

# 99.9kW

## COMMERCIAL SOLAR PROPOSAL



Prepared for  
John Wiley  
Wileys Wool Pty Ltd  
15 Factory Road,  
Oxley

Prepared on 18/11/20  
By Chris Taeni  
Solar Proof  
0411 549 054  
[chris@solarproof.com.au](mailto:chris@solarproof.com.au)

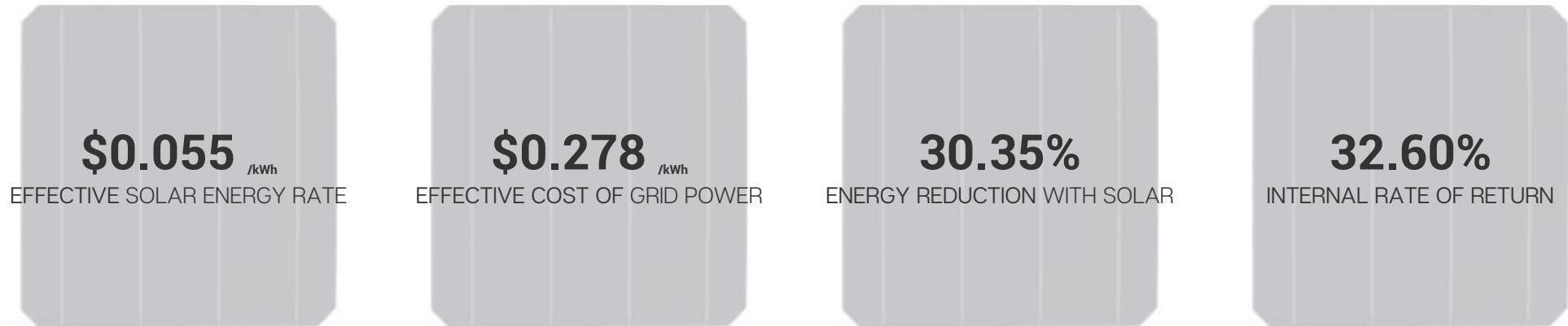


# Contents



Cover Page	0
Contents	1
Executive Summary	2
Power Bill Analysis	3
Performance	4
Site & System	5
Energy Use	6
Production	7
Solar Financials	8
Warranties	9
Quotation	10
Project Timeline	11
Appendix 1 - Project Assumptions	12
Appendix 2 - Project Charts	13





Note: Effective solar energy rate does not include the potential benefits of exported energy. It is solely a measure of how much self-consumed solar costs.

## What We Offer

- 99.9kWp solar PV System Installation.
- Generate power from your own solar power station\* and receive an estimated 30.35% on your annual electricity expenditure.
- Reduce your annual electricity costs by an estimated \$27,474 in the first year alone\*\*
- Full system investment (CAPEX OPTION) of just \$87,727.27 excluding GST

# Power Bill Analysis



Energy Charges	Rate (\$/kWh)	Energy (kWh)	Total Current Cost
Peak Energy	\$0.099	57,453	\$5,702
Shoulder Energy	\$0.115	73,856	\$8,478
Off-Peak Energy	\$0.044	134,484	\$5,937
<b>Environmental Charges</b>			
SRES	\$0.0043	265,793	\$1,137
LRET	\$0.0082	265,793	\$2,190
Other	\$0.0013	265,793	\$333
<b>Market Charges</b>			
Combined AEMO Market Charges	\$0.0046	265,793	\$1,234
<b>Network Charges</b>			
Peak Energy (Network)	\$0.120	57,453	\$31,825
Shoulder Energy (Network)	\$0.120	73,856	\$31,825
Off-Peak Energy (Network)	\$0.057	134,484	\$15,155
<b>Demand Charges</b>		Rate \$/kW	
Peak Demand (Network)		\$9.2687	\$9,535
Shoulder Demand (Network)		\$8.4848	\$8,994
Off-Peak Demand (Network)		\$4.4091	\$5,418
<b>Fixed (Standing) Charges</b>			
Access / Metering / Other Fixed			\$22,083

Total Power Bill

**\$92,423**

After Solar

**\$64,949 ↓ 29.7%**



## CURRENT (NO SOLAR ENERGY)

### \$92,423 POWER BILL AT A RATE OF \$0.237/kWh

- Power costs in year 1 estimated at \$92,423.
- Power price increase of 3% each year from then.
- Your peak energy cost without solar power system is \$0.278/kWh.
- Power demand costs may also apply in addition to the energy rate here.

## WITH 99.9kW SOLAR SYSTEM

### \$64,949 POWER BILL AT A RATE OF \$0.055/kWh

- ✓ New power costs in year 1 estimated at \$64,949.
- ✓ Annual power price increases mitigated with solar energy offset.
- ✓ Average energy cost with this solar power system is \$0.055/kWh.
- ✓ Demand costs may also reduce with average monthly demand reduction expected to be 4kVA.

### 265,793kWh ENERGY USED WITH 175.27kVA DEMAND

- Our assessment indicates your energy use is currently 265,793 kWh.
- Your peak demand has been assessed at 175.27 kVA.
- The total cost of power over the next 25 years is estimated at \$3,369,684.

### 185,114kWh ENERGY USED WITH 99kVA DEMAND

- ✓ Our simulation estimates your energy use with solar drops to 185,114 kWh.
- ✓ Your peak demand after installing this solar system is likely to drop to an average 99kVA/month.
- ✓ The total cost of power over the next 25 years with solar is estimated at \$2,510,028.

## Proposed System Design Details

Solar System Size	99.9kW
Solar Panels	270 x 370W - Seraphim Solar System Co Ltd - (SRP-370-BMC) Solar Panels
System Inverters	3 x Fronius Australia Pty Ltd 27kW (27.0-3-S)
Mounting System	Clenergy
Inverter Location	Assume plant room
Solar Connection Point	Main Switchboard
Energy Storage	NA

## Site Assessment Summary

Site Address	15 Factory Road, Oxley QLD, Australia
Solar Data Location	Oxley
Wind Region	A/B
Roof Height	>6m
Roof Type	Clip Lok
Roof Purlins Spacing	0.6 - 1.2m
Cathedral Ceilings	NA
Steep Roof	NA

## 99.9kW Solar Panel Site Layout



Array Capacity

99.9kW

Tilt angle

22°

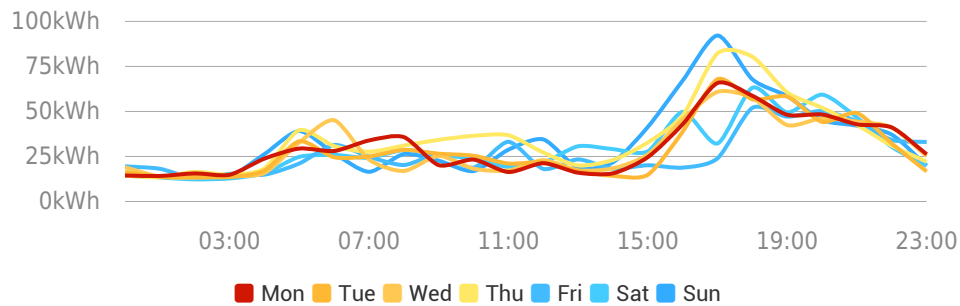
Direction (from North)

348.5°

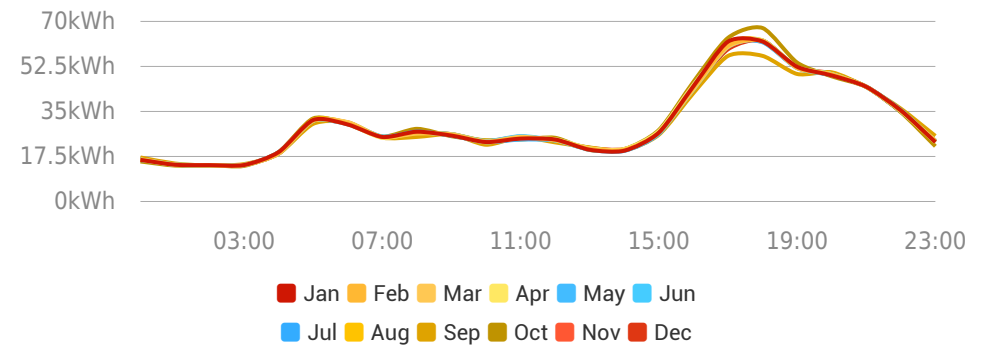
Current Annual Energy Consumption	265,793 kWh/year
Current Maximum Demand	175.27 kVA
Total Annual Energy Cost	\$92,423 \$/year (Excl. GST)

Average Daily Energy Consumption	728.2 kWh/day
Current Annual CO <sup>2</sup> Produced	279,550 kg

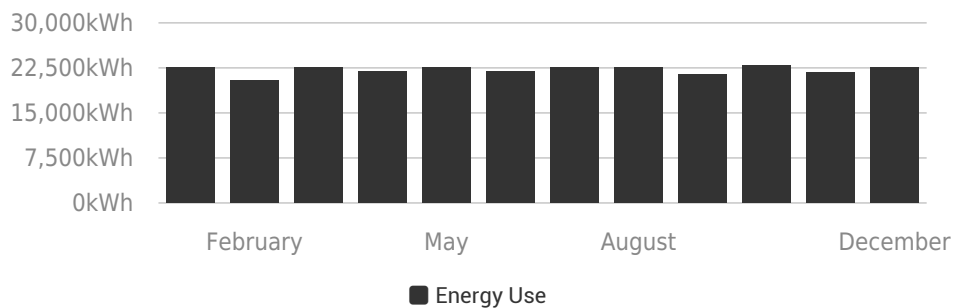
## Weekly average energy use



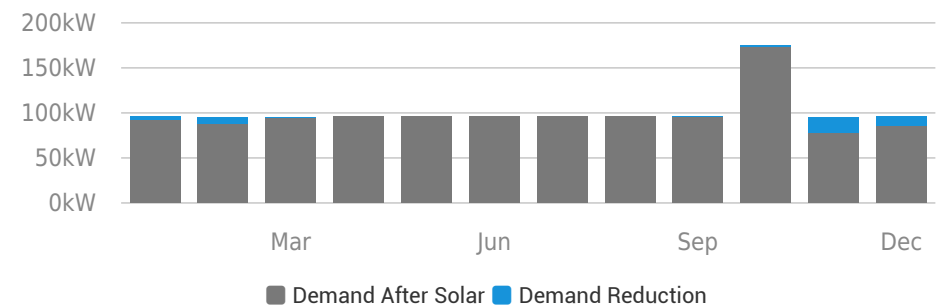
## Monthly average energy use



## Monthly Energy Use



## Month On Month Demand



# Solar System Production

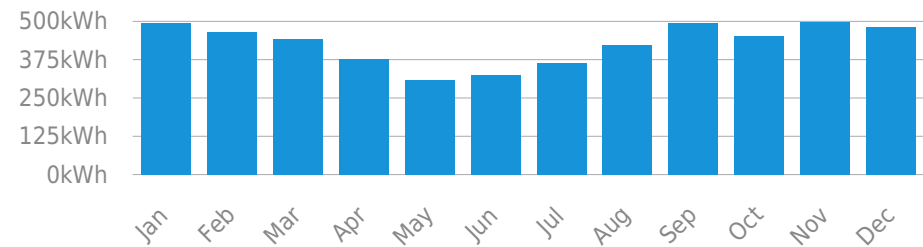
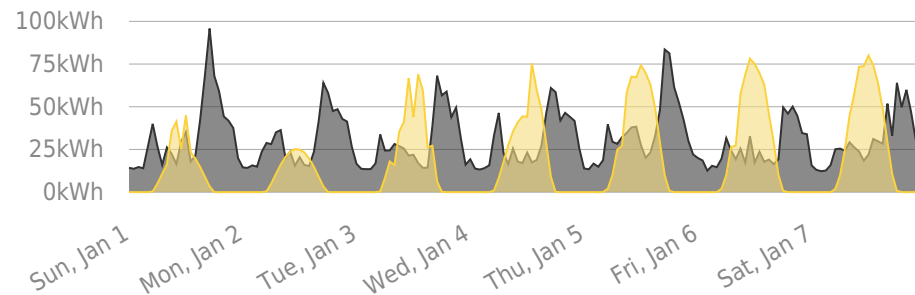


99.9kW System Energy	155,801 kWh/year
Average Daily System Production	426.9 kWh/day
Peak Solar Output	175.27 kW

Self-Consumed Solar Value (Year 1)	\$16,829 \$/year
Total Export Value In Year 1	\$25,093 \$/year

## Solar System Production - Production VS Energy Use

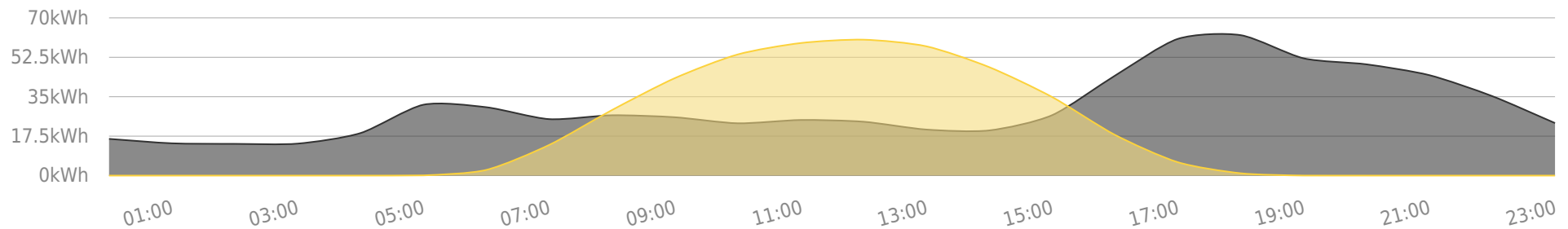
## Solar System Production - Monthly Solar Production



■ Normal Energy Use ■ Solar Production

■ Average Daily Solar Production

## An Average Day Energy Use VS Solar Produced



■ Average energy use ■ Average solar production





# Your Solar Investment



## Investment IRR

32.60%

## Year 1 Power Bill Savings Estimate

\$27,474

## Year 1 Solar Incentives

\$56,166.00

## Solar Energy Cost Basis

\$0.055 /kWh

## System Investment (Excl. GST)

Total System Value	\$143,893.27
Solar STC Incentives	\$56,166.00
Solar LGC Incentives (Year 1)	\$0
NET Investment Amount	\$87,727.27

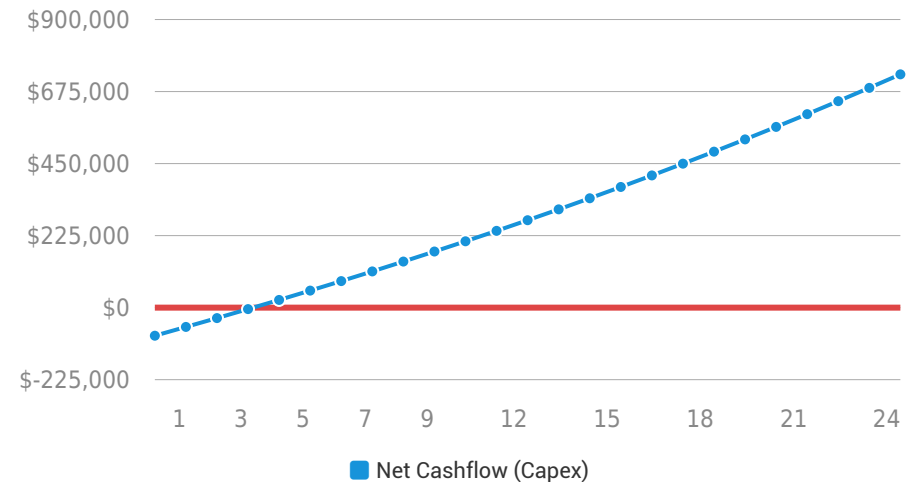
## System Savings Estimate

Energy Savings	\$25,093
Demand Savings	\$2,381
Other Savings	\$0
Total First Year Savings	\$27,474

## Lifetime Savings Estimate

Return On Investment	31.32%
Payback Period	3.15 years
Internal Rate of Return	32.60%
Net Present Value (CAPEX)	\$287,442

## Cumulative Savings Estimate



# System Warranties & Notes



Solar Panels



Inverter



Racking



Workmanship

Warranties

25 Year Performance  
Warranty / 10 Year  
Product Warranty

10 Year Manufacturer's  
Warranty

10 Year Warranty

10 Year Workmanship  
Warranty

Other Project Notes:

**Monitoring system:** Included in price



# Your Solar Quotation



## Quote Items

Description	Qty		Price Incl. GST
99.9kW Solar Power System	1	Unit	\$158,282.60
		Sub-Total	\$158,282.60
		GST Total	\$14,389.33
<b>STC Rebate</b>	<b>1,518</b>	<b>STCs</b>	<b>-\$61,782.60</b>
		<b>Total</b>	<b>\$96,500.00</b>

## Preliminary Quote Acceptance

I, John Wiley, accept the offer described in this document on behalf of Wileys Wool Pty Ltd. I also declare that I have the authority to accept this offer.

Signed:



Date:

18/11/20



## This is How You Can Expect Your Solar Installation To Progress In The Coming Weeks

Information collected & deposit paid (day 1)		Network approval (day 14)	* After-sales support & maintenance
<b>1 - 7 days</b>	<b>7 - 14 days</b>	<b>14 - 28 days</b>	<b>ONGOING</b>
	Installation booked (day 7)		Installation date & final payment (day 28)

This project timeline is provided to give you an estimate of the expected actions necessary before your solar system is installed. We try to be conservative with our estimates but some elements such as network approval are beyond our control and as such cannot be guaranteed. Most of our projects however are undertaken in less time than indicated above.

\* We pride ourselves in offering a high standard of after-sales support and maintenance services. Ask us about conducting routine cleaning & maintenance on your solar system so that you get the best performance results possible.

## Environmental Calculations

**Coal** - The calculated environmental impact is based on 350g of coal saved per kWh of solar energy produced.

**Carbon Emissions** - The reduction in CO<sub>2</sub> emissions is calculated based on your location. If you are located in Australia then emissions per kWh of solar are calculated as:

VIC	WA	QLD	ACT
1.17kg	0.78kg	0.82kg	0.87kg
SA	NSW	TAS	NT
0.62kg	0.87kg	0.20kg	0.69kg

The rest of the world is calculated at 0.75kg.

**Trees** - The number of trees equivalent calculation is based on 1.4 trees being required to offset each tonne of CO<sub>2</sub> as calculated above.

## Your Energy Usage Patterns

**Before solar** - Your energy needs are based on your energy usage patterns. If possible, this has been determined using real-life interval data collected from your energy retailer. If this is not possible, we have determined your energy needs by using a real-life energy profile which we feel is similar to your premises.

**After solar** - Many customers change their energy usage habits once a solar power system is installed. The projected energy needs and resulting financial benefits shown in this document do not account for any changes in usage patterns.

## Solar System Production

Your solar system generation estimates are based on real-life, historical data which helps us to simulate a "most likely" case of solar system energy yield. We have taken into account the angle of your solar panels, as well as the orientation (azimuth) and also the likely losses due to shade, clouds, wet seasons and equipment efficiencies.

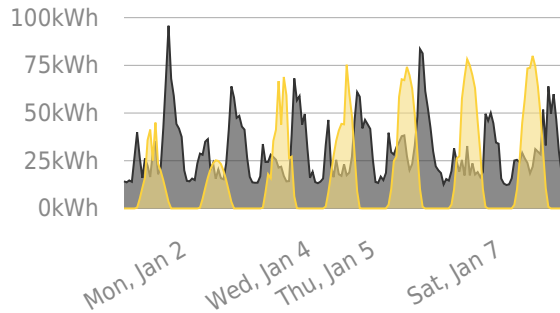
## Rates

We have used your past power bills to calculate the savings you are likely to make with solar. The major influencers of how much you will save are: the peak rate you pay for electricity and the solar feed-in-tariff rate you are able to get from your energy retailer.

## Efficiencies & Values

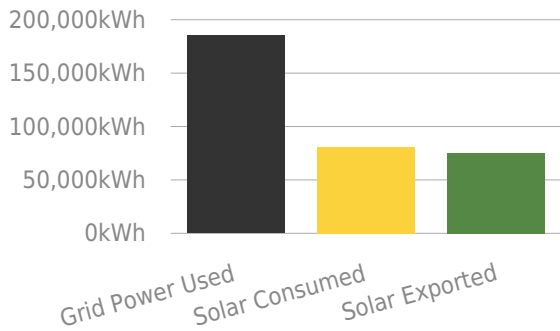
Solar system size (panels)	<b>99.9 kWp</b>
Solar inverter size (total)	<b>81 kW</b>
System efficiency	<b>87.3%</b>
Peak energy rate	<b>\$0.250000</b>
Power price increase p.a.	<b>3%</b>
% of solar energy used	<b>51.78%</b>
% of solar energy exported	<b>48.22%</b>
Solar panel lifetime	<b>25 years</b>
Tax rate	<b>10%</b>
Discount rate	<b>7%</b>

## 1 Week Energy Flow Projection:



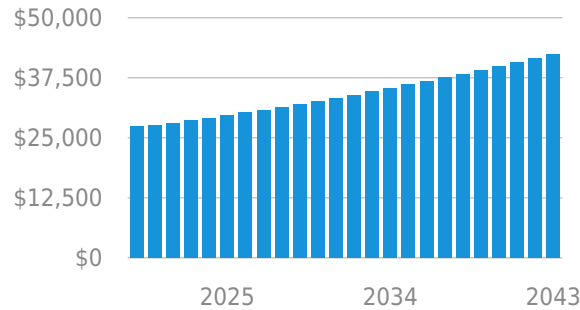
■ Normal Energy Use ■ Solar Production

## Mix of Energy over 1 year:



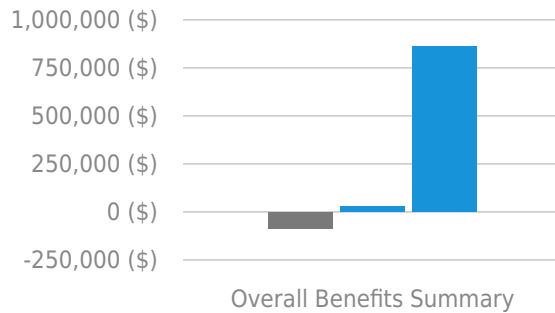
■ Grid Power Used ■ Solar Consumed ■ Solar Exported

## Savings (Year on Year):



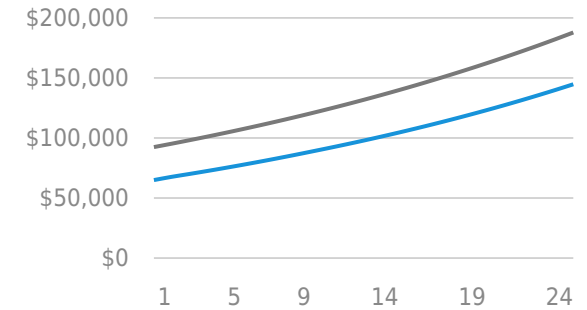
■ Solar Savings

## Overall financial benefits:



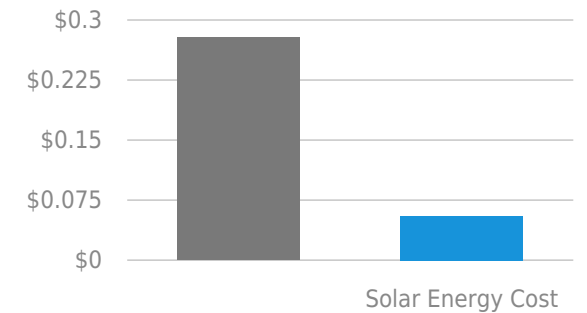
■ Total Investment ■ First Year Savings ■ 25 Year Benefit

## Power Bill Before and After Solar:



■ Before Solar ■ After Solar

## Cost of Energy Comparison:



■ Average Energy Cost (25 Yrs) ■ Avg Solar Energy Cost (25 Yrs)