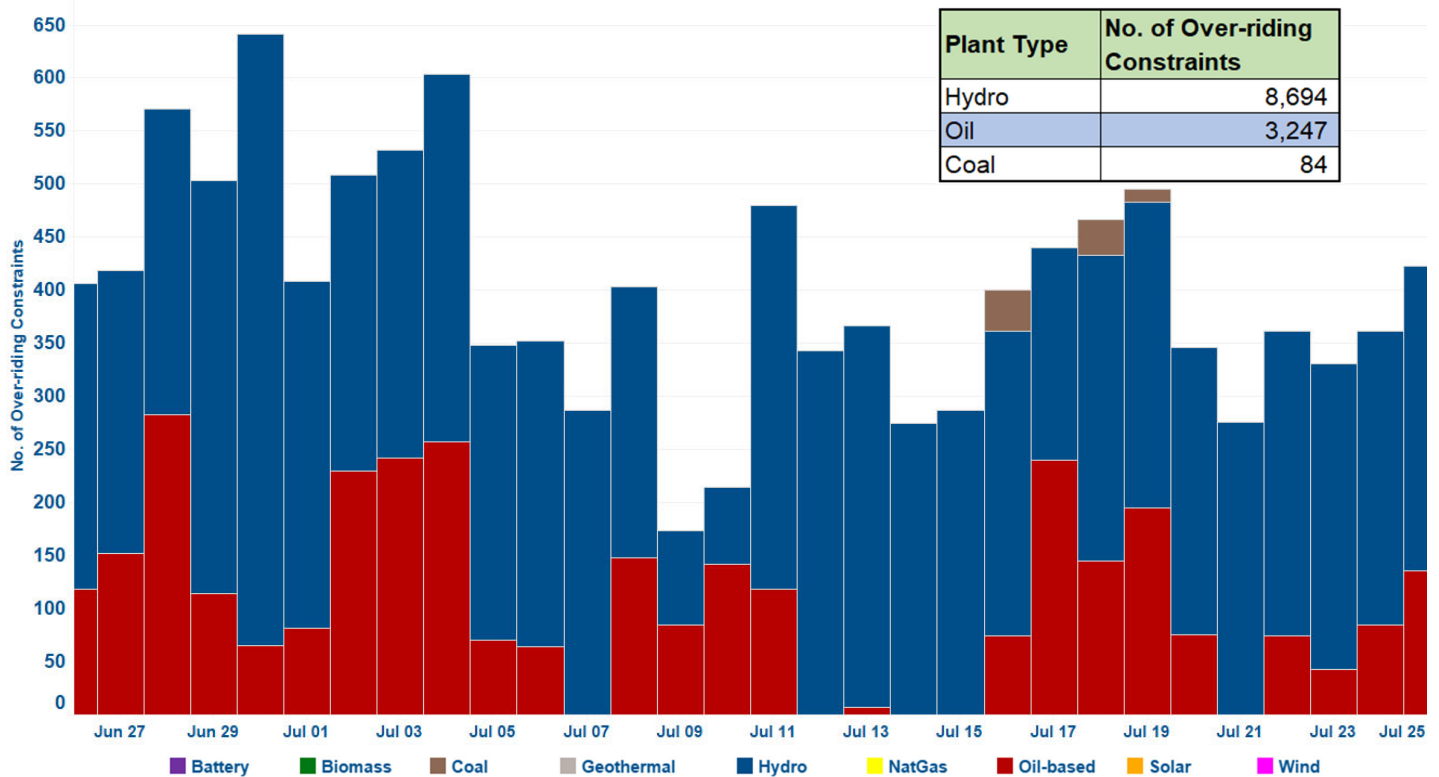
MINDANAO



by incident



by plant type



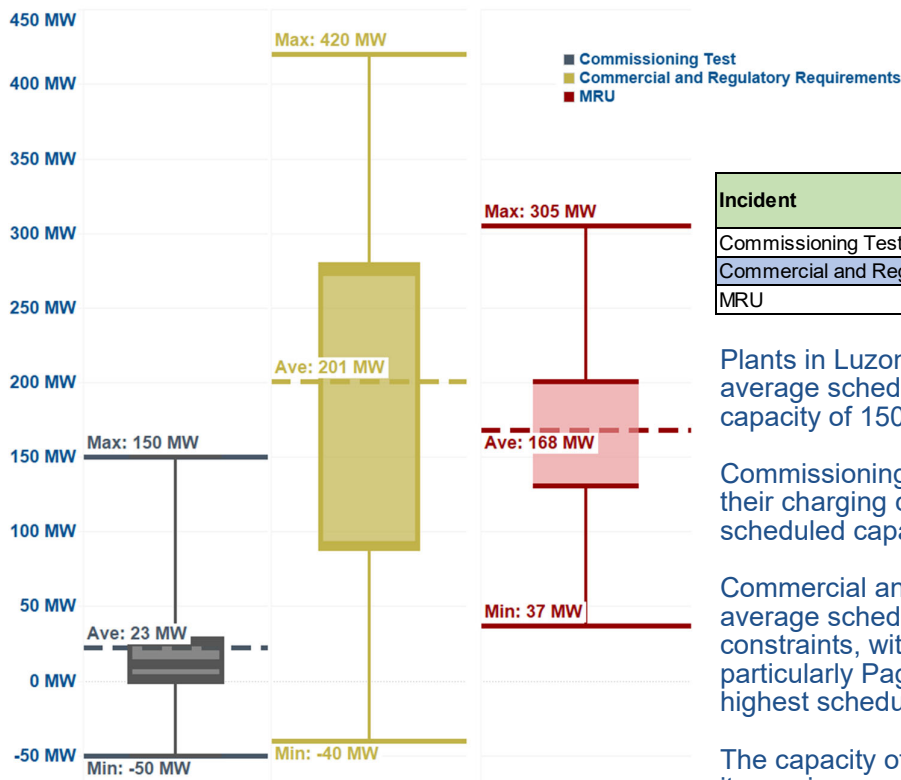
The hydro plants under commissioning tests were primarily responsible for majority of over-riding constraints in Mindanao during the billing period, followed by the previously dominant contributor which are oil-based plants dispatched as MRU to address the system voltage requirement.

Commissioning tests for Siguil Hydro Power Plant (HPP) began in middle of June, contributing to the increase in over-riding constraints in the region, along with Liangan Hydro Electric Power Plant (HEPP) which has a previous different name.

SCHEDULED CAPACITIES

LUZON

by incident



Plants in Luzon undergoing commissioning tests had an average scheduled capacity of 23 MW, with a peak capacity of 150 MW, attributable to a coal plant.

Commissioning tests for Lumban BESS involved testing their charging capabilities, resulting in negative scheduled capacity.

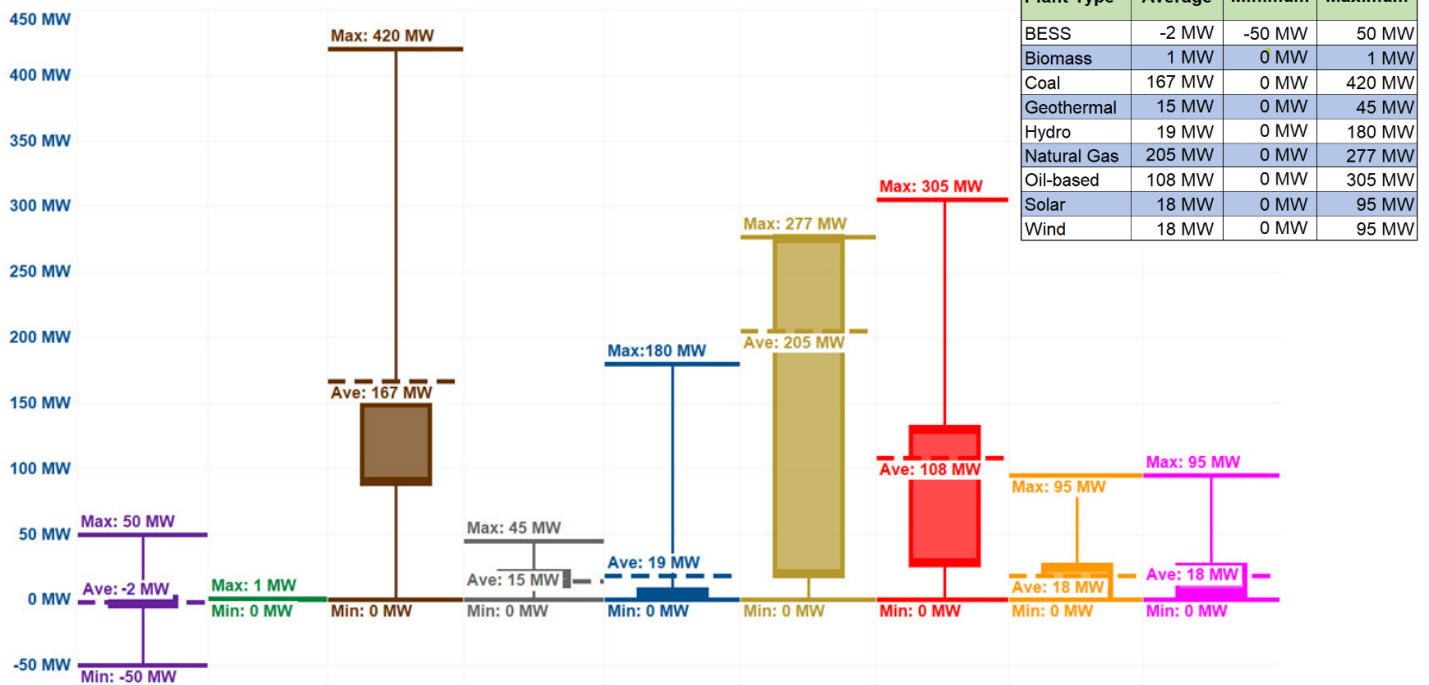
Commercial and regulatory requirements led to an average scheduled capacity of 201 MW for over-riding constraints, with performance tests for coal plant, particularly Pagbilao 3 CFTPP, accounting for the highest scheduled capacity during the covered period.

The capacity of Malaya TPP dispatch as MRU reached its maximum-security limit to comply with the required real power balancing and frequency control.

Natural gas plants, on average, had the largest capacity over-ridden due to commissioning test, and commercial and regulatory requirements.

by plant type

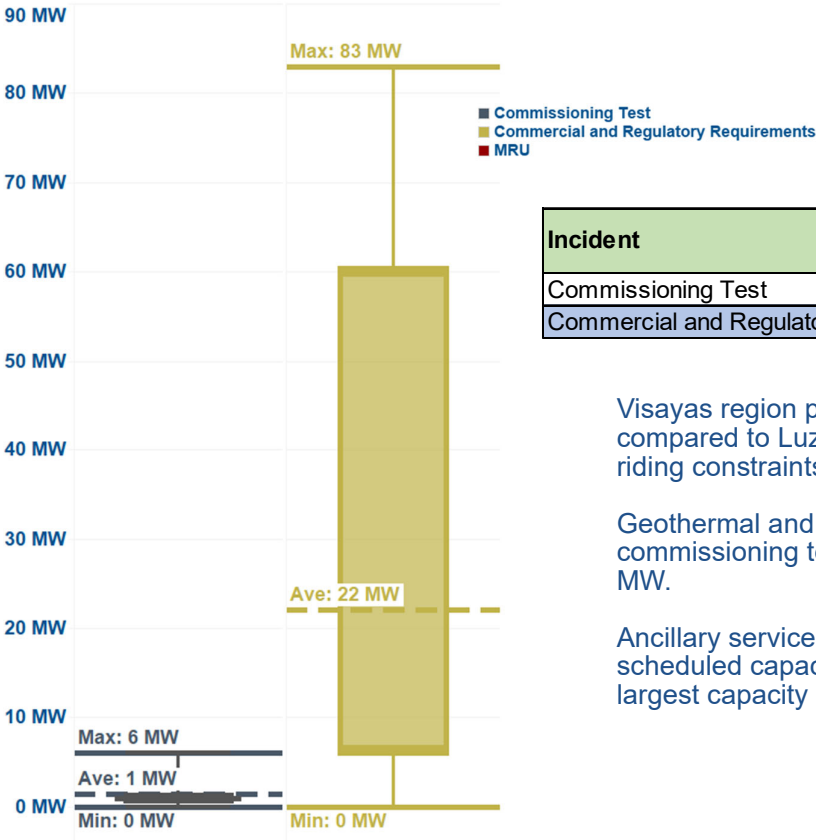
■ Battery
 ■ Biomass
 ■ Coal
 ■ Geothermal
 ■ Hydro
 ■ NatGas
 ■ Oil-based
 ■ Solar
 ■ Wind



SCHEDULED CAPACITIES

VISAYAS

by incident



Incident	Average	Minimum	Maximum
Commissioning Test	1 MW	0 MW	6 MW
Commercial and Regulatory Requirements	22 MW	0 MW	83 MW

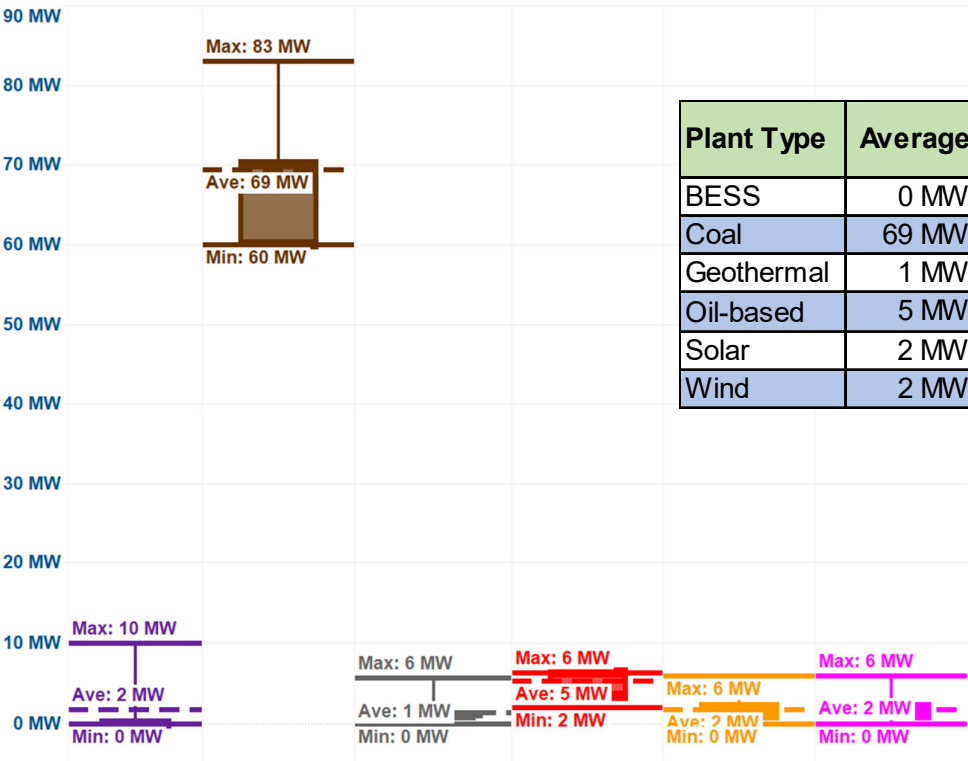
Visayas region plants had lower scheduled capacities compared to Luzon plants due to smaller plants with over-riding constraints.

Geothermal and Wind plants contributed to the commissioning test with an average scheduled capacity of 1 MW.

Ancillary service tests of CEDC CFTPP had the maximum scheduled capacity, while coal plants, on average, had the largest capacity over-riden due to ancillary service tests.

by plant type

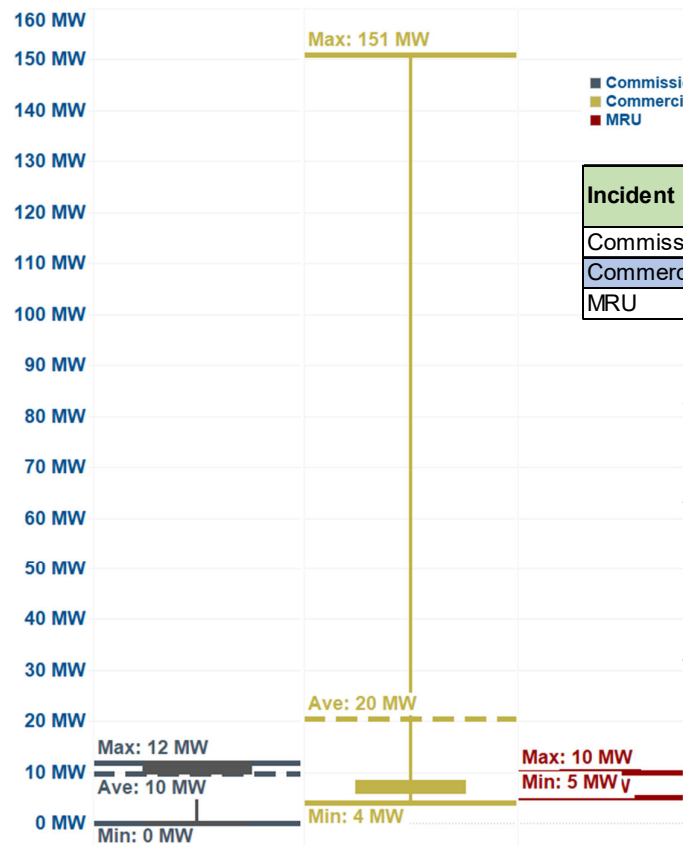
Battery Biomass Coal Geothermal Hydro NatGas Oil-based Solar Wind



Plant Type	Average	Minimum	Maximum
BESS	0 MW	2 MW	10 MW
Coal	69 MW	60 MW	83 MW
Geothermal	1 MW	0 MW	6 MW
Oil-based	5 MW	0 MW	6 MW
Solar	2 MW	0 MW	6 MW
Wind	2 MW	0 MW	6 MW

by incident

MINDANAO



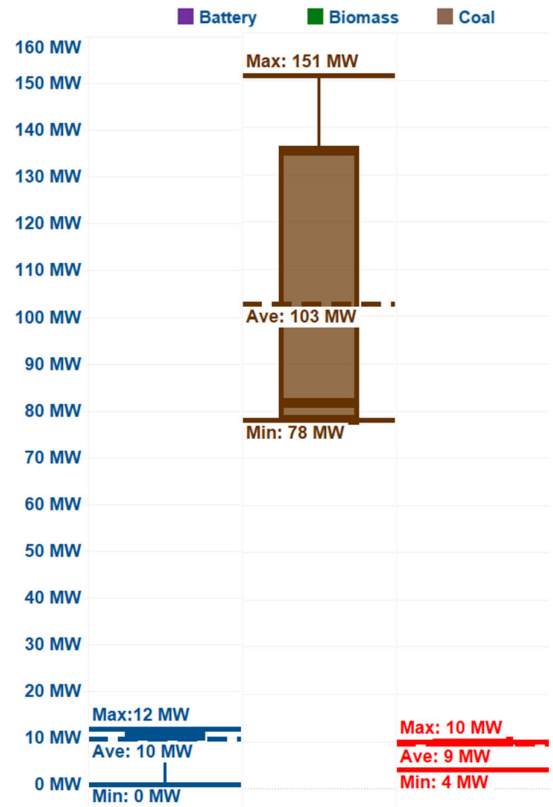
Incident	Average	Minimum	Maximum
Commissioning Test	10 MW	0 MW	12 MW
Commercial and Regulatory Requirements	20 MW	4 MW	151 MW
MRU	10 MW	5 MW	10 MW

Siguil and Liangan HEPP conducted its commissioning test during the billing period and were scheduled between 0 to 12 MW, averaging at about 10 MW.

Ancillary service tests for coal plants were scheduled between 78 to 151 MW, while oil-based plants due to emission and capability test were between at 4 to 10 MW.

Oil-based plants continued to be scheduled as MRU, from 5 to 10 MW, to address the system voltage requirement in Mindanao region.

by plant type

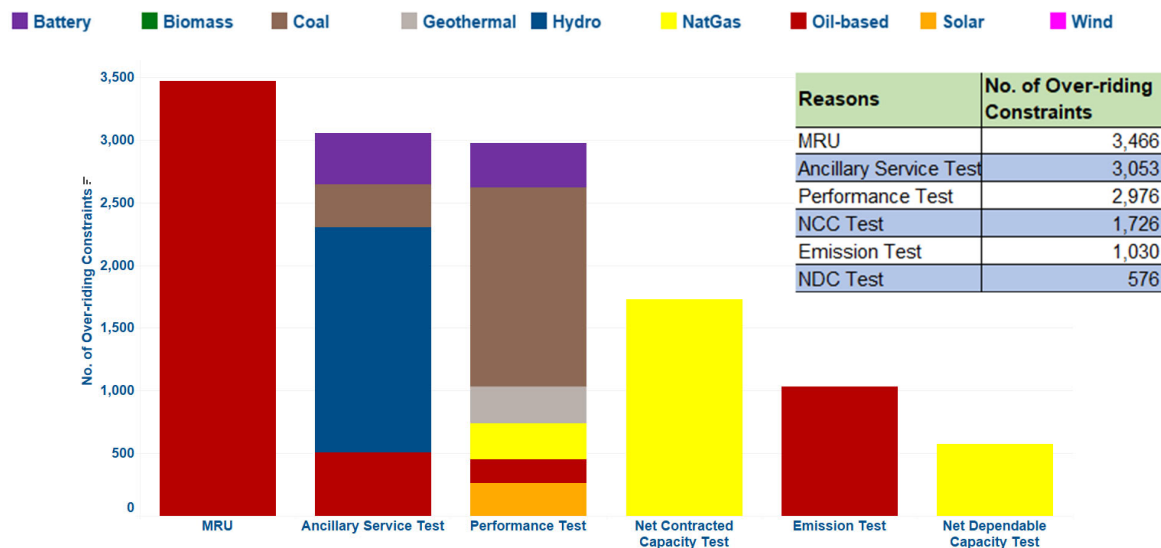


Plant Type	Average	Minimum	Maximum
Coal	103 MW	78 MW	151 MW
Hydro	10 MW	0 MW	12 MW
Oil-based	9 MW	4 MW	10 MW

OVER-RIDING CONSTRAINTS

by incident

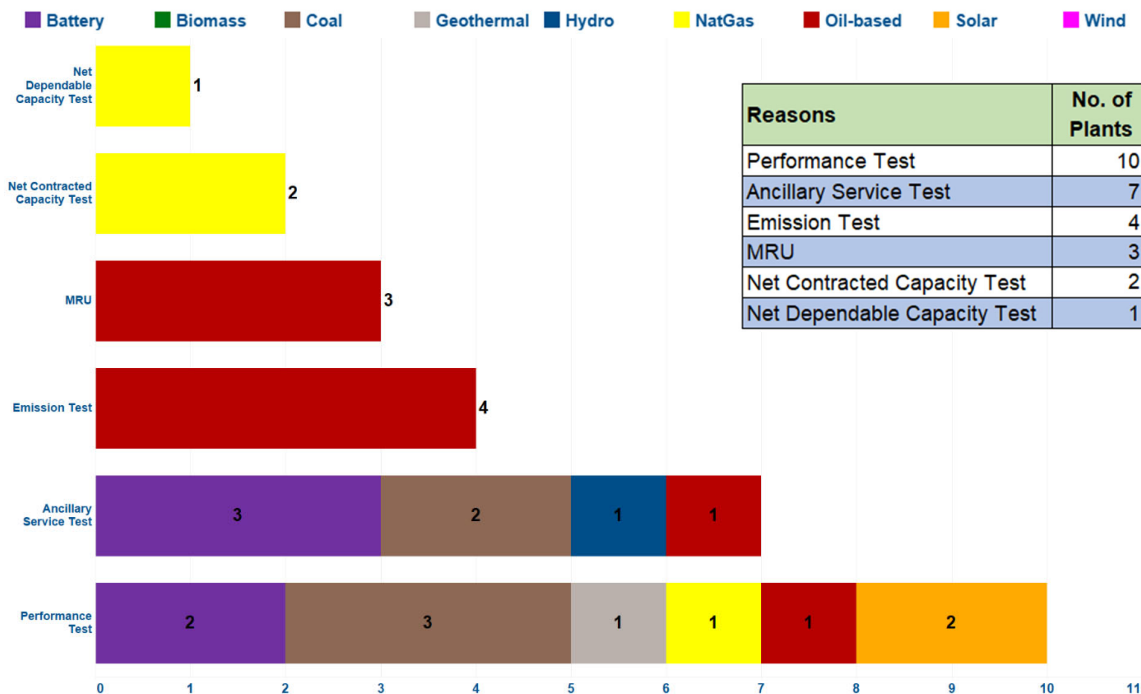
(excluding commissioning test)



The above chart reveals that MRUs (oil-based plants), ancillary service tests (BESS, coal, hydro, and oil-based plants), performance tests (BESS, coal, geothermal, natural gas, oil-based, and solar plants), emission test (oil-based plants), and solar plants conducting capacity tests were the main reasons for the majority of over-riding constraints during the billing period.

NUMBER OF PLANTS

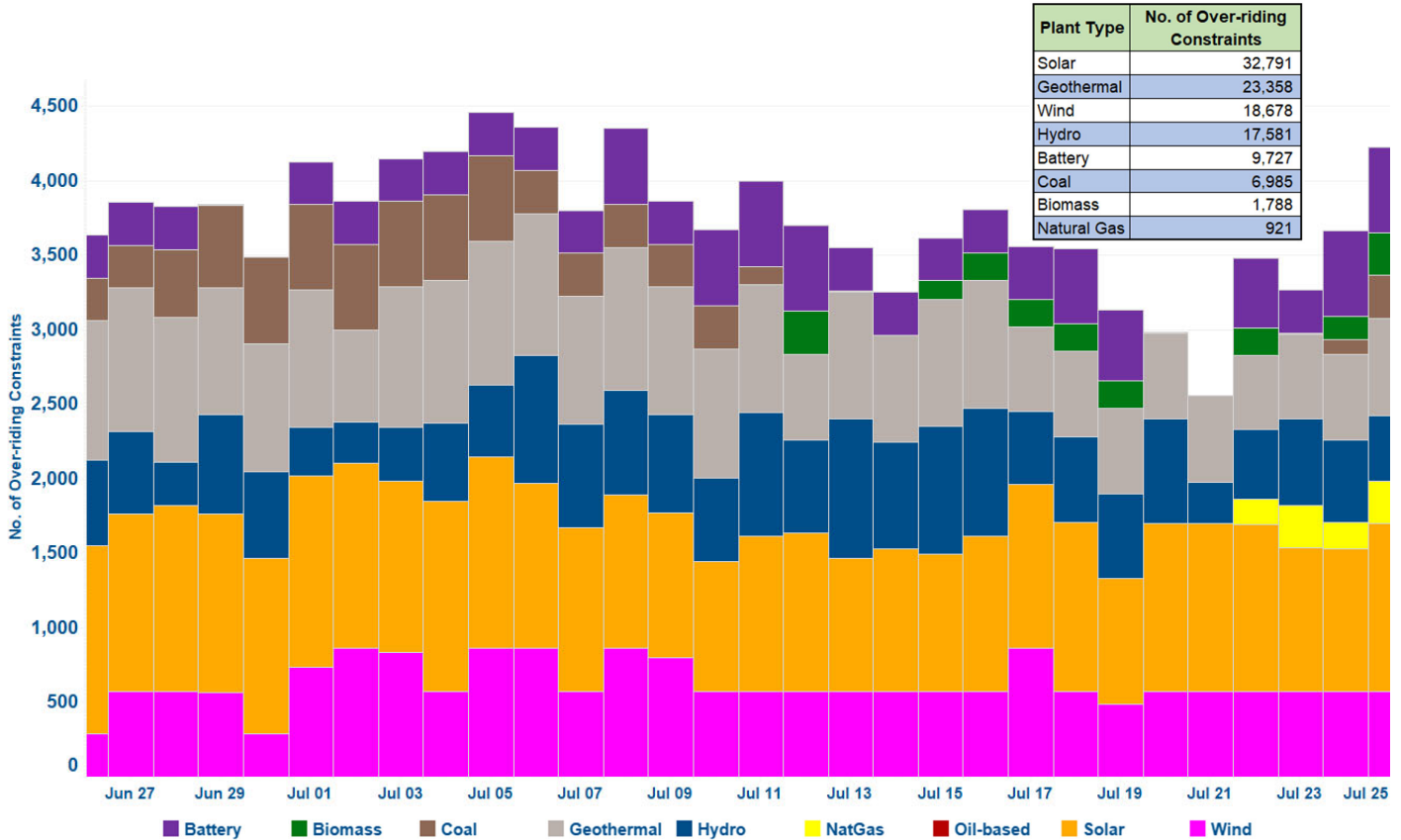
by incident



Emission test and some performance test, specifically heavy metal testing, were done during the billing period as part of the requirements of regulating agencies involving environmental and health standards. Ancillary service test was likewise conducted to determine the services a plant can commit in terms of adequacy, accuracy, timeliness, and other operational requirement. Meanwhile, MRUs are plants that are scheduled or dispatched to address threat to system security, and capacity tests (NDC and NCC) to ensure the grid received reliable power.

OVER-RIDING CONSTRAINTS

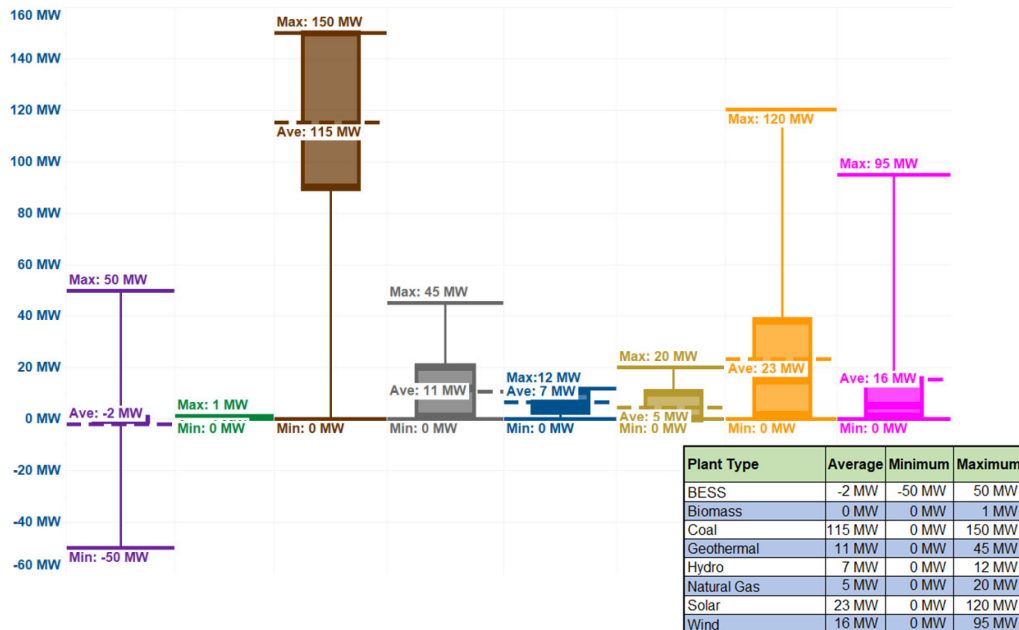
PLANTS UNDER COMMISSIONING TESTS



SCHEDULED CAPACITIES

PLANTS UNDER COMMISSIONING TESTS

Battery Biomass Coal Geothermal Hydro NatGas Oil-based Solar Wind



Renewable plants such as solar, geothermal, wind, and hydro plants experienced frequent over-riding constraints imposition related to commissioning tests during the billing period, accounting for seventy-four percent (74%) of the total impositions, while conventional plants (coal, biomass, and natural gas) accounted for eight percent (8%), and system storage, specifically battery, accounted for eight percent (8%).

ANNEX A

Plants with Over-riding Constraints

Plant/Unit Name	Plant Type	Registered Capacity ¹
LUZON		
80.000 MW Balaoi and Caunayan Wind Power Project Phase 1	Wind	80
133.464 MWp Cagayan North Solar Power Plant	Solar	115
Caparispisan II Wind Power Project	Wind	50
Concepcion 1 Solar Power Project	Solar	76
4.500 MW Ibulao Hydroelectric Power Project	Run-of River Hydro	6
72.020 MWp Laoag Solar Power Plant	Solar	58.6
Mariveles Coal Fired Thermal Power Plant Unit 1	Coal	316
Matuno River Hydroelectric Power Plant	Run-of River Hydro	8.7
Mariveles Coal-fired Thermal Power Plant Unit 3	Coal	150
20.397 MWp Orion Solar Power Plant	Solar	16.2
72.128 MWp Subic New PV Power Plant Project	Solar	62.7
95.827 MWp Pinugay Solar Power Plant	Solar	71.6
74.168 MWp Calabanga Solar Power Project	Solar	59.8
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
Pagbilao 3 Power Plant	Coal	420
35.700 MW Palayan Binary Power Plant	Geothermal	31
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
17MW Tiwi Geothermal Binary Power Plant	Geothermal	16.7
Mariveles Coal-fired Thermal Power Plant Unit 4	Coal	150
Biogas Power Plant (Phase 1)	Biomass	1.7
Bacman Geothermal Power Plant Unit 1	Geothermal	60
Calaca Coal-Fired Thermal Power Plant 2	Coal	300
Batangas Combined Cycle Power Plant Unit 2	Natural Gas	440
Pililla Diesel Power Plant Sector 1	Oil-Based	28
Pililla Diesel Power Plant Sector 2	Oil-Based	22

¹ As of 25 July 2024

Plant/Unit Name	Plant Type	Registered Capacity ¹
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
Malaya Thermal Power Plant Unit 2	Oil-Based	130
45.758 MWh Gamu Battery Energy Storage System (BESS)	Battery	40
50.519 MW Bataan Battery Energy Storage System	Battery	40
Subplant 1 Alaminos Battery Energy Storage System	Battery	20
57.125 MWh Lumban Battery Energy Storage System (BESS)	Battery	50
VISAYAS		
2.000 MW (Phase 1) Biliran Geothermal Power Plant Project	Geothermal	1
13.200 Nabas Wind Power Plant Phase 2 (Nabas-2)	Wind	13.2
Isabel Modular Diesel Power Plant Sector 1	Oil-Based	10
251.1MW Circulating Fluidized Bed Coal-Fired Thermal Power Plant Unit 1	Coal	83.2
251.1MW Circulating Fluidized Bed Coal-Fired Thermal Power Plant Unit 2	Coal	83.4
251.1MW Circulating Fluidized Bed Coal-Fired Thermal Power Plant Unit 3	Coal	83.1
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
Bago Binary Geothermal Power Plant	Geothermal	4.7
PPC3 Nabas Bunker C-Fired Diesel Power Plant Unit 1	Oil-Based	3
PPC3 Nabas Bunker C-Fired Diesel Power Plant Unit 2	Oil-Based	3.4
36.000 MW Nabas Phase I Wind Power Plant (NWPP-I)	Wind	36.7
23.316 MW Ubay Battery Energy Storage System (BESS)	Battery	20
MINDANAO		
112 MW Bunker-C Fired Diesel Power Plant Unit 1	Oil-Based	10.2
112 MW Bunker-C Fired Diesel Power Plant Unit 3	Oil-Based	10.2
112 MW Bunker-C Fired Diesel Power Plant Unit 4	Oil-Based	10.2
112 MW Bunker-C Fired Diesel Power Plant Unit 5	Oil-Based	10.2
112 MW Bunker-C Fired Diesel Power Plant Unit 8	Oil-Based	10.1
112 MW Bunker-C Fired Diesel Power Plant Unit 10	Oil-Based	10.2
GNPK's Coal Fired Power Plant Unit 3	Coal	151.3
GNPK's Coal Fired Power Plant Unit 4	Coal	151
Misamis Occidental Bunker C-Fired Power Plant 2 Unit 1	Oil-Based	7.8
Misamis Occidental Bunker C-Fired Power Plant 2 Unit 2	Oil-Based	7.8
112 MW Bunker-C Fired Diesel Power Plant Unit 2	Oil-Based	10.2

Plant/Unit Name	Plant Type	Registered Capacity ¹
112 MW Bunker-C Fired Diesel Power Plant Unit 6	Oil-Based	10.2
112 MW Bunker-C Fired Diesel Power Plant Unit 7	Oil-Based	10
Liangan Hydroelectric Power Project	Run-of River Hydro	11.9
PSFI Bunker C-Fired Diesel Power Plant Unit 2	Oil-Based	5.2
34.85 MW PSI Bunker C-Fired Power Plant	Oil-Based	34.9
14.500 MW Siguil Hydroelectric Power Project	Run-of River Hydro	15.3

ANNEX B

Plants Under Commissioning Tests

Plant/Unit Name	Plant Type	Registered Capacity (MW)	No. of PCATC Extensions ²	No. of Days under Commissioning Tests
45.758 MWh Gamu Battery Energy Storage System (BESS)	Battery	40	1	113
57.125 MWh Lumban Battery Energy Storage System (BESS)	Battery	50	1	62
50.519 MW Bataan Battery Energy Storage System	Battery	40	5	166
Biogas Power Plant (Phase 1)	Biomass	1.7	3	148
Mariveles Coal-fired Thermal Power Plant Unit 3	Coal	150	3	153
Mariveles Coal-fired Thermal Power Plant Unit 4	Coal	150		27
35.700 MW Palayan Binary Power Plant	Geothermal	31	6	225
17MW Tiwi Geothermal Binary Power Plant	Geothermal	16.7	1	64
2.000 MW (Phase 1) Biliran Geothermal Power Plant Project	Geothermal	1	3	209
Bacman Geothermal Power Plant Unit 1	Geothermal	60		0
Bago Binary Geothermal Power Plant	Geothermal	4.7		31
4.500 MW Ibulao Hydroelectric Power Project	Run-Of River Hydro	6	3	124
Matuno River Hydroelectric Power Plant	Run-Of River Hydro	8.7	10	372
14.500 MW Siguil Hydroelectric Power Project	Run-Of River Hydro	15.3		36
Liangan Hydroelectric Power Project	Run-Of River Hydro	11.9		14
Batangas Combined Cycle Power Plant Unit 2	Natural Gas	440		6
133.464 MWp Cagayan North Solar Power Plant	Solar	115	6	247
Concepcion 1 Solar Power Project	Solar	76		29
72.020 MWp Laoag Solar Power Plant	Solar	58.6	1	88
20.397 MWp Orion Solar Power Plant	Solar	16.2	7	250
72.128 MWp Subic New PV Power Plant Project	Solar	62.7	3	148

² Based on IEMOP's status of plants under commissioning test as of 25 July 2024

Plant/Unit Name	Plant Type	Registered Capacity (MW)	No. of PCATC Extensions ²	No. of Days under Commissioning Tests
74.168 MWp Calabanga Solar Power Project	Solar	59.8	2	101
95.827 MWp Pinugay Solar Power Plant	Solar	71.6		51
80.000 MW Balaoi and Caunayan Wind Power Project Phase 1	Wind	80	14	509
Caparispisan II Wind Power Project	Wind	50	3	142
13.200 Nabas Wind Power Plant Phase 2 (Nabas-2)	Wind	13.2	2	104
36.000 MW Nabas Phase I Wind Power Plant (NWPP-I)	Wind	36.7		0

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