

**Technical Consultant's Final Report
To the Delaware Public Service Commission**

**Delmarva Power & Light's 2019 Request for Proposals for
Full Requirements Wholesale Electric Supply for Standard Offer Service**

February 21, 2019



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Table of Contents

- I. Executive Summary 3
 - A. Introduction 3
 - B. Results 3
 - C. Findings & Conclusions 4
- II. RFP Overview 4
- III. Auction Results & Prices 6
 - A. Bid Activity 6
 - B. Prices 7
 - C. Rate Impacts 8
- IV. Market Analysis 8
 - A. Overview 8
 - B. Energy Market 8
 - C. Fuel Market Outlook 9
 - D. Capacity Market 11
 - E. Ancillary Services Market 11
- V. Process Analysis 12
 - A. Notification of the RFP to the Market 12
 - B. Information Dispersal 12
 - C. Determination of Applicant Eligibility 12
 - D. Bid Ranking 12
 - E. The Awarding of Transactions 12
 - F. Full Requirements Service Agreement Signing 13
- VI. Conclusions 13
- Appendix 1: Tranche 1 Final Bid Plan 14
- Appendix 2: Tranche 2 Final Bid Plan 16
- Appendix 3: RFP Announcement 18

I. Executive Summary

A. Introduction

The Delaware Public Service Commission (DE PSC) retained The Liberty Consulting Group, Inc. (Liberty) to monitor Delmarva Power & Light's (Delmarva) 2019 Request for Proposals (RFP) for Full Requirements Supply for its Standard Offer Service (SOS). Liberty presents this report to the DE PSC with its findings on the process and the auction results of the RFP.

Liberty is based in Lebanon, PA and has been providing regulatory consulting services to the energy industry since 1987. Its consultants are experts in electric utility operations and regulatory issues. Liberty has provided energy procurement monitoring services in multiple state jurisdictions and a broad range of procurement formats.

B. Results

Delmarva performed two auction sessions for the 2019 RFP. Tranche 1 was held on November 26, 2018, and Tranche 2 was held on January 28, 2019. Overall, Delmarva's RFP was satisfactory and resulted in prices reflective of market conditions. Participation was satisfactory and resulted in a competitive bidding process. The RFP process was run successfully from start to finish. The processes were carried out as expected and the Enel X auction platform performed flawlessly. The ultimate winning bids were consistent with regional market conditions.

This year's auctions reflect a fundamental change in how Delmarva procures supply for its Residential and Small Commercial and Industrial (RSCI) SOS customers. Historically, the bids to serve this load were for a three-year delivery period. For the 2020 procurement and beyond, these blocks will be for two-year periods. The transition from three to two years required that last year's RSCI bids were for 1 year and this year's bids were for a combination of one and two-year contracts. Thus, the power to be delivered in the 2019 delivery period (June 1, 2019 through May 31, 2020) was procured in the 2017 and 2019 RFPs, but not from 2018.

Average winning bid prices for this RFP are shown in Table 1, along with the percentage change in price compared to last year's prices. ***Year over year, the weighted average auction prices were lower for the RSCI, MGS, and LGS customer types, but slightly higher for GS-P. This is largely due to lower capacity prices year over year, somewhat offset by higher energy prices.***

Table 1: Weighted Average Winning Bid Price (\$/MWh)

Customer Type	2018	2019	Change	% Change
RSCI (12-month)	\$65.24	\$57.76	-\$7.48	-11.5%
RSCI (24-month)	NA	\$59.68	NA	NA
MGS	\$59.46	\$52.97	-\$6.49	-10.9%
LGS	\$56.53	\$50.55	-\$5.98	-10.6%
GS-P	\$52.07	\$52.37	+\$0.30	+0.6%

The customer bill impacts of the winning wholesale energy prices are estimated by Delmarva to be as follows in Table 2. More detail on these estimated impacts is provided in Section III: Auction Results & Prices.

Table 2: Estimated Average Monthly Customer Bill and Impact¹

Class	As of 9/1/18	6/1/19	\$ Change	% Change
R@840 kWh	\$111.42	\$107.99	(\$3.43)	(3.1%)
SGS-ND	\$101 - \$357	\$99 - \$348	(\$2.24) - (\$8.96)	(2.2%) - (2.5%)
MGS	\$340 - \$5,964	\$318 - \$5,470	(\$22) - (\$494)	(6.4%) - (8.3%)
LGS	\$6,506 - \$74,883	\$6,097 - \$69,884	(\$409) - (\$4,999)	(6.3%) - (6.7%)
GS-P	\$706 - \$122,044	\$706 - \$121,912	(\$132) - \$153	(0.1%) - 0.3%

C. Findings & Conclusions

Liberty monitored the auction process in its entirety. Pre-bid monitoring included reviews of announcements, bidder communication, bidder certification, bid system training, energy markets, and bid system performance. Bid day monitoring included live monitoring of the auction on-site, verification of bids, notification of winners, and contract signing.

Liberty has concluded that each element of the entire process, including both the Tranche 1 and Tranche 2 auctions, was run professionally and resulted in bids that were consistent with expectations based on market conditions. Concerning the process and results, Liberty finds no areas in need of attention at this time. Key to the effectiveness of the auction process is the Enel X auction platform which Liberty finds to be highly effective.

II. RFP Overview

Since 2006, Delmarva has performed an RFP to procure wholesale energy to serve its Standard Offer Service (SOS) customers. SOS customers receive comprehensive default energy service from Delmarva vs. a non-utility, third party supply for generation. Each year, blocks of power to meet the SOS load are purchased from the winning bidders of this multi-tranche auction. The process consists of two tranches, in November and January, and a third, if needed. In this year's process, a third tranche was not needed². The final bid plans defining blocks were provided by Delmarva and are shown in Appendix 1 (Tranche 1) and Appendix 2 (Tranche 2).

Blocks are bid for Residential Small Commercial and Industrial (RSCI), Medium General Service (MGS), Large General Service (LGS) and General Service-Primary (GS-P). Auctions for each block are held

¹ These comparisons are estimates and are subject to change as the adjustments to transmission, procurement cost, renewable energy portfolio standards, Qualified Fuel Cell Provider Projects-Renewable Capable Power Production, and reasonable allowance for retail margin are not yet included for the supply year beginning 6/1/2019.

² A Third Tranche was necessary in 2006.

electronically with a web-based platform provided by Enel X. Bidders apply for approval, and approved bidders are granted access to and training on the Enel X platform. Tables 3 and 4 display the quantity and size of each block by customer class for Tranche 1 and 2, respectively.

Table 3: Tranche 1 Bid Plan

Service Type	Blocks	MW Per Block	Total MW
RSCI (12-month)	2	43.2	86.4
RSCI (24-month)	4	48.6	194.4
MGS	2	40.8	81.6
LGS	1	15.8	15.8
GS-P	1	24.5	24.5
Total			402.7

Table 4: Tranche 2 Bid Plan

Service Type	Blocks	MW Per Block	Total MW
RSCI (12-month)	1	43.2	43.2
RSCI (24-month)	4	48.6	194.4
MGS	1	40.8	40.8
Total			278.4

One of the keys to a competitive RFP for power is active participation from power suppliers. To ensure adequate participation, Delmarva announces its RFP by issuing a press release to over 90 companies directly, and to media channels. As a result, ten companies submitted expressions of interest in this RFP, and seven ultimately became eligible. Table 5 displays historical participation since 2012-13, up to and including this most recent auction.

Table 5: Bidder Participation

Participants	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19
EOIs	13	17	15	11	12	12	10
Eligible Bidders	8	11	6	8	8	7	7
Actual Bidders	8	9	5	8	6	6	6

Table 6 lists the organizations who successfully bid (won) any of the blocks in Tranche 1 or 2. Five companies won blocks in this year's tranches as compared to four last year and three in 2017.

Table 6: Tranche 1 & 2 Winning Bidders

Company
AEP
DTE
Exelon
Hartree
Nextera

Table 7 displays the percentage of MWs served for the 2019 delivery period, which includes RSCI blocks won in 2017 and 2019.

Table 7: Suppliers for 2019 Delivery Period and Percentage of Load Served

Supplier	RSCI	MGS	LGS	GS-P
AEP			100%	
DTE	12%			
Exelon	19%	33%		100%
Hartree	6%			
Nextera	37%	67%		
TransCanada	26%			

The results in Table 7 show reasonable diversity in the *number* of suppliers, with six different companies serving load, five of them serving RSCI load.

III. Auction Results & Prices

A. Bid Activity

In both Tranche 1 and Tranche 2, participation was adequate and resulted in competitive auctions. The auction process itself promotes competition due to Enel X's auction platform. It provides real-time bidder feedback to induce competitive bidding behavior. The bid activity for Tranche 1 and Tranche 2 is displayed in Tables 8 and 9, respectively.

Table 8: Tranche 1 Bid Activity

Class/Block	Bidders	Bids
RSCI (12) – Block 1	3	10
RSCI (12) – Block 2	4	16
RSCI (24) – Block 1	4	14
RSCI (24) – Block 2	4	10
RSCI (24) – Block 3	4	8
RSCI (24) – Block 4	4	8
MGS – Block 1	5	12
MGS – Block 2	5	8
LGS	3	5
GS-P	3	5

Table 9: Tranche 2 Bid Activity

Class/Block	Bidders	Bids
RSCI (12)	5	19
RSCI (24) – Block 1	5	13
RSCI (24) – Block 2	5	11
RSCI (24) – Block 3	5	11
RSCI (24) – Block 4	5	13
MGS	6	12

B. Prices

Winning bid prices for the last four years for each customer class and block type are provided in Table 10, as well as the change in 2019 vs. 2018. The RSCI 12-month blocks averaged \$57.76 per MWh, which reflects a decrease of 11.5% from the 2018 auction prices. The RSCI 24-month blocks averaged \$59.68 per MWh, just slightly higher than the 12-month blocks due to higher expected energy and capacity market prices in the second year of the contracts. There were no 24-month RSCI blocks in previous years with which to compare the prices. MGS and LGS prices were lower than those of 2018 by 10.9% and 10.6%, respectively. GS-P prices ticked up year over year, an increase of 0.6%.

Table 10: Weighted Average Winning Bid Prices (\$/MWh)

Customer Class	2016	2017	2018	2019	Change	% Change
RSCI (12)			65.24	57.76	(7.48)	-11.5%
RSCI (24)				59.68		
RSCI (36)	63.60	58.21				
MGS	57.35	54.70	59.46	52.97	(6.49)	-10.9%
LGS	55.14	51.71	56.53	50.55	(5.98)	-10.6%
GS-P	55.82	50.20	52.07	52.37	0.30	0.6%

C. Rate Impacts

To gauge the impact of the most recent auction on its SOS customers, Delmarva has developed a model to calculate the estimated changes to average monthly customer bills by customer class. It is important to note that these are estimates and should not be construed as exact or guaranteed results based only on the wholesale prices of the winning bids. The results of this analysis, displayed in Table 11, are consistent with the bid price results displayed in Table 10.

Table 11: Estimated Average Monthly Bill Comparison³

Class	As of 9/1/18	6/1/19	\$ Change	% Change
R@840 kWh	\$111.42	\$107.99	(\$3.43)	(3.1%)
SGS-ND	\$101 - \$357	\$99 - \$348	(\$2.24) - (\$8.96)	(2.2%) - (2.5%)
MGS	\$340 - \$5,964	\$318 - \$5,470	(\$22) - (\$494)	(6.4%) - (8.3%)
LGS	\$6,506 - \$74,883	\$6,097 - \$69,884	(\$409) - (\$4,999)	(6.3%) - (6.7%)
GS-P	\$706 - \$122,044	\$706 - \$121,912	(\$132) - \$153	(0.1%) - 0.3%

IV. Market Analysis

A. Overview

As stated earlier in this report, the winning bid prices reflected market conditions. Liberty has collected market information on energy, capacity, and fuel prices to assess the key drivers of bidder behavior.

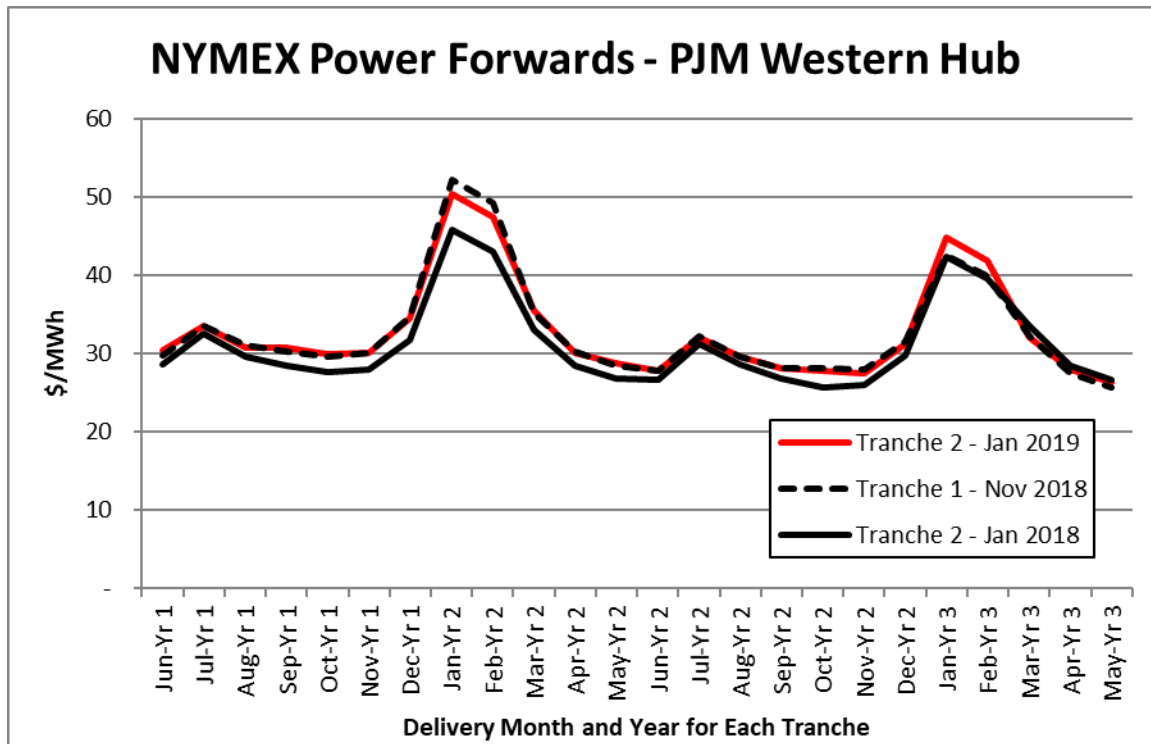
B. Energy Market

The outlook for regional energy prices was slightly lower in Tranche 2 as compared to Tranche 1. Energy prices for both Tranche 1 and Tranche 2 were higher than last year's Tranche 2 prices. The market for energy in PJM is currently stable, and futures prices reflect seasonal patterns and growth rates that are to be expected.

Exhibit 1 displays round the clock (RTC) prices for the last three auction dates. It highlights the difference in energy price expectations between the tranches. **Forward prices for wholesale energy in PJM have increased year over year.** This slightly offsets a substantial decrease in capacity prices that have helped to decrease bid prices. The source for all energy prices is CME Group NYMEX Futures.

³ These comparisons are estimates and are subject to change as the adjustments to transmission, procurement cost, renewable energy portfolio standards, Qualified Fuel Cell Provider Projects-Renewable Capable Power Production, and reasonable allowance for retail margin are not yet included for the supply year beginning 6/1/2019.

Exhibit 1: Energy Forward Prices – PJM RTC Avg – Western Hub



C. Fuel Market Outlook

As an extension of Liberty’s review of energy forwards, we also reviewed the underlying fuel markets that drive energy prices by assessing fuel forward markets. Liberty has reviewed forward prices for natural gas, the primary fuel commodity in PJM. Exhibit 2 displays the outlook for gas prices at the Dominion Hub over the previous two tranches. Gas prices are consistent with PJM Western Hub energy prices, as shown when they are plotted together in Exhibit 3.

Exhibit 2: Dominion Hub Gas Forward Prices

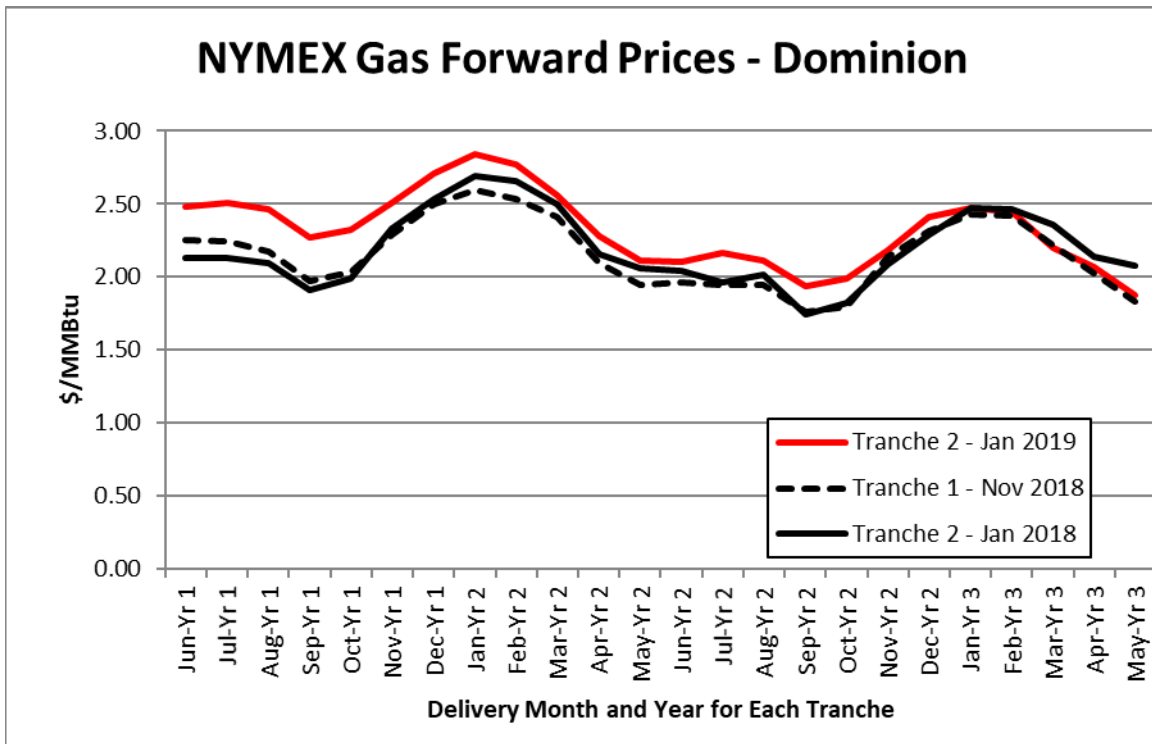
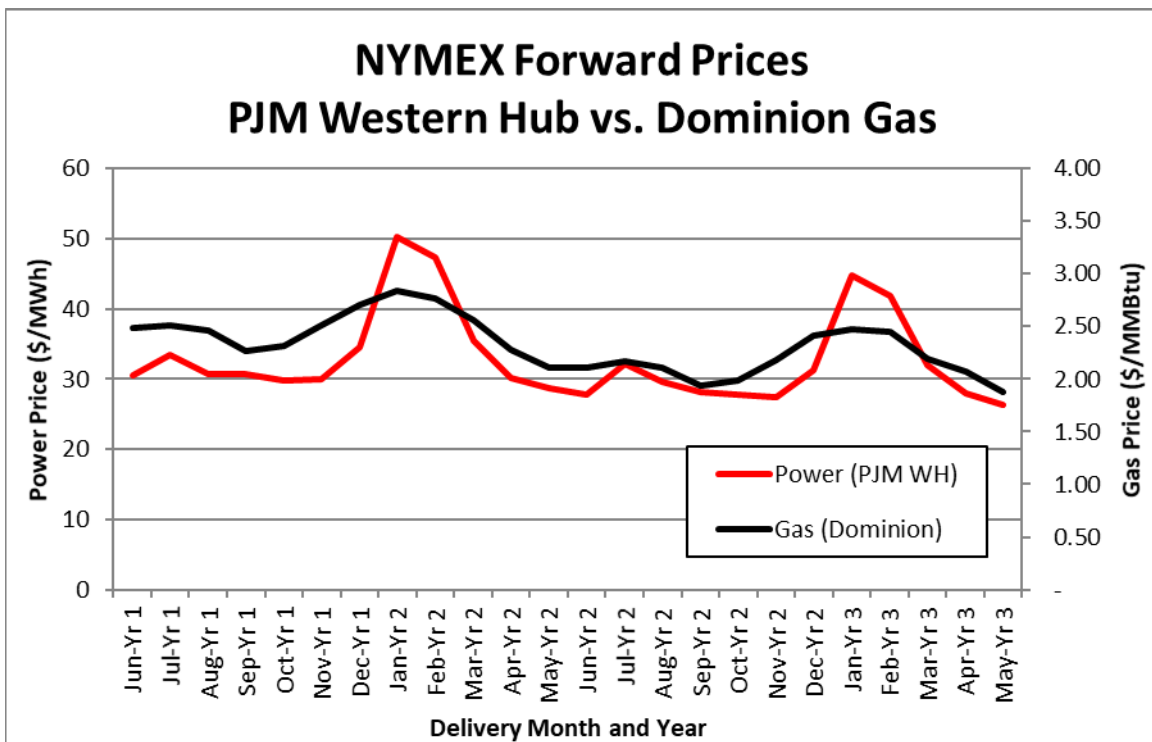


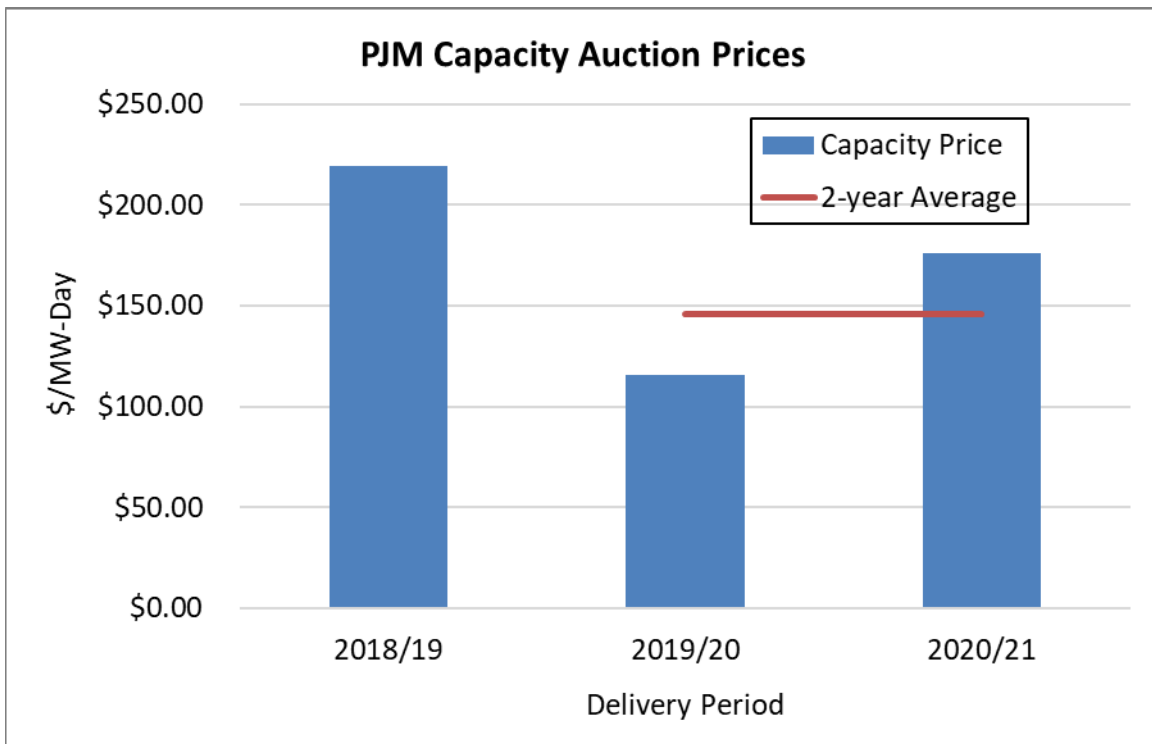
Exhibit 3: Gas Forward Prices vs. Power Forward Prices



D. Capacity Market

PJM capacity prices are set through auctions and are prices (in \$/MW-day) are set for annual delivery periods commencing June 1 of each year. Exhibit 4 shows capacity prices for the years relevant to this SOS auction’s delivery periods and how they affect each year and type of auction block. This year, the capacity prices for RSCI are both the 2019/20 and 2020/21 prices (\$115.68/MW-day and \$176.17/MW-day, respectively). Last year’s RSCI bids were based on the 2018/19 price (\$219.29/MW-day). Based on this, capacity prices applicable to the RSCI 12- and 24-month blocks fell 47% and 20%, respectively. The capacity price applicable to MGS, LGS, and GS-P all realized the 47% decrease year over year.

Exhibit 4: Capacity Prices (\$/MW-day)



It is worth noting how \$/MW-day capacity auction prices translate to \$/MWh SOS bid prices. The calculation is a function of the conversion factors between the two units and the load factor for each class (which change from year to year). Lower load factor customer classes like RSCI feel a greater impact from capacity prices than high load factor GS-P customers, since they have fewer MWh over which to spread their demand-based capacity charges. Based on historical load factors of the DP&L customer classes, every \$1 change in capacity auction prices translates to roughly \$0.07-\$0.10/MWh.

E. Ancillary Services Market

Ancillary service-related costs are reflected by the bidders, but do not make up a large portion of or impact on SOS prices. Ancillary services were essentially unchanged during this auction period and are relatively insignificant when compared to Capacity and Energy prices. This parameter did not have a material impact on the auction results.

V. Process Analysis

Liberty was assigned the task of monitoring Delmarva's RFP process through specific administrative requirements. The following is an assessment of each area:

A. Notification of the RFP to the Market

To ensure adequate participation, Delmarva announces its RFP by issuing a press release to over 90 companies directly, and to media channels. This announcement is displayed in Appendix 3. It included basic information to prospective bidders and instructions for acquiring more information and registering on Delmarva's RFP website. As a result, 10 companies submitted an expression of interest in this RFP, 7 ultimately became eligible, and 6 bid on blocks. Liberty finds that this task was performed to expectations.

B. Information Dispersal

Delmarva provided all materials for expressing interest and registering for the auction on its RFP website. Once approved, bidders were able to acquire all key administrative, technical, and schedule information. Liberty finds that information was disseminated appropriately and that the website, as a foundation for communication, worked according to plan.

Delmarva also held a webinar on the entire RFP process. The webinar included a review of changes since the previous RFP and instructions for all aspects of RFP participation. Liberty found that the webinar was run well and was informative.

C. Determination of Applicant Eligibility

Interested bidders were required to submit to Delmarva their Credit Application, Confidentiality Agreement, PJM certification, and FERC certification by the deadline. It was ultimately determined that 7 of the 10 interested parties became eligible to bid. Liberty finds that this eligibility process was performed to standards.

D. Bid Ranking

On auction day, each block is made available to bid at 10 AM. The first RSCI block auction ends at 10:00 am, and subsequent block auctions end every ten minutes after that. Each of the RSCI blocks was offered first, followed in order by MGS, LGS and finally the GS-P block (LGS and GS-P are only applicable to Tranche 1).

A Liberty consultant was present in DC with Delmarva and Enel X representatives and was joined by DE PSC Staff by teleconference. All viewed the auction through the Enel X platform. After all of the blocks ended, Liberty reviewed each bid with Delmarva and confirmed the winning bid, the organization, and the price.

E. The Awarding of Transactions

After the completion of each tranche, and review between Delmarva and Liberty, Delmarva contacted each bidder. Winning bidders were notified and were provided with contracts reflecting their organization, bid size and winning bid price.

F. Full Requirements Service Agreement Signing

Delmarva worked with each winning bidder to complete the Full Requirements Service Agreements and provided copies of each executed agreement to Liberty for review. On the Thursday after each auction, Liberty presented the auction results to the DE PSC, and these were subsequently approved.

VI. Conclusions

Liberty has concluded that all processes, including both the Tranche 1 and Tranche 2 auctions, were run professionally and resulted in bids that were consistent with expectations based on market conditions. Liberty finds no areas in need of attention at this time.

Appendix 1: Tranche 1 Final Bid Plan

Delmarva DE SOS RFP 2019
Tranche 1

	as of: 11/19/2018		
<u>Service Type</u>	<u>SOS</u> <u>PLC (MW)</u>	<u>Eligible</u> <u>PLC (MW)</u>	
Residential and Small Commercial & Industrial	773.2	860.3	
Medium General Service -Secondary	122.8	239.6	
Large General Service -Secondary	15.8	100.2	
General Service - Primary	24.5	114.9	
Total	936.3	1315.0	
	Contract Term		
<u>Service Type</u>	<u>12 Month</u> <u>6/1/19-5/31/20</u>	<u>24 Month</u> <u>6/1/19-5/31/21</u>	<u>Total</u>
Residential and Small Commercial & Industrial	16.6667%	50.0%	66.7%
Service Classifications: R, R-TOU, R-TOU-ND, R-TOU-SOP SGS-ND, SGS-SH, SGS-WH, OL, ORL, X.			
Approximate Total PLC	128.8	386.6	515.5
Block Size %	5.5556%	6.2500%	
Approximate Block Size (MW)	42.9	48.3	
Total Number of Blocks	3	8	11
Tranche 1 blocks	2	4	6
Tranche 2 blocks	1	4	5
Medium General Service - Secondary	100.0%		100.0%
Service Classifications: MGS-S			
Approximate Total PLC	122.8		122.8
Block Size %	33.3333%		
Approximate Block Size (MW)	40.9		
Total Number of Blocks	3		3
Tranche 1 blocks	2		2
Tranche 2 blocks	1		1
Large General Service - Secondary	100.0%		100.0%
Service Classifications: LGS-S			
Approximate Total PLC	15.8		15.8
Block Size %	100.0%		
Approximate Block Size (MW)	15.8		
Total Number of Blocks	1		1
Tranche 1 blocks	1		1
General Service - Primary	100.0%		100.0%
Service Classifications: GS-P			
Approximate Total PLC	24.5		24.5
Block Size %	100.0%		
Approximate Block Size (MW)	24.5		
Total Number of Blocks	1		1
Tranche 1 blocks	1		1

Appendix 2: Tranche 2 Final Bid Plan

**Delmarva DE SOS RFP 2019
Tranche 2**

as of: **1/21/2019**

<u>Service Type</u>	<u>SOS PLC (MW)</u>	<u>Eligible PLC (MW)</u>
Residential and Small Commercial & Industrial	777.9	862.7
Medium General Service -Secondary	122.5	238.5
Large General Service -Secondary	19.9	100.0
General Service - Primary	25.4	114.3
Total	945.7	1315.5

<u>Service Type</u>	<u>Contract Term</u>		<u>Total</u>
	<u>12 Month 6/1/19-5/31/20</u>	<u>24 Month 6/1/19-5/31/21</u>	
Residential and Small Commercial & Industrial	16.6667%	50.0%	66.7%
Service Classifications: R, R-TOU, R-TOU-ND, R-TOU-SOP SGS-ND, SGS-SH, SGS-WH, OL, ORL, X.			
Approximate Total PLC	129.6	389.0	518.6
Block Size %	5.5556%	6.2500%	
Approximate Block Size (MW)	43.2	48.6	
Total Number of Blocks	3	8	11
Tranche 1 blocks	2	4	6
Tranche 2 blocks	1	4	5
 Medium General Service - Secondary	 100.0%		 100.0%
Service Classifications: MGS-S			
Approximate Total PLC	122.5		122.5
Block Size %	33.3333%		
Approximate Block Size (MW)	40.8		
Total Number of Blocks	3		3
Tranche 1 blocks	2		2
Tranche 2 blocks	1		1

Appendix 3: RFP Announcement

October 3, 2018

**DELMARVA POWER
REQUEST FOR PROPOSALS FOR
STANDARD OFFER SERVICE WHOLESALE ELECTRIC POWER SUPPLY**

Ladies and Gentlemen:

Delmarva Power (Delmarva) provided electric supply service to Delaware customers through fixed price power supply tariffs offered by Delmarva pursuant to orders issued by the Delaware Public Service Commission (“Commission”) in Docket No. 99-163 and Docket No. 01-194. These offers expired as of April 30, 2006. Since May 1, 2006, Delmarva has provided generation supply for specified periods, procured through a competitive wholesale bidding process and pursuant to procedures that are set forth in Commission Docket No. 18-1065 (formerly Docket No. 04-391). Delmarva has conducted a multi-tranche (multi-round) bidding process to solicit proposals from suppliers interested in providing Fixed Price Standard Offer Service (“FP-SOS”) to Delmarva for its Delaware customer service classifications.

Delmarva is soliciting competitive bids for full requirements wholesale supply service, excluding the provision of Renewable Energy Credits (“RECs”). The supply will be procured using the Enel X (formerly EnerNOC) reverse auction process as is more fully described in the Request for Proposals (“RFP”) documents. The solicitation is for supply agreements for one year and two year terms. Auction dates and auction rounds for this multi-tranche solicitation can be found in the RFP documents which are provided on the RFP website as noted below.

The load to be bid upon in the RFP is divided into four service types. An approximation of that portion of the load (stated in megawatts) associated with customers currently receiving supply service for each service type and for whom wholesale supply will be solicited is indicated in the following table. The load figures will be updated prior to the auction dates.

<u>Service Type</u>	<u>Delmarva</u>
Residential and Small Commercial & Industrial FP-SOS	515
Medium General Service-Secondary FP-SOS	120
Large General Service-Secondary FP-SOS	15
General Service-Primary FP-SOS	<u>20</u>
TOTAL	670 MW

If you are interested in participating in the RFP, you must submit an Expression of Interest Form. The Expression of Interest Form is provided, electronically, for submission on the RFP website. The RFP website which became active on October 3, 2018 is as at:

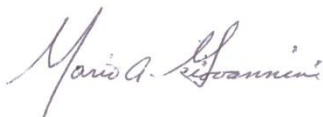
delmarva.com.

Prospective bidders who have submitted the Expression of Interest Form will be given access to password protected RFP material.

Additionally, Delmarva will be holding a pre-bid conference on October 16th to review the general RFP structure and process, the bid plan, and the Full Requirements Service Agreement (the contract that will be used to purchase generation supply under the RFP). We encourage your review of such documents (as posted on the website) prior to the conference to enhance the question and answer session. Please visit the RFP website in the coming days for additional details on the pre-bid conference, including registration information.

All questions related to this RFP should be submitted through the RFP website.

Sincerely,

A handwritten signature in black ink that reads "Mario A. Giovannini".

Mario A. Giovannini
Director, Energy Acquisition
Delmarva Power