







# Residential Solar Project Proposal

5692 Richgrove Ln., Dublin, OH 43016

Chris Tomin

This is a proposal for the installation of a solar system. The price is a turn-key price and includes everything that is associated with a successful installation: including Utility Company interconnection process & paperwork, local permit & electrical inspection, design & engineering, hardware purchase, installation, electrical hook-up, and system commissioning.

The following incentives and revenue streams have been incorporated into the numbers.

- Federal Tax Credit
- Electricity Bill Savings

At Ohio Power Solutions, we design, engineer, install, and maintain professional quality solar panel and wind turbine systems as well as energy efficiency products. We also install backup power systems such as generators and battery backup solar systems. We serve the entire state of Ohio. Located in central Ohio, we can easily accommodate customer needs. Our number one goal is customer satisfaction.

We are family owned & operated, and are NABCEP Solar PV Certified. We have installed over 400 plus systems for homeowners, business owners, farms, and non-profits. We have a passion for helping our community move toward a more sustainable energy future and reduce our dependence on fossil fuels.



The rough layout below shows the approximate location of the proposed solar panels.



The number of solar panels, inverter selection, utility bill offset, and the solar system's estimated production output in kilowatt hours (kWh) is identified below.

- **Roof Mounted Scenario # 1 : 4.44 kW System Size**

- 12 – 370 Watt panels – (4,440)
- 1 – Solar Edge Inverter and 12 Optimizers
- Will initially generate approximately 5,932 kWh per year (Annual Solar Production)
- Initial Installed Price : \$13,542
  - Less Federal Tax Credit : \$3,521 (26%)
- Net-Effective Cost : \$10,021
- Total Avoided Energy Costs (Savings) : \$39,578
- 96% : Utility Bill Offset / Energy Savings

- **Roof Mounted Scenario # 2 : 7.03 kW System Size**

- 19 – 370 Watt panels – (7,030)
- 1 – Solar Edge Inverter and 19 Optimizers
- Will initially generate approximately 5,828 kWh per year (Annual Solar Production)
- Initial Installed Price : \$20,036
  - Less Federal Tax Credit : \$5,209 (26%)
- Net-Effective Cost : \$14,826
- Total Avoided Energy Costs (Savings) : \$38,884
- 94% : Utility Bill Offset / Energy Savings

- Financials:**

The financial scenarios below leverage the Federal Tax Credit, and Energy Savings. The assumptions in the financial analysis include: Avg. Utility Rate is an average of \$0.125 cents per kWh, the kWh consumption is projected to be 6,203 kWh annually, and the Average Annual Increase in Utility Rates is 4.2% annually.

<b>SOLAR SIZING ANALYSIS</b>		
<b>System Size (kW)</b>	<b>4.44</b>	<b>7.03</b>
Annual Solar Production (First Year)	5,932	5,828
Annual Average Usage (kWh)	6,203	6,203
Utility Bill Offset / Energy Savings	96%	94%
Number of Panels	12	19
Watts per Panel	370	370
<b>Total Watts (DC) of the System</b>	<b>4,440</b>	<b>7,030</b>
<b>Assumptions</b>		
Current Cost per kWh	\$0.1250	\$0.1250
Average Annual Increase in kWh Charges	4.2%	4.2%
kWh (AC) Generated per kW (DC) Installed	1,336	829
Life of System	30	30
<b>Cost and Incentives Information</b>	<b>4.44</b>	<b>7.03</b>
Total Cost per DC Watt (Installed)	\$3.05	\$2.85
Initial Installed Price	\$13,542	\$20,036
<b>Incentive Information</b>		
Less Federal Tax Credits	\$3,521	\$5,209
Potential Tax Savings from Depreciation	\$0	\$0
<b>Net Effective Cost</b>	<b>\$10,021</b>	<b>\$14,826</b>
<b>Payback and Return</b>		
Average kWh Generated per Year	5,534	5,437
Total kWh Generated (over life of system)	166,028	163,118
Total Avoided Energy Costs	\$39,578	\$38,884
IRR (Includes Savings from Depreciation)	8.5%	5.5%
Average Annualized Yield (30 Year CD)	4.7%	3.3%
<b>Environmental Benefits</b>		
Pounds of CO <sub>2</sub> Not Emitted	344,896	338,851
Equivalent Number of Trees Planted	951	935

## Annual Payback Analysis: Roof Mounted Scenario # 1 : 4.44 kW System Size

This is a simple Pay Back and Cash Flow Analysis for 30 years of system operation.

Year	kWh Cost	Annual kWh Generated	Annual Avoided Energy Costs	Federal Tax Credit	Payback
	These numbers represent estimates and assumptions that can vary and should only be used as a guide.				
1	\$0.1250	5,932	\$741	\$3,521	\$9,280
2	\$0.1303	5,902	\$769	\$0	\$8,511
3	\$0.1357	5,873	\$797	\$0	\$7,714
4	\$0.1414	5,843	\$826	\$0	\$6,887
5	\$0.1474	5,814	\$857	\$0	\$6,031
6	\$0.1535	5,785	\$888	\$0	\$5,142
7	\$0.1600	5,756	\$921	\$0	\$4,221
8	\$0.1667	5,727	\$955	\$0	\$3,267
9	\$0.1737	5,699	\$990	\$0	\$2,277
10	\$0.1810	5,670	\$1,026	\$0	\$1,250
11	\$0.1886	5,642	\$1,064	\$0	\$186
12	\$0.1965	5,614	\$1,103	\$0	\$0
13	\$0.2048	5,586	\$1,144	\$0	\$0
14	\$0.2134	5,558	\$1,186	\$0	\$0
15	\$0.2224	5,530	\$1,230	\$0	\$0
16	\$0.2317	5,502	\$1,275	\$0	\$0
17	\$0.2414	5,475	\$1,322	\$0	\$0
18	\$0.2516	5,447	\$1,370	\$0	\$0
19	\$0.2621	5,420	\$1,421	\$0	\$0
20	\$0.2731	5,393	\$1,473	\$0	\$0
21	\$0.2846	5,366	\$1,527	\$0	\$0
22	\$0.2966	5,339	\$1,583	\$0	\$0
23	\$0.3090	5,312	\$1,642	\$0	\$0
24	\$0.3220	5,286	\$1,702	\$0	\$0
25	\$0.3355	5,259	\$1,765	\$0	\$0
26	\$0.3496	5,259	\$1,839	\$0	\$0
27	\$0.3643	5,259	\$1,916	\$0	\$0
28	\$0.3796	5,259	\$1,997	\$0	\$0
29	\$0.3956	5,259	\$2,080	\$0	\$0
30	\$0.4122	5,259	\$2,168	\$0	\$0

## Annual Payback Analysis: Roof Mounted Scenario # 2 : 7.03 kW System Size

This is a simple Pay Back and Cash Flow Analysis for 30 years of system operation.

Year	Kw Cost	Annual kWh Generated	Annual Avoided Energy Costs	Federal Tax Credit	Payback
These numbers represent estimates and assumptions that can vary and should only be used as a guide.					
1	\$0.1250	5,828	\$728	\$5,209	\$14,098
2	\$0.1303	5,799	\$755	\$0	\$13,343
3	\$0.1357	5,770	\$783	\$0	\$12,559
4	\$0.1414	5,741	\$812	\$0	\$11,748
5	\$0.1474	5,712	\$842	\$0	\$10,906
6	\$0.1535	5,684	\$873	\$0	\$10,033
7	\$0.1600	5,655	\$905	\$0	\$9,128
8	\$0.1667	5,627	\$938	\$0	\$8,190
9	\$0.1737	5,599	\$973	\$0	\$7,218
10	\$0.1810	5,571	\$1,008	\$0	\$6,209
11	\$0.1886	5,543	\$1,046	\$0	\$5,164
12	\$0.1965	5,515	\$1,084	\$0	\$4,080
13	\$0.2048	5,488	\$1,124	\$0	\$2,956
14	\$0.2134	5,460	\$1,165	\$0	\$1,791
15	\$0.2224	5,433	\$1,208	\$0	\$583
16	\$0.2317	5,406	\$1,253	\$0	\$0
17	\$0.2414	5,379	\$1,299	\$0	\$0
18	\$0.2516	5,352	\$1,346	\$0	\$0
19	\$0.2621	5,325	\$1,396	\$0	\$0
20	\$0.2731	5,298	\$1,447	\$0	\$0
21	\$0.2846	5,272	\$1,500	\$0	\$0
22	\$0.2966	5,246	\$1,556	\$0	\$0
23	\$0.3090	5,219	\$1,613	\$0	\$0
24	\$0.3220	5,193	\$1,672	\$0	\$0
25	\$0.3355	5,167	\$1,734	\$0	\$0
26	\$0.3496	5,167	\$1,807	\$0	\$0
27	\$0.3643	5,167	\$1,882	\$0	\$0
28	\$0.3796	5,167	\$1,962	\$0	\$0
29	\$0.3956	5,167	\$2,044	\$0	\$0
30	\$0.4122	5,167	\$2,130	\$0	\$0

**Contact: Bob Sisco**

**Cell: 740-506-0906**

**Email: [bsisco@ohiopowersolutions.com](mailto:bsisco@ohiopowersolutions.com)**

- **Product warranty information is provided below:**
  - The SolarEdge inverter comes with a 25 year warranty and the optimizers have a 25 year warranty
  - The solar panels come with a minimum of a 25 year production output warranty.
- **OPS will provide a 15 year warranty on the workmanship of the installation.**
- **Payment terms and project timeline consist of the following:**
  - 30% due Up-Front, then 30% 3 weeks from start date, & final 40% when complete & operational.
  - This size project will take approximately 3 days to complete.



[illegible]

**STREET TREES REQUESTS**  
Contact Paula Chope, Urban Forester  
To Coordinate - 761-6520

**SIDEWALKS REQUIRED**  
**CONTACT GARRY CLARK, ENGINEERING**  
**TO COORDINATE 761-6550**

ENGINEERING COMPLIANCE  
APPROVED AS NOTED  
City Of Dublin, Ohio 2/28/99  
on

BUILDING CO. DAVIDSON-PHILLIPS, INC SCALE: 1" = 20'  
LOT NO. 30 SUBDIVISION BRIGHTON PARK  
STREET ADDRESS 5692 RICHGROVE LANE DRAWN 1-12-74 SHT. NO. JK