

# PA SOLAR CENTER

SOLAR FEASIBILITY ANALYSIS FOR



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# How We Work



PENNSYLVANIA  
**SOLAR CENTER**



SOLAR CENTER

## Walking the Walk

Technical Assistance to the  
Commercial Sector



**TRANSFORM**

## Outreach, Public Awareness & Resources

Statewide Solar Resource Hub &  
Savvy Communications



**EDUCATE**

## Policy Education & Advocacy

Supporting Robust Solar Policies



**ADVOCATE**

# Important Information

Federal tax credits for commercial projects are now limited to installations placed in service by December 31, 2027, unless construction begins within 12 months of the bill's enactment (by July 4, 2026).

Options for ITC:

Start July 4, 2026 - complete within 4 years

*or*

Placed in service by end of 2027



## ROOFTOP #1 ARRAY:

- 79.6-kilowatt photovoltaic system
- Produces 105,400 kWh of clean energy in Year 1
- Offsets approximately 28% of the site's estimated annual electric consumption





## ROOFTOP #1 FINANCIAL METRICS **WITH ITC:**

- Over \$225,257+ total return on investment *including S-RECS*
- \$9,067+ savings on electricity per year
- Payback in 11-12 years *without* additional funding
- Hedges against rising electricity rates in PA

## Pricing

Up Front Cost: \$182,988

Incentives: \$63,952

**NET SYSTEM COST: \$119,035**



# CASH FLOW ANALYSIS

## ROOFTOP #1 WITH ITC

Year	Utility Electricity Price (\$/kWh)	Solar Production (kWh)	Solar Energy Savings (\$)	S-RECs Generated	S-RECs Value (\$)	O&M Costs (\$)	Energy Savings (\$)	Cumulative Savings with SRECs (\$)	Cost of Doing Nothing
0				Full Purchase Price of Solar Installation:			\$182,988		
1				Cost Recovered:			\$63,952		
1	\$0.0860	105,400	\$9,067	105	\$2,108	-\$557	-\$110,526	-\$108,418	-\$9,067
2	\$0.0895	104,873	\$9,382	105	\$2,097	-\$565	-\$101,709	-\$97,504	-\$18,449
3	\$0.0930	104,349	\$9,709	104	\$2,087	-\$574	-\$92,575	-\$86,282	-\$28,157
4	\$0.0968	103,827	\$10,046	104	\$2,077	-\$582	-\$83,111	-\$74,742	-\$38,203
5	\$0.1006	103,308	\$10,396	103	\$2,066	-\$591	-\$73,306	-\$62,870	-\$48,599
6	\$0.1047	102,791	\$10,758	103	\$1,542	-\$600	-\$63,148	-\$51,171	-\$59,357
7	\$0.1088	102,277	\$11,132	102	\$1,534	-\$609	-\$52,625	-\$39,113	-\$70,489
8	\$0.1132	101,766	\$11,520	102	\$1,526	-\$618	-\$41,723	-\$26,686	-\$82,009
9	\$0.1177	101,257	\$11,920	101	\$1,519	-\$627	-\$30,430	-\$13,874	-\$93,929
10	\$0.1224	100,751	\$12,335	101	\$1,511	-\$637	-\$18,732	-\$664	-\$106,265
11	\$0.1273	100,247	\$12,765	100	\$0	-\$646	-\$6,613	\$11,454	-\$119,029
12	\$0.1324	99,746	\$13,209	100	\$0	-\$656	\$5,939	\$24,007	-\$132,238
13	\$0.1377	99,247	\$13,668	99	\$0	-\$666	\$18,942	\$37,009	-\$145,906
14	\$0.1432	98,751	\$14,144	99	\$0	-\$676	\$32,410	\$50,478	-\$160,050
15	\$0.1490	98,257	\$14,636	98	\$0	-\$8,642	\$38,404	\$56,472	-\$174,686
16	\$0.1549	97,766	\$15,146	98	\$0	-\$816	\$52,734	\$70,802	-\$189,832
17	\$0.1611	97,277	\$15,673	97	\$0	-\$828	\$67,579	\$85,647	-\$205,505
18	\$0.1676	96,791	\$16,218	97	\$0	-\$840	\$82,957	\$101,025	-\$221,723
19	\$0.1743	96,307	\$16,782	96	\$0	-\$853	\$98,886	\$116,954	-\$238,505
20	\$0.1812	95,825	\$17,366	96	\$0	-\$866	\$115,387	\$133,455	-\$255,872
21	\$0.1885	95,346	\$17,971	95	\$0	-\$879	\$132,479	\$150,547	-\$273,843
22	\$0.1960	94,869	\$18,596	95	\$0	-\$892	\$150,184	\$168,252	-\$292,439
23	\$0.2039	94,395	\$19,243	94	\$0	-\$905	\$168,522	\$186,590	-\$311,682
24	\$0.2120	93,923	\$19,913	94	\$0	-\$919	\$187,516	\$205,584	-\$331,595
25	\$0.2205	93,453	\$20,606	93	\$0	-\$933	\$207,190	\$225,257	-\$352,201



## ROOFTOP #1 FINANCIAL METRICS **WITHOUT ITC:**

- Over \$158,872+ total return on investment *including S-RECS*
- \$9,067+ savings on electricity per year
- Payback in 15-18 years *without* additional funding
- Hedges against rising electricity rates in PA

## Pricing

Up Front Cost: \$183,080

Incentives: \$9,055

**NET SYSTEM COST: \$174,024**



# CASH FLOW ANALYSIS

## ROOFTOP #1 WITHOUT ITC

Year	Utility Electricity Price (\$/kWh)	Solar Production (kWh)	Solar Energy Savings (\$)	S-RECs Generated	S-RECs Value (\$)	O&M Costs (\$)	Energy Savings (\$)	Cumulative Savings with SRECs (\$)	Cost of Doing Nothing
0				Full Purchase Price of Solar Installation:			\$183,080		
1				Covered through Direct Pay Option, Rebates & Grants:			\$9,056		
1	\$0.0860	105,400	\$9,067	105	\$3,162	\$796	-\$165,754	-\$162,592	-\$9,067
2	\$0.0886	104,873	\$9,292	105	\$3,146	\$808	-\$157,270	-\$150,961	-\$18,358
3	\$0.0913	104,349	\$9,523	104	\$3,130	\$820	-\$148,567	-\$139,128	-\$27,881
4	\$0.0940	103,827	\$9,759	104	\$3,115	\$832	-\$139,640	-\$127,087	-\$37,640
5	\$0.0968	103,308	\$10,002	103	\$3,099	\$845	-\$130,483	-\$114,830	-\$47,642
6	\$0.0997	102,791	\$10,250	103	\$2,570	\$858	-\$121,090	-\$102,868	-\$57,893
7	\$0.1027	102,277	\$10,505	102	\$2,557	\$870	-\$111,455	-\$90,676	-\$68,398
8	\$0.1058	101,766	\$10,766	102	\$2,544	\$883	-\$101,573	-\$78,249	-\$79,164
9	\$0.1090	101,257	\$11,034	101	\$2,531	\$897	-\$91,436	-\$65,581	-\$90,198
10	\$0.1122	100,751	\$11,308	101	\$2,519	\$910	-\$81,038	-\$52,664	-\$101,506
11	\$0.1156	100,247	\$11,589	100	\$2,005	\$4,904	-\$74,353	-\$43,974	-\$113,095
12	\$0.1191	99,746	\$11,877	100	\$1,995	\$997	-\$63,473	-\$31,099	-\$124,971
13	\$0.1226	99,247	\$12,172	99	\$1,985	\$1,012	-\$52,313	-\$17,955	-\$137,144
14	\$0.1263	98,751	\$12,475	99	\$1,975	\$1,027	-\$40,866	-\$4,533	-\$149,618
15	\$0.1301	98,257	\$12,785	98	\$1,965	\$1,043	-\$29,125	\$9,174	-\$162,403
16	\$0.1340	97,766	\$13,102	98	\$1,466	\$1,059	-\$17,081	\$22,684	-\$175,505
17	\$0.1380	97,277	\$13,428	97	\$1,459	\$1,074	-\$4,728	\$36,497	-\$188,933
18	\$0.1422	96,791	\$13,761	97	\$1,452	\$1,091	\$7,943	\$50,620	-\$202,694
19	\$0.1464	96,307	\$14,103	96	\$1,445	\$1,107	\$20,940	\$65,061	-\$216,798
20	\$0.1508	95,825	\$14,454	96	\$1,437	\$1,124	\$34,270	\$79,828	-\$231,251
21	\$0.1554	95,346	\$14,813	95	\$1,430	\$1,140	\$47,943	\$94,931	-\$246,065
22	\$0.1600	94,869	\$15,181	95	\$1,423	\$1,157	\$61,967	\$110,378	-\$261,246
23	\$0.1648	94,395	\$15,558	94	\$1,416	\$1,175	\$76,350	\$126,178	-\$276,804
24	\$0.1698	93,923	\$15,945	94	\$1,409	\$1,192	\$91,103	\$142,339	-\$292,749
25	\$0.1749	93,453	\$16,341	93	\$1,402	\$1,210	\$106,234	\$158,872	-\$309,091



## ROOFTOP #2 ARRAY:

- 112-kilowatt photovoltaic system
- Produces 146,600 kWh of clean energy in Year 1
- Offsets approximately 39% of the site's estimated annual electric consumption



## Pricing

Up Front Cost:	\$246,400
Incentives:	\$ 86,515
<b>NET SYSTEM COST:</b>	<b>\$159,884</b>

### ROOFTOP #2 FINANCIAL METRICS WITH ITC:

- Over \$318,552+ total return on investment *including S-RECS*
- \$12.611+ savings on electricity per year
- Payback in 11-13 years *without* additional funding
- Hedges against rising electricity rates in PA



# CASH FLOW ANALYSIS

## ROOFTOP #2 WITH ITC

Year	Utility Electricity Price (\$/kWh)	Solar Production (kWh)	Solar Energy Savings (\$)	S-RECs Generated	S-RECs Value (\$)	O&M Costs (\$)	Energy Savings (\$)	Cumulative Savings with SRECs (\$)	Cost of Doing Nothing
0				Full Purchase Price of Solar Installation:			\$246,400		
1				Cost Recovered:			\$86,516		
1	\$0.0860	146,600	\$12,611	147	\$2,932	-\$784	-\$148,058	-\$145,126	-\$12,611
2	\$0.0895	145,867	\$13,049	146	\$2,917	-\$796	-\$135,804	-\$129,955	-\$25,660
3	\$0.0930	145,138	\$13,503	145	\$2,903	-\$808	-\$123,108	-\$114,356	-\$39,163
4	\$0.0968	144,412	\$13,973	144	\$2,888	-\$820	-\$109,955	-\$98,314	-\$53,137
5	\$0.1006	143,690	\$14,460	144	\$2,874	-\$832	-\$96,327	-\$81,813	-\$67,597
6	\$0.1047	142,971	\$14,963	143	\$2,145	-\$845	-\$82,209	-\$65,550	-\$82,559
7	\$0.1088	142,257	\$15,484	142	\$2,134	-\$857	-\$67,582	-\$48,790	-\$98,043
8	\$0.1132	141,545	\$16,022	142	\$2,123	-\$870	-\$52,430	-\$31,514	-\$114,065
9	\$0.1177	140,838	\$16,580	141	\$2,113	-\$883	-\$36,733	-\$13,705	-\$130,645
10	\$0.1224	140,133	\$17,157	140	\$2,102	-\$896	-\$20,473	\$4,658	-\$147,802
11	\$0.1273	139,433	\$17,754	139	\$0	-\$910	-\$3,628	\$21,502	-\$165,556
12	\$0.1324	138,736	\$18,372	139	\$0	-\$924	\$13,820	\$38,950	-\$183,928
13	\$0.1377	138,042	\$19,011	138	\$0	-\$937	\$31,894	\$57,024	-\$202,940
14	\$0.1432	137,352	\$19,673	137	\$0	-\$951	\$50,615	\$75,746	-\$222,612
15	\$0.1490	136,665	\$20,357	137	\$0	-\$12,166	\$58,807	\$83,937	-\$242,970
16	\$0.1549	135,982	\$21,066	136	\$0	-\$1,148	\$78,725	\$103,855	-\$264,036
17	\$0.1611	135,302	\$21,799	135	\$0	-\$1,165	\$99,358	\$124,489	-\$285,835
18	\$0.1676	134,625	\$22,558	135	\$0	-\$1,183	\$120,733	\$145,863	-\$308,392
19	\$0.1743	133,952	\$23,343	134	\$0	-\$1,201	\$142,875	\$168,005	-\$331,735
20	\$0.1812	133,282	\$24,155	133	\$0	-\$1,219	\$165,811	\$190,941	-\$355,890
21	\$0.1885	132,616	\$24,995	133	\$0	-\$1,237	\$189,570	\$214,700	-\$380,885
22	\$0.1960	131,953	\$25,865	132	\$0	-\$1,255	\$214,180	\$239,310	-\$406,751
23	\$0.2039	131,293	\$26,765	131	\$0	-\$1,274	\$239,671	\$264,801	-\$433,516
24	\$0.2120	130,637	\$27,697	131	\$0	-\$1,293	\$266,074	\$291,205	-\$461,213
25	\$0.2205	129,983	\$28,661	130	\$0	-\$1,313	\$293,422	\$318,552	-\$489,874



## Pricing

Up Front Cost:	\$246,400
<u>Incentives:</u>	<u>\$12,595</u>
<b>NET SYSTEM COST:</b>	<b>\$233,804</b>

### ROOFTOP #2 FINANCIAL METRICS **WITHOUT ITC:**

- Over \$228,753+ total return on investment *including S-RECS*
- \$12,611+ savings on electricity per year
- Payback in 14-16 years *without* additional funding
- Hedges against rising electricity rates in PA



# CASH FLOW ANALYSIS

## ROOFTOP #2 WITHOUT ITC

Year	Utility Electricity Price (\$/kWh)	Solar Production (kWh)	Solar Energy Savings (\$)	S-RECs Generated	S-RECs Value (\$)	O&M Costs (\$)	Energy Savings (\$)	Cumulative Savings with SRECs (\$)	Cost of Doing Nothing
0				Full Purchase Price of Solar Installation:			\$246,400		
1				Covered through Direct Pay Option, Rebates & Grants:			\$12,596		
1	\$0.0860	146,600	\$12,611	147	\$4,398	\$1,120	-\$222,314	-\$217,916	-\$12,611
2	\$0.0886	145,867	\$12,924	146	\$4,376	\$1,137	-\$210,526	-\$201,752	-\$25,534
3	\$0.0913	145,138	\$13,245	145	\$4,354	\$1,154	-\$198,435	-\$185,307	-\$38,779
4	\$0.0940	144,412	\$13,574	144	\$4,332	\$1,171	-\$186,032	-\$168,572	-\$52,354
5	\$0.0968	143,690	\$13,912	144	\$4,311	\$1,189	-\$173,309	-\$151,538	-\$66,265
6	\$0.0997	142,971	\$14,257	143	\$3,574	\$1,207	-\$160,259	-\$134,913	-\$80,522
7	\$0.1027	142,257	\$14,612	142	\$3,556	\$1,225	-\$146,872	-\$117,970	-\$95,134
8	\$0.1058	141,545	\$14,975	142	\$3,539	\$1,243	-\$133,140	-\$100,700	-\$110,109
9	\$0.1090	140,838	\$15,347	141	\$3,521	\$1,262	-\$119,055	-\$83,094	-\$125,455
10	\$0.1122	140,133	\$15,728	140	\$3,503	\$1,281	-\$104,608	-\$65,143	-\$141,183
11	\$0.1156	139,433	\$16,119	139	\$2,789	\$6,900	-\$95,389	-\$53,135	-\$157,302
12	\$0.1191	138,736	\$16,519	139	\$2,775	\$1,403	-\$80,272	-\$35,244	-\$173,822
13	\$0.1226	138,042	\$16,930	138	\$2,761	\$1,424	-\$64,767	-\$16,978	-\$190,752
14	\$0.1263	137,352	\$17,351	137	\$2,747	\$1,446	-\$48,862	\$1,674	-\$208,103
15	\$0.1301	136,665	\$17,782	137	\$2,733	\$1,467	-\$32,547	\$20,722	-\$225,884
16	\$0.1340	135,982	\$18,224	136	\$2,040	\$1,489	-\$15,813	\$39,496	-\$244,108
17	\$0.1380	135,302	\$18,677	135	\$2,030	\$1,512	\$1,352	\$58,690	-\$262,785
18	\$0.1422	134,625	\$19,141	135	\$2,019	\$1,534	\$18,958	\$78,316	-\$281,926
19	\$0.1464	133,952	\$19,616	134	\$2,009	\$1,557	\$37,017	\$98,384	-\$301,542
20	\$0.1508	133,282	\$20,104	133	\$1,999	\$1,581	\$55,540	\$118,907	-\$321,646
21	\$0.1554	132,616	\$20,603	133	\$1,989	\$1,605	\$74,539	\$139,895	-\$342,249
22	\$0.1600	131,953	\$21,115	132	\$1,979	\$1,629	\$94,026	\$161,361	-\$363,365
23	\$0.1648	131,293	\$21,640	131	\$1,969	\$1,653	\$114,013	\$183,317	-\$385,005
24	\$0.1698	130,637	\$22,178	131	\$1,960	\$1,678	\$134,513	\$205,777	-\$407,183
25	\$0.1749	129,983	\$22,729	130	\$1,950	\$1,703	\$155,539	\$228,753	-\$429,912

System Cost and Production Fields	Cost and Production Descriptions	Scenario 1	Scenario 2	Scenario 1 w/o ITC	Scenario 2 w/o ITC
<b>Cost of Doing Nothing (No Solar)</b>	Estimated cost of purchasing electricity through utility service over 25 years.	<b>-\$352,201</b>	<b>-\$489,874</b>	<b>-\$352,201</b>	<b>-\$489,874</b>
<b>Electricity Bill Savings Year One</b>	Value of electricity produced by solar versus the cost of paying for grid/supplier electricity.	<b>\$9,067</b>	<b>\$12,611</b>	<b>\$9,067</b>	<b>\$12,611</b>
<b>Estimated 25 Year Savings</b>	Electricity savings provided over 25 years factoring in up-front costs.	\$225,257	\$318,552	\$158,872	\$228,753
<b>Full Purchase Price</b>	The turnkey cost of the system if paid for outright.	\$182,988	\$246,400	\$182,988	\$246,400
<b>IRA Tax Benefits</b>	The cost recovered through the federal solar tax credit (or Direct Pay Option for nonprofits)	<b>\$54,896</b>	<b>\$73,920</b>	<b>\$0</b>	<b>\$0</b>
<b>Adjusted Net Price</b>	Full purchase price minus estimated cost recovered through direct pay and other funds	\$119,036	\$159,884	\$174,024	\$233,804
<b>System Size</b>	Factory rating for kilowatts (kW) of electricity produced annually.	80	112	80	112
<b>Electricity Production</b>	Expected kilowatt hours (kWh) of electricity produced annually.	105,400	146,600	105,400	146,600
<b>Price per Watt Installed</b>	Solar installations are commonly measured by the dollar cost (\$) per Watt installed.	\$2.30	\$2.20	\$2.30	\$2.20
<b>Electricity Usage Offset by Solar (District)</b>	The percentage of your current electricity usage offset by the installed solar.	28%	39%	28%	39%
<b>O&amp;M Costs Year One</b>	Estimated operations and maintenance costs in first year.	-\$557	-\$784	-\$557	-\$784

# SOLAR RENEWABLE ENERGY CREDITS

Solar Renewable Energy Credits (S-RECs) are made possible through a state policy called the Alternative Energy Portfolio Standard (AEPS) that was passed in 2004. The AEPS called for 8% of our electricity to be generated by renewable energy, 0.5% from solar specifically, by 2021.

A solar system owner earns one (1) SREC for every one (1) megawatt hour (MWh) of energy generated. For example, a typical solar system on a home is about 7 kilowatts and produces about 7,200 MWh of electricity per year, therefore earning about 7 SRECs per year. SRECs can be sold on a market and the utilities are required to purchase as many SRECs as the AEPS law requires. This is what gives SRECs monetary value to solar owners.

The AEPS hasn't been updated since 2004 and we currently have more than 0.5% solar on the grid. The value of the SREC in Pennsylvania is starting to decline. Without changes to state policy, the value of the SREC may become negligible over time. SRECs provide an important financial benefit over time that helps to increase the return on investment for solar owners.

SRECS can be retired rather than commodified. The organization that retired the SREC has the legal right to claim being solar-powered.

The estimate below includes SREC values declining in value over 25 years.

Unfortunately, the SREC should not be counted on as a certain financial benefit when determining return on investment of solar in Pennsylvania until a change to the AEPS is made. There are bills that have been introduced in the state House and Senate to increase the renewable energy goals, which would then create a steady and increased value of the SREC.

System Cost and Production Fields	Cost and Production Descriptions	Scenario 1	Scenario 2	Scenario 1 w/o ITC	Scenario 2 w/o ITC
<b>S-RECs Generated Year One</b>	Solar installations produce Solar Renewable Energy Credits (S-RECS) that can sold for additional revenue.	105	147	105	147
<b>Current Utility Supply Rate</b>	Your current electricity supply rate either through the default utility service or a 3rd-party supplier.	\$0.0860	\$0.0860	\$0.0860	\$0.0860
<b>Estimated Value of S-RECS Year One</b>	The total cash value S-REC produced year one based on current market value. Long term value of S-RECS is affected by market forces and state policy.	\$2,108	\$2,932	\$2,108	\$2,932
<b>Total Estimated Savings</b>	Total savings (\$) provided over 25 years factoring in up-front costs and S-REC values	<b>\$225,257</b>	<b>\$318,552</b>	<b>\$158,872</b>	<b>\$228,753</b>

# FUNDING OPPORTUNITIES

- PECO Act 129 Rebate
- Base Investment Tax Credit
  - 30% of total installation cost
- Other opportunities available may be available, GET Solar Team can review with your organization