



Pennsylvania SREC Market Update

February 5, 2020

- PA Regulatory Updates
- PA Solar Build Rates
- Supply and Demand Assumptions
- PA SREC Supply and Demand Scenarios
- PA SREC Market Pricing

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PA REGULATORY UPDATE: SB 600

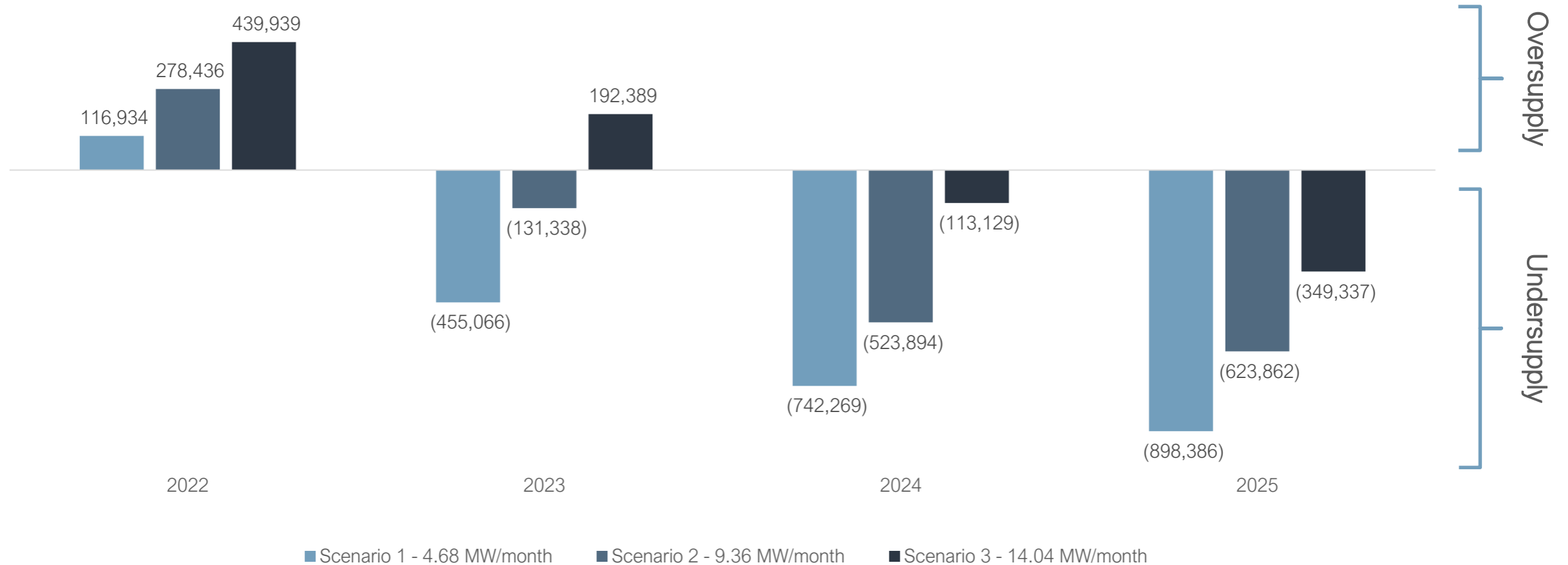


Introduced in Pennsylvania General Assembly on April 10, 2019 (not yet passed); future of the bill is still uncertain

1. Expands AEPS Tier I requirement from 8% by 2021 to 30% by 2030
2. Expands AEPS solar carve-out from 0.5% by 2021 to 10% by 2030, including 7.5% for grid-supply solar and 2.5% for distributed generation (DG) solar
3. Introduces fixed alternative compliance payment (ACP) schedules and a 15-year SREC eligibility term for solar facilities (beginning on June 1, 2021)

Energy Year	SB 600 Solar Carve-Out	Grid-Supply Carve-Out	Grid-Supply ACP	Dist. Generation Carve-Out	Dist. Generation ACP
2022	1.59%	0.94%	\$45.00	0.65%	\$125.00
2023	2.70%	1.88%	\$45.00	0.82%	\$125.00
2024	3.79%	2.81%	\$45.00	0.98%	\$125.00
2025	4.88%	3.75%	\$45.00	1.13%	\$125.00
2026	5.80%	4.50%	\$45.00	1.30%	\$125.00
2027	6.75%	5.25%	\$45.00	1.50%	\$100.00
2028	7.78%	6.00%	\$45.00	1.78%	\$100.00
2029	8.85%	6.75%	\$45.00	2.10%	\$100.00
2030	10.00%	7.50%	\$45.00	2.50%	\$100.00

HYPOTHETICAL MARKET PROJECTION: IF SB 600 PASSES



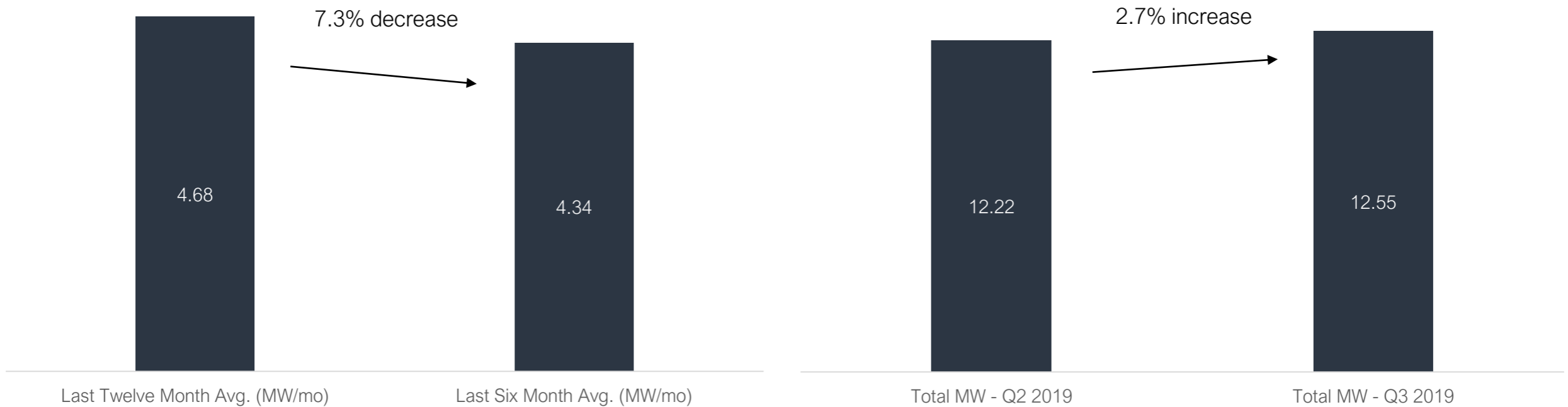
Source: PJM GATS, Penn AEPS, and SRECTrade Estimates.

Note: This model assumes that there will be no grandfathered load as part of this policy change.

PA SOLAR BUILD RATES



Total installed capacity as of November 30, 2019 is 422 MW. Monthly build over the last six months decreased slightly to 4.34 MW/month as compared to 4.68 MW/month over the last twelve-months (LTM). Total quarterly MW build for Q3 2019 was 2.7% higher than Q2 2019.



SUPPLY AND DEMAND ASSUMPTIONS



The following analysis assumes:

- Electric load growth remains flat at EY2019 MWh sold – 141.51 million MWh per year through 2023 (Source: [PUC 2017 AECPS Compliance Report](#))
- Capacity data sourced from Penn AEPS on Jan 7, 2020. Data is only utilized through November 2019 due to systems receiving interconnection approval in December, but not yet being registered with the state. Please note, there is approximately 9 MW of capacity that has registered with the state and appears in the Penn AEPS data, but has not yet registered in GATS. In this analysis, we assume that all eligible capacity registered with the state will eventually register with GATS and generate SRECs.
- Scenarios presented are derived from Last Twelve Month (LTM) average build rates per month (Dec 2018 – Nov 2019). Due to the variability of build rates, three scenarios are presented representing different rates of new capacity acceleration – 50%/100%/150% of current LTM build rates per month.
- The analysis uses a capacity factor of 11.42%, which is a high-end approximation derived from the running average capacity factor across PA-sited solar facilities since 2016. This capacity factor is monthly-weighted and applied to each month of projected cumulative capacity in the PA SREC market to determine future SREC supply.

PA EY2020 SREC MARKET DYNAMIC



Using GATS recent issuance data as of January 2020 and LTM average build rates.

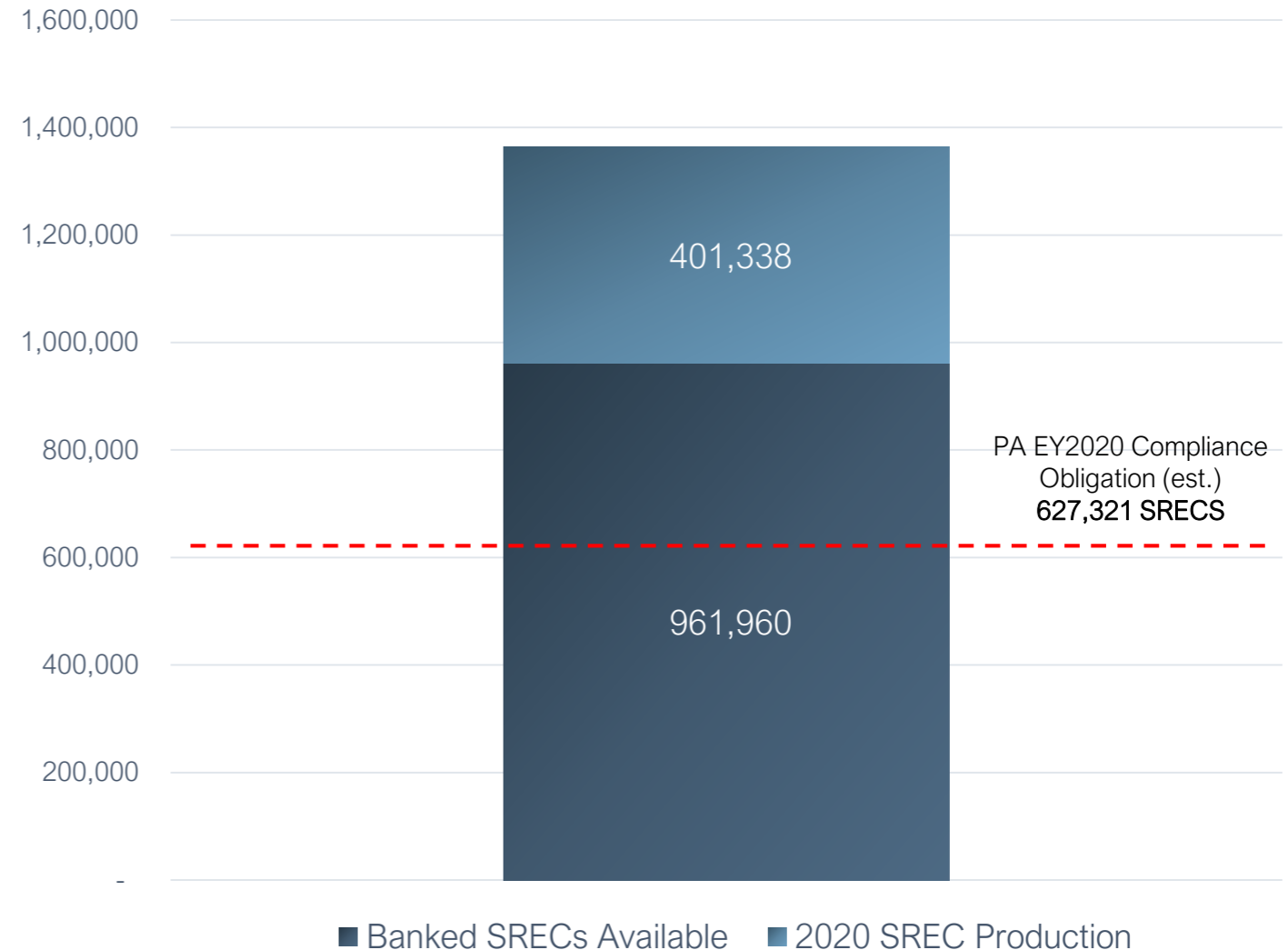
EY2020 Supply and Demand Summary

- PA Banked SRECs Available for Compliance: EY2018 = **679,975**; EY2019 = **281,985**
- Estimated EY2020 SREC Production: **401,338**
- Estimated Compliance Obligation: **627,321**
- Oversupply: **736,977** (117% of obligation)

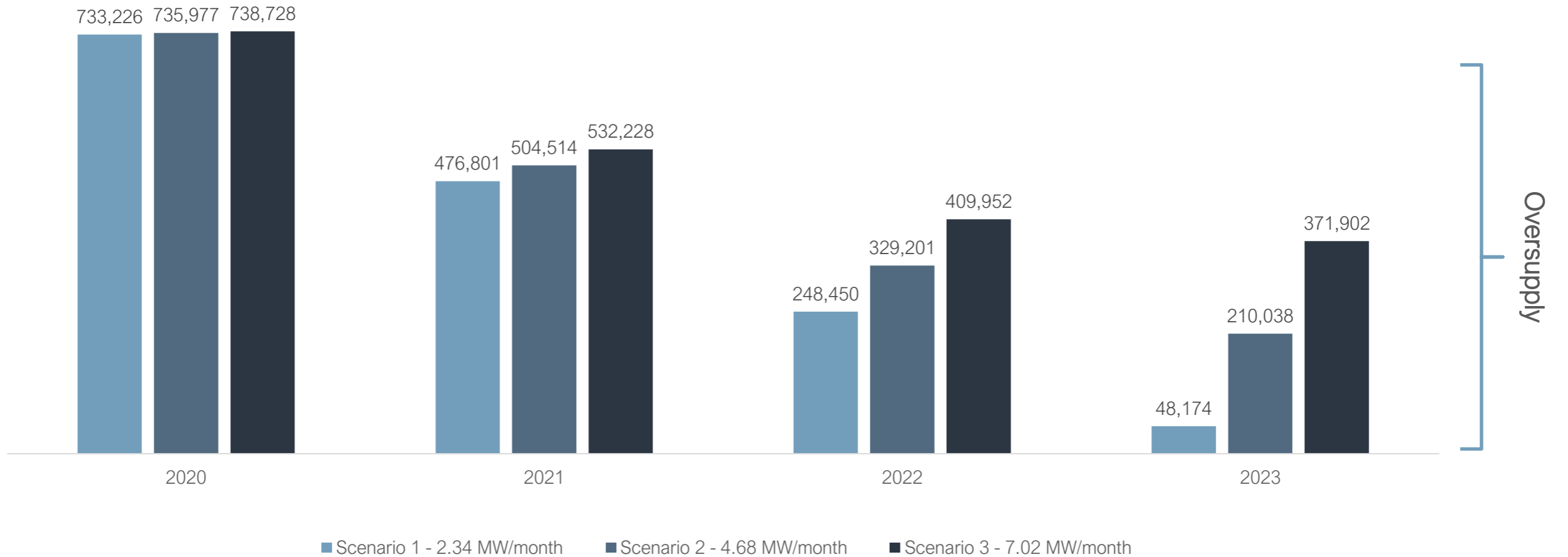
Factors that could impact this include:

- Final PA 2020 electric load figures
- Dec 2019 and onward build rates
- Final EY2020 SREC production figures

PA EY2020 SREC Compliance Projection



FORECASTED SUPPLY : BUILD RATE SCENARIOS



FORECASTED SUPPLY : BUILD RATE SCENARIO DETAIL



Compliance year	2020	2021	2022	2023
Scenario 1 - 50% of LTM Average MW is Added Per Month Throughout the Forecast				
PA SREC Requirements	627,321	707,558	707,558	707,558
Less: Excess SRECs From Prior Period	961,960	733,226	476,801	248,450
Less: Scenario 1 Estimated SRECs Produced	398,587	451,132	479,207	507,282
# of SRECs (Under) / Over Supplied	733,226	476,801	248,450	48,174

Scenario 2 - LTM Average MW is Added Per Month Throughout the Forecast				
PA SREC Requirements	627,321	707,558	707,558	707,558
Less: Excess SRECs From Prior Period	961,960	735,977	504,514	329,201
Less: Scenario 2 Estimated SRECs Produced	401,338	476,095	532,245	588,395
# of SRECs (Under) / Over Supplied	735,977	504,514	329,201	210,038

Scenario 3 - 150% of LTM Average MW is Added Per Month Throughout the Forecast				
PA SREC Requirements	627,321	707,558	707,558	707,558
Less: Excess SRECs From Prior Period	961,960	738,728	532,228	409,952
Less: Scenario 3 Estimated SRECs Produced	404,089	501,058	585,282	669,507
# of SRECs (Under) / Over Supplied	738,728	532,228	409,952	371,902

HISTORIC PA SREC PRICING



Current indicative markets: PA2020: \$39 @ \$45 / PA2021 \$45 @ \$52.50

PA2020 bid
PA2021 bid

