



# Photovoltaic Solar Feasibility Study

Middletown Township

ExactSolar



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# Solar Photovoltaic Feasibility Study for Middletown Township, PA

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## Executive Summary

Exact Solar has concluded a rigorous feasibility study and preliminary design for solar at multiple sites throughout Middletown Township and determined the following:

- It is both feasible and cost effective to install solar at multiple locations within the township sufficient to power 90% of the current electrical usage for the township owned utility accounts
- Solar could potentially avoid 570 tons of CO<sub>2</sub> per year
- A preliminary design, budget, and scope has been established for a priority list of sites
- All the work can be completed within 18 months - the work is “shovel ready”
- No taxpayer funding or capital spending is necessarily required - there are alternative ways to fund this project in such a way where the federal tax credit and Pennsylvania Solar Renewable Energy Certificates (SRECs) fund the up-front costs.

## Background:

In order to meet the goals of its Climate Action Plan, Middletown Township is pursuing the possibility of achieving 100% solar renewable energy production for all municipal properties and related energy consumption needs. As a first step towards this goal, the Township’s administration has engaged local solar installation and engineering firm, Exact Solar, based in Newtown, PA, to evaluate the feasibility, costs and cost-effectiveness of solar for the township, as well as present funding alternatives for installed solar across township properties.

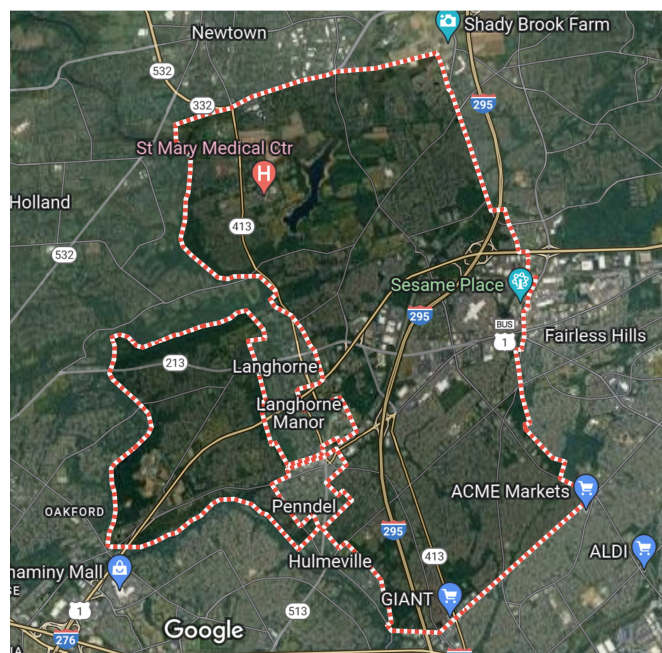


**Purpose:**

The purpose of this feasibility study is to determine which locations owned and operated by Middletown Township are best suited for the installation of solar panels in order to achieve the Township's goals of reducing energy costs both short and long term and, in particular, to reduce the township's carbon footprint.

As part of this study, the feasibility of solar and utility interconnection has been assessed for multiple township properties, and Exact Solar has prepared preliminary designs for prospective project sites that include financial projections and preliminary cost budgets for implementation.

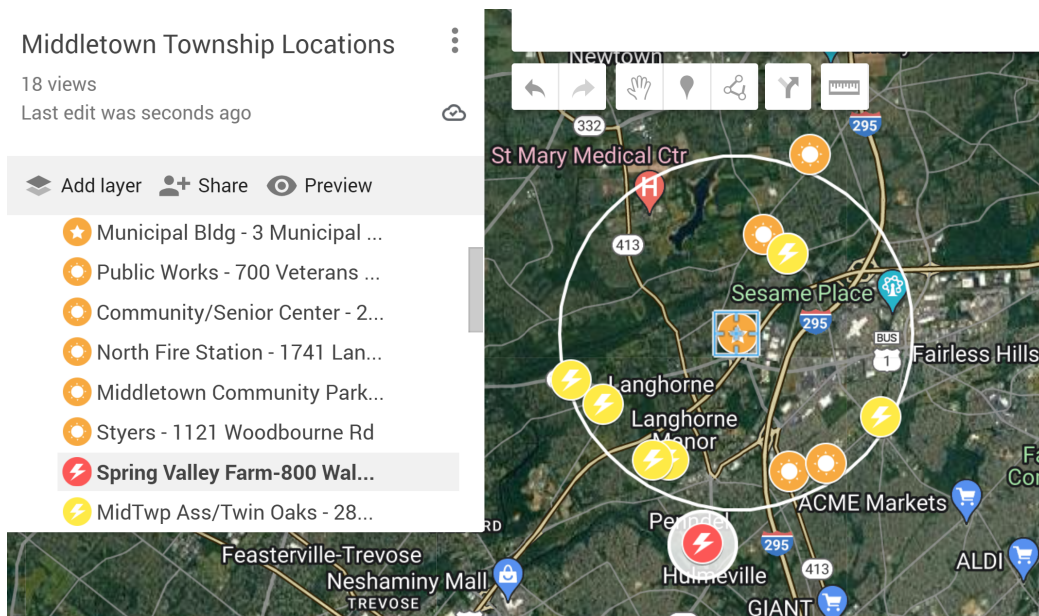
Energy procurement from the local utility companies (the grid) is an ever increasing cost and an otherwise permanent line item in the operating budget for municipalities. The fast rise of solar photovoltaic power generation, however, presents an exciting and highly feasible alternative that delivers surprising long-term cost savings, immediate environmental and carbon footprint benefits, and shows the community and neighboring townships a path forward to better secure their futures and the lives of their community members.



**Candidate Facilities/Sites:**

The following is a list of candidate sites that we have determined to potentially be the “best” candidates for solar power installations. In an effort to mitigate costs, we also determined that the most cost effective way to produce the most power was to avoid ground mounted or canopy style systems, with one exception, and instead install rooftop solar linked together through the use of Virtual Meter Aggregation. To simplify, that means pulling power from one location and using it at another. Those buildings are as follows:

- Municipal Building (Roof)
- Municipal Building (Ground Mount)
- Public Works
- Community/Senior Center
- North Fire Station
- Middletown Community Park
- Styers Store
- Styers Rear Buildings



*Virtual Aggregation Radius (2 miles)*



## Technical Approach

Middletown Township presented over twenty discrete PECO utility statements reflecting the electrical needs of the township, along with over half a dozen locations that may be viable for solar installations. The Exact Solar project team approached this study with a focus on identifying solar sites or projects that have the best chance of implementation and helping Middletown Township achieve their climate goals.

Our aim was to identify the most practical and economically viable projects, so we prioritized the sites that, in our experience, would yield the maximum value when factoring the complexity of the installation and utility interconnection, which heavily impact project costs. Given the amount of roof space available on existing township buildings, it was natural to start with those since there was less need for additional physical and electrical infrastructure to prepare a site.

Being able to produce all one's power needs is the best way to maximize the value in solar, so we focused on how much of the Township's electricity could be generated by solar projects at different locations. Normally, to maximize the value of solar at any individual location, the system would ideally be designed to produce about 100% of the energy needed at that location. There is no real financial incentive to produce more electricity than will ultimately be consumed. If a given location uses more energy than can be produced by solar, the site itself is a limiting factor in the overall value of the project, and a balance of the energy would still need to be purchased from PECO.

In a scenario where there are multiple properties under the one entity, Pennsylvania utilities provide an alternate billing mechanism called **virtual meter aggregation**. More commonly referred to as virtual metering, this permits multiple meters or properties to be linked together under one umbrella account and treated as a single entity. By taking advantage of this billing configuration, a customer would be incentivized to overproduce energy



on a location with more ideal solar conditions to be used to help cover the energy needed at another site with less ideal solar conditions.

This virtual metering solution is possible for properties within two miles. For example, the Municipal Building could potentially serve as a central location. Alternatively, other sites can serve as the central point for smaller virtual hubs, depending on the number of locations used. Ultimately, the potential exists for multiple sites to collectively provide the vast majority of the Township's electric energy needs, excluding the costs for powering street and traffic lights.

As such, the thrust of this study involved establishing a baseline of the total energy needs and costs of the township, and to compare it to the cost to produce energy directly so that the Township may determine if solar aligns with their long term financial goals and environmental objectives. Various sites were assessed for their potential contribution towards the clean energy goals, both individually and collectively.



### Process:

Our sales engineers analyzed the historical utility consumption and rate structures at each site to determine both the annual consumption of each location as well as for the township in aggregate. They reviewed each site using several mapping tools to eliminate sites that would entail unnecessary costs, such as extensive trenching and wire runs simply to connect the solar array to the power grid. Next, preliminary designs were created on the remaining sites and referred to our technicians for a full on-site evaluation.

Our technicians visited each site to evaluate the potential for solar, take physical measurements, assess the electrical setup and compatibility as well as the potential for utility interconnection, and provide a preliminary structural review. This was further supplemented by a drone survey that provides detailed LIDAR readings, photos and videos for both physical and shade measurements in order to mitigate human error.

Our operations managers and electricians looked closely at the Township's electric systems and each location's electrical configurations to determine the best way to handle the multiple interconnections with PECO. Our in-house engineers input the drone data into our Scanify solar design software which uses drone technology and 3D modeling tools to aid in creating extremely accurate designs that help us validate our proposals and render detailed engineering drawings ready for structural review and permitting.

Lastly, our sales engineers collated the results for each site to develop individual site proposals that allow the project to easily be implemented in stages, while also ultimately having the cumulative effect of meeting the Township's environmental and financial objectives.





## Conclusions:

### Location

By taking a multi-pronged, objective, but strategic approach to assessing the feasibility of solar across Middletown Township's various municipal properties, Exact Solar has concluded that the vast majority of the electrical needs of the township can be self generated should the township aim to achieve this goal.

Each site can be viewed as an individual project, and would be treated as such from a logistical perspective, however, if they are all considered financially viable and implemented, the combined production from all sites utilizing virtual metering will offset approximately 90% of the electricity that is currently being purchased from PECO. The installation of all sites can be achieved within the next 18 months depending on the priorities of the township.

While self-generating all the township's power may be a long-term goal, practical considerations may justify starting with a single location and expanding over time. There are a couple of candidates that seem more ideally suited to this approach, but one that stands out a little more.

The Municipal building site with its standing seam metal roof is a good candidate, particularly for showcasing the township's commitment to its climate objectives. It also has potential room for a ground based solar array in close proximity to the building for easy interconnection, which could provide all the electricity needed at that site. However, before proceeding at this location, some maintenance is likely required on the roof prior to installing solar.

Two other properties with great solar potential, Styers and the North Fire Station, are currently leased to tenants who pay for the electric usage through their own private accounts, separate from the township. Given that, the billing would have to be switched back to the Township in order for the power generated from those sites to be used to offset the power at other Township



locations. It could also benefit the tenant should the Township wish to pass along some of the solar savings and bill them at a lower rate than they would pay directly to PECO. Styers in particular is a good candidate for use with a virtual metering configuration, but both locations add an extra layer of complexity to the interconnection process.

The Community/Senior Center and Community Park are also good candidates, however, the Senior Center will need the roof replaced prior to installing solar. The roof at Community Park looks to be in good shape and that site is a good candidate for a single installation approach.

The Public Works facility looks to be the ideal candidate for a single installation approach for two primary reasons. First, the building recently had its roof replaced, an ideal scenario for solar. Second, the anticipated production from solar closely matches the energy needed on site, which better illustrates the direct impact from solar. Because it is a much more straightforward scenario, this makes it an ideal test case and much easier for the township to evaluate the value to the project.

### Funding

There are a number of feasible scenarios that we have identified to fund these projects. Ultimately, the best choice of funding will be determined by community, council, and administration feedback.

Options include:

- Traditional capital tax-payer financed project
- Power Purchase Agreement (PPA)
- 100% financed performance based contracting



Utilizing capital investments to fund the projects would enable the Township to receive the maximum value from solar by taking advantage of federal and state incentives, including the 30% federal Investment Tax Credit (ITC) for solar and Pennsylvania's Solar Renewable Energy Certificates (SRECs) that the system earns going forward for every 1,000 kWhs generated (*See summary table at the end of this section*). PECO also recently introduced a rebate for commercial properties that will further improve the payback for solar investments and we look forward to sharing those details once they are available.

A very popular low upfront-cost option for implementing solar is a Power Purchase Agreement (PPA), whereby Exact Solar would pay for the cost of installation, and would own and maintain the system. In essence, Exact Solar would become the Township's electric supplier and will provide a discounted electric rate with a capped yearly increase. Power Purchase Agreements allow businesses and municipalities to immediately reduce costs and carbon emissions with no capital investment. For the power purchase agreement, we have done preliminary modeling for that option and have determined that we can offer a 30-year power purchase agreement at a rate of .05 cents per watt with only a 1.5% annual rate increase.

Another option is a performance based contract whereby Exact Solar will ensure that our services are delivered at the highest level of quality and efficiency by establishing specific performance metrics. In comparison to a Power Purchase Agreement, where payment is based on the amount of energy generated, payment will instead be linked directly to the successful accomplishment of predefined production targets, guaranteeing a minimum level of system performance to further provide the township with accountability and a mutually beneficial relationship with Exact Solar. The performance targets will be established based on the size of scope of the specific projects undertaken.



### Summary of Solar Incentives

One of the most important goals of evaluating the potential for solar is to help clarify the incentives for investing in solar projects and to explain how well they collectively offset the cost of the project to a significant degree.

The incentive most are familiar with is the **federal** solar Investment Tax Credit (ITC), which is a one-time, upfront credit equal to a percentage of the cost of the solar system. Last year, with the passing of the Inflation Reduction Act (IRA), the ITC credit was raised back to its original level of 30%. As currently configured, **the federal ITC is valued at over \$1 million.**

On a **state** level, Pennsylvania incentivizes clean energy adoption for both residents and businesses through its Renewable Portfolio Standard (RPS), which sets targets for the state, and solar is one part of that. Pennsylvania residents and businesses who adopt solar are reimbursed for the clean energy production of their system through its SREC program. Every 1,000 kWhs produced by a system earns the system owner one Solar Renewable Energy Certificate, or SREC, which can then be sold on a market similar to a stock exchange. Your system will produce over 1.5 million kWhs annually, which translates to earning over 1500 SRECs annually over the life of all systems. **Those SRECs are valued at over \$1.5 million.**

On the **local** level, PECO recently introduced a rebate for commercial customers that will reimburse commercial system owners \$.10/kWh for their first year of production. **PECO's rebate is estimated to be over \$150,000 for all systems.**

Based on the incentives alone, the **net cost for the combined projects goes from \$3.5 million to under \$600,000** before accounting for electrical savings.



Below is a summary of the projected solar production at each site in relation to the energy needs of both the site itself, as well as the township in total, along with the individual site budget and the correlating system incentives.

**Location Summary**

Site	Site Usage (kWh)	System Size (kW DC)	Est Production (kWh)	Site Offset %	Project Offset %	Preliminary Site Budget \$	Federal ITC 30%	PA SRECs (Est. \$40 per 1,000 kWh)	New PECO Commercial Rebate (.10/kWh Year 1)	Net Project Cost after Incentives
Municipal Building (Roof)	748,770	301.32	367,147	49.0%	21.6%	<b>\$750,939</b>	\$225,282	430,348	\$36,715	\$58,595
(Ground)		241.92	322,502	43.1%	19.0%	<b>\$857,579</b>	\$257,274	378,018	\$32,250	<b>\$190,037</b>
North Fire Station	150,000	102.6	119,349	79.6%	7.0%	<b>\$262,660</b>	\$78,798	139,894	\$11,935	\$32,033
Public Works	102,160	105.3	111,693	109.3%	6.6%	<b>\$270,512</b>	\$81,154	130,920	\$11,169	\$47,269
Middletown Community Park	135,106	64.8	76,342	56.5%	4.5%	<b>\$170,680</b>	\$51,204	89,437	\$7,634	\$22,405
Community/Senior Center	202,024	171.18	185,679	91.9%	10.9%	<b>\$430,593</b>	\$129,178	181,368	\$18,568	\$101,479
Styers - Store	226,320	153.36	187,009	82.6%	11.0%	<b>\$430,885</b>	\$129,266	219,200	\$18,701	\$63,719
Styers - Rear Buildings	22,761	124.2	146,768	644.8%	8.6%	<b>\$337,865</b>	\$101,360	172,033	\$14,677	\$49,796
Additional Non-solar sites	113,215									

Total Usage (kWh)	Total System Size	Solar Production (kWh)	Total Project Offset %	Total Budget \$	Total Federal Credit 30%	PA SRECs (Est. Lifetime)	Total PECO Rebate
1,700,356	1,264.7	1,516,489	89.19%	<b>\$3,511,713</b>	<b>\$1,053,514</b>	<b>\$1,741,218</b>	<b>\$151,649</b>

Upfront Cost	
Incentives	
Net Cost	

Initial Budget	<b>\$3,511,713</b>
- Federal Tax Credit	<b>\$1,053,514</b>
- PA SRECs	<b>\$1,741,218</b>
- PECO Rebate	<b>\$151,649</b>

Net Project Cost	<b>\$565,332</b>
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The sections that follow provide individual budgetary proposals for each site, along with a review of the engineering study and drone survey for each.



## **Summary of Solar Proposal for Middletown Township**

July 26, 2023

# Overview



- Exact Solar was engaged by Middletown Township to evaluate the feasibility and cost effectiveness for installing solar PV on multiple sites in the township.
- Goals of the project include:
  - Identify locations capable of efficiently generating renewable energy
  - If possible, offset 100% of each location's energy needs with solar
  - Save money on utility costs versus purchasing from PECO
  - Create long-term budget certainty and hedge against inflation
  - Help Middletown Township achieve their goal of reducing their carbon footprint by using sustainable materials and becoming **carbon neutral**.



# Preliminary Project Summary

- Eight township locations could produce nearly 1.5 million kWh each year from solar energy
- This production equates to 90% of current estimated annual power consumption (based on preliminary designs)
- Locations include:
  - Municipal Building Roof & Ground (2 projects)
  - North Fire Station
  - Middletown Community Park
  - Public Works
  - Community/Senior Center
  - Styers Store & Rear Buildings (2 projects)



# Proposed Layout & Environmental Benefits

## Municipal Building Roof Mount



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year

49%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

138 tons  
Avoided CO<sub>2</sub> per year

Over System Lifetime

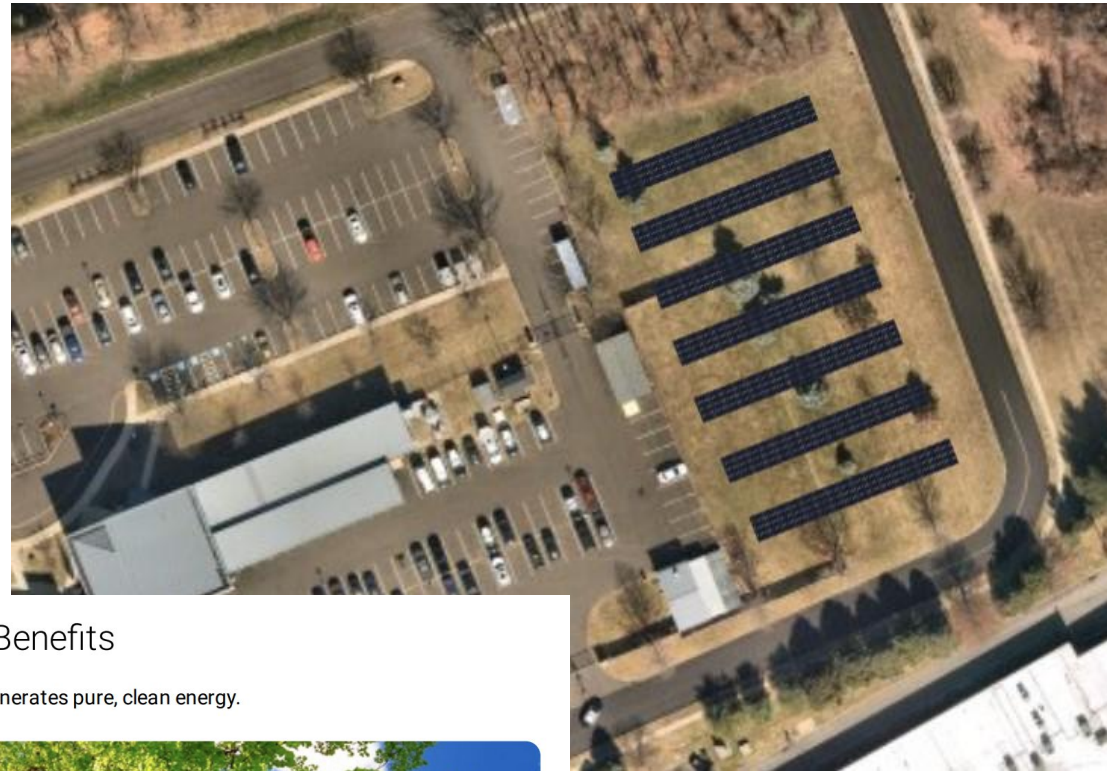
2,552,481  
Car miles avoided

26,425  
Trees planted

2,942  
Long haul flights  
avoided

# Proposed Layout & Environmental Benefits

## Municipal Building Ground Mount



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year	
43%	121 tons
Of CO <sub>2</sub> , SO <sub>x</sub> & NO <sub>x</sub>	Avoided CO <sub>2</sub> per year

Over System Lifetime		
2,242,102	23,211	2,584
Car miles avoided	Trees planted	Long haul flights avoided

# Proposed Layout & Environmental Benefits

## Fire Station



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year

80%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

45 tons  
Avoided CO<sub>2</sub> per year

Over System Lifetime

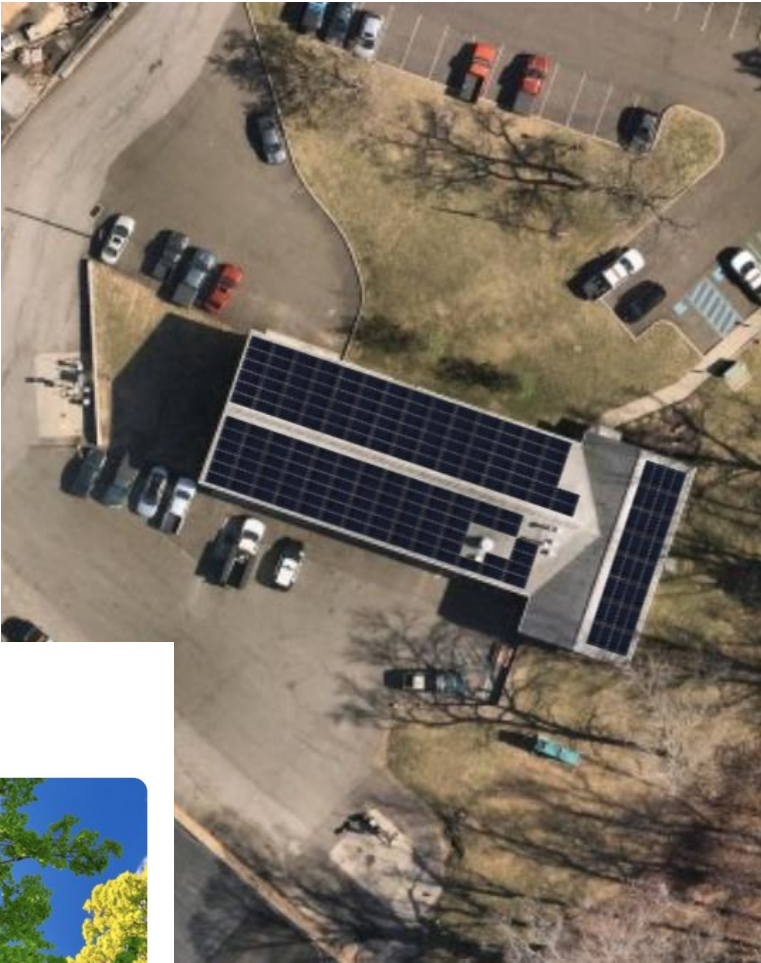
829,740  
Car miles avoided

8,590  
Trees planted

956  
Long haul flights  
avoided

# Proposed Layout & Environmental Benefits

## Public Works



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year	
1330%	42 tons
Of CO <sub>2</sub> , SO <sub>x</sub> & NO <sub>x</sub>	Avoided CO <sub>2</sub> per year

Over System Lifetime		
776,511	8,039	895
Car miles avoided	Trees planted	Long haul flights avoided

# Proposed Layout & Environmental Benefits

## Community Park



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year

57%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

29 tons  
Avoided CO<sub>2</sub> per year

Over System Lifetime

530,743  
Car miles avoided

5,495  
Trees planted

612  
Long haul flights  
avoided

# Proposed Layout & Environmental Benefits

## Community/Senior Center



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year	
92%	70 tons
Of CO <sub>2</sub> , SO <sub>x</sub> & NO <sub>x</sub>	Avoided CO <sub>2</sub> per year

Over System Lifetime		
1,290,878	13,364	1,488
Car miles avoided	Trees planted	Long haul flights avoided

# Proposed Layout & Environmental Benefits

## Styers Store



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year	
83%	70 tons
Of CO <sub>2</sub> , SO <sub>x</sub> & NO <sub>x</sub>	Avoided CO <sub>2</sub> per year

Over System Lifetime		
1,300,123	13,460	1,498
Car miles avoided	Trees planted	Long haul flights avoided

# Proposed Layout & Environmental Benefits

## Styers Rear Buildings



### Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



Each Year

65%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

55 tons  
Avoided CO<sub>2</sub> per year

Over System Lifetime

1,020,361  
Car miles avoided

10,563  
Trees planted

1,176  
Long haul flights  
avoided



# Summary Table

## Location Summary

Site	Site Usage (kWh)	System Size (kW DC)	Est Production (kWh)	Site Offset %	Project Offset %	Preliminary Site Budget \$	Federal ITC 30%	PA SRECs (Est. \$40 per 1,000 kWh)	New PECO Commercial Rebate (.10/kWh Year 1)	Net Project Cost after Incentives
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Upfront Cost
Incentives
Net Cost

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Net Project Cost	<b>\$565,332</b>
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# PPA Proposed Terms

- \$.05/kWh power purchase agreement
- 1.5% fixed annual inflation for the rate of power purchase
- 30-year term
- Exact Solar, as system owner, is responsible for all costs to install and maintain the systems
- Exact Solar retains all tax credits, SRECs and other incentives (which help pay back the cost of installing the system)

# PPA Benefits

- Total avoidance of the need for capital investment to achieve maximum solar offset at all sites and make major strides towards “Decade of Action” goals
- Total avoidance of any maintenance annual budget for adding solar
- \$500,000 approximate 30-year savings across the eight sites compared to expected future utility costs
  - Based on review of utility data provided, along with communicated expectation for higher supply rates over the next 1-2 years and typical annual inflation from there



# About Exact Solar

- Local solar engineering, installation, and service company
- 18+ years in business
- 50 local team members
- Civic 50 Award Winner for being one of the 50 most community-engaged private businesses in Greater Philadelphia
- Best of Bucks and Best of Philly award-winning solar company
- References proudly available upon request
- [www.exactsolar.com](http://www.exactsolar.com)

Thank you!

**Prepared by: Michael Lehane**  
267-399-3367  
michael.lehane@exactsolar.com

Municipal Building (Middletown Twp)  
3 Municipal Wy  
Langhorne, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Nick,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Michael Lehane

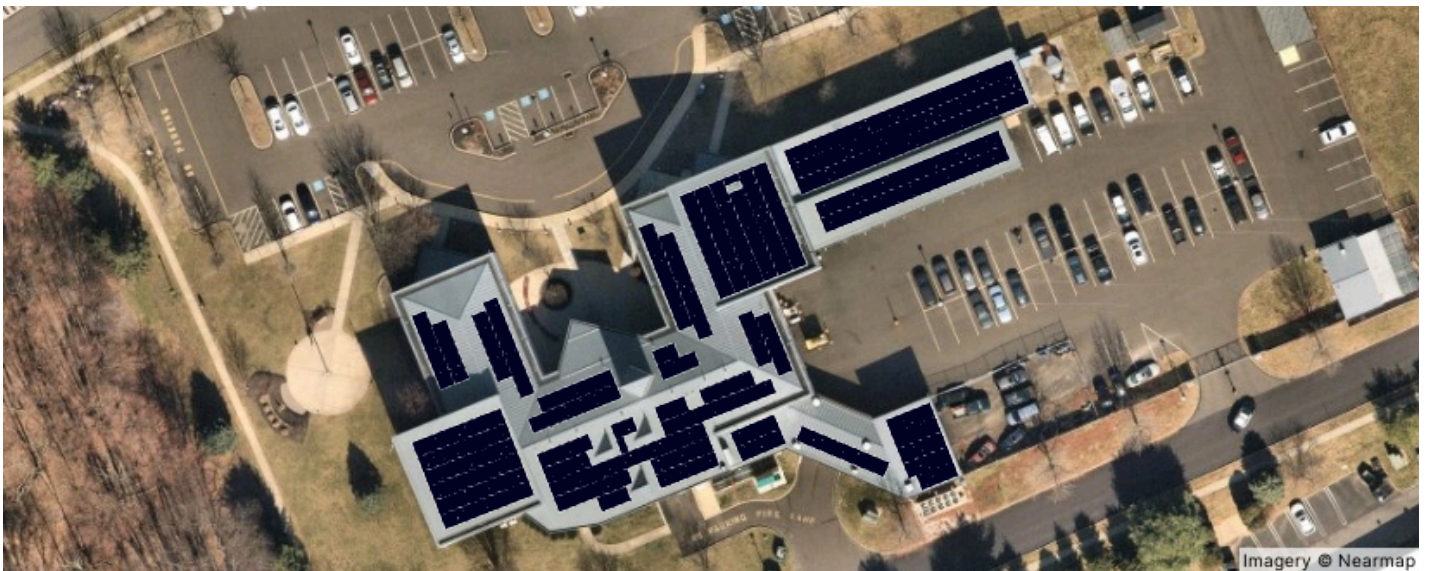
## Recommended System Option

**301.32**  
kW  
System Size

**\$750,939**  
Total System Price  
including tax

**\$525,657**  
Net System Price  
including tax

**9**  
Years  
4 Months  
Payback



## System Components

### Solar Panels

**AXITEC**  
301.320 kW Total Solar Power  
558 x 540 Watt Panels (AC-540MH/144V)  
367,147 kWh per year

### Inverter

**SolarEdge Technologies Ltd.**  
200.000 kW Total Inverter Rating  
2 x SE100KUS

### P1100 Power Optimizer

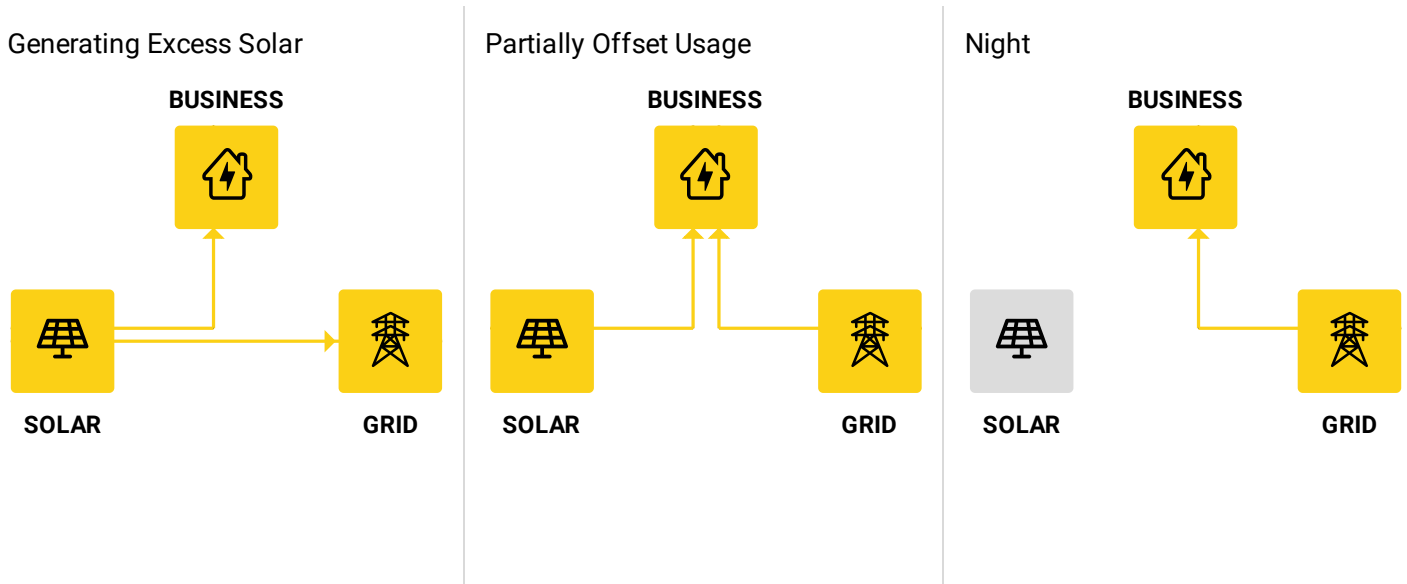
1100 W, Power Optimizer, specifically designed to work with SolarEdge inverters  
279 x P1100

### Inverter

**SolarEdge Technologies Ltd.**  
50.000 kW Total Inverter Rating  
1 x SE50KUS

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty

## How Your System Works



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



**Each Year**

<b>49%</b> Of CO <sub>2</sub> , SO <sub>x</sub> & NO <sub>x</sub>	<b>138 tons</b> Avoided CO <sub>2</sub> per year
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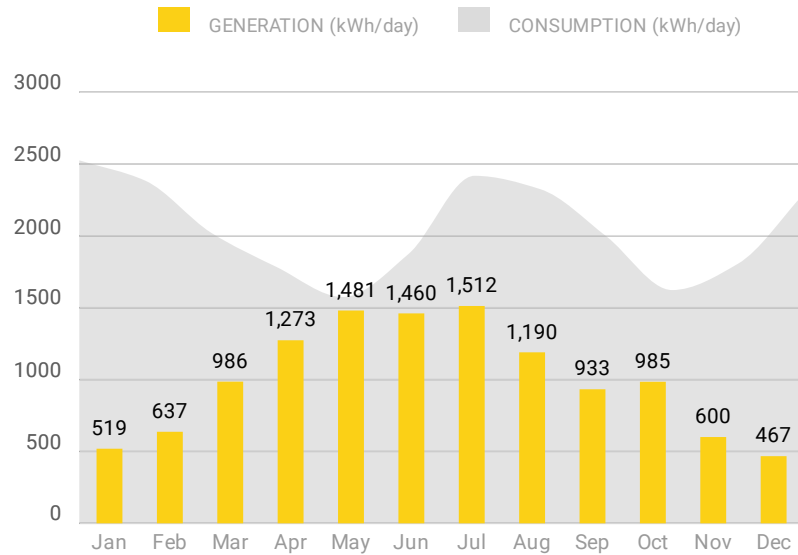
**Over System Lifetime**

<b>2,552,481</b> Car miles avoided	<b>26,425</b> Trees planted	<b>2,942</b> Long haul flights avoided
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## System Performance

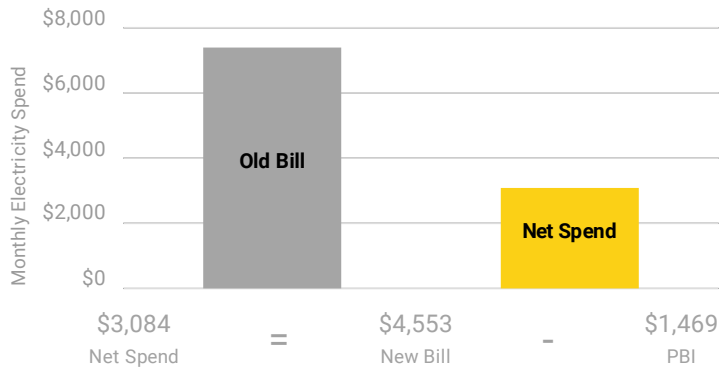
**49%**  
Energy From Solar



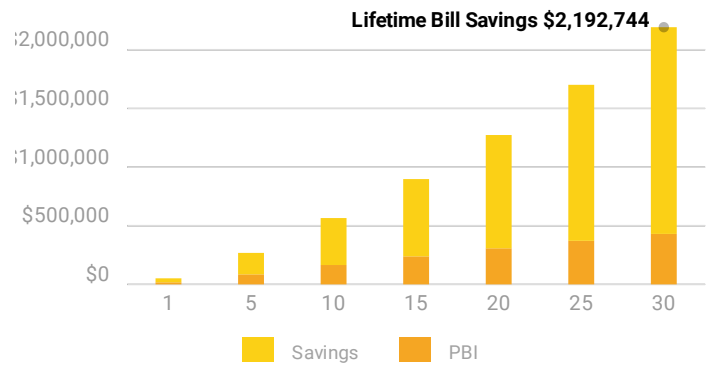
System Performance Assumptions: System Total losses: 14.3%, Inverter losses: 2.0%, Optimizer losses: 1.4%, Shading losses: 2.1%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 72 panels with Azimuth 159 and Slope 14, 94 panels with Azimuth 158 and Slope 14, 12 panels with Azimuth 157 and Slope 7, 79 panels with Azimuth 158 and Slope 10, 83 panels with Azimuth 68 and Slope 14, 93 panels with Azimuth 158 and Slope 10, 12 panels with Azimuth 203 and Slope 7, 15 panels with Azimuth 68 and Slope 14, 46 panels with Azimuth 249 and Slope 15, 22 panels with Azimuth 68 and Slope 16, 22 panels with Azimuth 338 and Slope 14, 8 panels with Azimuth 338 and Slope 14.

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$430,347.60</b> \$17,623.06 in year 1
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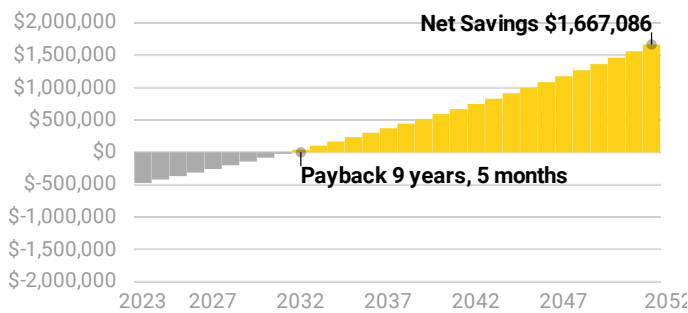
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 748770 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

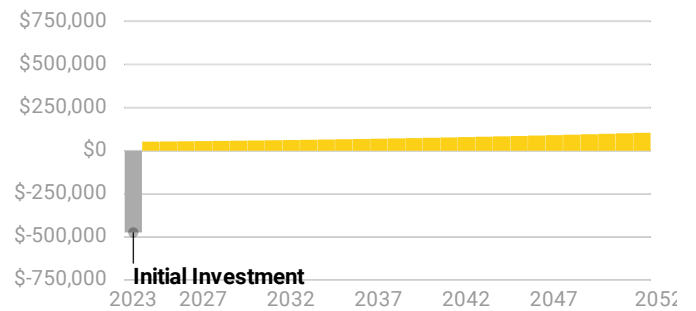
## Net Financial Impact Cash

$$\begin{array}{rcl}
 \$2,192,744 & - & \$525,657 = \$1,667,086 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} \quad \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$304,505**  
Net Present Value

**14.5 years**  
Discounted Payback  
Period

**317%**  
Total Return on  
Investment

**11.2%**  
Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	748,770	367,147	88,724	54,636	17,623	37,013	51,712	750,939	225,282	(473945)	(473945)
2024	748,770	365,495	92,273	56,981	17,368	39,612	52,661	0	0	52660	(421284)
2025	748,770	363,843	95,964	59,426	17,117	42,309	53,655	0	0	53655	(367629)
2026	748,770	362,191	99,803	61,976	16,869	45,107	54,696	0	0	54696	(312933)
2027	748,770	360,538	103,795	64,634	16,624	48,010	55,785	0	0	55784	(257148)
2028	748,770	358,886	107,947	67,406	16,382	51,024	56,923	0	0	56923	(200225)
2029	748,770	357,234	112,265	70,296	16,144	54,153	58,112	0	0	58112	(142112)
2030	748,770	355,582	116,755	73,310	15,908	57,402	59,354	0	0	59353	(82759)
2031	748,770	353,930	121,426	76,452	15,676	60,776	60,649	0	0	60649	(22109)
2032	748,770	352,278	126,283	79,729	15,447	64,282	62,001	0	0	62000	39890
2033	748,770	350,626	131,334	83,145	15,221	67,924	63,410	0	0	63409	103300
2034	748,770	348,973	136,587	86,707	14,998	71,709	64,878	0	0	64877	168178
2035	748,770	347,321	142,051	90,421	14,777	75,644	66,407	0	0	66407	234585
2036	748,770	345,669	147,733	94,293	14,560	79,733	68,000	0	0	67999	302584

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	748,770	344,017	153,642	98,330	14,345	83,985	69,657	0	0	69656	372241
2038	748,770	342,365	159,788	102,540	14,134	88,406	71,382	0	0	71381	443623
2039	748,770	340,713	166,179	106,929	13,925	93,004	73,175	0	0	73175	516798
2040	748,770	339,060	172,826	111,505	13,719	97,786	75,040	0	0	75040	591839
2041	748,770	337,408	179,739	116,276	13,515	102,760	76,979	0	0	76979	668818
2042	748,770	335,756	186,929	121,250	13,315	107,935	78,994	0	0	78993	747811
2043	748,770	334,104	194,406	126,436	13,117	113,319	81,087	0	0	81086	828898
2044	748,770	332,452	202,182	131,843	12,921	118,922	83,261	0	0	83260	912159
2045	748,770	330,800	210,270	137,480	12,729	124,752	85,518	0	0	85517	997677
2046	748,770	329,147	218,681	143,358	12,538	130,819	87,861	0	0	87861	1085538
2047	748,770	327,495	227,428	149,485	12,351	137,135	90,293	0	0	90293	1175831
2048	748,770	325,843	236,525	155,874	12,165	143,708	92,817	0	0	92816	1268648
2049	748,770	324,191	245,986	162,534	11,983	150,551	95,435	0	0	95434	1364083
2050	748,770	322,539	255,825	169,477	11,802	157,675	98,150	0	0	98150	1462233
2051	748,770	320,887	266,058	176,717	11,625	165,092	100,966	0	0	100966	1563200
2052	748,770	319,234	276,701	184,264	11,449	172,814	103,886	0	0	103886	1667086

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Cash

558 x AC-540MH/144V 540 Watt Panels (AXITEC) 2 x SE100KUS, 1 x SE50KUS (SolarEdge Technologies Ltd.) 279 x P1100	
Total System Price	\$750,939.05
<b>Purchase Price</b>	<b>\$750,939.05</b>
Price Per Watt	\$2.49 per Watt <small>For 301.320 kW system</small>
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$225,281.71</b>
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This proposal is valid until Aug 21 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	375,469.53
Passing Inspection	372,969.52
<b>Total</b>	<b>750,939.05</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

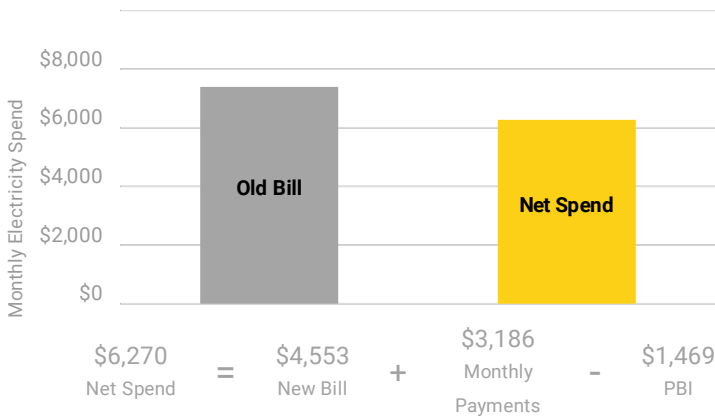
Date \_\_\_\_\_

### Payment Details: Offline Payment

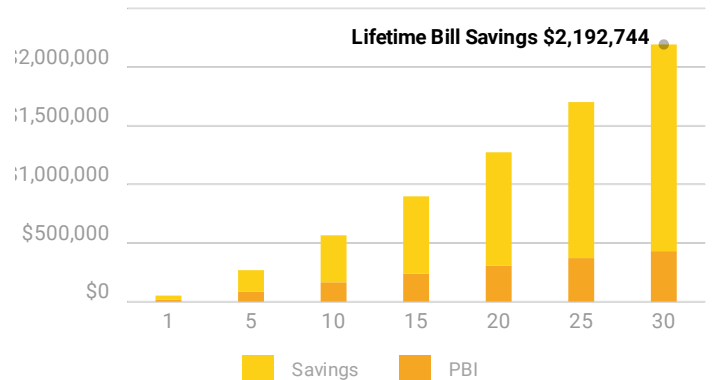
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

<b>Performance Based Incentives (Over System Lifetime)</b>	<b>\$430,347.60</b> \$17,623.06 in year 1
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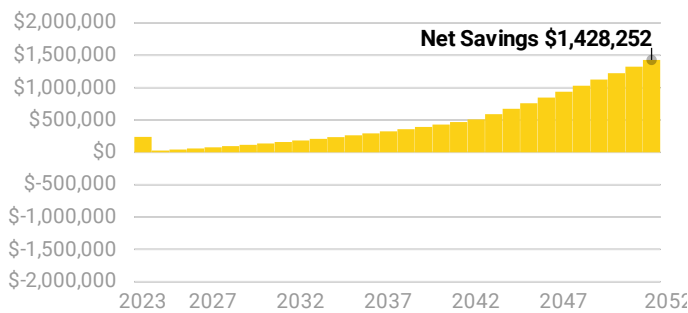
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Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

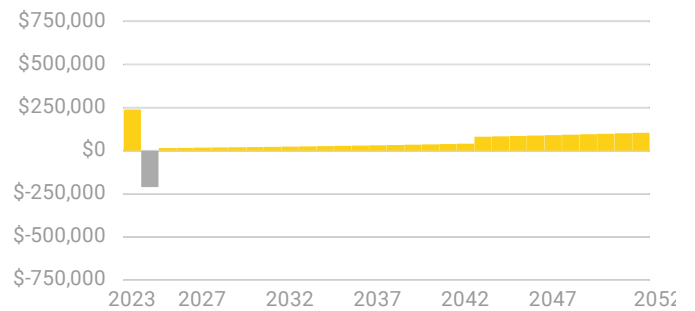
## Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$2,192,744 & - & \$764,491 & = & \$1,428,252 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$444,811**  
Net Present Value

**25.8 years**  
Discounted Payback  
Period

**187%**  
Total Return on  
Investment

**7.5%**  
Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	748,770	367,147	88,724	54,636	17,623	37,013	51,712	38,225	225,282	238768	238768
2024	748,770	365,495	92,273	56,981	17,368	39,612	52,661	263,507	0	(210845)	27923
2025	748,770	363,843	95,964	59,426	17,117	42,309	53,655	38,225	0	15430	43354
2026	748,770	362,191	99,803	61,976	16,869	45,107	54,696	38,225	0	16471	59825
2027	748,770	360,538	103,795	64,634	16,624	48,010	55,785	38,225	0	17560	77386
2028	748,770	358,886	107,947	67,406	16,382	51,024	56,923	38,225	0	18698	96084
2029	748,770	357,234	112,265	70,296	16,144	54,153	58,112	38,225	0	19887	115972
2030	748,770	355,582	116,755	73,310	15,908	57,402	59,354	38,225	0	21129	137101
2031	748,770	353,930	121,426	76,452	15,676	60,776	60,649	38,225	0	22424	159526
2032	748,770	352,278	126,283	79,729	15,447	64,282	62,001	38,225	0	23776	183302
2033	748,770	350,626	131,334	83,145	15,221	67,924	63,410	38,225	0	25185	208487
2034	748,770	348,973	136,587	86,707	14,998	71,709	64,878	38,225	0	26653	235140
2035	748,770	347,321	142,051	90,421	14,777	75,644	66,407	38,225	0	28182	263323
2036	748,770	345,669	147,733	94,293	14,560	79,733	68,000	38,225	0	29774	293098

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	748,770	344,017	153,642	98,330	14,345	83,985	69,657	38,225	0	31432	324530
2038	748,770	342,365	159,788	102,540	14,134	88,406	71,382	38,225	0	33156	357687
2039	748,770	340,713	166,179	106,929	13,925	93,004	73,175	38,225	0	34950	392638
2040	748,770	339,060	172,826	111,505	13,719	97,786	75,040	38,225	0	36815	429453
2041	748,770	337,408	179,739	116,276	13,515	102,760	76,979	38,225	0	38754	468208
2042	748,770	335,756	186,929	121,250	13,315	107,935	78,994	38,225	0	40769	508977
2043	748,770	334,104	194,406	126,436	13,117	113,319	81,087	0	0	81086	590064
2044	748,770	332,452	202,182	131,843	12,921	118,922	83,261	0	0	83260	673325
2045	748,770	330,800	210,270	137,480	12,729	124,752	85,518	0	0	85517	758843
2046	748,770	329,147	218,681	143,358	12,538	130,819	87,861	0	0	87861	846704
2047	748,770	327,495	227,428	149,485	12,351	137,135	90,293	0	0	90293	936997
2048	748,770	325,843	236,525	155,874	12,165	143,708	92,817	0	0	92816	1029814
2049	748,770	324,191	245,986	162,534	11,983	150,551	95,435	0	0	95434	1125249
2050	748,770	322,539	255,825	169,477	11,802	157,675	98,150	0	0	98150	1223399
2051	748,770	320,887	266,058	176,717	11,625	165,092	100,966	0	0	100966	1324365
2052	748,770	319,234	276,701	184,264	11,449	172,814	103,886	0	0	103886	1428252

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%



## Quotation

### Payment Option: Tax Exempt Municipal Lease

558 x AC-540MH/144V 540 Watt Panels (AXITEC) 2 x SE100KUS, 1 x SE50KUS (SolarEdge Technologies Ltd.) 279 x P1100	
Total System Price	\$750,939.05
<b>Purchase Price</b>	<b>\$750,939.05</b>
Loan Amount	\$750,939.05
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$225,281.71
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$225,281.71 in month 18 this payment level will continue for term of the loan.</small>	\$3,186.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$4,624.00
Total Payments <small>Over 20 years</small>	\$989,773.21

### Additional Incentives

Federal Investment Tax Credit (ITC) - 30% <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$225,281.71
<b>Net System Cost</b>	<b>\$525,657.34</b>

This proposal is valid until Aug 21 2023.

**Prepared by: Michael Lehane**  
267-399-3367  
michael.lehane@exactsolar.com

Municipal Building (Middletown Twp)  
3 Municipal Wy  
Langhorne, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Nick,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Michael Lehane

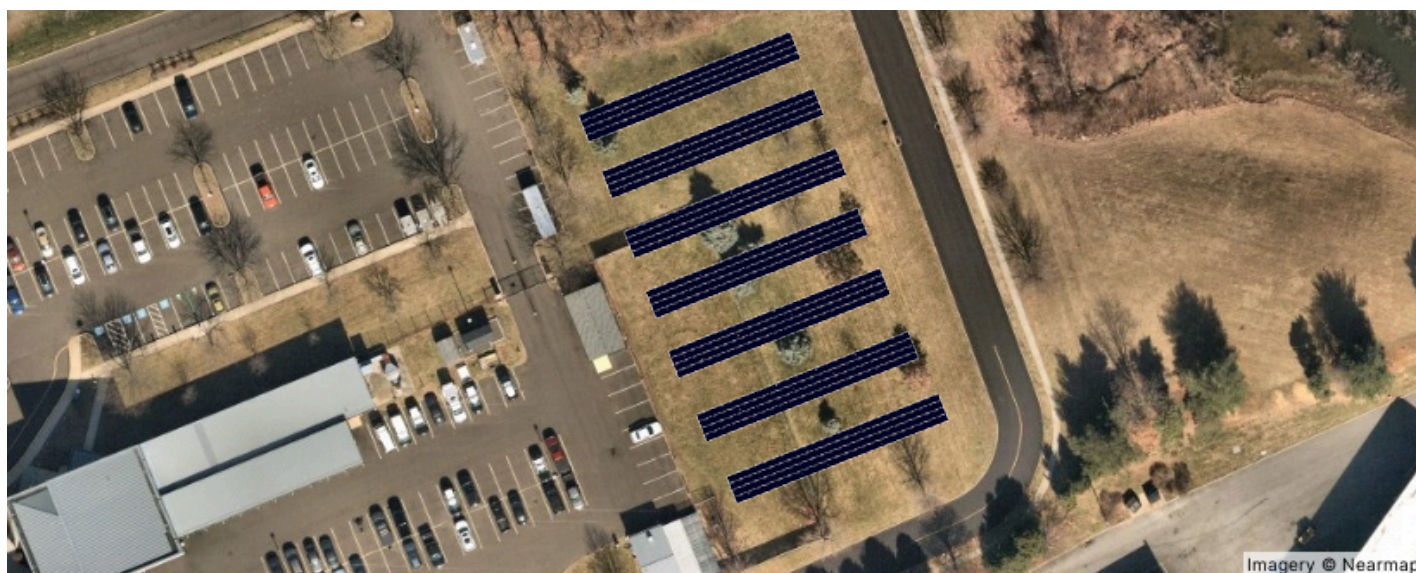
## Recommended System Option

**241.92**  
kW  
System Size

**\$857,579**  
Total System Price  
including tax

**\$600,306**  
Net System Price  
including tax

**11**  
Years  
10 Months  
Payback



## System Components

### Solar Panels

**AXITEC**

**241.920 kW** Total Solar Power

**448 x 540 Watt Panels** (AC-540MH/144V)

**322,502 kWh** per year

### Inverter

**SolarEdge Technologies Ltd.**

**200.000 kW** Total Inverter Rating

2 x SE100KUS

### Trenching (per foot)

Trenching or ground mounted array (unit is number of feet)

200 x Trenching (per foot)

### Ground Mount Adder

Pole-mounted ground mount solar array (unit is per solar module)

448 x Ground Mount System

### P1100 Power Optimizer

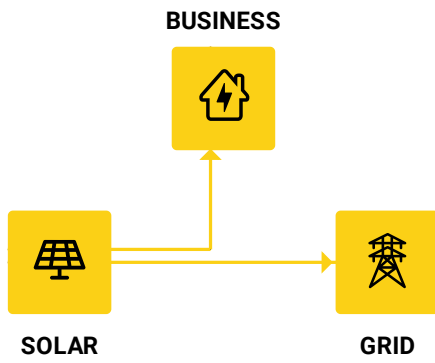
1100 W, Power Optimizer, specifically designed to work with SolarEdge inverters

224 x P1100

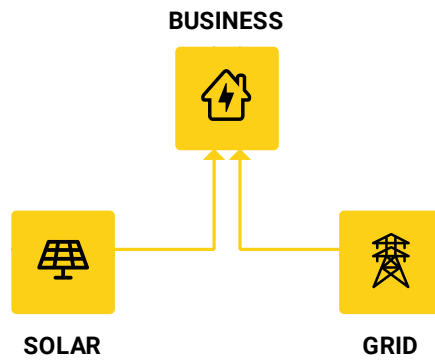
Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty

## How Your System Works

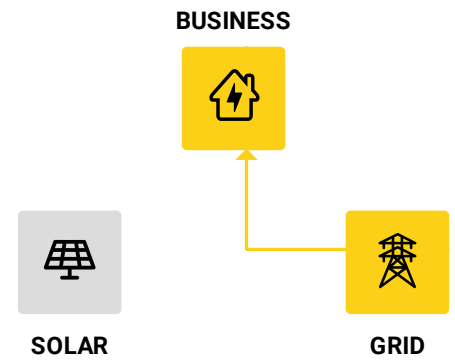
### Generating Excess Solar



### Partially Offset Usage



### Night



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



#### Each Year

**43%**  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

**121 tons**  
Avoided CO<sub>2</sub> per year

#### Over System Lifetime

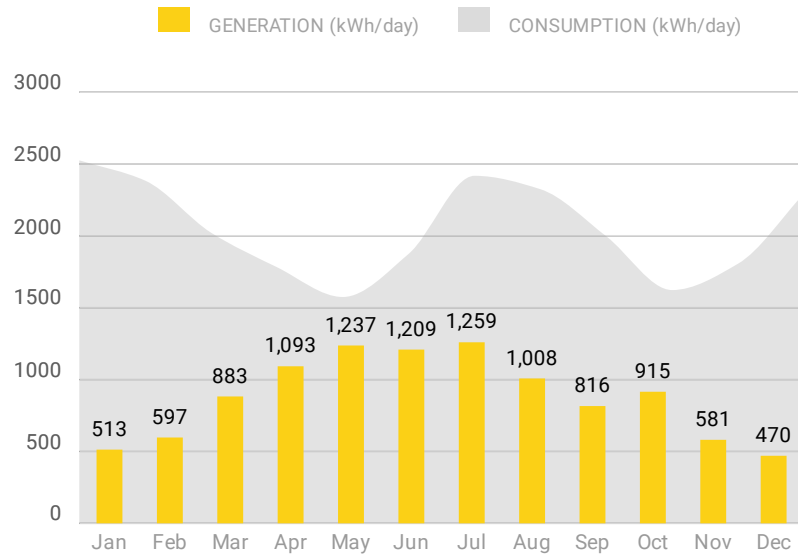
**2,242,102**  
Car miles avoided

**23,211**  
Trees planted

**2,584**  
Long haul flights avoided

## System Performance

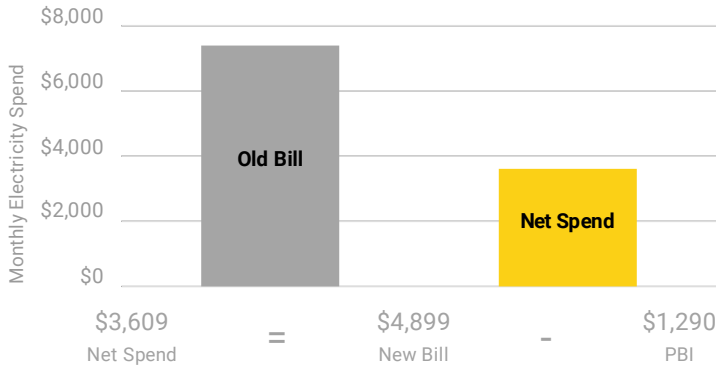
**43%**  
Energy From Solar



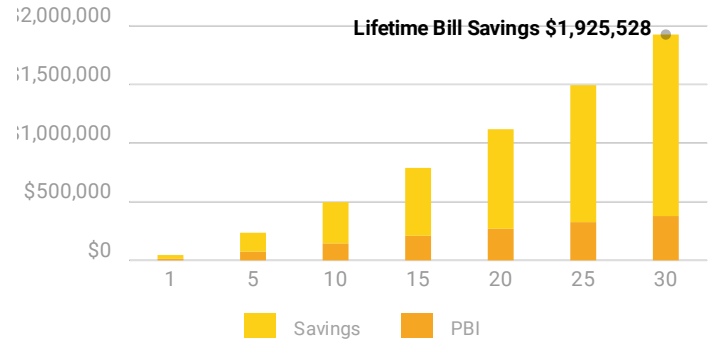
System Performance Assumptions: System Total losses: 14.0%, Inverter losses: 1.5%, Optimizer losses: 1.4%, Shading losses: 0%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 448 panels with Azimuth 159 and Slope 15.

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	\$378,017.81	\$15,480.12 in year 1
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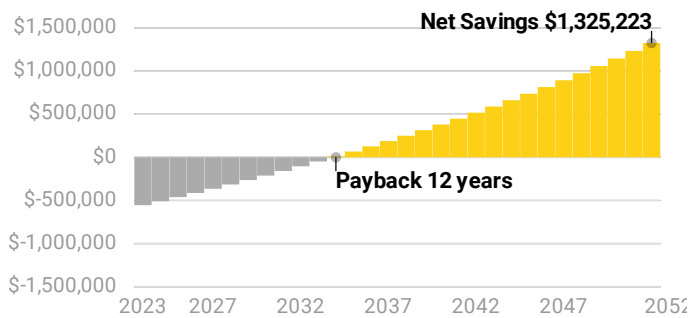
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 748770 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

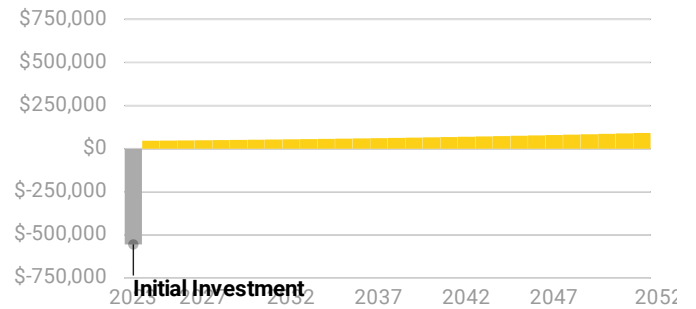
## Net Financial Impact Cash

$$\begin{array}{rcl}
 \$1,925,528 & - & \$600,306 & = & \$1,325,223 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$128,701**  
Net Present Value

**21.4 years**  
Discounted Payback  
Period

**221%**  
Total Return on  
Investment

**8.5%**  
Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	748,770	322,502	88,724	58,792	15,480	43,312	45,412	857,579	257,274	(554893)	(554893)
2024	748,770	321,051	92,273	61,284	15,256	46,028	46,246	0	0	46245	(508647)
2025	748,770	319,600	95,964	63,881	15,036	48,845	47,119	0	0	47118	(461528)
2026	748,770	318,149	99,803	66,588	14,818	51,770	48,033	0	0	48032	(413495)
2027	748,770	316,697	103,795	69,409	14,602	54,806	48,989	0	0	48988	(364506)
2028	748,770	315,246	107,947	72,349	14,390	57,959	49,988	0	0	49988	(314518)
2029	748,770	313,795	112,265	75,413	14,181	61,233	51,032	0	0	51031	(263486)
2030	748,770	312,344	116,755	78,607	13,974	64,633	52,122	0	0	52122	(211364)
2031	748,770	310,892	121,426	81,936	13,770	68,166	53,260	0	0	53259	(158105)
2032	748,770	309,441	126,283	85,405	13,569	71,836	54,446	0	0	54446	(103659)
2033	748,770	307,990	131,334	89,021	13,370	75,651	55,683	0	0	55683	(47975)
2034	748,770	306,539	136,587	92,789	13,174	79,615	56,972	0	0	56972	8996
2035	748,770	305,087	142,051	96,716	12,980	83,736	58,315	0	0	58315	67311
2036	748,770	303,636	147,733	100,809	12,789	88,019	59,713	0	0	59713	127024

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	748,770	302,185	153,642	105,074	12,601	92,473	61,169	0	0	61168	188193
2038	748,770	300,734	159,788	109,520	12,415	97,105	62,683	0	0	62682	250876
2039	748,770	299,282	166,179	114,153	12,232	101,921	64,258	0	0	64257	315133
2040	748,770	297,831	172,826	118,982	12,051	106,931	65,895	0	0	65895	381029
2041	748,770	296,380	179,739	124,014	11,872	112,142	67,598	0	0	67597	448626
2042	748,770	294,928	186,929	129,258	11,696	117,562	69,367	0	0	69366	517993
2043	748,770	293,477	194,406	134,724	11,522	123,202	71,204	0	0	71204	589197
2044	748,770	292,026	202,182	140,419	11,350	129,069	73,113	0	0	73113	662311
2045	748,770	290,575	210,270	146,355	11,181	135,175	75,095	0	0	75095	737406
2046	748,770	289,123	218,681	152,542	11,014	141,528	77,153	0	0	77152	814558
2047	748,770	287,672	227,428	158,989	10,849	148,140	79,288	0	0	79288	893846
2048	748,770	286,221	236,525	165,707	10,686	155,021	81,504	0	0	81503	975350
2049	748,770	284,770	245,986	172,709	10,526	162,183	83,803	0	0	83802	1059153
2050	748,770	283,318	255,825	180,006	10,367	169,638	86,187	0	0	86186	1145340
2051	748,770	281,867	266,058	187,610	10,211	177,399	88,660	0	0	88659	1233999
2052	748,770	280,416	276,701	195,534	10,057	185,477	91,223	0	0	91223	1325222

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%



## Quotation

### Payment Option: Cash

448 x AC-540MH/144V 540 Watt Panels (AXITEC) 2 x SE100KUS (SolarEdge Technologies Ltd.) 448 x Ground Mount System, 200 x Trenching (per foot), 224 x P1100 Tilt Racks (448 panels)	
Total System Price	\$857,579.30
<b>Purchase Price</b>	<b>\$857,579.30</b>
Price Per Watt	\$3.54 per Watt <small>For 241.920 kW system</small>
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$257,273.79</b>
--	---------------------

This proposal is valid until Aug 21 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	428,789.65
Passing Inspection	426,289.65
<b>Total</b>	<b>857,579.30</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

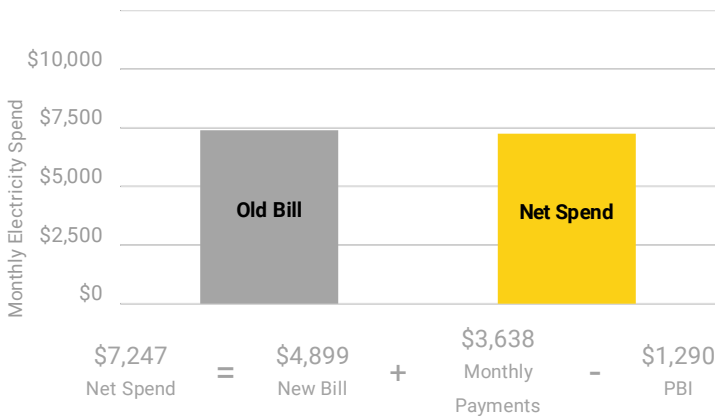
Date \_\_\_\_\_

### Payment Details: Offline Payment

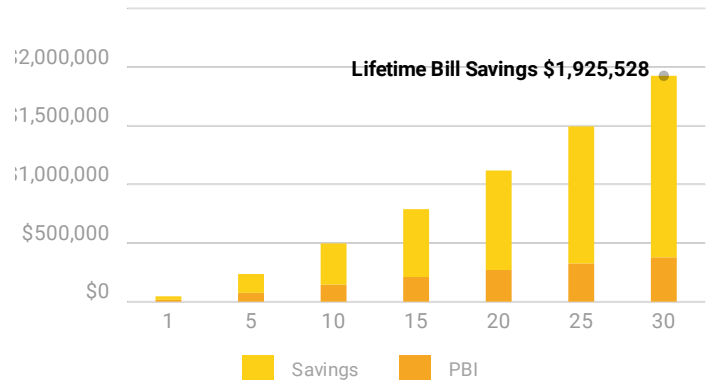
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

<b>Performance Based Incentives (Over System Lifetime)</b>	<b>\$378,017.81</b> \$15,480.12 in year 1
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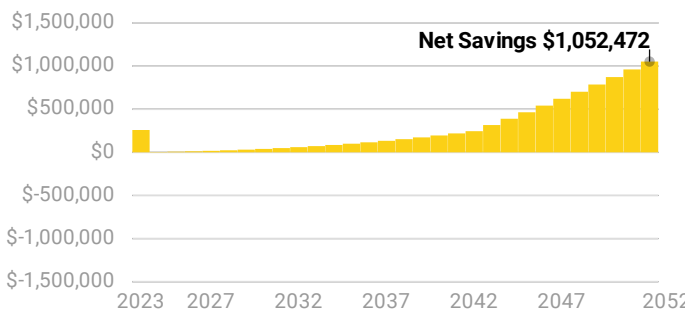
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 748770 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

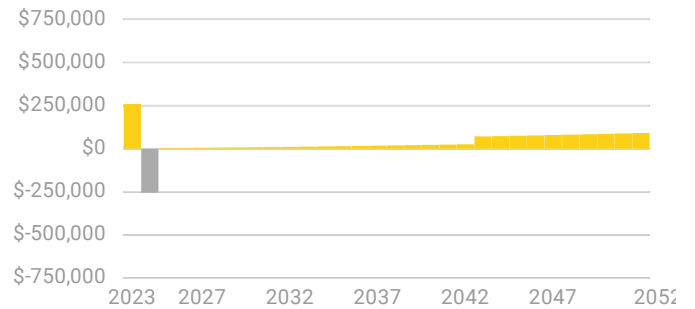
## Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$1,925,528 & - & \$873,056 & = & \$1,052,472 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$288,932**

Net Present Value

**121%**

Total Return on Investment

**5.3%**

Rate of Return on Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	748,770	322,502	88,724	58,792	15,480	43,312	45,412	43,653	257,274	259033	259033
2024	748,770	321,051	92,273	61,284	15,256	46,028	46,246	300,927	0	(254680)	4352
2025	748,770	319,600	95,964	63,881	15,036	48,845	47,119	43,653	0	3466	7818
2026	748,770	318,149	99,803	66,588	14,818	51,770	48,033	43,653	0	4379	12198
2027	748,770	316,697	103,795	69,409	14,602	54,806	48,989	43,653	0	5335	17534
2028	748,770	315,246	107,947	72,349	14,390	57,959	49,988	43,653	0	6335	23869
2029	748,770	313,795	112,265	75,413	14,181	61,233	51,032	43,653	0	7379	31248
2030	748,770	312,344	116,755	78,607	13,974	64,633	52,122	43,653	0	8469	39718
2031	748,770	310,892	121,426	81,936	13,770	68,166	53,260	43,653	0	9606	49324
2032	748,770	309,441	126,283	85,405	13,569	71,836	54,446	43,653	0	10793	60118
2033	748,770	307,990	131,334	89,021	13,370	75,651	55,683	43,653	0	12030	72148
2034	748,770	306,539	136,587	92,789	13,174	79,615	56,972	43,653	0	13319	85468
2035	748,770	305,087	142,051	96,716	12,980	83,736	58,315	43,653	0	14662	100130
2036	748,770	303,636	147,733	100,809	12,789	88,019	59,713	43,653	0	16060	116190

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	748,770	302,185	153,642	105,074	12,601	92,473	61,169	43,653	0	17515	133706
2038	748,770	300,734	159,788	109,520	12,415	97,105	62,683	43,653	0	19029	152736
2039	748,770	299,282	166,179	114,153	12,232	101,921	64,258	43,653	0	20604	173341
2040	748,770	297,831	172,826	118,982	12,051	106,931	65,895	43,653	0	22242	195584
2041	748,770	296,380	179,739	124,014	11,872	112,142	67,598	43,653	0	23944	219529
2042	748,770	294,928	186,929	129,258	11,696	117,562	69,367	43,653	0	25713	245242
2043	748,770	293,477	194,406	134,724	11,522	123,202	71,204	0	0	71204	316447
2044	748,770	292,026	202,182	140,419	11,350	129,069	73,113	0	0	73113	389560
2045	748,770	290,575	210,270	146,355	11,181	135,175	75,095	0	0	75095	464655
2046	748,770	289,123	218,681	152,542	11,014	141,528	77,153	0	0	77152	541808
2047	748,770	287,672	227,428	158,989	10,849	148,140	79,288	0	0	79288	621096
2048	748,770	286,221	236,525	165,707	10,686	155,021	81,504	0	0	81503	702599
2049	748,770	284,770	245,986	172,709	10,526	162,183	83,803	0	0	83802	786402
2050	748,770	283,318	255,825	180,006	10,367	169,638	86,187	0	0	86186	872589
2051	748,770	281,867	266,058	187,610	10,211	177,399	88,660	0	0	88659	961249
2052	748,770	280,416	276,701	195,534	10,057	185,477	91,223	0	0	91223	1052472

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Tax Exempt Municipal Lease

448 x AC-540MH/144V 540 Watt Panels (AXITEC) 2 x SE100KUS (SolarEdge Technologies Ltd.) 448 x Ground Mount System, 200 x Trenching (per foot), 224 x P1100 Tilt Racks (448 panels)	
Total System Price	\$857,579.30
<b>Purchase Price</b>	<b>\$857,579.30</b>
Loan Amount	\$857,579.30
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$257,273.79
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$257,273.79 in month 18 this payment level will continue for term of the loan.</small>	\$3,638.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$5,280.00
Total Payments <small>Over 20 years</small>	\$1,130,329.93

### Additional Incentives

Federal Investment Tax Credit (ITC) - 30% <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$257,273.79
<b>Net System Cost</b>	<b>\$600,305.51</b>

This proposal is valid until Aug 21 2023.

**PV Feasibility Study**  
(SolarEdge - Commercial)

***MIDDLETOWN TOWNSHIP - ROOF***

**Project Address:** 3 Municipal Way, Langhorne, PA 19047

**Service Size:** 3-Phase Wye 1600 amps

**Meter Rating:** CL20 277/480V

**Roof size:** 27,040 sq ft.

**Maximum number of panels:** 564 (59.99% of roof coverage)

**System Size:** 301.32 kW DC

**Projected Annual Production:** 367,147 kWh

**Actual Annual kWh used (2022):** 748,770 kWh

**Solar production percentage of total kWh used:** 49%



**PV Feasibility Study**  
(SolarEdge - Commercial)

**MIDDLETOWN TOWNSHIP - ROOF**

**Interconnection Point:**

The meter and the transformer are located on the south side of the building at the south side entrance. Exterior conduit can enter the building underground near the utility transformer. There is space available on the 1600 amp rated busbar in the main service panel for the interconnection point.

**Equipment Location:**

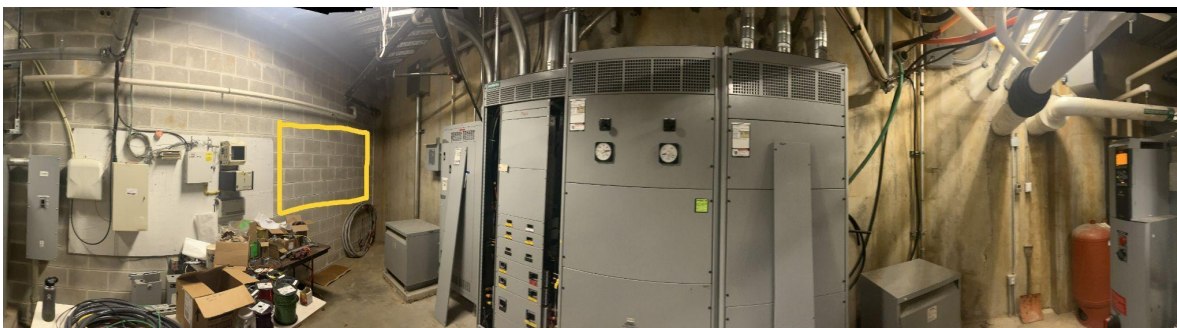
Exterior: Next to the meter at the south road entrance of the building.

Interior: In the back of the mechanical room to the right of the automatic transfer switch.

Exterior:



Interior:

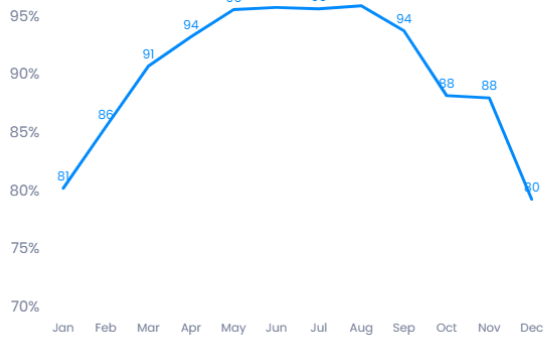


**PV Feasibility Study**  
 (SolarEdge - Commercial)

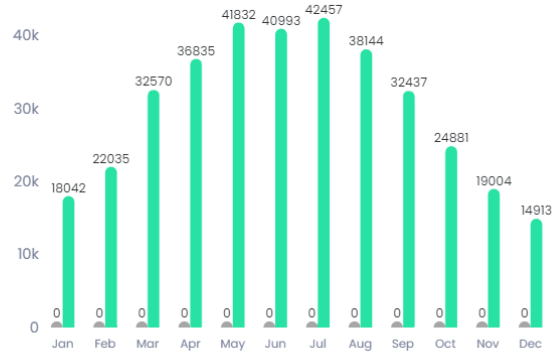
**MIDDLETOWN TOWNSHIP - ROOF**

**Additional production information:**

**Average Monthly Solar Access**



**Monthly Consumption and Production (kWh)**



**Segments**

Segment	Modules	Size (DC STC)	Production	ASA	Azimuth	Tilt	Roof Area	Roof Coverage
✔ Segment A	94 (540W)	50.76 kW	66,748 kWh	97%	158°	14°	4971 ft²	54.38%
✔ Segment B	72 (540W)	38.88 kW	50,608 kWh	96%	159°	14°	2689 ft²	77%
✔ Segment C	21 (540W)	11.34 kW	11,679 kWh	82%	248°	15°	1129 ft²	53.48%
✔ Segment D	22 (540W)	11.88 kW	12,609 kWh	94%	68°	16°	1376 ft²	45.99%
✔ Segment E	0	0 kW	0 kWh	97%	339°	18°	455 ft²	0%
✔ Segment F	33 (540W)	17.82 kW	15,477 kWh	84%	338°	14°	2280 ft²	41.63%
✔ Segment G	28 (540W)	15.12 kW	17,077 kWh	89%	249°	15°	1383 ft²	58.22%
✔ Segment H	15 (540W)	8.1 kW	9,136 kWh	99%	68°	14°	874 ft²	49.33%
✔ Segment I	12 (540W)	6.48 kW	7,943 kWh	95%	203°	7°	964 ft²	35.79%
✘ Segment J	0	0 kW	0 kWh	--	23°	12°	409 ft²	0%
✔ Segment K	29 (540W)	15.66 kW	19,811 kWh	96%	158°	10°	1128 ft²	73.92%
✔ Segment L	83 (540W)	44.82 kW	50,575 kWh	99%	68°	14°	2943 ft²	81.1%
✔ Segment M	50 (540W)	27 kW	33,485 kWh	94%	158°	10°	2460 ft²	58.45%
✔ Segment N	93 (540W)	50.22 kW	61,539 kWh	92%	158°	10°	3435 ft²	77.87%
✔ Segment O	12 (540W)	6.48 kW	7,456 kWh	89%	157°	7°	543 ft²	63.59%



**PV Feasibility Study**  
(SolarEdge - Commercial)

***MIDDLETOWN TOWNSHIP - GROUND MOUNT***

**Project Address:** 3 Municipal Way, Langhorne, PA 19047

**Service Size:** 3-Phase Wye 1600 amps

**Meter Rating:** CL20 277/480V

**Roof size:** - sq ft.

**Maximum number of panels:** 448

**System Size:** 241.92 kW DC

**Projected Annual Production:** 322,502 kWh

**Actual Annual kWh used (2022):** 748,770 kWh

**Solar production percentage of total kWh used:** 43.1%



**PV Feasibility Study**  
(SolarEdge - Commercial)

**MIDDLETOWN TOWNSHIP - GROUND MOUNT**

**Interconnection Point:**

The meter and the transformer are located on the south side of the building at the south side entrance. Exterior conduit can enter the building underground near the utility transformer. There is space available on the 1600 amp rated busbar in the main service panel for the interconnection point.

**Equipment Location:**

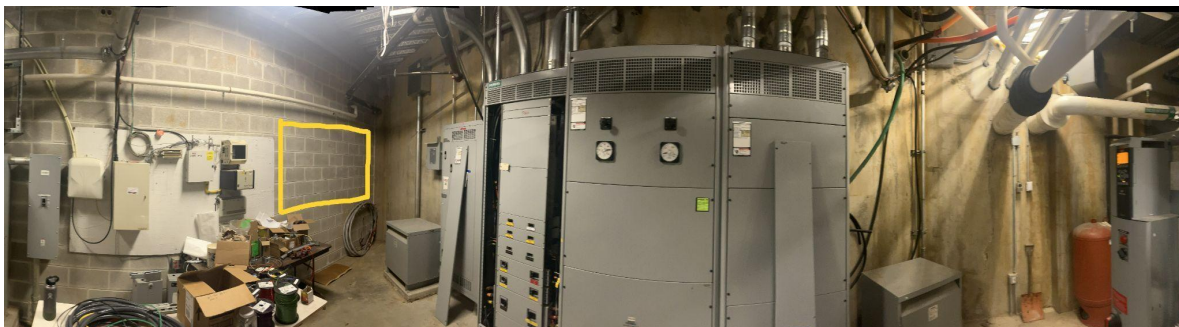
Exterior: Next to the meter at the south road entrance of the building or at ground mount location

Interior: In the back of the mechanical room to the right of the automatic transfer switch.

Exterior:



Interior:



**PV Feasibility Study**  
 (SolarEdge - Commercial)

**MIDDLETOWN TOWNSHIP - GROUND MOUNT**

**Additional production information:**

**Segment P**

Segment	Modules	Size (DC STC)	Production	ASA	Azimuth	Tilt	Roof Area	Roof Coverage
✓ Segment P	448 (540W)	241.92 kW	328,576 kWh	99%	158°	15°	36390 ft²	54.14%

**System Parameters**

Array Type (ground) Fixed - Open Rack

Module Type Premium

DC to AC Size Ratio

Inverter Efficiency (90-99.5%)

Bifaciality  %

[Update All Segments](#)

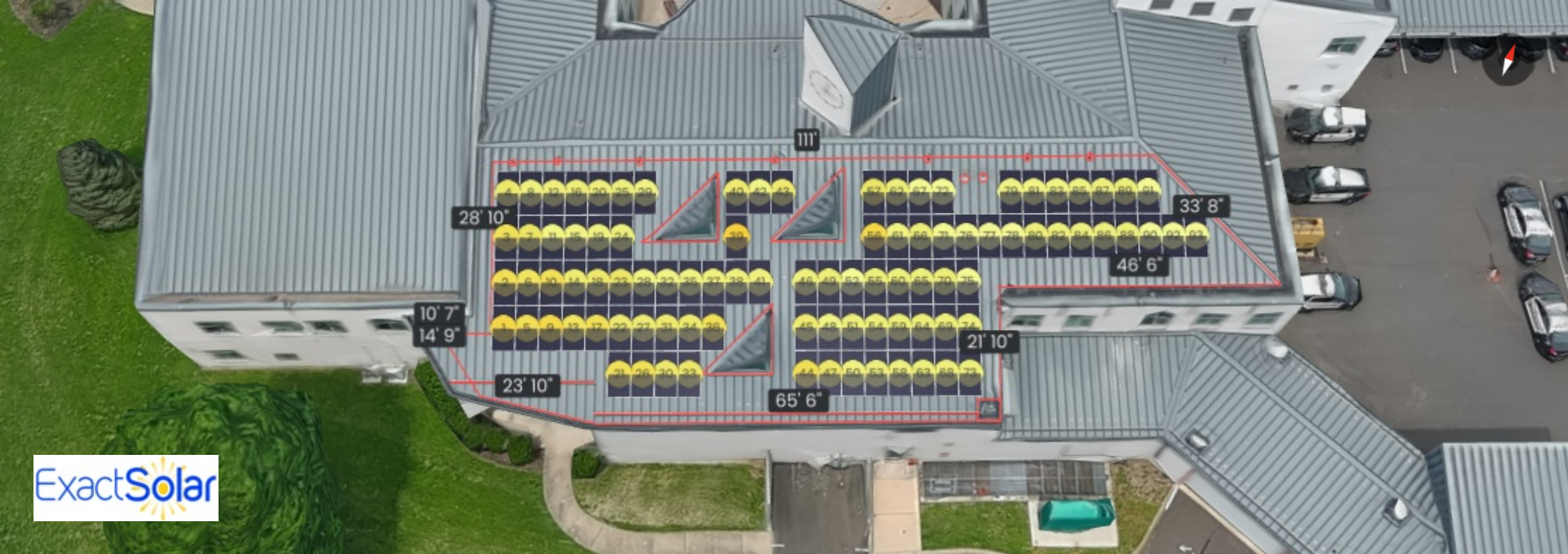
**Solar Access Monthly**



**Estimate System Losses**

Shade (calculated from viewsheds)

Snow



## Solar Access Shade Report Prepared For:

**Middletown Township 3 Municipal Way, Langhorne, PA**  
3 Municipal Way, Langhorne, Pennsylvania 19047, United States

Lat, Long: 40.1828, -74.9064

Time Zone: GMT-5

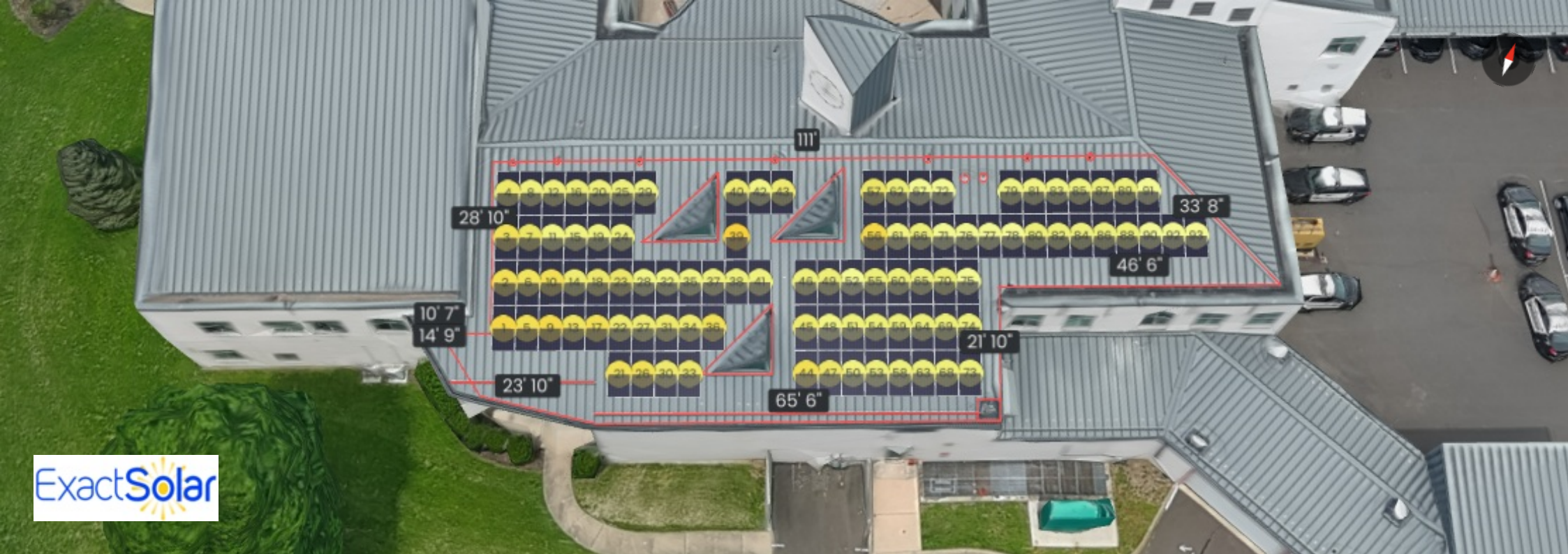
Weather Station: 724095, TRENTON MERCER COUNTY AP, NJ 8.4 miles

Report Author: Steve Kauffman

Report Created On: July 24, 2023

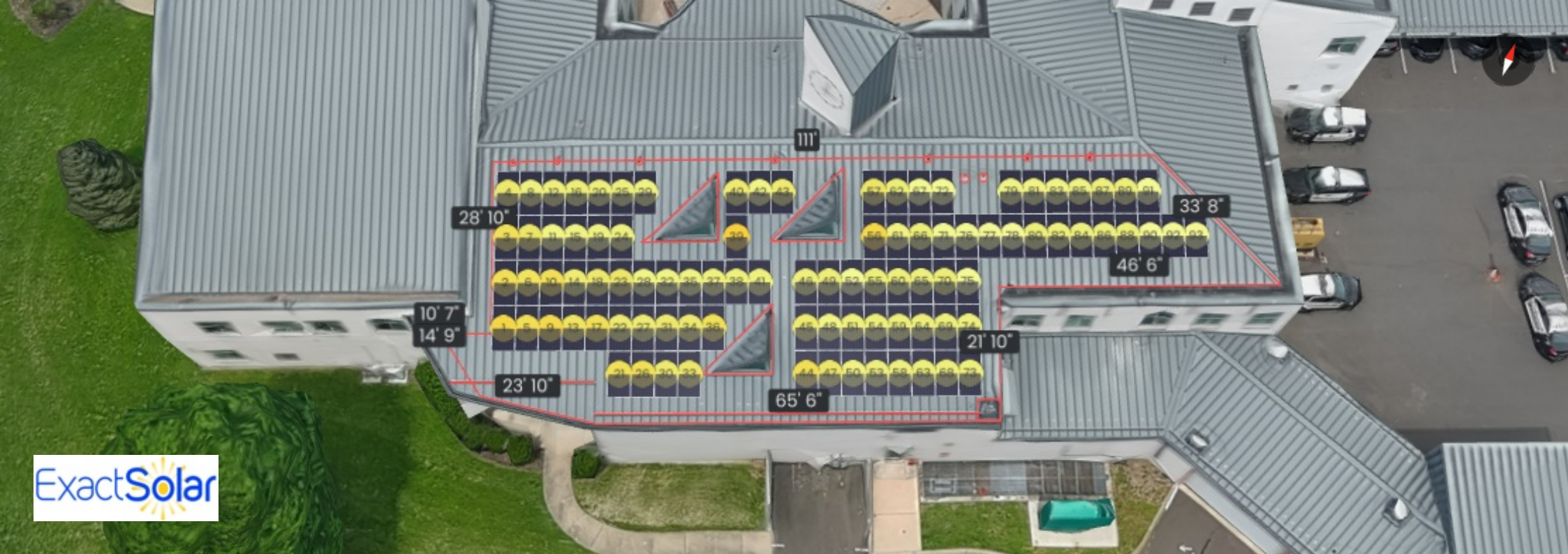
[Preview Model](#)





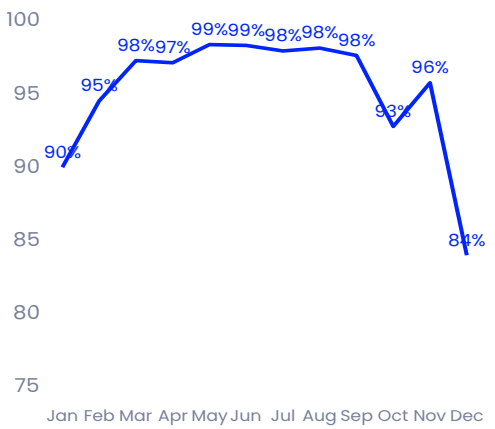
## Summary

Array	Panel Count	Azimuth (deg)	Tilt (deg)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
Segment A	94	158.4° True	13.9°	93.21%	96.90%	90.32%
Segment B	72	158.7° True	14°	93.28%	95.86%	89.42%
Segment C	21	248.4° True	15.2°	89.64%	81.67%	73.21%
Segment D	22	68.3° True	15.8°	78.25%	93.58%	73.23%
Segment E	0	338.6° True	17.5°	71.95%	96.79%	69.64%
Segment F	33	338.0° True	13.7°	75.31%	83.54%	62.91%
Segment G	28	248.6° True	15.1°	89.58%	89.48%	80.16%
Segment H	15	68.0° True	14.2°	79.03%	98.56%	77.90%
Segment I	12	202.7° True	6.8°	90.20%	94.86%	85.57%
Segment K	29	158.3° True	10°	91.40%	95.51%	87.30%
Segment L	83	68.1° True	14.1°	79.09%	98.53%	77.93%
Segment M	50	158.2° True	9.9°	91.35%	93.73%	85.62%



# Solar Access: Segment A

Average Monthly



Average Annual

**96.90%**

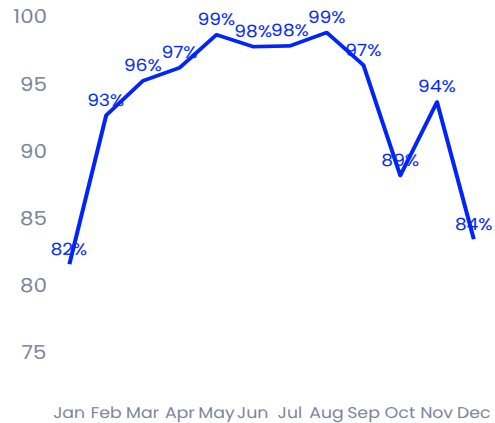
- TSRF: 90.32%
- TOF: 93.21%
- Summer (May - Oct): 98%
- Winter (Nov - Apr): 93%

- Tilt: 13.9°
- Azimuth: 158.4° True
- Solar Access Viewshed Heading: 180°



## Solar Access: Segment B

Average Monthly



Average Annual

**95.86%**

TSRF: 89.42%

TOF: 93.28%

Summer (May - Oct): 98%

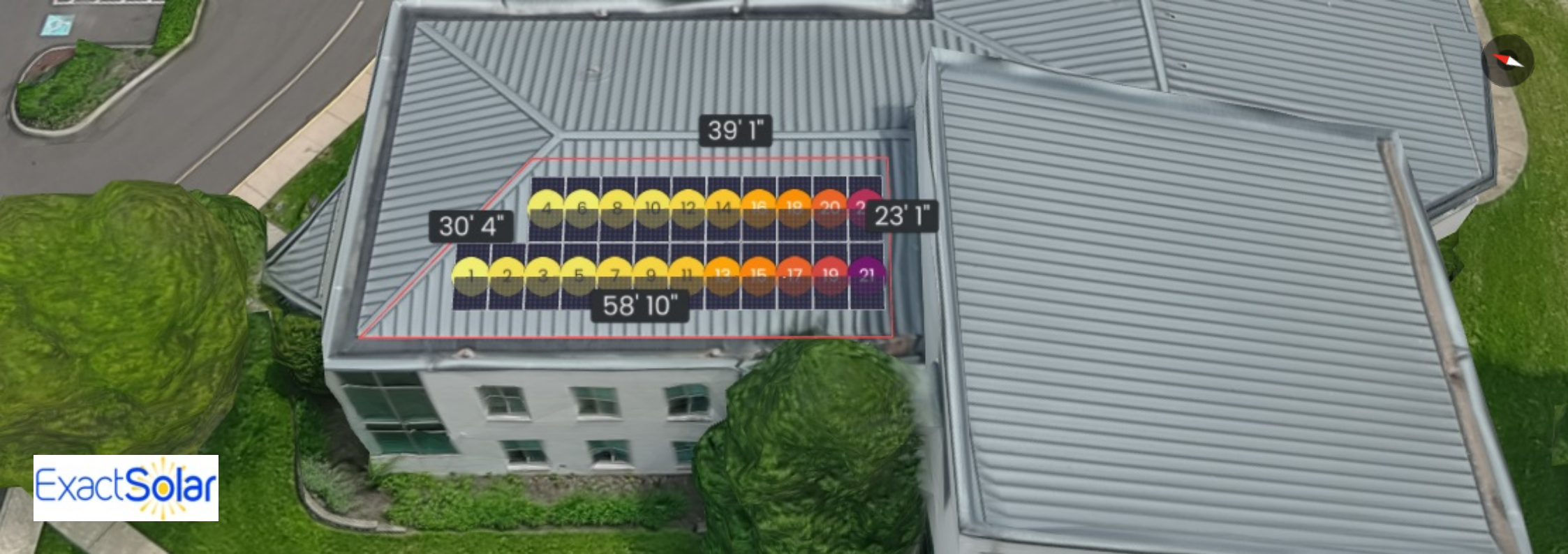
Winter (Nov - Apr): 91%

Tilt: 14°

Azimuth: 158.7° True

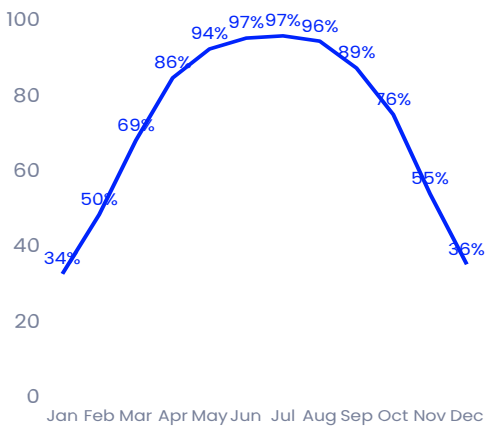
Solar Access Viewshed Heading:

180°



# Solar Access: Segment C

Average Monthly



Average Annual

**81.67%**

- TSRF: 73.21%
- TOF: 89.64%
- Summer (May - Oct): 94%
- Winter (Nov - Apr): 58%

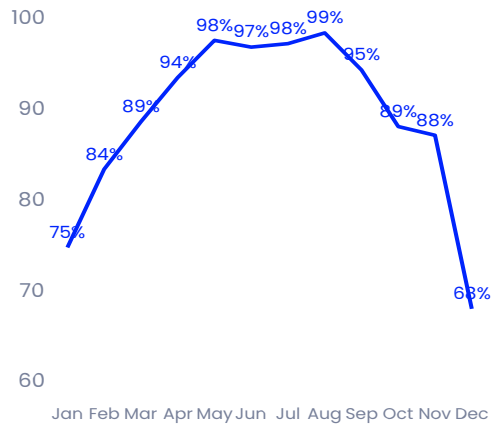
Tilt: 15.2°  
 Azimuth: 248.4° True  
 Solar Access Viewshed Heading:  
 180°





## Solar Access: Segment D

Average Monthly



Average Annual

**93.58%**

TSRF: 73.23%

TOF: 78.25%

Summer (May - Oct): 97%

Winter (Nov - Apr): 84%

Tilt: 15.8°

Azimuth: 68.3° True

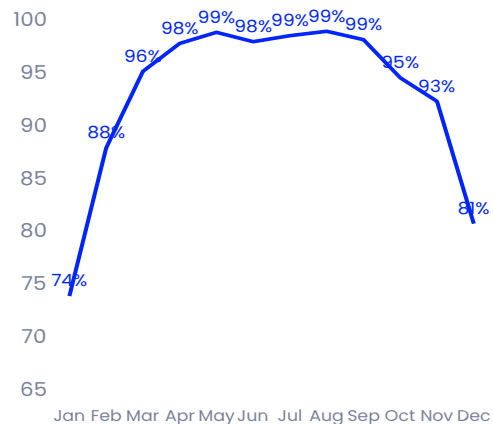
Solar Access Viewshed Heading:

180°



## Solar Access: Segment E

Average Monthly



Average Annual

**96.79%**

TSRF: 69.64%

TOF: 71.95%

Summer (May - Oct): 99%

Winter (Nov - Apr): 89%

Tilt: 17.5°

Azimuth: 338.6° True

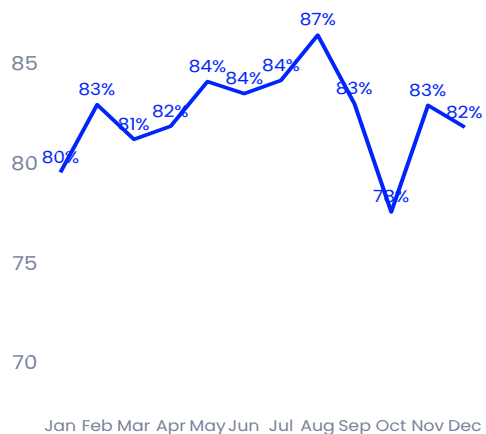
Solar Access Viewshed Heading:

180°



## Solar Access: Segment F

Average Monthly



Average Annual

**83.54%**

TSRF: 62.91%

TOF: 75.31%

Summer (May - Oct): 84%

Winter (Nov - Apr): 81%

Tilt: 13.7°

Azimuth: 338.0° True

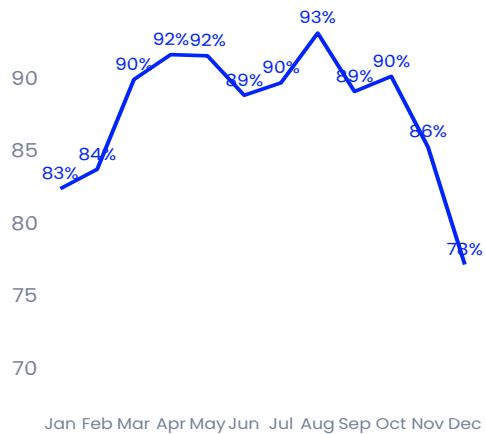
Solar Access Viewshed Heading:

180°



## Solar Access: Segment G

Average Monthly



Average Annual

**89.48%**

TSRF: 80.16%

TOF: 89.58%

Summer (May - Oct): 91%

Winter (Nov - Apr): 86%

Tilt: 15.1°

Azimuth: 248.6° True

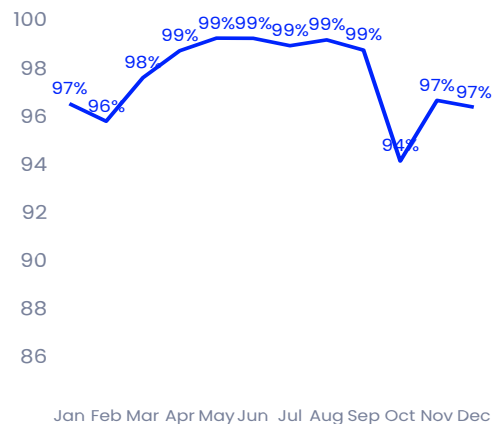
Solar Access Viewshed Heading:

180°



## Solar Access: Segment H

Average Monthly



Average Annual

**98.56%**

TSRF: 77.90%

TOF: 79.03%

Summer (May - Oct): 99%

Winter (Nov - Apr): 97%

Tilt: 14.2°

Azimuth: 68.0° True

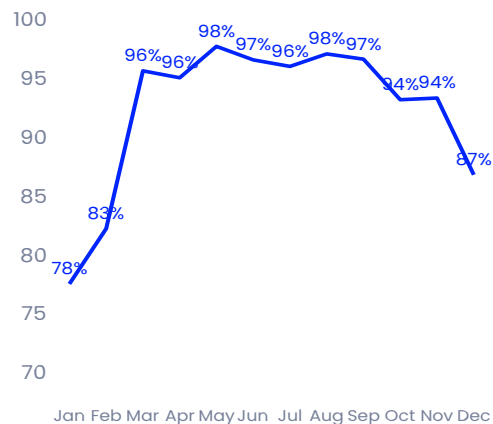
Solar Access Viewshed Heading:

180°



## Solar Access: Segment I

Average Monthly



Average Annual

**94.86%**

TSRF: 85.57%

TOF: 90.20%

Summer (May - Oct): 97%

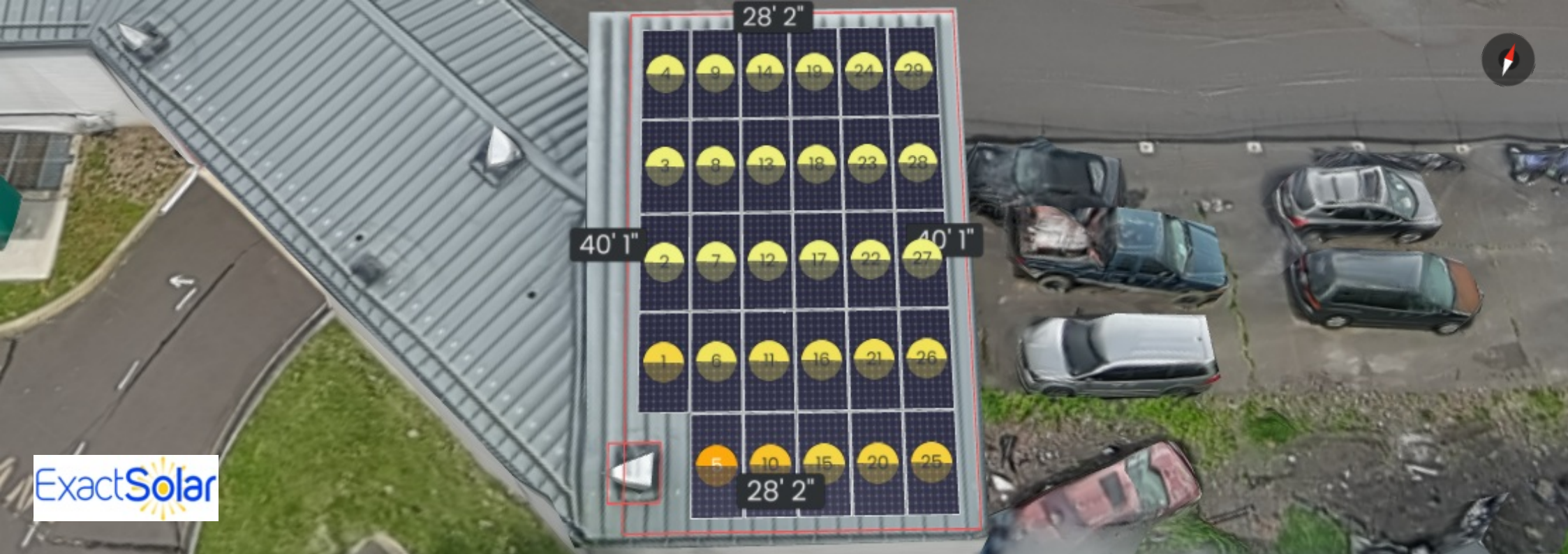
Winter (Nov - Apr): 90%

Tilt: 6.8°

Azimuth: 202.7° True

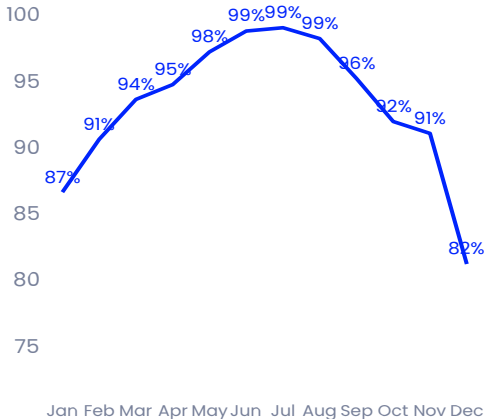
Solar Access Viewshed Heading:

180°



# Solar Access: Segment K

Average Monthly



Average Annual

**95.51%**

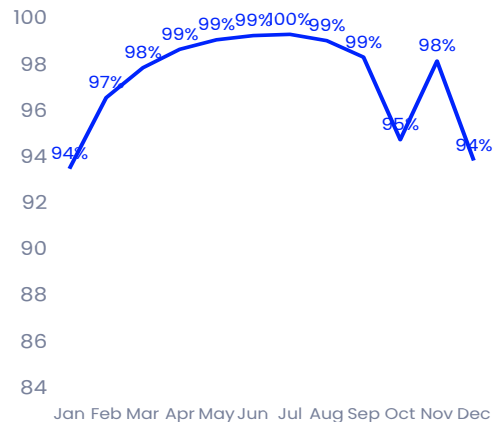
- TSRF: 87.30%
- TOF: 91.40%
- Summer (May - Oct): 98%
- Winter (Nov - Apr): 90%

- Tilt: 10°
- Azimuth: 158.3° True
- Solar Access Viewshed Heading: 180°



## Solar Access: Segment L

Average Monthly



Average Annual

**98.53%**

TSRF: 77.93%

TOF: 79.09%

Summer (May - Oct): 99%

Winter (Nov - Apr): 96%

Tilt: 14.1°

Azimuth: 68.1° True

Solar Access Viewshed Heading:

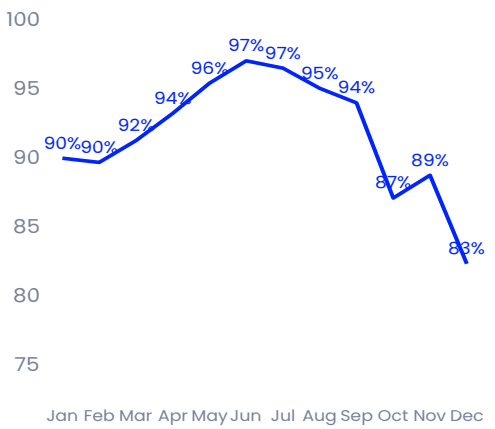
180°





# Solar Access: Segment M

Average Monthly



Average Annual

**93.73%**

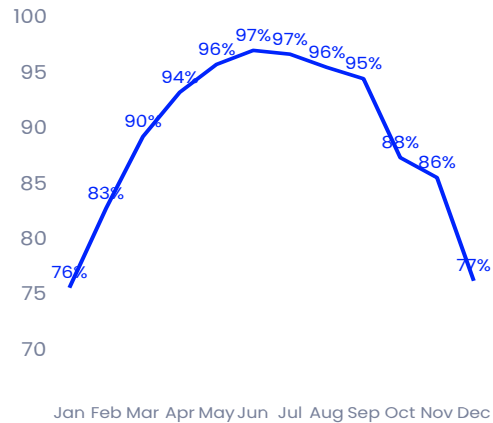
- TSRF: 85.62%
- TOF: 91.35%
- Summer (May - Oct): 96%
- Winter (Nov - Apr): 89%

- Tilt: 9.9°
- Azimuth: 158.2° True
- Solar Access Viewshed Heading: 180°



## Solar Access: Segment N

Average Monthly



Average Annual

**92.33%**

TSRF: 84.56%

TOF: 91.59%

Summer (May - Oct): 96%

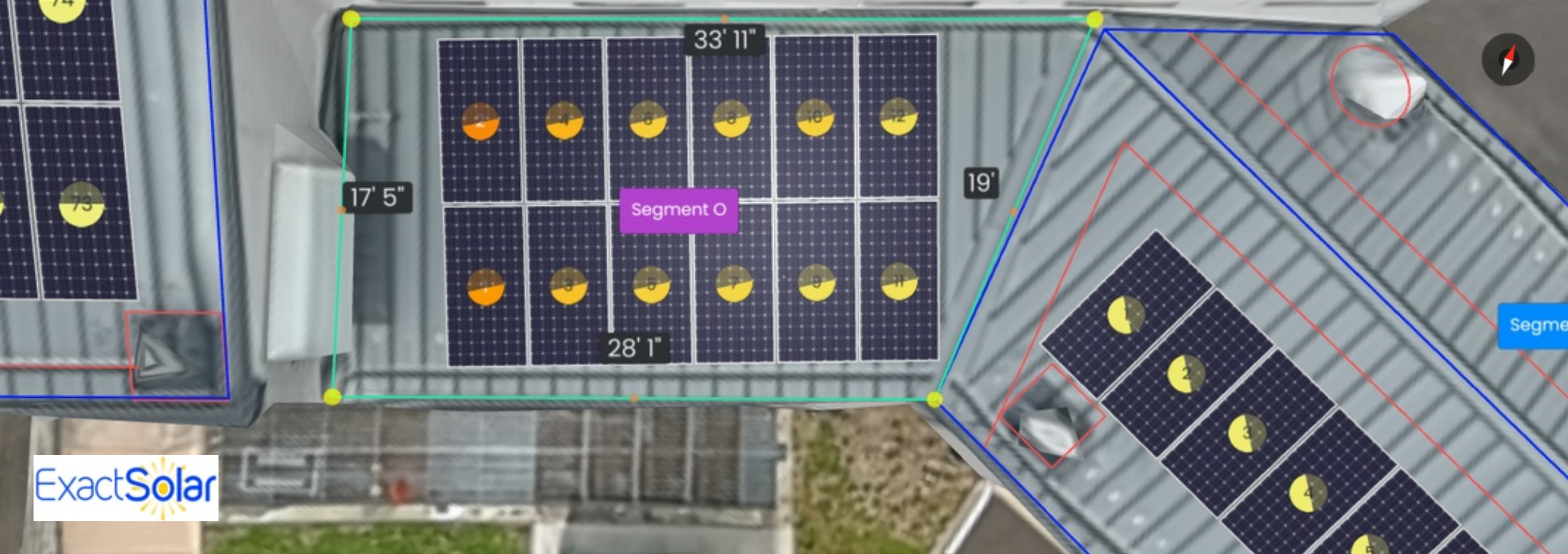
Winter (Nov - Apr): 85%

Tilt: 10.4°

Azimuth: 158.1° True

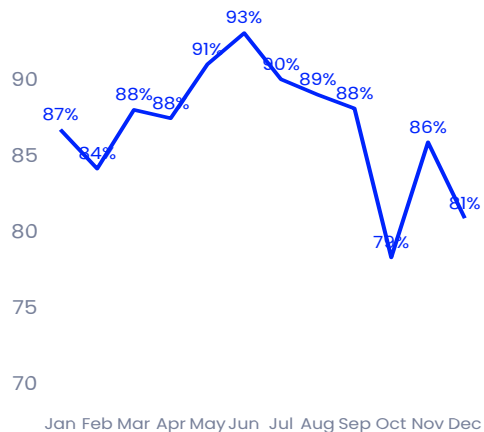
Solar Access Viewshed Heading:

180°



## Solar Access: Segment O

Average Monthly



Average Annual

**88.91%**

TSRF: 79.80%

TOF: 89.75%

Summer (May - Oct): 91%

Winter (Nov - Apr): 85%

Tilt: 7°

Azimuth: 157.0° True

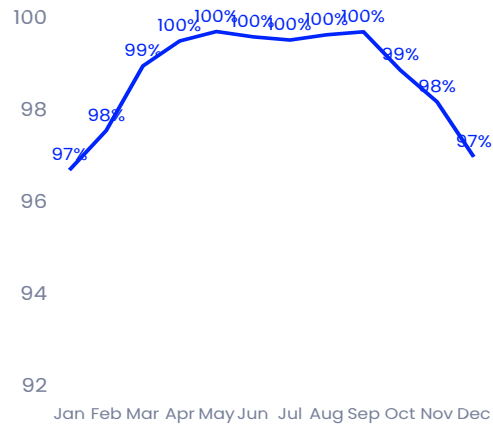
Solar Access Viewshed Heading:

180°



# Solar Access: Segment P

Average Monthly



Average Annual

**99.19%**

TSRF: 92.86%

TOF: 93.62%

Summer (May - Oct): 100%

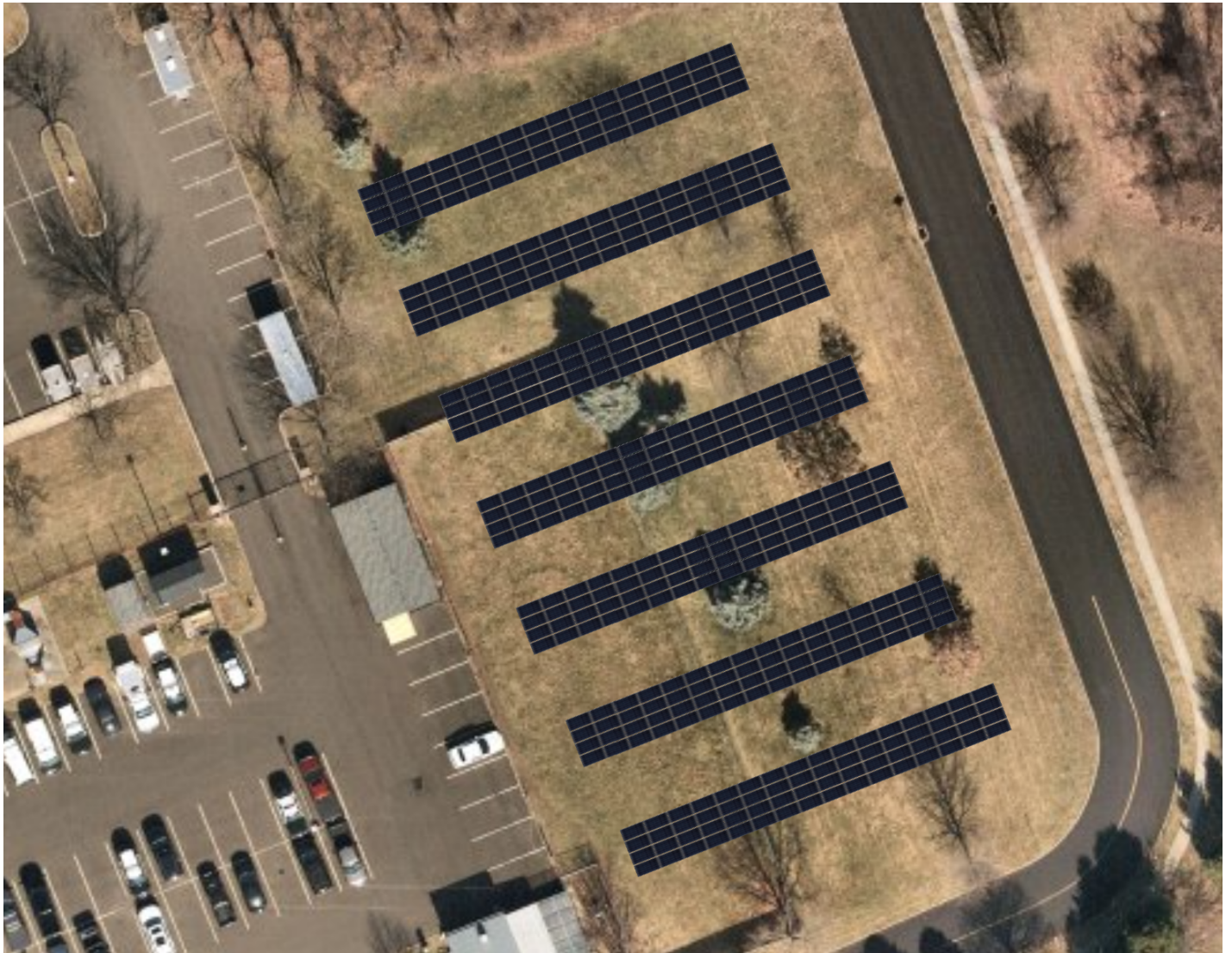
Winter (Nov - Apr): 98%

Tilt: 15°

Azimuth: 158.0° True

Solar Access Viewshed Heading:

180°



**Prepared by: Joe Robinson**  
215-917-4761  
joe.robinson@exactsolar.com

North Fire Station (Middletown Twp)  
1741 Langhorne Yardley Rd  
Langhorne, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Nick,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Joe Robinson

### Recommended System Option

102.6 kW

System Size

\$262,660

Total System Price including tax

\$183,862

Net System Price including tax

11 Years  
4 Months

Payback



### System Components

#### Solar Panels

**AXITEC**

102.600 kW Total Solar Power

190 x 540 Watt Panels (AC-540MH/144V)

119,349 kWh per year

#### Inverter

**SolarEdge Technologies Ltd.**

33.300 kW Total Inverter Rating

1 x SE33.3K

#### P1100 Power Optimizer

1100 W, Power Optimizer, specifically designed to work with SolarEdge inverters

95 x P1100

#### Inverter

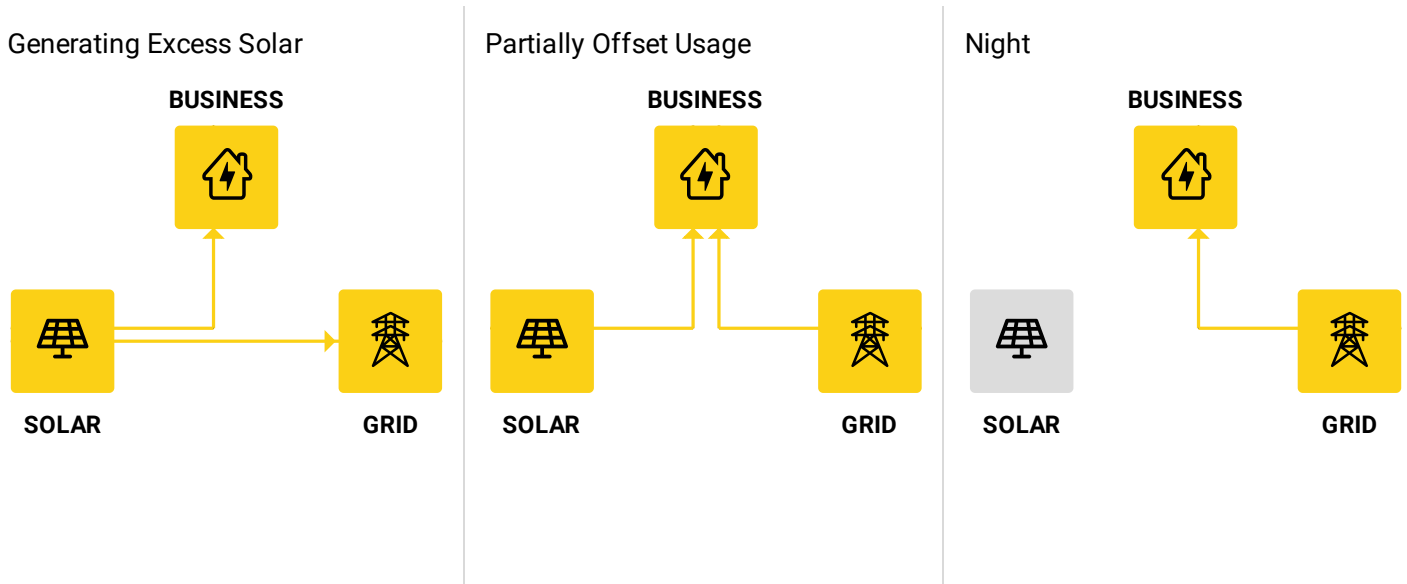
**SolarEdge Technologies Ltd.**

50.000 kW Total Inverter Rating

1 x SE50KUS

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty

## How Your System Works



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



**Each Year**

80%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

45 tons  
Avoided CO<sub>2</sub> per year

**Over System Lifetime**

829,740  
Car miles avoided

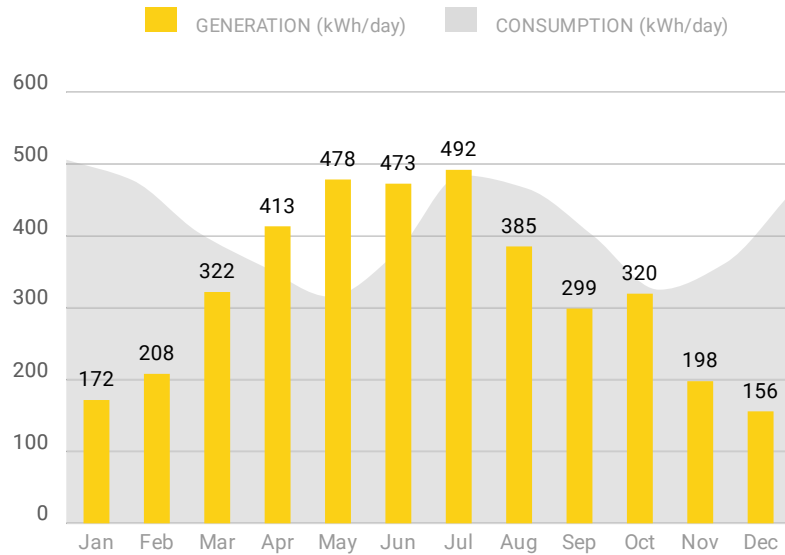
8,590  
Trees planted

956  
Long haul flights avoided



## System Performance

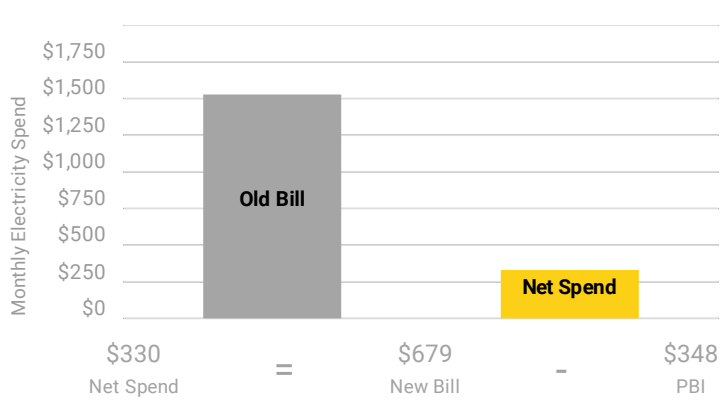
80%  
Energy From Solar



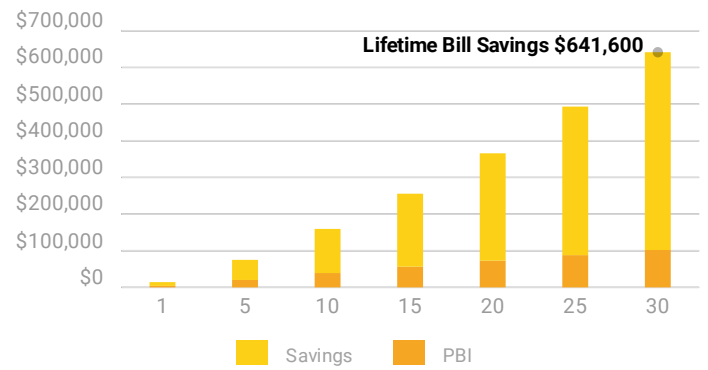
System Performance Assumptions: System Total losses: 14.5%, Inverter losses: 2.5%, Optimizer losses: 1.4%, Shading losses: 0.6%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 41 panels with Azimuth 222 and Slope 33, 66 panels with Azimuth 132 and Slope 19, 73 panels with Azimuth 312 and Slope 20, 10 panels with Azimuth 221 and Slope 34.

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	\$102,005.95	\$4,177.22 in year 1
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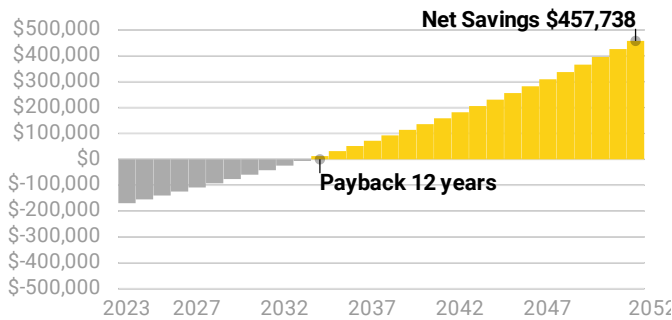
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 150000 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

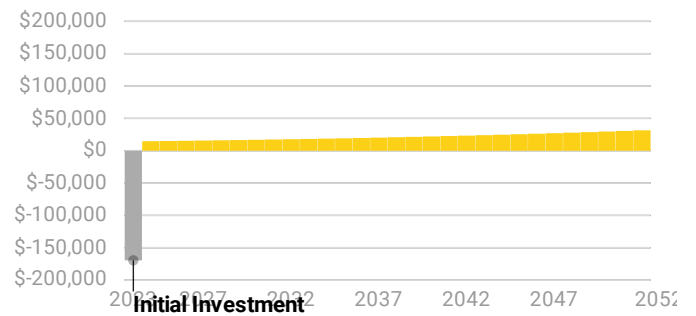
## Net Financial Impact Cash

$$\begin{array}{rcl}
 \$641,600 & - & \$183,862 & = & \$457,738 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$55,450**  
Net Present Value

**19.5 years**  
Discounted Payback  
Period

**249%**  
Total Return on  
Investment

**9.1%**  
Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	150,000	119,349	18,330	8,143	4,177	3,966	14,364	262,660	78,798	(169,497)	(169,497)
2024	150,000	118,812	19,063	8,502	4,117	4,386	14,678	0	0	14,677	(154,819)
2025	150,000	118,275	19,826	8,878	4,057	4,820	15,005	0	0	15,005	(139,814)
2026	150,000	117,738	20,619	9,270	3,998	5,271	15,348	0	0	15,347	(124,466)
2027	150,000	117,201	21,444	9,678	3,940	5,738	15,706	0	0	15,705	(108,761)
2028	150,000	116,664	22,301	10,105	3,883	6,222	16,079	0	0	16,079	(92,682)
2029	150,000	116,127	23,193	10,551	3,827	6,724	16,469	0	0	16,469	(76,212)
2030	150,000	115,590	24,121	11,016	3,771	7,245	16,876	0	0	16,876	(59,336)
2031	150,000	115,053	25,086	11,501	3,716	7,785	17,301	0	0	17,300	(42,035)
2032	150,000	114,516	26,089	12,007	3,661	8,346	17,744	0	0	17,743	(24,292)
2033	150,000	113,978	27,133	12,536	3,608	8,928	18,205	0	0	18,204	(6,087)
2034	150,000	113,441	28,218	13,087	3,555	9,532	18,686	0	0	18,685	12,598
2035	150,000	112,904	29,347	13,663	3,503	10,160	19,187	0	0	19,186	31,785
2036	150,000	112,367	30,521	14,264	3,451	10,813	19,708	0	0	19,708	51,493

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	150,000	111,830	31,742	14,891	3,400	11,491	20,251	0	0	20251	71744
2038	150,000	111,293	33,011	15,545	3,350	12,195	20,816	0	0	20816	92560
2039	150,000	110,756	34,332	16,228	3,301	12,927	21,404	0	0	21404	113965
2040	150,000	110,219	35,705	16,941	3,252	13,689	22,016	0	0	22016	135981
2041	150,000	109,682	37,133	17,684	3,204	14,481	22,653	0	0	22652	158634
2042	150,000	109,145	38,619	18,460	3,156	15,304	23,314	0	0	23314	181948
2043	150,000	108,608	40,163	19,270	3,109	16,161	24,002	0	0	24002	205950
2044	150,000	108,071	41,770	20,115	3,063	17,052	24,717	0	0	24717	230668
2045	150,000	107,534	43,441	20,997	3,017	17,980	25,461	0	0	25460	256128
2046	150,000	106,997	45,178	21,917	2,972	18,945	26,233	0	0	26233	282361
2047	150,000	106,459	46,985	22,878	2,928	19,950	27,035	0	0	27035	309397
2048	150,000	105,922	48,865	23,880	2,884	20,996	27,869	0	0	27868	337266
2049	150,000	105,385	50,819	24,925	2,840	22,085	28,735	0	0	28734	366000
2050	150,000	104,848	52,852	26,016	2,798	23,219	29,634	0	0	29633	395634
2051	150,000	104,311	54,966	27,154	2,755	24,399	30,567	0	0	30567	426201
2052	150,000	103,774	57,165	28,342	2,714	25,628	31,537	0	0	31536	457738

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Cash

190 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE33.3K, 1 x SE50KUS (SolarEdge Technologies Ltd.) 95 x P1100	
Total System Price	\$262,660.25
<b>Purchase Price</b>	<b>\$262,660.25</b>
Price Per Watt	\$2.56 per Watt <small>For 102.600 kW system</small>
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$78,798.07</b>
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This proposal is valid until Aug 21 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	131,330.12
Passing Inspection	128,830.13
<b>Total</b>	<b>262,660.25</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

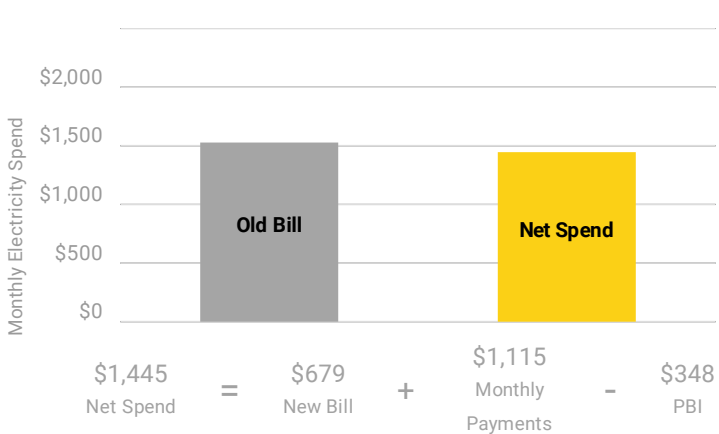
Date \_\_\_\_\_

### Payment Details: Offline Payment

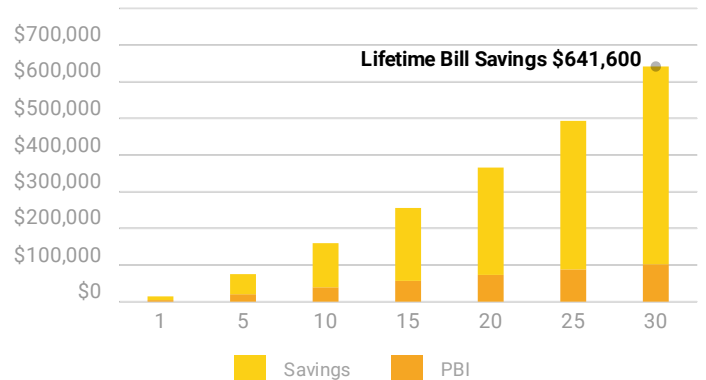
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

<b>Performance Based Incentives (Over System Lifetime)</b>	<b>\$102,005.95</b> \$4,177.22 in year 1
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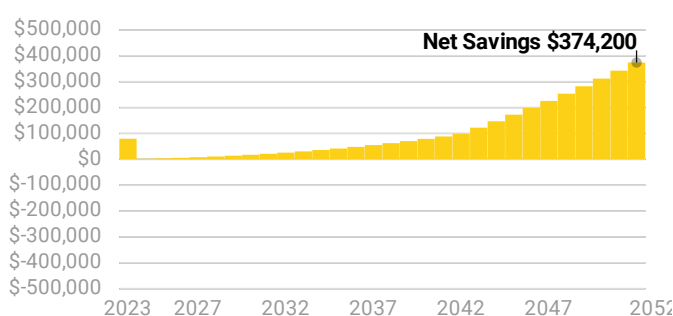
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 150000 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

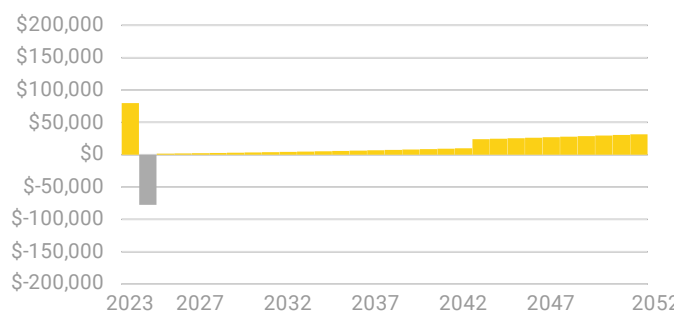
## Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$641,600 & - & \$267,400 & = & \$374,200 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



\$104,526

Net Present Value

140%

Total Return on Investment

5.8%

Rate of Return on Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	150,000	119,349	18,330	8,143	4,177	3,966	14,364	13,370	78,798	79,792	79,792
2024	150,000	118,812	19,063	8,502	4,117	4,386	14,678	92,168	0	(77,490)	2,302
2025	150,000	118,275	19,826	8,878	4,057	4,820	15,005	13,370	0	1,635	3,937
2026	150,000	117,738	20,619	9,270	3,998	5,271	15,348	13,370	0	1,977	5,915
2027	150,000	117,201	21,444	9,678	3,940	5,738	15,706	13,370	0	2,335	8,250
2028	150,000	116,664	22,301	10,105	3,883	6,222	16,079	13,370	0	2,709	10,959
2029	150,000	116,127	23,193	10,551	3,827	6,724	16,469	13,370	0	3,099	14,059
2030	150,000	115,590	24,121	11,016	3,771	7,245	16,876	13,370	0	3,506	17,565
2031	150,000	115,053	25,086	11,501	3,716	7,785	17,301	13,370	0	3,930	21,496
2032	150,000	114,516	26,089	12,007	3,661	8,346	17,744	13,370	0	4,373	25,869
2033	150,000	113,978	27,133	12,536	3,608	8,928	18,205	13,370	0	4,834	30,704
2034	150,000	113,441	28,218	13,087	3,555	9,532	18,686	13,370	0	5,315	36,020
2035	150,000	112,904	29,347	13,663	3,503	10,160	19,187	13,370	0	5,816	41,836
2036	150,000	112,367	30,521	14,264	3,451	10,813	19,708	13,370	0	6,338	48,175



Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	150,000	111,830	31,742	14,891	3,400	11,491	20,251	13,370	0	6881	55056
2038	150,000	111,293	33,011	15,545	3,350	12,195	20,816	13,370	0	7446	62502
2039	150,000	110,756	34,332	16,228	3,301	12,927	21,404	13,370	0	8034	70537
2040	150,000	110,219	35,705	16,941	3,252	13,689	22,016	13,370	0	8646	79183
2041	150,000	109,682	37,133	17,684	3,204	14,481	22,653	13,370	0	9282	88465
2042	150,000	109,145	38,619	18,460	3,156	15,304	23,314	13,370	0	9944	98410
2043	150,000	108,608	40,163	19,270	3,109	16,161	24,002	0	0	24002	122412
2044	150,000	108,071	41,770	20,115	3,063	17,052	24,717	0	0	24717	147129
2045	150,000	107,534	43,441	20,997	3,017	17,980	25,461	0	0	25460	172590
2046	150,000	106,997	45,178	21,917	2,972	18,945	26,233	0	0	26233	198823
2047	150,000	106,459	46,985	22,878	2,928	19,950	27,035	0	0	27035	225858
2048	150,000	105,922	48,865	23,880	2,884	20,996	27,869	0	0	27868	253727
2049	150,000	105,385	50,819	24,925	2,840	22,085	28,735	0	0	28734	282462
2050	150,000	104,848	52,852	26,016	2,798	23,219	29,634	0	0	29633	312096
2051	150,000	104,311	54,966	27,154	2,755	24,399	30,567	0	0	30567	342663
2052	150,000	103,774	57,165	28,342	2,714	25,628	31,537	0	0	31536	374200

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%



## Quotation

### Payment Option: Tax Exempt Municipal Lease

190 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE33.3K, 1 x SE50KUS (SolarEdge Technologies Ltd.) 95 x P1100	
Total System Price	\$262,660.25
<b>Purchase Price</b>	<b>\$262,660.25</b>
Loan Amount	\$262,660.25
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$78,798.07
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$78,798.07 in month 18 this payment level will continue for term of the loan.</small>	\$1,115.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$1,618.00
Total Payments <small>Over 20 years</small>	\$346,198.49

### Additional Incentives

Federal Investment Tax Credit (ITC) - 30% <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$78,798.07
<b>Net System Cost</b>	<b>\$183,862.17</b>

This proposal is valid until Aug 21 2023.

**PV Feasibility Study**  
(SolarEdge - Commercial)

***NORTH FIRE STATION***

**Project Address:** 1741 Langhorne Yardley Road, Langhorne, PA 19047

**Service Size:** 3-Phase Wye 600A 208/120V

**Meter Rating:** CL20 120/480V

**Roof size:** 10,418 sq ft.

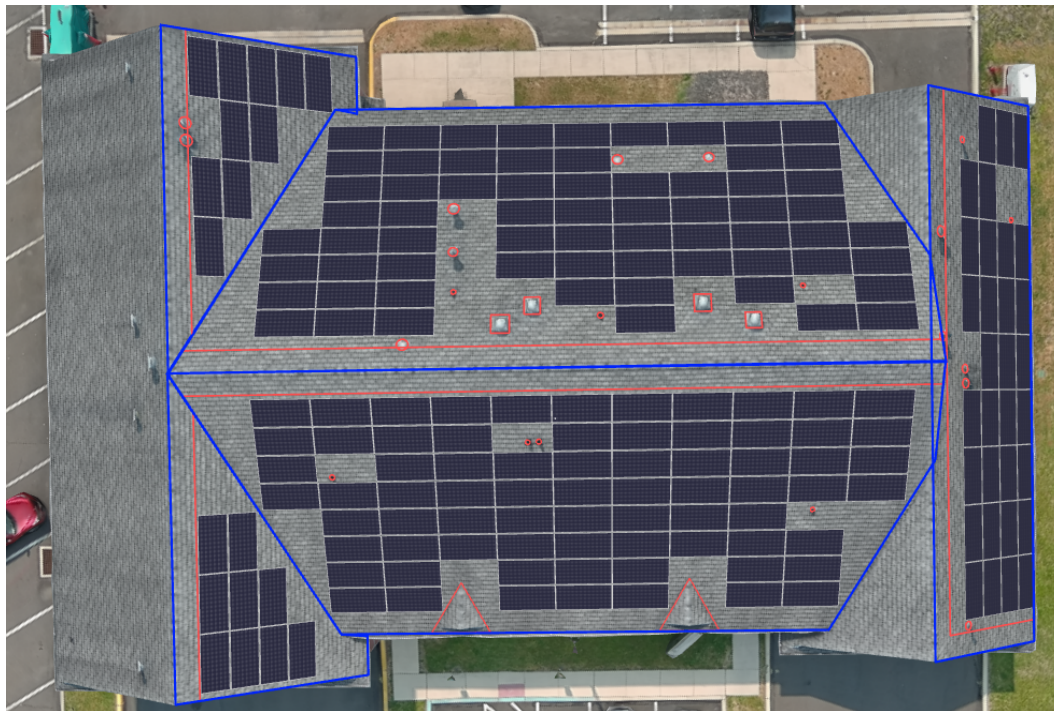
**Maximum number of panels:** 190 (58% of roof coverage)

**System Size:** 102.6 kW DC

**Projected Annual Production:** 119,349 kWh

**Actual Annual kWh used (2022):** 95,698 kWh

**Solar production percentage of total kWh used:** 124.7%



**PV Feasibility Study**  
(SolarEdge - Commercial)

***NORTH FIRE STATION***

**Interconnection Point:**

The 600A rated breaker panel. Exterior conduit through attic or along the side of the building. Office behind outside wall with drop ceilings that we may need to run conduit through to connect to electrical room. There is space available on the 600 amp rated busbar in the main service panel for the interconnection point.

**Equipment Location:**

Exterior: Equipment can be located outside back next to the door on the left

Interior: In the back of the mechanical room to the right of the automatic transfer switch.

Exterior:



**PV Feasibility Study**  
 (SolarEdge - Commercial)

**NORTH FIRE STATION**

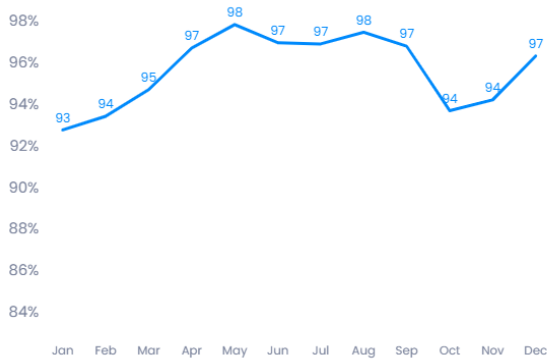
**Additional production information:**

**Overview**

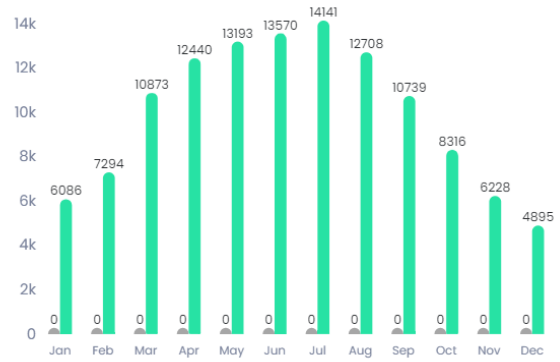
Segment	Modules	Size (DC STC)	Production	ASA	Consumption	PV Offset	Roof Area	Roof Coverage
All total	190	102.6 kW	120,483 kWh	97%	0 kWh	0%	8879 ft <sup>2</sup>	61.11%

Nearest weather station: 724095, TRENTON MERCER COUNTY AP, NJ (7.3 miles)

**Average Monthly Solar Access**



**Monthly Consumption and Production (kWh)**





## Solar Access Shade Report Prepared For:



**Middletown Township Fire Station 1741 Langhorne Yardley Rd, Langhorne, PA 19047, USA**

1741 Langhorne Yardley Rd, Middletown Township, Pennsylvania 19047, United States

Lat, Long: 40.1990, -74.9009

Time Zone: GMT-5

Weather Station: 724095, TRENTON MERCER COUNTY AP, NJ 7.3 miles

Report Author: Evan Johnson

Report Created On: June 7, 2023



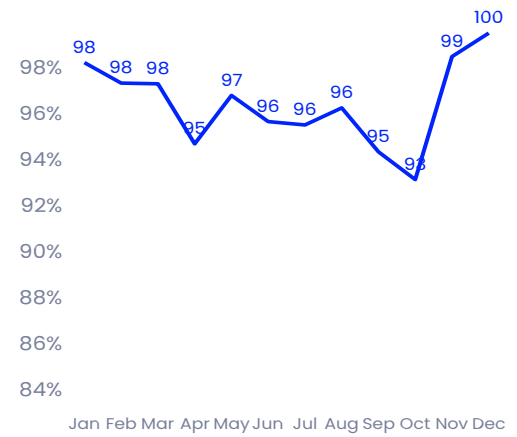
## Summary

Array	Panel Count	Azimuth (deg)	Tilt (deg)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
Segment A	32	222.0° True	33.4°	96.59%	96.63%	93.33%
Segment B	66	132.3° True	18.6°	90.93%	97.06%	88.26%
Segment C	9	222.1° True	33.1°	96.57%	96.57%	93.26%
Segment D	10	221.1° True	33.5°	96.76%	95.51%	92.41%
Segment E	73	312.0° True	20°	74.56%	96.84%	72.20%
<b>Weighted Average by panel count</b>					96.80%	83.40%



# Solar Access: Segment A

Average Monthly

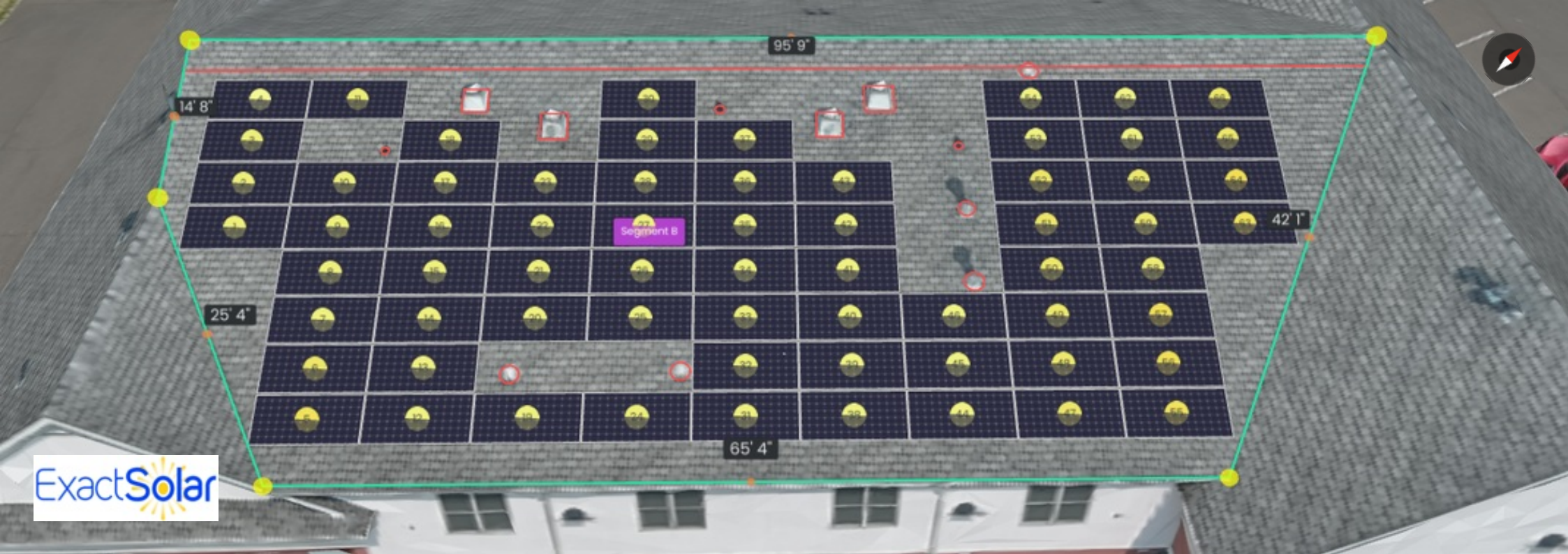


Average Annual

**96.63%**

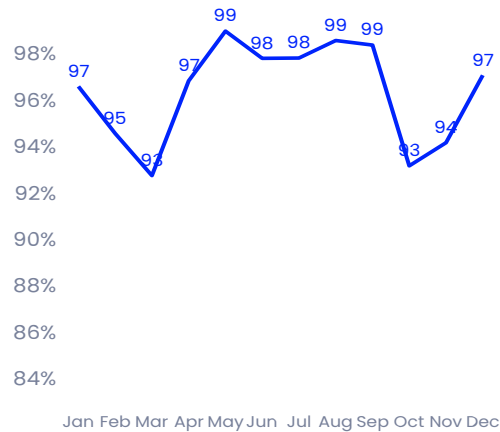
- TSRF: 93.33%
- TOF: 96.59%
- Summer (May - Oct): 96%
- Winter (Nov - Apr): 97%

Tilt: 33.4°  
 Azimuth: 222.0° True  
 Solar Access Viewshed Heading:  
 180°



## Solar Access: Segment B

Average Monthly



Average Annual

**97.06%**

TSRF: 88.26%

TOF: 90.93%

Summer (May - Oct): 99%

Winter (Nov - Apr): 95%

Tilt: 18.6°

Azimuth: 132.3° True

Solar Access Viewshed Heading:

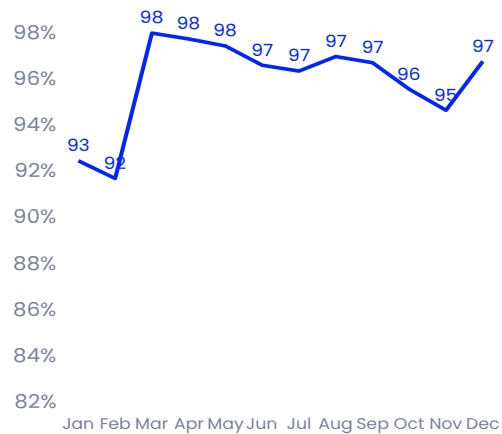
180°





## Solar Access: Segment C

Average Monthly



Average Annual

**96.57%**

TSRF: 93.26%

TOF: 96.57%

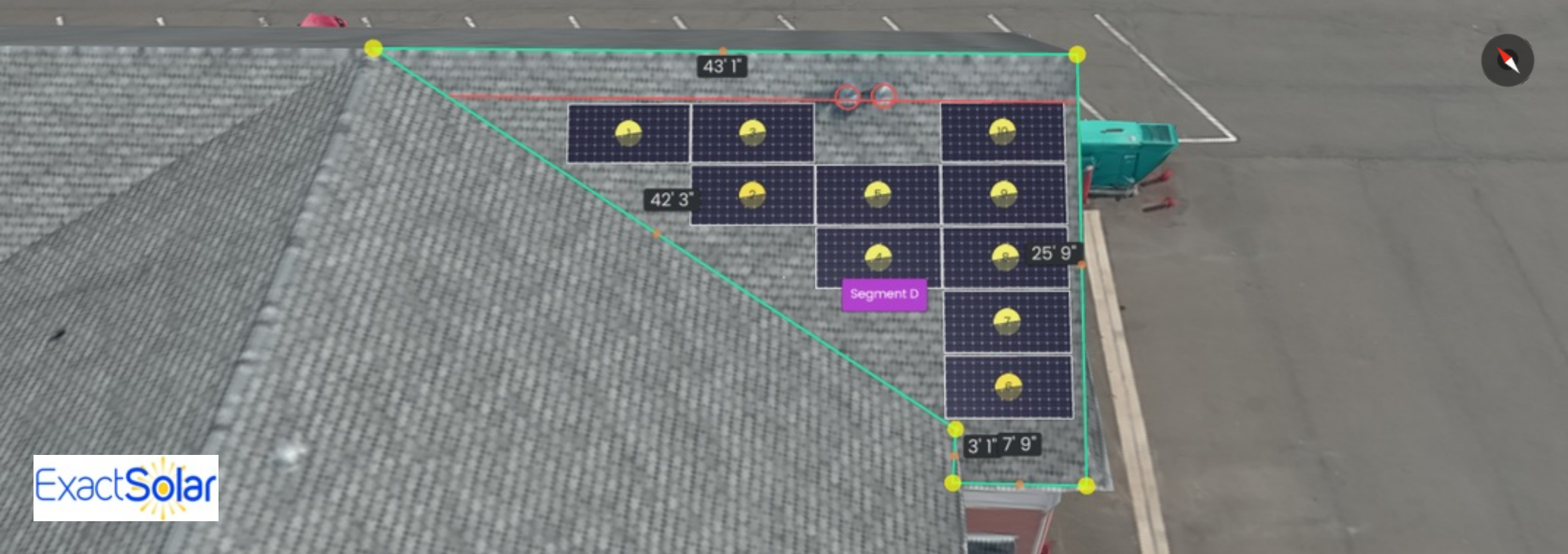
Summer (May - Oct): 97%

Winter (Nov - Apr): 95%

Tilt: 33.1°

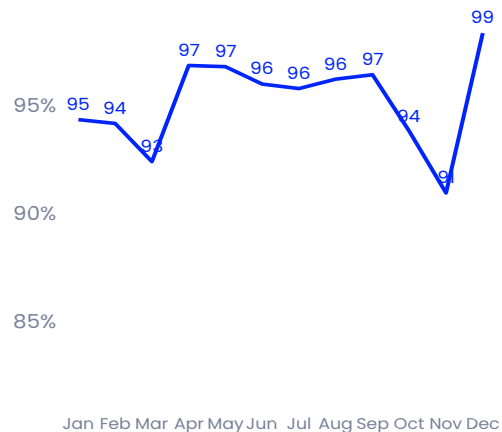
Azimuth: 222.1° True

Solar Access Viewshed Heading:  
180°



## Solar Access: Segment D

Average Monthly



Average Annual

**95.51%**

TSRF: 92.41%

TOF: 96.76%

Summer (May - Oct): 96%

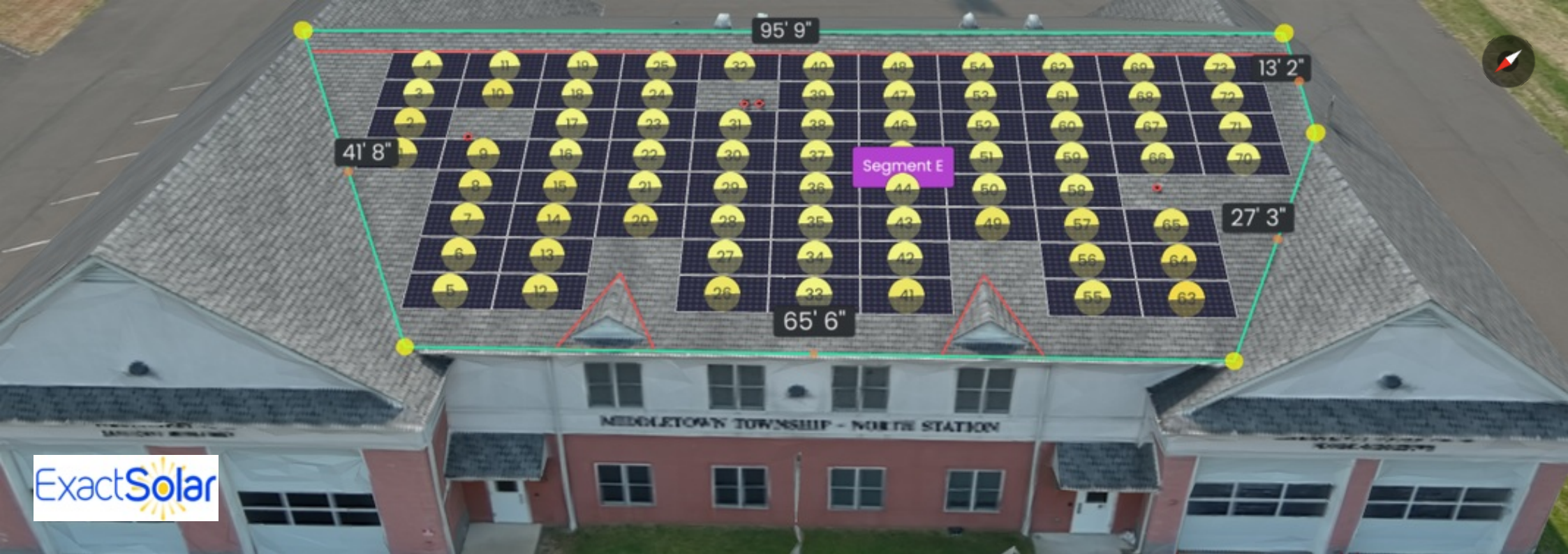
Winter (Nov - Apr): 95%

Tilt: 33.5°

Azimuth: 221.1° True

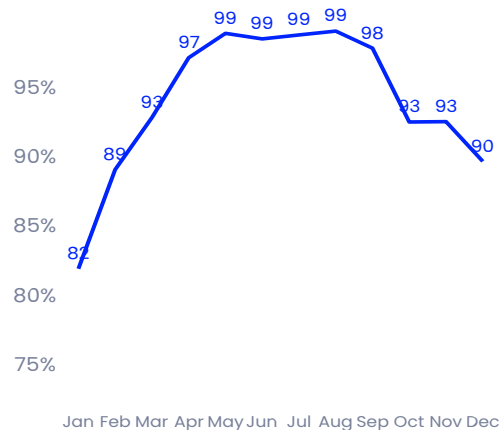
Solar Access Viewshed Heading:

180°



## Solar Access: Segment E

Average Monthly



Average Annual

**96.84%**

TSRF: 72.20%

TOF: 74.56%

Summer (May - Oct): 99%

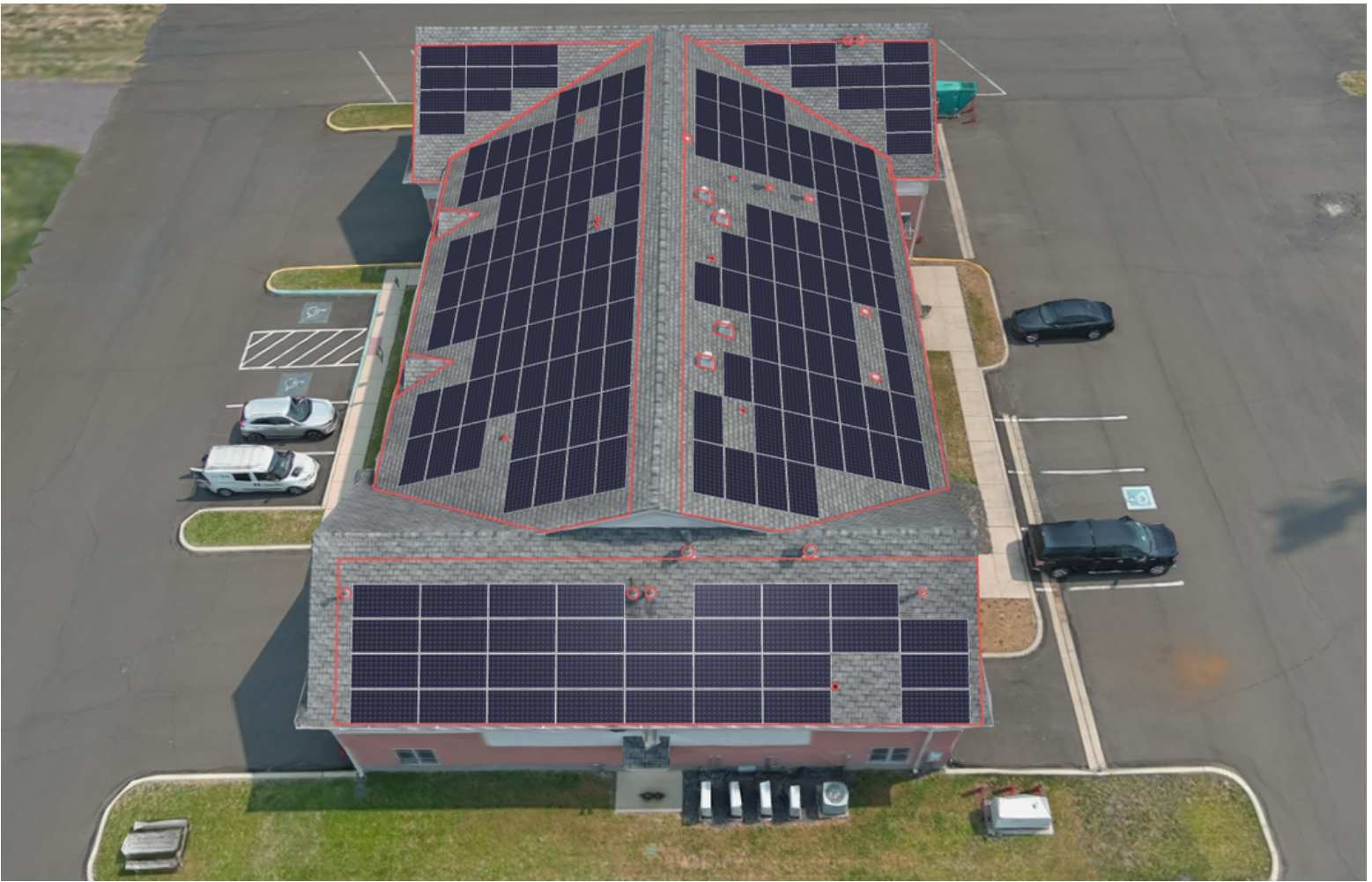
Winter (Nov - Apr): 91%

Tilt: 20°

Azimuth: 312.0° True

Solar Access Viewshed Heading:

180°



**Prepared by: Joe Robinson**  
215-917-4761  
joe.robinson@exactsolar.com

Public Works (Middletown Twp)  
700 Veterans Hwy  
Levittown, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Middletown Township,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Joe Robinson

### Recommended System Option

105.3 kW

System Size

\$270,512

Total System Price including tax

\$189,358

Net System Price including tax

13 Years  
3 Months

Payback



Imagery © Nearmap

### System Components

#### Solar Panels

**AXITEC**

105.300 kW Total Solar Power

195 x 540 Watt Panels (AC-540MH/144V)

111,693 kWh per year

#### Inverter

**SolarEdge Technologies Ltd.**

33.300 kW Total Inverter Rating

1 x SE33.3K

#### P1100 Power Optimizer

1100 W, Power Optimizer, specifically designed to work with SolarEdge inverters

98 x P1100

#### Inverter

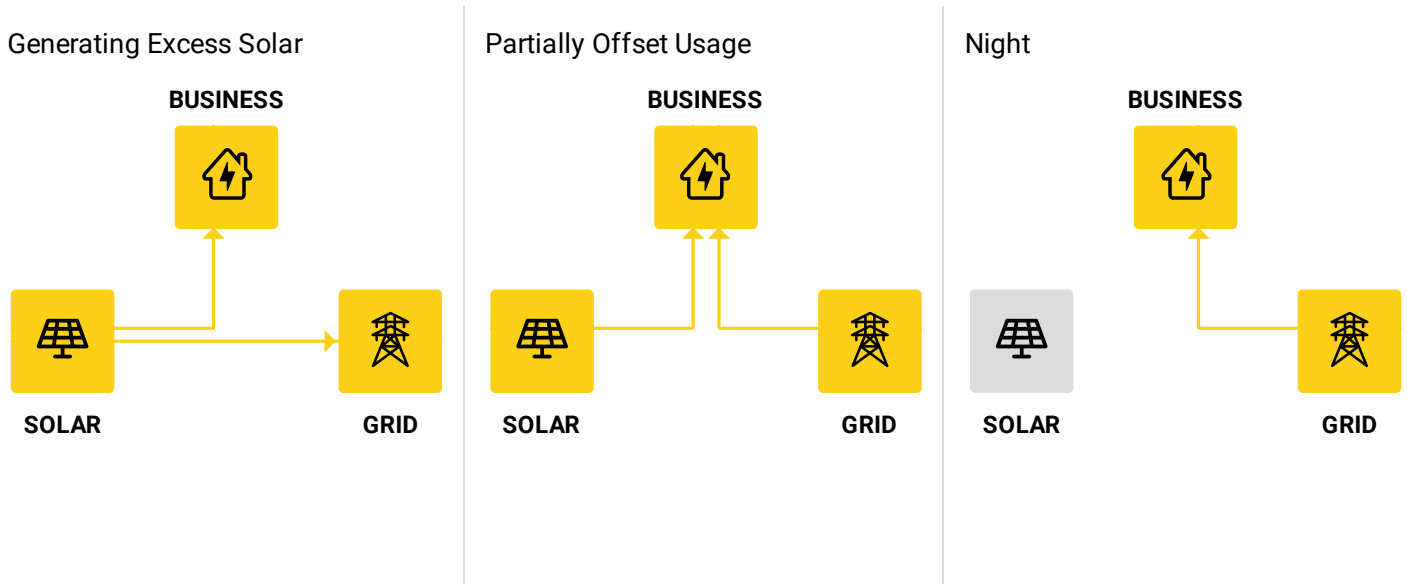
**SolarEdge Technologies Ltd.**

50.000 kW Total Inverter Rating

1 x SE50KUS

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty

## How Your System Works



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



**Each Year**

109%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

42 tons  
Avoided CO<sub>2</sub> per year

**Over System Lifetime**

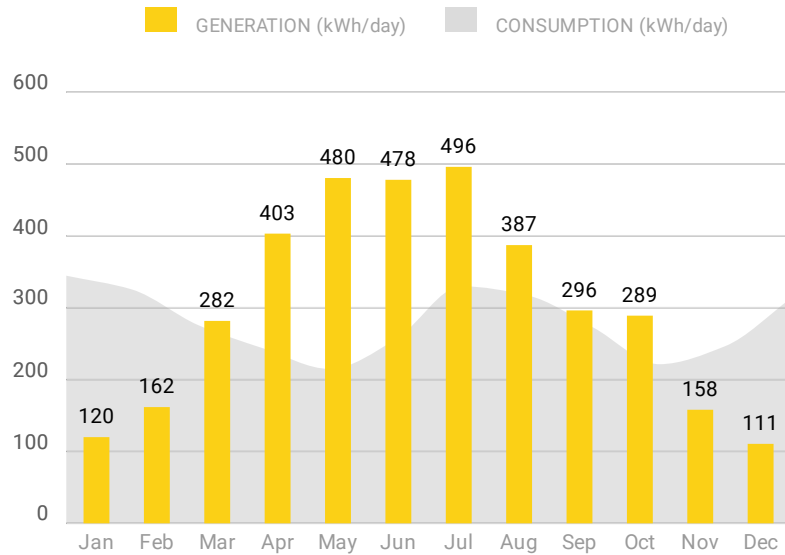
776,511  
Car miles avoided

8,039  
Trees planted

895  
Long haul flights avoided

## System Performance

109%  
Energy From Solar

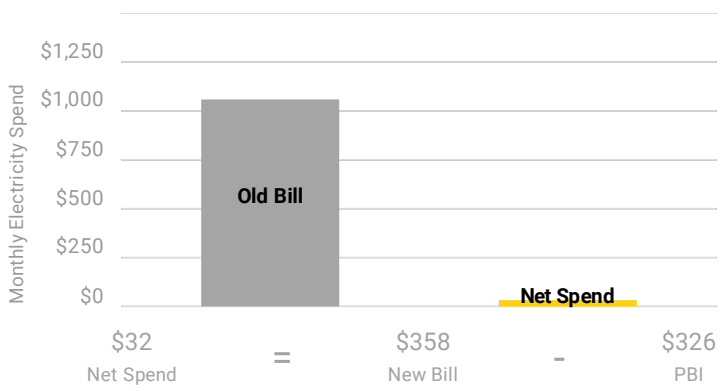


System Performance Assumptions: System Total losses: 15.4%, Inverter losses: 2.5%, Optimizer losses: 1.4%, Shading losses: 10.3%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 86 panels with Azimuth 251 and Slope 18, 77 panels with Azimuth 71 and Slope 18, 32 panels with Azimuth 162 and Slope 30.

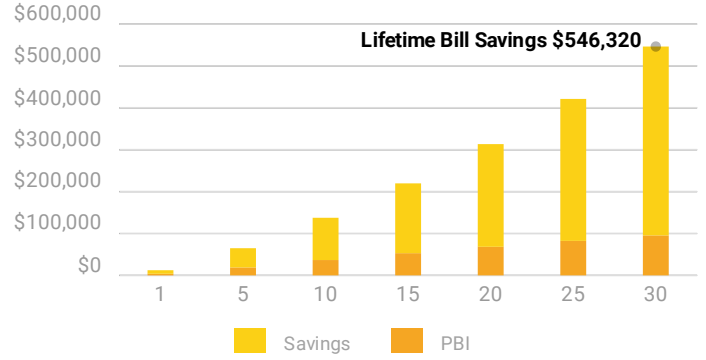


## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$95,462.16</b> \$3,909.25 in year 1
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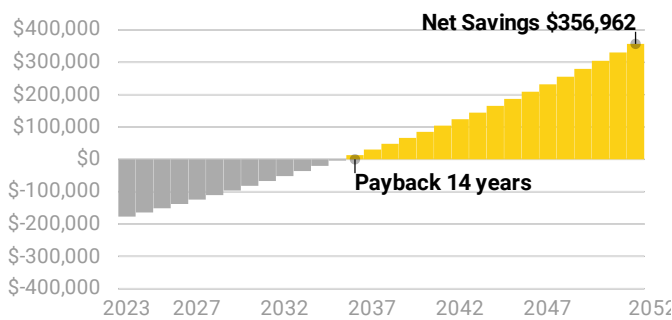
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 102160 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

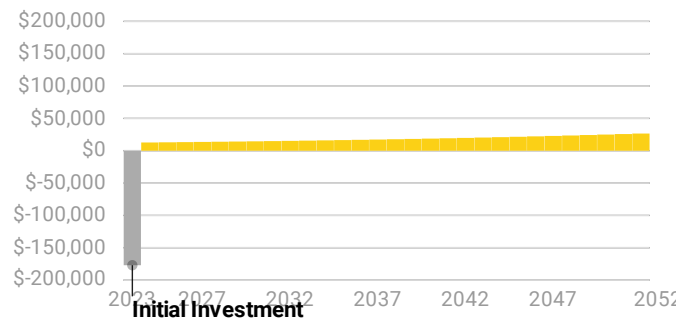
## Net Financial Impact Cash

$$\begin{array}{rcl}
 \$546,320 & - & \$189,358 & = & \$356,962 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$15,402**

Net Present Value

**26 Years**  
1 Month

Discounted Payback  
Period

**189%**

Total Return on  
Investment

**7.4%**

Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	102,160	111,693	12,706	4,297	3,909	388	12,318	270,512	81,154	(177040)	(177040)
2024	102,160	111,190	13,214	4,346	3,853	493	12,721	0	0	12720	(164320)
2025	102,160	110,688	13,743	4,547	3,797	750	12,993	0	0	12992	(151327)
2026	102,160	110,185	14,292	4,757	3,742	1,015	13,277	0	0	13277	(138050)
2027	102,160	109,682	14,864	4,976	3,688	1,289	13,575	0	0	13575	(124475)
2028	102,160	109,180	15,458	5,208	3,634	1,574	13,885	0	0	13884	(110590)
2029	102,160	108,677	16,077	5,462	3,581	1,881	14,195	0	0	14195	(96395)
2030	102,160	108,174	16,720	5,738	3,529	2,209	14,511	0	0	14510	(81884)
2031	102,160	107,672	17,389	6,008	3,477	2,531	14,858	0	0	14858	(67026)
2032	102,160	107,169	18,084	6,290	3,427	2,864	15,221	0	0	15220	(51805)
2033	102,160	106,667	18,808	6,585	3,376	3,209	15,599	0	0	15598	(36207)
2034	102,160	106,164	19,560	6,894	3,327	3,567	15,993	0	0	15992	(20214)
2035	102,160	105,661	20,342	7,217	3,278	3,939	16,403	0	0	16403	(3811)
2036	102,160	105,159	21,156	7,555	3,230	4,325	16,831	0	0	16830	13019

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	102,160	104,656	22,002	7,908	3,182	4,726	17,276	0	0	17276	30295
2038	102,160	104,154	22,882	8,277	3,135	5,142	17,740	0	0	17740	48035
2039	102,160	103,651	23,798	8,664	3,089	5,575	18,223	0	0	18222	66258
2040	102,160	103,148	24,749	9,068	3,043	6,024	18,725	0	0	18725	84983
2041	102,160	102,646	25,739	9,490	2,998	6,492	19,248	0	0	19247	104231
2042	102,160	102,143	26,769	9,932	2,954	6,978	19,791	0	0	19790	124022
2043	102,160	101,640	27,840	10,393	2,910	7,484	20,356	0	0	20356	144378
2044	102,160	101,138	28,953	10,876	2,866	8,010	20,943	0	0	20943	165321
2045	102,160	100,635	30,112	11,381	2,824	8,558	21,554	0	0	21553	186875
2046	102,160	100,133	31,316	11,909	2,781	9,128	22,188	0	0	22188	209063
2047	102,160	99,630	32,569	12,461	2,740	9,721	22,847	0	0	22847	231911
2048	102,160	99,127	33,871	13,038	2,699	10,339	23,532	0	0	23532	255443
2049	102,160	98,625	35,226	13,641	2,658	10,983	24,243	0	0	24243	279686
2050	102,160	98,122	36,635	14,272	2,618	11,654	24,982	0	0	24981	304668
2051	102,160	97,620	38,101	14,931	2,579	12,352	25,748	0	0	25748	330417
2052	102,160	97,117	39,625	15,620	2,540	13,080	26,544	0	0	26544	356961

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Cash

195 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE33.3K, 1 x SE50KUS (SolarEdge Technologies Ltd.) 98 x P1100	
Total System Price	\$270,512.00
<b>Purchase Price</b>	<b>\$270,512.00</b>
Price Per Watt	\$2.57 per Watt <small>For 105.300 kW system</small>
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$81,153.60</b>
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This proposal is valid until Oct 13 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	135,256.00
Passing Inspection	132,756.00
<b>Total</b>	<b>270,512.00</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

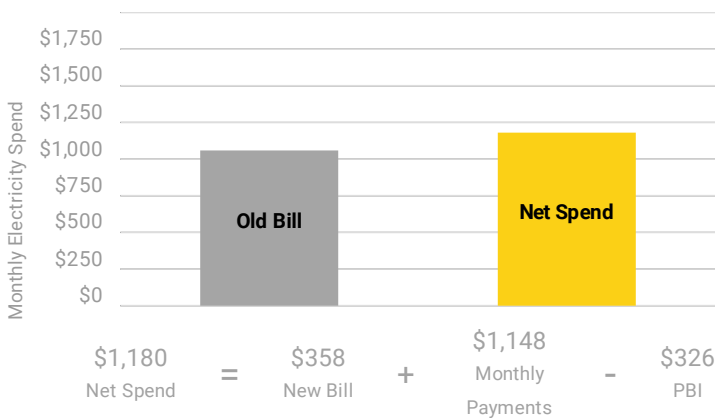
Date \_\_\_\_\_

### Payment Details: Offline Payment

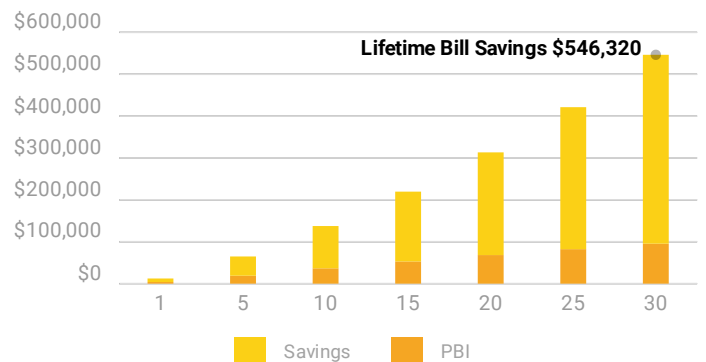
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

<b>Performance Based Incentives (Over System Lifetime)</b>	<b>\$95,462.16</b> \$3,909.25 in year 1
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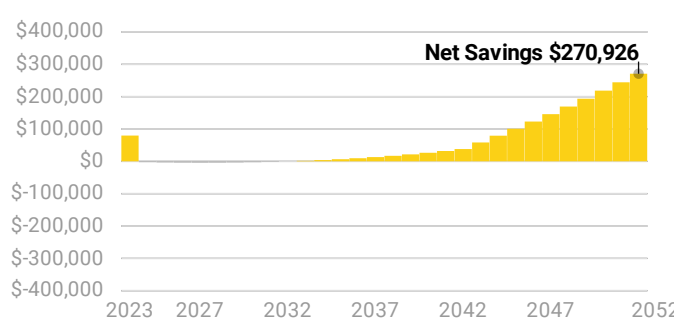
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 102160 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

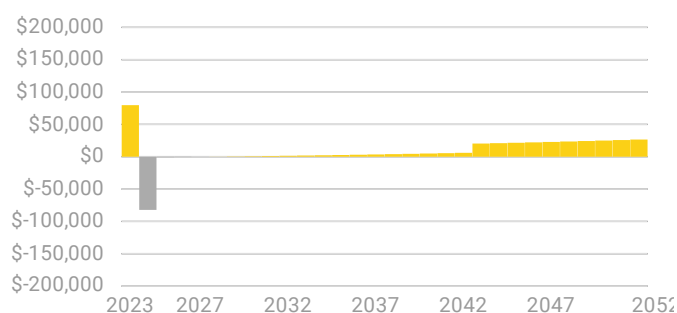
## Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$546,320 & - & \$275,394 & = & \$270,926 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$65,944**

Net Present Value

**98%**

Total Return on Investment

**4.4%**

Rate of Return on Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	102,160	111,693	12,706	4,297	3,909	388	12,318	13,770	81,154	79,701	79,701
2024	102,160	111,190	13,214	4,346	3,853	493	12,721	94,924	0	(82,203)	(2,501)
2025	102,160	110,688	13,743	4,547	3,797	750	12,993	13,770	0	(777)	(3,278)
2026	102,160	110,185	14,292	4,757	3,742	1,015	13,277	13,770	0	(492)	(3,770)
2027	102,160	109,682	14,864	4,976	3,688	1,289	13,575	13,770	0	(194)	(3,965)
2028	102,160	109,180	15,458	5,208	3,634	1,574	13,885	13,770	0	114	(3,850)
2029	102,160	108,677	16,077	5,462	3,581	1,881	14,195	13,770	0	425	(3,425)
2030	102,160	108,174	16,720	5,738	3,529	2,209	14,511	13,770	0	740	(2,684)
2031	102,160	107,672	17,389	6,008	3,477	2,531	14,858	13,770	0	1,088	(1,595)
2032	102,160	107,169	18,084	6,290	3,427	2,864	15,221	13,770	0	1,450	(144)
2033	102,160	106,667	18,808	6,585	3,376	3,209	15,599	13,770	0	1,828	1,684
2034	102,160	106,164	19,560	6,894	3,327	3,567	15,993	13,770	0	2,222	3,907
2035	102,160	105,661	20,342	7,217	3,278	3,939	16,403	13,770	0	2,633	6,540
2036	102,160	105,159	21,156	7,555	3,230	4,325	16,831	13,770	0	3,061	9,601

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	102,160	104,656	22,002	7,908	3,182	4,726	17,276	13,770	0	3506	13108
2038	102,160	104,154	22,882	8,277	3,135	5,142	17,740	13,770	0	3970	17078
2039	102,160	103,651	23,798	8,664	3,089	5,575	18,223	13,770	0	4453	21531
2040	102,160	103,148	24,749	9,068	3,043	6,024	18,725	13,770	0	4955	26487
2041	102,160	102,646	25,739	9,490	2,998	6,492	19,248	13,770	0	5477	31965
2042	102,160	102,143	26,769	9,932	2,954	6,978	19,791	13,770	0	6021	37986
2043	102,160	101,640	27,840	10,393	2,910	7,484	20,356	0	0	20356	58342
2044	102,160	101,138	28,953	10,876	2,866	8,010	20,943	0	0	20943	79285
2045	102,160	100,635	30,112	11,381	2,824	8,558	21,554	0	0	21553	100839
2046	102,160	100,133	31,316	11,909	2,781	9,128	22,188	0	0	22188	123028
2047	102,160	99,630	32,569	12,461	2,740	9,721	22,847	0	0	22847	145875
2048	102,160	99,127	33,871	13,038	2,699	10,339	23,532	0	0	23532	169407
2049	102,160	98,625	35,226	13,641	2,658	10,983	24,243	0	0	24243	193650
2050	102,160	98,122	36,635	14,272	2,618	11,654	24,982	0	0	24981	218632
2051	102,160	97,620	38,101	14,931	2,579	12,352	25,748	0	0	25748	244381
2052	102,160	97,117	39,625	15,620	2,540	13,080	26,544	0	0	26544	270925

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Tax Exempt Municipal Lease

195 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE33.3K, 1 x SE50KUS (SolarEdge Technologies Ltd.) 98 x P1100	
Total System Price	\$270,512.00
<b>Purchase Price</b>	<b>\$270,512.00</b>
Loan Amount	\$270,512.00
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$81,153.60
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$81,153.60 in month 18 this payment level will continue for term of the loan.</small>	\$1,148.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$1,666.00
Total Payments <small>Over 20 years</small>	\$356,547.83

### Additional Incentives

Federal Investment Tax Credit (ITC) - 30% <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$81,153.60
<b>Net System Cost</b>	<b>\$189,358.40</b>

This proposal is valid until Oct 13 2023.



## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature

\_\_\_\_\_

Name

\_\_\_\_\_

Date

\_\_\_\_\_

## ABOUT EXACT SOLAR

Exact Solar is a local full-service solar company, installing solar in PA and NJ since 2005. We do all our work with our in-house installation team and we only install projects we sell and design. We don't broker out our installer labor, and we don't subcontract our work. We will hold your hand every step of the way through final permission to operate and registration with the SREC programs. We will make sure you not only have a good investment, but that you have peace of mind with the entire process. We are in the business of helping property owners reduce or eliminate their electric bills and save money while doing something good for the environment. We are committed to **hands-free, peace-of-mind solar**.

## EXPERIENCE

- Local full-service solar sales, design, installation, and service since 2005
- NJ and PA Leader in Solar Electric (PV), Solar Hot Water, and Solar Pool Heating Design and Installation
- Leading battery backup installer with experience with all leading battery technologies and brands
- Fully Licensed and Insured; NABCEP Certified Installer; Licensed Master Electrician
- Residential and Commercial Installations

## CUSTOMER SERVICE

- Your satisfaction is our highest priority.
- Complete turn-key installations - everything from engineering to permits to SREC registration.
- Excellent communication from initial consultation through final installation and beyond.
- Proactive system monitoring after installation included.
- Financing options for maximum customer flexibility.

### Exact Solar

5.0 ★★★★★ 39 reviews  
Solar energy company

ExactSolar  
4.84 from 113 Reviews  
How was this rating calculated?  
Rating trends

## TOP QUALITY PRODUCTS AND INSTALLATIONS

- All system components are from the leading "Tier 1" suppliers in the solar industry with the strongest warranties
- Committed to offering a wide array of solar electric home options: sloped roofs, flat roofs and stationary, integrated solar shingles, single-axis and dual-axis ground arrays; battery backup; EV-charger, consumption monitors, electric pool heat pumps, geothermal heating & cooling systems, and generator installations.
- Panel-level monitoring via online portal and phone app included.
- Free membership to the American Solar Energy Society (ASES) included - Join us in the grassroots movement working for a transition to a 100% clean energy economy.



## Contract for Solar Installation

### Contractor Information:

Exact Solar  
 82 Walker Lane  
 Newtown, PA  
 18940  
 (215) 621-8353

### Customer Information:

Middletown Township Public Works,  
 700 Veterans Hwy  
 Levittown, PA  
 19056

1. SCOPE OF WORK. Exact Solar will provide the services, materials and labor described herein, for the installation of a Solar Photovoltaic Grid-Tied System ('System') at the property located at 700 Veterans Hwy, Levittown, PA 19056 (the 'Site'). This includes building and construction materials, necessary labor and site security, and the required tools and machinery needed for completion of construction. Key components to include:

Modules	195	AXITECAC-540MH/144V
Inverters	2	SolarEdge Technologies Ltd. 1 x SE33.3K, 1 x SE50KUS
Batteries	-	-
Other Components	98 x P1100	

\* With Customer's consent, module brand and size may be changed, subject to the constraint that total System wattage must not decrease, due to unforeseeable supply constraints.

2. DESCRIPTION OF SERVICES. Exact Solar will provide to the customer the following services for the installation of the System (collectively, the 'Service'):

- Engineer and design System
- Obtain building and electrical permits
- Reserve state-based incentive and submit application for incentive monitoring (if applicable)
- Facilitate interconnection approval with utility and post-installation meter exchange(if applicable)
- Install System
- Test System to ensure it is operational
- Obtain Inspection Approvals

3. TOTAL PRICE:

Total Price of the System and Services	\$ 270512.00
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4. PAYMENTS

- a. An initial payment of \$ 2,500.00 is due at the time of execution of this Agreement.
- b. 50% of the balance of \$ 268,012.00 will be due upon the start of installation
- c. The remaining 50% of \$ 268,012.00 will be due substantial completion of installation of the System.
- d. If payments are to be made through a Company-approved third-party financing company, these payment terms will be replaced by those offered by the third-party financing company.

Signed By: \_\_\_\_\_

Date: Oct 13 2023



This proposal has been prepared by Exact Solar using tools from OpenSolar. Please visit [www.opensolar.com/proposal-disclaimer](http://www.opensolar.com/proposal-disclaimer) for additional disclosures from OpenSolar.

**PV Feasibility Study**  
(SolarEdge - Commercial)

***PUBLIC WORKS***

**Project Address:** 700 Veterans Hwy, Levittown, PA 19056

**Service Size:** 3-Phase,4 wire, 208/120V wye 600 amps

**Meter Rating:** CL20 120/480V

**Roof size:** 7386 sq ft.

**Maximum number of panels:** 195 (75.4% of roof coverage)

**System Size:** 105.3 kW DC

**Projected Annual Production:** 111,693 kWh

**Actual Annual kWh used (2022):** 8,400 kWh

**Solar production percentage of total kWh used:** 1,329.7%



**PV Feasibility Study**  
(SolarEdge - Commercial)

***PUBLIC WORKS***

**Interconnection Point:**

The meter and the transformer are located on the west of the building about 50ft. Exterior conduit can enter the building where the equipment will be installed. There is space available on the 600 amp rated busbar in the main service panel for the interconnection point.

**Equipment Location:**

Exterior: Next to the meter at the south road entrance of the building.

Interior: In the back of the mechanical room to the right of the automatic transfer switch.

Exterior:



**PV Feasibility Study**  
 (SolarEdge - Commercial)

**PUBLIC WORKS**

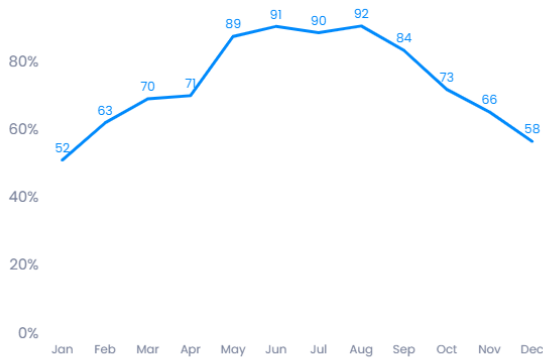
**Additional production information:**

**Project Info**

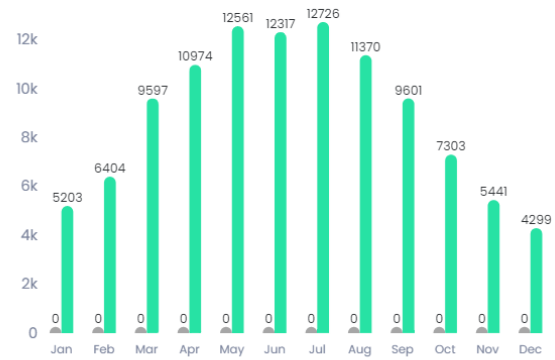
Segment	Modules	Size (DC STC)	Production	ASA	Consumption	PV Offset	Roof Area	Roof Coverage
All total	195	105.3 kW	107,795 kWh	79%	0 kWh	0%	7386 ft <sup>2</sup>	75.4%

Nearest weather station: 724085, PHILADELPHIA NE PHILADELPHIA, PA (8.4 miles)

**Average Monthly Solar Access**



**Monthly Consumption and Production (kWh)**



**Segments**

Segment	Modules	Size (DC STC)	Production	ASA	Azimuth	Tilt	Roof Area	Roof Coverage
✓ Segment A	86 (540W)	46.44 kW	51,845 kWh	89%	251°	18°	3018 ft <sup>2</sup>	81.38%
✓ Segment B	77 (540W)	41.58 kW	41,194 kWh	88%	71°	18°	3018 ft <sup>2</sup>	72.85%
✓ Segment C	32 (540W)	17.28 kW	14,757 kWh	60%	162°	30°	1349 ft <sup>2</sup>	67.75%



## Solar Access Shade Report Prepared For:



### **Middletown Township Public Works 700 Veterans Hwy Levittown, PA**

700 Veterans Highway, Levittown, Pennsylvania 19056,  
United States

Lat, Long: 40.1603, -74.8954

Time Zone: GMT-5

Weather Station: 724085, PHILADELPHIA NE PHILADELPHIA, PA 8.4 miles

Report Author: Evan Johnson

Report Created On: June 9, 2023





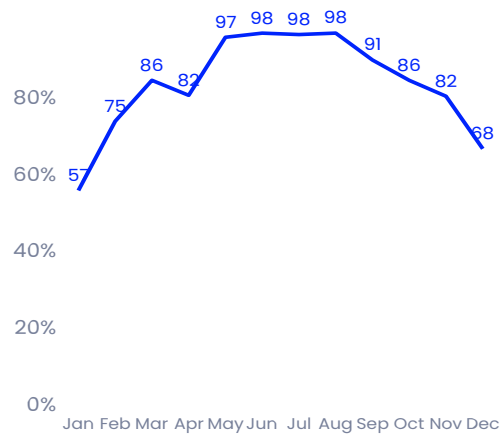
## Summary

Array	Panel Count	Azimuth (deg)	Tilt (deg)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
Segment A	86	251.4° True	17.9°	87.85%	88.95%	78.15%
Segment B	77	71.4° True	18.4°	78.47%	87.90%	68.97%
Segment C	32	161.7° True	29.9°	98.20%	59.78%	58.70%
<b>Weighted Average by panel count</b>					<b>83.75%</b>	<b>71.33%</b>



## Solar Access: Segment A

Average Monthly



Average Annual

**88.95%**

TSRF: 78.15%

TOF: 87.85%

Summer (May - Oct): 96%

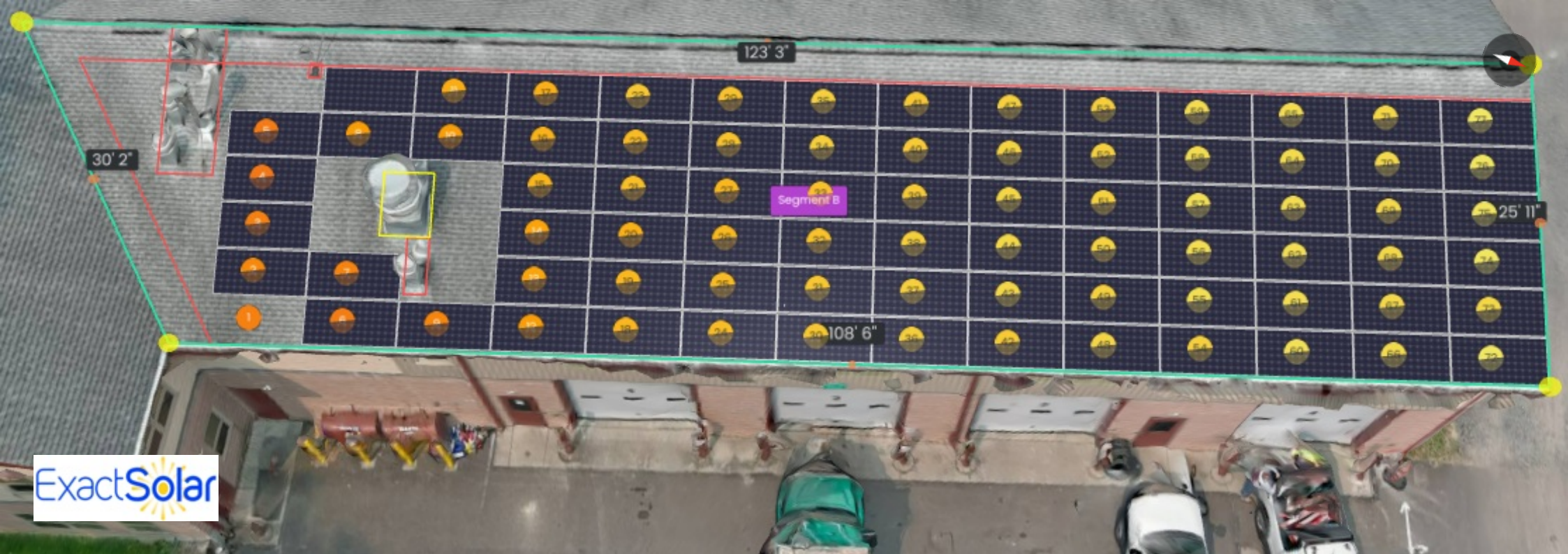
Winter (Nov - Apr): 76%

Tilt: 17.9°

Azimuth: 251.4° True

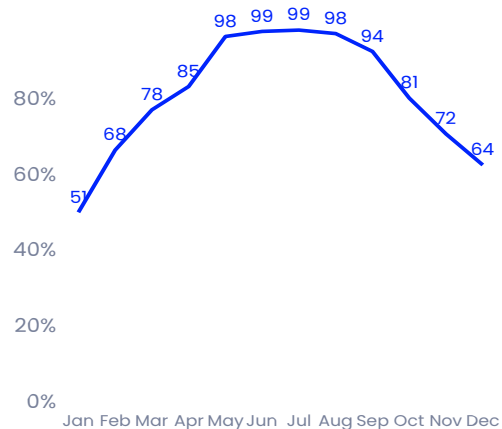
Solar Access Viewshed Heading:

180°



## Solar Access: Segment B

Average Monthly



Average Annual

**87.90%**

TSRF: 68.97%

TOF: 78.47%

Summer (May - Oct): 98%

Winter (Nov - Apr): 71%

Tilt: 18.4°

Azimuth: 71.4° True

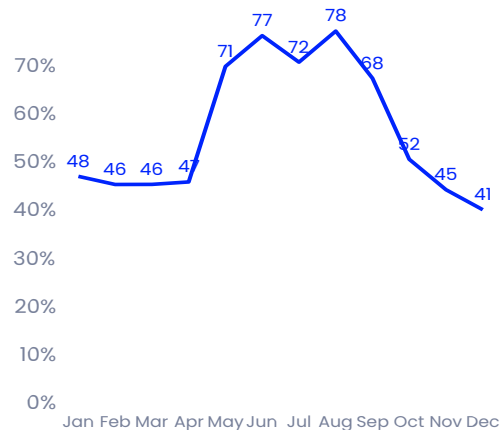
Solar Access Viewshed Heading:

180°



## Solar Access: Segment C

Average Monthly



Average Annual

**59.78%**

TSRF: 58.70%

TOF: 98.20%

Summer (May - Oct): 73%

Winter (Nov - Apr): 47%

Tilt: 29.9°

Azimuth: 161.7° True

Solar Access Viewshed Heading:

180°



**Prepared by: Joe Robinson**  
215-917-4761  
joe.robinson@exactsolar.com

Community Park (Middletown Twp)  
2600 Langhorne Yardley Rd  
Langhorne, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Nick,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Joe Robinson

### Recommended System Option

64.8 kW

System Size

\$170,680

Total System Price  
including tax

\$119,476

Net System Price  
including tax

10 Years  
11 Months

Payback



### System Components

#### Solar Panels

**AXITEC**

**64.800 kW** Total Solar Power

**120 x 540 Watt Panels** (AC-540MH/144V)

**76,342 kWh** per year

#### Inverter

**SolarEdge Technologies Ltd.**

**50.000 kW** Total Inverter Rating

1 x SE50K

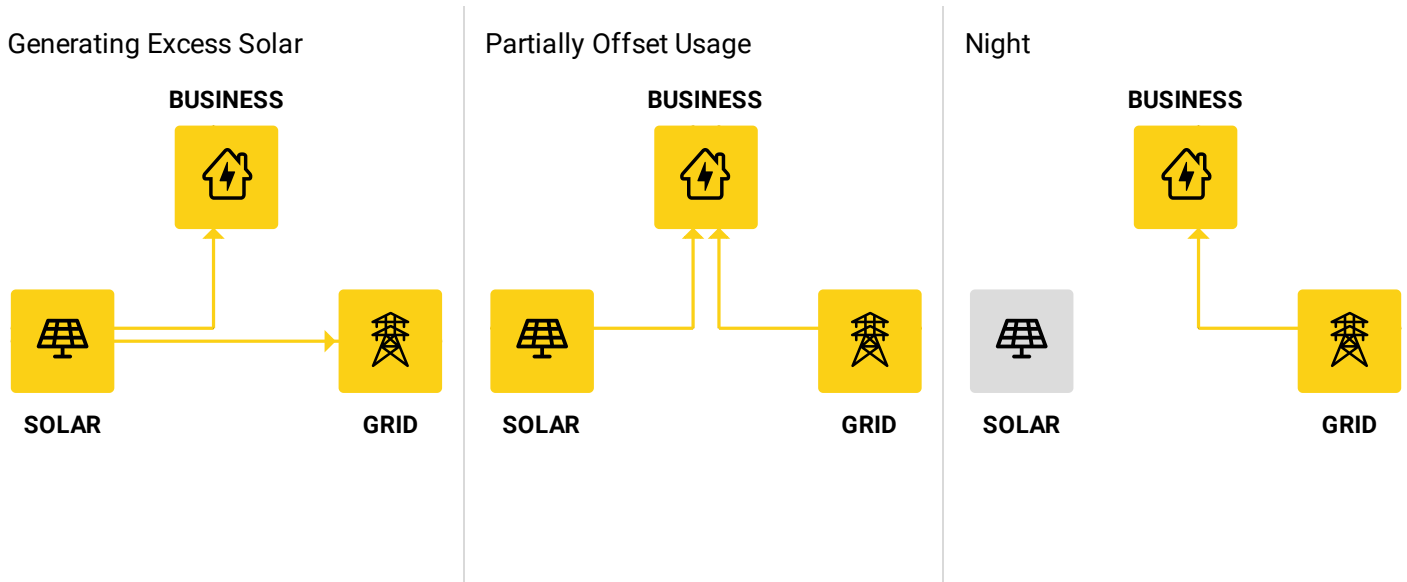
#### Power Optimizer

1100 W, Power Optimizer, specifically designed to work with SolarEdge inverters

60 x P1100

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty

## How Your System Works



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



**Each Year**

**57%**  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

**29 tons**  
Avoided CO<sub>2</sub> per year

**Over System Lifetime**

**530,743**  
Car miles avoided

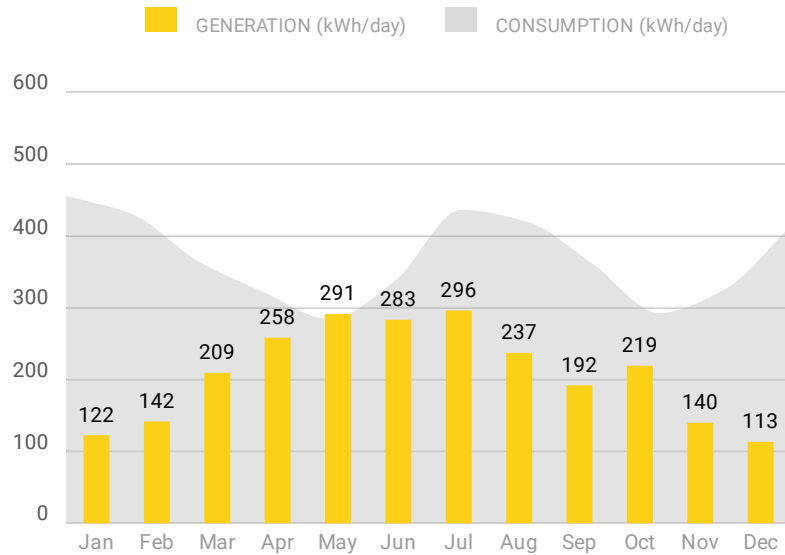
**5,495**  
Trees planted

**612**  
Long haul flights avoided



## System Performance

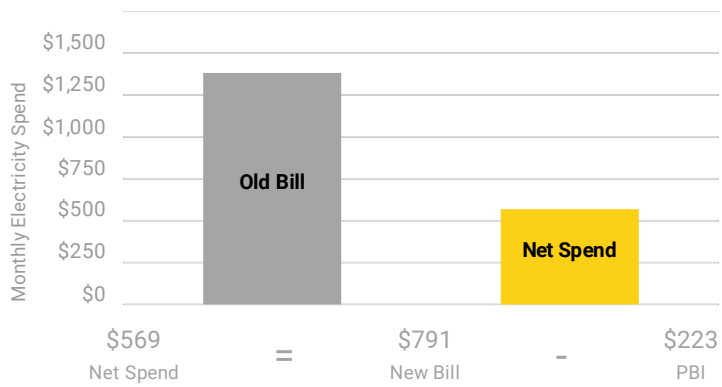
**57%**  
Energy From Solar



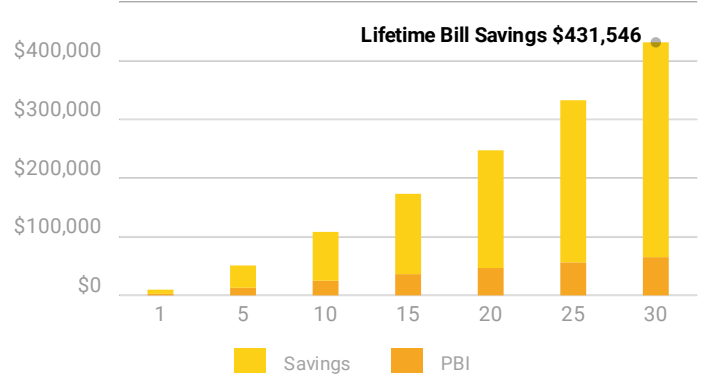
System Performance Assumptions: System Total losses: 13.9%, Inverter losses: 2.0%, Optimizer losses: 1.4%, Shading losses: 7.7%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 20 panels with Azimuth 178 and Slope 33, 51 panels with Azimuth 178 and Slope 33, 12 panels with Azimuth 178 and Slope 14, 37 panels with Azimuth 358 and Slope 13.

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$65,248.08</b> \$2,671.96 in year 1
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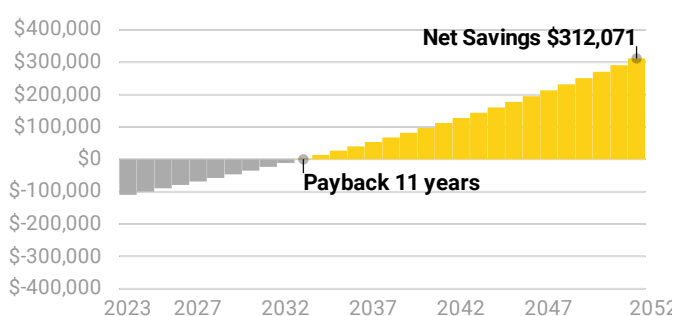
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 135106 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

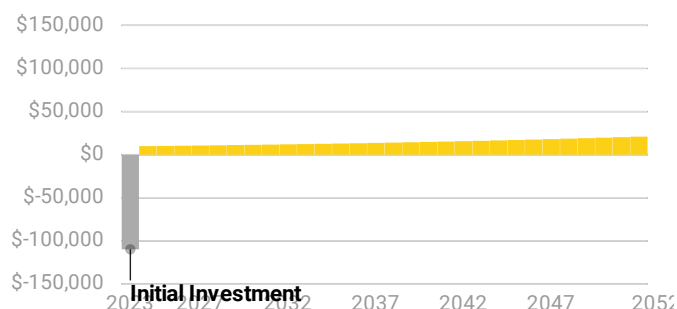
## Net Financial Impact Cash

$$\begin{array}{rcl}
 \$431,546 & - & \$119,476 & = & \$312,071 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$42,092**

Net Present Value

**18.3 years**

Discounted Payback  
Period

**261%**

Total Return on  
Investment

**9.5%**

Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	135,106	76,342	16,579	9,494	2,672	6,822	9,757	170,680	51,204	(109718)	(109718)
2024	135,106	75,998	17,242	9,907	2,633	7,274	9,969	0	0	9968	(99750)
2025	135,106	75,655	17,932	10,338	2,595	7,742	10,189	0	0	10189	(89560)
2026	135,106	75,311	18,649	10,787	2,558	8,229	10,420	0	0	10419	(79140)
2027	135,106	74,968	19,395	11,256	2,520	8,735	10,660	0	0	10659	(68481)
2028	135,106	74,624	20,171	11,745	2,484	9,261	10,910	0	0	10909	(57571)
2029	135,106	74,280	20,978	12,255	2,448	9,807	11,170	0	0	11170	(46400)
2030	135,106	73,937	21,817	12,787	2,412	10,375	11,442	0	0	11441	(34959)
2031	135,106	73,593	22,690	13,342	2,377	10,965	11,724	0	0	11724	(23235)
2032	135,106	73,250	23,597	13,921	2,342	11,579	12,018	0	0	12017	(11217)
2033	135,106	72,906	24,541	14,525	2,308	12,218	12,323	0	0	12323	1106
2034	135,106	72,563	25,523	15,155	2,274	12,882	12,641	0	0	12641	13747
2035	135,106	72,219	26,544	15,813	2,240	13,572	12,971	0	0	12971	26718
2036	135,106	71,876	27,605	16,498	2,208	14,291	13,314	0	0	13314	40032

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	135,106	71,532	28,710	17,213	2,175	15,038	13,671	0	0	13671	53703
2038	135,106	71,189	29,858	17,959	2,143	15,817	14,041	0	0	14041	67745
2039	135,106	70,845	31,052	18,738	2,111	16,626	14,426	0	0	14425	82171
2040	135,106	70,502	32,294	19,549	2,080	17,469	14,825	0	0	14825	96996
2041	135,106	70,158	33,586	20,396	2,049	18,347	15,240	0	0	15239	112235
2042	135,106	69,814	34,930	21,279	2,019	19,260	15,670	0	0	15669	127905
2043	135,106	69,471	36,327	22,200	1,989	20,211	16,116	0	0	16115	144021
2044	135,106	69,127	37,780	23,160	1,959	21,201	16,578	0	0	16578	160599
2045	135,106	68,784	39,291	24,162	1,930	22,232	17,058	0	0	17058	177658
2046	135,106	68,440	40,863	25,207	1,901	23,306	17,556	0	0	17556	195214
2047	135,106	68,097	42,497	26,297	1,873	24,425	18,072	0	0	18072	213286
2048	135,106	67,753	44,197	27,434	1,844	25,590	18,607	0	0	18607	231893
2049	135,106	67,410	45,965	28,620	1,817	26,803	19,162	0	0	19161	251055
2050	135,106	67,066	47,803	29,857	1,789	28,067	19,736	0	0	19736	270791
2051	135,106	66,723	49,716	31,147	1,762	29,384	20,331	0	0	20331	291122
2052	135,106	66,379	51,704	32,492	1,736	30,756	20,948	0	0	20948	312070

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Cash

120 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE50K (SolarEdge Technologies Ltd.) 60 x P1100	
Total System Price	\$170,679.50
<b>Purchase Price</b>	<b>\$170,679.50</b>
Price Per Watt	\$2.63 per Watt For 64.800 kW system
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$51,203.85</b>
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This proposal is valid until Aug 21 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	85,339.75
Passing Inspection	82,839.75
<b>Total</b>	<b>170,679.50</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

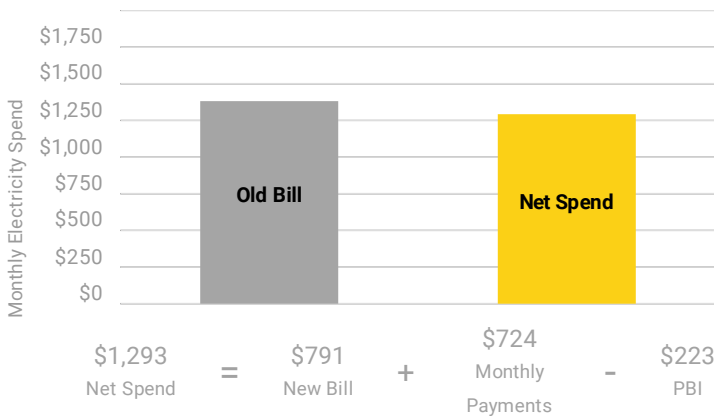
Date \_\_\_\_\_

### Payment Details: Offline Payment

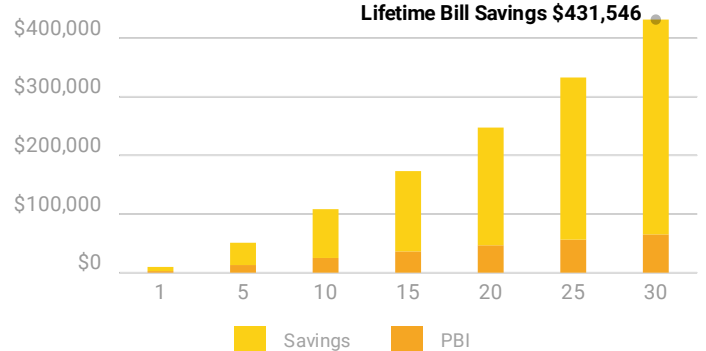
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

<b>Performance Based Incentives (Over System Lifetime)</b>	<b>\$65,248.08</b> \$2,671.96 in year 1
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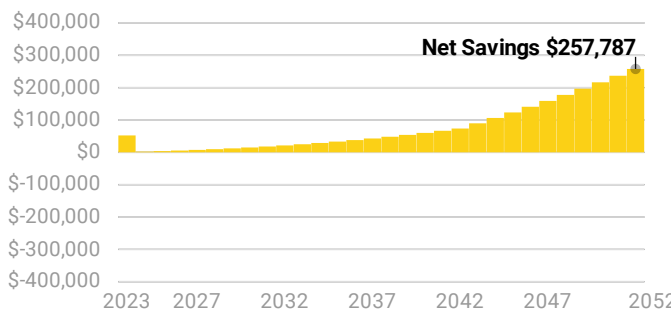
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 135106 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

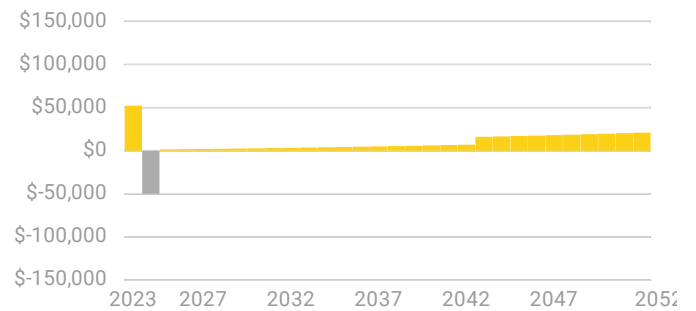
## Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$431,546 & - & \$173,760 & = & \$257,787 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$73,982**

Net Present Value

**148%**

Total Return on Investment

**6.1%**

Rate of Return on Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	135,106	76,342	16,579	9,494	2,672	6,822	9,757	8,688	51,204	52272	52272
2024	135,106	75,998	17,242	9,907	2,633	7,274	9,969	59,892	0	(49923)	2349
2025	135,106	75,655	17,932	10,338	2,595	7,742	10,189	8,688	0	1501	3850
2026	135,106	75,311	18,649	10,787	2,558	8,229	10,420	8,688	0	1731	5582
2027	135,106	74,968	19,395	11,256	2,520	8,735	10,660	8,688	0	1971	7554
2028	135,106	74,624	20,171	11,745	2,484	9,261	10,910	8,688	0	2221	9776
2029	135,106	74,280	20,978	12,255	2,448	9,807	11,170	8,688	0	2482	12258
2030	135,106	73,937	21,817	12,787	2,412	10,375	11,442	8,688	0	2753	15012
2031	135,106	73,593	22,690	13,342	2,377	10,965	11,724	8,688	0	3036	18048
2032	135,106	73,250	23,597	13,921	2,342	11,579	12,018	8,688	0	3329	21378
2033	135,106	72,906	24,541	14,525	2,308	12,218	12,323	8,688	0	3635	25013
2034	135,106	72,563	25,523	15,155	2,274	12,882	12,641	8,688	0	3953	28966
2035	135,106	72,219	26,544	15,813	2,240	13,572	12,971	8,688	0	4283	33250
2036	135,106	71,876	27,605	16,498	2,208	14,291	13,314	8,688	0	4626	37876

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	135,106	71,532	28,710	17,213	2,175	15,038	13,671	8,688	0	4983	42859
2038	135,106	71,189	29,858	17,959	2,143	15,817	14,041	8,688	0	5353	48212
2039	135,106	70,845	31,052	18,738	2,111	16,626	14,426	8,688	0	5737	53950
2040	135,106	70,502	32,294	19,549	2,080	17,469	14,825	8,688	0	6137	60088
2041	135,106	70,158	33,586	20,396	2,049	18,347	15,240	8,688	0	6551	66639
2042	135,106	69,814	34,930	21,279	2,019	19,260	15,670	8,688	0	6981	73621
2043	135,106	69,471	36,327	22,200	1,989	20,211	16,116	0	0	16115	89736
2044	135,106	69,127	37,780	23,160	1,959	21,201	16,578	0	0	16578	106315
2045	135,106	68,784	39,291	24,162	1,930	22,232	17,058	0	0	17058	123373
2046	135,106	68,440	40,863	25,207	1,901	23,306	17,556	0	0	17556	140930
2047	135,106	68,097	42,497	26,297	1,873	24,425	18,072	0	0	18072	159002
2048	135,106	67,753	44,197	27,434	1,844	25,590	18,607	0	0	18607	177609
2049	135,106	67,410	45,965	28,620	1,817	26,803	19,162	0	0	19161	196770
2050	135,106	67,066	47,803	29,857	1,789	28,067	19,736	0	0	19736	216507
2051	135,106	66,723	49,716	31,147	1,762	29,384	20,331	0	0	20331	236838
2052	135,106	66,379	51,704	32,492	1,736	30,756	20,948	0	0	20948	257786

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%



## Quotation

### Payment Option: Tax Exempt Municipal Lease

120 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE50K (SolarEdge Technologies Ltd.) 60 x P1100	
Total System Price	\$170,679.50
<b>Purchase Price</b>	<b>\$170,679.50</b>
Loan Amount	\$170,679.50
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$51,203.85
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$51,203.85 in month 18 this payment level will continue for term of the loan.</small>	\$724.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$1,051.00
Total Payments <small>Over 20 years</small>	\$224,963.76

### Additional Incentives

Federal Investment Tax Credit (ITC) - 30% <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$51,203.85
<b>Net System Cost</b>	<b>\$119,475.65</b>

This proposal is valid until Aug 21 2023.

**PV Feasibility Study**  
(SolarEdge - Commercial)

**COMMUNITY PARK**

**Project Address:** 2600 Langhorne Yardley Rd, Langhorne, PA 19047

**Service Size:** 3-Phase,4 wire, 208/120V wye 600 amps

**Meter Rating:** CL20 480/120

**Roof size:** 8,282 sq ft.

**Maximum number of panels:** 271 (70.7% of roof coverage)

**System Size:** 64.8 kW DC

**Projected Annual Production:** 76,303 kWh

**Actual Annual kWh used (2022):** 39,408kWh

**Solar production percentage of total kWh used:** 193.6%



**PV Feasibility Study**  
(SolarEdge - Commercial)

**COMMUNITY PARK**

**Interconnection Point:**

The meter and MSP are located on the east side of the building in an attached mechanical room. The MSP is 225A breaker.

**Equipment Location:**

Exterior: Next to the meter on the east side of the building.

Interior: None.

Exterior:



**PV Feasibility Study**  
 (SolarEdge - Commercial)

**COMMUNITY PARK**

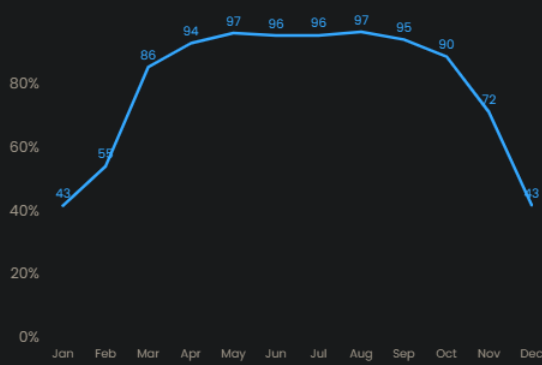
**Additional production information:**

**Overview**

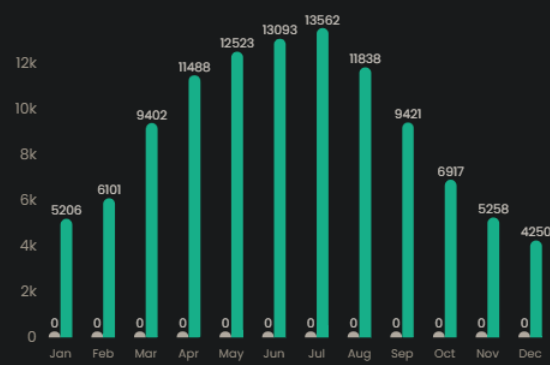
Segment	Modules	Size (DC STC)	Production	ASA	Consumption	PV Offset	Roof Area	Roof Coverage
All total	271	109,755 kW	109,059 kWh	89%	0 kWh	0%	8282 ft <sup>2</sup>	70.66%

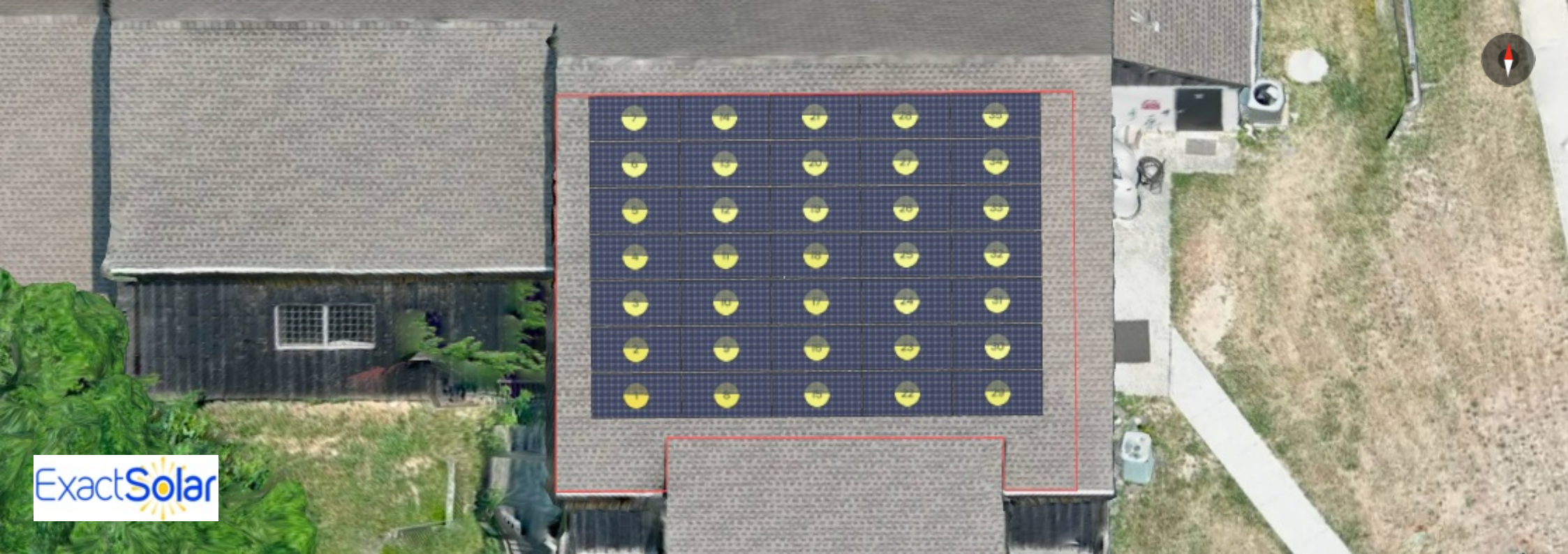
Nearest weather station: 724095, TRENTON MERCER COUNTY AP, NJ (6.3 miles)

**Average Monthly Solar Access**



**Monthly Consumption and Production (kWh)**





## Solar Access Shade Report Prepared For:



**Middletown Township Community Park 2600 Langhorne  
Yardley rd. Langhorne, PA**

2600 Langhorne Yardley Road, Langhorne, Pennsylvania  
19047, United States

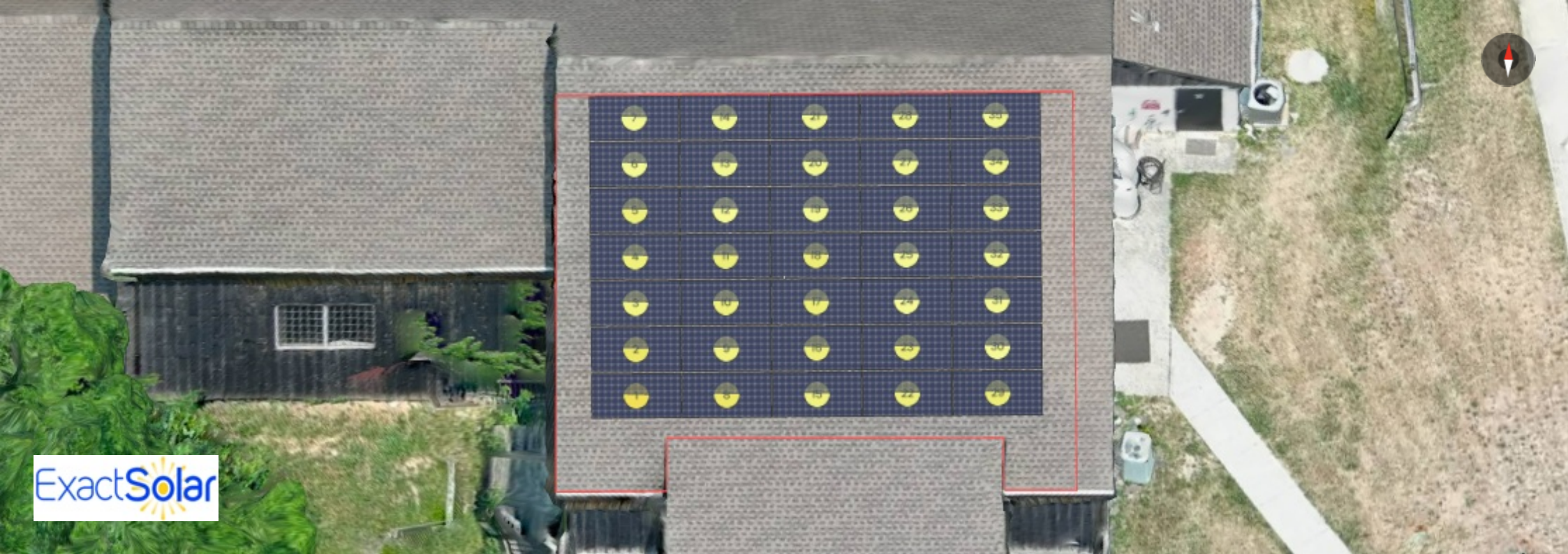
Lat, Long: 40.2121, -74.8921

Time Zone: GMT-5

Weather Station: 724095, TRENTON MERCER COUNTY AP, NJ 6.3 miles

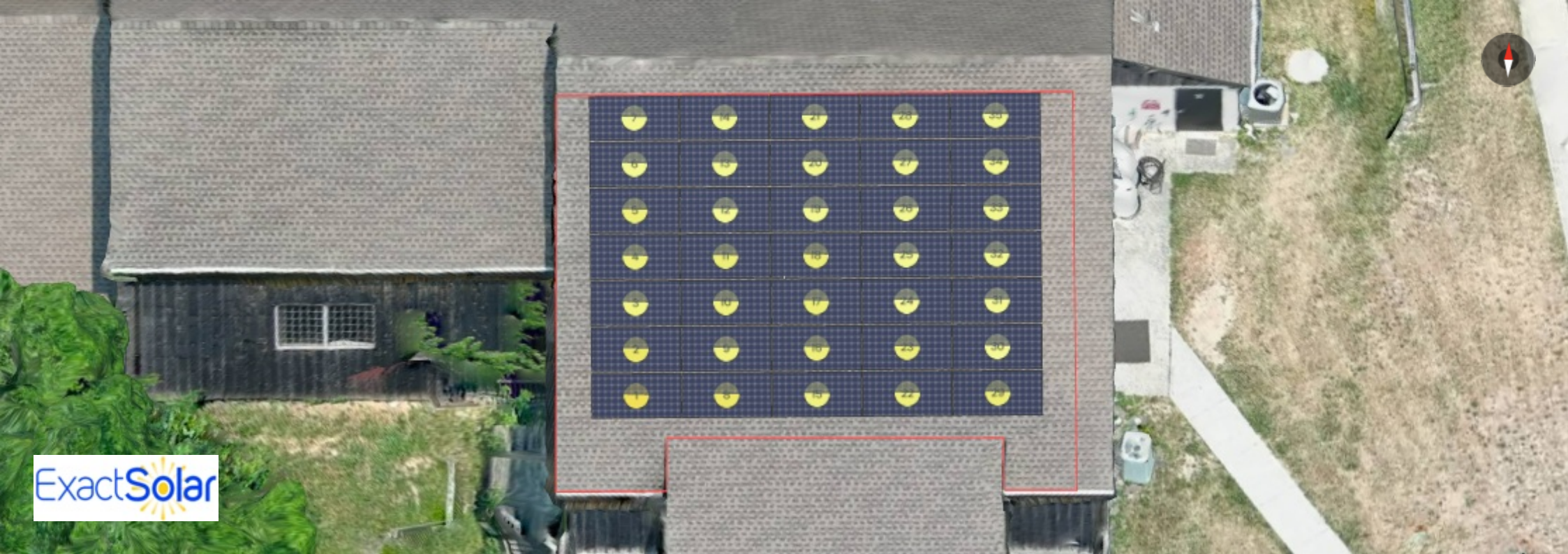
Report Author: Evan Johnson

Report Created On: July 13, 2023



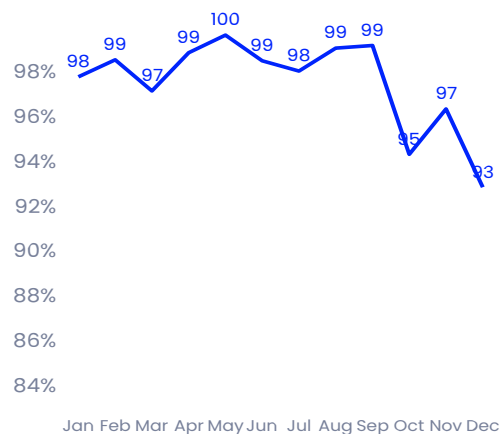
## Summary

Array	Panel Count	Azimuth (deg)	Tilt (deg)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
Segment A	35	177.7° True	31.9°	99.58%	98.23%	97.81%
Segment B	12	178.0° True	13.9°	94.37%	96.62%	91.18%
Segment C	16	177.9° True	32.8°	99.65%	91.31%	90.99%
Segment D	20	178.2° True	33.4°	99.71%	71.34%	71.13%
Segment E	60	357.8° True	32.3°	55.56%	91.52%	50.85%
Segment F	37	357.9° True	13°	74.68%	92.70%	69.22%
Segment G	15	358.3° True	33.7°	54.24%	85.45%	46.35%
<b>Weighted Average by panel count</b>					90.71%	70.27%



## Solar Access: Segment A

Average Monthly



Average Annual

**98.23%**

TSRF: 97.81%

TOF: 99.58%

Summer (May - Oct): 99%

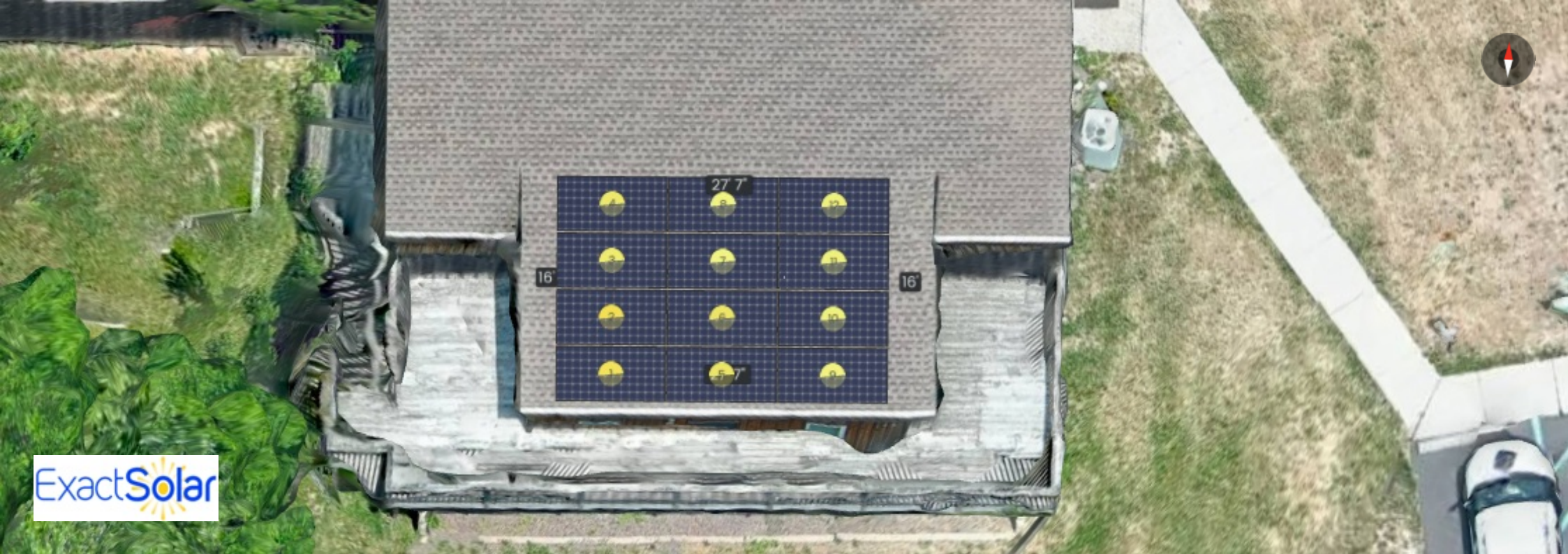
Winter (Nov - Apr): 97%

Tilt: 31.9°

Azimuth: 177.7° True

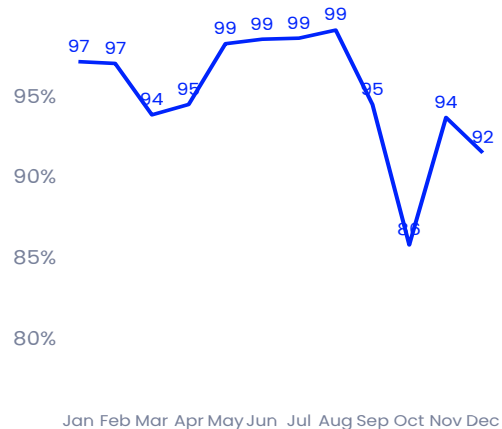
Solar Access Viewshed Heading:

180°



## Solar Access: Segment B

Average Monthly



Average Annual

**96.62%**

TSRF: 91.18%

TOF: 94.37%

Summer (May - Oct): 98%

Winter (Nov - Apr): 94%

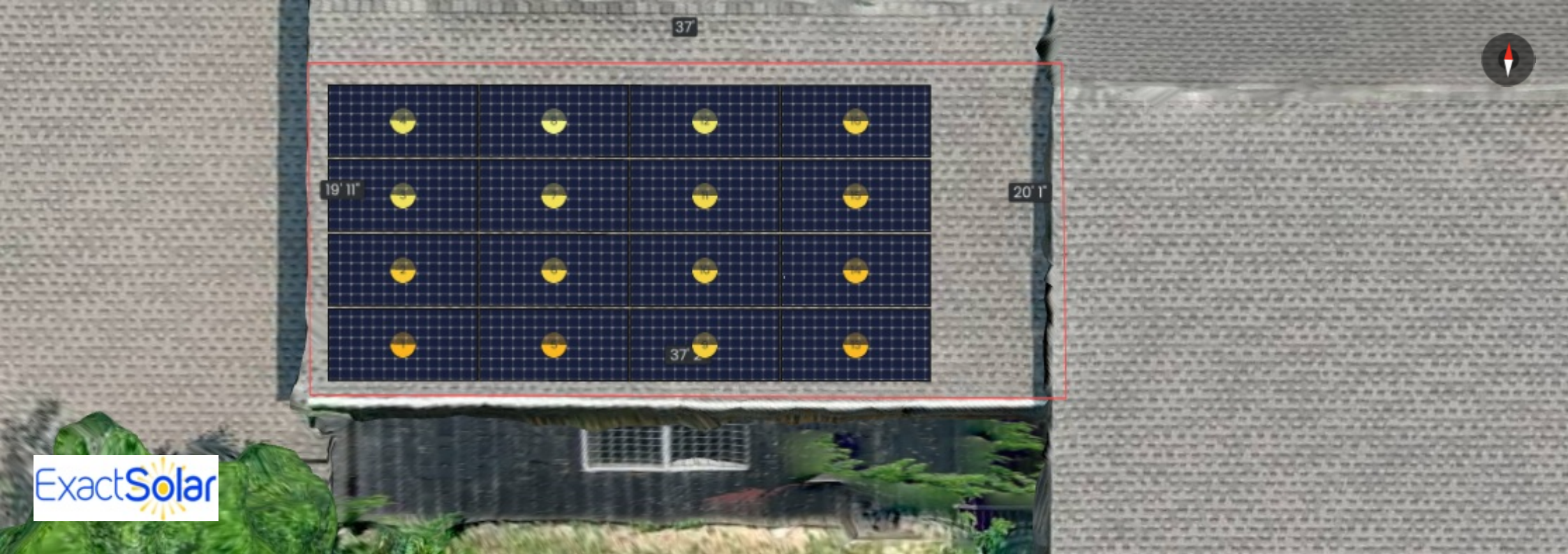
Tilt: 13.9°

Azimuth: 178.0° True

Solar Access Viewshed Heading:

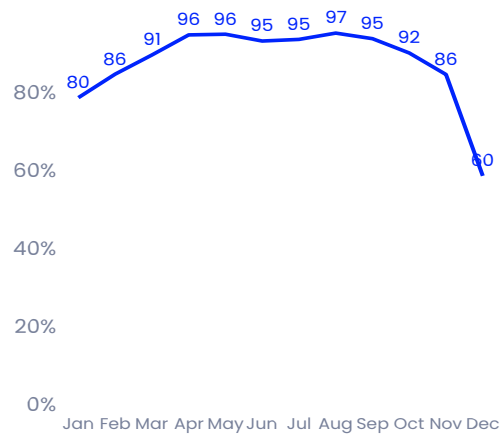
180°





## Solar Access: Segment C

Average Monthly



Average Annual

**91.31%**

TSRF: 90.99%

TOF: 99.65%

Summer (May - Oct): 96%

Winter (Nov - Apr): 84%

Tilt: 32.8°

Azimuth: 177.9° True

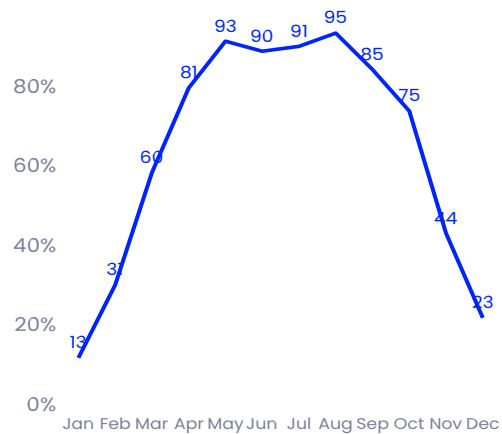
Solar Access Viewshed Heading:

180°



## Solar Access: Segment D

Average Monthly



Average Annual

**71.34%**

TSRF: 71.13%

TOF: 99.71%

Summer (May - Oct): 91%

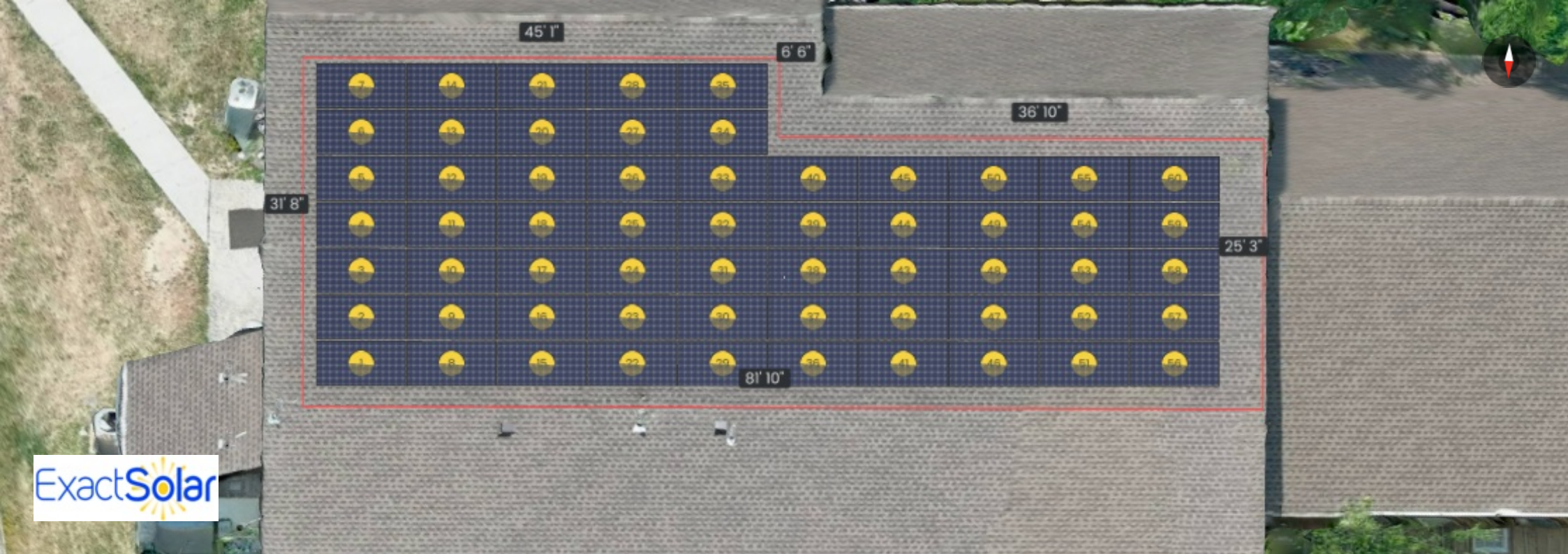
Winter (Nov - Apr): 47%

Tilt: 33.4°

Azimuth: 178.2° True

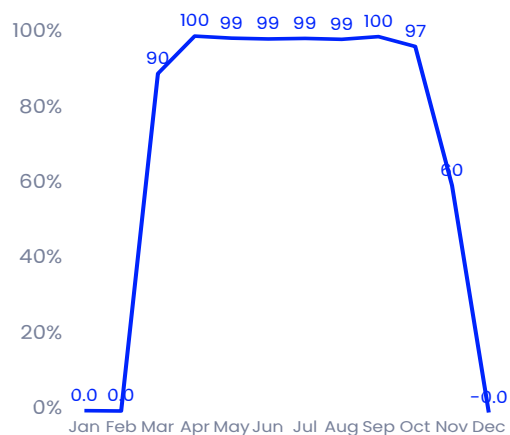
Solar Access Viewshed Heading:

180°



## Solar Access: Segment E

Average Monthly



Average Annual

**91.52%**

TSRF: 50.85%

TOF: 55.56%

Summer (May - Oct): 99%

Winter (Nov - Apr): 50%

Tilt: 32.3°

Azimuth: 357.8° True

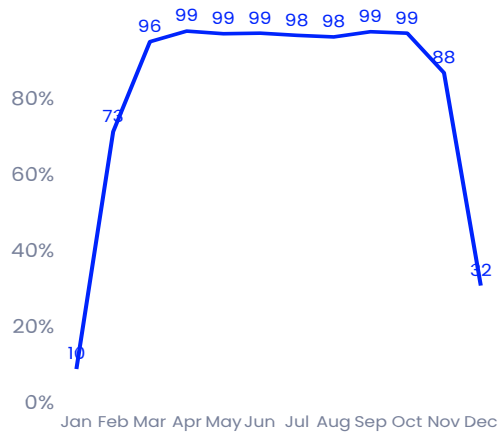
Solar Access Viewshed Heading:

180°



## Solar Access: Segment F

Average Monthly



Average Annual

**92.70%**

TSRF: 69.22%

TOF: 74.68%

Summer (May - Oct): 98%

Winter (Nov - Apr): 71%

Tilt: 13°

Azimuth: 357.9° True

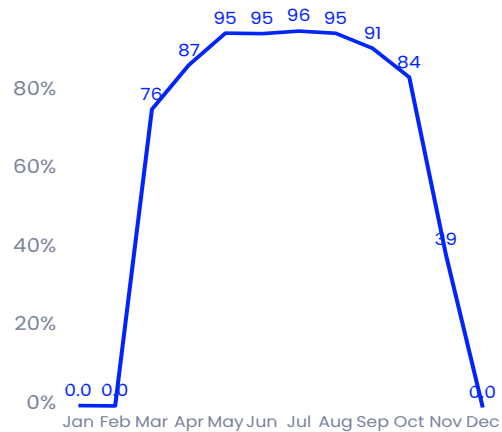
Solar Access Viewshed Heading:

180°



## Solar Access: Segment G

Average Monthly



Average Annual

**85.45%**

TSRF: 46.35%

TOF: 54.24%

Summer (May - Oct): 95%

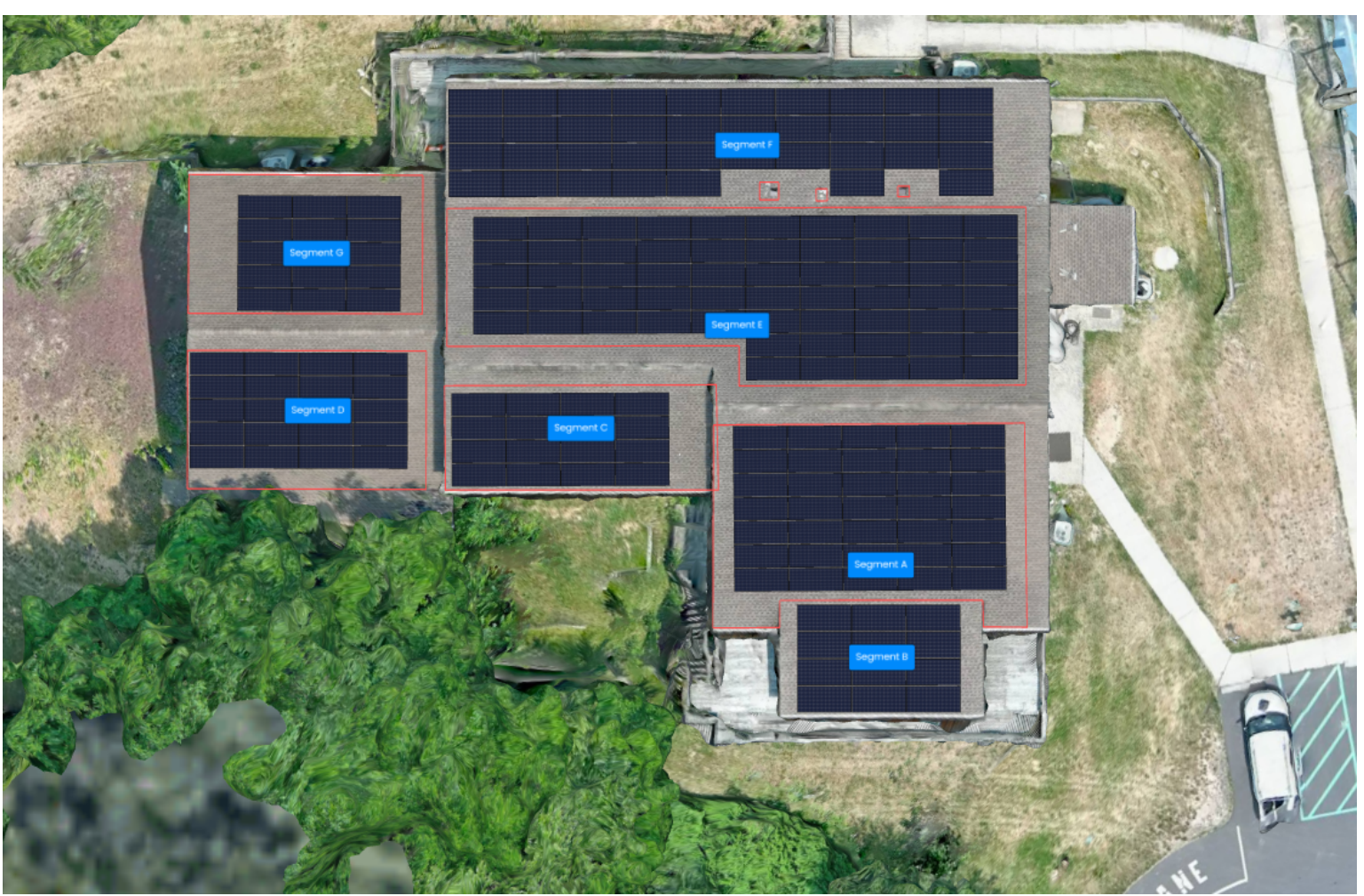
Winter (Nov - Apr): 41%

Tilt: 33.7°

Azimuth: 358.3° True

Solar Access Viewshed Heading:

180°



**Prepared by: Joe Robinson**  
215-917-4761  
joe.robinson@exactsolar.com

Community/Senior Center (Middletown Twp)  
2140 Trenton Rd  
Levittown, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Nick,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Joe Robinson

### Recommended System Option

171.18 kW

System Size

\$430,593

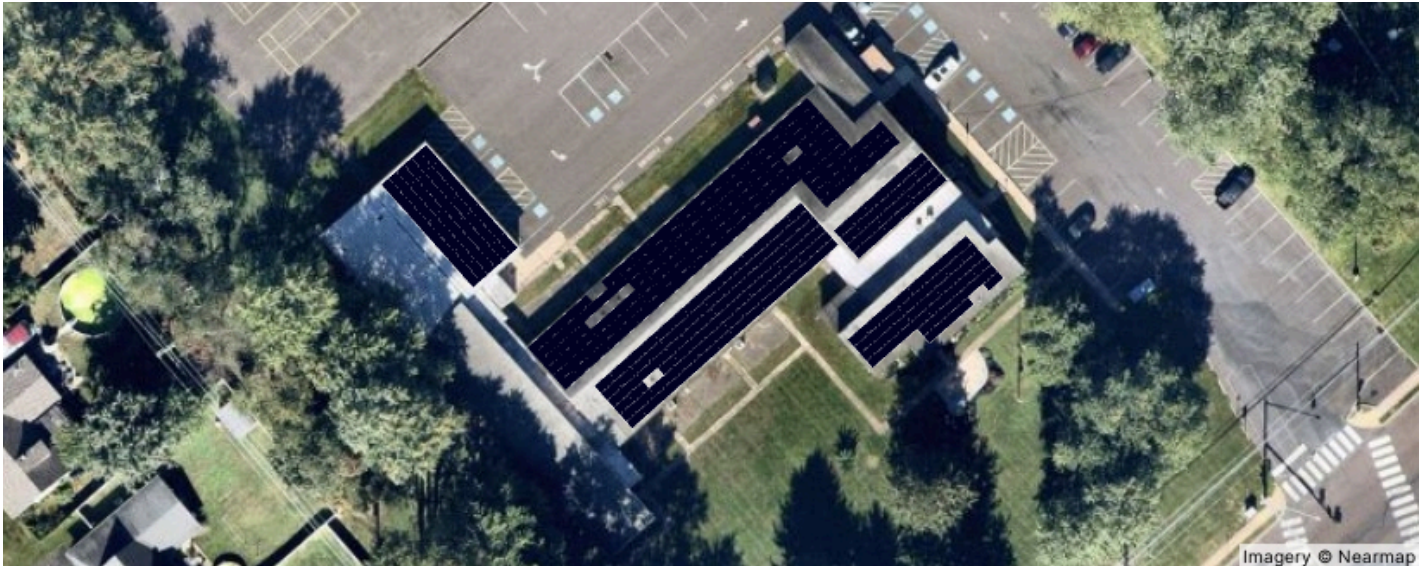
Total System Price including tax

\$301,415

Net System Price including tax

11 years  
11 months

Payback



Imagery © Nearmap

### System Components

#### Solar Panels

**AXITEC**

171.180 kW Total Solar Power

317 x 540 Watt Panels (AC-540MH/144V)

185,679 kWh per year

#### Inverter

**SolarEdge Technologies Ltd.**

50.000 kW Total Inverter Rating

1 x SE50KUS

#### P1100 Power Optimizer

1100 W, Power Optimizer, specifically designed to work with SolarEdge inverters

159 x P1100

#### Inverter

**SolarEdge Technologies Ltd.**

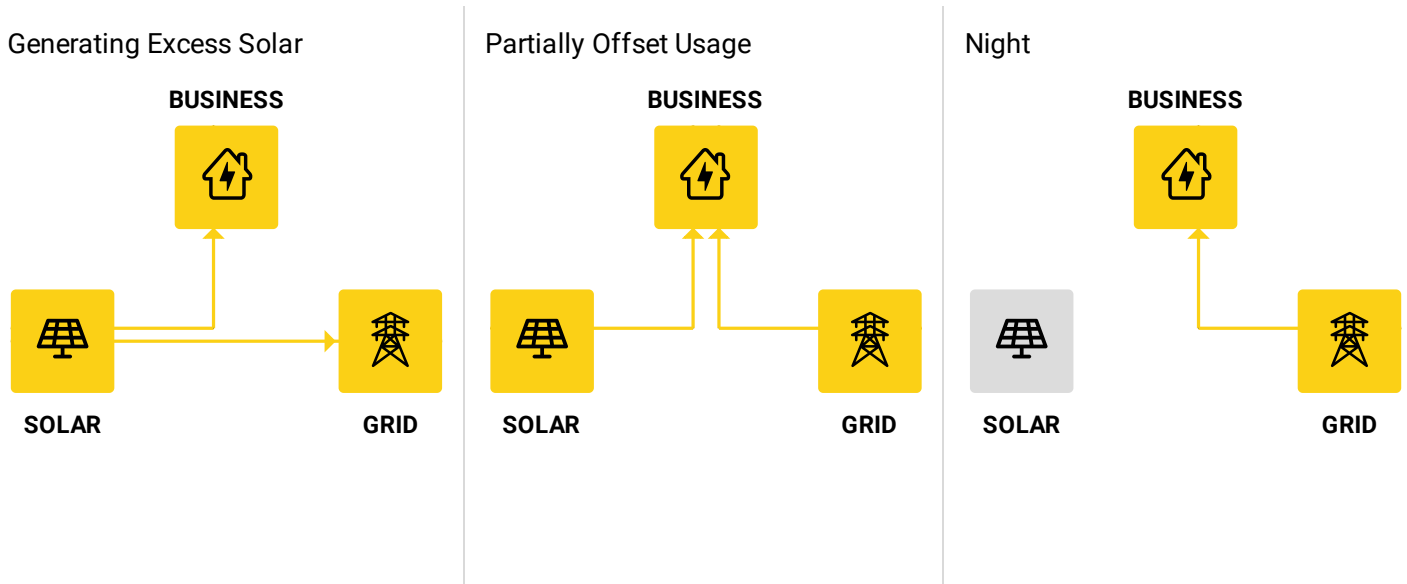
100.000 kW Total Inverter Rating

1 x SE100KUS

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty



## How Your System Works



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



**Each Year**

92%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

70 tons  
Avoided CO<sub>2</sub> per year

**Over System Lifetime**

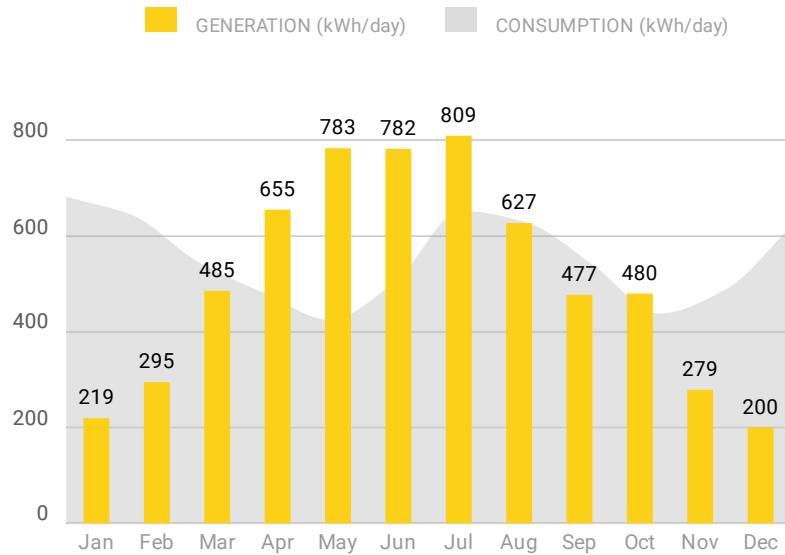
1,290,878  
Car miles avoided

13,364  
Trees planted

1,488  
Long haul flights avoided

## System Performance

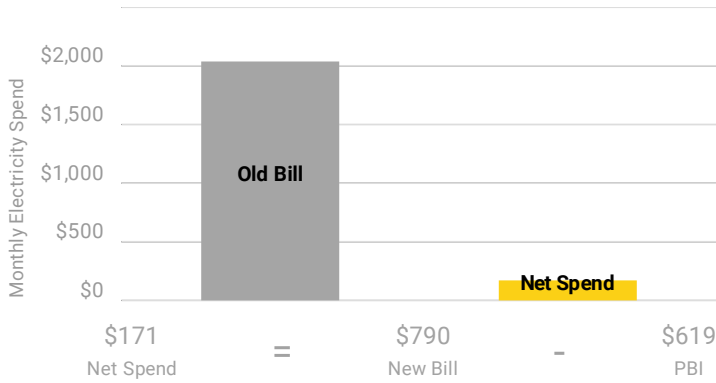
92%  
Energy From Solar



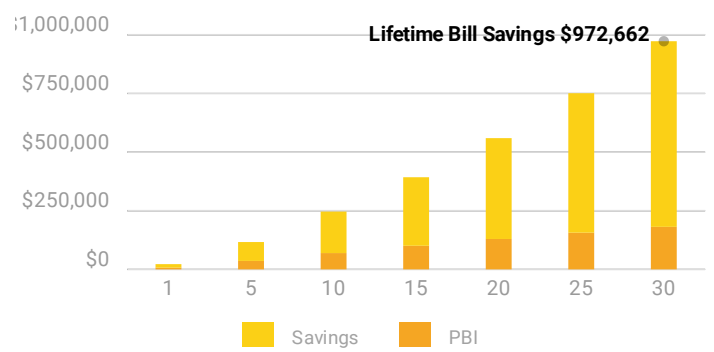
System Performance Assumptions: System Total losses: 14.9%, Inverter losses: 2.2%, Optimizer losses: 1.4%, Shading losses: 7.0%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 148 panels with Azimuth 138 and Slope 18, 42 panels with Azimuth 48 and Slope 2, 127 panels with Azimuth 318 and Slope 19.

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$181,368.06</b> \$7,427.16 in year 1
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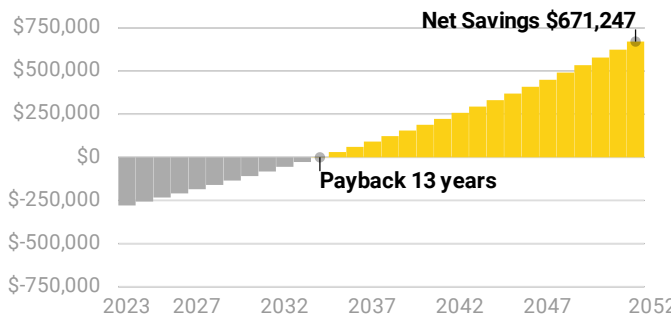
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 202024 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

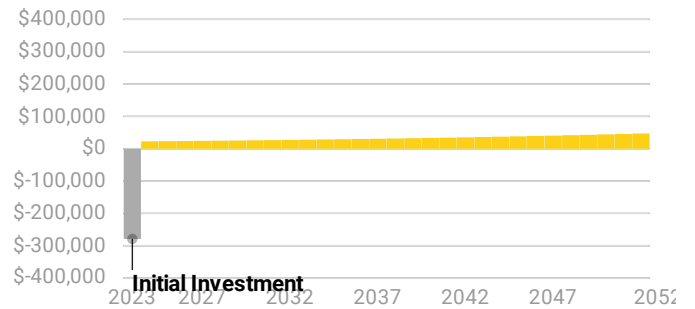
### Net Financial Impact Cash

$$\begin{array}{rcl}
 \$972,662 & - & \$301,415 & = & \$671,247 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$64,104**  
Net Present Value

**21.6 years**  
Discounted Payback  
Period

**223%**  
Total Return on  
Investment

**8.5%**  
Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	202,024	185,679	24,446	9,477	7,427	2,050	22,396	430,593	129,178	(279019)	(279019)
2024	202,024	184,843	25,424	9,908	7,320	2,588	22,836	0	0	22836	(256183)
2025	202,024	184,008	26,441	10,358	7,214	3,144	23,297	0	0	23297	(232885)
2026	202,024	183,172	27,499	10,828	7,109	3,718	23,780	0	0	23780	(209105)
2027	202,024	182,337	28,599	11,319	7,006	4,313	24,286	0	0	24286	(184819)
2028	202,024	181,501	29,743	11,832	6,904	4,927	24,815	0	0	24815	(160004)
2029	202,024	180,666	30,932	12,368	6,804	5,564	25,368	0	0	25368	(134635)
2030	202,024	179,830	32,170	12,927	6,705	6,223	25,947	0	0	25946	(108688)
2031	202,024	178,995	33,456	13,512	6,607	6,906	26,551	0	0	26550	(82138)
2032	202,024	178,159	34,795	14,123	6,510	7,613	27,181	0	0	27181	(54956)
2033	202,024	177,323	36,186	14,761	6,415	8,347	27,840	0	0	27839	(27117)
2034	202,024	176,488	37,634	15,428	6,321	9,108	28,526	0	0	28526	1409
2035	202,024	175,652	39,139	16,125	6,228	9,897	29,242	0	0	29242	30651
2036	202,024	174,817	40,705	16,852	6,136	10,716	29,989	0	0	29989	60640

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	202,024	173,981	42,333	17,612	6,046	11,566	30,767	0	0	30766	91407
2038	202,024	173,146	44,026	18,405	5,957	12,449	31,577	0	0	31577	122985
2039	202,024	172,310	45,787	19,234	5,869	13,366	32,422	0	0	32421	155406
2040	202,024	171,475	47,619	20,100	5,782	14,319	33,300	0	0	33300	188707
2041	202,024	170,639	49,524	21,005	5,696	15,309	34,215	0	0	34215	222922
2042	202,024	169,803	51,505	21,949	5,611	16,338	35,167	0	0	35166	258089
2043	202,024	168,968	53,565	22,936	5,528	17,408	36,157	0	0	36157	294246
2044	202,024	168,132	55,707	23,966	5,446	18,520	37,187	0	0	37187	331433
2045	202,024	167,297	57,936	25,042	5,364	19,677	38,258	0	0	38258	369691
2046	202,024	166,461	60,253	26,166	5,284	20,881	39,372	0	0	39371	409063
2047	202,024	165,626	62,663	27,339	5,205	22,134	40,529	0	0	40529	449592
2048	202,024	164,790	65,170	28,565	5,127	23,438	41,732	0	0	41732	491324
2049	202,024	163,955	67,776	29,844	5,050	24,794	42,982	0	0	42982	534306
2050	202,024	163,119	70,488	31,181	4,974	26,207	44,281	0	0	44280	578587
2051	202,024	162,283	73,307	32,577	4,899	27,678	45,629	0	0	45629	624216
2052	202,024	161,448	76,239	34,034	4,825	29,209	47,030	0	0	47030	671246

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Cash

317 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE50KUS, 1 x SE100KUS (SolarEdge Technologies Ltd.) 159 x P1100 Tilt Racks (42 panels only)	
Total System Price	\$430,593.45
<b>Purchase Price</b>	<b>\$430,593.45</b>
Price Per Watt	\$2.52 per Watt <small>For 171.180 kW system</small>
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$129,178.03</b>
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This proposal is valid until Aug 21 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	215,296.72
Passing Inspection	212,796.73
<b>Total</b>	<b>430,593.45</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

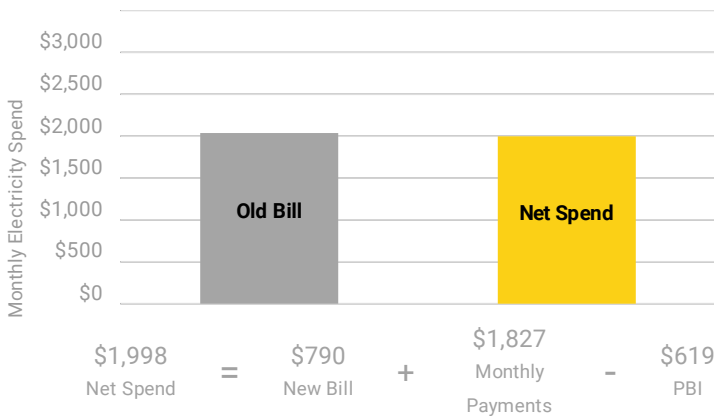
Date \_\_\_\_\_

### Payment Details: Offline Payment

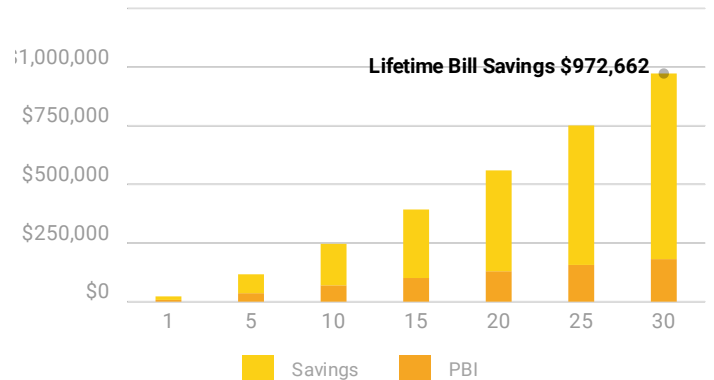
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$181,368.06</b> \$7,427.16 in year 1
---	--

Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 202024 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

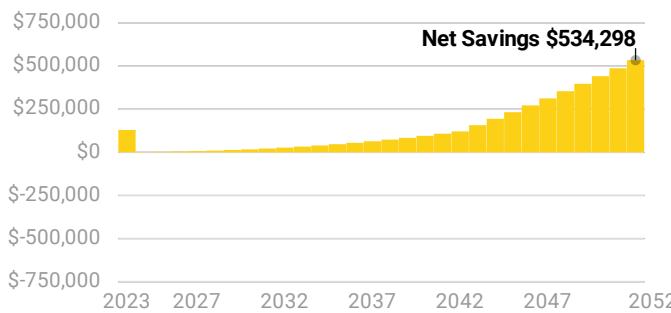
Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.



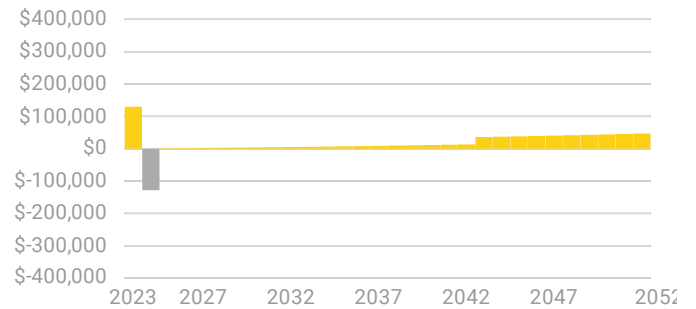
# Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$972,662 & - & \$438,364 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} \\
 & = & \text{\$534,298} \\
 & & \text{Estimated Net Savings}
 \end{array}$$

### Cumulative Savings From Going Solar



### Annual Savings From Going Solar



# \$144,556

Net Present Value

# 122%

Total Return on Investment

# 5.3%

Rate of Return on Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	202,024	185,679	24,446	9,477	7,427	2,050	22,396	21,918	129,178	129656	129656
2024	202,024	184,843	25,424	9,908	7,320	2,588	22,836	151,096	0	(128260)	1395
2025	202,024	184,008	26,441	10,358	7,214	3,144	23,297	21,918	0	1379	2775
2026	202,024	183,172	27,499	10,828	7,109	3,718	23,780	21,918	0	1862	4637
2027	202,024	182,337	28,599	11,319	7,006	4,313	24,286	21,918	0	2367	7005
2028	202,024	181,501	29,743	11,832	6,904	4,927	24,815	21,918	0	2896	9902
2029	202,024	180,666	30,932	12,368	6,804	5,564	25,368	21,918	0	3450	13352
2030	202,024	179,830	32,170	12,927	6,705	6,223	25,947	21,918	0	4028	17380
2031	202,024	178,995	33,456	13,512	6,607	6,906	26,551	21,918	0	4632	22013
2032	202,024	178,159	34,795	14,123	6,510	7,613	27,181	21,918	0	5263	27276
2033	202,024	177,323	36,186	14,761	6,415	8,347	27,840	21,918	0	5921	33197
2034	202,024	176,488	37,634	15,428	6,321	9,108	28,526	21,918	0	6608	39806
2035	202,024	175,652	39,139	16,125	6,228	9,897	29,242	21,918	0	7324	47130
2036	202,024	174,817	40,705	16,852	6,136	10,716	29,989	21,918	0	8070	55201



Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	202,024	173,981	42,333	17,612	6,046	11,566	30,767	21,918	0	8848	64049
2038	202,024	173,146	44,026	18,405	5,957	12,449	31,577	21,918	0	9659	73709
2039	202,024	172,310	45,787	19,234	5,869	13,366	32,422	21,918	0	10503	84212
2040	202,024	171,475	47,619	20,100	5,782	14,319	33,300	21,918	0	11382	95594
2041	202,024	170,639	49,524	21,005	5,696	15,309	34,215	21,918	0	12296	107891
2042	202,024	169,803	51,505	21,949	5,611	16,338	35,167	21,918	0	13248	121140
2043	202,024	168,968	53,565	22,936	5,528	17,408	36,157	0	0	36157	157297
2044	202,024	168,132	55,707	23,966	5,446	18,520	37,187	0	0	37187	194484
2045	202,024	167,297	57,936	25,042	5,364	19,677	38,258	0	0	38258	232742
2046	202,024	166,461	60,253	26,166	5,284	20,881	39,372	0	0	39371	272114
2047	202,024	165,626	62,663	27,339	5,205	22,134	40,529	0	0	40529	312643
2048	202,024	164,790	65,170	28,565	5,127	23,438	41,732	0	0	41732	354375
2049	202,024	163,955	67,776	29,844	5,050	24,794	42,982	0	0	42982	397357
2050	202,024	163,119	70,488	31,181	4,974	26,207	44,281	0	0	44280	441638
2051	202,024	162,283	73,307	32,577	4,899	27,678	45,629	0	0	45629	487267
2052	202,024	161,448	76,239	34,034	4,825	29,209	47,030	0	0	47030	534297

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period. Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Tax Exempt Municipal Lease

317 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE50KUS, 1 x SE100KUS (SolarEdge Technologies Ltd.) 159 x P1100 Tilt Racks (42 panels only)	
Total System Price	\$430,593.45
<b>Purchase Price</b>	<b>\$430,593.45</b>
Loan Amount	\$430,593.45
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$129,178.03
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$129,178.03 in month 18 this payment level will continue for term of the loan.</small>	\$1,827.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$2,651.00
Total Payments <small>Over 20 years</small>	\$567,542.38

### Additional Incentives

Federal Investment Tax Credit (ITC) - 30% <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$129,178.03
<b>Net System Cost</b>	<b>\$301,415.41</b>

This proposal is valid until Aug 21 2023.

**PV Feasibility Study**  
(SolarEdge - Commercial)

***Community/Senior Center***

**Project Address:** 2140 Trenton Rd, Levittown, PA 19056

**Service Size:** 3-Phase Wye 800A 208/120V

**Meter Rating:** CL20 120/480V

**Roof size:** 16,627 sq ft.

**Maximum number of panels:** 326 (56.34% of roof coverage)

**System Size:** 171.18 kW DC

**Projected Annual Production:** 185,679 kWh

**Actual Annual kWh used (2022):** 202,024kWh

**Solar production percentage of total kWh used:** 91.9%



**PV Feasibility Study**  
(SolarEdge - Commercial)

***Community/Senior Center***

**Interconnection Point:**

The meter and the transformer are located on the north of the building. Exterior conduit can enter the building on the wall behind the equipment location. There is space available on the 800 amp rated busbar in the main service panel for the interconnection point.

**Equipment Location:**

Exterior: Next to the meter at the north entrance of the building.

Exterior:



**PV Feasibility Study**  
 (SolarEdge - Commercial)

**Community/Senior Center**

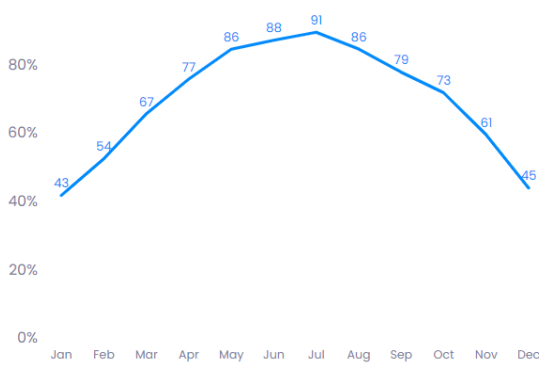
**Additional production information:**

**Overview**

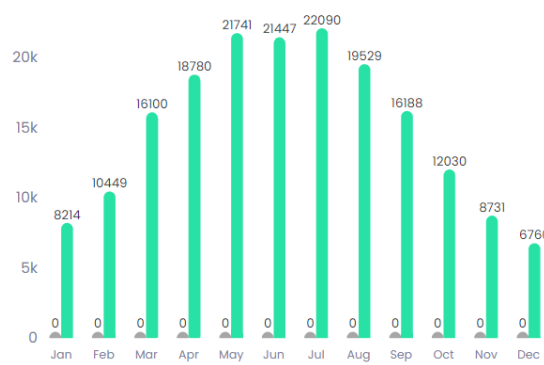
Segment	Modules	Size (DC STC)	Production	ASA	Consumption	PV Offset	Roof Area	Roof Coverage
All total	326	176.04 kW	182,058 kWh	76%	0 kWh	0%	16627 ft <sup>2</sup>	56.34%

Nearest weather station: 724085, PHILADELPHIA NE PHILADELPHIA, PA (8.7 miles)

**Average Monthly Solar Access**



**Monthly Consumption and Production (kWh)**



**Segments**

Segment	Modules	Size (DC STC)	Production	ASA	Azimuth	Tilt	Roof Area	Roof Coverage
✔ Segment A	83 (540W)	44.82 kW	51,696 kWh	85%	138°	19°	3077 ft <sup>2</sup>	77.03%
✔ Segment B	24 (540W)	12.96 kW	16,830 kWh	96%	138°	18°	968 ft <sup>2</sup>	70.8%
✔ Segment C	41 (540W)	22.14 kW	25,470 kWh	85%	139°	18°	1889 ft <sup>2</sup>	62%
✔ Segment D	0	0 kW	0 kWh	45%	228°	18°	2478 ft <sup>2</sup>	0%
✔ Segment E	127 (540W)	68.58 kW	62,277 kWh	89%	318°	19°	4730 ft <sup>2</sup>	76.68%
✔ Segment F	0	0 kW	0 kWh	42%	228°	3°	1454 ft <sup>2</sup>	0%
✔ Segment G	42 (540W)	22.68 kW	21,240 kWh	78%	48°	2°	1485 ft <sup>2</sup>	81.34%
✔ Segment H	9 (540W)	4.86 kW	4,545 kWh	83%	319°	8°	545 ft <sup>2</sup>	56.25%



## Solar Access Shade Report Prepared For:



**Middletown Township Senior Center 2140 Trenton Rd.  
Levittown, PA**

2140 Trenton Road, Levittown, Pennsylvania 19056, United States

Lat, Long: 40.1613, -74.8876

Time Zone: GMT-5

Weather Station: 724085, PHILADELPHIA NE PHILADELPHIA, PA 8.7 miles

Report Author: Evan Johnson

Report Created On: June 9, 2023



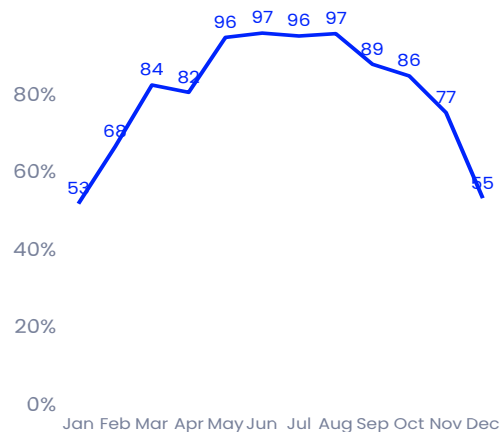
## Summary

Array	Panel Count	Azimuth (deg)	Tilt (deg)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
Segment A	83	138.3° True	18.5°	92.58%	85.48%	79.13%
Segment B	24	138.2° True	18.2°	92.49%	96.18%	88.95%
Segment C	41	138.7° True	18.3°	92.59%	85.26%	78.94%
Segment D	0	228.2° True	17.6°	92.10%	45.06%	41.50%
Segment E	127	318.2° True	18.5°	73.20%	89.27%	65.35%
<b>Average</b>					80.25%	70.78%



## Solar Access: Segment A

Average Monthly



Average Annual

**85.48%**

TSRF: 79.13%

TOF: 92.58%

Summer (May - Oct): 95%

Winter (Nov - Apr): 72%

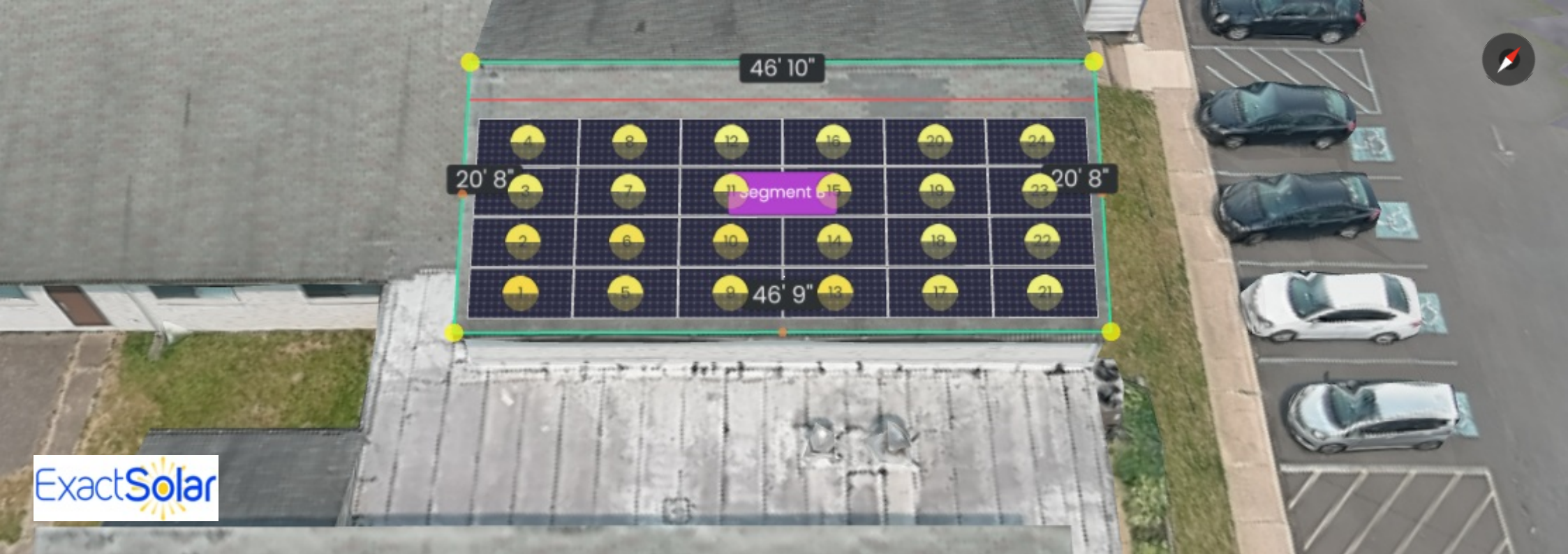
Tilt: 18.5°

Azimuth: 138.3° True

Solar Access Viewshed Heading:

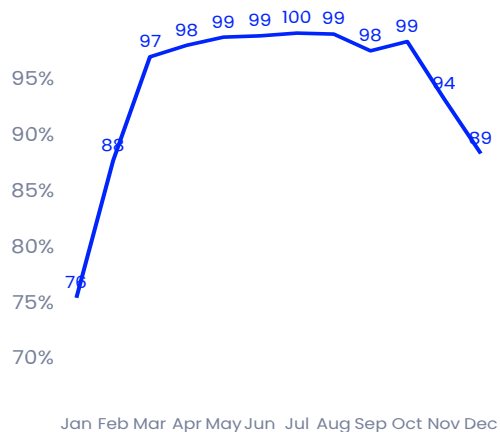
180°





## Solar Access: Segment B

Average Monthly



Average Annual

**96.18%**

TSRF: 88.95%

TOF: 92.49%

Summer (May - Oct): 99%

Winter (Nov - Apr): 92%

Tilt: 18.2°

Azimuth: 138.2° True

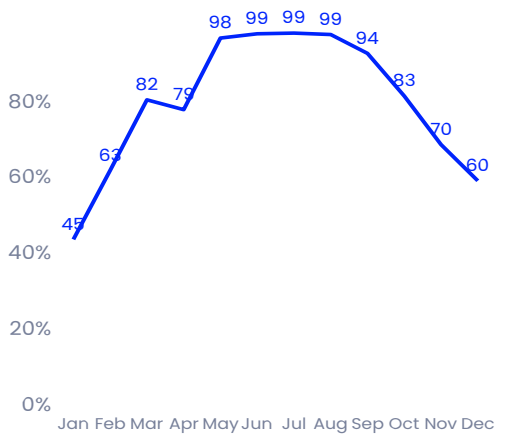
Solar Access Viewshed Heading:

180°



## Solar Access: Segment C

Average Monthly



Average Annual

**85.26%**

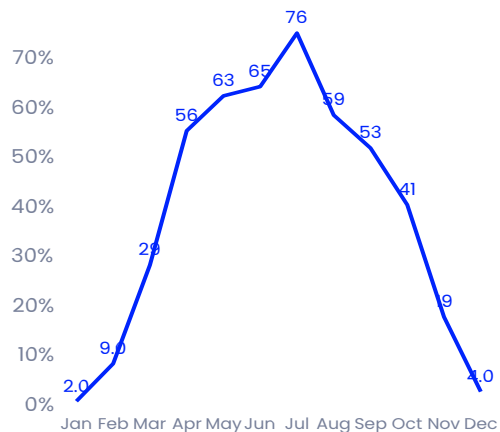
- TSRF: 78.94%
- TOF: 92.59%
- Summer (May - Oct): 98%
- Winter (Nov - Apr): 69%

- Tilt: 18.3°
- Azimuth: 138.7° True
- Solar Access Viewshed Heading: 180°



## Solar Access: Segment D

Average Monthly



Average Annual

**45.06%**

TSRF: 41.50%

TOF: 92.10%

Summer (May - Oct): 63%

Winter (Nov - Apr): 23%

Tilt: 17.6°

Azimuth: 228.2° True

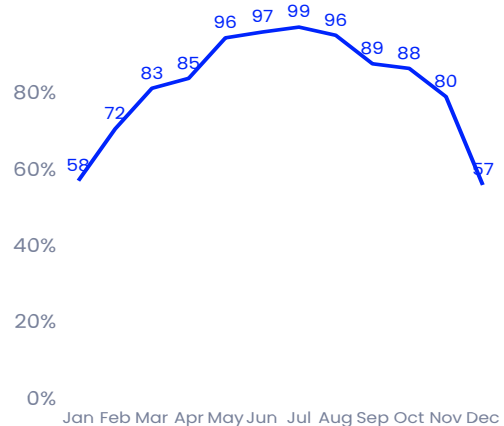
Solar Access Viewshed Heading:

180°



## Solar Access: Segment E

Average Monthly



Average Annual

**89.27%**

TSRF: 65.35%

TOF: 73.20%

Summer (May - Oct): 95%

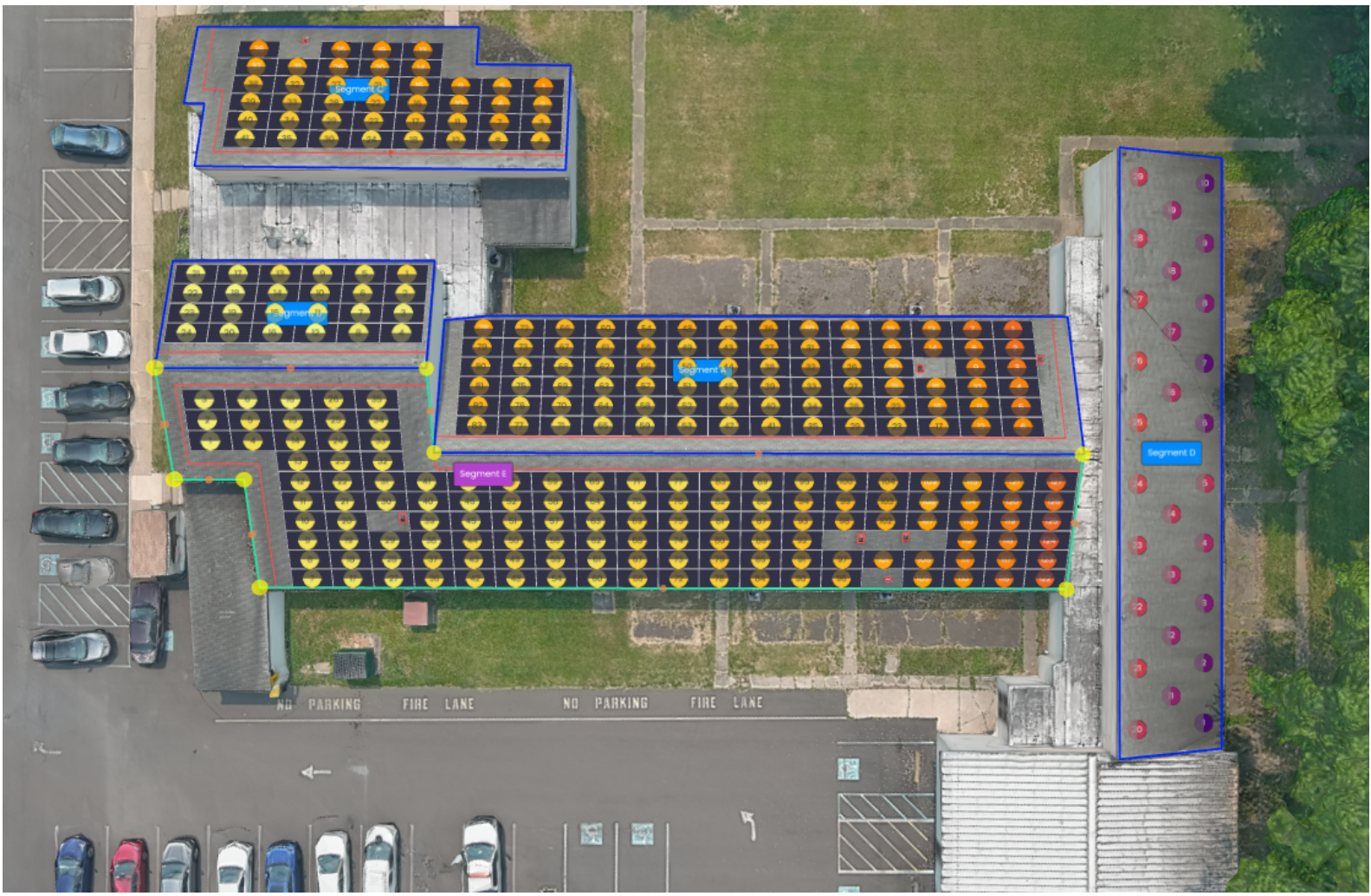
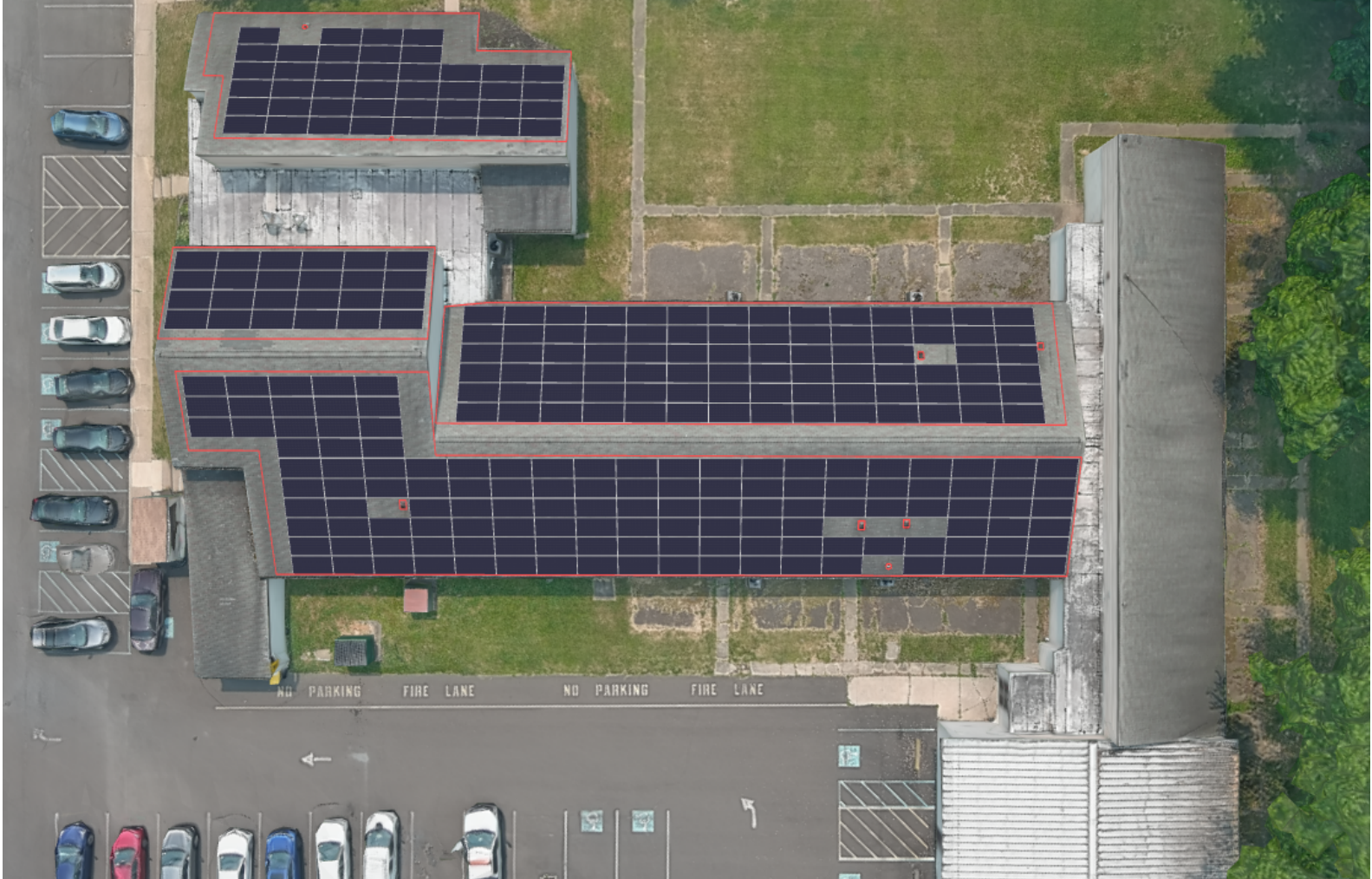
Winter (Nov - Apr): 75%

Tilt: 18.5°

Azimuth: 318.2° True

Solar Access Viewshed Heading:

180°



**Prepared by: Michael Lehane**  
267-399-3367  
michael.lehane@exactsolar.com

Styers Store (Middletown Twp)  
1121 Woodbourne Rd  
Langhorne, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Nick,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Michael Lehane

## Recommended System Option

**153.36**  
kW  
System Size

**\$430,885**  
Total System Price  
including tax

**\$301,619**  
Net System Price  
including tax

**11**  
Years  
1 Months  
Payback



## System Components

### Solar Panels

**AXITEC**  
**153.360 kW** Total Solar Power  
**284 x 540 Watt Panels** (AC-540MH/144V)  
**187,009 kWh** per year

### Inverter

**SolarEdge Technologies Ltd.**  
**100.000 kW** Total Inverter Rating  
1 x SE100KUS

### Ground Ballasted Installation

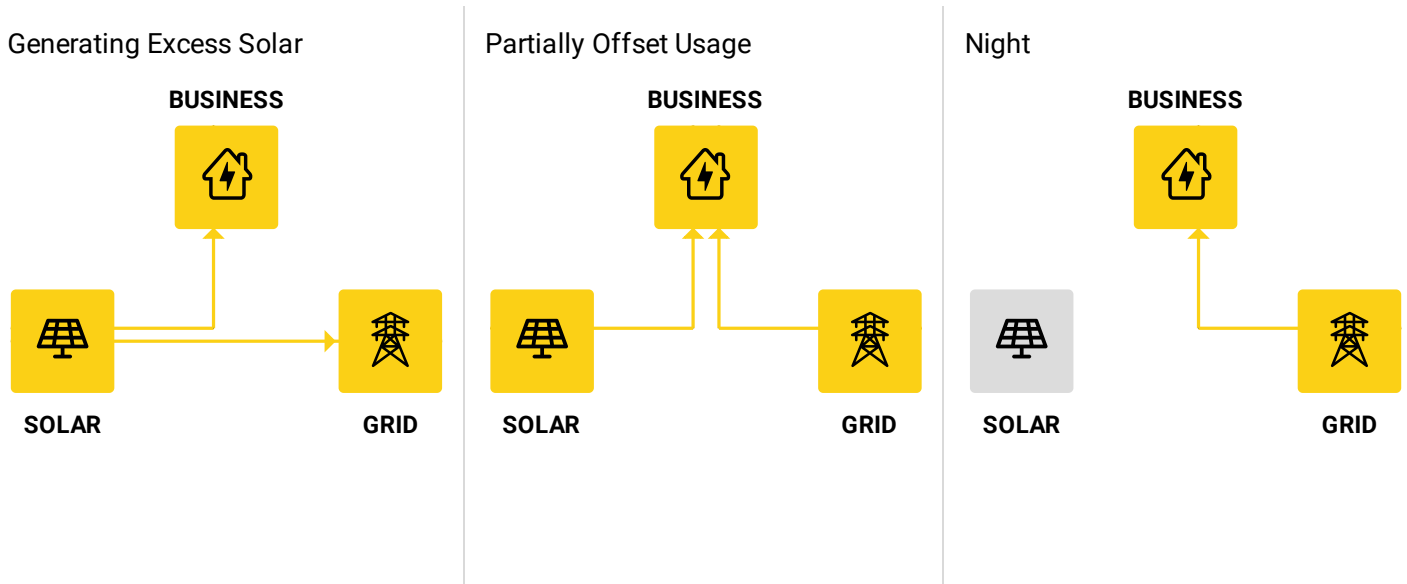
Ballasted ground mount installation  
284 x Ground Ballasted Installation

### Inverter

**SolarEdge Technologies Ltd.**  
**33.300 kW** Total Inverter Rating  
1 x SE33.3K

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty

## How Your System Works



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



**Each Year**

83%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

70 tons  
Avoided CO<sub>2</sub> per year

**Over System Lifetime**

1,300,123  
Car miles avoided

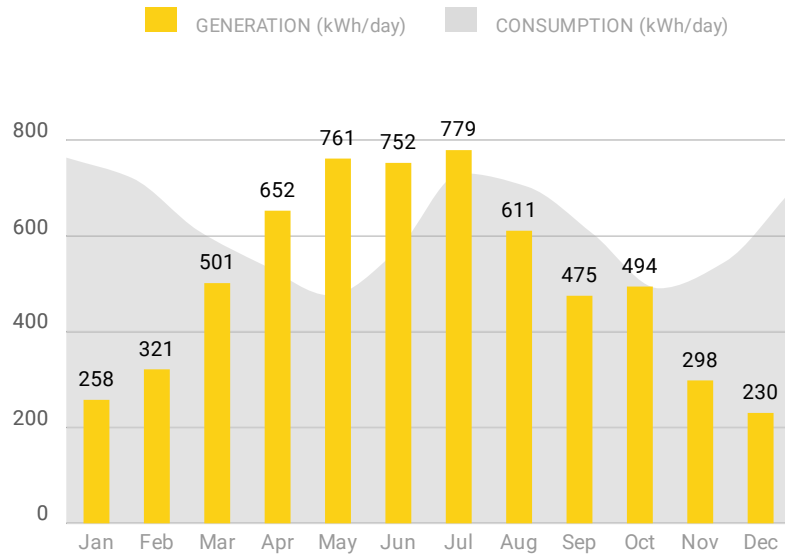
13,460  
Trees planted

1,498  
Long haul flights avoided



## System Performance

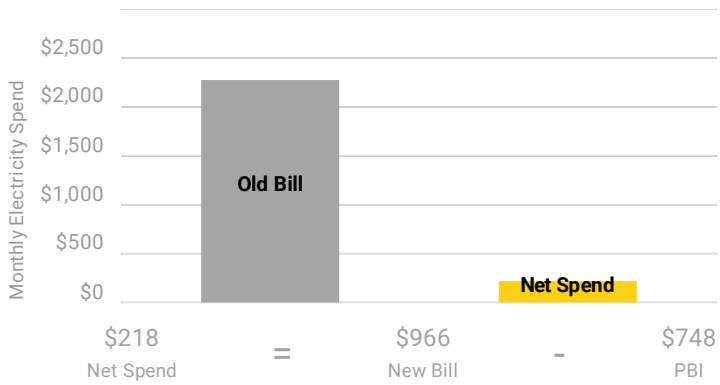
83%  
Energy From Solar



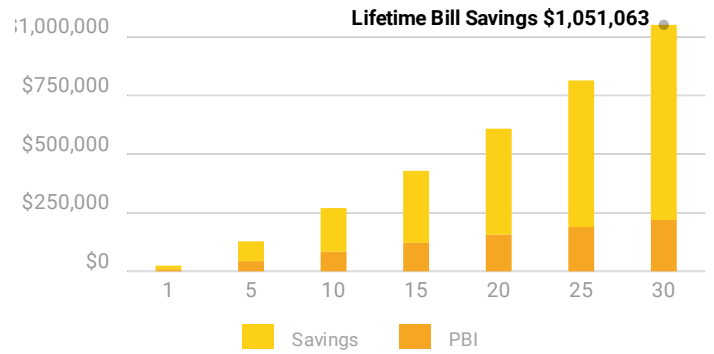
System Performance Assumptions: System Total losses: 16.4%, Inverter losses: 1.8%, Optimizer losses: 0%, Shading losses: 0.7%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 284 panels with Azimuth 139 and Slope 5.

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$219,200.32</b> \$8,976.42 in year 1
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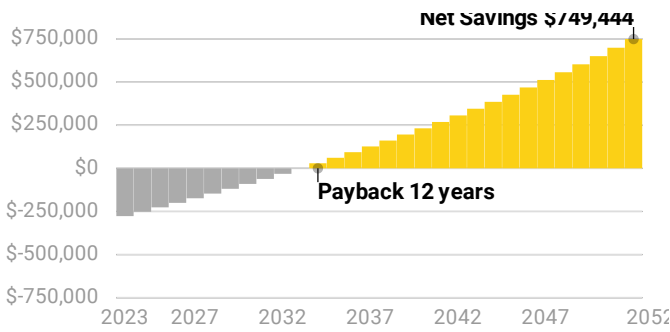
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 226320 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

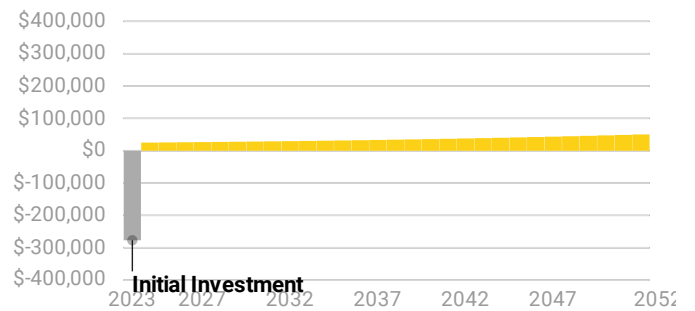
## Net Financial Impact Cash

$$\begin{array}{rcl}
 \$1,051,063 & - & \$301,619 = \$749,444 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} \quad \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$95,454**

Net Present Value

**18.9 years**

Discounted Payback  
Period

**248%**

Total Return on  
Investment

**9.3%**

Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	226,320	187,009	27,303	11,589	8,976	2,613	24,690	430,885	129,265	(276929)	(276929)
2024	226,320	186,167	28,395	12,106	8,847	3,259	25,136	0	0	25135	(251793)
2025	226,320	185,326	29,530	12,645	8,719	3,926	25,604	0	0	25604	(226189)
2026	226,320	184,484	30,712	13,208	8,592	4,615	26,096	0	0	26096	(200093)
2027	226,320	183,643	31,940	13,795	8,468	5,328	26,613	0	0	26612	(173480)
2028	226,320	182,801	33,218	14,409	8,344	6,064	27,154	0	0	27153	(146326)
2029	226,320	181,960	34,546	15,049	8,223	6,826	27,720	0	0	27720	(118606)
2030	226,320	181,118	35,928	15,718	8,103	7,615	28,314	0	0	28313	(90293)
2031	226,320	180,276	37,365	16,416	7,985	8,431	28,934	0	0	28934	(61358)
2032	226,320	179,435	38,860	17,145	7,868	9,277	29,583	0	0	29583	(31775)
2033	226,320	178,593	40,415	17,906	7,753	10,153	30,262	0	0	30261	(1514)
2034	226,320	177,752	42,031	18,700	7,639	11,061	30,970	0	0	30970	29456
2035	226,320	176,910	43,712	19,529	7,527	12,002	31,710	0	0	31710	61166
2036	226,320	176,069	45,461	20,395	7,416	12,979	32,482	0	0	32482	93648

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	226,320	175,227	47,279	21,298	7,307	13,992	33,288	0	0	33287	126936
2038	226,320	174,386	49,170	22,242	7,199	15,043	34,128	0	0	34127	161063
2039	226,320	173,544	51,137	23,226	7,093	16,134	35,004	0	0	35003	196067
2040	226,320	172,703	53,183	24,254	6,988	17,267	35,916	0	0	35916	231983
2041	226,320	171,861	55,310	25,327	6,884	18,443	36,867	0	0	36867	268850
2042	226,320	171,020	57,522	26,447	6,782	19,665	37,857	0	0	37857	306707
2043	226,320	170,178	59,823	27,616	6,681	20,935	38,888	0	0	38888	345596
2044	226,320	169,336	62,216	28,836	6,582	22,255	39,961	0	0	39961	385557
2045	226,320	168,495	64,705	30,110	6,483	23,627	41,078	0	0	41078	426636
2046	226,320	167,653	67,293	31,439	6,387	25,053	42,240	0	0	42240	468876
2047	226,320	166,812	69,985	32,827	6,291	26,536	43,449	0	0	43448	512324
2048	226,320	165,970	72,784	34,275	6,197	28,079	44,705	0	0	44705	557030
2049	226,320	165,129	75,696	35,787	6,104	29,683	46,012	0	0	46012	603042
2050	226,320	164,287	78,723	37,365	6,012	31,353	47,370	0	0	47370	650412
2051	226,320	163,446	81,872	39,011	5,921	33,090	48,782	0	0	48782	699194
2052	226,320	162,604	85,147	40,730	5,832	34,898	50,249	0	0	50248	749443

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period. Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Cash

284 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE100KUS, 1 x SE33.3K (SolarEdge Technologies Ltd.) 284 x Ground Ballasted Installation Tilt Racks (284 panels)	
Total System Price	\$430,884.90
<b>Purchase Price</b>	<b>\$430,884.90</b>
Price Per Watt	\$2.81 per Watt <small>For 153.360 kW system</small>
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$129,265.47</b>
--	---------------------

This proposal is valid until Aug 21 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	215,442.45
Passing Inspection	212,942.45
<b>Total</b>	<b>430,884.90</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

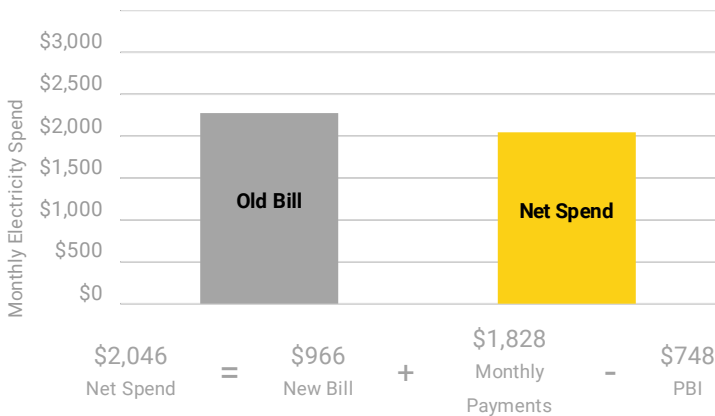
Date \_\_\_\_\_

### Payment Details: Offline Payment

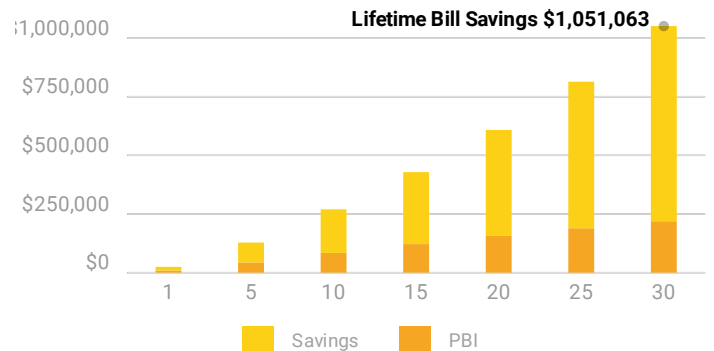
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$219,200.32</b> \$8,976.42 in year 1
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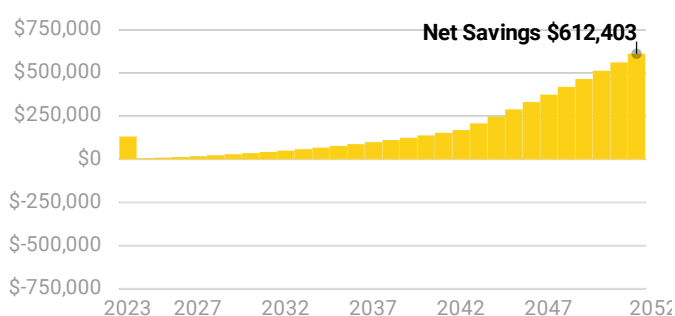
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 226320 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

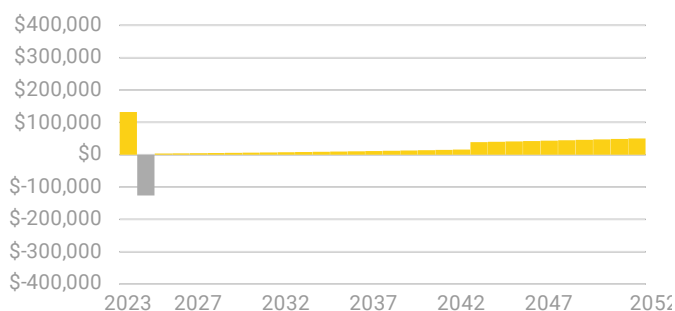
## Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$1,051,063 & - & \$438,661 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} \\
 & = & \mathbf{\$612,403} \\
 & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$175,962**

Net Present Value

**140%**

Total Return on Investment

**5.9%**

Rate of Return on Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	226,320	187,009	27,303	11,589	8,976	2,613	24,690	21,933	129,265	132022	132022
2024	226,320	186,167	28,395	12,106	8,847	3,259	25,136	151,198	0	(126062)	5959
2025	226,320	185,326	29,530	12,645	8,719	3,926	25,604	21,933	0	3671	9631
2026	226,320	184,484	30,712	13,208	8,592	4,615	26,096	21,933	0	4163	13794
2027	226,320	183,643	31,940	13,795	8,468	5,328	26,613	21,933	0	4679	18474
2028	226,320	182,801	33,218	14,409	8,344	6,064	27,154	21,933	0	5220	23694
2029	226,320	181,960	34,546	15,049	8,223	6,826	27,720	21,933	0	5787	29481
2030	226,320	181,118	35,928	15,718	8,103	7,615	28,314	21,933	0	6380	35862
2031	226,320	180,276	37,365	16,416	7,985	8,431	28,934	21,933	0	7001	42863
2032	226,320	179,435	38,860	17,145	7,868	9,277	29,583	21,933	0	7650	50513
2033	226,320	178,593	40,415	17,906	7,753	10,153	30,262	21,933	0	8328	58842
2034	226,320	177,752	42,031	18,700	7,639	11,061	30,970	21,933	0	9037	67879
2035	226,320	176,910	43,712	19,529	7,527	12,002	31,710	21,933	0	9776	77656
2036	226,320	176,069	45,461	20,395	7,416	12,979	32,482	21,933	0	10549	88205

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	226,320	175,227	47,279	21,298	7,307	13,992	33,288	21,933	0	11354	99560
2038	226,320	174,386	49,170	22,242	7,199	15,043	34,128	21,933	0	12194	111755
2039	226,320	173,544	51,137	23,226	7,093	16,134	35,004	21,933	0	13070	124825
2040	226,320	172,703	53,183	24,254	6,988	17,267	35,916	21,933	0	13983	138808
2041	226,320	171,861	55,310	25,327	6,884	18,443	36,867	21,933	0	14933	153742
2042	226,320	171,020	57,522	26,447	6,782	19,665	37,857	21,933	0	15924	169666
2043	226,320	170,178	59,823	27,616	6,681	20,935	38,888	0	0	38888	208555
2044	226,320	169,336	62,216	28,836	6,582	22,255	39,961	0	0	39961	248516
2045	226,320	168,495	64,705	30,110	6,483	23,627	41,078	0	0	41078	289594
2046	226,320	167,653	67,293	31,439	6,387	25,053	42,240	0	0	42240	331835
2047	226,320	166,812	69,985	32,827	6,291	26,536	43,449	0	0	43448	375283
2048	226,320	165,970	72,784	34,275	6,197	28,079	44,705	0	0	44705	419989
2049	226,320	165,129	75,696	35,787	6,104	29,683	46,012	0	0	46012	466001
2050	226,320	164,287	78,723	37,365	6,012	31,353	47,370	0	0	47370	513371
2051	226,320	163,446	81,872	39,011	5,921	33,090	48,782	0	0	48782	562153
2052	226,320	162,604	85,147	40,730	5,832	34,898	50,249	0	0	50248	612402

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period. Financial discount rate assumed: 6.75%



## Quotation

### Payment Option: Tax Exempt Municipal Lease

284 x AC-540MH/144V 540 Watt Panels (AXITEC) 1 x SE100KUS, 1 x SE33.3K (SolarEdge Technologies Ltd.) 284 x Ground Ballasted Installation Tilt Racks (284 panels)	
Total System Price	\$430,884.90
<b>Purchase Price</b>	<b>\$430,884.90</b>
Loan Amount	\$430,884.90
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$129,265.47
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$129,265.47 in month 18 this payment level will continue for term of the loan.</small>	\$1,828.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$2,653.00
Total Payments <small>Over 20 years</small>	\$567,925.98

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$129,265.47
<b>Net System Cost</b>	<b>\$301,619.43</b>

This proposal is valid until Aug 21 2023.

**PV Feasibility Study**  
(SolarEdge - Commercial)

**STYERS STORE**

**Project Address:** 1121 Woodbourne Rd, Langhorne, PA. 19047

**Service Size:** 3-Phase,4 wire, 208/120V wye 600 amps

**Meter Rating:** CL20 480/120

**Roof size:** 18221 sq ft.

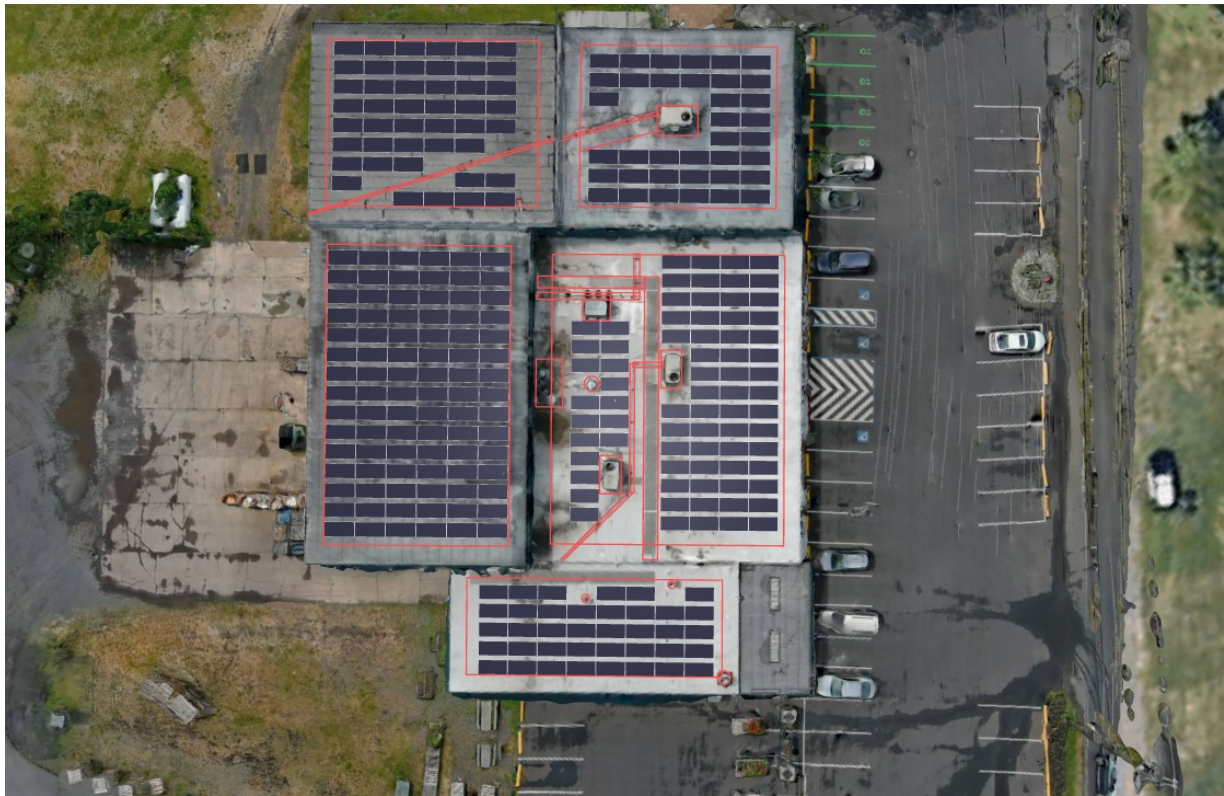
**Maximum number of panels:** 284 (55.61% of roof coverage)

**System Size:** 153.36 kW DC

**Projected Annual Production:** 187,009 kWh

**Actual Annual kWh used (2022):** 226,320kWh

**Solar production percentage of total kWh used:** 82.6%



**PV Feasibility Study**  
(SolarEdge - Commercial)

**STYERS STORE**

**Interconnection Point:**

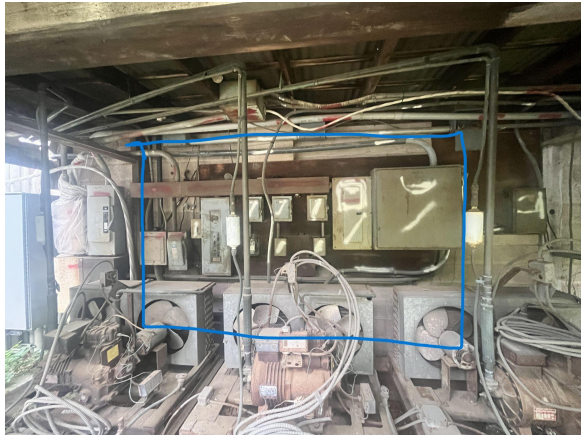
Line side tap in disconnect or ats if installed in the future

**Equipment Location:**

Exterior: Also space around exterior of electric room near side door.

Interior: Space for equipment where old electrical equipment currently is under overhang near the electrical room.

Interior:



Exterior:



**PV Feasibility Study**  
 (SolarEdge - Commercial)

**STYERS STORE**

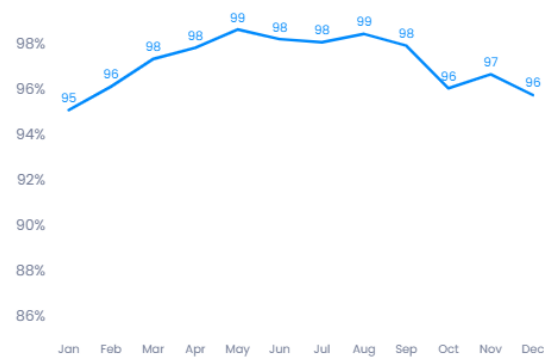
**Additional production information:**

**Overview**

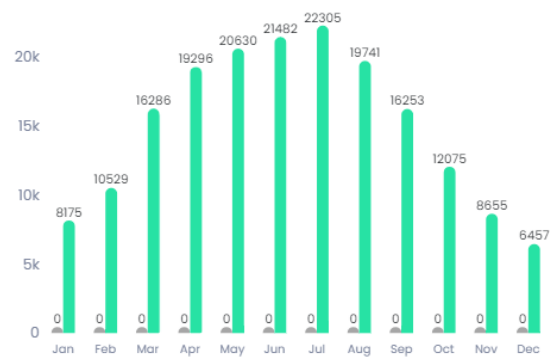
Segment	Modules	Size (DC STC)	Production	ASA	Consumption	PV Offset	Roof Area	Roof Coverage
All total	284	153.36 kW	181,885 kWh	98%	0 kWh	0%	18221 ft <sup>2</sup>	56.61%

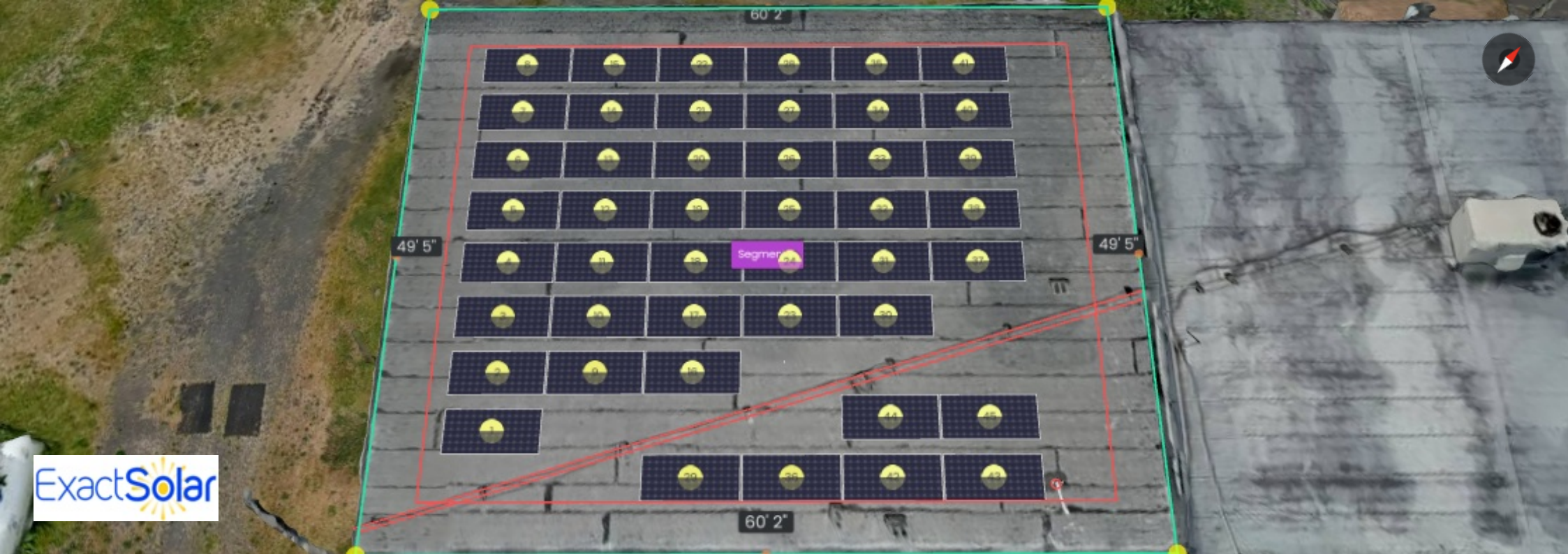
Nearest weather station: 724095, TRENTON MERCER COUNTY AP, NJ (7.3 miles)

**Average Monthly Solar Access**



**Monthly Consumption and Production (kWh)**





## Solar Access Shade Report Prepared For:



**Styers Store 1121 Woodbourne Rd. Langhorne, PA**  
1121 Woodbourne Road, Langhorne, Pennsylvania 19047,  
United States

Lat, Long: 40.1960, -74.8959

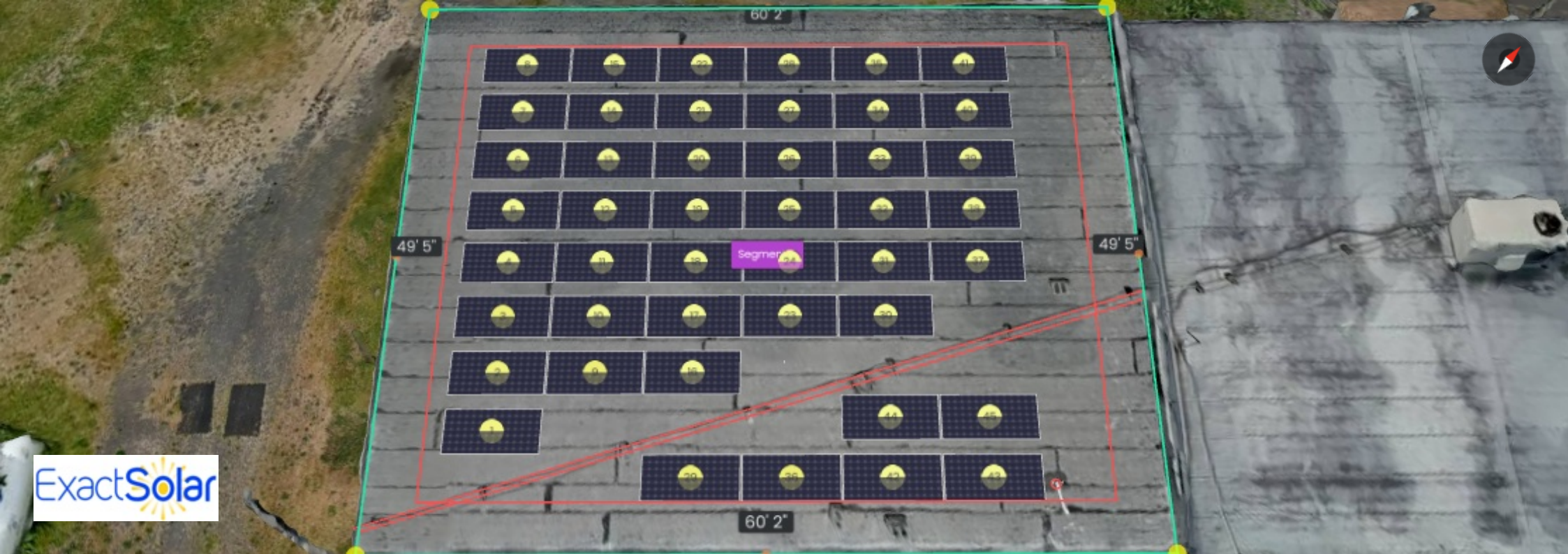
Time Zone: GMT-5

Weather Station: 724095, TRENTON MERCER COUNTY AP, NJ 7.3 miles

Report Author: Evan Johnson

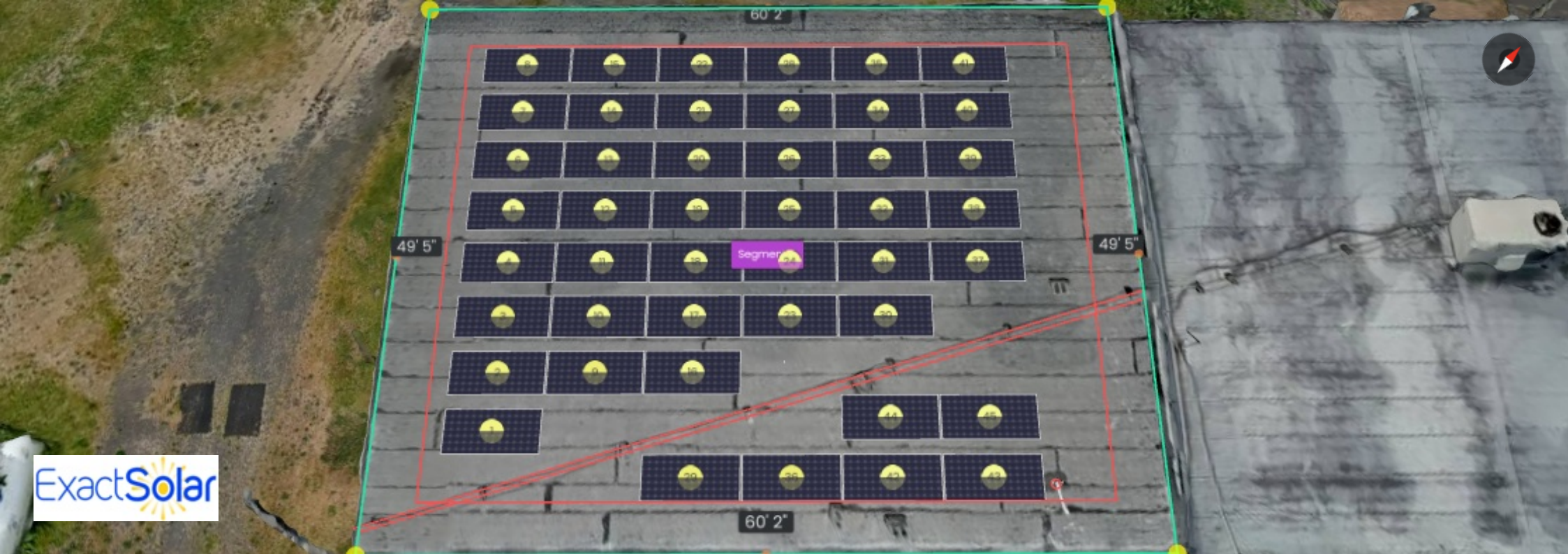
Report Created On: June 15, 2023

[Preview Model](#)



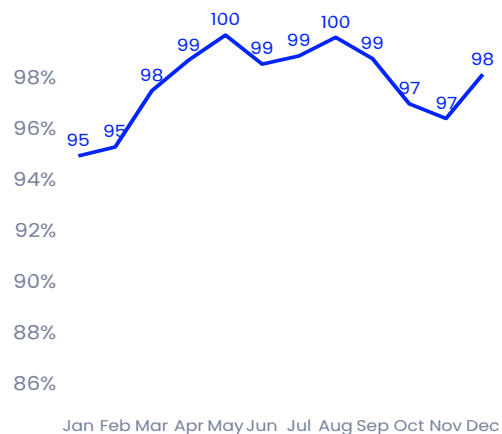
## Summary

Array	Panel Count	Azimuth (deg)	Tilt (deg)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
Segment A	45	138.6° True	0.2°	85.45%	98.49%	84.16%
Segment B	90	138.6° True	0.8°	85.77%	99.61%	85.43%
Segment C	37	138.6° True	0°	85.34%	97.95%	83.59%
Segment D	74	138.4° True	0.4°	85.56%	95.24%	81.49%
Segment E	38	138.5° True	0.5°	85.61%	98.06%	83.95%
<b>Weighted Average by panel count</b>					97.87%	83.77%



## Solar Access: Segment A

Average Monthly



Average Annual

**98.49%**

TSRF: 84.16%

TOF: 85.45%

Summer (May - Oct): 99%

Winter (Nov - Apr): 97%

Tilt: 0.2°

Azimuth: 138.6° True

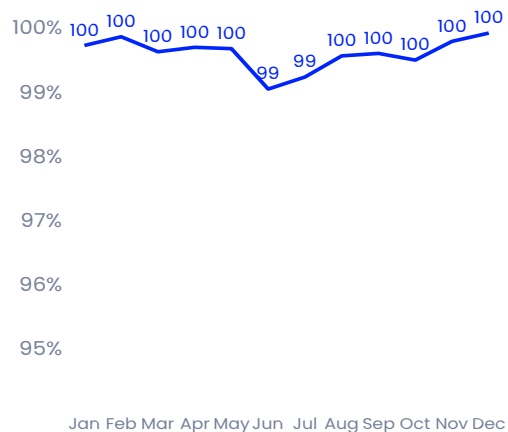
Solar Access Viewshed Heading:

180°



## Solar Access: Segment B

### Average Monthly



### Average Annual

**99.61%**

TSRF: 85.43%

TOF: 85.77%

Summer (May - Oct): 100%

Winter (Nov - Apr): 100%

Tilt: 0.8°

Azimuth: 138.6° True

Solar Access Viewshed Heading:

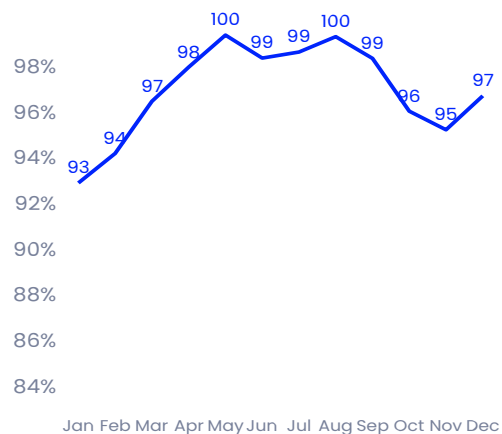
180°





## Solar Access: Segment C

Average Monthly



Average Annual

**97.95%**

TSRF: 83.59%

TOF: 85.34%

Summer (May - Oct): 99%

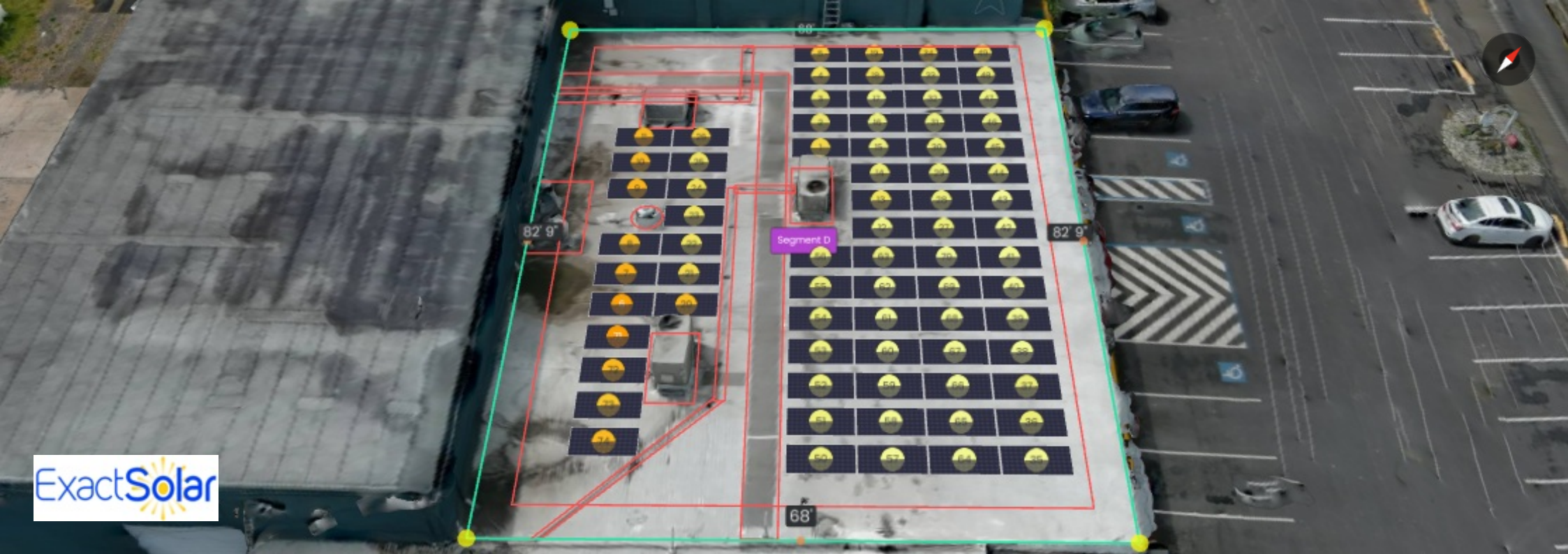
Winter (Nov - Apr): 96%

Tilt: 0°

Azimuth: 138.6° True

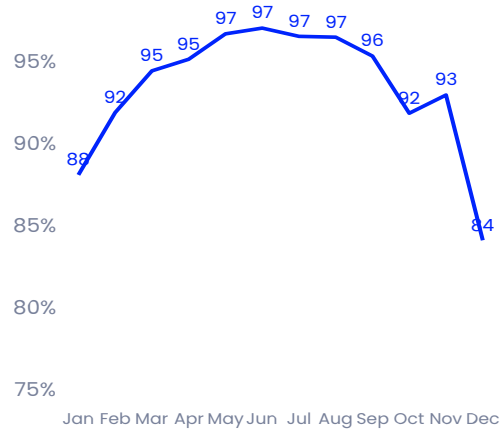
Solar Access Viewshed Heading:

180°



## Solar Access: Segment D

Average Monthly



Average Annual

**95.24%**

TSRF: 81.49%

TOF: 85.56%

Summer (May - Oct): 97%

Winter (Nov - Apr): 92%

Tilt: 0.4°

Azimuth: 138.4° True

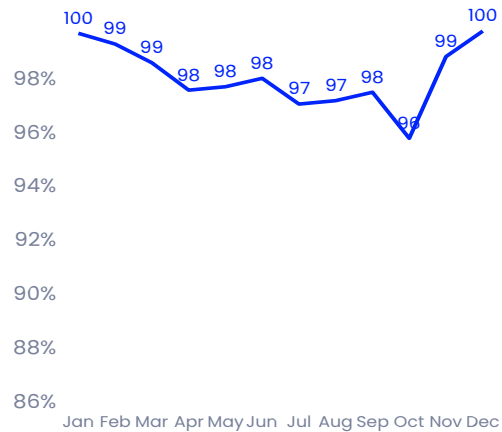
Solar Access Viewshed Heading:

180°



## Solar Access: Segment E

Average Monthly



Average Annual

**98.06%**

TSRF: 83.95%

TOF: 85.61%

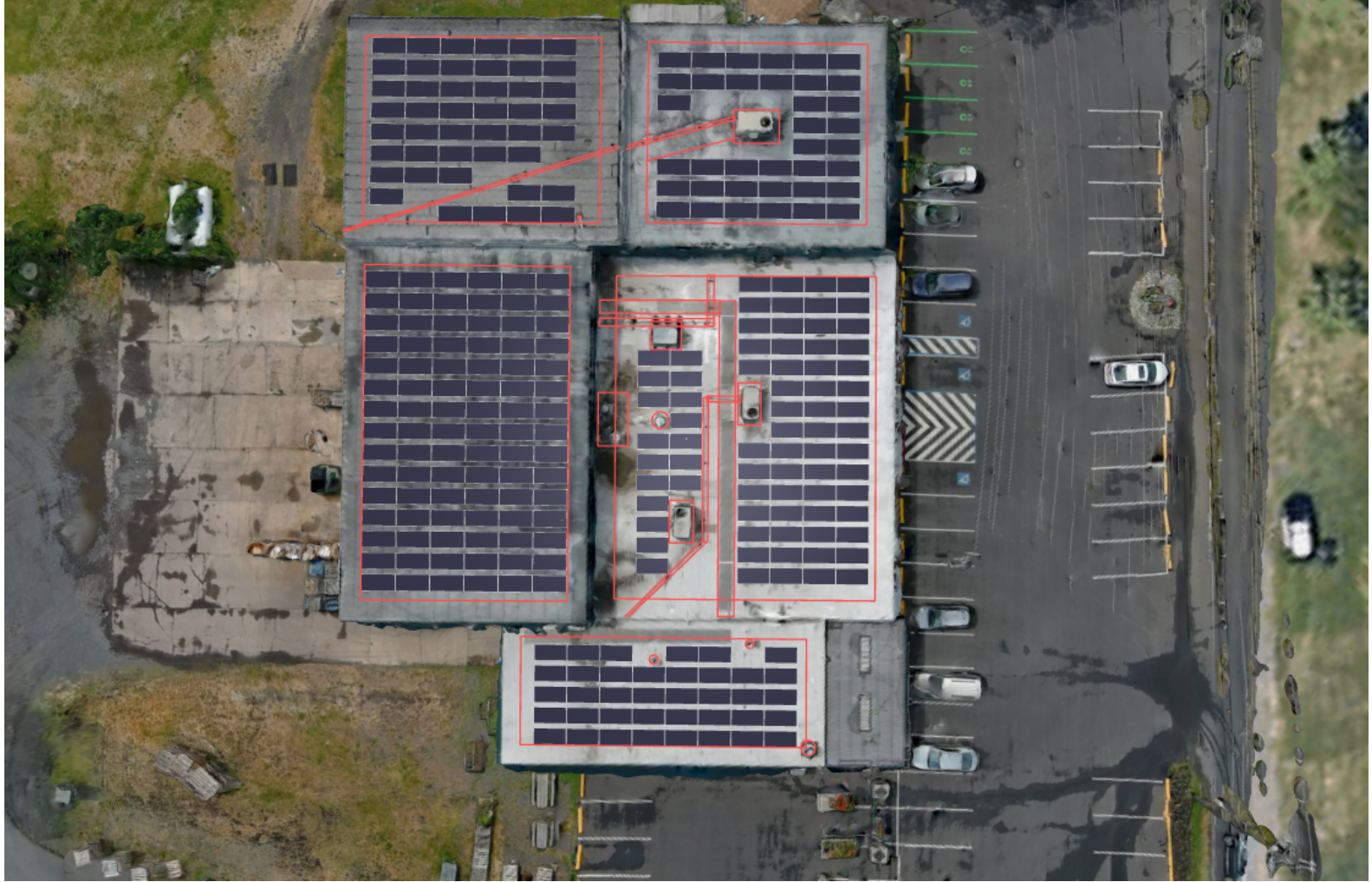
Summer (May - Oct): 98%

Winter (Nov - Apr): 99%

Tilt: 0.5°

Azimuth: 138.5° True

Solar Access Viewshed Heading:  
180°



**Prepared by: Joe Robinson**  
215-917-4761  
joe.robinson@exactsolar.com

Styers Rear Buildings (Middletown Twp)  
1121 Woodbourne Rd  
Langhorne, PA



## YOUR SOLAR ENERGY SYSTEM

Dear Nick,

Thank you for the opportunity to present your Solar Energy System Proposal. We're excited to work with you and to help you achieve your goals for solar for your building.

With a solar PV system or battery-backup system installed by Exact Solar, you can expect:

- Only the highest-quality, proven equipment with industry-leading manufacturers' warranties
- Award-winning customer service and technical support every step of the way
- A customized, complete solution developed for your home and its unique requirements
- A turnkey project including design, permitting, installation, inspections, interconnection, & SREC registration
- Real-time continuous production monitoring included
- **WELCOME TO HANDS FREE, PEACE-OF-MIND SOLAR!**

We look forward to helping you go solar! Don't hesitate to reach out with any questions as you review your proposal.

Best Regards,

Joe Robinson

### Recommended System Option

**124.2**  
kW  
System Size

**\$337,864**  
Total System Price  
including tax

**\$236,505**  
Net System Price  
including tax

**10**  
Years  
6 Months  
Payback



### System Components

#### Solar Panels

**AXITEC**  
124.200 kW Total Solar Power  
230 x 540 Watt Panels (AC-540MH/144V)  
146,768 kWh per year

#### Inverter

**SolarEdge Technologies Ltd.**  
100.000 kW Total Inverter Rating  
2 x SE50KUS

#### S440 Power Optimizer

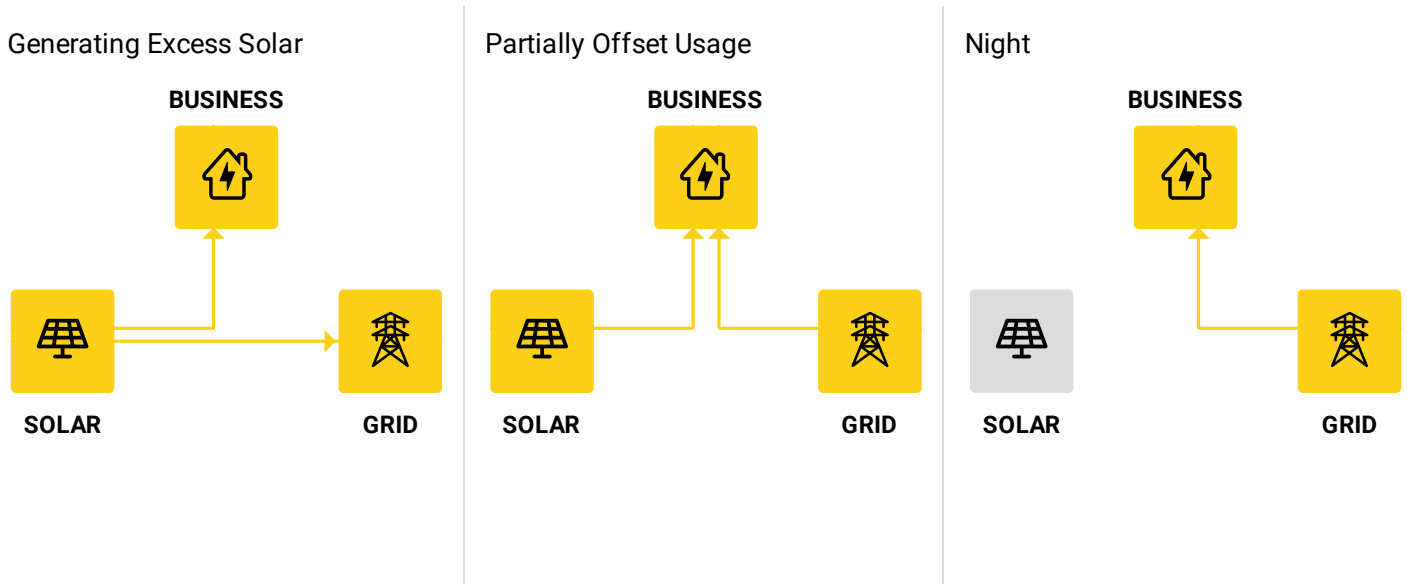
Power Optimizer For Residential Installations - 440 W  
230 x S440

#### Trenching (per foot)

Trenching or ground mounted array (unit is number of feet)  
150 x Trenching (per foot)

Warranties: 15 Year Panel Product Warranty, 25 Year Panel Performance Warranty, 12 Year Inverter Product Warranty

## How Your System Works



## Environmental Benefits

Solar has no emissions. It just silently generates pure, clean energy.



**Each Year**

65%  
Of CO<sub>2</sub>, SO<sub>x</sub> & NO<sub>x</sub>

55 tons  
Avoided CO<sub>2</sub> per year

**Over System Lifetime**

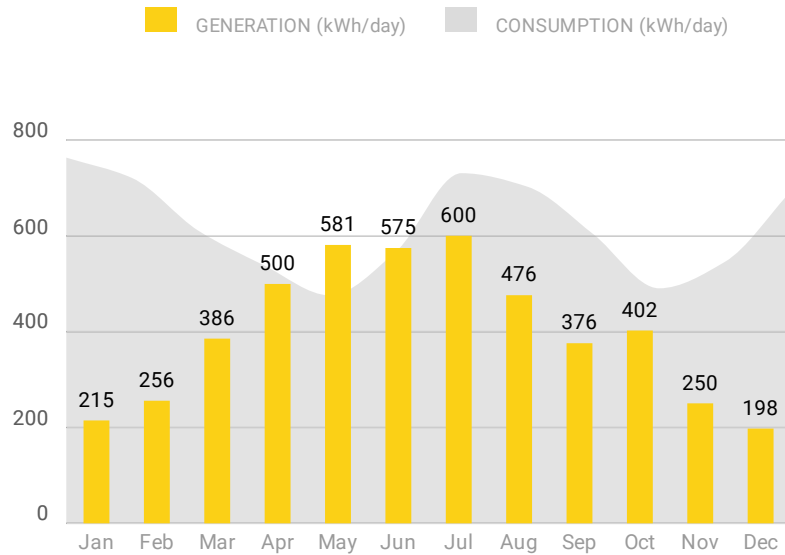
1,020,361  
Car miles avoided

10,563  
Trees planted

1,176  
Long haul flights avoided

## System Performance

**65%**  
Energy From Solar

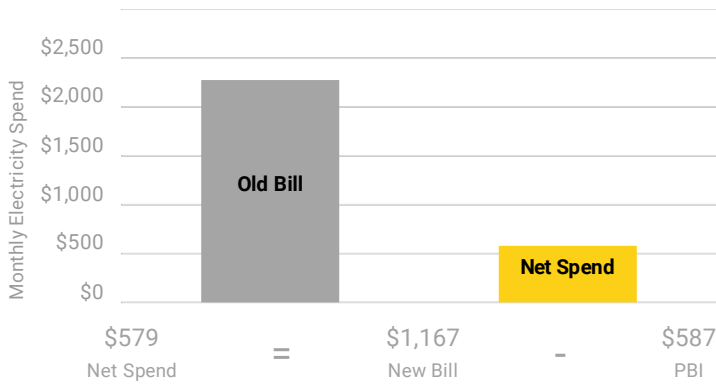


System Performance Assumptions: System Total losses: 14.1%, Inverter losses: 3.0%, Optimizer losses: 1.4%, Shading losses: 7.2%, Performance Adjustment: 0%, Output Calculator: System Advisor Model 2020.02.29.r2. Panel Orientations: 72 panels with Azimuth 165 and Slope 18, 28 panels with Azimuth 165 and Slope 34, 14 panels with Azimuth 165 and Slope 33, 30 panels with Azimuth 75 and Slope 13, 30 panels with Azimuth 255 and Slope 15, 56 panels with Azimuth 165 and Slope 5.

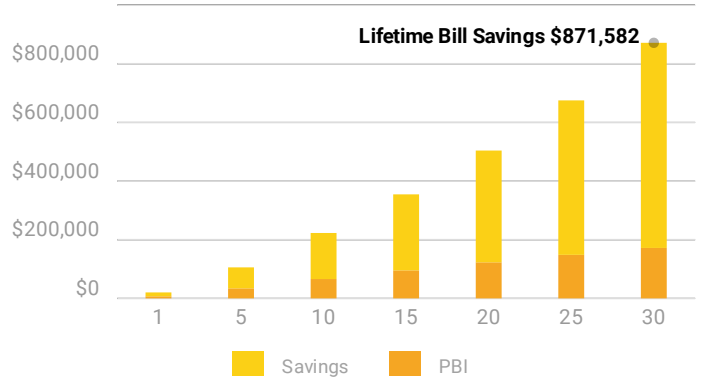


## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	<b>\$172,032.63</b> \$7,044.87 in year 1
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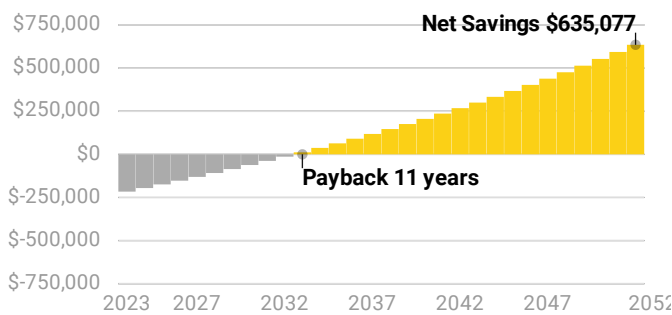
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 226320 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

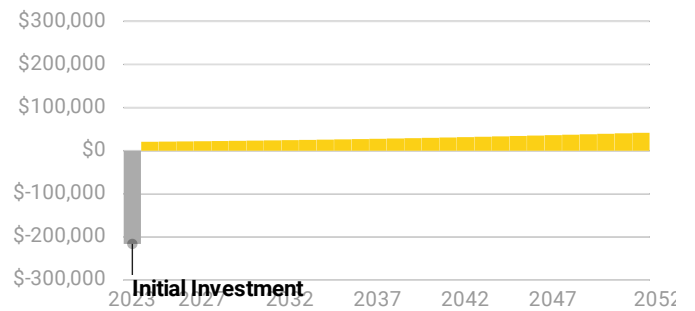
## Net Financial Impact Cash

$$\begin{array}{rcl}
 \$871,582 & - & \$236,505 = \$635,077 \\
 \text{Utility Bill Savings} & & \text{Net System Cost} \quad \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$92,441**  
Net Present Value

**17.4 years**  
Discounted Payback  
Period

**269%**  
Total Return on  
Investment

**9.8%**  
Rate of Return on  
Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	226,320	146,768	27,303	13,998	7,045	6,953	20,349	337,864	101,359	(216156)	(216156)
2024	226,320	146,108	28,395	14,607	6,943	7,664	20,731	0	0	20731	(195424)
2025	226,320	145,447	29,530	15,241	6,843	8,399	21,132	0	0	21131	(174293)
2026	226,320	144,787	30,712	15,903	6,743	9,160	21,552	0	0	21551	(152741)
2027	226,320	144,126	31,940	16,594	6,645	9,949	21,992	0	0	21991	(130750)
2028	226,320	143,466	33,218	17,314	6,549	10,766	22,452	0	0	22452	(108297)
2029	226,320	142,805	34,546	18,066	6,454	11,612	22,934	0	0	22934	(85363)
2030	226,320	142,145	35,928	18,850	6,359	12,490	23,438	0	0	23437	(61925)
2031	226,320	141,484	37,365	19,668	6,267	13,401	23,965	0	0	23964	(37961)
2032	226,320	140,824	38,860	20,521	6,175	14,346	24,515	0	0	24514	(13446)
2033	226,320	140,164	40,415	21,410	6,085	15,326	25,089	0	0	25088	11642
2034	226,320	139,503	42,031	22,338	5,995	16,343	25,688	0	0	25687	37330
2035	226,320	138,843	43,712	23,307	5,907	17,399	26,313	0	0	26313	63643
2036	226,320	138,182	45,461	24,316	5,820	18,496	26,965	0	0	26964	90607

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	226,320	137,522	47,279	25,370	5,735	19,635	27,644	0	0	27644	118252
2038	226,320	136,861	49,170	26,468	5,650	20,818	28,352	0	0	28352	146604
2039	226,320	136,201	51,137	27,614	5,567	22,048	29,090	0	0	29089	175693
2040	226,320	135,540	53,183	28,810	5,484	23,325	29,857	0	0	29857	205551
2041	226,320	134,880	55,310	30,056	5,403	24,653	30,657	0	0	30656	236208
2042	226,320	134,219	57,522	31,357	5,323	26,034	31,488	0	0	31488	267696
2043	226,320	133,559	59,823	32,713	5,243	27,469	32,354	0	0	32353	300050
2044	226,320	132,898	62,216	34,128	5,165	28,962	33,254	0	0	33254	333304
2045	226,320	132,238	64,705	35,608	5,088	30,520	34,185	0	0	34184	367489
2046	226,320	131,578	67,293	37,184	5,012	32,172	35,121	0	0	35121	402610
2047	226,320	130,917	69,985	38,828	4,937	33,891	36,094	0	0	36093	438704
2048	226,320	130,257	72,784	40,545	4,863	35,682	37,102	0	0	37102	475806
2049	226,320	129,596	75,696	42,337	4,790	37,547	38,149	0	0	38148	513955
2050	226,320	128,936	78,723	44,207	4,718	39,489	39,234	0	0	39234	553189
2051	226,320	128,275	81,872	46,159	4,647	41,512	40,360	0	0	40360	593549
2052	226,320	127,615	85,147	48,197	4,577	43,620	41,527	0	0	41527	635077

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Cash

230 x AC-540MH/144V 540 Watt Panels (AXITEC) 2 x SE50KUS (SolarEdge Technologies Ltd.) 150 x Trenching (per foot), 230 x S440 Tilt Racks (56 panels only)	
Total System Price	\$337,864.50
<b>Purchase Price</b>	<b>\$337,864.50</b>
Price Per Watt	\$2.72 per Watt <small>For 124.200 kW system</small>
<b>Deposit Payable</b>	<b>\$2,500.00</b>

### Additional Incentives

<b>Federal Investment Tax Credit (ITC) - 30%</b> <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	<b>\$101,359.35</b>
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This proposal is valid until Aug 21 2023.

### Payment Milestones

Deposit	2,500.00
Beginning Installation	168,932.25
Passing Inspection	166,432.25
<b>Total</b>	<b>337,864.50</b>

## Proposal Acceptance

I have reviewed and accept this proposal and have had the opportunity to discuss system options with my Exact Solar sales engineer.

Signature \_\_\_\_\_

Name \_\_\_\_\_

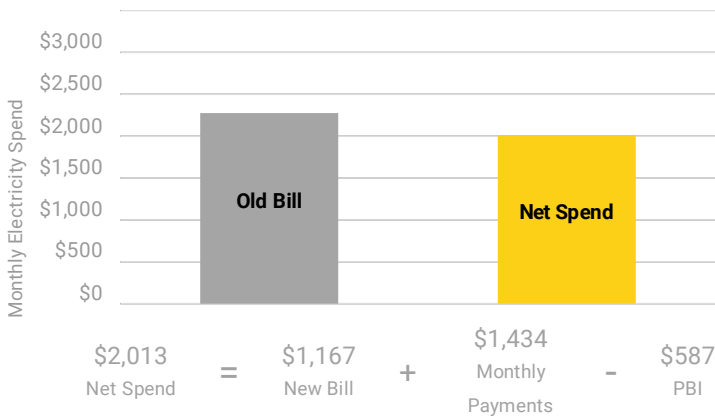
Date \_\_\_\_\_

### Payment Details: Offline Payment

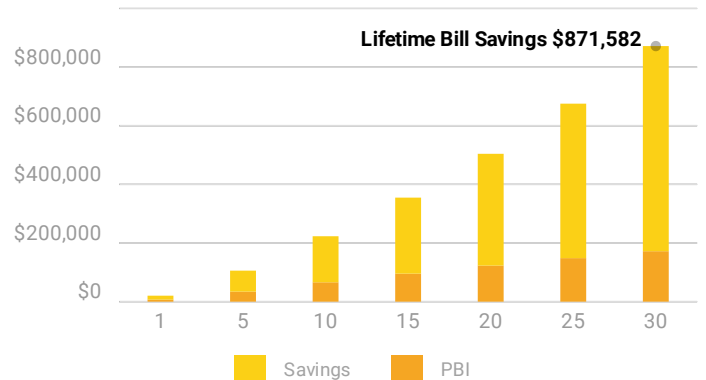
Please send an initial payment deposit for \$2,500 to Exact Solar to secure your order. Check should be payable to "Exact Solar" and mailed to 82 Walker Lane, Newtown, PA 18940. We look forward to helping you on your solar journey!

## Electricity Bill Savings

### First Year Monthly Bill Savings



### Lifetime Bill Savings



### Performance Based Incentives

Performance Based Incentives (Over System Lifetime)	\$172,032.63    \$7,044.87 in year 1
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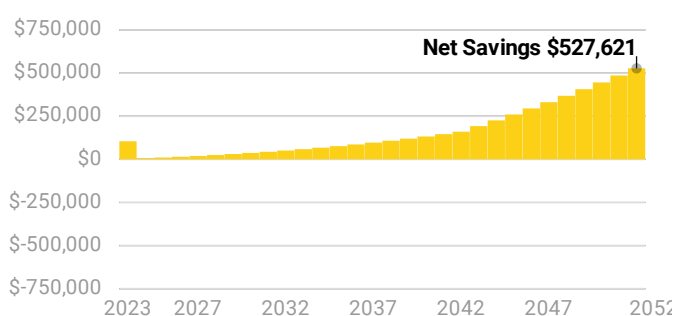
Your projected energy cost is calculated by considering a 4.0% increase in energy cost each year, due to trends in the raising cost of energy. This estimate is based on your selected preferences, current energy costs and the position and orientation of your roof to calculate the efficiency of the system. Projections are based on estimated usage of 226320 kWh per year, assuming General Service (Poly-Phase) (NEM 30 years) Electricity Tariff.

Your electricity tariff rates may change as a result of installing the system. You should contact your electricity retailer for further information.

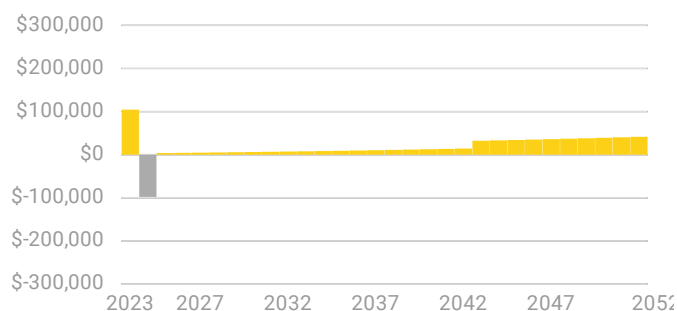
## Net Financial Impact Tax Exempt Municipal Lease

$$\begin{array}{rcl}
 \$871,582 & - & \$343,961 & = & \$527,621 \\
 \text{Utility Bill Savings} & & \text{Total Payments over 20 years} & & \text{Estimated Net Savings}
 \end{array}$$

Cumulative Savings From Going Solar



Annual Savings From Going Solar



**\$155,568**

Net Present Value

**153%**

Total Return on Investment

**6.4%**

Rate of Return on Investment

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2023	226,320	146,768	27,303	13,998	7,045	6,953	20,349	17,198	101,359	104510	104510
2024	226,320	146,108	28,395	14,607	6,943	7,664	20,731	118,557	0	(97826)	6684
2025	226,320	145,447	29,530	15,241	6,843	8,399	21,132	17,198	0	3933	10617
2026	226,320	144,787	30,712	15,903	6,743	9,160	21,552	17,198	0	4353	14971
2027	226,320	144,126	31,940	16,594	6,645	9,949	21,992	17,198	0	4793	19765
2028	226,320	143,466	33,218	17,314	6,549	10,766	22,452	17,198	0	5254	25019
2029	226,320	142,805	34,546	18,066	6,454	11,612	22,934	17,198	0	5735	30755
2030	226,320	142,145	35,928	18,850	6,359	12,490	23,438	17,198	0	6239	36995
2031	226,320	141,484	37,365	19,668	6,267	13,401	23,965	17,198	0	6766	43761
2032	226,320	140,824	38,860	20,521	6,175	14,346	24,515	17,198	0	7316	51077
2033	226,320	140,164	40,415	21,410	6,085	15,326	25,089	17,198	0	7890	58968
2034	226,320	139,503	42,031	22,338	5,995	16,343	25,688	17,198	0	8489	67458
2035	226,320	138,843	43,712	23,307	5,907	17,399	26,313	17,198	0	9114	76573
2036	226,320	138,182	45,461	24,316	5,820	18,496	26,965	17,198	0	9766	86340

Year	Electricity Consumption (kWh)	Solar Generation (kWh)	Utility Bill (before solar) (\$)	Utility Bill (after solar) (\$)	PA SRECs (\$)	Total Energy Spend (After) (\$)	Annual Savings (from solar) (\$)	System Costs (Net of Dealer Incentives) (\$)	Customer Incentives (Upfront) (\$)	Net Savings (\$)	Cumulative Impacts (\$)
2037	226,320	137,522	47,279	25,370	5,735	19,635	27,644	17,198	0	10446	96786
2038	226,320	136,861	49,170	26,468	5,650	20,818	28,352	17,198	0	11154	107940
2039	226,320	136,201	51,137	27,614	5,567	22,048	29,090	17,198	0	11891	119831
2040	226,320	135,540	53,183	28,810	5,484	23,325	29,857	17,198	0	12659	132491
2041	226,320	134,880	55,310	30,056	5,403	24,653	30,657	17,198	0	13458	145949
2042	226,320	134,219	57,522	31,357	5,323	26,034	31,488	17,198	0	14290	160240
2043	226,320	133,559	59,823	32,713	5,243	27,469	32,354	0	0	32353	192594
2044	226,320	132,898	62,216	34,128	5,165	28,962	33,254	0	0	33254	225848
2045	226,320	132,238	64,705	35,608	5,088	30,520	34,185	0	0	34184	260032
2046	226,320	131,578	67,293	37,184	5,012	32,172	35,121	0	0	35121	295154
2047	226,320	130,917	69,985	38,828	4,937	33,891	36,094	0	0	36093	331247
2048	226,320	130,257	72,784	40,545	4,863	35,682	37,102	0	0	37102	368350
2049	226,320	129,596	75,696	42,337	4,790	37,547	38,149	0	0	38148	406499
2050	226,320	128,936	78,723	44,207	4,718	39,489	39,234	0	0	39234	445733
2051	226,320	128,275	81,872	46,159	4,647	41,512	40,360	0	0	40360	486093
2052	226,320	127,615	85,147	48,197	4,577	43,620	41,527	0	0	41527	527620

Estimates do not include replacement costs of equipment not covered by a warranty. Components may need replacement after their warranty period.  
 Financial discount rate assumed: 6.75%

## Quotation

### Payment Option: Tax Exempt Municipal Lease

230 x AC-540MH/144V 540 Watt Panels (AXITEC) 2 x SE50KUS (SolarEdge Technologies Ltd.) 150 x Trenching (per foot), 230 x S440 Tilt Racks (56 panels only)	
Total System Price	\$337,864.50
<b>Purchase Price</b>	<b>\$337,864.50</b>
Loan Amount	\$337,864.50
Loan Interest Rate	4.00%
Loan Term	20 years
Prepayment <small>In month 18</small>	\$101,359.35
Initial monthly payment <small>Starting in month 1 - assuming prepayment of \$101,359.35 in month 18 this payment level will continue for term of the loan.</small>	\$1,434.00
Final monthly payment <small>19 - 240, assuming NO prepayment.</small>	\$2,081.00
Total Payments <small>Over 20 years</small>	\$445,320.84

### Additional Incentives

Federal Investment Tax Credit (ITC) - 30% <small>The Federal Solar Tax Credit or The Federal Investment Tax Credit (ITC) for constructions starting in 2022.</small>	\$101,359.35
<b>Net System Cost</b>	<b>\$236,505.15</b>

This proposal is valid until Aug 21 2023.



**PV Feasibility Study**  
(SolarEdge - Commercial)

***STYERS REAR BUILDINGS***

**Project Address:** 97 Styers Ln, Langhorne, PA, 19047

**Service Size:** Single Phase, 3W, 240V

**Meter Rating:** CL200 240V

**Roof size:** 12,565 sq ft.

**Maximum number of panels:** 230 (70.7% of roof coverage)

**System Size:** 124.2 kW DC

**Projected Annual Production:** 146,768 kWh

**Actual Annual kWh used (2022):** 22,761 kWh

**Solar production percentage of total kWh used:** 644.8%



**PV Feasibility Study**  
(SolarEdge - Commercial)

**STYERS REAR BUILDINGS**

**Interconnection Point:**

Line side tap at 250A Disconnect in garage, Line side tap at MSP at pavilion,

**Equipment Location:**

Exterior: Next to the meter on the east side of the building.

Interior: None.

Exterior:



Interior:



**PV Feasibility Study**  
 (SolarEdge - Commercial)

**STYERS REAR BUILDINGS**

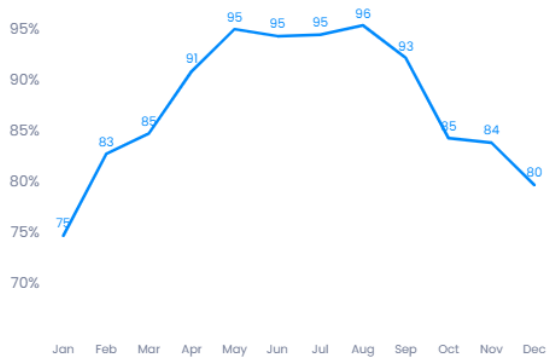
**Additional production information:**

**Overview**

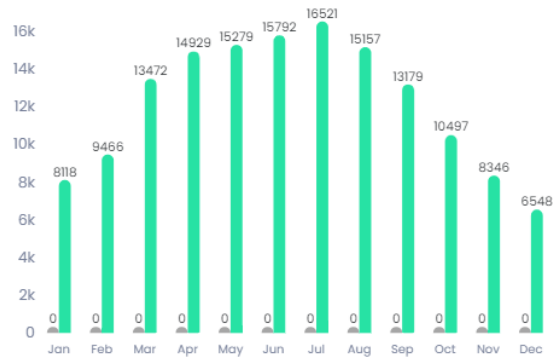
Segment	Modules	Size (DC STC)	Production	ASA	Consumption	PV Offset	Roof Area	Roof Coverage
All total	230	124.2 kW	147,304 kWh	90%	0 kWh	0%	8814 ft <sup>2</sup>	78.61%

Nearest weather station: 724095, TRENTON MERCER COUNTY AP, NJ (7.5 miles)

**Average Monthly Solar Access**

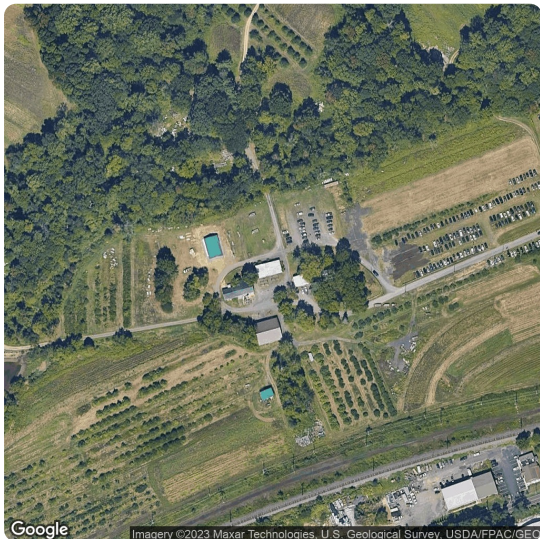


**Monthly Consumption and Production (kWh)**





## Solar Access Shade Report Prepared For:



**Styers Rear Buildings 1141 Woodbourne rd. Langhorne, PA**  
1121 Woodbourne Road, Langhorne, Pennsylvania 19047,  
United States

Lat, Long: 40.1949, -74.8996

Time Zone: GMT-5

Weather Station: 724095, TRENTON MERCER COUNTY AP, NJ 7.5 miles

Report Author: Evan Johnson

Report Created On: June 15, 2023

[Preview Model](#)



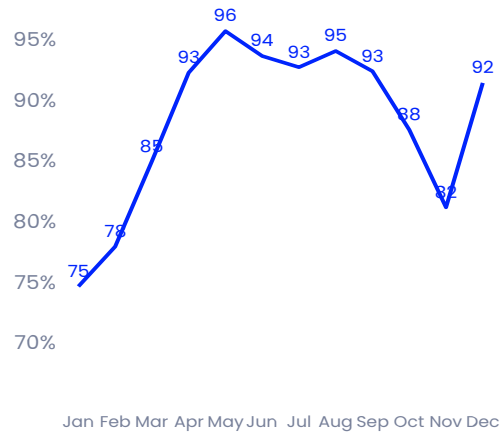
## Summary

Array	Panel Count	Azimuth (deg)	Tilt (deg)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
Segment A	72	165.0° True	17.8°	95.33%	90.21%	86.00%
Segment B	28	165.4° True	34.2°	98.28%	93.82%	92.20%
Segment C	14	165.5° True	33.1°	98.30%	84.84%	83.39%
Segment D	56	165.2° True	5°	88.83%	85.74%	76.17%
Segment E	30	254.5° True	15.1°	88.56%	95.17%	84.29%
Segment F	30	74.6° True	12.7°	80.81%	93.09%	75.22%
<b>Weighted Average by panel count</b>					90.26%	82.57%



## Solar Access: Segment A

Average Monthly



Average Annual

**90.21%**

TSRF: 86.00%

TOF: 95.33%

Summer (May - Oct): 94%

Winter (Nov - Apr): 85%

Tilt: 17.8°

Azimuth: 165.0° True

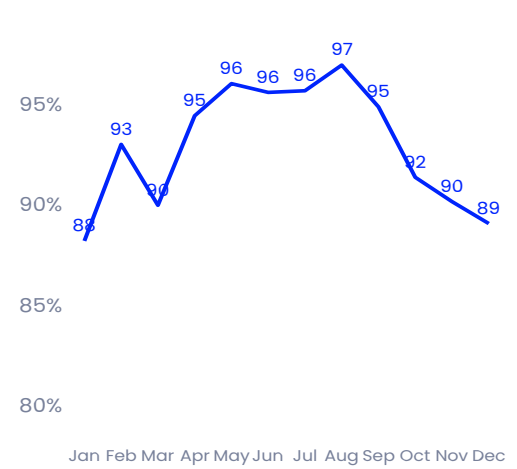
Solar Access Viewshed Heading:

180°



## Solar Access: Segment B

Average Monthly



Average Annual

**93.82%**

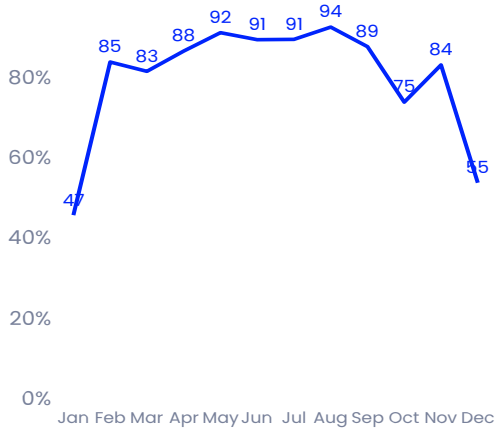
- TSRF: 92.20%
- TOF: 98.28%
- Summer (May - Oct): 96%
- Winter (Nov - Apr): 91%

- Tilt: 34.2°
- Azimuth: 165.4° True
- Solar Access Viewshed Heading: 180°



## Solar Access: Segment C

Average Monthly



Average Annual

**84.84%**

TSRF: 83.39%

TOF: 98.30%

Summer (May - Oct): 91%

Winter (Nov - Apr): 74%

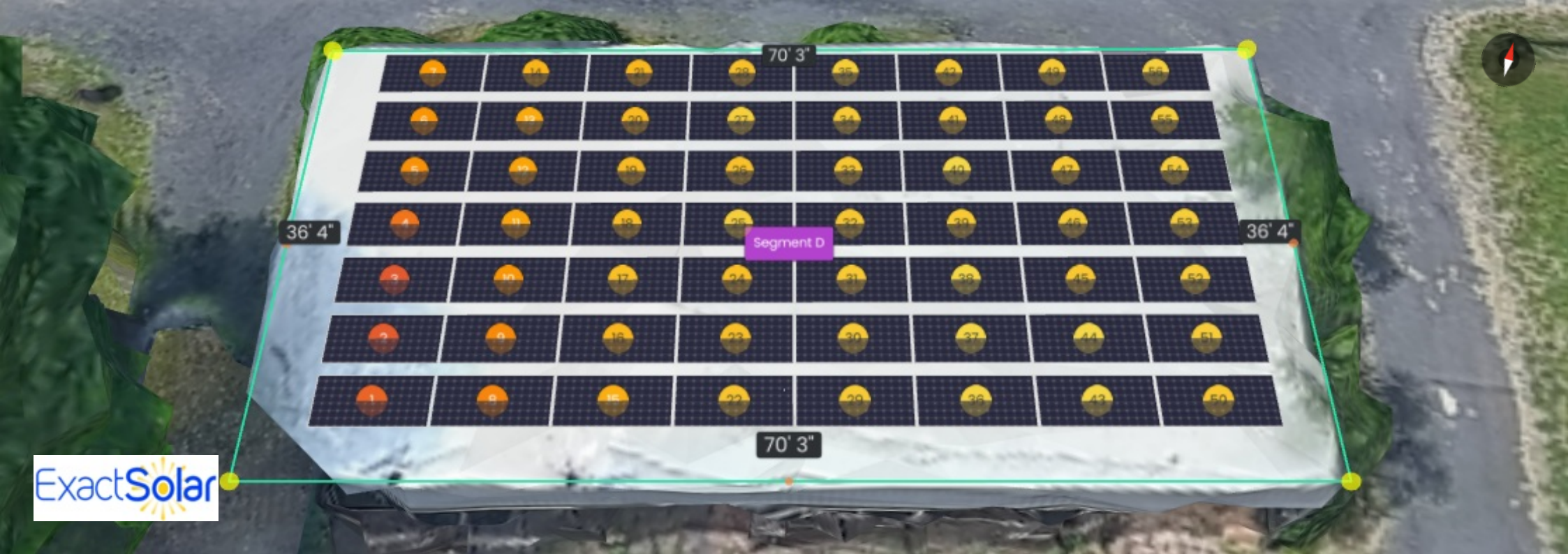
Tilt: 33.1°

Azimuth: 165.5° True

Solar Access Viewshed Heading:

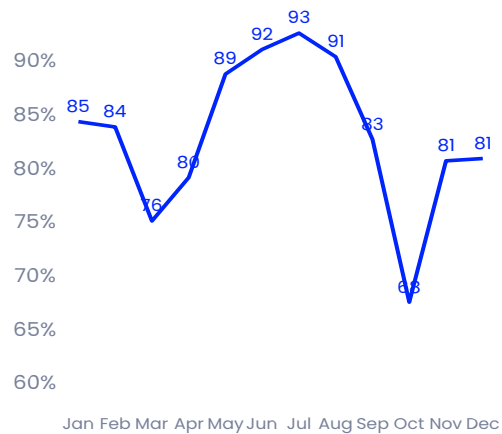
180°





## Solar Access: Segment D

Average Monthly



Average Annual

**85.74%**

TSRF: 76.17%

TOF: 88.83%

Summer (May - Oct): 90%

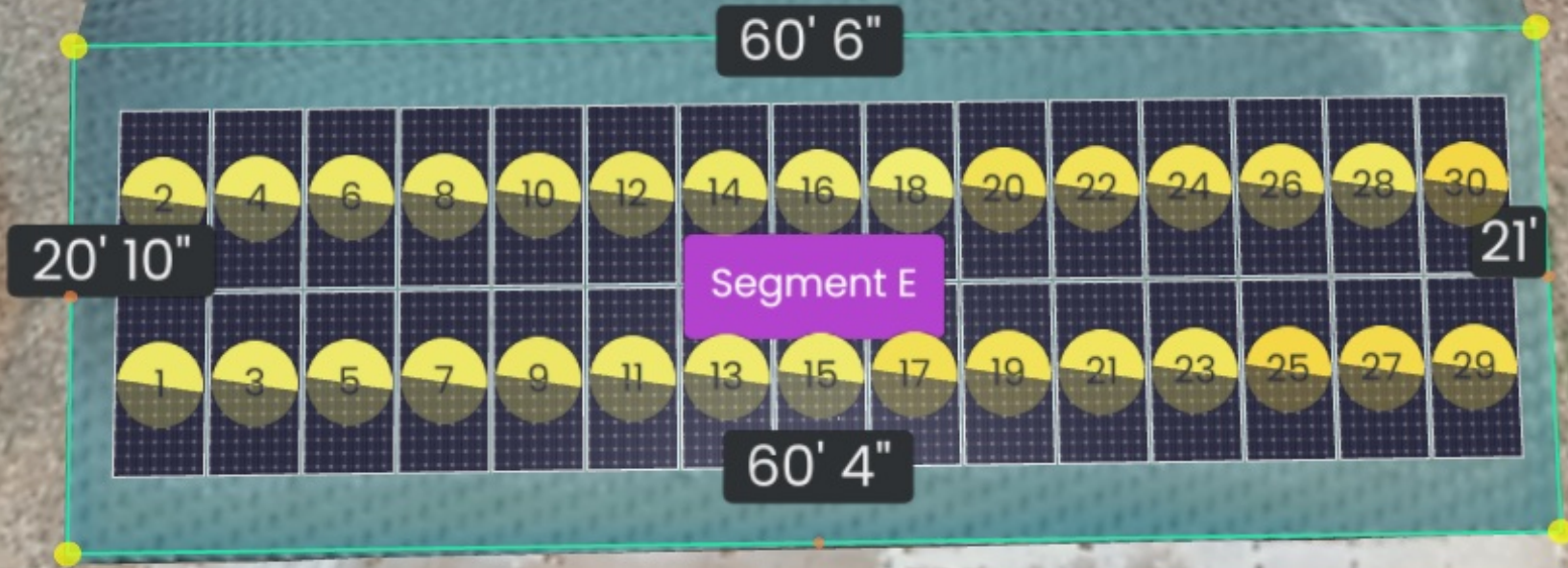
Winter (Nov - Apr): 79%

Tilt: 5°

Azimuth: 165.2° True

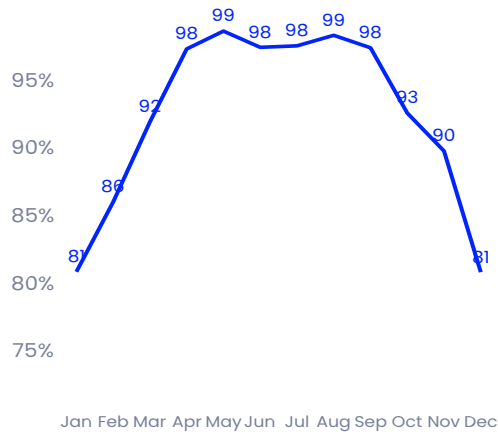
Solar Access Viewshed Heading:

180°



## Solar Access: Segment E

Average Monthly



Average Annual

**95.17%**

TSRF: 84.29%

TOF: 88.56%

Summer (May - Oct): 98%

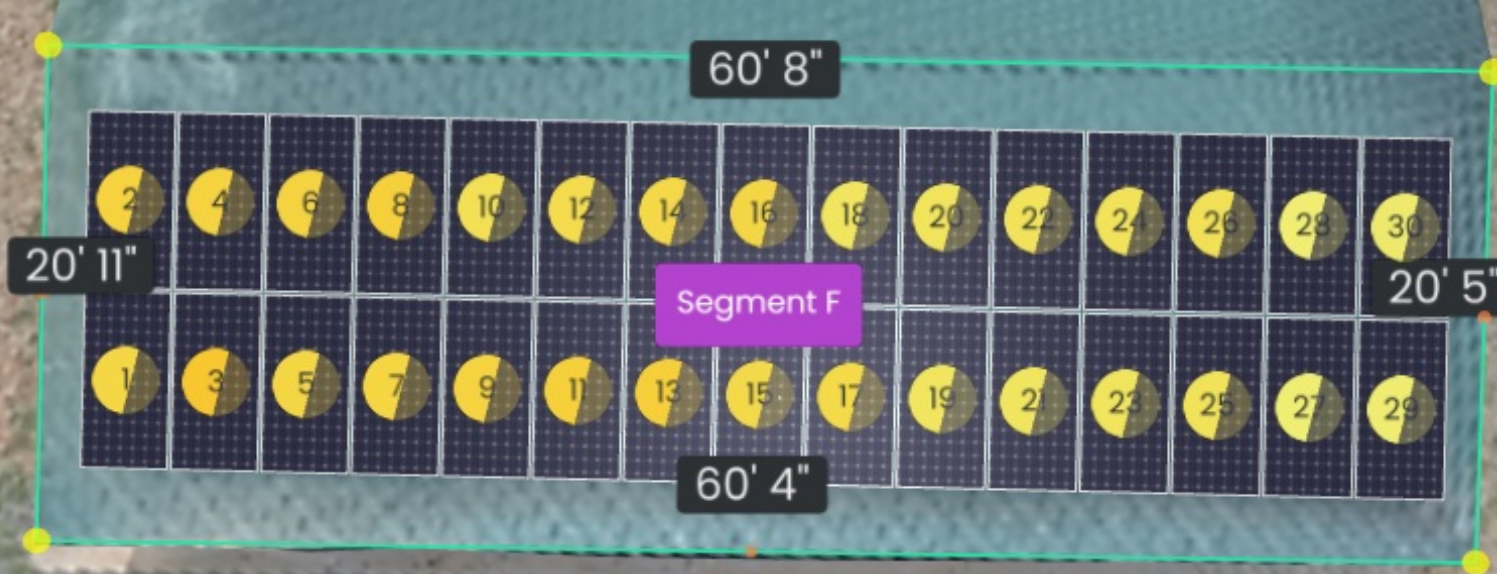
Winter (Nov - Apr): 89%

Tilt: 15.1°

Azimuth: 254.5° True

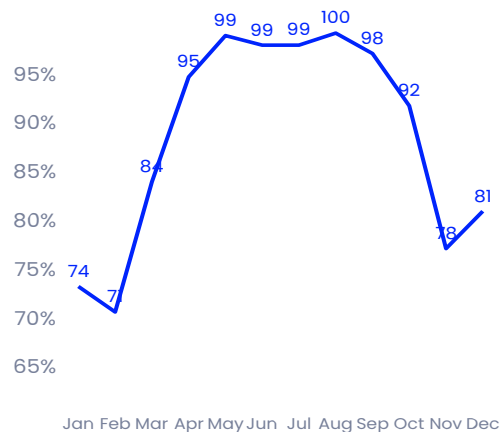
Solar Access Viewshed Heading:

180°



## Solar Access: Segment F

Average Monthly



Average Annual

**93.09%**

TSRF: 75.22%

TOF: 80.81%

Summer (May - Oct): 99%

Winter (Nov - Apr): 82%

Tilt: 12.7°

Azimuth: 74.6° True

Solar Access Viewshed Heading:

180°



**Usage by Location**

<b>Account #</b>	<b>Meter #</b>	<b>Location Ref</b>	<b>Address</b>	<b>kWh</b>
58326-01601	016953264	Middletown Twp <b>Municipal Center</b>	Twp Bldg, 3 Municipal Way, Langhorne, PA	748,770
64355-89018	17149063	<b>Styers Farm</b> (Middletown Twp)	1121 Woodbourne Rd, Box 249, Langhorne, PA	226,320
27449-01305	017113437	Middletown Township Admin Bldg ( <b>Community/Senior Center</b> )	2140 Trenton Rd, Levittown PA	202,024
11907-01705	016944125	Middletown Twnshp (MCP-Front) ( <b>Comm Park Field Lights</b> )	1741 Langhorne Yardley Rd, Front, Langhorne, PA	95,698
24290-05007	016944123	Middletown Township (2600 L/Y Rd-MCP Barn) ( <b>Comm Park</b> )	2600 Langhorne Yardley Rd, Langhorne, PA	39,408
32791-39082	032015577	Middletown Township (Simmons Park Ball Lights)	Brownsville Rd, Ball Lts S/O Us Rt 1, Langhorne, PA	35,515
14980-00309	124385807	Middletown Twp (Twin Oaks Park Rec Lts)	W 0 Trenton, 0 Woodbourne Rd, Levittown, PA	16,080
42942-00806	124386231	Midd. Twp Rec Bldg (Twin Oaks Heater)	Trenton Rd N, Woodbourne Rd, Levittown, PA	15,800
67416-01809	120116855	Middletown Township (1125 W/B Rd-Reimb)	1125 Woodbourne Rd, Langhorne, PA	12,800
02423-00808	125645071	Sup of Middletown Twp	698 Hulmeville Av, Langhorne, PA	11,681
98494-00105	020991676	Middletown Twp, Twin Oaks Fid Lots	Trenton Rd, Field Lt Trellis Rd, Levittown, PA	11,419
01351-41169	125646051	Middletown Twp (Poplar Park Tennis Ct)	Field Lt*2, 800 Poplar St, Langhorne, PA	10,934
30530-00300	124385844	Middletown Township Assoc	Twin Oak Way, 2850 Trenton Rd, Levittown, PA	10,400
30500-00707	123481395	Middletown Township	1121 Woodbourne Rd, Box 249, Langhorne, PA	9,961
55380-01405	123437648	Middletown Township ( <b>Public Works</b> - Pesticide Building)	Pesticide Storage, 698 New Rodgers Rd, Levittown, PA	102,160
95557-01408	123437649	Middletown Township ( <b>Public Works</b> -Highway Storage Bldg)	Stray Dog Fac, 700 New Rodgers Rd, Levittown, PA	0
36691-13001	124756934	Middletown Township (Garage-1741 L/Y Rd) ( <b>Fire Station</b> )	Garage, 1741 Langhorne Yardley Rd, Langhorne, PA	150,000
78151-01026	125642620	Middletown Twp (Jones Park)	Beechwood Ave, 0 Maple Ave, Langhorne, PA	1,377
58295-00100	123546237	Middletown Township ( <b>Public Works</b> - Pole Building)	700 New Rodgers Rd, Pole Bld, Levittown, PA	0
41440-92115	127885659	Middletown Twp (Beechwood Ave Sign)	Beechwood Ave-Sign, 0 Maple Ave, Langhorne, PA	9
			<b>TOTAL ANNUAL kWh ALL SITES ---&gt;&gt;&gt;</b>	<b>1,700,356</b>



## Your Local Solar Experts!

**Exact Solar is an award-winning local installer of solar energy systems in PA and NJ. We specialize in solar electric (PV) options. We are your local experts for all your solar needs!**

Exact Solar is the premier installer of solar energy systems in Southeast PA and New Jersey. Our top-tier solar panel installations and award-winning customer service are second to none. Locally-owned and operated for the last 18 years in Newtown, PA, Exact Solar was recently recognized as "Best of the Region" for Solar Installers for 2022, and received the Greater Philadelphia Civic 50 Award. We deliver customized projects with a first-class experience, guiding you every step of the way. We provide sales, design, installation, and long-term service with full-time employees - we don't subcontract out work!

Join us in the mission to fight climate change and help our planet! Let our expert sales engineers provide a consultation to help you make the move to energy independence today.

Exact Solar installs residential solar systems, as well as light commercial, as roof or ground mount systems. Our team has installed over 2,000 systems within the area. We have a full service department, as well as a remote troubleshooting team to assist our customers.

SOS - Solar Orphan Service: Exact Solar is one of a few companies that will service systems we did not install, so if your installer has gone out of business or retired, we're here to help!



**Harness the Sun, Power Your Home,  
and Free Your Wallet!**

**Contact Us Today! (215) 621-8353 | [www.ExactSolar.com](http://www.ExactSolar.com)**

