

Executive Summary

Throughout the period of June 2014 to May 2015, Diamond State Generation Partners' (DSGP's) fuel cell projects remained in operation built out to its full 30 MW nameplate capacity and continued to generate steady revenue streams. While the project is experiencing some minor decreased efficiency due to aging fuel cells, the project's average Heat Rate (MMBTU gas used/KWH produced) for the period remained lower than the Target Heat Rate in the QFCP Tariff. As a result, DSGP has banked an additional 1,034 MMBTU credits since last year. The Project's capacity factor for the period increased to 86.2% compared to last year's 84.4%.

Diamond State Generation Partners continues to maximize its revenue from PJM through multiple sources of revenue. The Project continues to sell its energy output into the PJM Day Ahead Market, and receives payments for capacity and reactive services. DSGP believes that the project is maximizing PJM revenue through all of the sources for which it is currently eligible in the PJM market.

For the June 2014 – May 2015 Period:

Monthly energy payments averaged \$716,463/month

Capacity payments averaged \$18,549/month

Reactive Services payments totaled \$10,939/month

June 2014 through May 2015 Operating Results:

This annual report covers the third year of operations from June 2014 through May 2015.

The annual total QFCP-RC PJM revenue was **\$ 9,032,540.66**. Table 1 below summarizes the PJM revenue on a monthly basis. The table shows steady revenue generation throughout the period.

Table 1

Total PJM Revenue	
Month	PJM Revenue
June	\$ 744,660.41
July	\$ 743,553.79
August	\$ 585,782.17
September	\$ 566,518.15
October	\$ 605,531.90
November	\$ 775,089.59
December	\$ 610,902.67
January 2015	\$ 808,355.18
February	\$ 1,701,605.76
March	\$ 776,788.52
April	\$ 513,013.17
May	\$ 600,739.35
Total	\$ 9,032,540.66

Fuel cell operating data is presented in Table 2 below. The table includes information on the energy produced, natural gas consumed, average output, heat rate, and nameplate capacity installed. The average heat rate for the period was **7545**. The average output for the period was **25.87 MW**. The next section of the report provides detailed information on the factors that drove the QFCP heat rate and availability for the period.

Table 2

Fuel Cell Operating Results							
Month	MWH Generated	mmBTU Reformed	mmBTU Banked	Cumulative mmBTU Banked	Heat Rate	Avg Output, MW	Approx. Name Plate MW @ Month End
June	18363	131926	6711	104519	7185	25.5	30
July	18927	137558	5337	109856	7268	25.44	30
August	18893	139709	2933	112789	7395	25.39	30
September	18515	138601	1190	113979	7486	25.72	30
October	19253	145057	306	114285	7534	25.88	30
November	18513	139982	-208	114077	7561	25.68	30
December	19304	147731	-1984	112093	7653	25.95	30
January 2015	19276	149035	-3498	108595	7731	25.91	30
February	17582	136430	-3686	104909	7760	26.16	30
March	19540	150856	-3331	101578	7720	26.3	30
April	18890	143491	-868	100710	7596	26.24	30
May	19522	149259	-1868	98842	7645	26.24	30
Totals	226578	1709635	1034				

Total QFCP Contract Payments for the period: **\$ 37,809,216.04**

Plus Total Gas Cost for the period: **\$ 8,121,633.75**

Minus Total PJM Revenues for the period: **\$ 9,535,977.61**

Equals Total Disbursements to QFCP for the period: **\$ 36,394,872.18**

Fuel Cell Availability: **86.22%**

Primary Heat Rate and Availability Variance Drivers:

1. Routine maintenance.
 - a. DSGP continues to execute its maintenance plans. There were no significant changes during the period.
2. Grid Voltage Quality
 - a. Our systems are sensitive to grid voltage fluctuations and will enter an auto-restart mode if the voltage dips or spikes (even momentarily) beyond

predetermined thresholds. DSGP experienced a significant number of these events throughout the period.

3. Gas Composition

- a. When there is a substantial amount of ethane in the gas supply, our systems do not get the benefit of a full heating value of the gas. The units run more process air which typically lowers efficiency by 5%.
- b. NE US shale gas supplies have significantly higher ethane content. This content is not expected to improve in the next few years.

Actions Taken during the Year to Maximize Revenue:

DSGP has the duty to maximize PJM revenues in order to minimize collections from ratepayers, per the Tariff. DSGP has three streams of revenue from PJM for the QFCP project: energy, capacity, and reactive services.

Energy: DSGP has sold 100% of its energy production to date into the PJM Energy Market. Table 2 summarizes the past year's energy output. While the first draw on the MMBTU bank occurred in November 2014, significant efforts have been made to increase the units' efficiency. This can be seen in Table 2 above, as the heat rate has declined since its peak in February 2015.

Capacity: DSGP has successfully bid in all available capacity auctions since March 2012. DSGP is exempt from the MOPR for all Incremental Auctions

DSGP PJM Auction Results:

2016/2017

DSGP successfully bid 28.8 MW at \$119.13/MWD for the Base Residual Auction, and submitted no offer for the first Incremental Auction. The second Incremental Auction takes place July, 2015.

2017/2018

DSGP successfully bid 29.4 MW at \$120.00/MWD for the Base Residual Auction, and the first Incremental Auction takes place September, 2015.

Table 3

RPM Auction Schedule

Delivery Year	Base Residual Auction	Incremental Auctions		
		First	Second	Third
2013/14	2/3/2010	9/12/2011	7/16/2012	2/25/2013
2014/15	5/2/2011	9/10/2012	7/15/2013	2/24/2014
2015/16	5/7/2012	9/9/2013	7/14/2014	2/23/2015
2016/17	5/13/2013	9/8/2014	7/13/2015	2/29/2016
2017/18	5/12/2014	9/14/2015		

Table 4

Historical Base Residual Auction Results

Year	EMAAC
2015/16	\$ 167.46
2016/17	\$ 119.13
2017/18	\$ 120.00

Table 5

Historical Incremental Auction Results

Year	EMAAC
2013/14 - 1st	\$ 178.85
2013/14 - 2nd	\$ 40.00
2014/15 - 1st	\$ 16.56
2014/15 - 2nd	\$ 56.94
2014/15 - 3rd	\$ 132.20
2015/16 - 1st	\$ 111.00
2015/16 - 2nd	\$ 153.56
2015/16 - 3rd	\$ 184.77
2016/17 - 1st	\$ 119.13

Reactive Services: As mentioned in the previous report, DSGP investigated the economics of providing reactive power, weighing the revenue stream against the drop in efficiency that the fuel cells experience when operating at less than unity power factor. Consistent with DSGP's analysis from the 2013-2014 period, the fixed monthly payments for reactive power has provided benefits to the ratepayers well in excess of incremental gas cost from lower efficiency. The project continues to earn \$ 10,939 per month from PJM for reactive services.