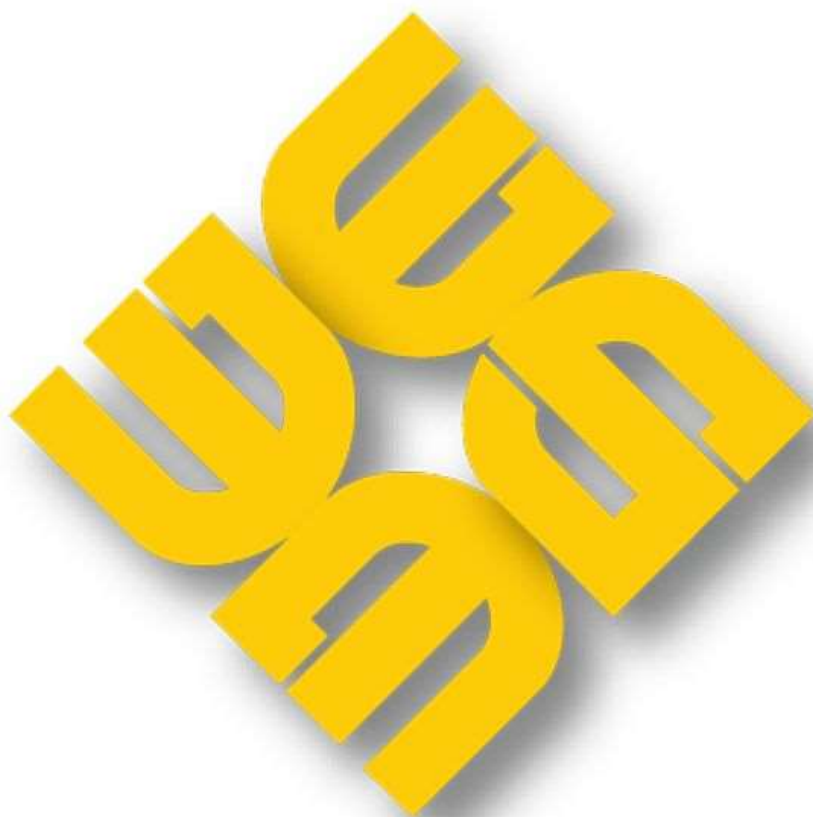


MAG-ARMAR-2016

ANNUAL RETAIL MARKET ASSESSMENT REPORT

26 December 2015 – 25 December 2016



**PHILIPPINE
ELECTRICITY
MARKET
CORPORATION**

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Executive Summary

This Annual Assessment Report on the Retail Electricity Market covering the billing period January to December 2016 (**26 December 2015 to 25 December 2016**) discusses the results of monitoring indices, as set forth in the Catalogue of Retail Market Monitoring Data and Indices. The report provides indications on how the retail market performed during the period in review and how it fared with the previous year's performance. It is important to note that the Contestable Customers being referred to in this report are only those registered in the market. Other electricity end-users that have been issued with a Certificate of Contestability by the Energy Regulatory Commission (ERC) but have yet to register in the market remain as Captive Customers.

As of December 2016 billing period, there were a total of 492 registered Contestable Customers. Likewise, the market recorded a total of 22 registered Retail Electricity Suppliers (RES), 12 registered Local RES (LRES), and 7 registered Supplier of Last Resort (SOLR).

Of the total registrants, 39 Contestable Customers are in the 750 kW to 999 kW contestability threshold, while 453 Contestable Customers are in the 1 MW and above contestability threshold. Majority or 477 registered Contestable Customers are in Luzon and the remaining 15 registered Contestable Customers are in Visayas. Most of them or about 65 percent are engaged in industrial activities while about 35 percent are into commercial. Further, the number of registered Contestable Customers is only 33 percent of the 1,469 electricity end-users that were already issued with a Certificate of Contestability by the ERC, while majority of them or about 67 percent continue to be served by their respective distribution utilities.

The total energy consumption of the registered Contestable Customers for the 2016 billing period stood at 9,393 GWh (higher by about 12 percent than the previous year at about 8,399 GWh). This accounts for about 15 percent of the combined energy consumption of the registered Contestable Customers and the Captive Customers for the 2016 billing year. The load factor of registered Contestable Customers was maintained relatively high throughout the period in review, indicating that their electricity usage is reasonably efficient.

Majority of the registered Contestable Customers are located within the MERALCO franchise area and are mostly being served by MERALCO's local RES (MRLCOLRE). With the MRLCOLRE controlling the majority of the market both in terms of number and energy consumption of registered Contestable Customers, the retail market is best described as highly concentrated.

These observations based on the results of the indices signify the need to further encourage participation of Contestable Customers in the retail market. It is hoped that with the targeted full implementation of RCOA, the retail market will grow faster and that the Contestable Customers will realize the full benefits of retail competition.

I. MARKET PERFORMANCE

A. Total Energy Consumption

The total energy consumption of the market for the billing period January to December 2016 is shown in **Figure 1**. Factors such as temperature and seasonal changes as well as the holidays may well have played a role in the varying level of energy consumption per month.

For the 2016 billing year, total energy consumption was recorded at about 70,258 GWh, which is about 9 percent higher than the 2015 billing year's total energy consumption at about 64,379 GWh, signifying that demand for electricity is continually increasing.

On a monthly basis, the level of energy consumption varied ranging from as low as 5,212 GWh (recorded in January billing month) to as high as 6,364 GWh (recorded in June billing month). It may be observed that the pattern of energy consumption month-on-month is almost consistent for billing years 2015 and 2016, where energy consumption is lowest during the January to March billing months and highest during the summer months of April to June. Such seasonal pattern in energy consumption is influenced by weather, holidays, and the economic activities happening during certain periods of the year.

Figure 1. Monthly Total Energy Consumption¹ (in GWh)—2015-2016

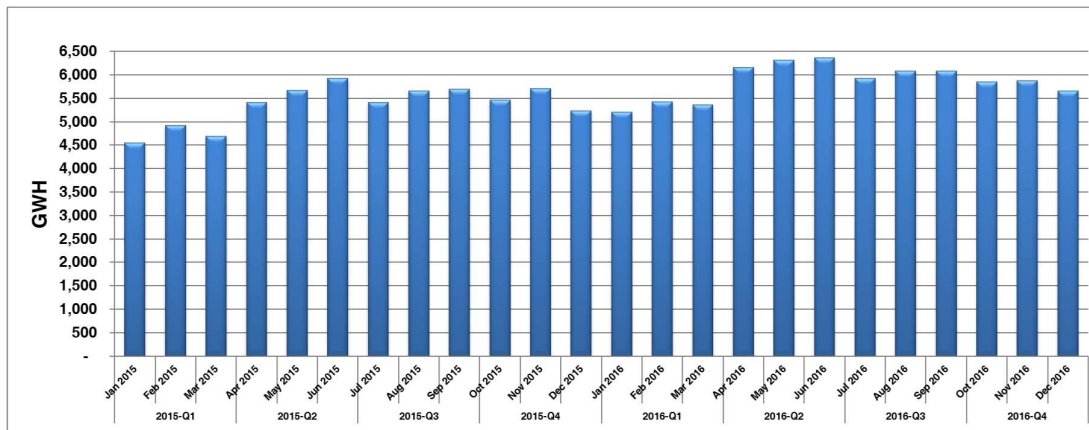
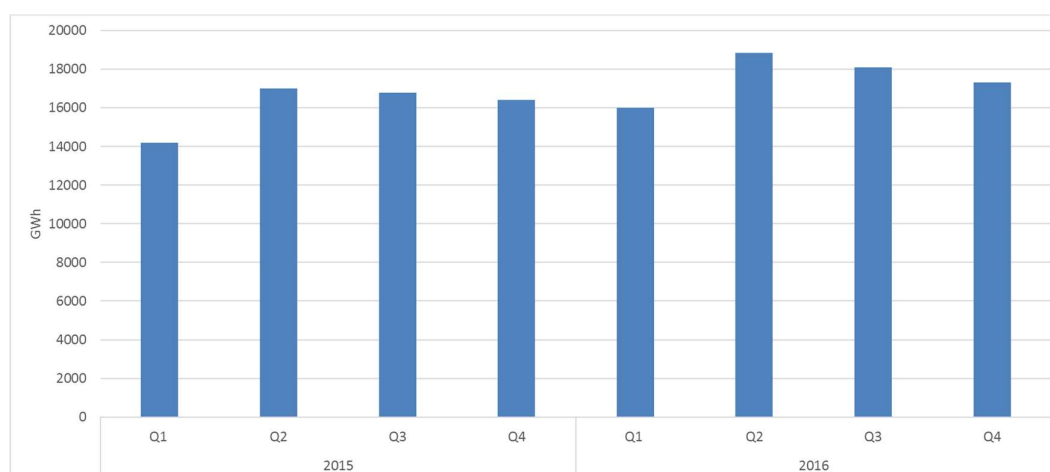


Figure 2 shows the quarter-on-quarter energy consumption for the 2016 billing period. As expected, the highest energy consumption was observed during the second billing quarter, covering the April to June 2016 billing months, which was recorded at about 18,836 GWh. Meanwhile, the lowest energy consumption was recorded during the first billing quarter, covering the billing months January to March 2016, at about 16,005 GWh. It may be noted that a significant increase of almost 18 percent in the energy consumption was observed from first to second billing quarter. It was further observed that energy consumption was on a declining trend during the second half of the year. As previously mentioned, this pattern of energy

¹ Includes consumption of Captive Customers, Contestable Customers, and Others (consumption of Directly-Connected Customers, NSP, Kalayaan pumping and other generator-related consumption).

consumption mirrors that of the 2015 billing year, signifying the consistency in the seasonal trend of energy consumption as a whole.

Figure 2. Quarterly Total Energy Consumption (in GWh)—2015 and 2016



B. Energy Consumption by Type of End-User

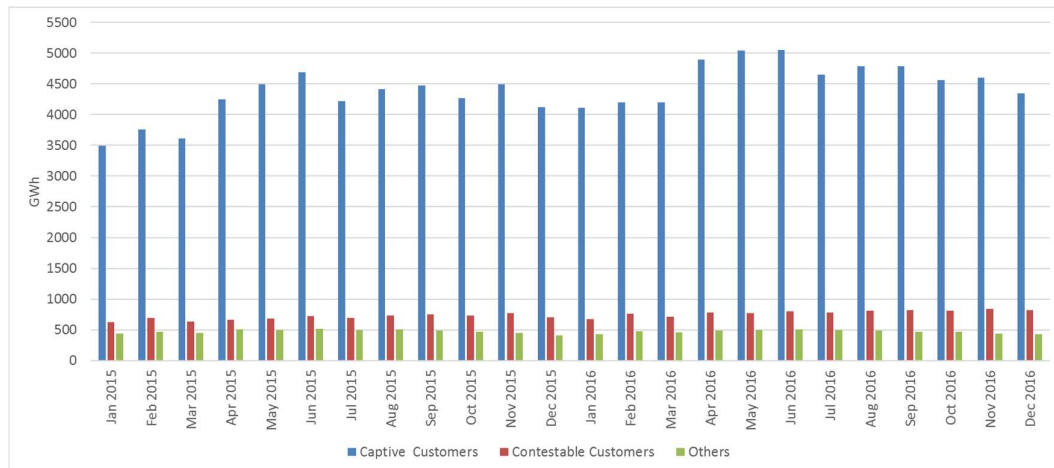
Shown in **Figure 3** is the monthly energy consumption by type of end-user, consisting of the Captive Customers, the registered Contestable Customers, and Others². Evidently, the level of energy consumption of both the Captive Customers and registered Contestable Customers increased in the billing year 2016 as compared with the previous year.

Consistent for all the billing months in review, bulk of the energy consumption for the 2016 billing year is still on account of Captive Customers. The total energy consumption of Captive Customers for this year reached about 55,243 GWh (higher by about 10 percent than the previous year at about 50,300 GWh), with monthly total energy consumption ranging from about 4,114 GWh to 5,050 GWh this year.

Meanwhile, the total energy consumption of registered Contestable Customers was recorded at about 9,393 GWh (higher by almost 12 percent than previous year at about 8,399 GWh), with monthly total energy consumption ranging from about 673 GWh to 842 GWh this year. Among other things, the participation of more electricity end-users in the retail market, including those with electricity threshold of 750 kW, may well have contributed in the increased energy consumption level of registered Contestable Customers this year.

² Others include energy consumption of Directly-Connected Customers (DCC), Network Services Providers (NSP), Kalayaan pumping and other generator-related consumption.

Figure 3. Monthly Total Energy Consumption (in GWh), by Type of End-User—2015-2016



While the energy consumption of registered Contestable Customers increased this year, it is worth noting that the level of energy consumption of registered Contestable Customers for the entire 2016 billing year is still significantly lower as compared with that of Captive Customers.

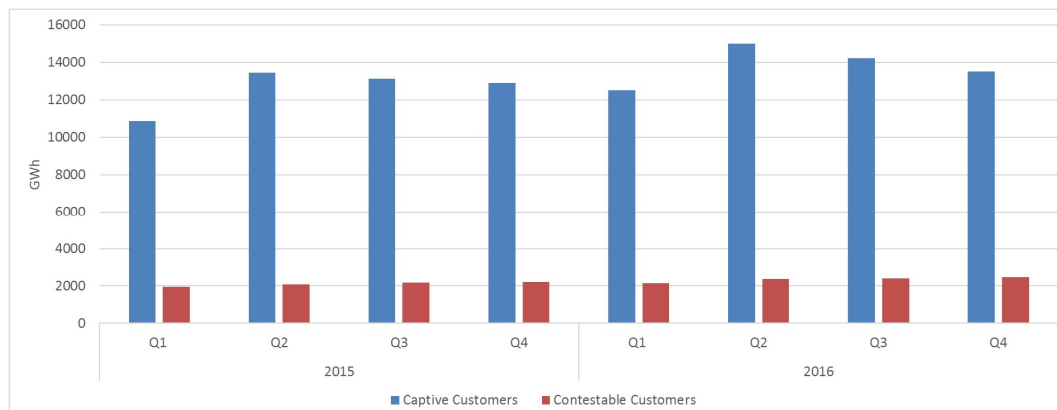
For purposes of comparison between the energy consumption of Captive Customers and registered Contestable Customers, the succeeding discussions on sections B and C shall focus on the consumption of these two only and shall exclude the consumption of Others³.

The quarter-on-quarter total energy consumption per type of end-user is shown in **Figure 4**. The quarterly energy consumption of Captive Customers was lowest during the first billing quarter, which was recorded at about 12,512 GWh. Meanwhile, the highest energy consumption of Captive Customers was recorded during the second billing quarter at about 14,987 GWh covering the summer months of April to June 2016. Consistent with the previous discussions, energy consumption of Captive Customers was on a declining trend during the second half of the year.

Meanwhile, the registered Contestable Customers followed a different pattern of energy Consumption quarter-on-quarter. While the lowest consumption of registered Contestable Customers was also observed during the first billing quarter at about 2,139 GWh, it may be noted that the energy consumption during the second billing quarter of 2016 (about 2,356 GWh), was lower than in the third quarter (about 2,418 GWh) and fourth quarter (about 2,480 GWh).

³ Others include energy consumption of Directly-Connected Customers (DCC), Network Services Providers (NSP), Kalayaan pumping and other generator-related consumption.

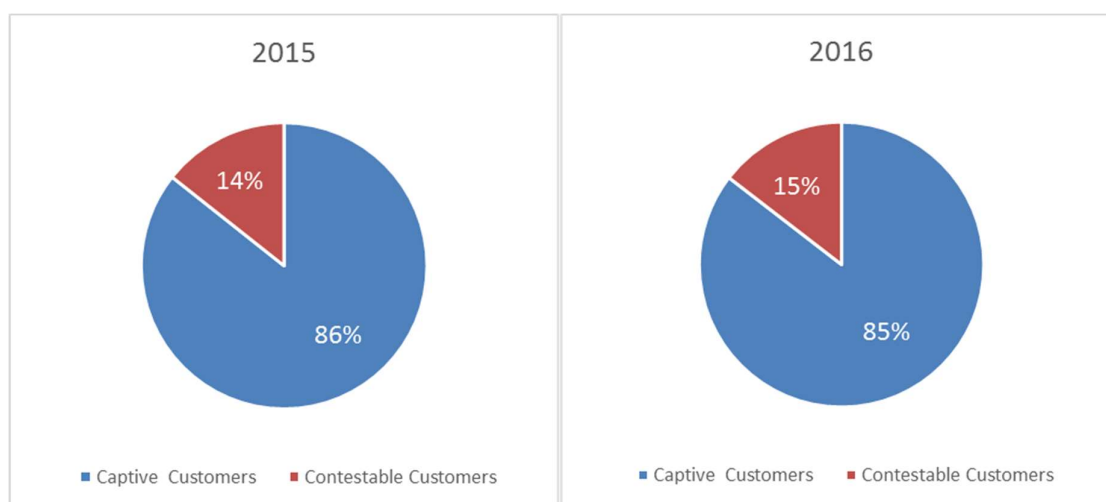
Figure 4. Quarterly Total Energy Consumption⁴ (in GWh), by Type of End-User (Captive Customer and Registered Contestable Customer)—2016



C. Share in Energy Consumption, by Type of End-User—2015 vs. 2016

Based on WESM transactions, the share of registered Contestable Customers as shown in **Figure 5** in the total energy consumption (combined energy consumption of Captive and registered Contestable Customers) increased minimally at 15 percent in 2016 from 14 percent in 2015 billing year. The bulk of energy consumption remains accounted for by Captive Customers that continue to be served by their respective distribution utilities.

Figure 5. Percentage Share in Total Energy Consumption, by Type of End-User (Captive Customer and Registered Contestable Customer)—2015 and 2016



D. Hourly Energy Consumption Profile of Registered Contestable Customers

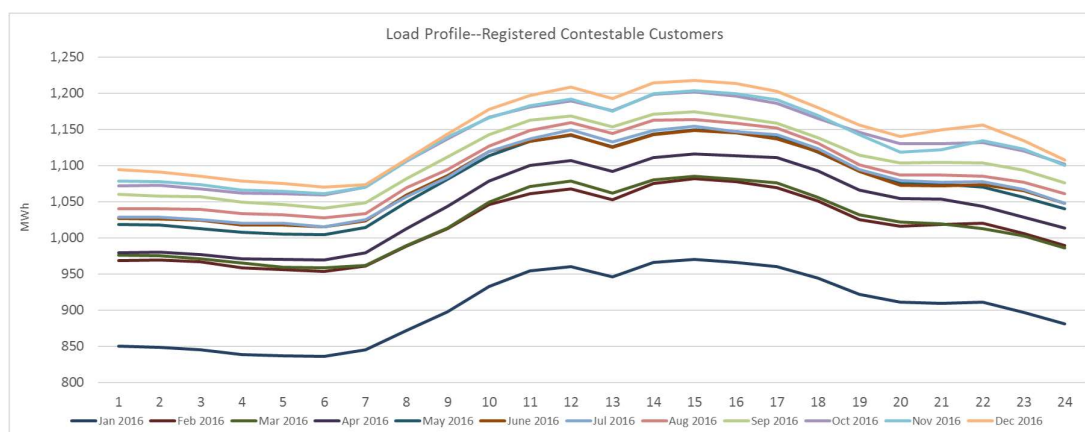
Figure 6 shows the hourly consumption profile (per month) of registered Contestable Customers for the billing months January to December 2016,

⁴ Excludes consumption of Others (DCC, NSP, Kalayaan pumping and other generator-related consumption).

demonstrating how their electricity consumption varied over the course of a 24-hour period. No substantial peak and off-peak variation in the hourly consumption was observed for the billing months in review.

The month-on-month comparison of consumption profile likewise denotes that regardless of seasonal changes and varying temperatures throughout the year, the pattern of electricity consumption during the course of a day is approximately the same for any given month.

Figure 6. Hourly Average Energy Consumption (MWh), Registered Contestable Customers—2016



Figures 7 and 8 illustrate the hourly consumption profile based on average consumption per month (for the January to December 2016 billing months) of registered industrial and commercial Contestable Customers, respectively.

The figures depict that the average consumption level of industrial Contestable Customers are significantly higher than that of commercial Contestable Customers. The highest average consumption of registered industrial Contestable Customers reached as low as 659 MWh (observed at 0700H in January 2016 billing month) to as high as 906 MWh (observed at 1500H in October 2016 billing month). On the other hand, the average consumption of registered commercial Contestable Customers reached as low as 164 MWh (observed at 0400H in January 2016 billing month) to as high as 312 MWh (observed at 1500H in December 2016 billing month).

It is also observed that the hourly load profile of registered industrial Contestable Customers dipped several times in a day at 0700H, 1300H, and 2000H. Meanwhile, the registered commercial Contestable Customers had peak hours generally observed from 0900H to 2100H.

Figure 7. Hourly Average Energy Consumption (in MWh), Registered Industrial Contestable Customers—2016

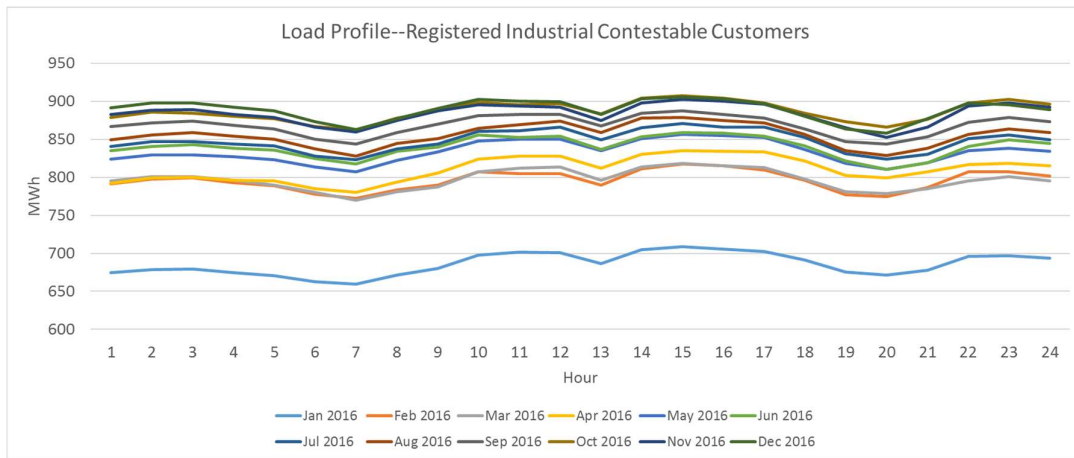
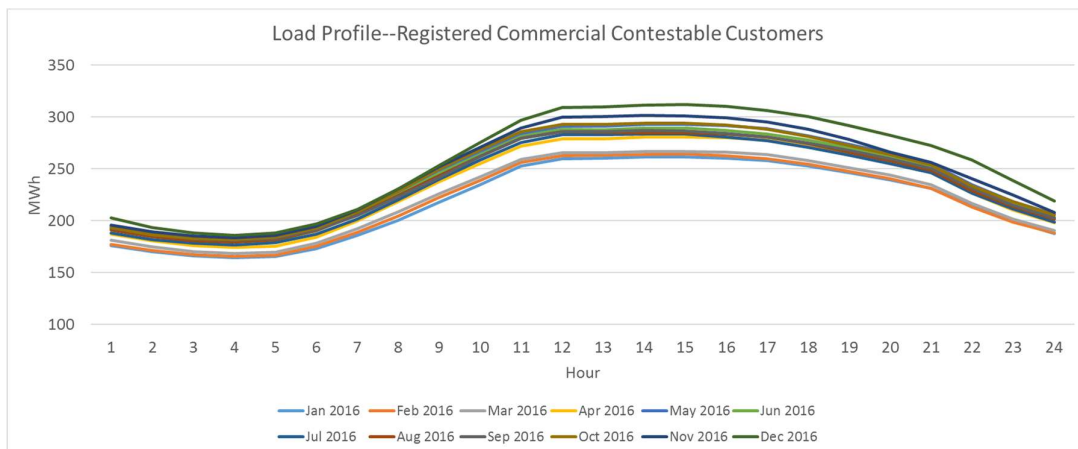
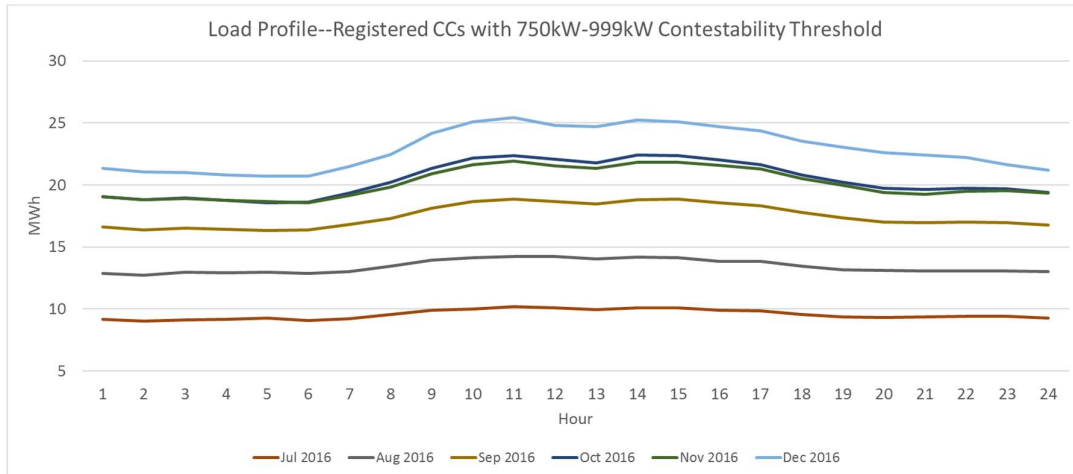


Figure 8. Hourly Average Energy Consumption (in MWh), Registered Commercial Contestable Customers—2016



As earlier mentioned, electricity end-users with 750 kW to 999 kW contestability threshold started to register in the market in the July 2016 billing month. The average hourly consumption of these registered Contestable Customers is illustrated in **Figure 9**. Data shows that for the six-month period from July to December 2016, the average hourly consumption of these registered Contestable Customers was recorded at a minimum of about 9 MWh (experienced at 0200H in July 2016 billing month) and at maximum of about 25 MWh (experienced at 1100H in December 2016 billing month).

Figure 9. Hourly Average Energy Consumption, Registered Contestable Customers with 750 kW to 999 kW Contestability Threshold—July to December 2016



E. Load Factor

Figure 10 shows the monthly load factor of registered Contestable Customers, which is calculated based on their actual electricity consumption. Consistent with the preceding section, the monthly load factor of registered Contestable Customers was maintained relatively high throughout the billing period in review, ranging from 80 percent to 89 percent. This indicates that the electricity usage of registered Contestable Customers is reasonably efficient.

Further, it was observed that except for the January to February billing months, no other significant month-on-month changes were noted in the load factor of these registered Contestable Customers.

Figure 10. Monthly Load Factor, Registered Contestable Customers—2015-2016

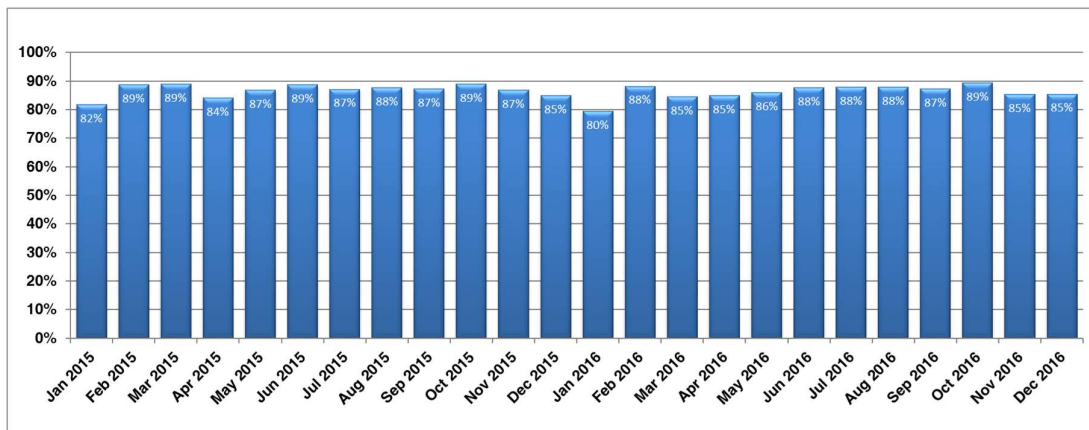
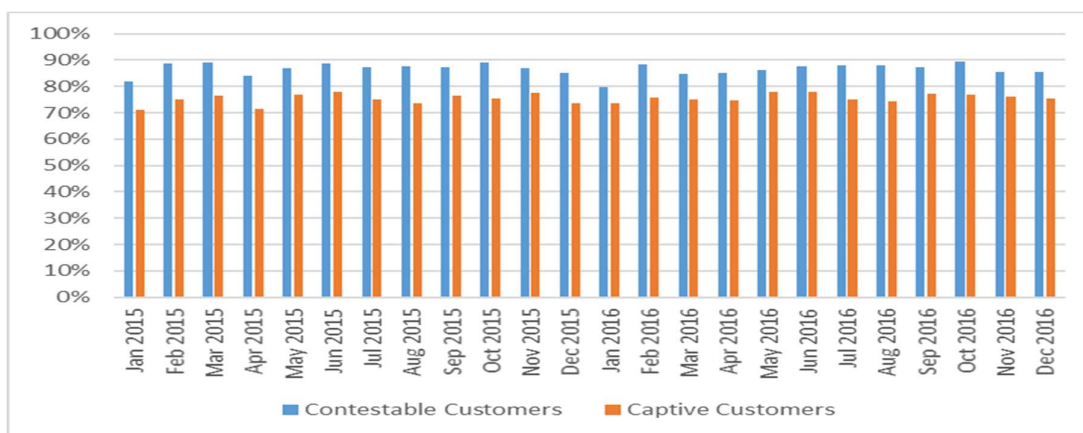


Figure 11 depicts the comparative load factor of registered Contestable Customers vis-à-vis the Captive Customers for the 2016 billing period. It may be observed that the load factor of registered Contestable Customers is consistently higher than that of Captive Customers. The load factor of Captive Customers for the 2015 and 2016 billing periods ranged from 71 percent to 79 percent. It must be noted also that the load factor of Captive Customers still included the electricity end-users with 750kW-999kW and 1MW and above electricity threshold that have yet to register in the market. This comparison of load factor depicts that the electricity usage of registered Contestable Customers is more efficient than that of the Captive Customers.

Figure 11. Monthly Load Factor, Registered Contestable Customers vs. Captive Market—2016



II. MARKET STRUCTURE

The market structure indices are used to determine the number of players, market share, and level of market concentration.

A. Number of Players

1. Number of Contestable Customers

The number of participating Contestable Customers grew from the time of integration of the retail market into the WESM. From only 240 Contestable Customers that initially registered in July 2013, more electricity end-users started participating in the succeeding months, with a record of 492 registered Contestable Customers by the end of December 2016 billing month (see **Table 1**). Of this number, majority or 477 registered Contestable Customers are located within Luzon, while only 15 registered Contestable Customers are within Visayas.

Table 1. Number of Contestable Customers by Membership Category, As of Billing Month—2016

Region / Membership Category	No. of Contestable Customers (CCs)												
	As of Billing Month												
	Dec 2015	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Luzon	375	379	380	381	383	381	385	407	415	428	441	460	477
CC	370	373	374	374	375	373	376	397	405	418	431	450	467
DCCC	5	6	6	7	8	8	9	10	10	10	10	10	10
Visayas	4	4	4	4	4	4	4	5	5	7	8	10	15
CC	2	2	2	2	2	2	2	3	3	4	5	7	11
DCCC	2	2	2	2	2	2	2	2	2	3	3	3	4
TOTAL	379	383	384	385	387	385	389	412	420	435	449	470	492
New	-	5	2	1	3	1	4	23	8	15	16	21	22
Deregistered	-	1	1	-	1	3	-	-	-	-	2	-	-
Increase/Decrease	-	4	1	1	2	(2)	4	23	8	15	14	21	22
% Increase	0.00%	1.06%	0.26%	0.26%	0.52%	-0.52%	1.04%	5.91%	1.94%	3.57%	3.22%	4.68%	4.68%

*DCCC refers to Directly Connected Contestable Customers

As mentioned in the previous section, a number of Contestable Customers within the 750 kW to 999 kW contestability threshold started to register in the market in July 2016 with the lowering of contestability threshold by 26 June 2016 (on a voluntary basis). The participation of the electricity end-users with lower contestability threshold partly influenced the increased number of registrants by the end of the 2016 billing year, with already 39 registered Contestable Customers with lower contestability threshold (**Table 3**).

Table 2. Number of Contestable Customers by Contestability Threshold, as of Billing Month—2016

Region / Contestability Threshold	No. of Contestable Customers (As of Billing Month)											
	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
LUZON	379	380	381	383	381	385	407	415	428	441	460	477
750kW							14	19	27	32	33	38
1MW	379	380	381	383	381	385	393	396	401	409	427	439
VISAYAS	4	4	4	4	4	4	5	5	7	8	10	15
750kW												1
1MW	4	4	4	4	4	4	5	5	7	8	10	14
Grand Total	383	384	385	387	385	389	412	420	435	449	470	492

While the number of retail market participants had grown over the years, the total registered Contestable Customers only makes up for about 33 percent of the 1,469 electricity end-users already issued a certificate of contestability by the Energy Regulatory Commission based on December 2016 data. The rest of the Contestable Customers that continue to be served by their respective distribution utilities have yet to register in the WESM to participate in the retail market.

Shown in **Tables 3 and 4** are the number and percentage of registered Contestable Customers by industry type and by contestability threshold, respectively, per level of maximum energy consumption during the period in review. Note that some of these contestable customers had already ceased their membership in the WESM at some point during the billing year in review, and are thus no longer accounted for in the number registered contestable customers as of the end of the billing year.

During the 2016 billing period, majority or about 372 registered contestable customers (about 75 percent) had maximum energy consumption of 1 MWh to 5 MWh. Meanwhile, 53 registered contestable customers (about 11 percent) had maximum energy consumption of 5 MWh to 10 MWh and 52 registered contestable customers (about 10 percent) had maximum energy consumption of 1 MWh and

below. The remaining 22 registered contestable customers (about 4 percent) had maximum energy consumption of 10 MWh and above.

Table 3. Number of Registered Contestable Customers by Level of Maximum Energy Consumption, Per Industry Type—2016

Region / Industry Type	Frequency of CCs Per Level of Maximum Energy Consumption							Total
	1 MWh and Below	1 MWh to 5 MWh	5 MWh to 10 MWh	10 MWh to 15 MWh	15 MWh to 20 MWh	20 MWh to 50 MWh	Above 50 MWh	
LUZON	51	362	51	10	3	6	1	484
Commercial	12	147	10					169
Industrial	39	215	41	10	3	6	1	315
VISAYAS	1	10	2			1	1	15
Commercial		3						3
Industrial	1	7	2			1	1	12
Total	52	372	53	10	3	7	2	499
Region / Industry Type	Percentage of CCs Per Level of Maximum Energy Consumption							Total
	1 MWh and Below	1 MWh to 5 MWh	5 MWh to 10 MWh	10 MWh to 15 MWh	15 MWh to 20 MWh	20 MWh to 50 MWh	Above 50 MWh	
LUZON	10.22%	72.55%	10.22%	2.00%	0.60%	1.20%	0.20%	96.99%
Commercial	2.40%	29.46%	2.00%					33.87%
Industrial	7.82%	43.09%	8.22%	2.00%	0.60%	1.20%	0.20%	63.13%
VISAYAS	0.20%	2.00%	0.40%	0.00%	0.00%	0.20%	0.20%	3.01%
Commercial		0.60%						0.60%
Industrial	0.20%	1.40%	0.40%			0.20%	0.20%	2.40%
Total	10.42%	74.55%	10.62%	2.00%	0.60%	1.40%	0.40%	100.00%

Table 4. Number of Registered Contestable Customers, by Level of Maximum Energy Consumption, Per Contestability Threshold—2016

Region / Threshold	Frequency of CCs Per Level of Maximum Energy Consumption							Total
	1 MWh and Below	1 MWh to 5 MWh	5 MWh to 10 MWh	10 MWh to 15 MWh	15 MWh to 20 MWh	20 MWh to 50 MWh	Above 50 MWh	
LUZON	51	362	51	10	3	6	1	484
750 kW	29	9						38
1MW	22	353	51	10	3	6	1	446
VISAYAS	1	10	2			1	1	15
750 kW	1							1
1MW		10	2			1	1	14
Total	52	372	53	10	3	7	2	499
Region / Threshold	Percentage of CCs Per Level of Maximum Energy Consumption							Total
	1 MWh and Below	1 MWh to 5 MWh	5 MWh to 10 MWh	10 MWh to 15 MWh	15 MWh to 20 MWh	20 MWh to 50 MWh	Above 50 MWh	
LUZON	10.22%	72.55%	10.22%	2.00%	0.60%	1.20%	0.20%	96.99%
750 kW	5.81%	1.80%						7.62%
1MW	4.41%	70.74%	10.22%	2.00%	0.60%	1.20%	0.20%	89.38%
VISAYAS	0.20%	2.00%	0.40%	0.00%	0.00%	0.20%	0.20%	3.01%
750 kW	0.20%							0.20%
1MW		2.00%	0.40%			0.20%	0.20%	2.81%
Total	10.42%	74.55%	10.62%	2.00%	0.60%	1.40%	0.40%	100.00%

2. Number of Suppliers

As of December 2016, there were a total of 22 Retail Electricity Suppliers (RES), 12 Local RES (LRES) and 7 Suppliers of Last Resort (SOLR) that have registered in the market. A list of registered suppliers from Luzon and Visayas as of the period covered are shown in **Table 5**.

Table 5 provides the list of registered RES, LRES and SOLR for 2016 billing year.

Table 5. List of Suppliers

No.	Market Participant Name	Short Name	Category	Region Served
22	AC Energy Holdings, Inc.	ACERES	Retail Electricity Supplier	Luzon/Visayas
	AdventEnergy, Inc.	ADVENTRES		Luzon/Visayas
	Aboitiz Energy Solutions, Inc.	AESIRES		Luzon/Visayas
	Corenergy, Inc.	CORERES		Luzon/Visayas
	DirectPower Services, Inc.	DIRPOWRES		Luzon/Visayas
	Ecozone Power Management, Inc.	EPMIRES		Luzon/Visayas
	FDC Retail Electricity Sales Corporation	FDCRESC		Luzon/Visayas
	First Gen Energy Solutions, Inc.	FGESRES		Luzon/Visayas
	Global Energy Supply Corporation	GESCRES		Luzon/Visayas
	GNPower Mariveles Coal Plant Ltd. Co.	GNPRES		Luzon/Visayas
	Kratos RES, Inc.	KRATOSRES		Luzon/Visayas
	Manta Energy, Inc.	MANTARES		Luzon/Visayas
	Masinloc Power Partners Company Limited	MPPCLRES		Luzon/Visayas
	Millenium Power RES, Inc.	MPRIRES		Luzon/Visayas
	Premier Energy Resources Corporation	PERCRES		Luzon/Visayas
	Prism Energy, Inc.	PRISMRES		Luzon/Visayas
	San Miguel Electric Corporation	SMELCRES		Luzon/Visayas
	SMC Consolidated Power Corporation	SMCCPCRES		Luzon/Visayas
	SN Aboitiz Power-RES, Inc.	SNAPRES		Luzon/Visayas
	Trans-Asia Oil & Energy Development Corporation	TAORES		Luzon/Visayas
	TeaM (Philippines) Energy Corporation	TPECRES		Luzon/Visayas
	Waterfront Mactan Casino Hotel, Inc.	WAHCRES		Visayas
12	Batangas II Electric Cooperative, Inc.	BTLC2LRE	Local Retail Electricity Supplier	Luzon
	Camarines Sur II Electric Cooperative, Inc.	CASUR2LRE		Luzon
	Dagupan Electric Corporation	DECORPLRE		Luzon
	Ilocos Norte Electric Cooperative, Inc.	INECLRE		Luzon
	Manila Electric Company	MRLCOLRE		Luzon
	San Fernando Electric Light & Power Co., Inc.	SFELAPLRE		Luzon
	Subic Enerzone Corporation	SEZLRE		Luzon
	Tarlac Electric, Inc.	TEILRE		Luzon
	Cebu I Electric Cooperative, Inc.	CEBEC1LRE		Visayas
	Cebu II Electric Cooperative, Inc.	CEBEC2LRE		Visayas
	Central Negros Electric Cooperative, Inc.	CENECOLRE		Visayas
	Visayan Electric Company, Inc.	VECOLRE		Visayas
7	Batangas II Electric Cooperative, Inc.	BTLC2SLR	Supplier of Last Resort	Luzon
	Camarines Sur II Electric Cooperative, Inc.	CASUR2SLR		Luzon
	Clark Electric Distribution Corporation	CEDCSLR		Luzon
	Dagupan Electric Corporation	DECORPSLR		Luzon
	Manila Electric Company	MRLCOSLR		Luzon
	Ilocos Norte Electric Cooperative, Inc.	INECSLR		Luzon
	Cebu I Electric Cooperative, Inc.	CEBEC1SLR		Visayas

B. Market Share

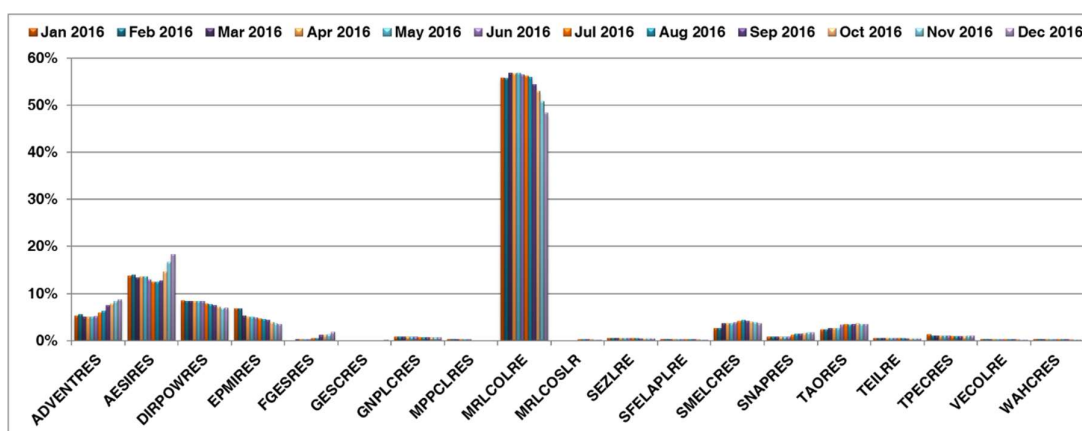
1. Market Share of Supplier

Throughout the period in review, it was noted that MRLCOLRE has been consistently supplying the energy requirements of bulk of registered Contestable Customers (**Figure 12**). By the end of December 2016, MRLCOLRE's share in the total number of registered Contestable Customers stood at about 48 percent. However, said market share is lower than the 56 percent share posted at the end of December 2015, which means that the registered Contestable Customers are tapping other suppliers for their energy requirements.

Distantly following MRLCOLRE in terms of share to the total number of registered Contestable Customers by the end of December 2016 was: AESIRES at about 18 percent (from about 14 percent in the previous year); ADVENTRES at about 9 percent (from about 5 percent in the previous year); DIRPOWRES at about 7 percent (from about 9 percent in the previous year); and SMELCRES at about 4 percent (from about 2 percent in the previous year).

Meanwhile, the actual number of registered customers served by these top suppliers showed respective increases relative to the previous billing year. Worth mentioning are the increases in the number of registered Contestable Customers supplied by: ADVENTRES (with 43 Contestable Customers by the end of December 2016 from 20 Contestable Customers by the end of December 2015 billing month or about 115 percent increase), SMELCRES (with 18 Contestable Customers from 9 contestable customers at the end of the previous year or a 100 percent increase), and AESIRES (with 90 Contestable Customers from 51 contestable customers at the end of the previous year or about 76 percent increase). An increase in MRLCOLRE's number of registered Contestable Customers was likewise observed (with 237 contestable customers from 212 Contestable Customers at the end of the previous year or about 12 percent increase). Similarly, the number of registered Contestable Customers supplied by DIRPOWRES showed an increase but at a minimal or about 6 percent with additional 2 Contestable Customers from 32 contestable customers served by the end of December 2015 billing year.

Figure 12. Share by Supplier in No. of Registered Contestable Customers—2016

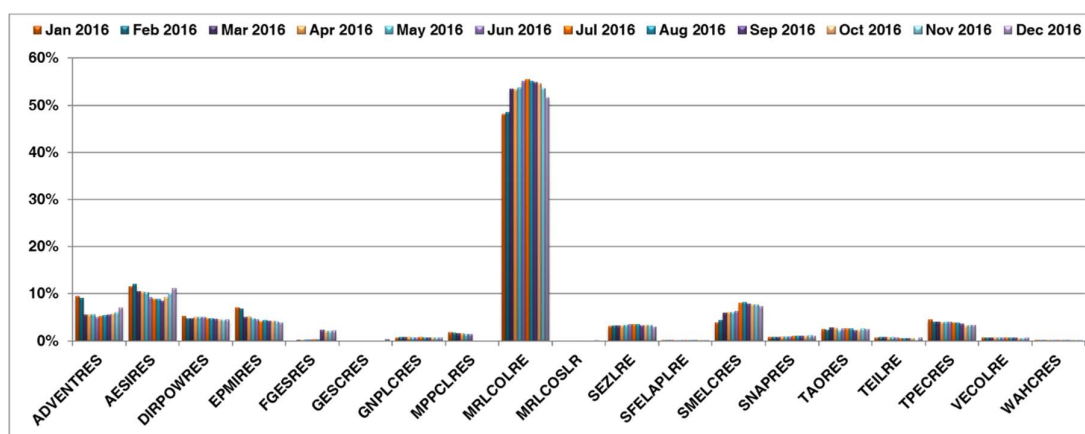


Consistent with the preceding discussion, MRLCOLRE's Contestable Customers accounted for bulk of the energy consumption of all registrants in 2016 as shown in **Figure 13**. MRLCOLRE's share was recorded at about 53 percent of the total energy consumption of registered Contestable Customers for the entire 2016 billing period (from about 50 percent share in the 2015 billing year). Year-on-year comparison further showed that the level of total energy consumption of MRLCOLRE's registered contestable customers posted about 19 percent increase from the previous year, as supported by the increase in its number of registered Contestable Customers this year. The share of MRLCOLRE to the total energy consumption of registered contestable customers, month-on-month, ranged from about 48 percent to about 56 percent during the billing period in review.

MRLCOLRE was distantly followed by: AESIRES (about 10 percent share in 2016 from about 12 percent in 2015 billing year), SMELCRES (about 7 percent share in 2016 from about 3 percent share in 2015), ADVENTRES (about 6 percent share in 2016 from about 9 percent share in 2015), EPMIRES (about 5 percent share in 2016 from about 8 percent share in 2015), and DIRPOWRES (about 5 percent for the two consecutive billing years, with only a minimal increase in 2016).

Among these top suppliers of energy during the 2016 billing period, it was notable that aside from MRLCOLRE, only SMELCRES showed an increase in the level of their contestable customers' energy consumption. The energy consumption level of registered contestable customers served by SMELCRES for the entire 2016 billing year posted a significant increase of about 191 percent as compared with the previous year. The rest of the top suppliers showed year-on-year decreases in terms of their registered Contestable Customers' energy consumption level, as follows: EPMIRES with about 32 percent decrease, ADVENTRES with about 26 percent decrease, AESIRES with about 7 percent decrease, and DIRPOWRES with a very minimal decrease of less than 1 percent in the level of their contestable customers' energy consumption.

Figure 13. Share by Supplier in Energy Consumption of Registered Contestable Customers—2016



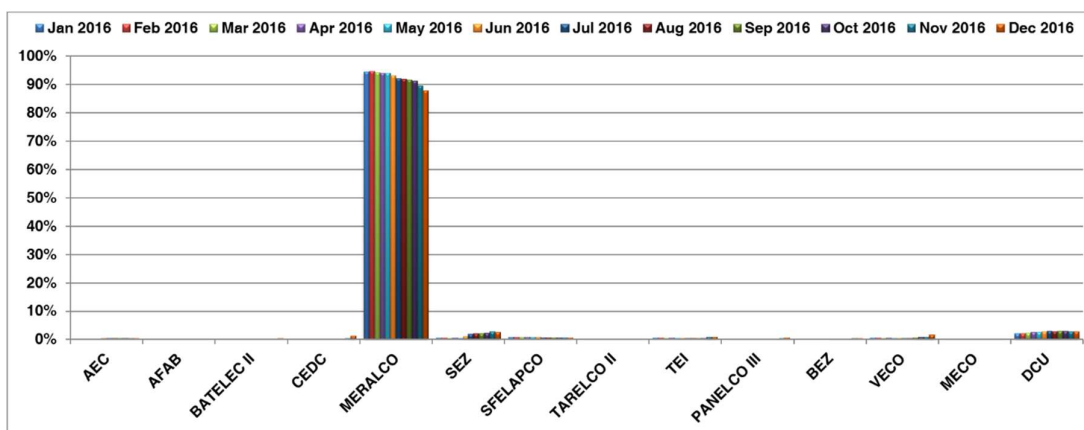
In terms of location, registered Contestable Customers are scattered within the following distribution utility franchise areas and economic zones: Angeles Electric Cooperative Angeles Electric Corporation (AEC); Authority of the Freeport Area of Bataan (AFAB); Balamban Enerzone Corporation (BEZ); Batangas II Electric Cooperative, Inc. (BATELEC II); Clark Electric Distribution Corporation (CEDC); Mactan Electric Company (MECO); Manila Electric Company (MERALCO); Pangasinan Electric Cooperative III (PANELCO); Subic Enerzone Corporation (SEZ); San Fernando Electric Light and Power Company, Inc. (SFELAPCO); Tarlac II Electric Cooperative, Inc. (TARELCO II), Tarlac Electric Incorporated (TEI); and Visayan Electric Company (VECO). The rest of the 13 registered Contestable Customers or about 3 percent are directly connected to the transmission grid.

Majority of the registered Contestable Customers (432 registered contestable customers or about 88 percent) are located within the franchise area of MERALCO (**Figure 14**). This figure depicts a 20 percent increase from the 360 registered Contestable Customers located within this franchise area by the end of December 2015. It should be noted, however, that not all of these registered Contestable Customers were supplied by MRLCOLRE—MERALCO's local RES—as some of them tapped the other RES serving within the MERALCO franchise area to supply their energy requirements.

Meanwhile, 46 registered Contestable Customers (about 9 percent) were distributed among the different franchise locations and economic zones and the rest

of the 14 registered Contestable Customers (about 3 percent) are directly connected to the transmission grid.

Figure 14. Percentage of Registered Contestable by Location—2016



The registered Contestable Customers located within the MERALCO franchise area accounted for about 84 percent (about 90 percent in 2015 billing year) of the total energy consumption of all registrants for 2016 billing period (**Figure 15**). Further, the level of energy consumption of registered Contestable Customers within the MERALCO franchise increased by about 5 percent in 2016 as compared with the previous year supported by the increased number of registered Contestable Customers within that location. Meanwhile, the registered Contestable Customers located within SEZ accounted for about 3 percent of the total consumption of all registrants, while about 1 percent was the consumption within VECO. Moreover, about 8 percent is the consumption of registered Contestable Customers that are directly connected to the transmission grid.

Figure 15. Percentage of Registered Contestable Customers' Energy Consumption by Location—2016

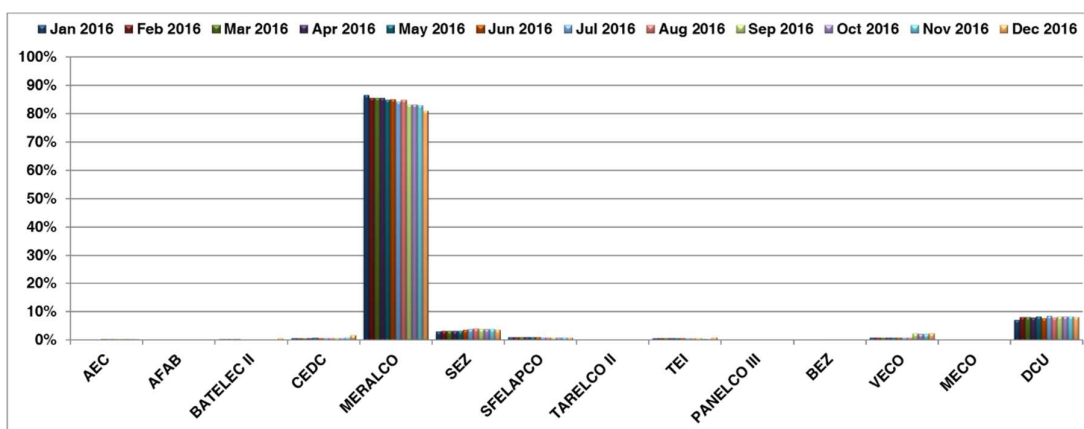
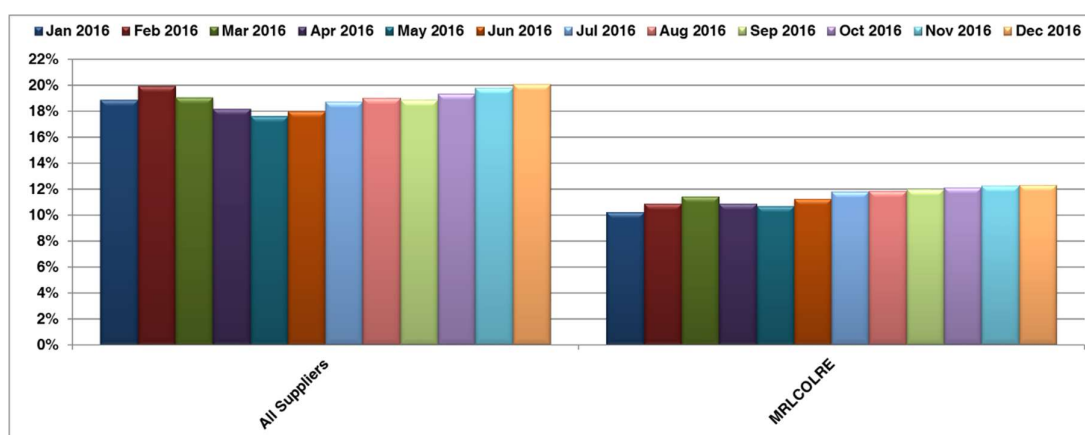


Figure 16 depicts that the consumption of registered Contestable Customers within the MERALCO franchise area held only a small percentage of the total energy consumption within that franchise area, as bulk of the energy consumption was held by MERALCO's Captive Customers. The share in energy consumption of all

registered Contestable Customers within the MERALCO franchise supplied by all Suppliers ranged from about 18 percent to 20 percent throughout the period in review. Meanwhile, the share of MRLCOLRE in the energy consumption within the MRLCOLRE franchise are ranged from about 10 percent to 12 percent. Effectively, only about 7 percent to 9 percent was supplied by other RES supplying within the MERALCO franchise area throughout the period in review.

Figure 16. Registered Contestable Customers' Monthly Share to Total Consumption within MERALC Franchise Area—2016



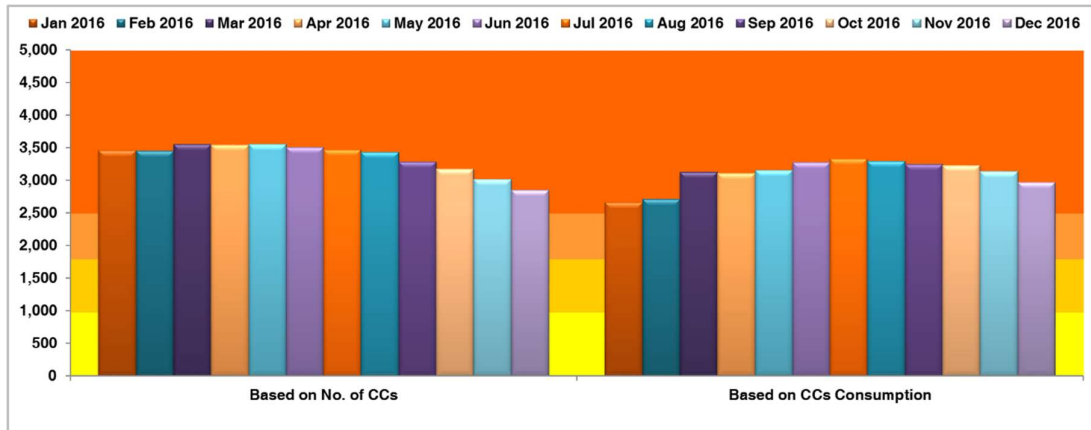
2. Herfindahl–Hirschman Index (HHI)⁵

Considering the significant share controlled by MRLCOLRE, the Herfindahl–Hirschman Index (HHI) results indicated a highly concentrated market based on market shares of suppliers as measured both in terms of the number and consumption of registered contestable customers (**Figure 17**). Notably, the monthly HHI values in terms of number of registered contestable customers demonstrated a slightly decreasing trend with the entry of new registrants not supplied by MRLCOLRE.

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

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

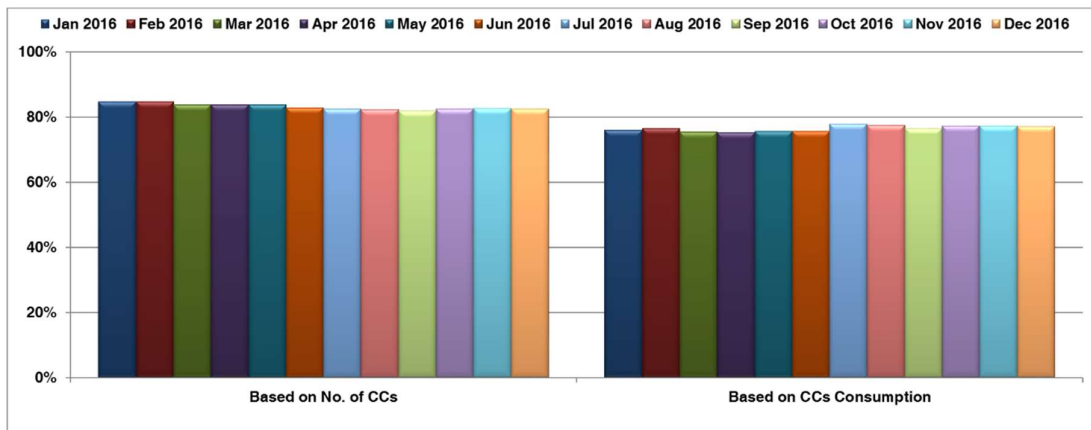
Figure 17. HHI Values Based on Supplier Share in No. and Consumption of Registered Contestable Customers—2016



3. Four-Firm Concentration Index (C4)

The monthly C4 values were likewise observed to be relatively high, ranging from about 82 percent to 85 percent in terms of number of Contestable Customers, and from about 75 percent to 78 percent in terms of consumption of Contestable Customers (**Figure 18**).

Figure 18. Monthly Four-Firm Index, 2016



4. Supplier Structure

Table 6 shows the degree of integration between the Suppliers and Generation. It is noted that majority or 76 percent of the RES that are registered in the retail market are affiliated with Generation Companies. Meanwhile, about 33 percent and 17 percent of Local RES and Supplier of Last Resort, respectively, have affiliate generators.

Table 6. Number of Suppliers

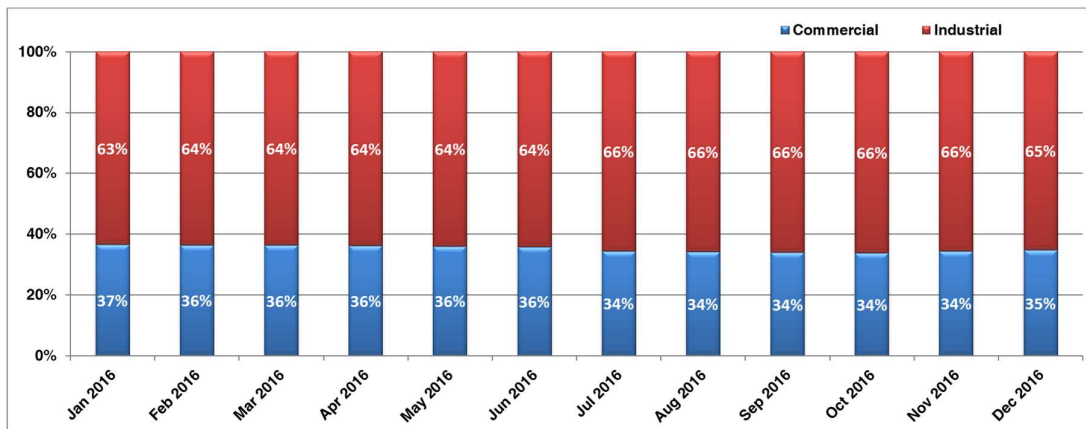
Category	No. of Suppliers	No. of Suppliers with Affiliate Generator	% of Suppliers with Affiliate Generators
Retail Electricity Supplier	22	15	68%
Local Retail Electricity Supplier	12	4	33%
Supplier of Last Resort	7	1	14%

III. RETAIL ACTIVITY

A. Customer Participation Level

The industrial sector consistently comprised more than half of the Contestable Customers' participation (**Figure 19**) in the retail market, with monthly share ranging from about 65 percent to 66 percent over the course of the period in review.

Figure 19. Percentage of Registered Contestable Customers, Per Industry Type—2016



B. Customer Switching Rate

Table 7 shows the switching rate among registered Contestable Customers from January to December 2016 billing periods. Based on the data, only a few Customers, relative to all registrants, switched from one Supplier to another during the period in review.

Table 7. Customer Switching Rate

Particulars	Contestable Customer Switching Rate (For Contestable Customers Switching the Following Billing Month)											
	Jan 2016	Feb 2016	Mar 2016	Apr 2016	May 2016	Jun 2016	Jul 2016	Aug 2016	Sep 2016	Oct 2016	Nov 2016	Dec 2016
Switching Rate (Luzon)	0.3%	2.9%	0.0%	0.0%	1.0%	0.8%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
Total No. of CCs	379	380	381	383	381	385	407	415	428	441	460	477
Total No. of CCs that Switched	1	11	-	-	4	3	-	1	-	-	-	-
Switching Rate (Visayas)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total No. of CCs	4	4	4	4	4	4	5	5	7	8	10	15
Total No. of CCs that Switched	-	-	-	-	-	-	-	-	-	-	-	-
Switching Rate (Luzon-Visayas)	0.3%	2.9%	0.0%	0.0%	1.0%	0.8%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
Total No. of CCs	383	384	385	387	385	389	412	420	435	449	470	492
Total No. of CCs that Switched	1	11	-	-	4	3	-	1	-	-	-	-

C. Spot Exposure

The monthly spot exposure per Supplier is shown in **Figure 20**. Among the suppliers, only GNPLRES, SEZLRE, and SMELCRES consistently incurred positive spot exposures during the period in review. This means that the actual consumption of their contestable customers is greater than the bilateral contract quantities declared by their counterparty generators. Spot exposures of these suppliers ranged from 4.9 percent to 36.68 percent. Additionally, WAHCRES consistently had a 100 percent spot exposure.

Figure 20. Monthly Spot Exposure, Per Supplier—2016

