Market Surveillance Committee
Monthly Over-riding Constraints Report

26 December 2022 to 25 January 2023

April 2023

This Report is prepared by the
Philippine Electricity Market Corporation –
Market Assessment Group for the
Market Surveillance Committee

CONTENTS
OF THE REPORT

MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

Philippine Electricity Market Corporation

OCR-2023-01

IMPOSITIONS BY CATEGORY AND REGION

26,020 Total Impositions

All of which were non-security limits.

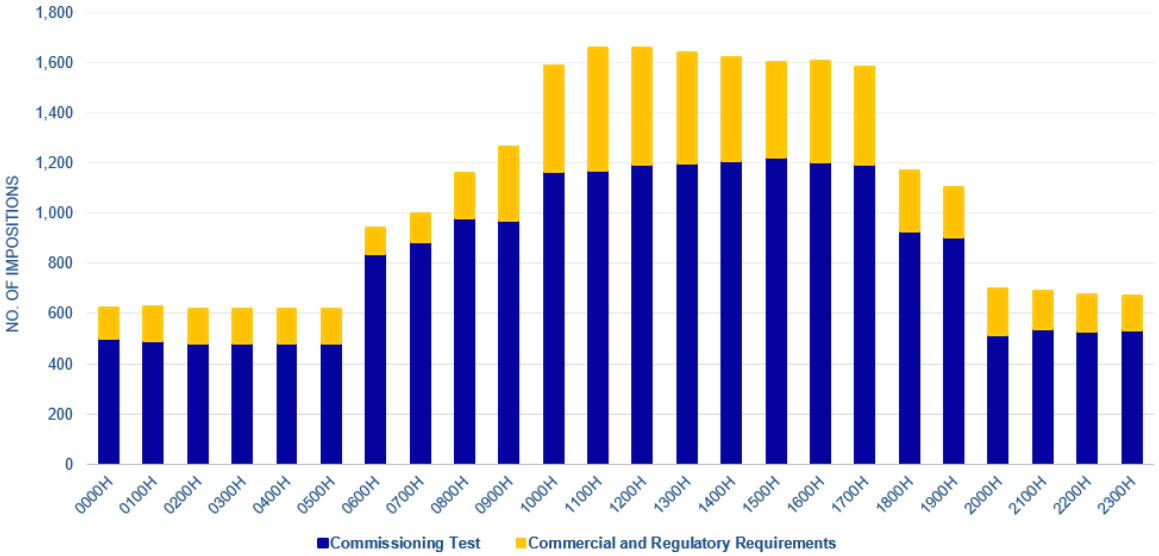
Luzon
73%
18,895 OC

Visayas
27%
7,125 OC

26,835 OC Impositions for December 2022

3.1% decrease from previous month

IMPOSITIONS BY HOUR



A decrease of **3.1%** in over-riding constraints (OC) impositions was observed during the January 2023 billing period involving **32 Luzon** and **9 Visayas plants**.

Note: *Under the Dispatch Protocol Manual Issue 16.0, imposition of over-riding constraints falls into 2 categories – 1) security limit i.e., MRU and other types as may be recommended by SO and 2) non-security limit. Security limit is imposed to address possible threats in system security while non-security limit is related to 1) generating unit limitations, 2) commercial and regulatory requirements, and lastly, 3) conduct of commissioning test of plants.*

The monitoring of the over-riding constraints is based on the data and information provided by MO (i.e., real time market results and MMS-input files on security limits) and SO (i.e., SO Data for Market Monitoring).

Majority of over-riding constraints imposed over a 24-hour period were caused by the conduct of commissioning tests which constituted **77% of the total impositions.**

Since most commissioning tests were imposed on solar plants, the impositions during the covered period were mostly noted during peak hours.

Similar with commissioning tests, commercial and regulatory requirement test impositions were mostly observed during peak hours which were attributable to hydro plants.

MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

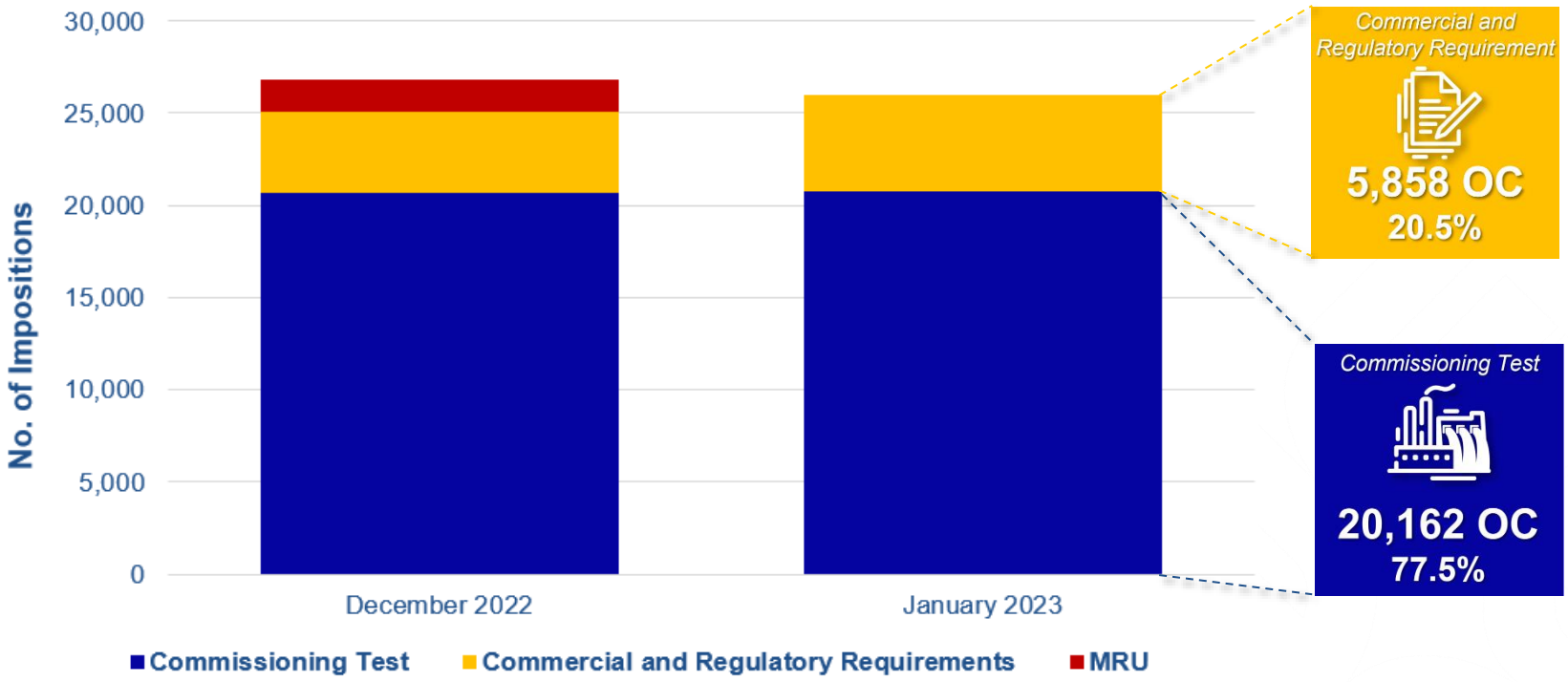
Philippine Electricity Market Corporation

OCR-2023-01

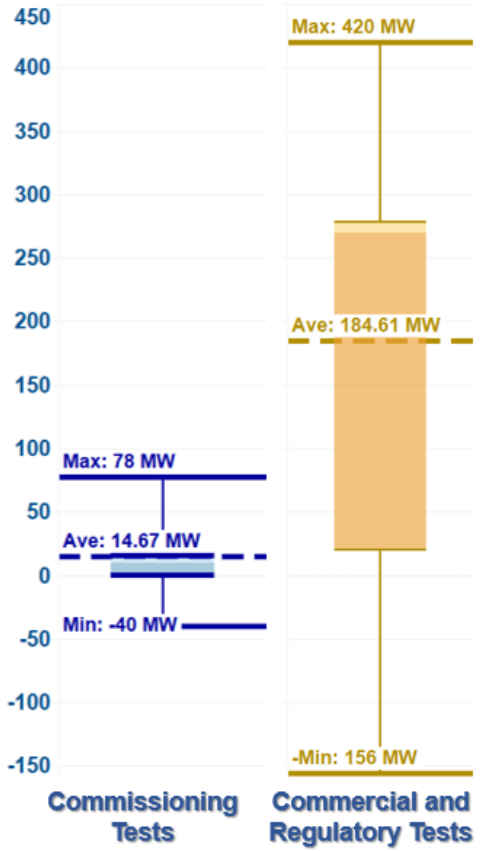
IMPOSITIONS BY INCIDENT

Slight decrease in OC imposition related to commissioning test was observed following the completion of tests of one (1) solar plant. Also, no MRU imposition was observed during the period. On the other hand, the number of incidents related to commercial and regulatory requirements (e.g., Ancillary Services Test, Net Contracted Capacity, and Net Dependable Capacity Test) increased.

Incidents related to commercial and regulatory requirements were imposed on plants with large capacities which had greater market impact than plants under commissioning test. It was however noted that despite the large capacities of plants, majority were over-ridden to smaller capacities. Meanwhile, commissioning tests were mostly undertaken by renewable energy plants with relatively lower capacities. The graph shows the scheduled capacities corresponding to the impositions.



SCHEDULED CAPACITIES (MW)

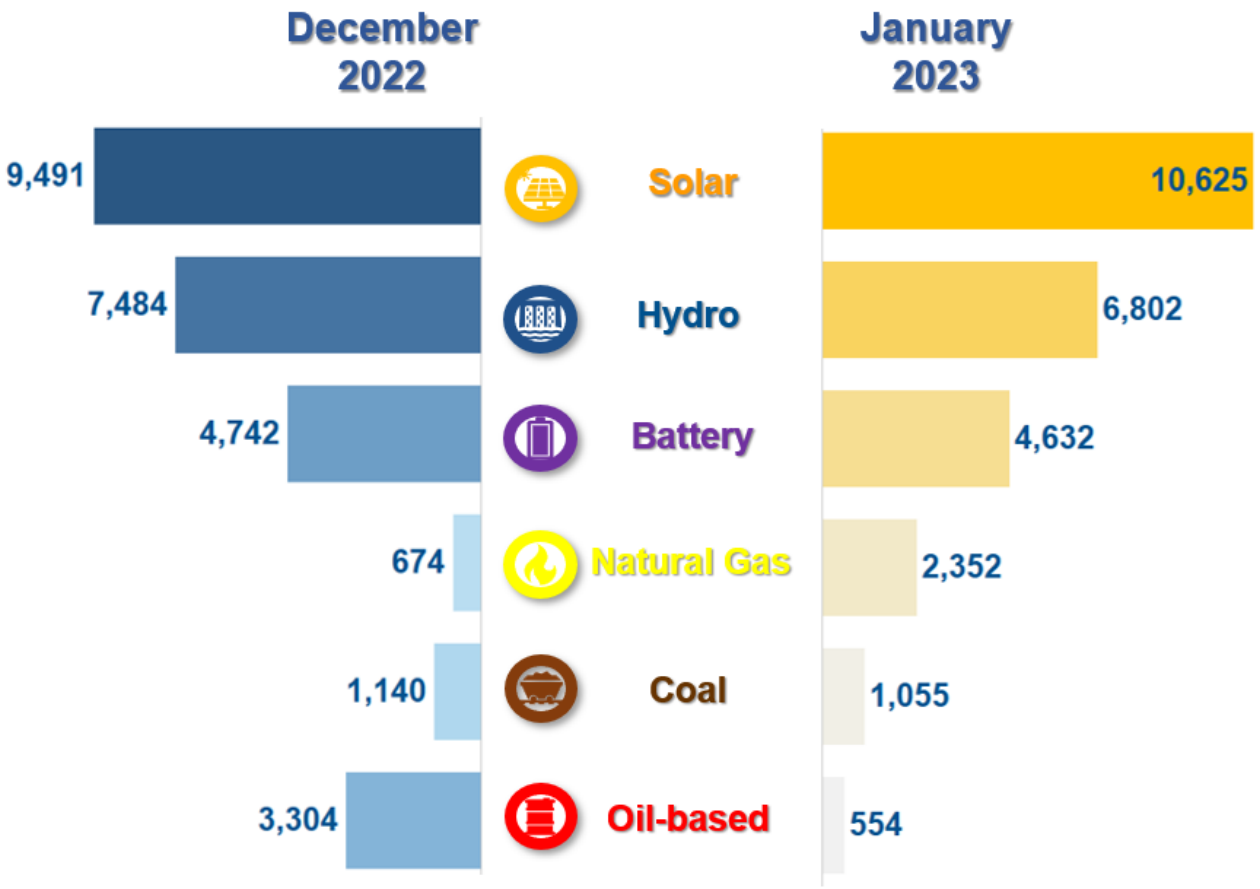


MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

Philippine Electricity Market Corporation

OCR-2023-01

IMPOSITIONS BY PLANT TYPE



Overall, over-riding constraints impositions for most of plant types decreased, with solar and natural gas plants recorded an increase, during the January 2023 billing period. The reasons for the impositions per plant types were as follows:

- With the continuing conduct of commissioning tests, ***Solar*** plants remained to be imposed with the majority of the over-riding constraints which mostly occurred during peak hours.
- Impositions attributable to ***Hydro*** plants decreased mainly caused by expiring commissioning test validity of several plants.
- Similar with the hydro plants, the expiration of commissioning test of one (1) ***battery*** energy storage facility was the reason for the decrease in the over-riding constraints for this resource type.
- Increase in the number of impositions to ***natural gas*** plant was attributable to the conduct of net dependable capacity test.
- Impositions related to ***coal*** plants were due to the continuing conduct of performance test and emission test.
- The absence of MRU impositions to ***oil-based*** plants resulted in the decrease in over-riding constraints imposition during the billing period.

MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

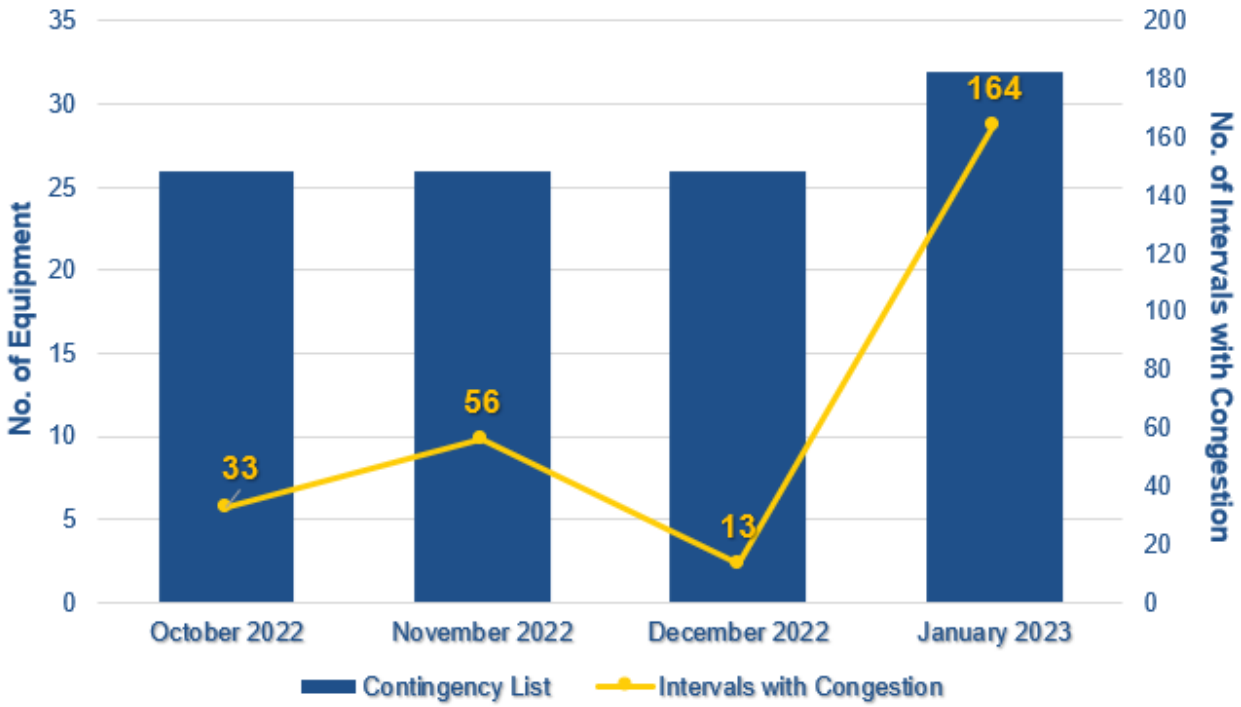
Philippine Electricity Market Corporation

OCR-2023-01

IMPOSITIONS TO SYSTEM EQUIPMENT

Similar with the previous billing period, **32 equipment** were observed to have been imposed with N-1 contingency during the January 2023 billing period which have contributed to congestions for **164 intervals**, which is **higher** compared with the previous billing period. These congestions have triggered the imposition of **Price Substitution Methodology (PSM) in 73 intervals.**

Contingency List
230kV Bauang-La Trinidad Line 1
230kV Bauang-La Trinidad Line 2
230kV Binga-La Trinidad Line 1
230kV Binga-La Trinidad Line 2
230kV Concepcion-Mexico Line 1
230kV Concepcion-Mexico Line 2
Nagsaag_EHV Transformer 1
Nagsaag_EHV Transformer 2
Kadampat_EHV_Transformer 1
Kadampat_EHV_Transformer 2
Kadampat_EHV_Transformer 3
Kadampat_EHV_Transformer 4
230kV San Manuel-Concepcion Line 1
230kV San Manuel-Concepcion Line 2
230kV Sucat-Binan Line 1
230kV Sucat-Binan Line 2
230kV Sucat-Binan Line 3
230kV Sucat-Binan Line 4
230kV Binan-Dasmarinas Line 1
230kV Binan-Dasmarinas Line 2
230kV Calamba-Binan Line 1
230kV Calamba-Binan Line 2
230kV Makban-Calamba Line 1
230kV Makban-Calamba Line 2
230kV Makban-Lumban Line 1
230kV Makban-Lumban Line 2
230kV Mexico-Hermosa Line 2
230kV Hermosa-Duhat Line 1
230kV Hermosa-Malolos Line 1
230kV Hermosa-San Jose Line 1
230kV Mexico-Hermosa Line 1



MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

Philippine Electricity Market Corporation

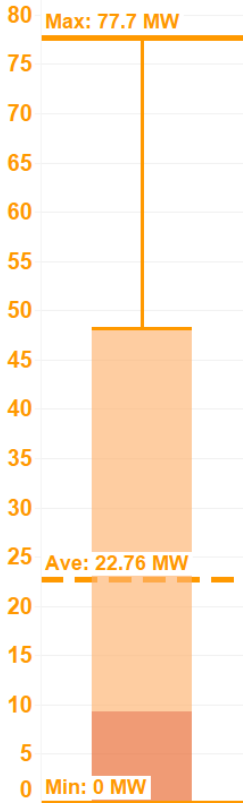
OCR-2023-01

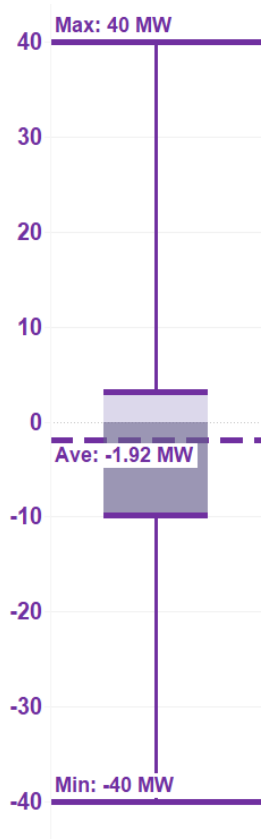
PLANTS ON COMMISSIONING TEST

10,625 Solar 53.6%

5,087 Hydro 25.7%

4,104 Battery 20.7%





There was an observed **decrease in the number of impositions of over-riding constraints** related to **commissioning tests**, logging a total of **19,816 impositions** with an average scheduled capacity of **14.67 MW**.

Majority of impositions related to commissioning tests were attributable to solar plants, followed by hydro plants and battery energy storage system facilities, with a small share coming from natural gas plants.

Based on the updates provided by the Independent Electricity Market Operator of the Philippines (IEMOP) and the System Operator as of 07 February 2023, the following were the updates on the **status of power plants under commissioning tests**:

- **2 solar plants** and completed their commissioning tests.
- **1 hydro plant** and **1 battery energy storage facility** were about to have expired Provisional Certificate of Approval to Connect (PCATC).
- **1 battery energy storage facility** and **1 solar plant** were undergoing commissioning tests.

Generally, the scheduled capacities imposed to plants undergoing commissioning tests were noted to be less than their registered capacity.

MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

Philippine Electricity Market Corporation

OCR-2023-01

ANNEX A. LIST OF PLANTS WITH OVER-RIDING CONSTRAINTS[1]

Plant/Unit Name	Plant Type	Registered Capacity (MW)[2]
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
Bauang Diesel Power Plant GS1	Oil-Based	70.0
Bauang Diesel Power Plant GS2	Oil-Based	70.0
Bauang Diesel Power Plant GS3	Oil-Based	70.0
Binga Hydroelectric Power Plant - Unit 1	Hydro	35.0
Binga Hydroelectric Power Plant - Unit 2	Hydro	35.0
Binga Hydroelectric Power Plant - Unit 3	Hydro	35.0
Binga Hydroelectric Power Plant - Unit 4	Hydro	35.0
Currimao 2 Solar Power Plant	Solar	68.7
Magapit Battery Energy Storage System	Battery	40.0
Pasuquin Solar Power Plant	Solar	92.4
Pantabangan Hydro Electric Power Plant Unit 1	Hydro	60.0
Pantabangan Hydro Electric Power Plant Unit 2	Hydro	60.0

[1] In accordance with the Market Operator Information Disclosure and Confidentiality (MO IDC) Manual Issue 7.0

[2] As of 02 March 2023

MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

Philippine Electricity Market Corporation

OCR-2023-01

Plant/Unit Name	Plant Type	Registered Capacity (MW)[2]
Raslag III Solar Power Plant	Solar	13.4
Subplant 2 Alaminos Battery Energy Storage System	Battery	20.0
Botocan Hydro Electric Power Plant	Hydro	20.8
Caliraya Hydro Electric Power Plant	Hydro	28.0
Kalayaan Hydro Electric Power Plant 1	Hydro	180.0
Kalayaan Hydro Electric Power Plant 2	Hydro	180.0
Kalayaan Hydro Electric Power Plant 3	Hydro	180.0
Kalayaan Hydro Electric Power Plant 4	Hydro	180.0
Pagbilao Coal-Fired Power Plant 1	Coal	382.0
Pagbilao Coal-Fired Power Plant 2	Coal	382.0
Pagbilao 3 Power Plant	Coal	420.0
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	264.0
San Lorenzo Combined-Cycle Gas Turbine Power Plant Unit 50	Natural Gas	265.0
San Lorenzo Combined-Cycle Gas Turbine Power Plant Unit 60	Natural Gas	265.0
VISAYAS		
Ormoc Battery Energy Storage System	Battery	40.0
Panay Diesel Power Plant 1 (Unit 2)	Oil-Based	5.0
Panay Diesel Power Plant 1 (Unit 3)	Oil-Based	5.0
Panay Diesel Power Plant 1 (Unit 5)	Oil-Based	5.0

MONTHLY REPORT ON OVER-RIDING CONSTRAINTS

Philippine Electricity Market Corporation

OCR-2023-01

Plant/Unit Name	Plant Type	Registered Capacity (MW)[2]
Panay Diesel Power Plant 3 (Unit Charlie)	Oil-Based	12.0
Panay Diesel Power Plant 3 (Unit Echo)	Oil-Based	12.0
Panay Diesel Power Plant 3 (Unit Golf)	Oil-Based	13.0
Panay Diesel Power Plant 3 (Unit Hotel)	Oil-Based	13.0
Timbaban Hydro Power Plant	Hydro	18.9