#### Solar Successes & Lessons Learned *Case Studies from PA Schools* Thursday June 8 9:30-10:30AM

Join us for a robust discussion with superintendents and facilities managers from three solar school districts!



#### Presented in partnership with







PENNSYLVANIA

#### Solar Schools Toolkit Webinar #2 - Solar Successes and Lessons Learned June 8, 2023



#### **Speakers**

- Mick Iskric, Superintendent, Steelton Highspire School District
- Rick Musselman, Former Superintendent, Midd-West School District
- Mark Stein, Director, Facilities and Operations, Bethlehem Area School District
- Roger Clark, Director, Sustainable Development Fund (retired)

#### **Philadelphia Solar Energy Association**

Toolkit supported by PA Department of Environmental Protection

In cooperation with: PHENND, PA Solar Center, Generation 180, Delaware Valley Regional Planning Commission

### **Solar Schools Toolkit**



#### Save Money Increase Educational Opportunities Provide Environmental Benefits Improve Resilience

## **Advantages of Going Solar**

#### • Electricity Bill Savings

- Offset electricity consumption
- Earn Solar Renewable Energy Credits
- Reduce peak demand (sometimes)
- Avoid future electric price increases
- Reduce CO<sub>2</sub> emissions
- Create educational opportunities for students and staff
- Improve Resilience



#### **10 Steps to Become a Solar School**



## **Case Study 1: Steelton-Highspire SD**



Typical ground mounting system with perimeter fencing



*On settled landfill from flooding caused by Hurricane Agnes* 

- 1.6 MW in 2021
- Ground mounted on settled landfill behind high school
- PPA with McClure Energy
- Provides 100% of the district's load

## Case Study 2: Midd-West SD



West Snyder Elementary School 460KW

- Completed in 2020
- Total of 2.56 MW
- Supplies 90% of District's load



Behind the High School 2.1 MW Bifacial panels

- PSA with Greenworks Development
- Contractor: Solar Renewable Energy LLC
- Snyder County

## Case Study 3: Bethlehem Area SD



East Hills

- Completed in 2011-12
- 1.625 MW on 5 schools
- Ground mounted, rooftop and parking canopy



Solar Parking Canopy at Freedom High School

- PPA with Tangent Energy Solutions
- Solar contractor: Tri-M Group and Baja Group
- Northampton and Lehigh Counties

## Step 1: Build a Team

- How did the solar project begin? Early champions ?
- Who were the key team members? the key decision makers?
- What were the initial goals? Did those goals change over time?
- What roadblocks did you encounter? How did you overcome them?



## Step 2: Analyze School Electricity Usage

How did you analyze your school's electricity usage and bills?

Who was involved in that process?

- Did you learn anything surprising when you analyzed the bills
- Were electricity costs the driver for the solar project?

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energy-saving tip

### **Step 3: Assess Your Solar Potential**

- How was the size and location of your solar project determined?
- Did the solar installer do the initial layout?
- Was there much back and forth about the layout?
- What were the key issues in the location of the project?



## **Step 4: Determine the Ownership Model**

In the past **PPAs** or other third-party ownership models worked well for schools, but the Inflation Reduction Act (IRA) is a game changer:

**Direct Payment** under IRA extends the federal Investment Tax Credit benefit to tax-exempt entities, changing the math.

- 30% tax credit is the base credit
- Adders:
  - +10% for domestic content
  - +10%, for fossil fuel energy communities (much of PA qualifies)
  - +10% for low-income communities

(competitive, cap on MWs, 2 years only)



## **Direct Ownership benefiting from other trends**

- Pennsylvania **SREC** prices are up currently \$46/MWh up from \$5
- Electric utility Act 129 solar programs up to 10 cents per kWh generated and used in first year
- Other potential state grants/financing much is afoot



#### **PPA v. Direct Ownership Savings**



### **Step 5: Estimate Financial Benefits**

- Did you do an initial financial analysis of bill savings
- Did you realize the predicted financial savings? If not, what was the problem that caused the problem?
- What advice do you have for others about the terms of a PPA?
- Did you retain the SRECs? Do you sell the SRECs or retire them?

Year	Electricity Cost	Paid to PPA Provider	Paid to PPL Utility	SREC Revenue	Difference	Savings
2021-22	\$630,000	\$358,550	\$297,548	\$106,646	\$549,452	\$ 80,548
2022-23	\$840,000	\$362,136	\$307,462	\$110,000	\$519,598	\$280,402

## **Step 6: Financing**

With a PPA, project financing is the concern of the solar developer, not the school. But with Direct Ownership, the school must arrange financing.

Financing will be the subject of the third Solar on Schools webinar -Thursday, June 29 at 9:30 a.m.



Central Columbia SD 3.8 MW Largest solar school system in PA !

# Step 7: Request for Proposal (RFP)

- Did you issue an RFP to select your PPA provider/solar contractor?
- What advice do you have about the RFPs document?
- How many responses did you get to the RFP?



### Step 8: Select Solar Installer & Issue Contract

- Did your RFP specify the selection criteria and the scoring of the proposals? Did that work as you expected?
- Who evaluated the proposals?
- What did you learn about the contracting process? What changes would you make if you could re-do the contract?



### **Step 9: Construction**

- What time of year did the construction occur?
- Did construction impede normal school operations?
- How long did it take?
- Any surprises in the construction?



## Step 10: System Monitoring, O & M

- How is the performance of your system monitored? Who does it? How is that monitoring information used?
- Have teachers and students used the monitoring information in the classroom? What teaching about the system has taken place?
- Has your system needed any repair or replacement?
- How do you mow under the ground mounted systems?



### **Future Plans?**

- Are you planning to add more solar ?
- Do you plan to electrify your HVAC and other systems? Electric school buses?
- Do you plan additional energy efficiency measures in the district?



# How to Pay for Your School's Solar System

Thursday June 29 9:30-10:45 AM

Solar finance experts will describe new and existing options, and how these incentives create opportunities for greater financial savings!



#### **REGISTER HERE**







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