

Solar Power Purchase Agreements for Bancroft Elementary and West Elementary / Shawsheen Schools

School Committee Meeting

March 16, 2023

Joyce Losick-Yang, PhD and Janet Nicosia



Preliminary Warrant Articles

Agreement to purchase solar energy at a fixed rate for term

P24. AUTHORIZE ELECTRICITY SUPPLY /ON BILL CREDIT PURCHASE AGREEMENTS AT BANCROFT ELEMENTARY SCHOOL

To see if the Town will vote to authorize the School Committee to enter into one or more electricity supply, on-bill credit or similar agreements with the owner(s) of solar voltaic facilities to be installed at the Bancroft Elementary School for such terms of years, and on such other terms and conditions, as the School Committee deems in the best interests of the Town, or take any other action related thereto.

Agreement to lease site to third-party to generate solar energy for term

P25. AUTHORIZE LEASE OF LAND/ROOFTOP SPACE AT BANCROFT ELEMENTARY SCHOOL FOR SOLAR PHOTOVOLTAIC FACILITIES

To see if the Town will vote to authorize the School Committee to (i) lease building rooftop space and any unused, open-land areas for installation of solar voltaic facilities and (ii) grant easements on, over and under the land and buildings located at 15 Bancroft Road shown on Assessors Map 59 as Lot 29A and known as the Bancroft Elementary School, with such leases and easements to be for such terms of years, not to exceed 20 years, and on such other terms and conditions, as the School Committee deems in the best interests of the Town, or take any other action related thereto.



Preliminary Warrant Articles

Agreement to purchase solar energy at a fixed rate for term

P27. AUTHORIZE ELECTRICITY SUPPLY /ON BILL CREDIT PURCHASE AGREEMENTS AT WEST ELEMENTARY SCHOOL / SHAWSHEEN PRE-SCHOOL

To see if the Town will vote to authorize the School Committee to enter into one or more electricity supply, on-bill credit or similar agreements with the owner(s) of solar voltaic facilities to be installed at the West Elementary School/Shawsheen Pre-School for such terms of years, and on such other terms and conditions, as the School Committee deems in the best interests of the Town, or take any other action related thereto.

Agreement to lease site to third-party to generate solar energy for term

P28. AUTHORIZE LEASE OF LAND/ROOFTOP SPACE AT WEST ELEMENTARY SCHOOL / SHAWSHEEN PRE-SCHOOL FOR SOLAR PHOTOVOLTAIC FACILITIES

To see if the Town will vote to authorize the School Committee to (i) lease building rooftop space and any unused, open-land areas for installation of solar voltaic facilities and (ii) grant easements on, over and under the land and buildings located at 54, 54R, 58 and 60 Beacon Street shown on Assessors Map 88 as Lot 57A, Map 88 as Lot 57, Map 88 as Lot 58, and Map 107, Lot 16 and known as the West Elementary School/Shawsheen Pre-School, with such leases and easements to be for such terms of years, not to exceed 20 years, and on such other terms and conditions, as the School Committee deems in the best interests of the Town, or take any other action related thereto.



Benefits and Risks Overview

- **Anticipated solar power purchase agreement (PPA) benefits**
 - Avoid 6,900 tons of carbon pollution
 - Term savings > \$1.2 million
 - Extends life of school roofs

Project	Solar Production (kWh)	% Electricity Offset	Block 11 PPA Rate (\$/kWh)	Year 1 Savings	Term Savings*	Term Carbon Avoided (tons)
Bancroft El	327,484	51%	\$0.1250	\$10,200	\$398,000	3,000
West El / Shawsheen	423,936	25%	\$0.0979	\$29,400	\$841,000	3,900

* 2% annual utility rate escalation rate assumed

- **Potential liabilities / risks**
 - Unanticipated solar system downtime results in higher electricity rates (less than 1 month)



Back-Up



Andover Bancroft School - PPA



PPA Savings Summary

PV System Capacity (kW DC)	293.76
Year 1 PV Output (kWh)	327,000
Percent of Usage	51%
Avoided kWh Electric Cost	\$0.1561
Solar PPA kWh Rate	\$0.1210
PPA Rate Escalator	0.0%
Term (Yrs)	20
SMART Incentive Amt (\$/kWh)	\$0.0742
Year 1 Forecast Savings	\$11,500
Term Savings	\$422,000
Annual Avoided CO ₂ (lbs)	315,000
Term CO ₂ Avoided (tons)	3,000

Assumptions

ITC Values are estimates, actual values are subject to final regulations
 Prevailing wage labor
 Rates assume PILOT of \$0.00 per kW-DC
 Excludes potential costs for utility studies or required upgrades
 Bonding not included as system is 3rd party owned
 Assumes SMART block 10
 Utility electric rates escalate at 2.0%

PPA Savings Summary

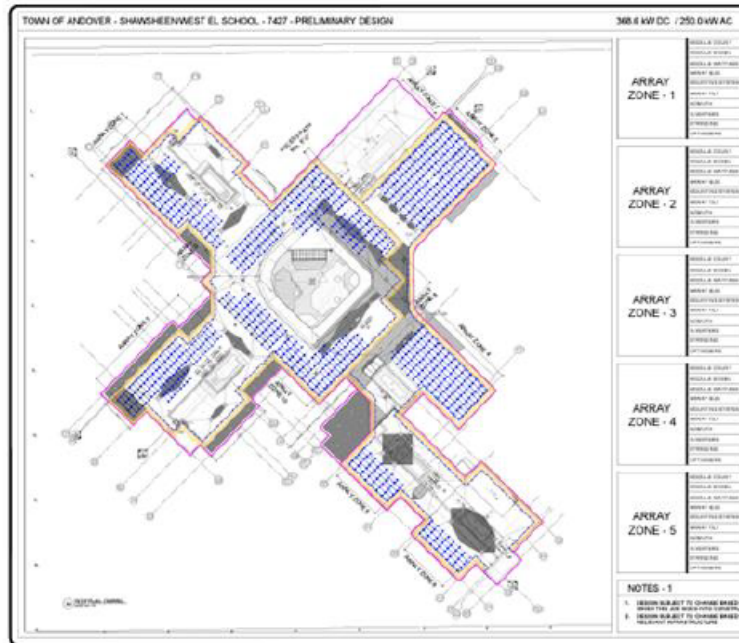
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PPA Rate Escalator	0.0%
Term (Yrs)	20
SMART Incentive Amt (\$/kWh)	\$0.0708
Year 1 Forecast Savings	\$10,200
Term Savings	\$398,000
Annual Avoided CO ₂ (lbs)	315,000
Term CO ₂ Avoided (tons)	3,000

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Andover West Elem-Shawsheen School – PPA



PPA Savings Summary

PV System Capacity (kW DC)	368.64
Year 1 PV Output (kWh)	424,000
Percent of Usage	25%
Avoided kWh Electric Cost	\$0.1769
Solar PPA kWh Rate	\$0.0945
PPA Rate Escalator	0.0%
Term (Yrs)	20
SMART Incentive Amt (\$/kWh)	\$0.0742
Year 1 Forecast Savings	\$30,800
Term Savings	\$868,000
Annual Avoided CO ₂ (lbs)	407,000
Term CO ₂ Avoided (tons)	3,900

Assumptions

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- Rates do not include utility network upgrade or study costs
- Bonding not included as system is 3rd party owned
- Assumes SMART block 10
- Utility electric rates escalate at 2.0%
- Avoided emissions calculated based on 2020 EIA MA State Electricity Prof

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SMART Incentive Amt (\$/kWh)	\$0.0708
Year 1 Forecast Savings	\$29,400
Term Savings	\$841,000
Annual Avoided CO ₂ (lbs)	407,000
Term CO ₂ Avoided (tons)	3,900

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- Prevailing Wage labor
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