

# Pelham School District

Solar Task Force Report  
October 6, 2021

# Bottom Line Up Front (BLUF)

- The District Consumes 2.61M KWh of electricity per year @ a cost of \$336K
- The District has been proactive in negotiating competitive electricity supply agreements
- Electric costs are expected to rise
  - Elementary HVAC (air conditioning) will increase consumption by ~175,000 kWh/yr
  - Memorial School expansion will increase consumption by ~664,000 kWh /year
  - Competitive electricity supply agreement ends November 2023
- The Task Force is proposing a warrant article for 2022
  - Lease roof space across 3 buildings
  - Offset power purchase and delivery charges
  - Economic, Educational and Environmental Benefits

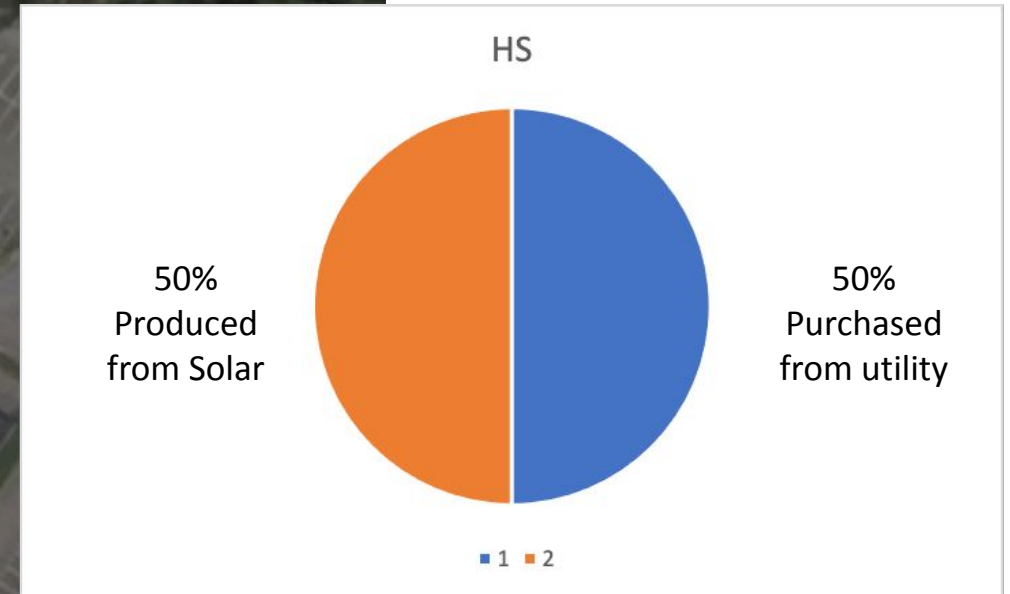
**Estimated Savings of ~\$300K over 25 years**

# History

- Solar Task Force established summer 2021
  - Administration, Educator, Student, Board Member, Consultant, Budget Committee Member, and Community Member
- Tasked with assessing feasibility of project
  - Lease vs. Buy evaluation
  - Meet Key Objectives
    - **Economic benefits:** The project needs to benefit the District budget and therefore the taxpayers who support our operations.
    - **Educational benefits:** The project would be improved if students can learn from it.
    - **Environmental benefits:** The project needs to provide an improvement compared to our current energy usage.

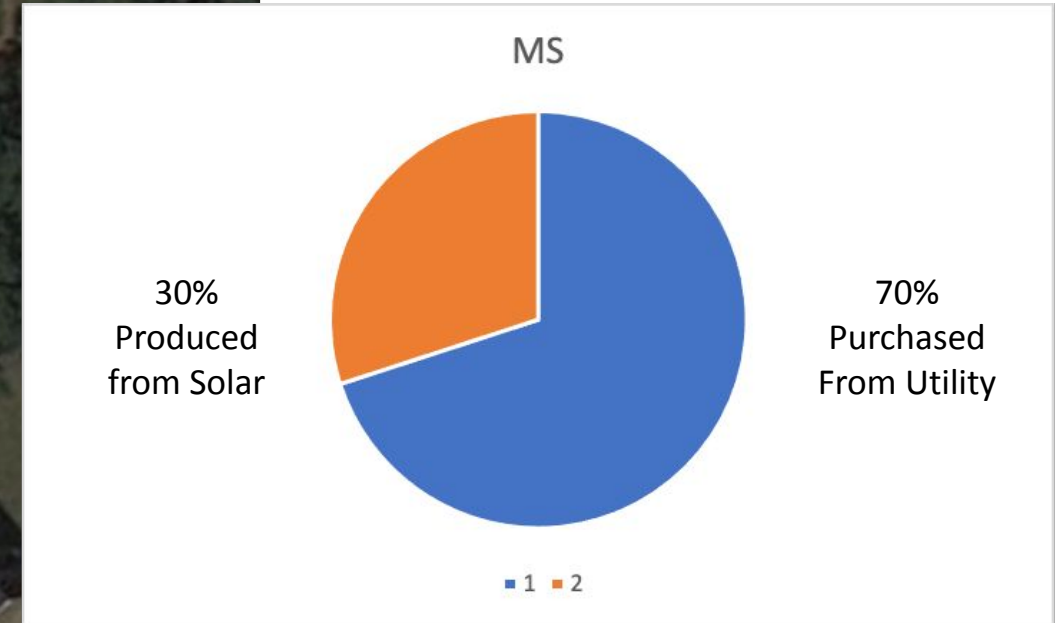
Evaluated Project Viability & Proposing Path Forward that meets 3 Objectives

# Conceptual Layouts – High School



720 KW DC – 50% of Usage per year

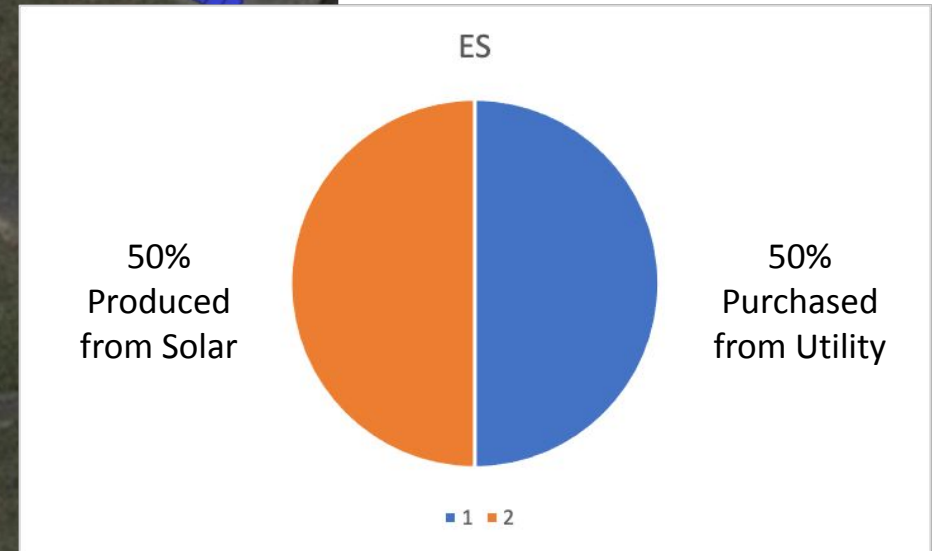
# Conceptual Layouts – Memorial School



Electric Usage is slated to increase due to the school expansion; PV generation will also increase due to roof space available

199 KW DC – 70% of Current Usage per year

# Conceptual Layouts – Elementary School



Electric Usage is slated to increase due addition of HVAC

313 KW DC – 50% of Current Usage per year

# Lease vs. Own?

## Lease Option

1. Zero Up-Front Costs
2. Zero annual maintenance costs
3. Guaranteed Performance
4. Leasing company owns green energy credits
5. Purchased electricity still subject to market volatility
6. Zero decommissioning costs
7. Projected savings over 25 years = ~\$300,000

## Ownership Option

1. \$2.4M Up-Front Cost
2. Annual Maintenance Costs
3. Monitoring required to ensure performance
4. PSD owns and can sell energy credits
5. Purchased electricity still subject to market volatility
6. Must decommission after 25 years
7. Projected savings over 25 years = \$164,500

Leasing requires no capital outlay & reduces financial & performance risks

# Production and Consumption Estimates

|       | Estimated Annual Production (kWh) | Current Annual Consumption (kWh) | Projected Annual Consumption (kWh) | Production as a % of Consumption Estimates |
|-------|-----------------------------------|----------------------------------|------------------------------------|--|
| PHS   | 756,000                           | 1,518,000                        | 1,563,000                          | 48.4%                                      |
| PMS   | 225,000                           | 336,000                          | 1,000,000                          | 22.5%                                      |
| PES   | 363,500                           | 754,600                          | 929,600                            | 39.1%                                      |
| Total | 1,344,500                         | 2,608,600                        | 3,492,600                          | 38.5%                                      |

Estimated Total Savings District Wide are ~\$300,000 over project lifetime



# Key Objectives

- Economic
  - Solar provides a hedge against future electricity market volatility
  - Guaranteed performance from array in lease model
  - Estimated Annual Savings
- Educational
  - Production/Consumption data provided from arrays can be integrated into STEAM curriculum
  - Green energy production becomes 'normal' for all students & staff
- Environmental
  - 38% offset of power used by District
  - 1050 Tons of carbon dioxide reduction per year

Key Objectives are Met!

# Draft Warrant Article

Shall the District vote to authorize the School Board to enter into a long-term lease of School District property and a long-term power purchase agreement for the purpose of installing solar panels and supplying power to District schools on such terms and conditions as the School Board determines are in the best interests of the District?

# Next Steps

- The Board considers the Warrant Article for ballot
- The Board presents the warrant to voters in March 2022
- IF approved by voters, the District will:
  - Send project out for formal bids
  - Evaluate bids against key objectives (Economic, Educational, Environmental)
  - If a bid (or bids) are viable, negotiate favorable terms
  - Execute project

Solar Task Force fully supports this project