



# Maryland SREC Market Update

February 13, 2018

- Maryland Solar Build Rates
- MD SREC Supply and Forecast
- Maryland Electricity Sales Assumptions
- Supply and Demand Scenarios
- MD SREC Market Pricing

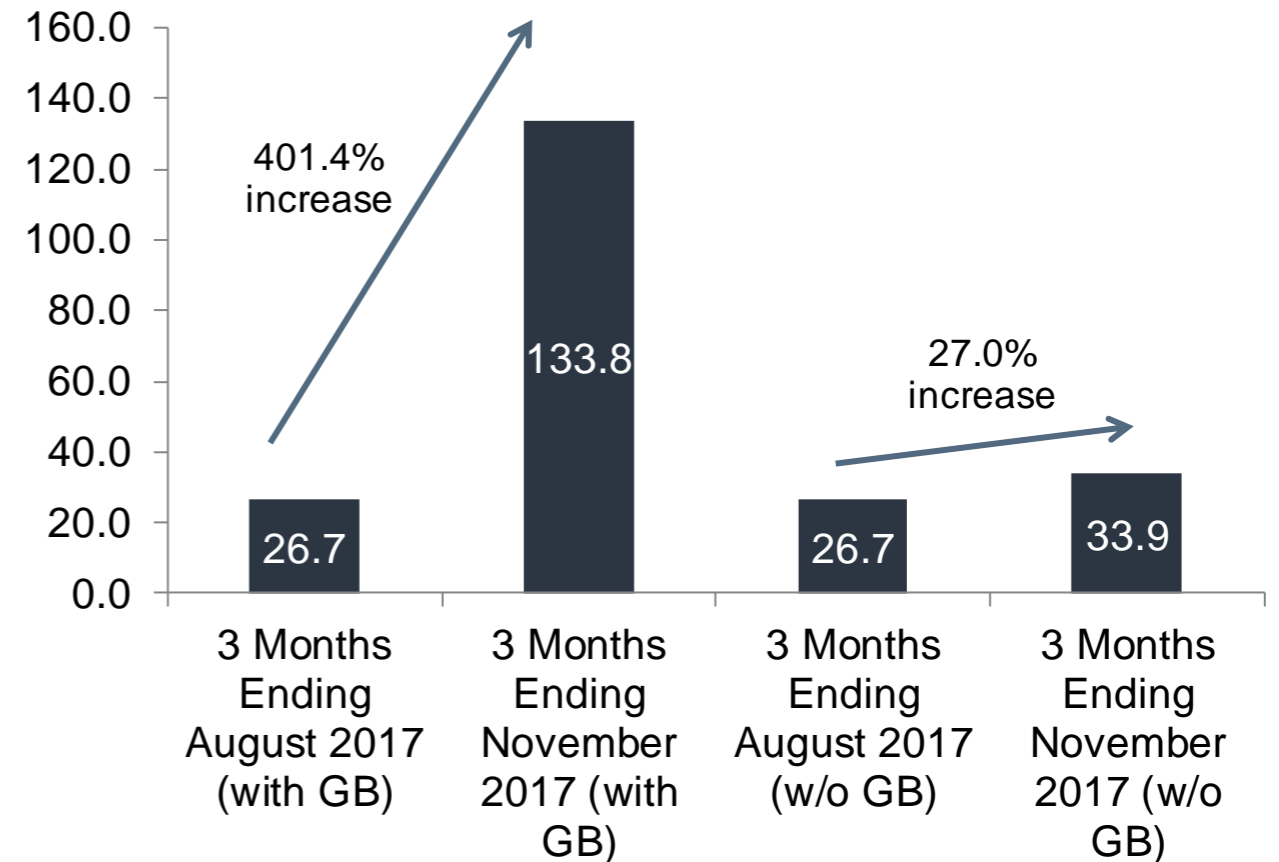
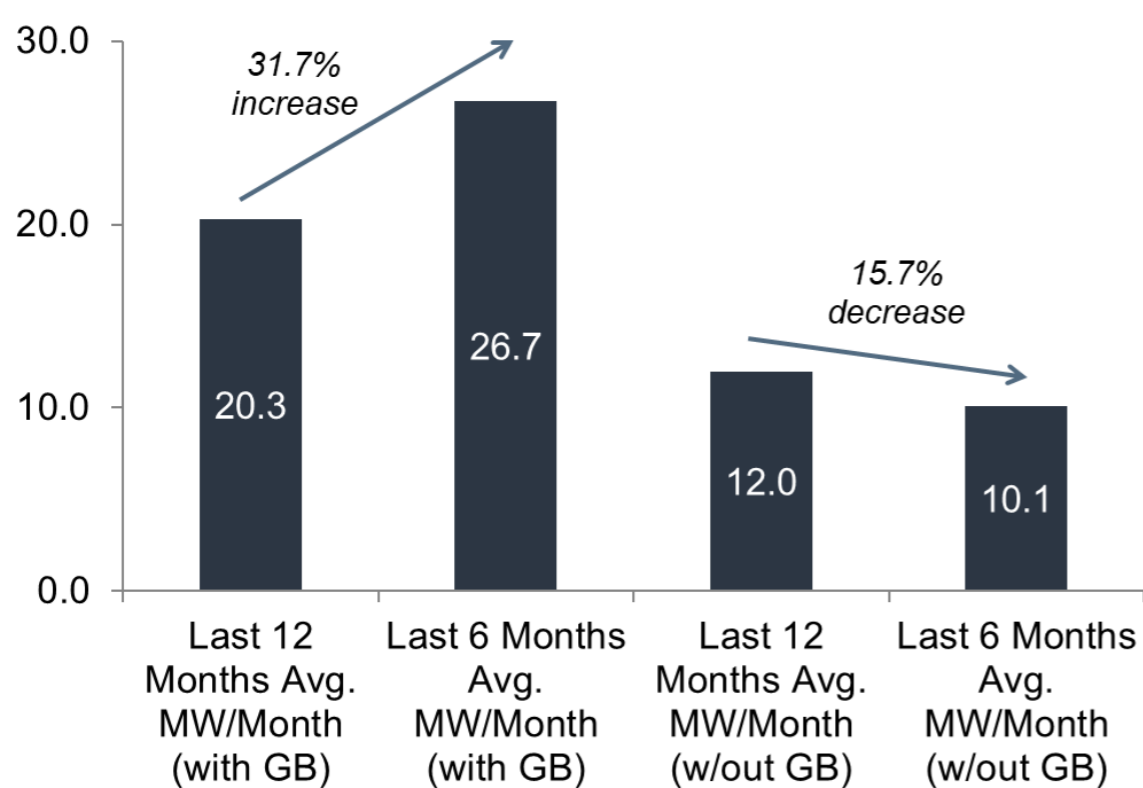
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# MD SOLAR BUILD RATES



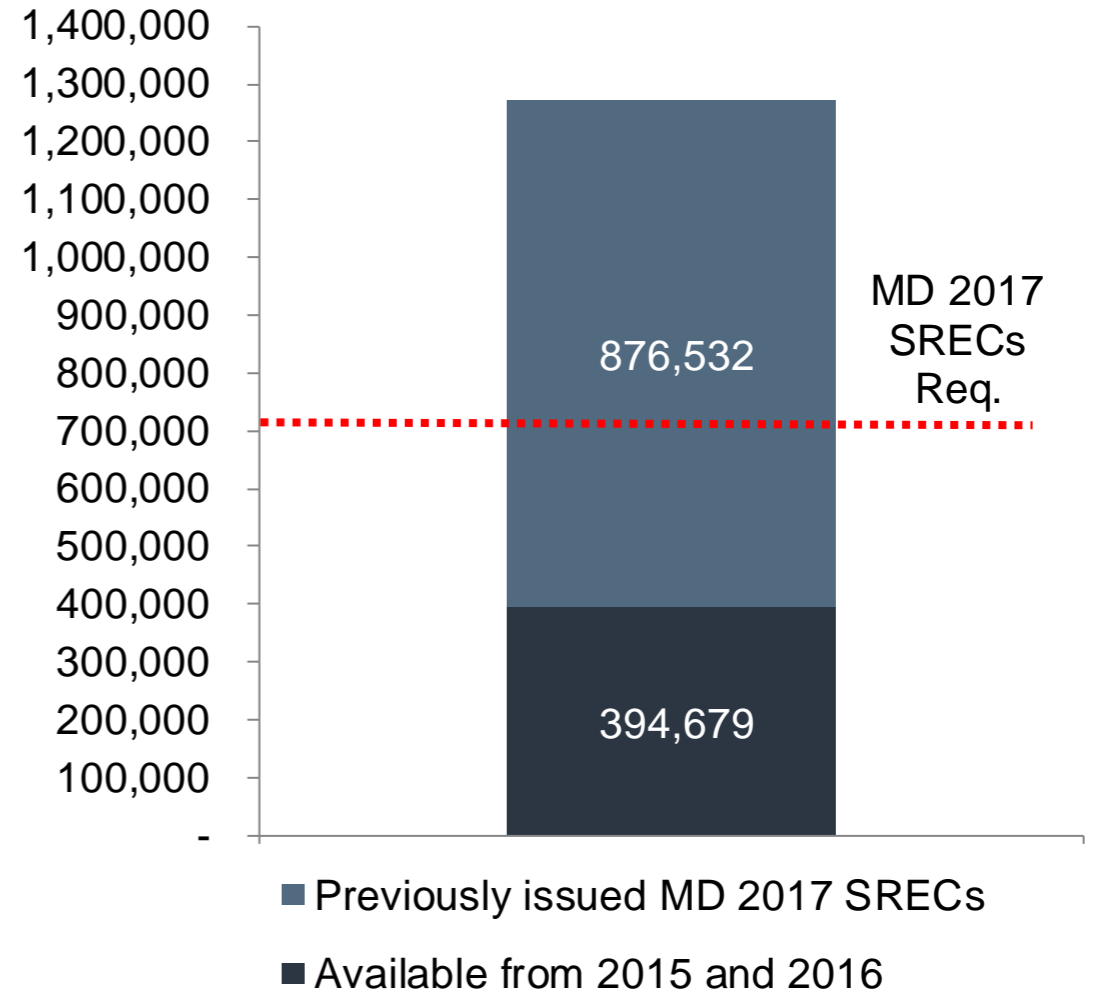
Registered MD Capacity in PJM GATS as of January 2018 = 962.3MW

- These figures consider scenarios with and without the ~100 MW facility that came online in September 2017, DPL GREAT BAY 1 SP – 1 (“Great Bay” or “GB”)



Using GATS recent issuance data as of February 2018

- 394.7k CY2015 and CY2016 SRECs remain
- 876.5k CY2017 SRECs have been issued
- CY2017 SREC Requirement is 705.6k (assuming flat load)
- CY2017 estimated oversupply is 565.5k SRECs or approximately 80.2% over the 2017 SREC compliance obligation.\*



Source: PJM GATS and SRECTrade Estimates. Figures obtained from PJM GATS were updated as of 02/12/2018.

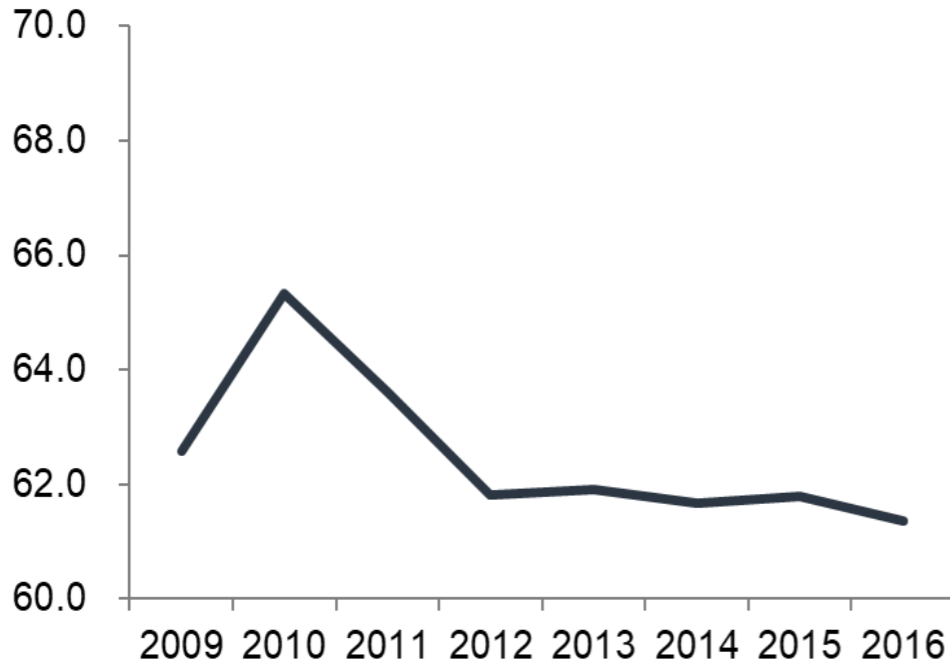
\*It is possible this number could increase if more MD2017 vintage SRECs are issued in 2018 periods (i.e. late generation reporting).

# MD ELECTRICITY SALES (MWh) AND SRECs REQUIRED CURRENT RPS



Recent years have declined or are flat; 2016 = 61.4 mm MWh

Electricity Sales (MWh in millions)



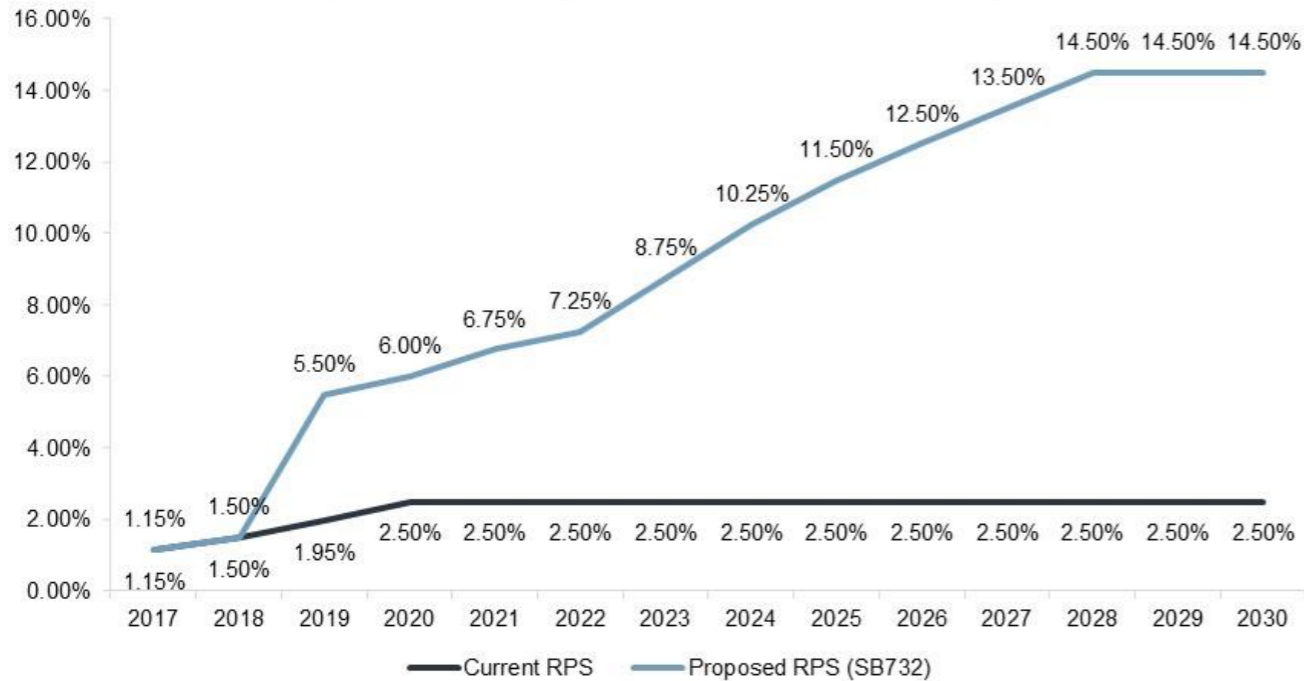
Year	SRECs Required (in 000s)				
	RPS Solar %	0% Annual Load Growth	1.0% Annual Load Growth	SREC Difference	SACP
2017	1.15%	705.6	719.8	14.2	\$ 195.00
2018	1.50%	920.3	948.2	27.9	\$ 175.00
2019	1.95%	1,196.4	1,245.0	48.6	\$ 150.00
2020	2.50%	1,533.8	1,612.1	78.2	\$ 125.00
2021	2.50%	1,533.8	1,628.2	94.4	\$ 100.00
2022	2.50%	1,533.8	1,644.5	110.6	\$ 75.00

# CURRENT VS PROPOSED RPS REQUIREMENTS AND SACP

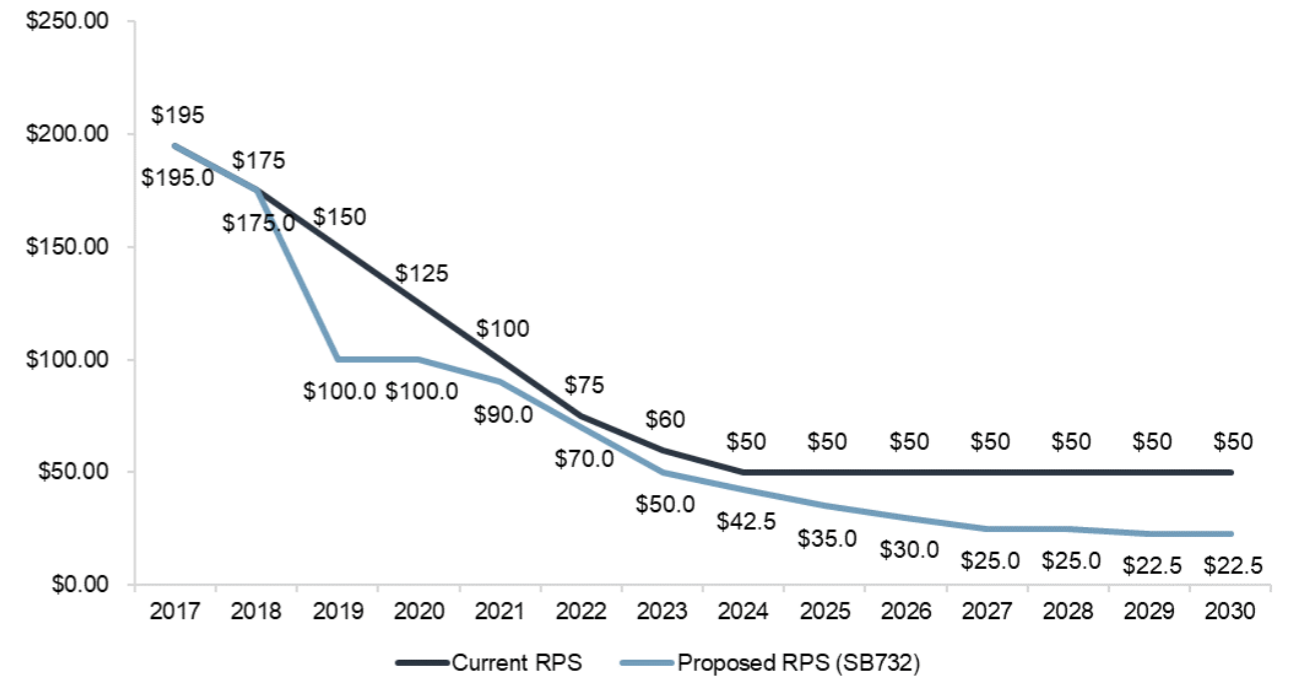


The following charts illustrate the differences between the current MD RPS schedule and the new, proposed Renewable Energy and Job Development Bill (SB732/HB1453). The proposed bill increases the Solar RPS % requirements while reducing the Solar Alternative Compliance Payment (SACP) (i.e. \$/MWh).

Maryland RPS Requirements: Current vs. Proposed



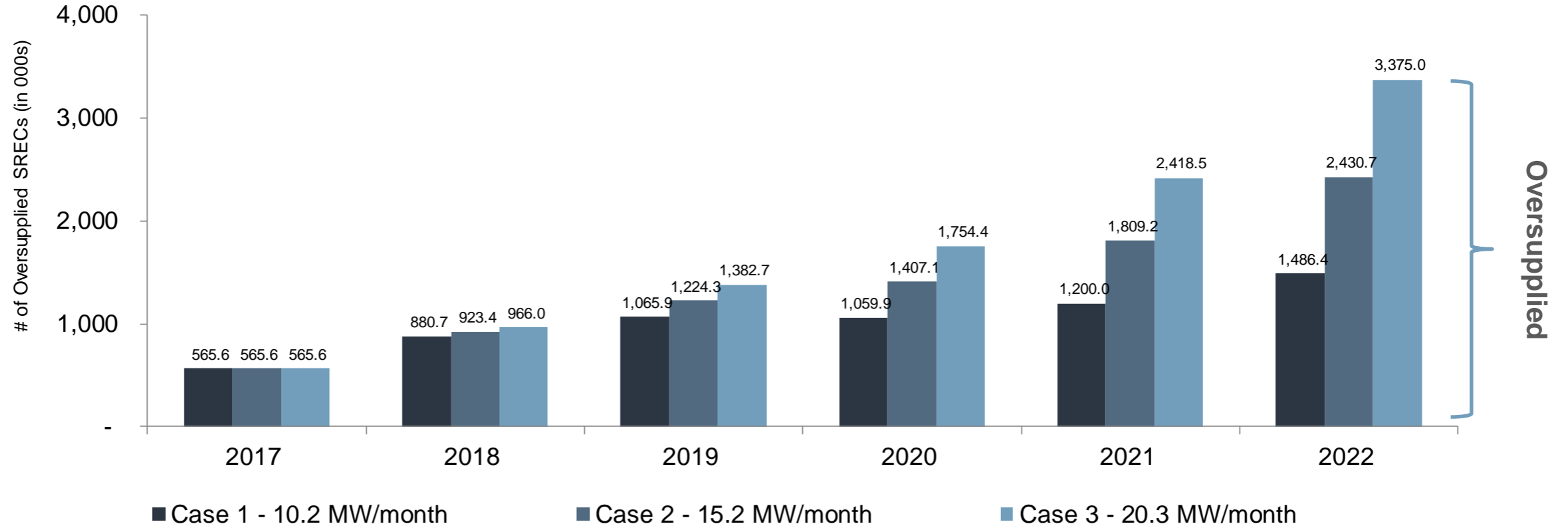
Maryland SACP: Current vs. Proposed



The following analysis assumes the following:

- Load growth remains flat at 2016 MWh sold - 61.4 mm MWh per year (source: EIA)
- Exempt load (i.e. supply agreements already executed at time of proposed RPS passage) not considered, but will impact demand
- Supply (i.e. build forecast) is based on registered projects in PJM GATS as of January 17, 2018
- Scenarios presented are derived from Last Twelve Month (LTM) average build rates per month. Due to the likely impact of dramatically depressed SREC prices, we assume that the 100% of LTM “base case” is actually an aggressive case, and the other two presented scenarios are of different rates of new capacity deceleration – 50% / 75% / 100% of current LTM build rates per month
- PJM queue (particularly the large scale projects) could certainly further impact the supply forecast in the enclosed scenarios, but is not reflected in the following analysis
- Under proposed RPS, new increases in solar carve out would allow for new build and solar growth to continue in MD

# SUPPLY / DEMAND SCENARIOS – LOAD SALES FLAT, CURRENT RPS



Energy Year	2017	2018	2019	2020	2021	2022
<b>Estimated % Over (Under) Supplied</b>						
Case 1 - 10.2 MW/month	80.2%	95.7%	89.1%	69.1%	78.2%	96.9%
Case 2 - 15.2 MW/month	80.2%	100.3%	102.3%	91.7%	118.0%	158.5%
Case 3 - 20.3 MW/month	80.2%	105.0%	115.6%	114.4%	157.7%	220.0%

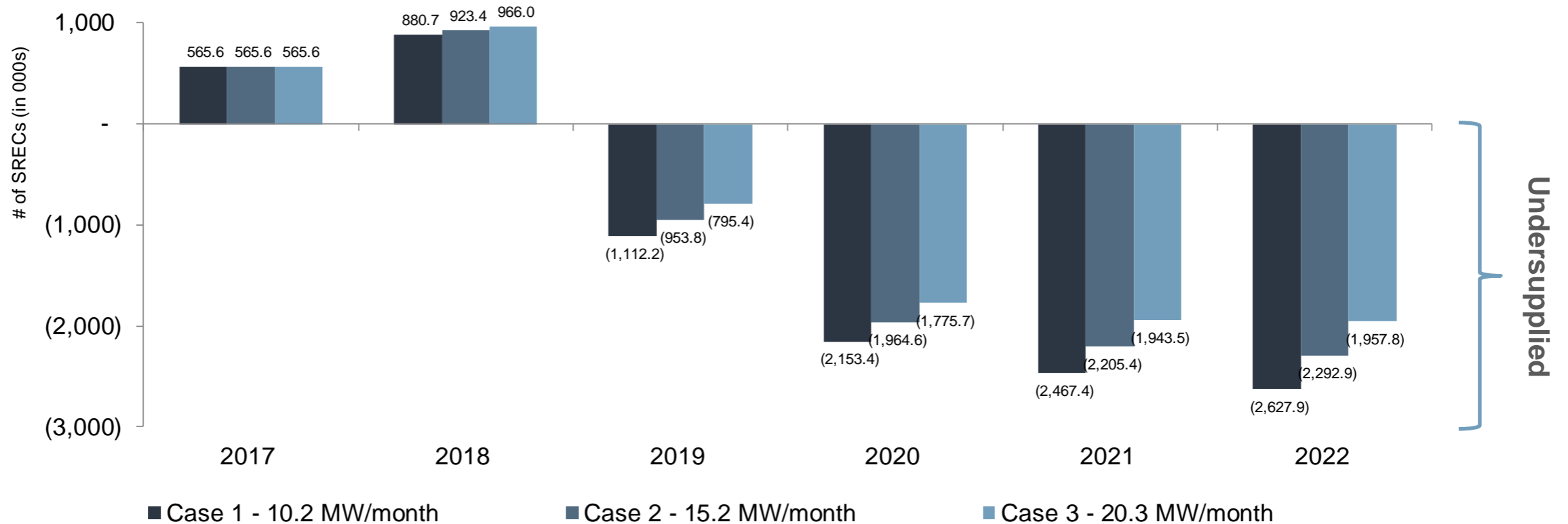


# SUPPLY / DEMAND SCENARIOS – LOAD SALES FLAT, CURRENT RPS



<b>Case 1 - 50% of LTM Average MW Added Per Month Throughout the Forecast</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
MD SREC Requirements	705,570	920,309	1,196,401	1,533,848	1,533,848	1,533,848
Less: Excess SRECs From Prior Period	394,679	565,641	880,717	1,065,910	1,059,868	1,200,036
Less: Case 1 Estimated SRECs Produced	876,532	1,235,384	1,381,595	1,527,806	1,674,016	1,820,227
<b># of SRECs Under / (Over) Supplied</b>	<b>(565,641)</b>	<b>(880,717)</b>	<b>(1,065,910)</b>	<b>(1,059,868)</b>	<b>(1,200,036)</b>	<b>(1,486,415)</b>
<b>Case 2 - 75% of LTM Average MW Added Per Month Throughout the Forecast</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
MD SREC Requirements	705,570	920,309	1,196,401	1,533,848	1,533,848	1,533,848
Less: Excess SRECs From Prior Period	394,679	565,641	923,361	1,224,305	1,407,118	1,809,247
Less: Case 2 Estimated SRECs Produced	876,532	1,278,029	1,497,345	1,716,661	1,935,977	2,155,293
<b># of SRECs Under / (Over) Supplied</b>	<b>(565,641)</b>	<b>(923,361)</b>	<b>(1,224,305)</b>	<b>(1,407,118)</b>	<b>(1,809,247)</b>	<b>(2,430,692)</b>
<b>Case 3 - LTM Average MW Added Remains the Same Per Month Throughout the Forecast</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
MD SREC Requirements	705,570	920,309	1,196,401	1,533,848	1,533,848	1,533,848
Less: Excess SRECs From Prior Period	394,679	565,641	966,006	1,382,700	1,754,369	2,418,458
Less: Case 3 Estimated SRECs Produced	876,532	1,320,674	1,613,095	1,905,516	2,197,938	2,490,359
<b># of SRECs Under / (Over) Supplied</b>	<b>(565,641)</b>	<b>(966,006)</b>	<b>(1,382,700)</b>	<b>(1,754,369)</b>	<b>(2,418,458)</b>	<b>(3,374,970)</b>

# SUPPLY / DEMAND SCENARIOS – LOAD SALES FLAT, PROPOSED RPS



Energy Year	2017	2018	2019	2020	2021	2022
<b>Estimated % Over (Under) Supplied</b>						
Case 1 - 10.2 MW/month	80.2%	95.7%	-33.0%	-58.5%	-59.6%	-59.1%
Case 2 - 15.2 MW/month	80.2%	100.3%	-28.3%	-53.4%	-53.3%	-51.5%
Case 3 - 20.3 MW/month	80.2%	105.0%	-23.6%	-48.2%	-46.9%	-44.0%

# SUPPLY / DEMAND SCENARIOS – LOAD SALES FLAT, PROPOSED RPS



<b>Case 1 - 50% of LTM Average MW Added Per Month Throughout the Forecast</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
MD SREC Requirements	705,570	920,309	3,374,465	3,681,235	4,141,389	4,448,159
Less: Excess SRECs From Prior Period	394,679	565,641	880,717	-	-	-
Less: Case 1 Estimated SRECs Produced	876,532	1,235,384	1,381,595	1,527,806	1,674,016	1,820,227
<b># of SRECs Under / (Over) Supplied</b>	<b>(565,641)</b>	<b>(880,717)</b>	<b>1,112,154</b>	<b>2,153,429</b>	<b>2,467,373</b>	<b>2,627,932</b>

<b>Case 2 - 75% of LTM Average MW Added Per Month Throughout the Forecast</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
MD SREC Requirements	705,570	920,309	3,374,465	3,681,235	4,141,389	4,448,159
Less: Excess SRECs From Prior Period	394,679	565,641	923,361	-	-	-
Less: Case 2 Estimated SRECs Produced	876,532	1,278,029	1,497,345	1,716,661	1,935,977	2,155,293
<b># of SRECs Under / (Over) Supplied</b>	<b>(565,641)</b>	<b>(923,361)</b>	<b>953,759</b>	<b>1,964,574</b>	<b>2,205,412</b>	<b>2,292,866</b>

<b>Case 3 - LTM Average MW Added Remains the Same Per Month Throughout the Forecast</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
MD SREC Requirements	705,570	920,309	3,374,465	3,681,235	4,141,389	4,448,159
Less: Excess SRECs From Prior Period	394,679	565,641	966,006	-	-	-
Less: Case 3 Estimated SRECs Produced	876,532	1,320,674	1,613,095	1,905,516	2,197,938	2,490,359
<b># of SRECs Under / (Over) Supplied</b>	<b>(565,641)</b>	<b>(966,006)</b>	<b>795,364</b>	<b>1,775,718</b>	<b>1,943,451</b>	<b>1,957,800</b>

# MD SREC CURRENT PRICING

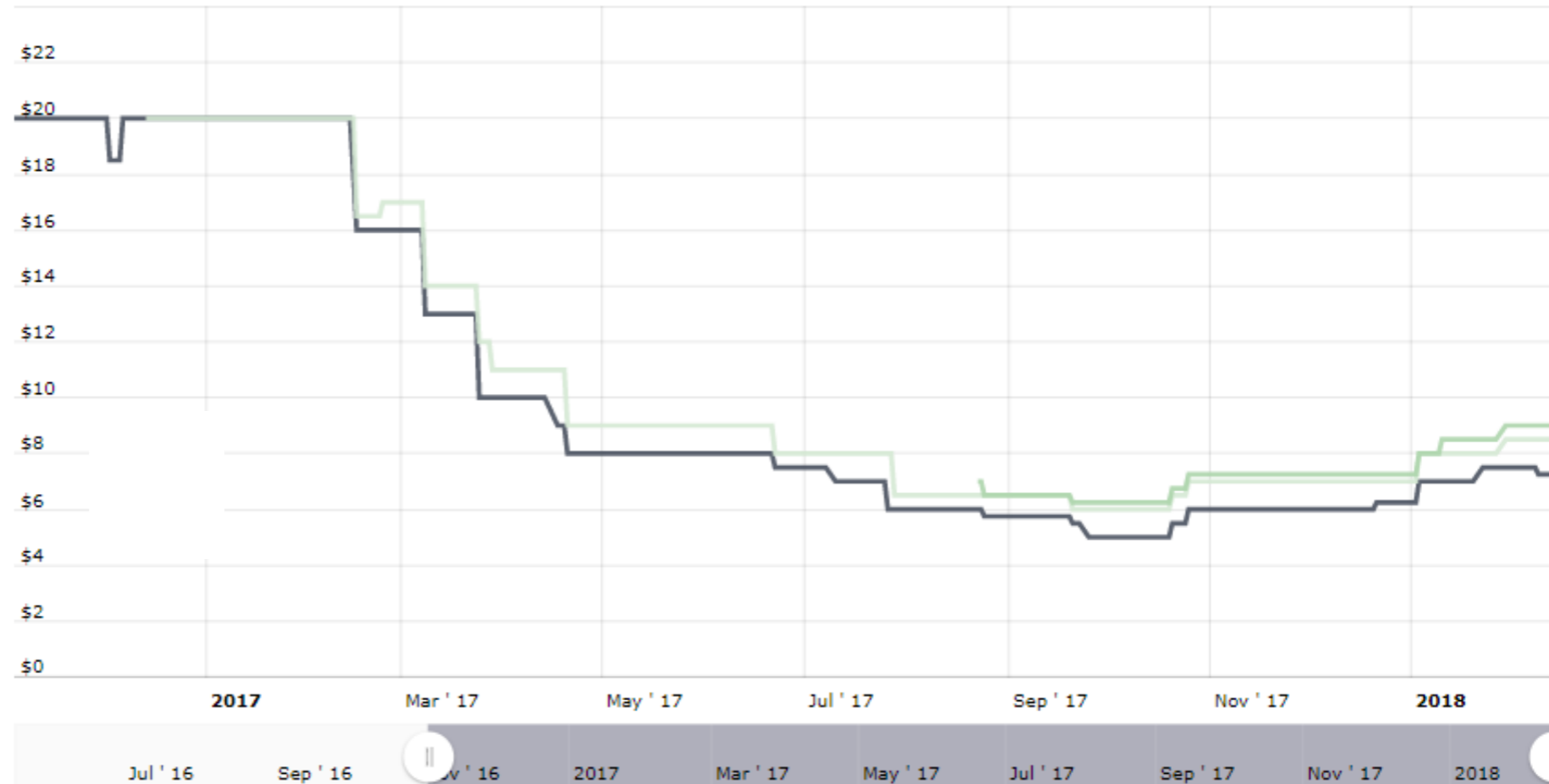


MD2017 market: \$7.25 @ \$8.50

MD2018 market: \$8.50 @ \$9.50

MD2019 market: \$9.00 @ \$10.00

- MD2017 bid
- MD2018 bid
- MD2019 bid



Zoom: 1m YTD 1y Show all