



Empower Your World.



Energy Savings through Solar Systems



**Bedford County Jail &
Courthouse Facilities
December 13, 2017**

Key Benefits Solar Can Provide Bedford County Jail & Courthouse Facilities

- Reduce your fixed operating costs
 - Leverage the ‘fuel from the sun’ to power your facility at a lower cost than you pay today
- Take a volatile & important budget item and make it predictable
 - A solar energy system locks in energy costs over many years, giving you peace of mind and more clarity on your operating budget
- Better align energy consumption with sustainability goals

Topics to Cover

Who We Are

- RER Energy Group (RER)
- Sunvestment Energy Group (SEG)

Why Solar Now

- Pricing Trends
- Power Purchase Agreement (PPA)

What We Can Do For Bedford County

- Provide Significant Energy Cost Savings
- Hedge Against Energy Price Increases
- Align with Community Sustainability Mission



Company Overview



RER Energy Group

- Launched in 2009 to develop, design and install solar systems.
- Projects and team members located throughout U.S. and Mexico.

Sunvestment Energy Group

- Launched in 2013 to help non-profit organizations access more savings through solar energy by developing innovative solar financing structures and allowing community members to participate.
- Recipient of prestigious U.S. Department of Energy SunShot Initiative award, and two NY State Energy Research and Development Authority (NYSERDA) grants.



Milestones & Achievements

- Over 40 megawatts (MW) of cost effective energy systems
- More than \$30 MM in grants obtained for 100 clients
- Over \$50 MM of solar PPA projects developed & financed
- 2016 largest Iowa community solar array completed
- 2016 largest NY school district solar array completed
- 2016 first installation in Mexico completed
- 2017 named #1 PA Solar Developer by Solar Power Magazine
- 2017 named #23 U.S. Solar Developer by Solar Power Magazine
- 2017 obtained #684 on the Inc. 5000 rankings

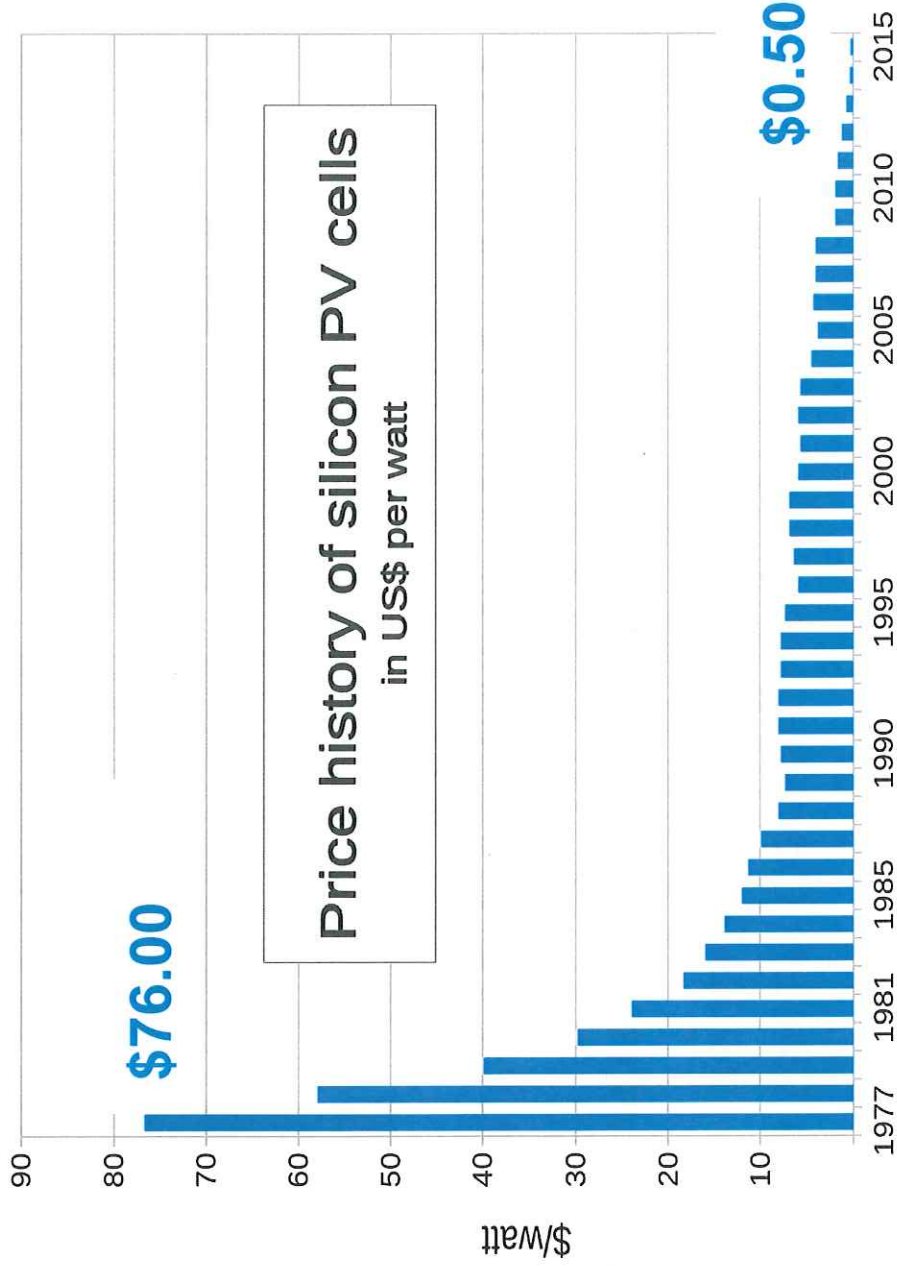


RER Uses Quality Components and Efficient System Design To Deliver Optimal Energy Production

- All systems designed to last 30 to 40 years
- NABCEP-Certified Solar Installers
- Energy produced tracking at 103% of projected generation

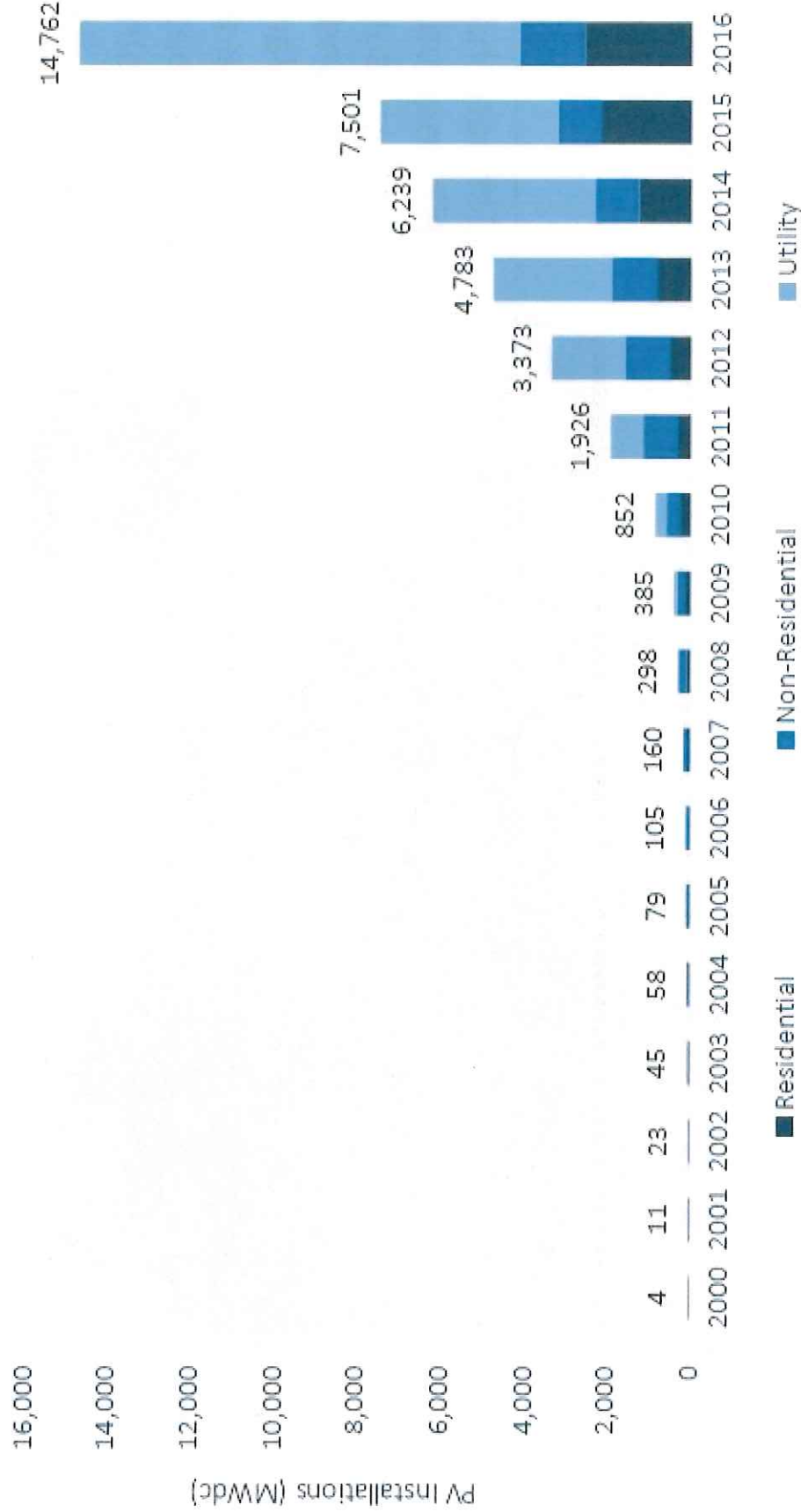


Significant Price Reductions Have Been Realized in Solar



Source: Bloomberg New Energy Finance & pv.energytrend.com

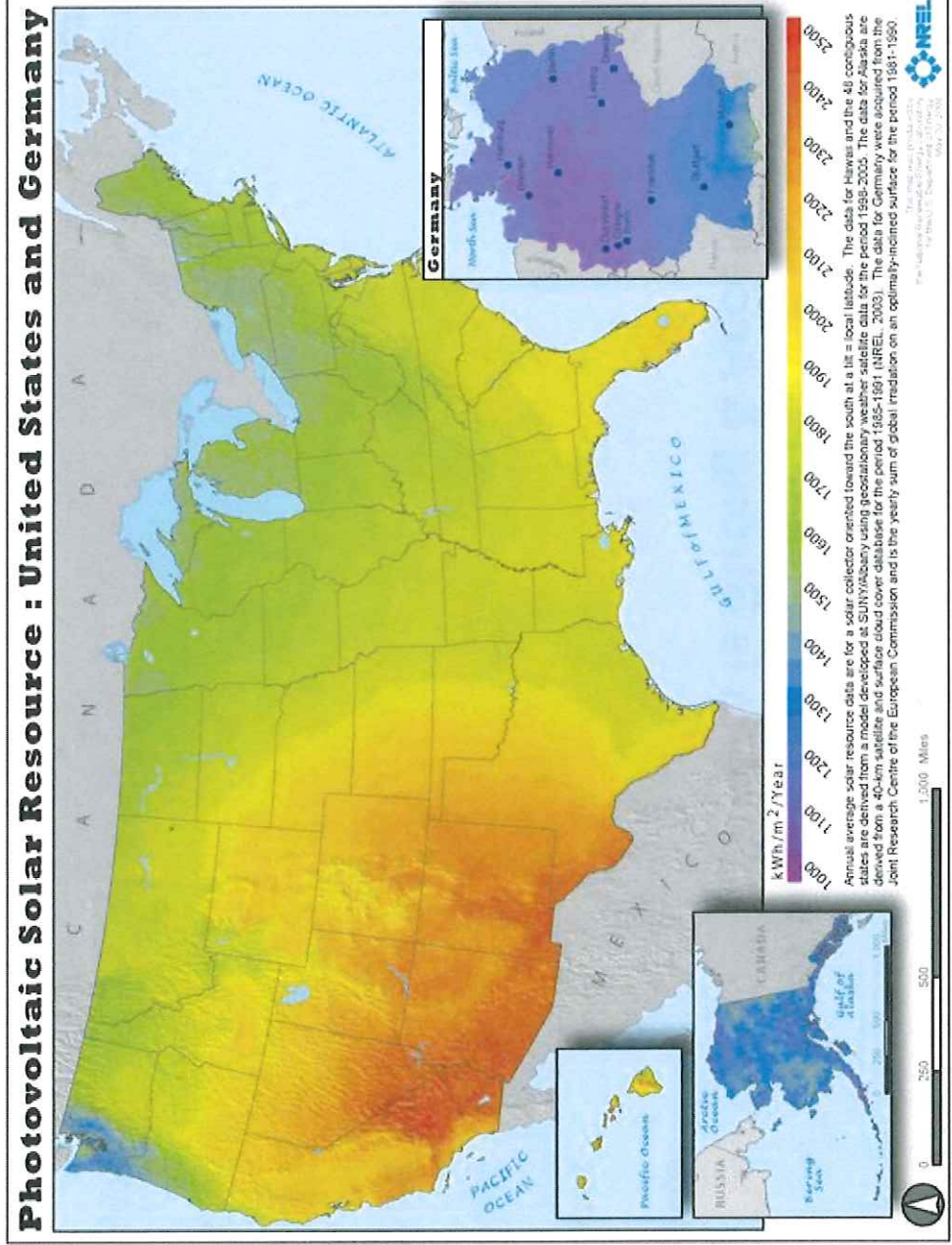
2016 was a Banner Year for the US Solar Market Growth is Strong & Accelerating



Source: GTM Research and Solar Energy Industry Association

Where's The Sunshine?

The Entire U.S. Has Sufficient Solar Exposure For Solar Systems



Germany has Alaska equivalent sun exposure levels, and more solar (on absolute and per capita basis) than any other country in the world.

Solar Financing Structure Power Purchase Agreement (PPA)

Bedford Co. Obtains Solar Savings Through a PPA Structure

Site Host Organization – Bedford Co.

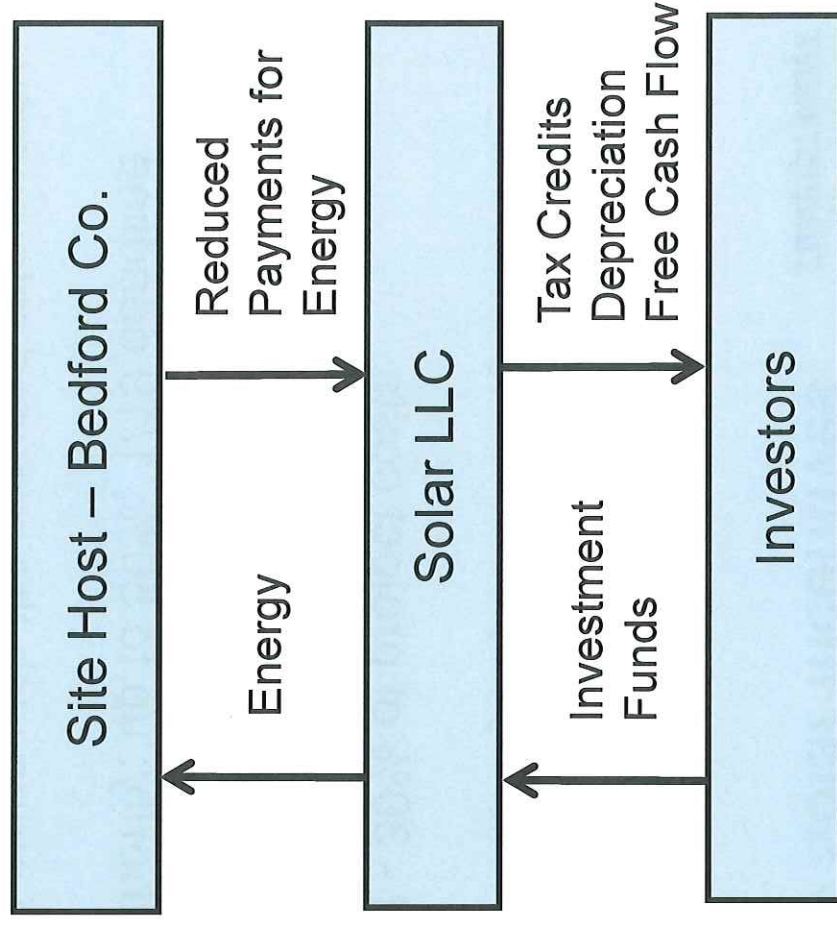
- Purchases low-cost solar energy at agreed upon rate

Solar LLC – Owned by SEG

- Operates system and collects payments from PTMA for power generated
- Pays for all operations & maintenance of solar array

Investors

- Provides capital and owns the solar array
- Monetizes ITC, depreciation, and state incentives



Current Federal and State Incentives Makes The PPA Model Possible

- Federal and State Incentives Cover a Majority of the Project Costs
 - Federal Investment Tax Credit - 30% of project costs
 - Accelerated Depreciation benefits provide ~ 30-45% of costs
 - Commonwealth Financing Authority: up to 50%, 1/19 deadline
- Investors receive these incentives along with the reduced rate energy payments from Bedford Co. Jail & Courthouse in order to achieve their required returns.
- Bedford County obtains reduced energy payments and predictability.

Reduced Energy Rates for Bedford County

Bedford County Jail and Courthouse agrees to purchase low-cost solar electricity at a pre-determined rate over the term of the PPA agreement

Reduced Upfront Capital Required for Bedford County

Third-Party Investors can fully fund the project and utilize all tax incentives.

- Options exist to pre-pay a portion of the future energy payments in order to reduce the investor capital required and increase your savings

No Operational Costs to Bedford County Jail and Courthouse

PPA Provider will operate and maintain the system for the duration of the PPA and Site Lease Term

End of PPA Term Options

- Removal of the system at no cost to Bedford County
- Extend the Solar Energy Procurement Agreement
- Purchase the system at Fair Market Value

Case Study

Horizon Goodwill Industries, Hagerstown, MD 957.6 kW Solar Array – Will provide 100% of Energy Needs



- Project completed September 2016
- Anticipated \$1MM of energy savings over 20 year PPA term
- Provides funds for mission advancement and program operations
- Aligns organization with sustainability goals



Solar Potential



Preliminary Analysis Shows The Following Solar Capacity



Total Solar Arrays
System Size: 1,830 kW DC
5,304 Solar Modules (345 Watts Each)
Annual Production: 2,342,195 kWh

**Bedford County Jail and
Courthouse Facility**



Projected Savings Calculator with \$900,000 Pennsylvania CFA Grant



25 Year PPA Scenario										
Year	Annual kWh	Utility Rate	PPA Rate	System Costs (1)	Avoided Utility Bills	PPA Payments	O&M Costs	Annual Savings	Cumulative Savings	Cumul. \$ / kWh
0				\$0		\$0		\$0	\$0	
1	2,342,195	\$0.100	\$0.064	\$0	\$234,220	(\$148,729)	\$0	\$85,490	\$85,490	\$0.064
2	2,330,484	\$0.103	\$0.065	\$0	\$240,040	(\$150,945)	\$0	\$89,094	\$174,585	\$0.064
3	2,318,832	\$0.106	\$0.066	\$0	\$246,005	(\$153,195)	\$0	\$92,810	\$267,395	\$0.065
4	2,307,237	\$0.109	\$0.067	\$0	\$252,118	(\$155,477)	\$0	\$96,641	\$364,036	\$0.065
5	2,295,701	\$0.113	\$0.069	\$0	\$258,383	(\$157,794)	\$0	\$100,589	\$464,625	\$0.066
6	2,284,223	\$0.116	\$0.070	\$0	\$264,804	(\$160,145)	\$0	\$104,659	\$569,284	\$0.067
7	2,272,802	\$0.119	\$0.072	\$0	\$271,384	(\$162,531)	\$0	\$108,853	\$678,138	\$0.067
8	2,261,438	\$0.123	\$0.073	\$0	\$278,128	(\$164,953)	\$0	\$113,176	\$791,313	\$0.068
9	2,250,130	\$0.127	\$0.074	\$0	\$285,040	(\$167,411)	\$0	\$117,629	\$908,943	\$0.069
10	2,238,880	\$0.130	\$0.076	\$0	\$292,123	(\$169,905)	\$0	\$122,218	\$1,031,161	\$0.069
11	2,227,685	\$0.134	\$0.077	\$0	\$299,382	(\$172,437)	\$0	\$126,946	\$1,158,106	\$0.070
12	2,216,547	\$0.138	\$0.079	\$0	\$306,822	(\$175,006)	\$0	\$131,816	\$1,289,922	\$0.071
13	2,205,464	\$0.143	\$0.081	\$0	\$314,446	(\$177,613)	\$0	\$136,833	\$1,426,755	\$0.072
14	2,194,437	\$0.147	\$0.082	\$0	\$322,260	(\$180,260)	\$0	\$142,001	\$1,568,756	\$0.072
15	2,183,465	\$0.151	\$0.084	\$0	\$330,269	(\$182,946)	\$0	\$147,323	\$1,716,079	\$0.073
16	2,172,547	\$0.156	\$0.085	\$0	\$338,476	(\$185,672)	\$0	\$152,804	\$1,868,883	\$0.074
17	2,161,685	\$0.160	\$0.087	\$0	\$346,887	(\$188,438)	\$0	\$158,449	\$2,027,332	\$0.075
18	2,150,876	\$0.165	\$0.089	\$0	\$355,507	(\$191,246)	\$0	\$164,261	\$2,191,593	\$0.075
19	2,140,122	\$0.170	\$0.091	\$0	\$364,341	(\$194,095)	\$0	\$170,246	\$2,361,839	\$0.076
20	2,129,421	\$0.175	\$0.093	\$0	\$373,395	(\$196,987)	\$0	\$176,408	\$2,538,247	\$0.077
21	2,118,774	\$0.181	\$0.094	\$0	\$382,674	(\$199,923)	\$0	\$182,752	\$2,720,999	\$0.078
22	2,108,180	\$0.186	\$0.096	\$0	\$392,184	(\$202,901)	\$0	\$189,282	\$2,910,281	\$0.078
23	2,097,639	\$0.192	\$0.098	\$0	\$401,929	(\$205,925)	\$0	\$196,005	\$3,106,286	\$0.079
24	2,087,151	\$0.197	\$0.100	\$0	\$411,917	(\$208,993)	\$0	\$202,924	\$3,309,210	\$0.080
25	2,076,715	\$0.203	\$0.102	\$0	\$422,153	(\$212,107)	\$0	\$210,047	\$3,519,257	\$0.081
26	2,066,332	\$0.209	\$0.000	(\$323,910)	\$432,644	\$0	(\$30,023)	\$78,711	\$3,597,967	\$0.084
27	2,056,000	\$0.216	\$0.000	\$0	\$443,395	\$0	(\$30,624)	\$412,772	\$4,010,739	\$0.082
28	2,045,720	\$0.222	\$0.000	\$0	\$454,414	\$0	(\$31,236)	\$423,178	\$4,433,917	\$0.080
29	2,035,492	\$0.229	\$0.000	\$0	\$465,706	\$0	(\$31,861)	\$433,845	\$4,867,762	\$0.078
30	2,025,314	\$0.236	\$0.000	\$0	\$477,279	\$0	(\$32,498)	\$444,781	\$5,312,542	\$0.076
Total	65,401,490	\$0.157	\$0.076	(\$323,910)	\$10,258,326	(\$4,465,633)	(\$156,241)	\$5,312,542	\$5,312,542	\$0.076

(1) Year 26 cost represents an option to buy the array at Fair Market Value. This is not an obligation. Scenario assumes a 2% annual PPA rate escalator.

Make a Positive Impact on the Environment

By installing a solar electricity system, Bedford County will be doing its part to reduce global warming, air pollution, natural disasters and ultimately preserve our planet.

The proposed 1,830.0 kW photovoltaic system is estimated to generate 2,342,195 kWh of clean energy each year. This clean energy would avoid 1,654 metric tons of Carbon Dioxide (CO₂) from entering into the environment.

2,342,195 kWh of clean energy is equivalent to any of the following:



- Annual green house gas emissions from 344 cars.
- CO₂ emissions from 185,263 gallons of gasoline consumed.
- CO₂ emissions 3,844 barrels of oil consumed.
- CO₂ emissions from 22 tanker trucks' worth of gasoline.
- CO₂ emissions from the electricity use of 248 homes in one year.
- CO₂ emissions from all the energy use of 85 homes for one year.
- Carbon sequestered annually by 42,373 tree seedlings grown for 10 years.
- Carbon sequestered annually by 1,354 acres of U.S. forests.
- Carbon sequestered by 13 acres of U.S. forest preserved from conversion to cro
- CO₂ emissions from 68,856 propane cylinders used for home barbeques.
- CO₂ emissions from burning 7 railcars' worth of coal.
- Greenhouse gas emission avoided by recycling 618 tons of waste.

Source: <http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

RER Can Provide Multiple Avenues of Education and Awareness for the Benefits of Solar Energy

- Educational Kiosks
- Display Monitors in High Traffic Areas
- Community Presentations



All RER Systems Provide the Following

Turn-Key Service

- All components necessary to complete the project
- Permitting applications and costs
- Installation and project management
- Clean up, removal and recycling of project debris
- Warranty, utility interconnection and production reporting

Additional Features

- Each solar array will be custom designed to compliment your facility
- We use only the most highly trained solar electric engineers and designers to ensure your system meets or exceeds industry standards
- System design and engineering completed by a NABCEP Certified Solar Installer
- All RER solar systems are designed to last 30-40 years or more

All RER Systems Provide the Following Minimum Levels

Warranties

- Solar Modules: 25 Years
- DC to AC Inverters: 5-10 Years plus extension options
- Racking: 10 Years
- System Installation: 5 Years

24/7/365 Monitoring

- Your solar electric system will include a data acquisition system that will enable 24/7/365, web-based monitoring, allowing real-time access to the system's energy production levels from any computer and even hand-held communication devices
- RER will also provide an annual summary production report on the anniversary date of your system commissioning

RER Project Managers Will Lead 6 to 9 Month Installation Process

WEEK	TASK	RESPONSIBLE
1	Finalize Installation Agreement	Customer/RER
2	Structural & electrical review, engineering, submit interconnection	RER
8	Interconnection approval; submit building & electrical permit packages; order materials	RER
12	Permit approvals; receive materials and begin construction	RER
26	Substantial completion	RER
28	Final interconnection and system commissioning	RER
30	Training and close out meeting	Customer/RER

Why Now? What Would One Lose by Waiting?

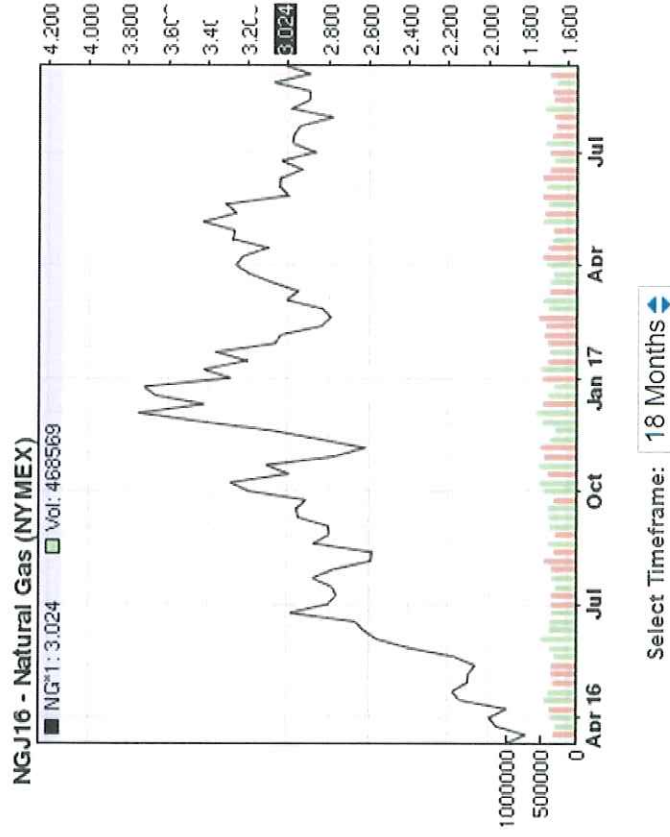
- Pennsylvania CFA Grant applications for the first, and potentially only round of funding, are due January 19, 2018. Requires LOI.
- Every month delayed is less cumulative savings over time
- Cost of borrowing money is at historically low rates
- Modules prices dropped 80%+ over last 5 years, pricing increases or decreases uncertain going forward
- Federal 30% ITC declines for systems installed after 2019. Projects take over a year for planning, financing, permitting, other
- Lock in future electric prices today. Natural Gas prices are expected to double in the U.S. over the next 5 years

Natural Gas: Primary Driver of Electricity Costs

**U.S. is Net Exporter of Natural Gas for the First Time in 60 Years
Prices Have Risen 50% Over Past 18 Mos. After
Export Ban Lifted in December 2015**

U.S. National Average Natural Gas Price

End of day Commodity Futures Price Quotes for Natural Gas (NYMEX)



Source: www.nasdaq.com/markets/natural-gas.aspx?timeframe=18m

To further explore the solar opportunity:

1. Determine if economics are compelling for Bedford County.
2. Confirm interest in pursuing the solar project with RER by Letter of Intent.
3. Provide three years of financial statements to assist with third-party financing options.

When we sign the Letter of Intent:

1. RER will schedule on-site evaluations and further analysis with a NABCEP (North American Board of Certified Energy Practitioners) solar engineer.
2. After this evaluation, we will refine and confirm design and pricing for the project and get together with you to review a completed proposal and all required grant paperwork, including a Power Purchase Agreement.
3. Upon completion of all paperwork, the grant application is submitted by 1/19/18.

The final size and cost will be determined after your utility company and the Authorities Having Jurisdiction (AHJ) have reviewed detailed system engineering plans. The financial data assumes acceptable engineering and jurisdictional approvals for the systems illustrated. RER will proceed with the review process upon the signing of an Letter of Intent, which would allow either party to cancel the project if unanticipated costs arise from the review process. All anticipated costs are included in this budgetary proposal.

Boscov's Department Stores – 3 Store Projects to Date Continue to Pursue Additional Solar Projects

Boscov's – Westminster, MD
System Size: 478.4 kW

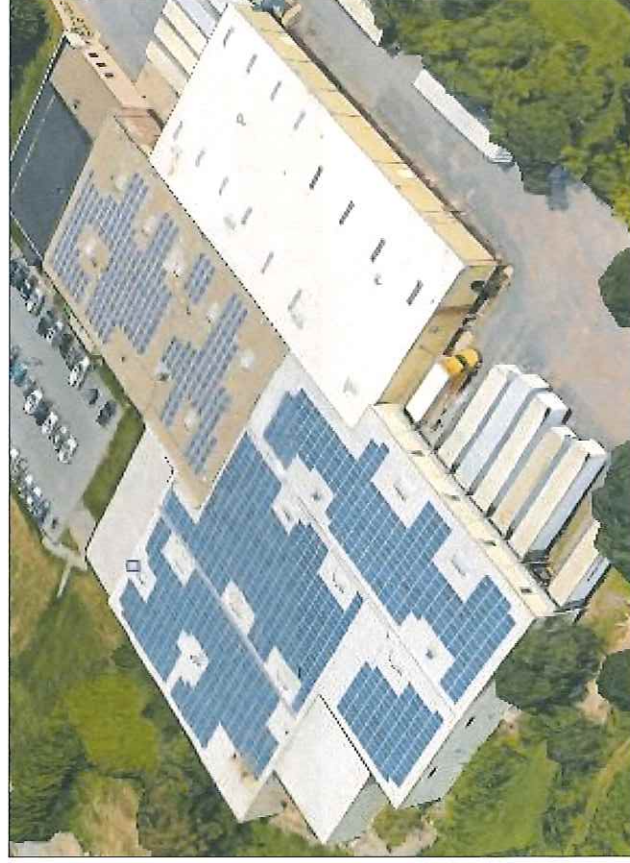


Boscov's – Woodbridge, NJ
System Size: 603.68 kW



RER Projects

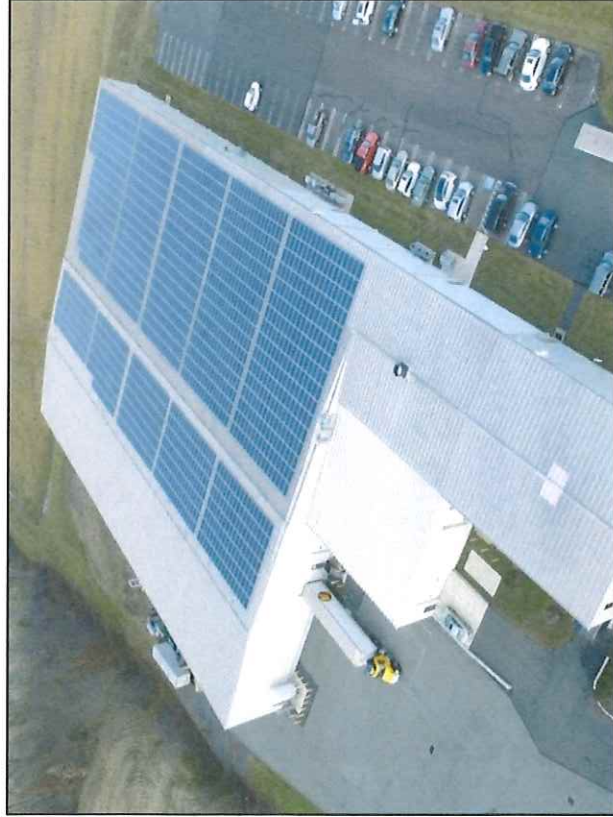
Misco Products
Reading, PA
System Size: 300 kW



Heyco Metals
Reading, PA
System Size: 304.98 kW



AGP Plastics, Inc. – 602.5 kW Specialty Glass Manufacturer, Quakertown, PA

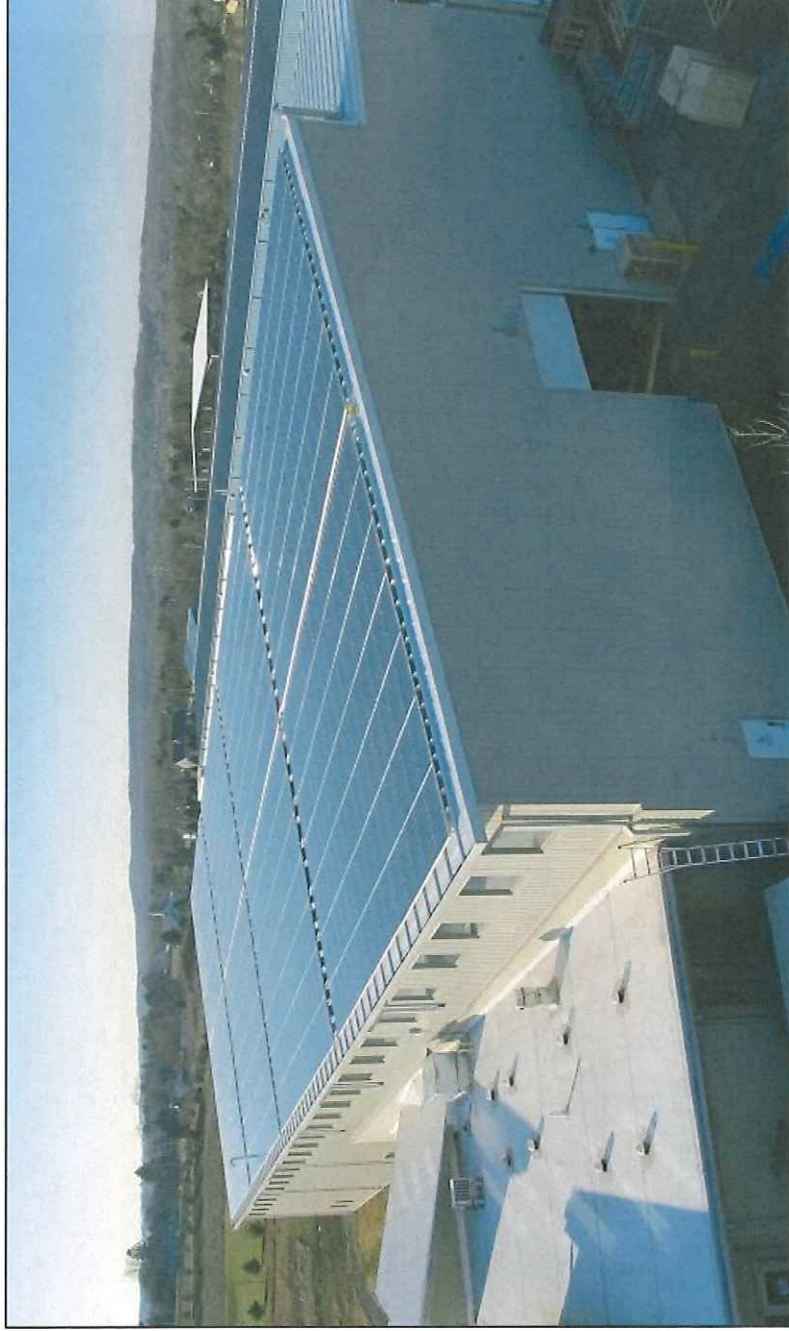




RER Projects



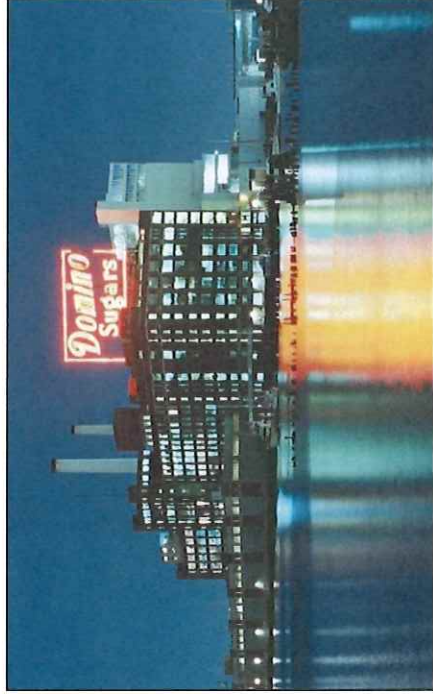
Aerzen USA Corporation – 205.8 kW Array Community Funded PPA, Coatesville, PA



American PowerNet – 40 kW Array Carports Provide Shading and Snow Protection



Domino Sugars – 35.28 kW Array Solar Energy for Iconic Baltimore Harbor Sign



A&A Global Industries – 1,627 kW, 5,104 Modules Manufacturer of Toys & Novelties, Cockeysville, MD



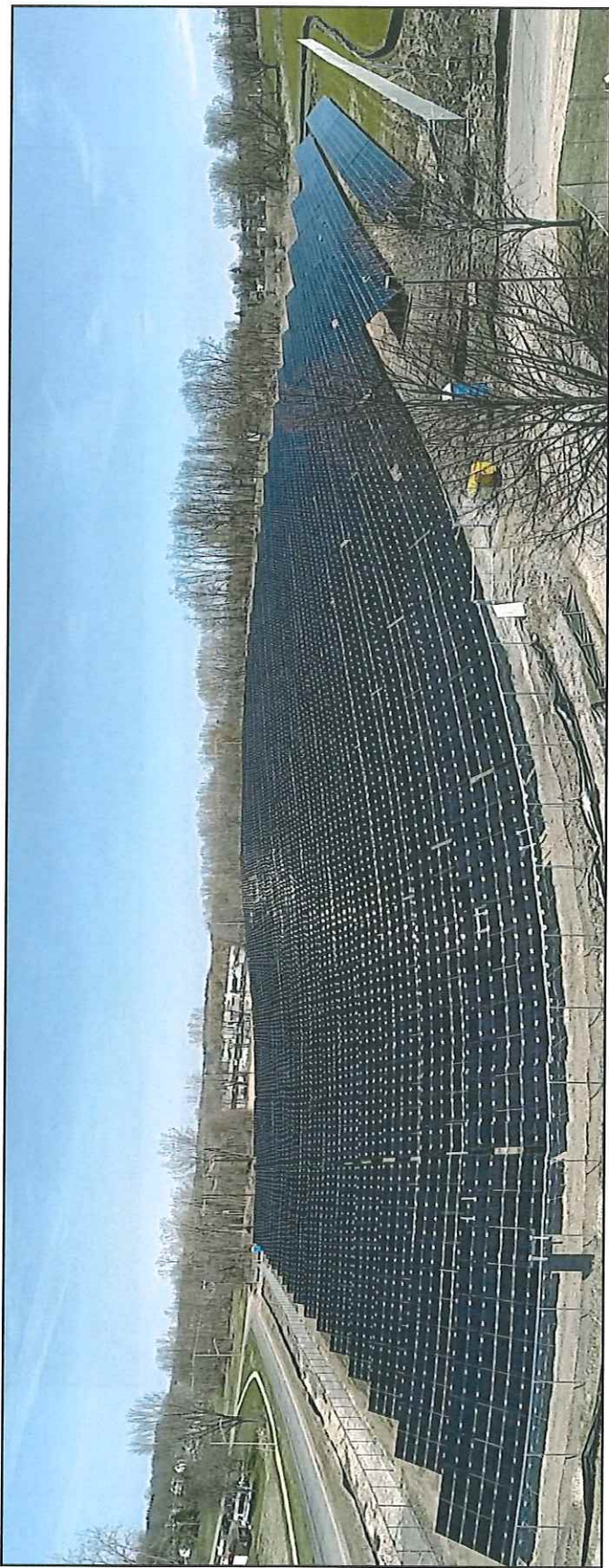
RER Projects

Cedar Falls Utility – 1,987 kW, 5,814 Modules Largest Community Solar Array in Iowa



To view a video of the RER Cedar Falls Utility project, visit the RER website homepage and click on the link to the right under “In the News”, or use the following link:
<http://www.rerenergygroup.com/en/cedar-falls-utilities-and-rer-energy-group>

Avon Central School District – 1,512 kW Array Largest Public School District Array in NY





Contact Information



**Thank You For This Opportunity.
If you have any questions, please contact:**

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