Market Surveillance Committee
Monthly Over-riding Constraints Report

26 November to 25 December 2022

March 2023

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

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IMPOSITIONS BY CATEGORY AND REGION

26,835 Total Impositions

93.4% of which are non-security limits

Luzon
63%
17,029 OC

Visayas
37%
9,806 OC

14,217 OC Impositions for November 2022

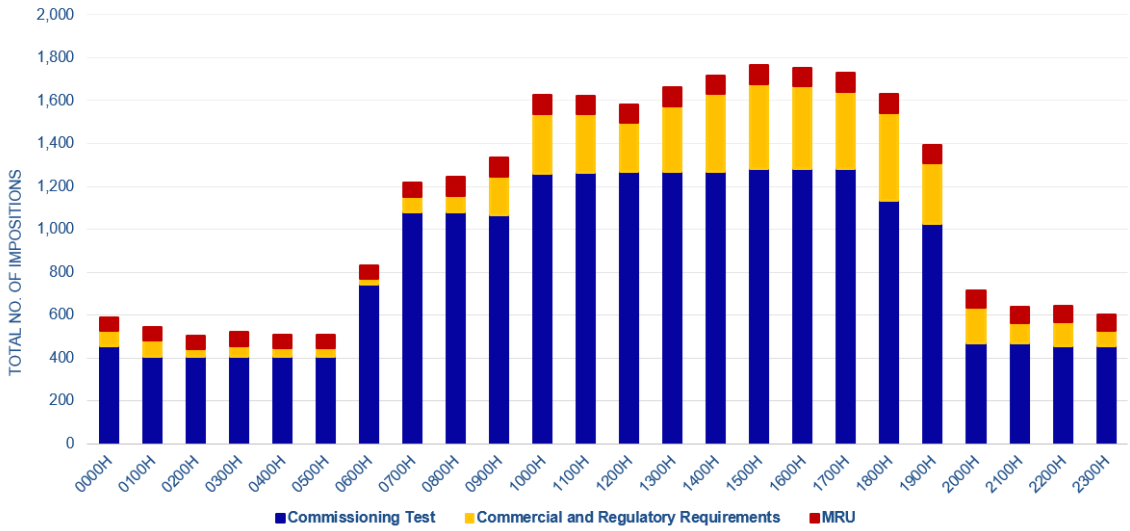
88.8% increase from previous month

An **increase** of **88.8%** in over-riding constraints (OC) impositions was observed during the December 2022 billing period due to the increase in the number of impositions related to commissioning tests and commercial and regulatory requirements involving **21 Luzon** and **26 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).

IMPOSITIONS BY HOUR



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 are imposed on solar plants, the resulting impositions were mostly noted during peak hours.

Furthermore, for the first two (2) weeks of the billing period, MRU-accounted impositions were observed throughout the day.

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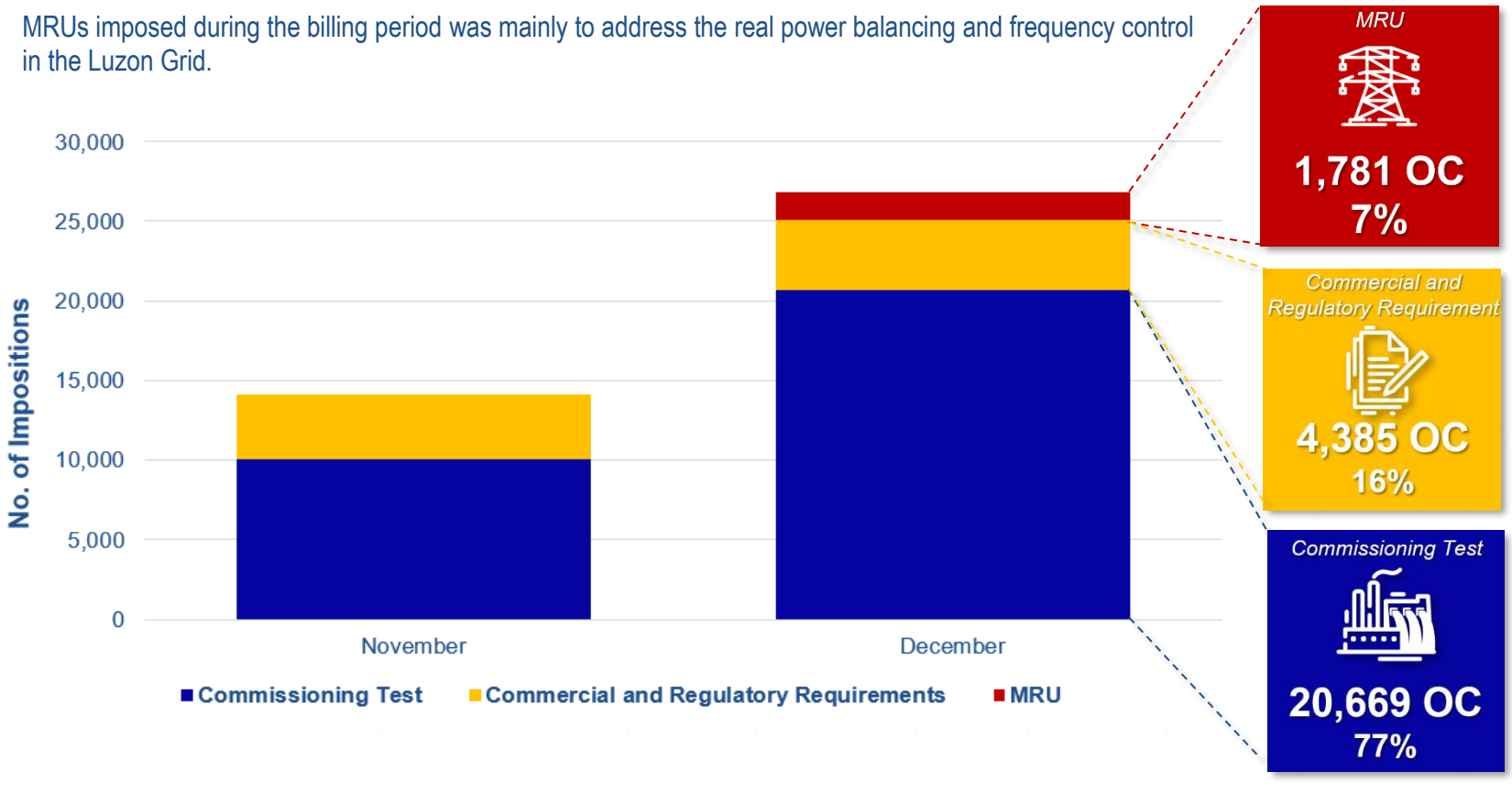
IMPOSITIONS BY INCIDENTS

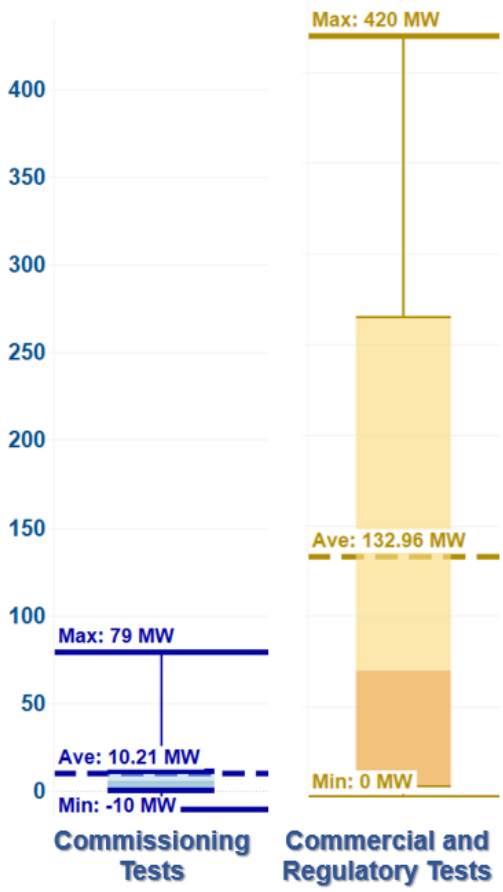
The extension of one (1) hydro plant commissioning test period and the commencement of commissioning test of two (2) battery plants in December 2022 resulted in the significant increase in the overall over-riding constraints impositions. In addition, the number of tests related to commercial and regulatory (Ancillary Service, Emission, Net Contracted Capacity, and Performance Test) likewise increased.

Commercial and regulatory requirements imposed on plants with large capacities have had a 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, which may have had an effect on the market outcomes. Meanwhile, commissioning tests were mostly undertaken by renewable energy plants with relatively lower capacities. The graph shows the scheduled capacities corresponding to the impositions.

MRUs imposed during the billing period was mainly to address the real power balancing and frequency control in the Luzon Grid.



SCHEDULED CAPACITIES (MW)



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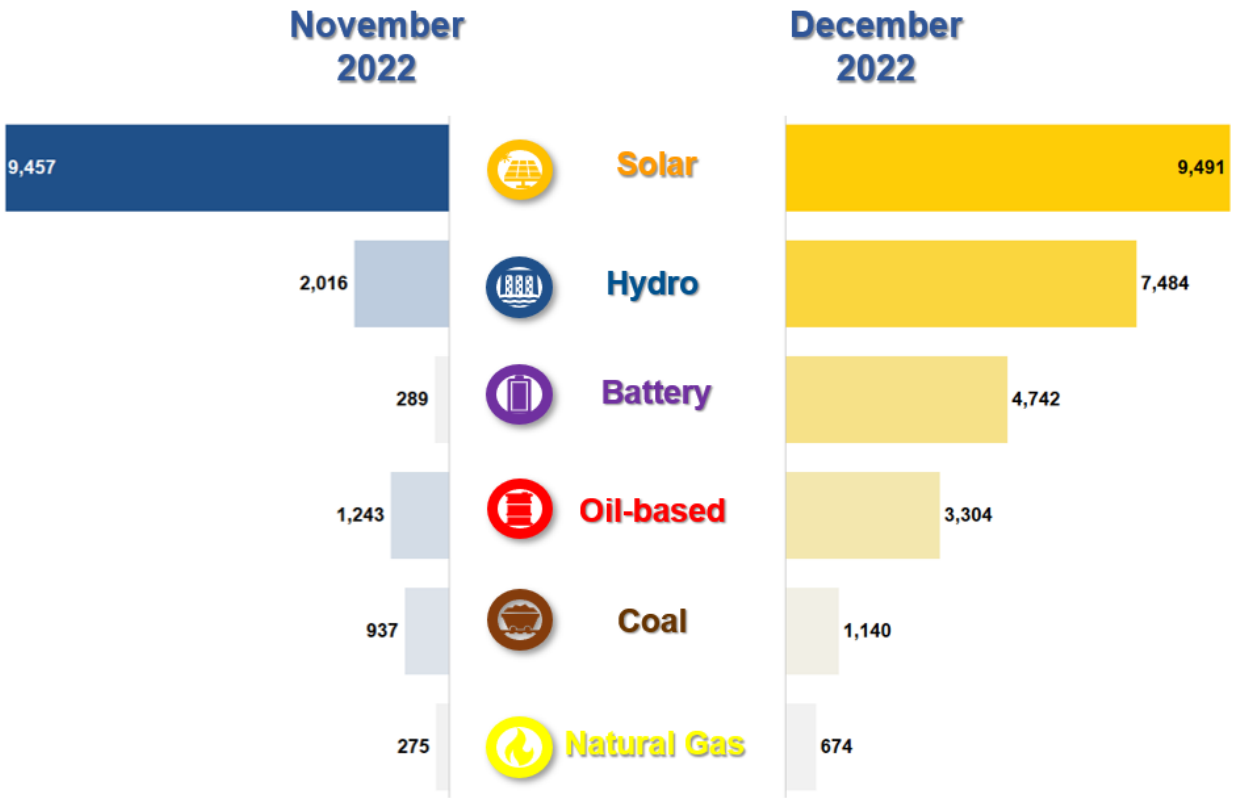
IMPOSITIONS BY PLANT TYPE



Overall, over-riding constraints impositions for all plant types increased during the December 2022 billing period. The reasons for the increase 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 occurring during peak hours.
- ***Hydro*** plants contributed to the significant increase in the overall impositions attributable to the extension of commissioning test periods which previously expired, resulting in lower impositions during the previous month.
- The start of commissioning tests of two (2) new ***battery*** plants was the reason for the increase of the over-riding constraints for this resource type.
- MRU impositions to ***oil-based*** plants were the result of addressing the real power balancing and frequency control in the Luzon Grid
- The increase in the conduct of performance test and ancillary service test by ***coal*** plants caused the increase in overall impositions for this resource type.
- Increase in the number of impositions of ***natural gas*** plant was attributable to the conduct of performance test.

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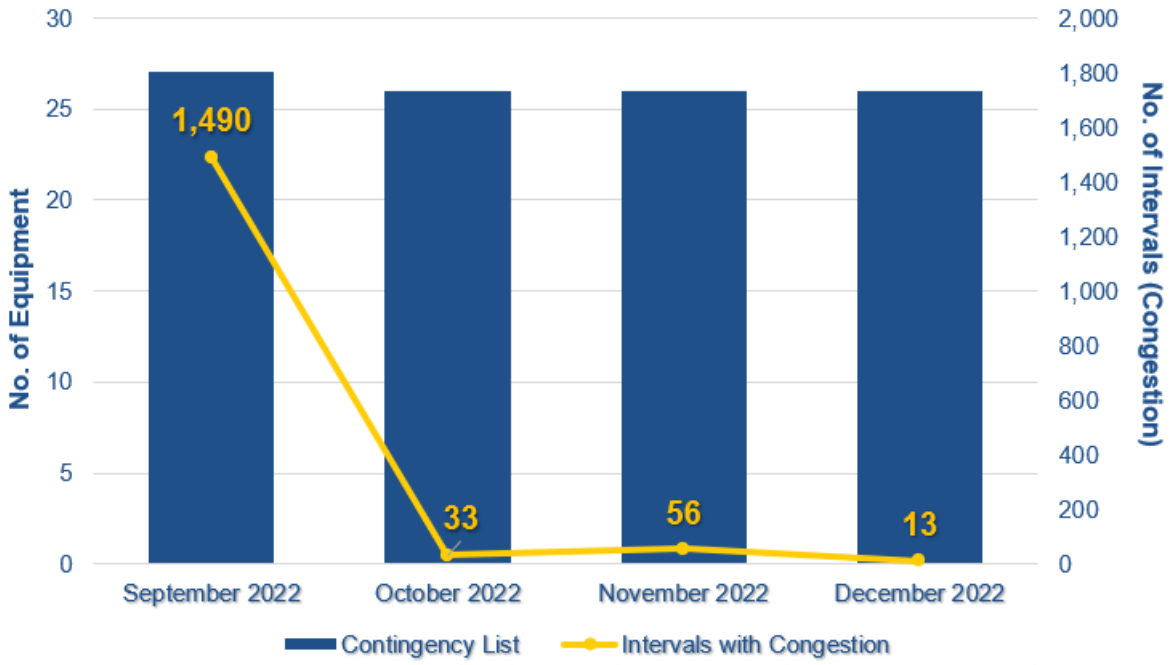
IMPOSITIONS TO SYSTEM EQUIPMENT

Same **26 equipment** were identified by the System Operator to be used for the single outage contingency (N-1) testing during the December 2022 billing period, when compared to the previous billing period. These may have contributed to congestions for **13 intervals**, a **77% decrease** from the previous month. Despite these congestions, **price substitution methodology (PSM)** was not imposed to any interval with observed congestion.

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



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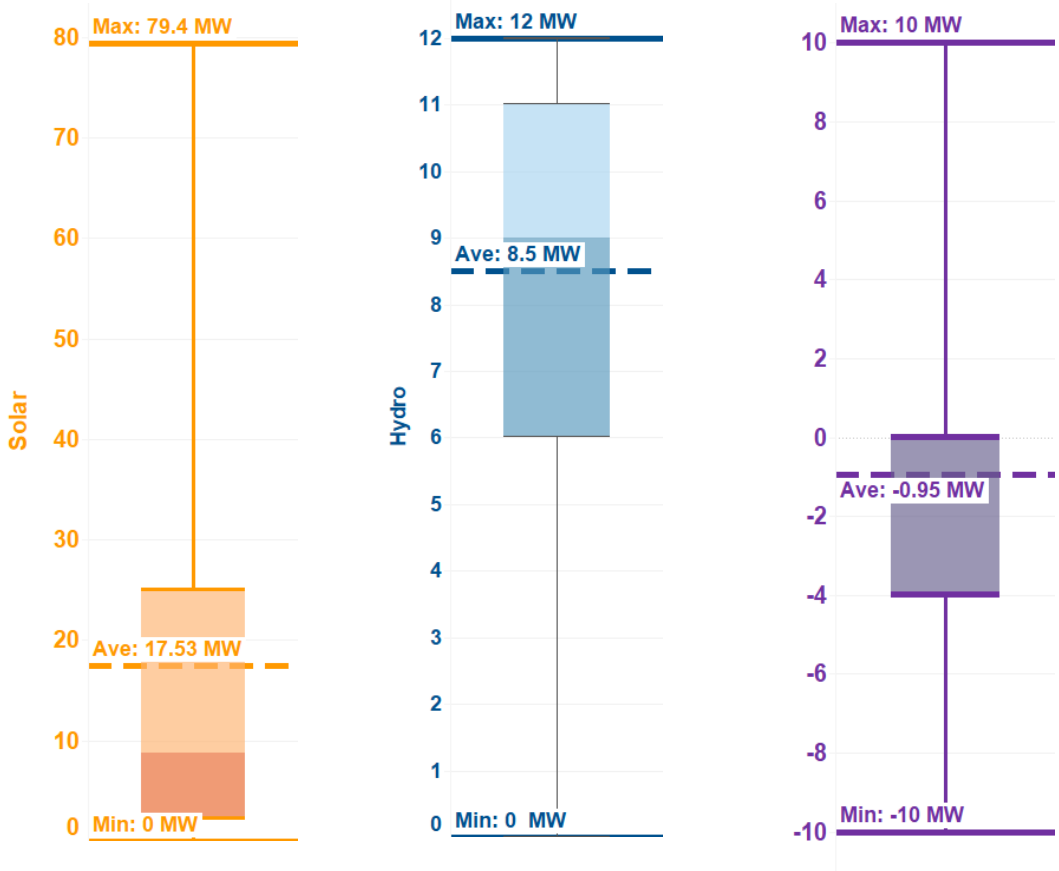
PLANTS ON COMMISSIONING TEST

8,875 Solar 42.9%

7,052 Hydro 34.1%

4,742 Battery 22.9%



There was an observed **increase in the impositions of over-riding constraints** related to **commissioning tests**, logging a total of **20,669 impositions** and with an average scheduled capacity of **10.21 MW**.

Majority of impositions related to commissioning tests were attributable to solar plants, followed by hydro and battery plants.

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

- **2 battery plants** just commenced with their commissioning tests
- **1 hydro plant** received extension to its expired Provisional Certificate of Approval to Connect (PCATC) which prohibited it from being imposed with over-riding constraints during the previous months
- **2 solar plants** were undergoing commissioning test

Generally, the MW scheduled to plants undergoing commissioning tests was noted to be less than their registered capacity.

Note: The Department of Energy (DOE) department circular no. DC2021-06-0013 (Adopting a General Framework Governing the Test and Commissioning of Generation Facilities for Ensuring Readiness to Deliver Energy to the Grid or Distribution Network) provides a transitory provision that:

- *Allows generation companies that are already on T&C, upon effectivity of the circular (especially those plants on prolonged commissioning test), to continue to conduct commissioning test for a maximum of two (2) months after the effectivity date.*

This will be in consideration in the MSC's monitoring of plants on prolonged testing commissioning test (beyond the maximum two-month period allowed also under the ERC Resolution No. 16, Series of 2014).

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

Plant/Unit Name	Plant Type	Registered Capacity (MW)[2]
LUZON		
Magapit Battery Energy Storage System	Battery	40.0
Pasuquin Solar Power Plant	Solar	96.0
Pampanga Solar Power Project Phase I	Solar	8.2
Pampanga Solar Power Project Phase II	Solar	10.5
RASLAG III Solar PV Plant	Solar	15.0
Navotas Bunker C-Fired Diesel Power Plant Power Barge 1	Oil-Based	63.8
Navotas Bunker C-Fired Diesel Power Plant Power Barge 2	Oil-Based	51.5
Navotas Bunker C-Fired Diesel Power Plant Power Barge 4	Oil-Based	52.0
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
Malaya Thermal Power Plant Unit 2	Oil-Based	130.0
Pagbilao Coal-Fired Power Plant 2	Coal	382.0
Pagbilao Coal-Fired Power Plant 3	Coal	420.0

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

[2] As of 02 March 2023

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Plant/Unit Name	Plant Type	Registered Capacity (MW)[2]
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
CPPC Bunker C-Fired Diesel Power Plant Unit 6	Oil-Based	6.5
EAUC Bunker C-Fired Power Plant Unit 2	Oil-Based	11.0
EAUC Bunker C-Fired Power Plant Unit 3	Oil-Based	11.5
Calumangan Bunker C-Fired Diesel Power Plant Unit 1	Oil-Based	4.5
Calumangan Bunker C-Fired Diesel Power Plant Unit 2	Oil-Based	4.5
Calumangan Bunker C-Fired Diesel Power Plant Unit 3	Oil-Based	4.5
Calumangan Bunker C-Fired Diesel Power Plant Unit 4	Oil-Based	6.7
Calumangan Bunker C-Fired Diesel Power Plant Unit 5	Oil-Based	6.7
Bohol Diesel Power Plant Unit 1	Oil-Based	4.0
Bohol Diesel Power Plant Unit 2	Oil-Based	4.0
Bohol Diesel Power Plant Unit 3	Oil-Based	4.2
Bohol Diesel Power Plant Unit 4	Oil-Based	4.0
Nabas Diesel Power Plant	Oil-Based	6.4
Panay Diesel Power Plant 1 (Unit 2)	Oil-Based	5.0

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Plant/Unit Name	Plant Type	Registered Capacity (MW)[2]
Panay Diesel Power Plant 1 (Unit 3)	Oil-Based	5.0
Panay Diesel Power Plant 1 (Unit 5)	Oil-Based	5.0
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
PEDC Coal-Fired Thermal Power Plant Unit 1	Coal	83.7
PEDC Coal-Fired Thermal Power Plant Unit 2	Coal	83.7
PPC 1A Diesel Power Plant	Oil-Based	31.5
PPC 1B Diesel Power Plant	Oil-Based	31.5
Timbaban Hydro Power Plant	Hydro	18.9