



Annual Retail Market Assessment Report for 2023

26 December 2022 to 25 December 2023

APRIL 2023

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

TABLE OF CONTENTS

1. RETAIL COMPETITION AND OPEN ACCESS	1
1.1. MARKET STRUCTURE	1
1.1.1. Number of Participants	1
1.1.1.1. Contestable Customers	1
1.1.1.2. Per Threshold	2
1.1.1.3. Per Location	2
1.1.1.4. Per Retail Activity	3
1.1.1.5. Average Consumption	4
1.1.1.6. Suppliers	5
1.2. MARKET SHARE	5
1.2.1. Supplier Share	5
1.2.1.1. In terms of Number of Contestable Customer and Consumption	5
1.2.1.2. Consumption Per Franchise Area Location	7
1.2.2. Market Concentration	8
1.2.2.1. Herfindahl–Hirschman Index (HHI)	8
1.2.2.2. Four-Firm Concentration Index (C4)	8
1.2.3. Supplier Structure	9
1.2.3.1. Supplier Affiliate	9
1.3. MARKET PERFORMANCE	10
1.3.1. Energy Consumption	10
1.3.1.1. Total Energy Consumption	10
1.3.1.2. Monthly Energy Consumption	10
1.3.2. Load Profile	11
1.3.2.1. Hourly Energy Consumption Profile	11
1.3.2.2. Load Factor	13
1.4. RETAIL ACTIVITY	13
1.4.1. Customer Switching Rate	13
1.4.2. Retail Rate	14
1.4.3. Estimated Savings	15
2. GREEN ENERGY OPTION PROGRAM	16
2.1. MARKET STRUCTURE	16
2.1.1. Number of Participants	16
2.1.1.1. Per Threshold	16
2.1.1.2. Per Location	17
2.1.1.3. Per Retail Activity	17

2.1.1.4. Average Consumption.....	18
2.1.1.5. Suppliers.....	18
2.2. MARKET SHARE.....	19
2.2.1. Supplier Share.....	19
2.2.1.1. Share in terms of Number of GEOP End-users and Consumption	19
2.2.1.2. Per Franchise Area Location.....	21
2.2.2. Market Concentration	22
2.2.2.1. Herfindahl–Hirschman Index (HHI).....	22
2.2.2.2. Four-Firm Concentration Index (C4).....	23
2.3. MARKET PERFORMANCE	24
2.3.1. Energy Consumption.....	24
2.3.1.1. Monthly Energy Consumption	24
2.3.2. Load Profile	25
2.3.2.1. Hourly Energy Consumption Profile	25
2.3.2.2. Load Factor.....	26
2.4. RETAIL ACTIVITY	27
2.4.1. Customer Switching Rate	27
 APPENDIX A - LIST OF REGISTERED SUPPLIERS	 29
APPENDIX B - LIST OF DISTRIBUTION UTILITIES / ECONOMIC ZONES WITH CONTESTABLE CUSTOMERS AND GEOP END-USERS	31

LIST OF TABLES

Table 1. Percentage Per Level of Maximum Energy Consumption, Jan to Dec 2023	4
Table 2. Cumulative Number of Supplier, 2019-2023.....	5
Table 4. Switching Rate, Jan to Dec 2023.....	14
Table 4. Distribution of Maximum Energy Consumption, Jan to Dec 2023	18
Table 5. Cumulative Number of Suppliers, 2022 & 2023.....	19
Table 7. Switching Rate, Jan to Dec 2023.....	28

LIST OF FIGURES

Figure 1. Cumulative Number of Eligible End-Users and CCs, 2019-2023	1
Figure 2. Cumulative Number of CCs per Threshold, 2019-2023	2
Figure 3. Cumulative Number of CCs Per Region, 2019-2023	3
Figure 4. Cumulative Number of CCs Per Industry, 2019-2023.....	4
Figure 5. Share in Number of CCs Per Major Participant Grouping, 2019-2023.....	6
Figure 6. Share in CCs' Total Served Energy Consumption Per Major Participant Grouping, 2019-2023	6
Figure 7. Share in CCs' Energy Consumption by Franchise Area, 2019-2023	7

Figure 8. Share in CCs' Served Energy Consumption by Supplier within MERALCO Franchise Area, 2019-2023.....	7
Figure 9. HHI Based on No. of CCs and Consumption, 2019-2023.....	8
Figure 10. Four-Firm Index Based on No. of CCs and Consumption, 2019-2023.....	9
Figure 11. Summary of the number of Suppliers with Affiliate Generation Companies, Suppliers and Distribution Utilities	9
Figure 13. Total Energy Consumption (in GWh), 2019-2023.....	10
Figure 14. Total Energy Consumption by Industry Type (in GWh), 2019-2023.....	11
Figure 15. Hourly Average Energy Consumption (in MWh), Industrial, Jan to Dec 2023	12
Figure 16. Hourly Average Energy Consumption (in MWh), Commercial, Jan to Dec 2023.	12
Figure 17. Load Factor, 2019-2023.....	13
Figure 19. Switching Rate, Jan to Dec 2023	14
Figure 20. DU Average Generation Rate vs Retail Weighted Average Rate, Jan to Dec 2023	15
Figure 21. CC's Cumulative Estimated Savings, Jan to Dec 2023	15
Figure 22. Cumulative Number of GEOP End-users per Threshold, 2022 & 2023.....	16
Figure 23. Cumulative Number of GEOP End-users Per Region, 2022 & 2023.....	17
Figure 24. Cumulative Number GEOP End-users Per Industry, 2022 & 2023	18
Figure 25. Share in Number of GEOP End-Users Per Major Participant Grouping, 2022 & 2023	20
Figure 26. Share in Total Served Energy Consumption of GEOP End-users Per Major Participant Grouping, 2022 & 2023.....	20
Figure 27. GEOP End-Users Energy Consumption by Franchise Area, 2022 & 2023	21
Figure 28. GEOP End-Users Served Energy Consumption by Supplier within MERALCO Franchise Area, 2022 & 2023	22
Figure 29. HHI Values, 2022 & 2023.....	23
Figure 30. Four-Firm Index, 2022 & 2023.....	24
Figure 31. Total Energy Consumption Industry Type (in GWh), Jan to Dec 2023.....	25
Figure 32. Hourly Average Energy Consumption (in MWh), Industrial, Jan to Dec 2023	25
Figure 33. Hourly Average Energy Consumption (in MWh), Commercial, Jan to Dec 2023.	26
Figure 34. Load Factor, 2022 & 2023.....	27
Figure 35. Switching Rate, Jan to Dec 2023	27

General Note:

- Number of Contestable Customers (CC) and Green Energy Option Program (GEOP) End-Users – Based on Cumulative Count at the End of any given Year
- CCs and GEOP End-Users Consumption – Based on Total Consumptions for the whole Year

1. RETAIL COMPETITION AND OPEN ACCESS

This portion provides the assessment on the implementation of the Retail Competition and Open Access (RCOA) for the year 2023 (26 December 2022 to 25 December 2023), based on the monitoring indices set forth in the Catalogue of Retail Market Monitoring Data and Indices (CRMMDI) Issue 1.

1.1. MARKET STRUCTURE

The market structure indices were used to assess the number of participants, market share, and level of market concentration.

1.1.1. Number of Participants

1.1.1.1. Contestable Customers

For the year 2023, there were seventy-eight (78) recorded initial switches¹ and nineteen (19) cessations yielding to an additional fifty-nine (59) registered Contestable Customers (CCs) that participated in the market, demonstrating continuous increase on the figures of the previous year as shown in **Figure 1**. A total of 1,991 Contestable Customers or about 61% of the entire population of eligible end-users² by the end of year 2023 have registered in the Retail Market. Despite the continuous rise in the total number of registered Contestable Customers in the market, there has been a slight decrease in the overall share of eligible CCs caused by the increase number of end-users who may already participate in the RCOA but still opted to remain under the tariff services.

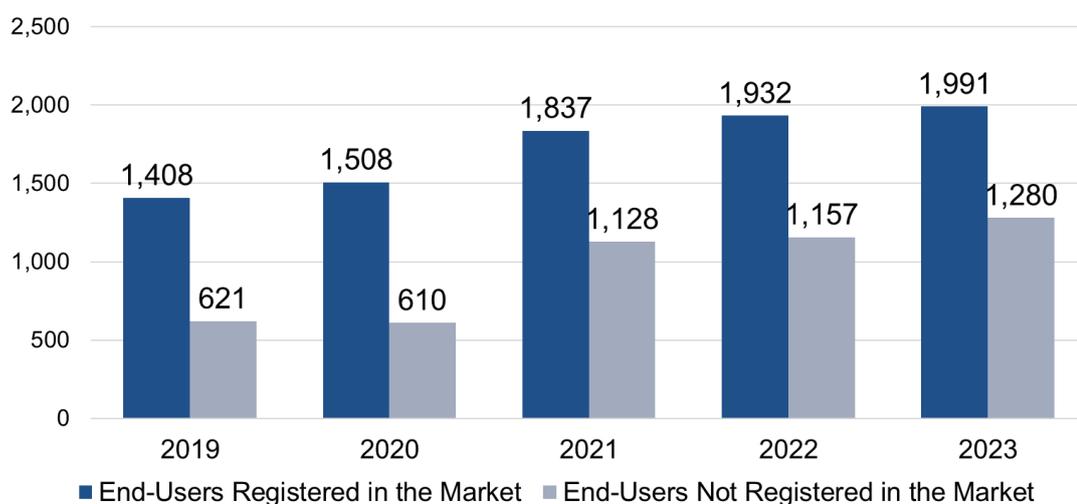


Figure 1. Cumulative Number of Eligible End-Users and CCs, 2019-2023

¹ Commercial transfer of Contestable Customer from the Distribution Utility as its supplier under regulated service to a Supplier.

² End-user that has met the eligibility threshold, as indicated by a single revenue meter and who has a choice to switch to the Retail Electricity Market.

1.1.1.2. Per Threshold

This section provides the annual breakdown of CCs based on contestability thresholds.

Among the three thresholds, the 750-999kW range had the smallest share in the total increase for 2023, accounting for approximately 5%. Additionally, there was a notable slowdown in registration growth in the 500-749kW threshold. Furthermore, **Figure 2** illustrates a sustained growth in all contestability thresholds.

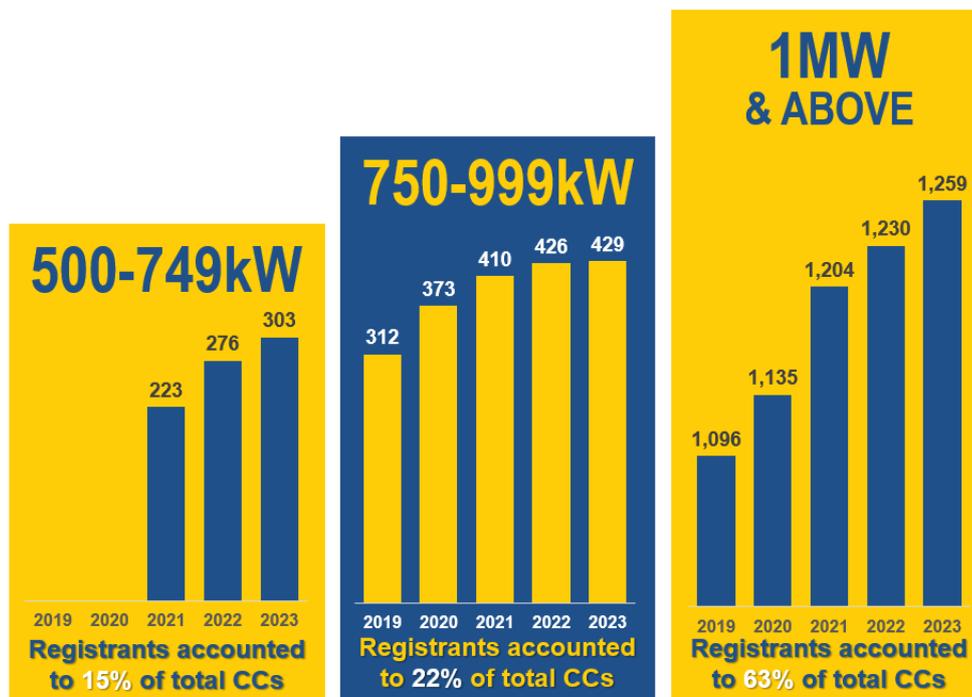


Figure 2. Cumulative Number of CCs per Threshold, 2019-2023

1.1.1.3. Per Location

In terms of geographical distribution, 87% or 1,742 CCs were situated in Luzon, with the remaining 13% or 249 located in Visayas, as depicted in **Figure 3**. Although there is a slight variation in the percentage share due to the observed decrease in Luzon, primarily caused by the cessation of CCs in the region, the concentration remains predominantly in Luzon.



LUZON	
Period	No. of CCs
2019	1,264
2020	1,349
2021	1,614
2022	1,699
2023	1,742

VISAYAS	
Period	No. of CCs
2019	144
2020	159
2021	223
2022	233
2023	249

Figure 3. Cumulative Number of CCs Per Region, 2019-2023

Note: RCOA is only operational in the Luzon and Visayas grids. Commencement of retail market in the Mindanao will be determined by the Department of Energy (DOE) and Energy Regulatory Commission (ERC).

1.1.1.4. Per Retail Activity³

In terms of industry category, for the preceding years, there was a consistent increase in the number of participation from commercial and industrial CCs resulting in a steady percentage share at around 53% of those engaged in commercial activities, while the remaining 47% were engaged in industrial activities. Moreover, the percentage share remained unchanged when compared to previous years.

³ Retail activity is based on the available information provided under the specific business type, i.e. manufacturing, real estate, etc., in the IEMOP-Registration Data. If information is unavailable in the Registration Data, retail activity of the participant will be tagged based on the business description available online.

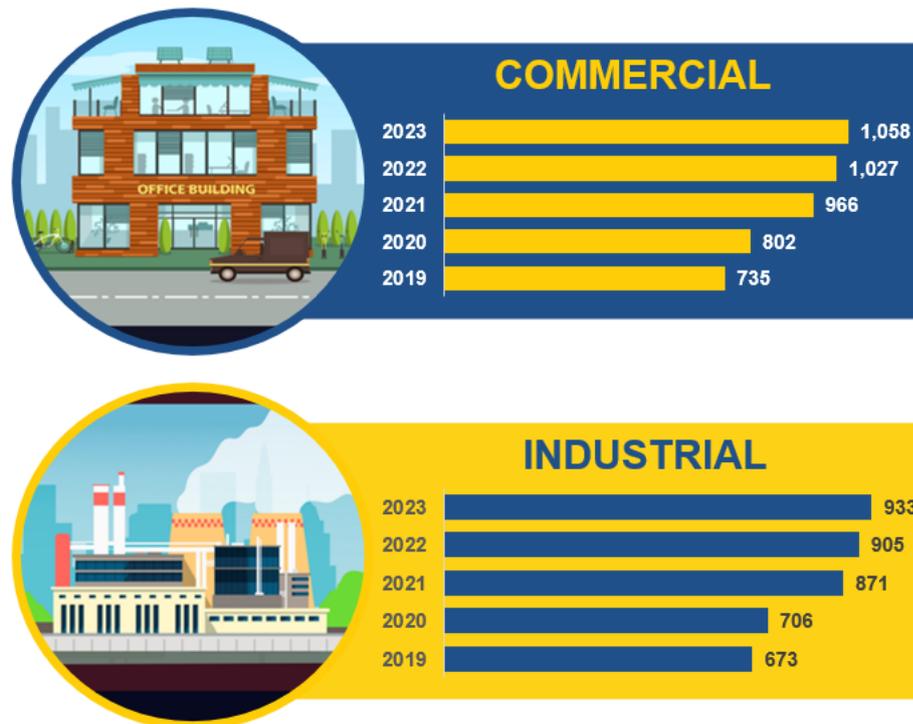


Figure 4. Cumulative Number of CCs Per Industry, 2019-2023

1.1.1.5. Average Consumption

With respect to the energy consumption for CCs, **Table 1** shows month-on-month breakdown on the level of consumption based on the maximum metered quantity (MQ) for year 2023. About 56% of the registered CCs had maximum energy consumption of 1MWh and above. This is followed by customers that are in the 500-749kWh threshold taking about 21% of the total population, while 17% are in the 750kWh-999kWh level. Moreover, for 2023 an average of 7% of the Contestable Customer registered to have maximum energy consumption of 499kW and below.

In summary, the table shows CCs with 1MW and above threshold still dominates in terms of their month-on-month registered maximum demand.

Table 1. Percentage Per Level of Maximum Energy Consumption, Jan to Dec 2023

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
499kWh below	8%	8%	7%	6%	6%	6%	6%	7%	7%	6%	7%	7%
500-749kWh	24%	23%	22%	21%	19%	19%	20%	20%	19%	20%	20%	20%
750-999kWh	15%	16%	16%	17%	17%	18%	17%	17%	18%	18%	17%	17%
1MWh and above	53%	54%	55%	57%	58%	57%	57%	57%	56%	56%	56%	55%

1.1.1.6. Suppliers

Table 2 shows the cumulative number of Suppliers with License from Energy Regulatory Commission (ERC) vis-à-vis registered Suppliers per category vis-à-vis the number of active Suppliers or those that are currently serving a registered Contestable Customer. Majority of the registered Retail Electricity Suppliers (RES) were actively participating in the market and serving registered CCs.

Table 2. Cumulative Number of Supplier, 2019-2023

	2019	2020	2021	2022	2023		
	Registered					Licensed/ Authorized	With Retail Supply Contract (RSC)
Retail Electricity Supplier (RES)	31	33	37	38	40	47	33
Local Retail Electricity Supplier (LRES)	14	14	15	15	15	29	3
Supplier of Last Resort (SoLR)	24	25	25	25	26	47	0

Note: The complete list of all registered Suppliers per category is provided in *Annex A. List of Suppliers Per Category, as of 25 December 2023.*

For 2023, the newly Registered Retail Electricity Supplier and Supplier of Last Resort, are as follows:

- RES
 - Jin Navitas Electric Corp. (JNECRES)
 - ACX3 Capital Holdings, Inc. (ACX3)
- SoLR
 - Iloilo I Electric Cooperative, Inc. (ILECO I)

1.2. MARKET SHARE

1.2.1. Supplier Share

1.2.1.1. In terms of Number of Contestable Customer and Consumption

Figure 5 shows the year-on-year comparison of Suppliers share per major participant grouping⁴ in terms of the number of CCs registered in the market as of the December billing period for each year.

On an annual review, it is evident that in spite of a consistent rise in participation in the market, the share of the MERALCO group experienced a decrease of approximately 6%. Despite this reduction, MERALCO remained the leading group with the highest share in terms of the number of CCs engaged with its services.

Moreover, the Aboitiz group and the remaining suppliers with non-grouped Suppliers,

⁴ Based on ERC's Competitive Retail Electricity Market (CREM) Report.

collectively under the “Others” group, increased their combined share by 6%. While the remaining groups, namely, Ayala, San Miguel, and EDC generally retained their shares from the previous year.

The change in market share was primarily influenced by CCs switching to another supplier.

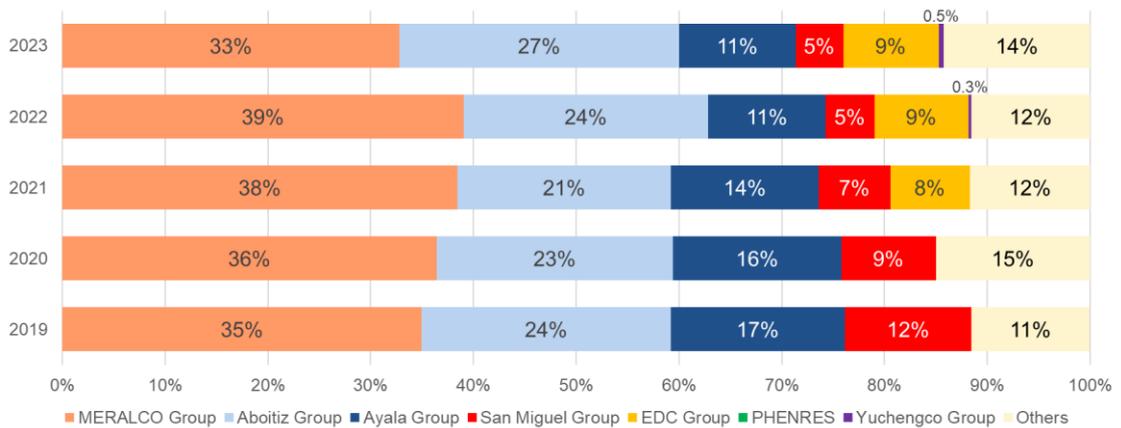


Figure 5. Share in Number of CCs Per Major Participant Grouping, 2019-2023

With regards to the market share based on retail-served energy consumption, **Figure 6** shows that for 2023, the Aboitiz group clinched the largest market share, at 31%, surpassing the MERALCO group which was the top supplier with most energy consumption served for the past four (4) years. This indicates the disparity in consumption scale present between the Suppliers’ clienteles.

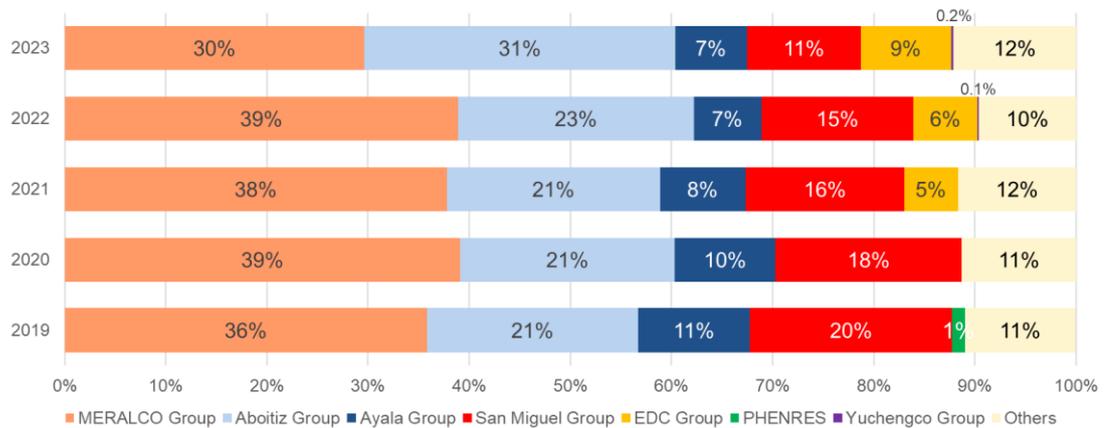


Figure 6. Share in CCs’ Total Served Energy Consumption Per Major Participant Grouping, 2019-2023

Moreover, it is noteworthy to observe the change in market share of the San Miguel and EDC groups for the year 2023. Despite San Miguel maintaining a consistent market share in terms of the number of CCs served, a decline in market share was observed on the energy consumption which can be attributed to the exit of major customers transferring to other suppliers. Conversely, the EDC group experienced the opposite trend.

Further, the increase in the "Others" group was primarily driven by the growth in the number of customers participating in the market.

1.2.1.2. Consumption Per Franchise Area Location

Geographically, registered CCs were dispersed throughout the various economic zones and Distribution Utility (DU) franchise areas indicated in *Appendix B: List of Distribution Utility Franchise Areas and Economic Zones*.

As shown in **Figure 7**, about 70.8% of the registered CCs' consumption were located in MERALCO's franchise area, 8.2% were directly-connected to the transmission grid, 5.2% were within the VECO franchise, while the remaining 15.8% were scattered throughout the other franchise areas and economic zones.

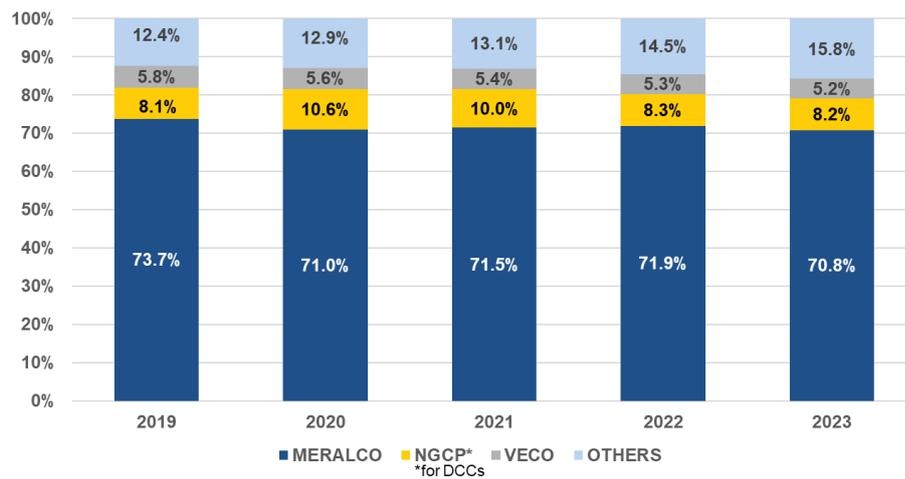


Figure 7. Share in CCs' Energy Consumption by Franchise Area, 2019-2023

Moreover, it should be highlighted that not every CC in the MERALCO franchise area was served by the MERALCO Group. As **Figure 8** illustrates, some are subscribed to other Suppliers to meet their energy needs and only 36% was supplied by the MERALCO group.

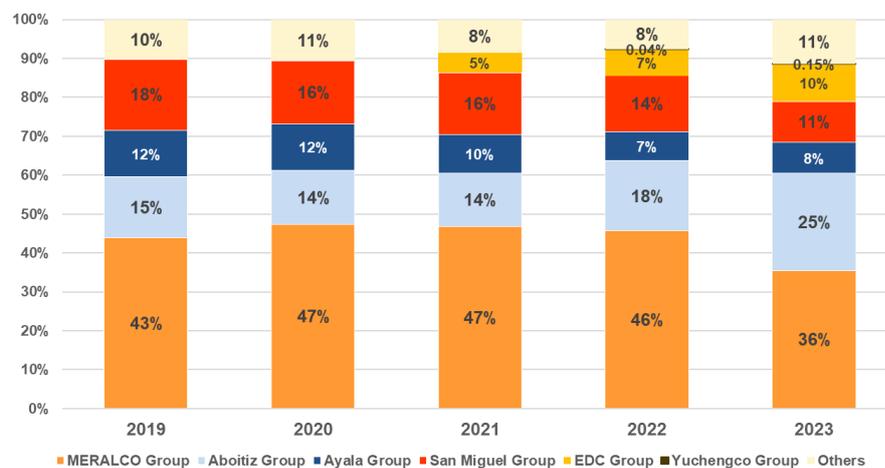


Figure 8. Share in CCs' Served Energy Consumption by Supplier within MERALCO Franchise Area, 2019-2023

1.2.2. Market Concentration

1.2.2.1. Herfindahl–Hirschman Index (HHI)

This section discusses the market concentration by major participant grouping of the Suppliers, as determined by the ERC, based on the contracted number of CCs and energy consumption. **Figure 9** shows the level of market concentration using the HHI⁵ based on the shares determined in Section 1.2.1.1.

Although there was a notable decline in HHI values for both per major participant grouping and per supplier basis, the market remained concentrated. The decline in the HHI values marked an improvement in the level of concentration and generally indicates better competition in the market.

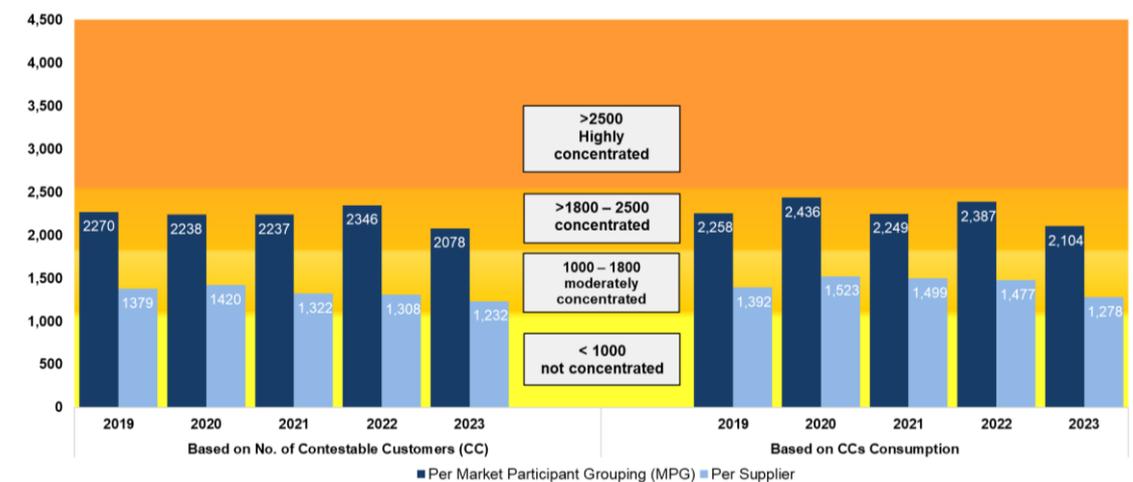


Figure 9. HHI Based on No. of CCs and Consumption, 2019-2023

1.2.2.2. Four-Firm Concentration Index (C4)⁶

The four-firm index or C4 was based both on the number of served CCs and their consumptions on a per major participant grouping. **Figure 10** shows that C4 values were still high at about 81% of the total share.

Moreover, on a per supplier basis, the C4 index value remained to be high at more than 50% share from top four (4) suppliers only. This means that the market remains to be and classified as an oligopoly.

⁵ HHI measures the degree of market concentration. Defined as the sum of the square of the Suppliers' market shares, the HHI threshold are as follows:

- HHI < 1000 - not concentrated
- Greater than 1000 up to 1800 - moderately concentrated
- Greater than 1800 up to 2500 - concentrated
- Greater than 2500 - highly concentrated

⁶ C4 measures the cumulative market share of the four largest firms in the market. Concentration levels are as follows: High: 80% to 100%; Medium: 50% to 80%; and Low: 0% to 50%.

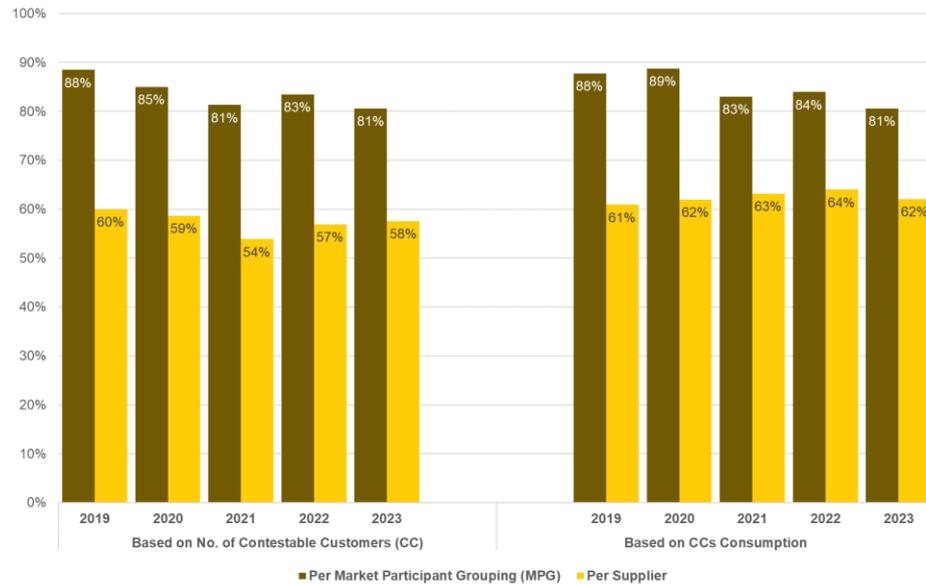


Figure 10. Four-Firm Index Based on No. of CCs and Consumption, 2019-2023

1.2.3. Supplier Structure

1.2.3.1. Supplier Affiliate

Figure 11 shows the degree of integration among the Suppliers, Generation Companies, and Distribution Utilities as of 31 December 2023⁷. The Supplier structure shows that most of the RES are affiliated with Generation Companies. Additionally, some Suppliers had affiliations with other Suppliers, DUs, or both.

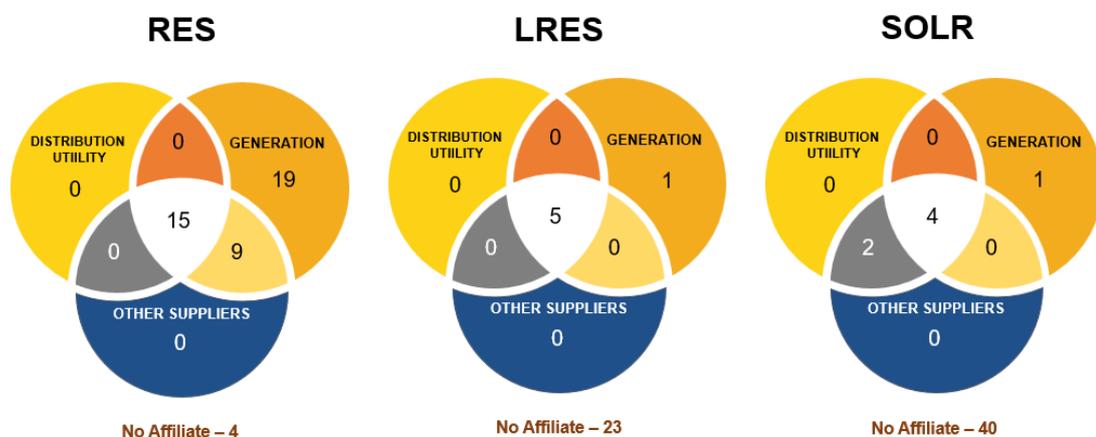


Figure 11. Summary of the number of Suppliers with Affiliate Generation Companies, Suppliers and Distribution Utilities⁸

⁷ Based on latest available ERC data.

⁸ Note that one Supplier may have multiple affiliate Generation Companies, Suppliers, and/or Distribution Utilities

Not to be overlooked is the fact that two (2) of the four (4) independent RESEs have active contracts with CCs. Notably, only three (3) RESEs are registered in the market, suggesting that these unaffiliated entities, in spite of their lack of affiliation with other electricity players, have been successful in securing contracts with customers who have the freedom to choose their Supplier. Moreover, for Local RES, only (1) out of the twenty-three (23) Suppliers without affiliation has an active contract with Contestable Customer.

1.3. MARKET PERFORMANCE

1.3.1. Energy Consumption

1.3.1.1. Total Energy Consumption

Figure 13 shows the total energy consumption on a year-to-year basis for all End-users, including the Green Energy Option Program (GEOP) End-Users and registered CCs. The demand for electricity and the increase in the number of participants in the retail market are the two factors that affect these statistics.

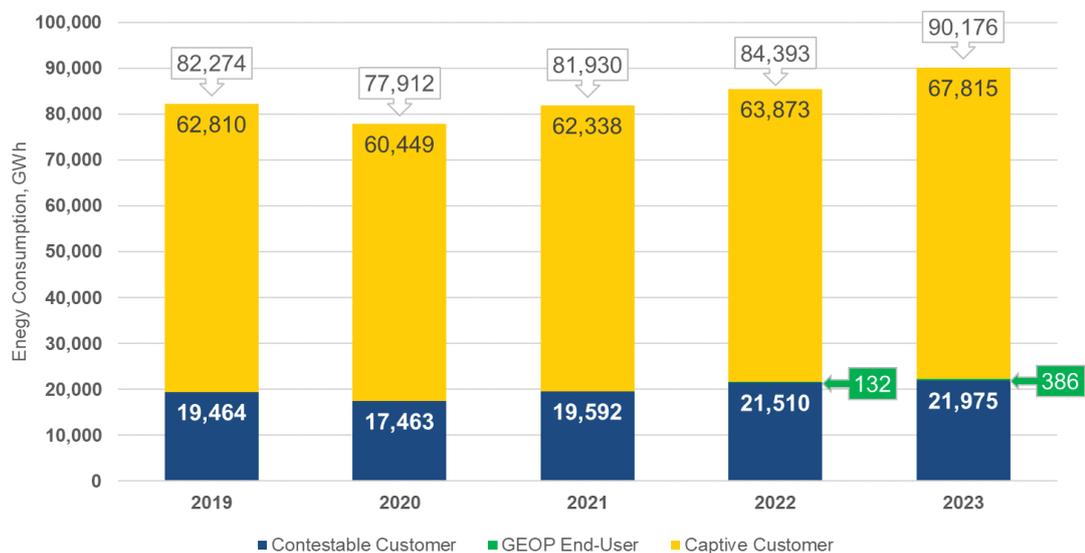


Figure 12. Total Energy Consumption (in GWh), 2019-2023

On a year-on-year basis, there is a noticeable upward trend in consumption across all customer groups due to the natural growth in demand. A 3% increase in total consumption was observed in 2023 as compared to the previous year. Meanwhile, a 2% increase in consumption from the CC and 6% increase from the captive customer were noted in comparison to the previous year. On the other hand, in the second year of implementation of the GEOP, a significant increase was noted at 192% of total consumption.

1.3.1.2. Monthly Energy Consumption

Figure 14 illustrates the year-on-year consumption of CCs across industries. Despite

an upward trend in total consumption since 2020 (during the pandemic) and an increase in the number of participants, there has been a slight setback or deceleration in the industrial sector compared to the previous year. On the other hand, the recorded consumption in the commercial sector continues to show an upward trend.

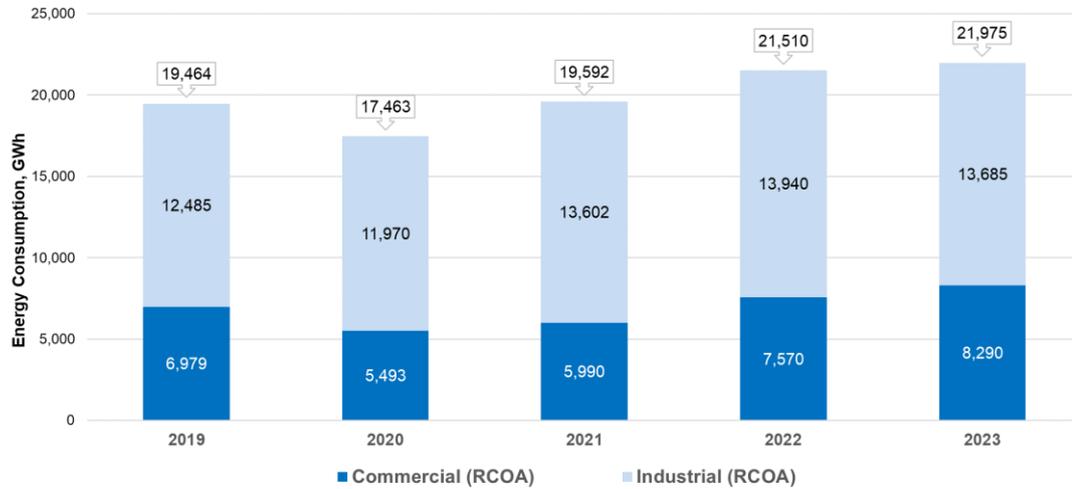


Figure 13. Total Energy Consumption by Industry Type (in GWh), 2019-2023

1.3.2. Load Profile

1.3.2.1. Hourly Energy Consumption Profile

Figures 15 and 16 show the hourly average consumption of registered industrial and commercial CCs, respectively, for year 2023. The consumption profile demonstrates how electricity consumption of CCs varied over the course of a 24-hour period.

As depicted in Figure 15, the electricity consumption patterns of industrial CCs revealed no significant fluctuations between peak and off-peak periods. It consistently exhibited troughs during specific intervals at 0600h, 1300h, and 1900h for each series. The data indicates a high likelihood of three-shift operations and/or break periods among these industrial customers.

In connection with the analysis presented in the earlier sections, it is evident that the load profiles of industrial consumers notably illustrate a variation in their average energy consumption with the October billing period exhibiting the highest consumption while the January billing period registering with the lowest average consumption for the year 2023. It should be noted that varying temperatures and observance of the holiday seasons contribute to significant disparity in average demand per observed period.

Moreover, it is important to highlight that the consumption patterns of industrial customers present a promising opportunity to strategically shift their loads to off-peak hours. By capitalizing on periods when prices in the Wholesale Electricity Spot Market (WESM) are notably lower, this strategic load-shifting can stabilize their load factors. Such stabilization could influence their price negotiations, resulting in cost savings for

industrial consumers during periods of more favorable pricing conditions.

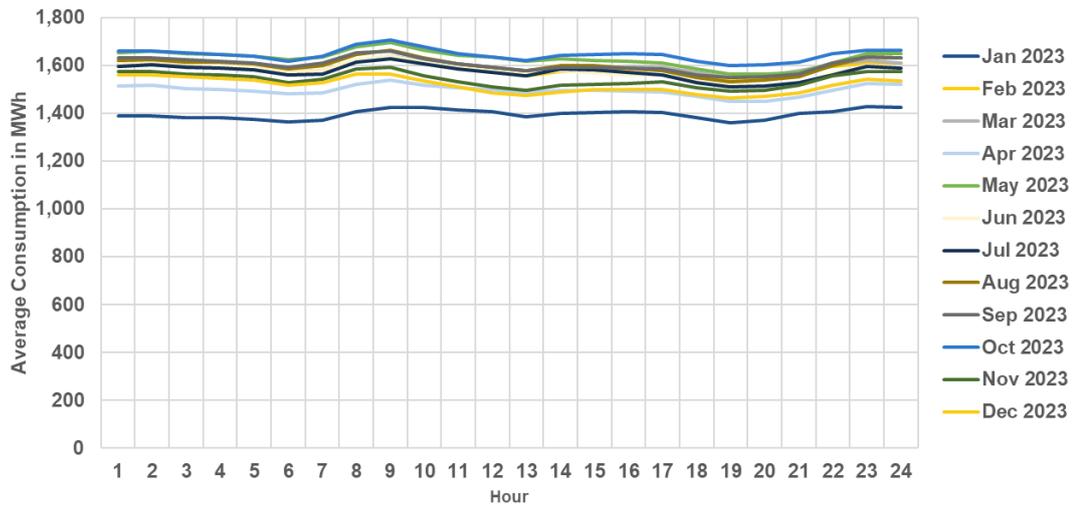


Figure 14. Hourly Average Energy Consumption (in MWh), Industrial, Jan to Dec 2023

Figure 16 shows notable differences in consumption patterns between peak and off-peak periods among registered commercial CCs. For these customers, the hours between 1000h to 2000h were when peak consumption was observed.

Similar to the industrial businesses, the month of October had the highest consumption while January had the lowest consumption for year 2023. Moreover, it is also evident that there was a significant increase in consumption beginning from the May billing period. Furthermore, during the billing period of December, which is typically associated with festivities, there was an observed increase in consumption, particularly evident from 2000h onwards due to extended operations of commercial establishments.

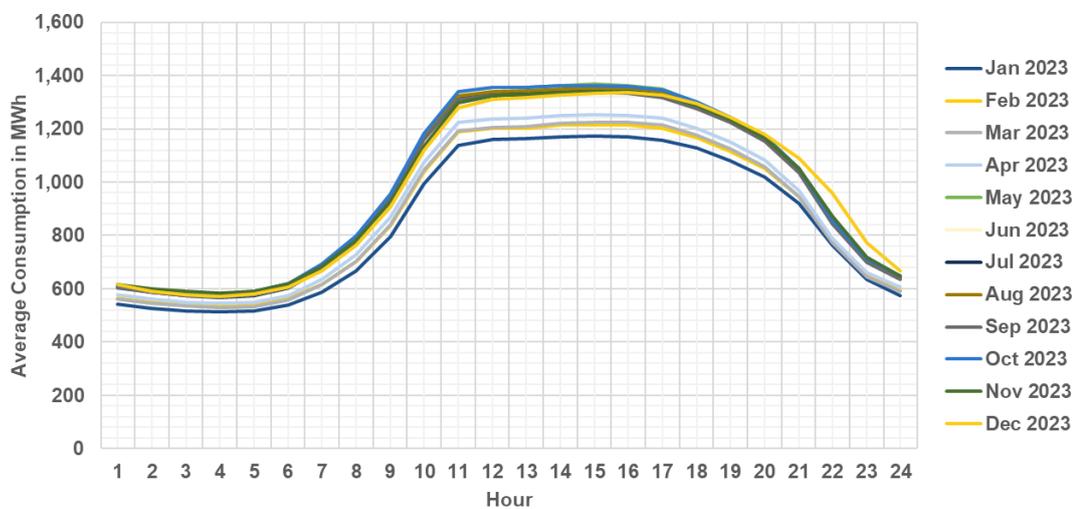


Figure 15. Hourly Average Energy Consumption (in MWh), Commercial, Jan to Dec 2023

1.3.2.2. Load Factor

Figure 17 shows the monthly load factor⁹ of registered CCs in comparison with the previous years, which was calculated based on the actual electricity consumption (total consumption over the maximum consumption and the total number of hours for the billing period). The load factors of registered CCs ranged from 76% to 82% for year 2023. Significantly, the presence of holidays during the billing periods predominantly contributes to low load factors, falling below 80%, with the lowest observed during the month of April, coinciding with the long holidays in observances of the Holy Week.

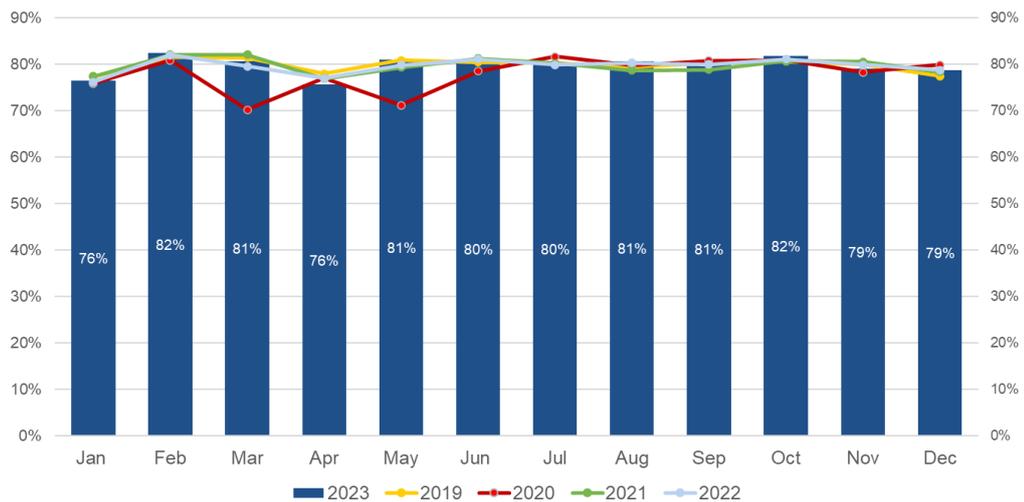


Figure 16. Load Factor, 2019-2023

1.4. RETAIL ACTIVITY

1.4.1. Customer Switching Rate

Figure 19 provides the 2023 historical switching rate among registered CCs. Based on the data, there were three hundred thirty-five (335) instances of customer switching from one Supplier to another. About 30% of the regular switches for the year 2023 billing period were between Supplier affiliates and two hundred forty-one (241) were due to the expiration and non-renewal of contracts between parties. However, the remaining ninety-four (94) observed switches stemmed from early termination of contracts, possibly influenced by factors like receiving a more competitive offer or the need for a more specific resource supply to meet the demand. Notably, the January and March billing periods recorded the highest switching rate which historically recorded the ending of contract periods.

⁹ Based on Metered Quantity (MQ)


Figure 17. Switching Rate, Jan to Dec 2023

Table 4 below provides a detailed historical switching information among registered CCs to other suppliers per category and per region.

Table 3. Switching Rate, Jan to Dec 2023

Particulars	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023
Switching Rate (Luzon)	2.06%	1.70%	3.46%	0.94%	0.58%	0.76%	1.52%	0.93%	2.08%	0.64%	0.58%	0.46%
Total No. of CCs	1,701	1,702	1,707	1,709	1,716	1,714	1,714	1,717	1,727	1,731	1,736	1,742
Total No. of CCs that Switched	35	29	59	16	10	13	26	16	36	11	10	8
LRES to RES	5	5	29	4	2	1	5	2	10	3	2	5
RES to LRES	1	-	-	-	-	-	2	-	-	-	-	-
RES to RES	29	24	30	12	8	11	18	12	26	8	8	3
SOLR to RES	-	-	-	-	-	-	-	1	-	-	-	-
RES to SOLR	-	-	-	-	-	1	-	-	-	-	-	-
Switching Rate (Visayas)	11.06%	0.85%	1.27%	0.43%	2.97%	4.24%	1.69%	1.69%	0.84%	2.04%	0.00%	0.80%
Total No. of CCs	235	235	236	235	236	236	236	236	238	245	248	249
Total No. of CCs that Switched	26	2	3	1	7	10	4	4	2	5	-	2
LRES to RES	-	-	-	-	-	-	-	-	-	-	-	-
RES to RES	26	2	3	1	7	10	4	4	2	5	0	2
Switching Rate (Luzon-Visayas)	3.15%	1.60%	3.19%	0.87%	0.87%	1.18%	1.54%	1.02%	1.93%	0.81%	0.50%	0.50%
Total No. of CCs	1,936	1,937	1,943	1,944	1,952	1,950	1,950	1,953	1,965	1,976	1,984	1,991
Total No. of CCs that Switched	61	31	62	17	17	23	30	20	38	16	10	10

1.4.2. Retail Rate

Figure 20 shows that DU generation rates experienced a rise during the year 2023, making the Weighted-Average Retail Generation Rates¹⁰ lower by around 23% on average when compared to DU¹¹ Average Generation Rates. This rate reduction was experienced by the participants engaged with a Supplier in the RCOA.

¹⁰ Based on ERC's Competitive Retail Electricity Market (CREM) report

¹¹ MERALCO, VECO, BATELEC II

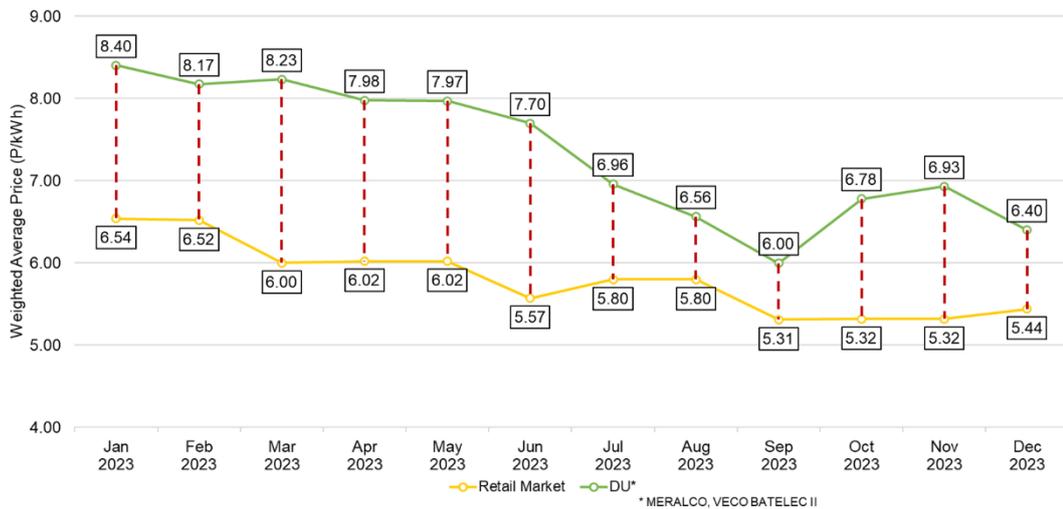


Figure 18. DU Average Generation Rate vs Retail Weighted Average Rate, Jan to Dec 2023

1.4.3. Estimated Savings

In continuation of the analysis provided in the preceding section, the assessment of estimated savings incurred by the Retail Market participants may likewise be undertaken. For the purpose of this report, monthly savings were calculated by determining the difference between the weighted-average retail rate and the DU average generation rates multiplied by the monthly consumption of CCs. It is important to note that these calculations were based on the available data and are considered as estimates.

For year 2023, CCs in the market experienced an estimated total savings of 46 billion Philippine Pesos. **Figure 21** shows the month-on-month incurred saving per business category.

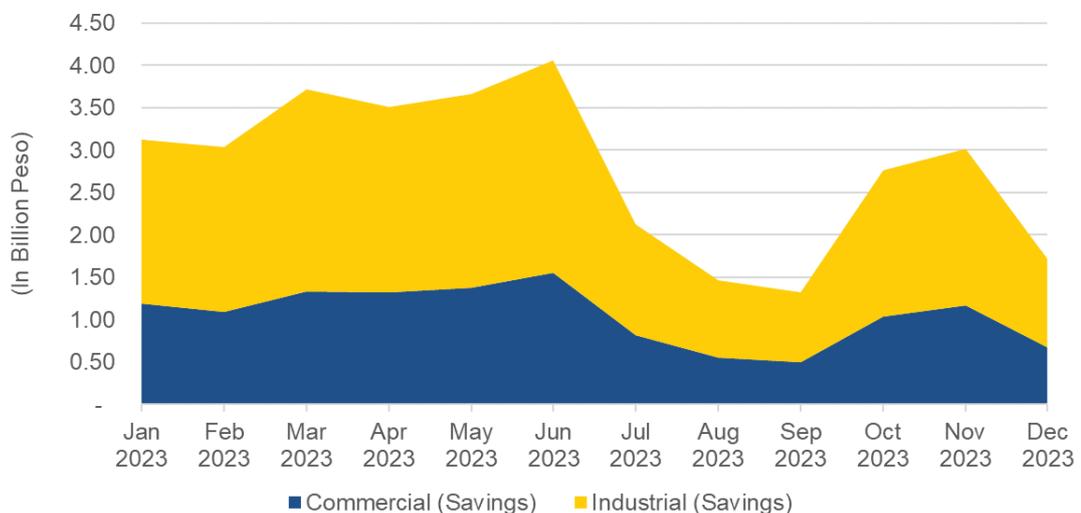


Figure 19. CC's Cumulative Estimated Savings, Jan to Dec 2023

2. GREEN ENERGY OPTION PROGRAM

This portion provides an assessment on the implementation of the Green Energy Option Program (GEOP) for the covered period, utilizing the RCOA indices as reference for the review of activities under this program.

2.1. MARKET STRUCTURE

2.1.1. Number of Participants

2.1.1.1. Per Threshold

For the year 2023, there were ninety (90) initial switches recorded, along with three (3) cessations. This resulted in an additional eighty-seven (87) registered GEOP End-users joining the market, bringing the total to 286 registered GEOP End-users in the program. This marks a 44% increase compared to the program's second year of implementation.

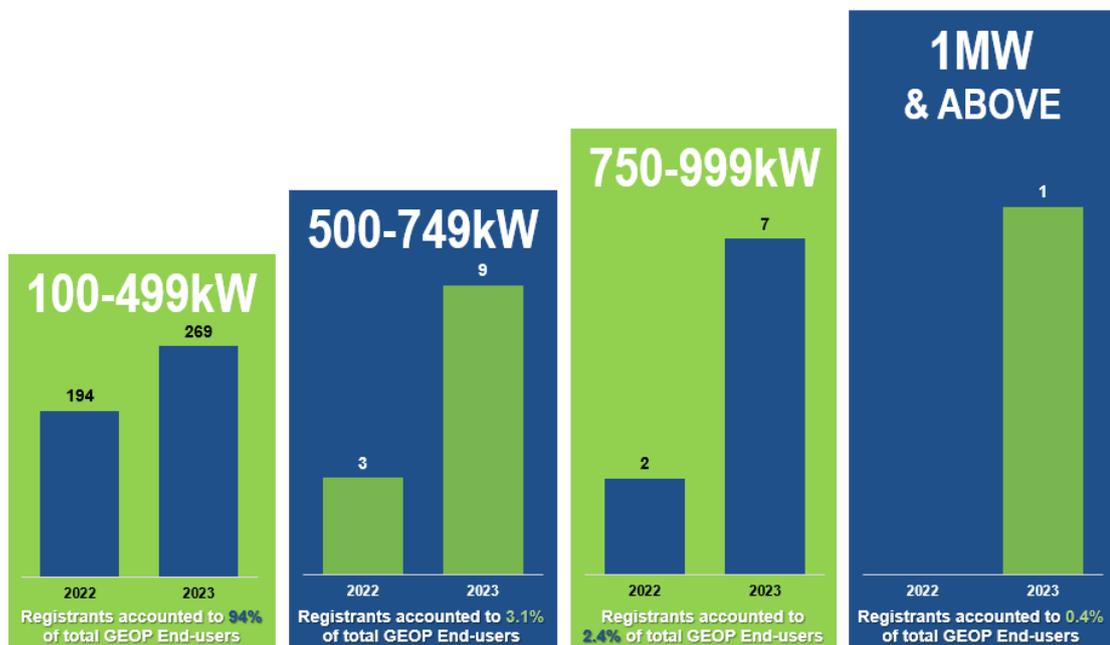


Figure 20. Cumulative Number of GEOP End-users per Threshold, 2022 & 2023

Based on the information provided in **Figure 22**, majority of GEOP End-users were within the 100k-499kW threshold, which is below the current threshold offered under the RCOA program. Notably, the continuous increase in participation of GEOP End-user within the RCOA threshold (triple as compared to the previous year) and with inclusion of one (1) GEOP End-user under 1MW and above which signifies that consumers are actively choosing to participate in the GEOP during the specified timeframe.

On a per threshold basis, 6% of the registered GEOP End-users were within the RCOA threshold but opted to participate in the GEOP as shown in **Figure 22**.

2.1.1.2. Per Location

In terms of geographical distribution of GEOP End-Users, majority were located in the Luzon grid, accounting for 73% or a total of 208 GEOP End-Users, while the remaining 27% or 78 GEOP End-Users, were located in the Visayas grid, see **Figure 23**. This distribution pattern remained consistent when compared to the assessment of the previous year and to the RCOA. The data underscores that Luzon serves as the focal point of concentration for GEOP End-users.

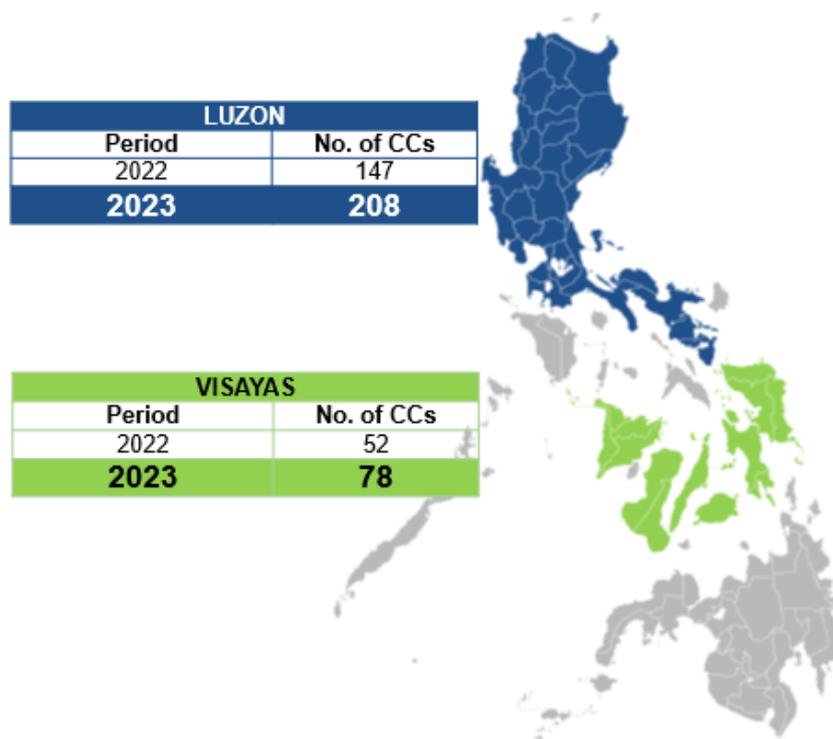


Figure 21. Cumulative Number of GEOP End-users Per Region, 2022 & 2023
Note: GEOP is only operational in the Luzon and Visayas grid. Commencement of retail market in the Mindanao shall be determined by the DOE and ERC.

2.1.1.3. Per Retail Activity

Looking at a per industry categorization within the GEOP, there has been a notable increase in the share of GEOP End-Users from the commercial sector accounting to approximately 65% for year 2023, with the remaining 35% coming from the industrial sector. **Figure 24** illustrates the year-on-year comparison from 2022.

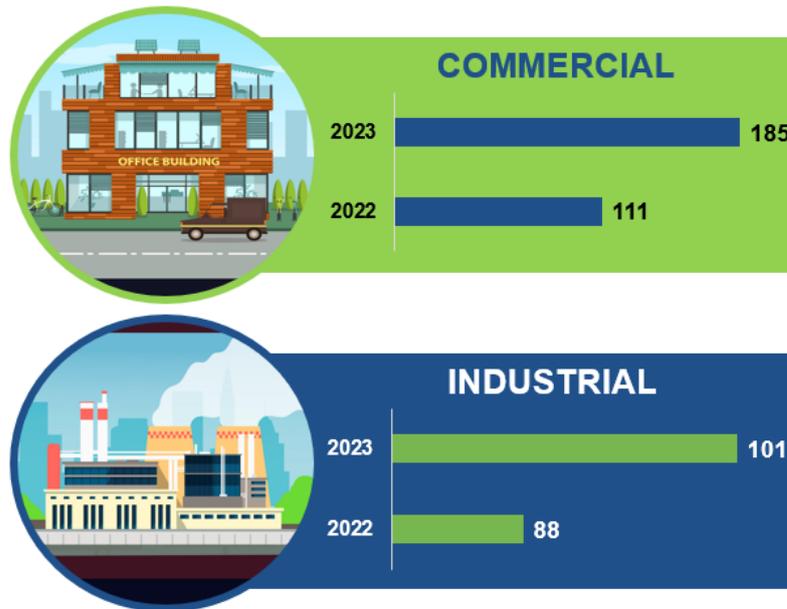


Figure 22. Cumulative Number GEOP End-users Per Industry, 2022 & 2023

2.1.1.4. Average Consumption

With regard to the energy consumption of GEOP End-users, **Table 4** provides the monthly breakdown of consumption levels based on the maximum metered quantity (MQ) for 2023. Notably, most of the GEOP End-users recorded a maximum consumption falling under the category of 499kW and below averaging at 88% for 2023. This is followed by customers that are in the 500-749kWh threshold taking about 9% of the total population, while 1% were in the 750kWh-999kWh level. Moreover, for 2023 an average of 1% of the CCs registered to have maximum energy consumption of 1MW and above.

Table 4. Distribution of Maximum Energy Consumption, Jan to Dec 2023

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
499kWh below	93%	90%	90%	90%	88%	88%	89%	88%	87%	87%	85%	87%
500-749kWh	6%	8%	9%	8%	9%	9%	9%	11%	10%	9%	11%	10%
750-999kWh	0%	1%	1%	1%	2%	2%	1%	1%	2%	2%	2%	1%
1MWh and above	0%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%	2%

2.1.1.5. Suppliers

Within the GEOP framework, authorized RES are allowed to provide energy supply, contingent with the possession of an operational permit from the Department of Energy (DOE) and proper authorization or license from the ERC, which will then allow them to become a Renewable Energy (RE) Supplier.

For the year 2023, there were a total of seventeen (17) registered RE Suppliers in the market, along with thirteen (13) designated SoLRs.

An additional RE Supplier¹² has entered into an active contract with GEOP End-users resulting in ten (10) among the seventeen (17) RE Suppliers having active contracts with GEOP End-users. It is worth noting that all RE Suppliers with active contracts are also actively participating in the RCOA.

Table 5. Cumulative Number of Suppliers, 2022 & 2023

	2022	2023	
		Registered	With RSC
RE Supplier	16	17	10
SoLR	12	13	-

For 2021, the newly Registered RE Supplier and SoLR, respectively, are as follows:

- Kratos RES, Inc. (KRATOSGES)
- Iloilo I Electric Cooperative, Inc. (ILECO I)

2.2. MARKET SHARE

2.2.1. Supplier Share

2.2.1.1. Share in terms of Number of GEOP End-users and Consumption

Figure 25 shows the annual share of RE Suppliers per major participant grouping in terms of the number of GEOP End-users registered in the market as of the December billing period for each year.

Following a year-on-year analysis, there has been a substantial increase in the Ayala group's market share compared to its inception. Moreover, the Ayala group continues to maintain its position as the primary provider in serving the highest number of GEOP End-Users with almost half of the total number of GEOP End-User being served. Meanwhile, EDC group also held a significant share in terms of the number of users served within GEOP, being the second largest among major participant groups. This measure highlights the enduring prominence of the Ayala group and the sustained presence of other players in the GEOP.

¹² Complete list of all registered Suppliers per category is provided in Annex A. List of Suppliers Per Category, as of 25 December 2023

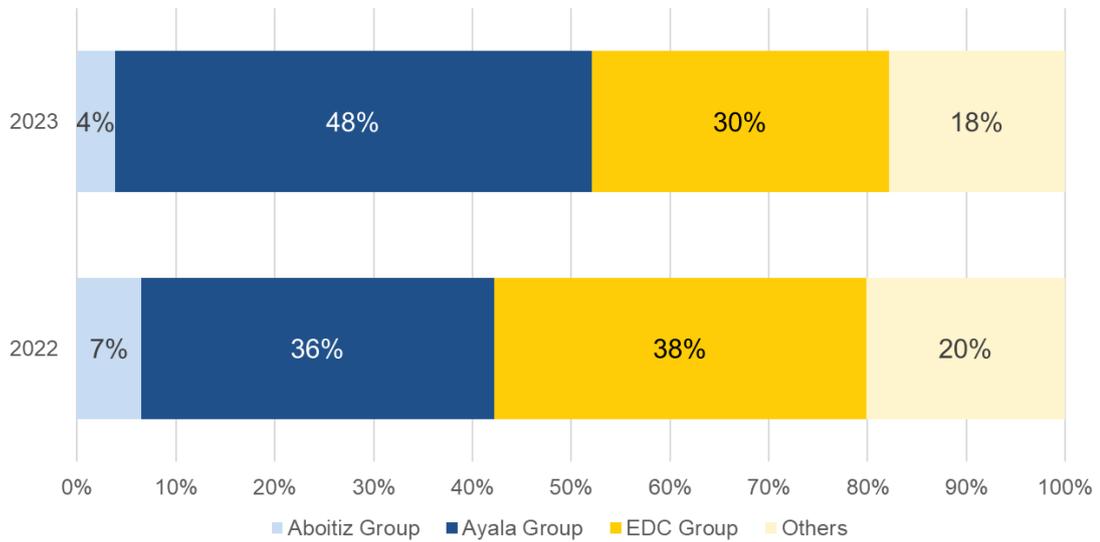


Figure 23. Share in Number of GEOP End-Users Per Major Participant Grouping, 2022 & 2023

With regard to the distribution of major groups' shares in terms of served energy consumption, **Figure 26** illustrates that the Ayala group still remained to have the highest percentage share for year 2023, accounting to 39%. This highlights the dominant position of the Ayala group in both the number of GEOP End-users engaged and the served energy consumption.

It is noteworthy that the suppliers not belonging to any of the major groups, labeled as "Others", saw minimal increase in the percentage share of served energy consumption despite the decrease in the percentage share in the number of engaged GEOP End-users.

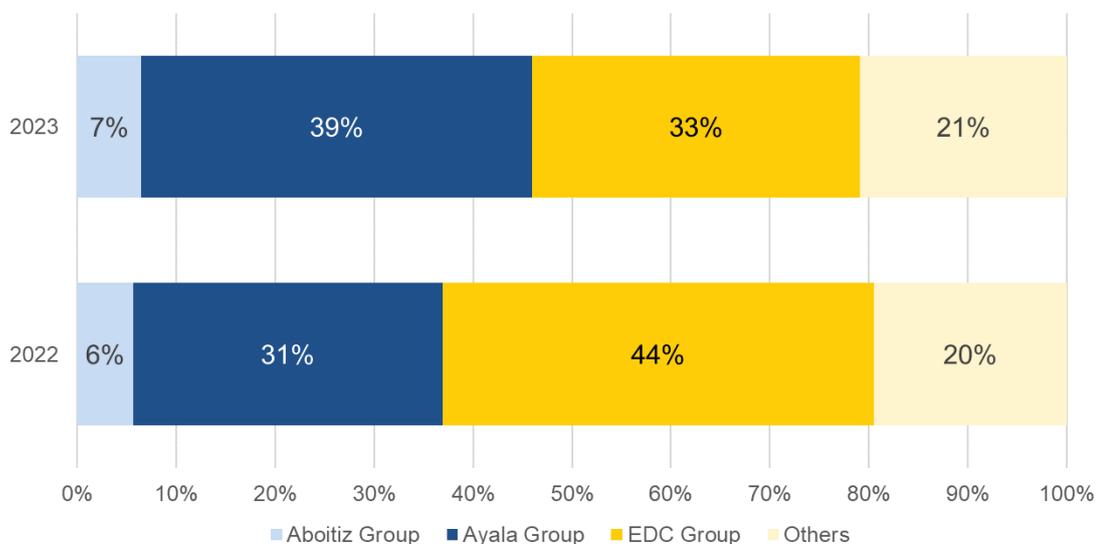


Figure 24. Share in Total Served Energy Consumption of GEOP End-users Per Major Participant Grouping, 2022 & 2023

2.2.1.2. Per Franchise Area Location

Geographically, registered GEOP End-users were spread throughout the various economic zones and DU franchise areas indicated in *Appendix B: List of Distribution Utility and Economic Zones*.

Nonetheless, the bulk of the consumption by registered GEOP End-users is situated within MERALCO's franchise area, comprising approximately 64% (see **Figure 27**). Another 17% falls within the VECO franchise area, while the remaining 19% are dispersed across other franchise areas and economic zones.

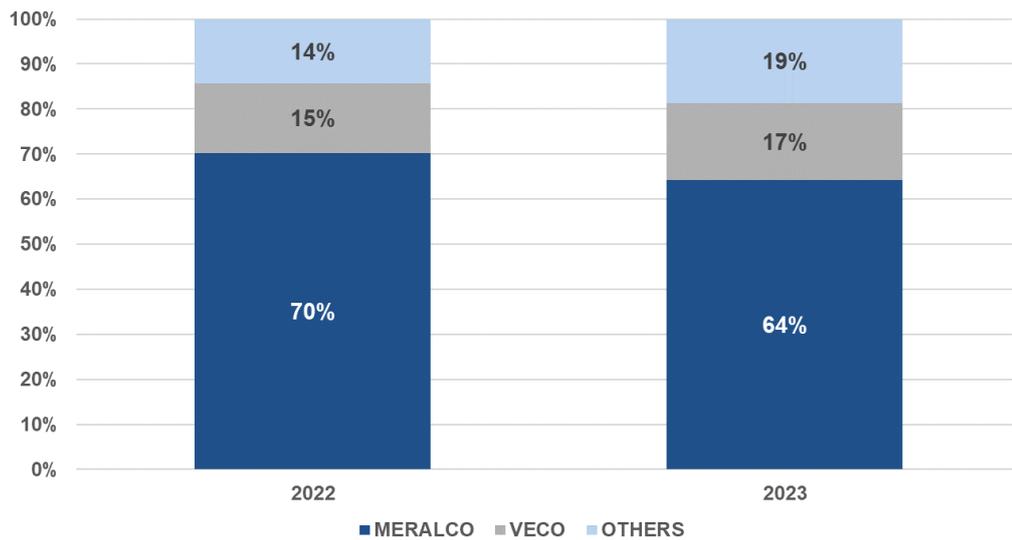


Figure 25. GEOP End-Users Energy Consumption by Franchise Area, 2022 & 2023

Figure 28 illustrates that inside the MERALCO franchise area, majority of the GEOP End-Users were being supplied by the Ayala group at around 48%, followed by the EDC group at 39% forming the top two major participant grouping serving in GEOP.

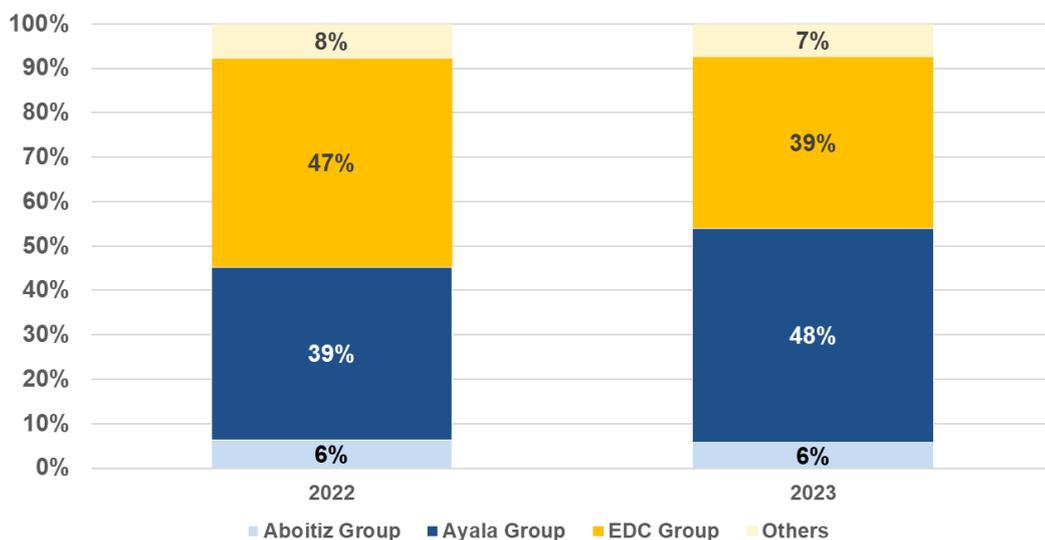


Figure 26. GEOP End-Users Served Energy Consumption by Supplier within MERALCO Franchise Area, 2022 & 2023

Moreover, with the Ayala group's growing share within MERALCO's franchise area, it has emerged as the leading market participant across all indices.

2.2.2. Market Concentration

2.2.2.1. Herfindahl–Hirschman Index (HHI)

This section discusses the market concentration in GEOP, by major participant grouping as determined by the ERC. This index was based on the number of contracted GEOP End-users and the corresponding served energy consumption of these GEOP End-users. **Figure 29** shows the level of market concentration using the HHI¹³ when measured in terms of the number of served GEOP End-users and their consumption.

In terms of per major participant groupings, the market has a high level of concentration for both GEOP End-user and served energy consumption. Based on Section 2.2.1 of this report, the increase in both the number of GEOP End-users and their served energy consumption within the Ayala group led to the continued increase in this measure resulting in an increase in the level of market concentration and a decline in terms of competition.

Meanwhile, when considering market shares on a per RE Supplier basis, the market was found to be moderately concentrated. **Figure 29** illustrates a notable rise in the share one (1) RE Supplier in terms of number of GEOP End-users, bringing it close to the threshold of being classified a concentrated one. Moreover, this influx in measurement extends to the per market participant grouping as well.

¹³ HHI measures the degree of market concentration. Defined as the sum of the square of Suppliers' market shares, the HHI threshold are as follows:

HHI < 1000 - not concentrated

Greater than 1000 up to 1800 - moderately concentrated

Greater than 1800 up to 2500 - concentrated

Greater than 2500 - highly concentrated

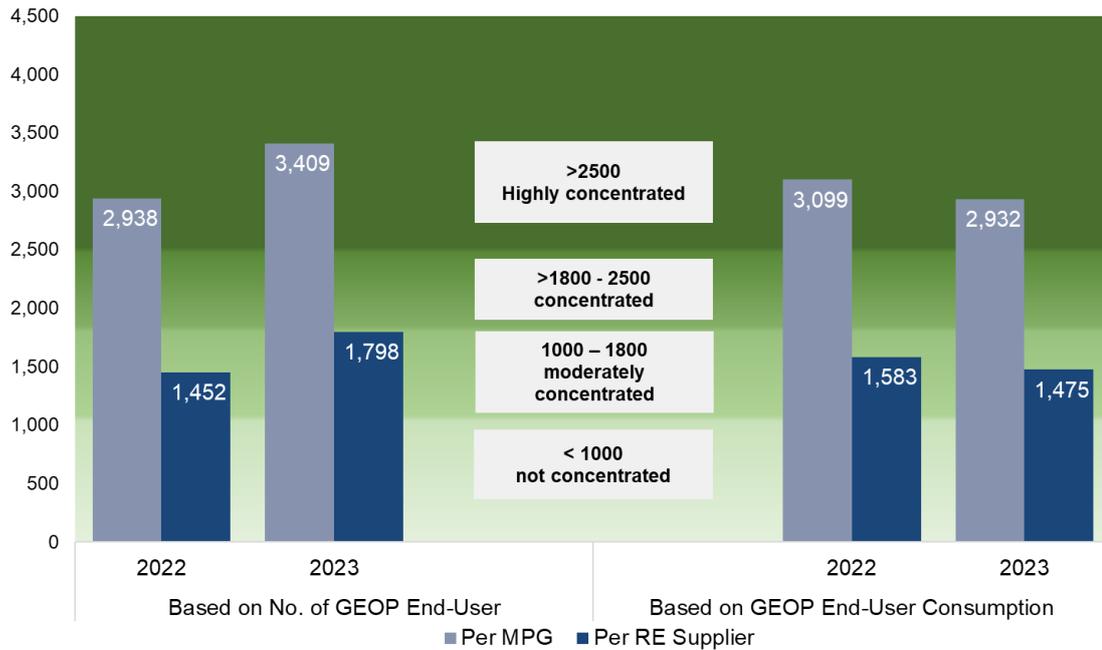


Figure 27. HHI Values, 2022 & 2023

2.2.2.2. Four-Firm Concentration Index (C4)

With regard to the four-firm index or C4 for the GEOP, values were based both on the number of registered GEOP End-users and their served energy consumption in terms of per major participant grouping. During the period in review, C4 values remained high for both measures at about 96% and 93%, respectively, as shown in **Figure 30**.

Furthermore, when considering the shares of each supplier, the market continues to exhibit characteristics of an oligopoly, with the top four (4) suppliers collectively controlling more than 50% of the total shares. Specifically, these four (4) major suppliers control as much as 76% of the market when assessed in terms of the number of GEOP End-Users and 69% in terms of served energy consumption. This resulting concentration may be attributed to the early stages of GEOP implementation, and the unique characteristics of energy sources involved in the program.

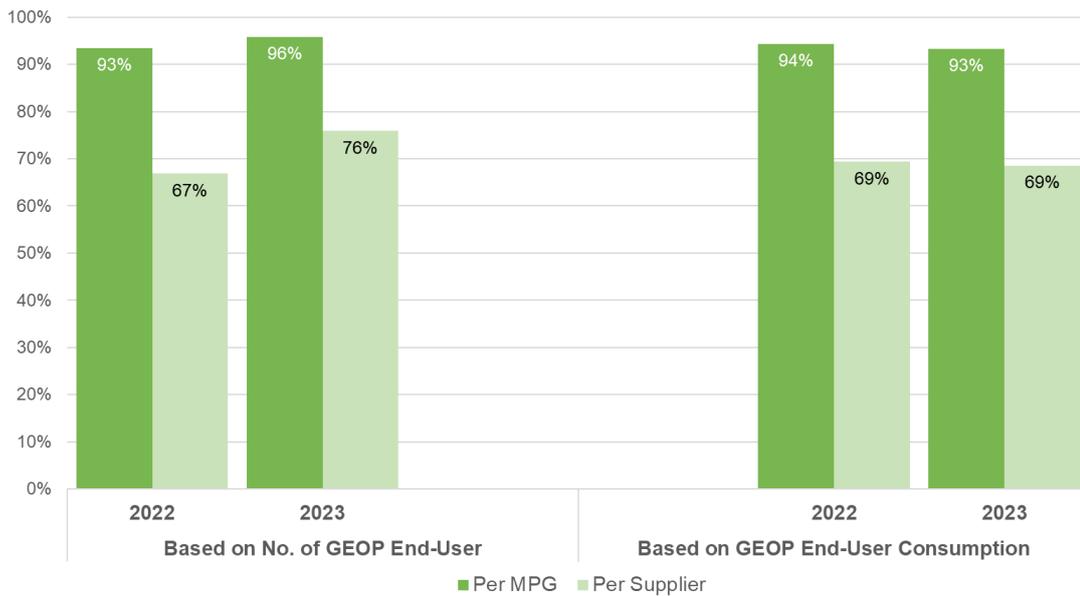


Figure 28. Four-Firm Index, 2022 & 2023

2.3. MARKET PERFORMANCE

2.3.1. Energy Consumption

2.3.1.1. Monthly Energy Consumption

Figure 31 illustrates the GEOP program's impact on end-user consumption over the first two years of its implementation. It is important to note, however, that the program only began in March 2022 so consumption data for GEOP end-users only reflects billing cycles starting in April of that year.

The significant increase in consumption between the first and second years is primarily attributed to a growing number of participants in the GEOP program. In simpler terms, the more end-users who join GEOP, the higher the overall consumption reflected in the data.

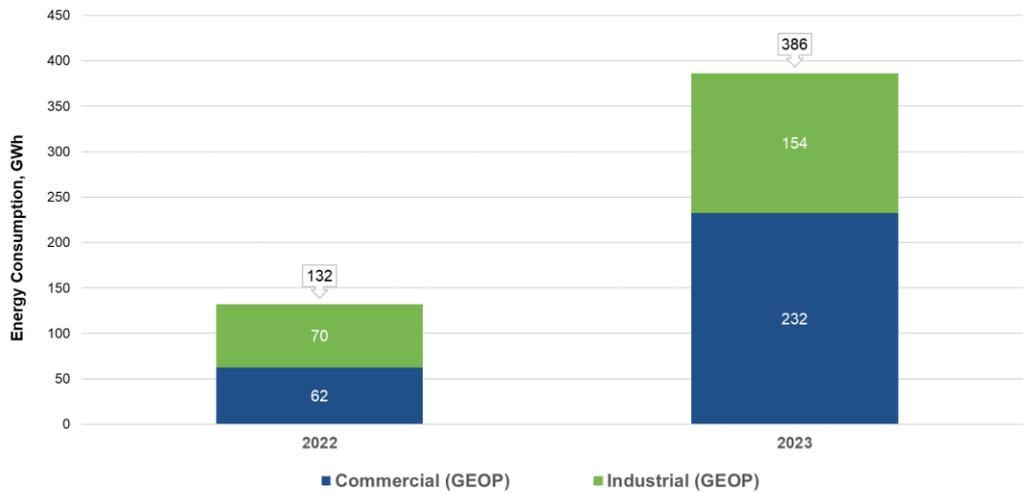


Figure 29. Total Energy Consumption Industry Type (in GWh), Jan to Dec 2023

2.3.2. Load Profile

2.3.2.1. Hourly Energy Consumption Profile

Figures 32 and 33 show the hourly average consumption of registered industrial and commercial GEOP End-users, respectively, for the year 2023. The consumption profile demonstrated how their electricity consumption varied over the course of a 24-hour period.

Industrial facilities in the GEOP program have relatively constant electricity use throughout the day, with minimal difference between peak and off-peak hours and some seasonal variations (See **Figure 32**). The regular dips at specific times strongly suggest that these facilities likely have three shifts or breaks scheduled at those times.

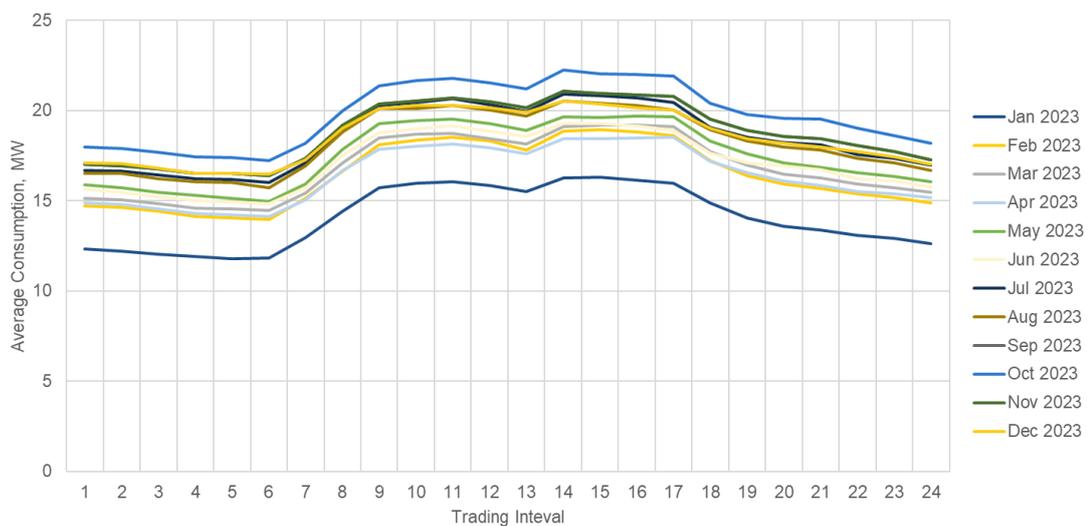


Figure 30. Hourly Average Energy Consumption (in MWh), Industrial, Jan to Dec 2023

Notably, with the increasing number of GEOP End-Users under the commercial business type, **Figure 33** shows the customers have their peak consumption between 1000h and 2000h which likely reflects typical business operating hours for shops, offices, and restaurants.

The graph clearly shows a month-on-month increase in consumption, suggesting potentially higher overall usage as the program encompasses the increasing number of participants in the program.

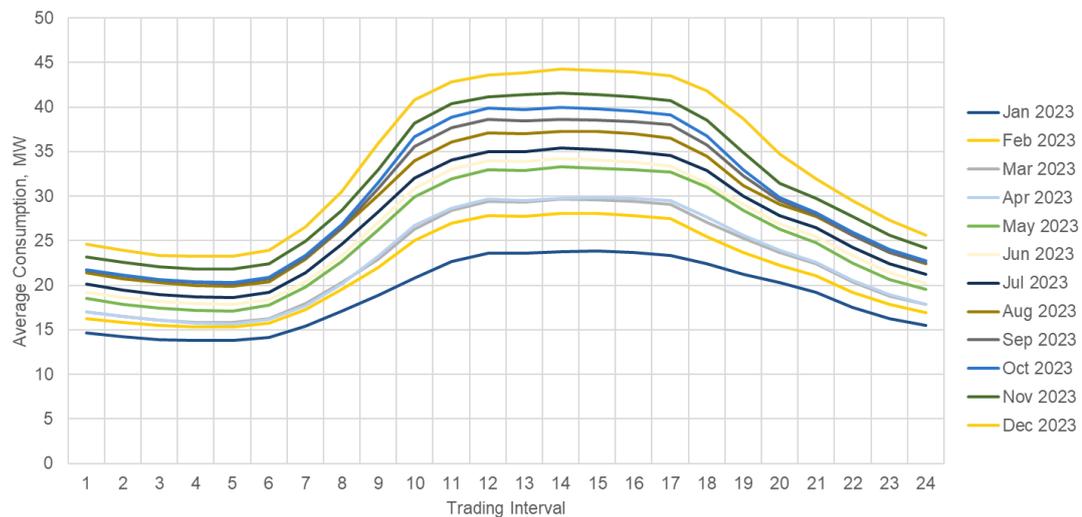


Figure 31. Hourly Average Energy Consumption (in MWh), Commercial, Jan to Dec 2023

2.3.2.2. Load Factor

Figure 34 shows the monthly load factor¹⁴ of the registered GEOP End-users, which was calculated based on their actual electricity consumption (total consumption over the maximum consumption and the total number of hours). The load factors of the registered GEOP End-users remained consistently high throughout the 4th quarter of 2023. Despite a recorded lower load factor in the billing periods of November and December in comparison to the previous year, it was sustained at a level of 71%, which still indicates efficient utilization of electricity.

¹⁴ Based on Metered Quantity (MQ)

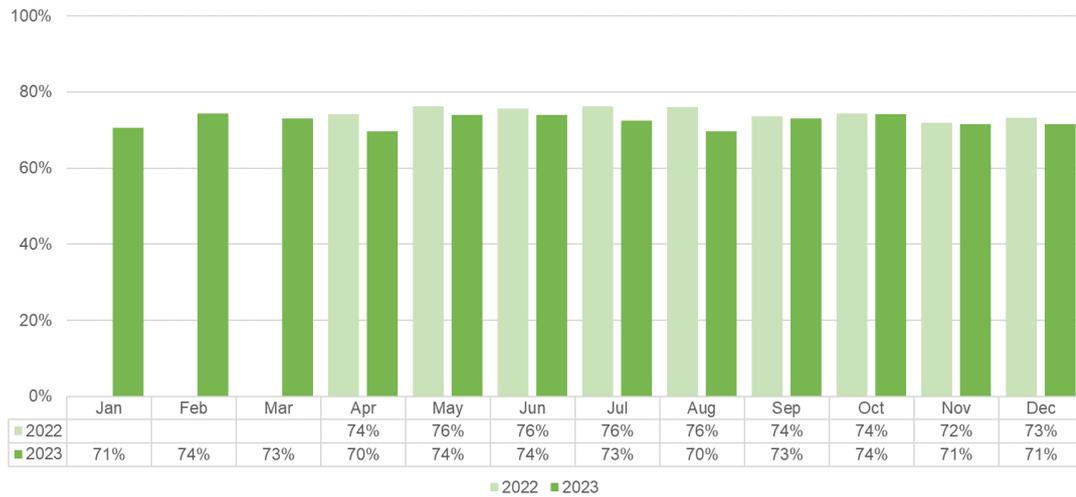


Figure 32. Load Factor, 2022 & 2023

2.4. RETAIL ACTIVITY

2.4.1. Customer Switching Rate

Figure 35 provides the historical switching rate among registered GEOP End-users for the year 2023. Based on the data, only six (6) out of the 12 billing periods recorded had customers switching from one Supplier to another. Furthermore, sixteen (16) out of the eighteen (18) switches were due to the expiration of contract and its subsequent non-renewal. However, the remaining two (2) switches stemmed from the termination of contracts, possibly influenced by factors like receiving a more competitive offer or the need for a more specific resource supply to meet the demand.

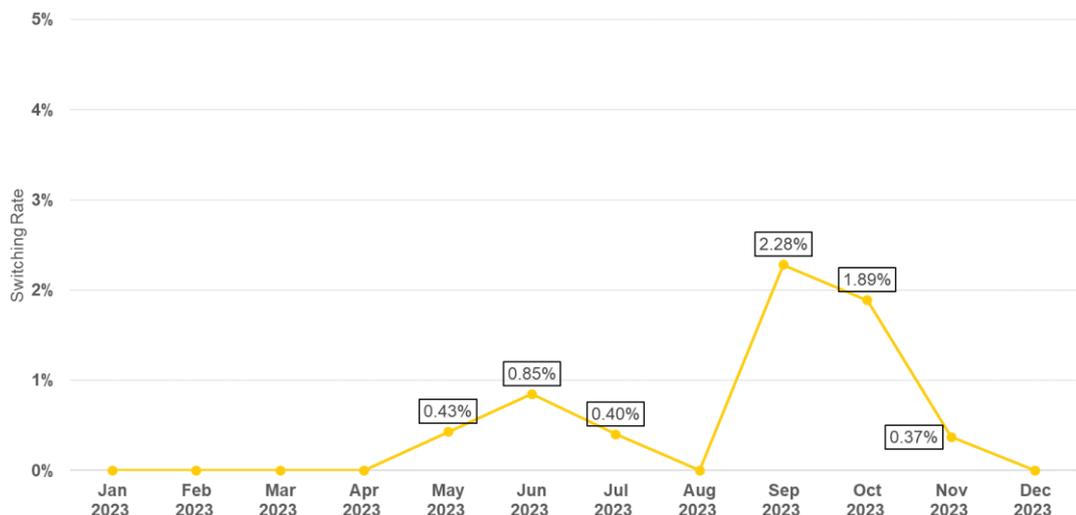


Figure 33. Switching Rate, Jan to Dec 2023

Table 7 provides a detailed historical switching information among registered GEOP End-Users to other suppliers per category and per region.

Table 6. Switching Rate, Jan to Dec 2023

Particulars	Jan 2023	Feb 2023	Mar 2023	Apr 2023	May 2023	Jun 2023	Jul 2023	Aug 2023	Sep 2023	Oct 2023	Nov 2023	Dec 2023
Switching Rate (Luzon)	0.00%	0.00%	0.00%	0.00%	0.59%	0.58%	0.00%	0.00%	2.13%	0.00%	0.52%	0.00%
Total No. of GEUs	160	162	169	170	170	171	181	186	188	189	194	208
Total No. of GEUs that Switched	-	-	-	-	1	1	-	-	4	-	1	-
Local RE Supplier to RE Supplier	-	-	-	-	-	-	-	-	-	-	1	-
RE Supplier to Local RE Supplier	-	-	-	-	-	-	-	-	-	-	-	-
RE Supplier to RE Supplier	-	-	-	-	1	1	-	-	4	-	-	-
SOLR (GEOP) to RE Supplier	-	-	-	-	-	-	-	-	-	-	-	-
Switching Rate (Visayas)	0.00%	0.00%	0.00%	0.00%	0.00%	1.54%	1.47%	0.00%	2.67%	6.58%	0.00%	0.00%
Total No. of GEUs	56.00	59.00	62.00	61.00	63.00	65.00	68.00	71.00	75.00	76.00	77.00	78.00
Total No. of GEUs that Switched	-	-	-	-	-	1.00	1.00	-	2.00	5.00	-	-
Local RE Supplier to RE Supplier	-	-	-	-	-	-	-	-	-	-	-	-
RE Supplier to Local RE Supplier	-	-	-	-	-	-	-	-	-	-	-	-
RE Supplier to RE Supplier	-	-	-	-	-	1.00	1.00	-	2.00	5.00	-	-
SOLR (GEOP) to RE Supplier	-	-	-	-	-	-	-	-	-	-	-	-
Switching Rate (Luzon-Visayas)	0.00%	0.00%	0.00%	0.00%	0.43%	0.85%	0.40%	0.00%	2.28%	1.89%	0.37%	0.00%
Total No. of GEUs	216	221	231	231	233	236	249	257	263	265	271	286
Total No. of GEUs that Switched	-	-	-	-	1	2	1	-	6	5	1	-

APPENDIX A - LIST OF REGISTERED SUPPLIERS

Category	No.	Market Participant Name	RCOA	GEOP
Retail Electricity Supplier (RES) and Renewable Electricity Supplier (RE Supplier)	1	Aboitiz Energy Solutions, Inc.	✓	✓
	2	AC Energy and Infrastructure Corporation	✓	
	3	ACEN Corporation (Formerly known as AC Energy Corporation)	✓	✓
	4	ACX3 Capital Holdings Inc.	✓	
	5	Advent Energy, Inc.	✓	✓
	6	Anda Power Corporation RES	✓	
	7	AP Renewables Inc.	✓	✓
	8	Asiapac Green Renewable Energy Corp.	✓	
	9	Bac-Man Geothermal, Inc.	✓	✓
	10	Citicore Energy Solutions, Inc.	✓	✓
	11	Corenergy, Inc.	✓	
	12	DirectPower Services, Inc.	✓	✓
	13	Ecozone Power Management, Inc.	✓	
	14	EEl Energy Solutions Corporation	✓	✓
	15	FDC Retail Electricity Sales Corporation	✓	
	16	First Gen Energy Solutions, Inc.	✓	✓
	17	Global Energy Supply Corporation	✓	
	18	GNPower Ltd. Co.	✓	
	19	Green Core Geothermal, Inc.	✓	✓
	20	Jin Navitas Electric Corporation	✓	
	21	KEPCO SPC Power Corporation	✓	
	22	Kratos RES, Inc.	✓	✓
	23	Mabuhay Energy Corporation	✓	
	24	Masinloc Power Partners Company Limited	✓	
	25	Mazzaraty Energy Corporation	✓	
	26	MegawattSolutions Inc.	✓	
	27	MeridianX Inc.	✓	
	28	PetroGreen Energy Corporation	✓	
	29	Premier Energy Resources Corporation	✓	
	30	Prism Energy, Inc.	✓	✓
	31	Rockport Power Inc.	✓	
	32	SEM-Calaca RES Corporation	✓	
	33	Shell Energy Philippines, Inc. - RES	✓	✓
	34	Limay Power Inc. (formerly SMC Consolidated Power Corporation)	✓	
	35	SN Aboitiz Power- Magat, Inc.	✓	✓
	36	SN Aboitiz Power-RES, Inc.	✓	✓
	37	Solar Philippines Retail Electricity, Inc.	✓	✓
	38	TeaM (Philippines) Energy Corporation	✓	
	39	Therma Luzon, Inc.	✓	✓
	40	Vantage Energy Solutions and Management, Inc.	✓	

Category	No.	Market Participant Name	ROA	GEOP
Local Retail Electricity Supplier	1	Batangas II Electric Cooperative, Inc.	✓	
	2	Camarines Sur II Electric Cooperative, Inc.	✓	
	3	Cebu I Electric Cooperative, Inc.	✓	
	4	Cebu II Electric Cooperative, Inc.	✓	
	5	Central Negros Electric Cooperative, Inc.	✓	
	6	Clark Electric Distribution Corporation LRES	✓	
	7	Dagupan Electric Corporation	✓	
	8	Ilocos Norte Electric Cooperative, Inc.	✓	
	9	Mactan Enerzone Corporation LRES	✓	
	10	Manila Electric Company	✓	
	11	Nueva Ecija I Electric Cooperative, Inc.	✓	
	12	San Fernando Electric Light & Power Co., Inc.	✓	
	13	Subic Enerzone Corporation	✓	
	14	Tarlac Electric, Inc.	✓	
	15	Visayan Electric Company, Inc.	✓	
Supplier of Last Resort	1	Angeles Electric Corporation	✓	✓
	2	Balamban Enerzone Corporation	✓	
	3	Batangas II Electric Cooperative, Inc.	✓	✓
	4	Benguet Electric Cooperative, Inc.	✓	
	5	Bohol I Electric Cooperative, Inc.	✓	
	6	Bohol Light Company, Inc.	✓	
	7	Cabanatuan Electric Corporation	✓	
	8	Camarines Sur II Electric Cooperative, Inc.	✓	
	9	Cebu I Electric Cooperative, Inc.	✓	✓
	10	Cebu II Electric Cooperative, Inc.	✓	
	11	Clark Electric Distribution Corporation	✓	
	12	Dagupan Electric Corporation	✓	✓
	13	Ilocos Norte Electric Cooperative, Inc.	✓	
	14	Ilocos Sur Electric Cooperative, Inc.	✓	
	15	Iloilo I Electric Cooperative, Inc.		✓
	16	Isabela I Electric Cooperative, Inc.	✓	
	17	La Union Electric Cooperative, Inc.	✓	✓
	18	Mactan Electric Company, Inc.	✓	✓
	19	Mactan Enerzone Corporation	✓	✓
	20	Manila Electric Company	✓	✓
	21	Negros Oriental II Electric Cooperative, Inc.	✓	
	22	Subic Enerzone Corporation	✓	
	23	Tarlac Electric, Inc.	✓	✓
	24	Tarlac I Electric Cooperative, Inc.	✓	✓
	25	Tarlac II Electric Cooperative, Inc.	✓	✓
	26	Visayan Electric Company, Inc.	✓	✓

APPENDIX B - LIST OF DISTRIBUTION UTILITIES / ECONOMIC ZONES WITH CONTESTABLE CUSTOMERS AND GEOP END-USERS

No.	Distribution Utility/ Economic Zone	RCOA	GEOP	No.	Distribution Utility/ Economic Zone	RCOA	GEOP
1	Angeles Electric Corporation	✓	✓	32	Leyte II Electric Cooperative, Inc.	✓	
2	Authority of the Freeport Area of Bataan	✓		33	Leyte V Electric Cooperative, Inc.	✓	
3	Aklan Electric Cooperative, Inc.	✓		34	LIMA Enerzone Corporation	✓	
4	Albay Electric Cooperative, Inc.	✓	✓	35	La Union Electric Company, Inc.	✓	
5	Antique Electric Cooperative, Inc.	✓		36	La Union Electric Cooperative, Inc.	✓	
6	Batangas I Electric Cooperative, Inc.	✓	✓	37	Mactan Electric Company	✓	
7	Batangas II Electric Cooperative	✓	✓	38	Mactan Enerzone Corporation	✓	✓
8	Benguet Electric Cooperative	✓	✓	39	Malvar Enerzone Corporation	✓	
9	Balamban Enerzone Corporation	✓		40	Manila Electric Company	✓	✓
10	Bohol Light Company, Inc.	✓		41	MORE Electric and Power Corporation	✓	✓
11	Bohol I Electric Cooperative, Inc.	✓	✓	42	Nueva Ecija I Electric Cooperative, Inc.	✓	
12	Bohol II Electric Cooperative, Inc.	✓		43	Nueva Ecija II Electric Area 1 Cooperative, Inc.	✓	
13	Cagayan I Electric Cooperative, Inc.	✓		44	Negros Occidental Electric Cooperative	✓	✓
14	Cagayan II Electric Cooperative, Inc.	✓		45	Northern Negros Electric Cooperative, Inc.	✓	
15	Capiz Electric Cooperative, Inc.	✓	✓	46	Negros Oriental II Electric Cooperative, Inc.	✓	
16	Camarines Sur II Electric Cooperative, Inc.	✓		47	Olongapo Electricity Distribution Company	✓	
17	Cebu I Electric Cooperative, Inc.	✓	✓	48	Pangasinan III Electric Cooperative, Inc.	✓	✓
18	Cebu II Electric Cooperative, Inc.	✓	✓	49	Pampanga I Electric Cooperative, Inc.	✓	
19	Cebu III Electric Cooperative, Inc.	✓	✓	50	Pampanga II Electric Cooperative, Inc.	✓	✓
20	Clark Electric Distribution Corporation	✓		51	Peninsula Electric Cooperative, Inc.	✓	
21	Cabanatuan Electric Corporation	✓		52	Quezon I Electric Cooperative, Inc.	✓	
22	Central Negros Electric Cooperative, Inc.	✓	✓	53	Samar I Electric Cooperative, Inc.	✓	✓
23	Central Pangasinan Electric Cooperative, Inc.	✓		54	San Fernando Electric Light and Power Company, Inc.	✓	
24	Dagupan Electric Corporation	✓	✓	55	Sorsogon II Electric Cooperative, Inc.	✓	
25	Don Orestes Electric Cooperative, Inc.	✓		56	Subic EnerZone Corporation	✓	
26	Iloilo I Electric Cooperative, Inc.	✓	✓	57	Tarlac I Electric Cooperative, Inc.	✓	✓
27	Iloilo II Electric Cooperative, Inc.	✓		58	Tarlac II Electric Cooperative, Inc.	✓	✓
28	Iloilo III Electric Cooperative, Inc.		✓	59	Tarlac Electric, Inc.	✓	✓
29	Ilocos Norte Electric Cooperative, Inc.	✓		60	Visayan Electric Company, Inc.	✓	✓
30	Isabela I Electric Cooperative, Inc.	✓		61	National Grid Corporation of the Philippines ¹⁵	✓	
31	Isabela II Electric Cooperative, Inc.	✓					

¹⁵ For Directly Connected Customers