

Solar Energy for Zion

August 20, 2023

The Sun can Provide Zion's Electricity Needs

AND provide average annual income of
\$29,987 to Zion each year for 25+ Years

What We'll Discuss Today

- 1) Summary/Thesis
- 2) Financial Contribution from Solar Installation
- 3) What Other Mennonite Churches are Doing
- 4) Community Interest and Engagement
- 5) Discussion/Question and Answer

Summary/Thesis

- ❖ A Solar Energy Installation Could Deliver:
 - ✓ Elimination of current \$14,000 PPL annual cost
 - ✓ Provide additional \$4,300 SREC revenue annually
 - ✓ With No/Minimal maintenance required
 - ✓ 25 Year Warranty on Panels
 - ✓ Reliable and Well-Proven Technology
 - ✓ Generate Interest in the Community
 - ✓ Wise Stewardship
 - ✓ Demonstrate Care for Creation and Future Generations

Financial Contribution - Background

- ❖ A Solar Energy installation can Serve as an Endowment to Zion's Ministry of Stewardship:
 - ✓ Cost Avoidance: \$14,000 PPL current annual cost
 - ✓ Cost Avoidance: Eliminates PPL future cost increases – Pennsylvania has the 12th highest rates in the U.S.
 - ✓ Adds \$4,300 SREC income annually
 - ✓ SRECs Explained:
 - Solar Renewable Energy Credits (SREC): Pennsylvania is one of ten states with a Renewable Portfolio Standard requiring utilities to produce 18% of energy from renewable sources and a specific amount of solar-generated electricity – at least .5%.
 - One SREC is generated for every 1,000 kWh or 1 megawatt of Solar energy created by the installation and “banked” to the owner of the installation.
 - SRECs are purchased by utilities that don't generate enough solar energy to meet the portfolio standard. Utilities tend to simply buy the credits (SRECs) from solar owners. These are known as Alternative Compliance Payments.
 - SRECs in 2023 varied in value from \$37 to \$42.50 each. We are using \$38 as an estimate.

Financial Contribution – Gross Benefits

Assumptions:

- 1) 25 Year Time Horizon – It is expected the system will be operational longer than 25 years. Full Years 2025 – 2049 modeled for cost/benefit analysis.
- 2) PPL Electricity Increases 4% annually
- 3) SREC Rates Vary from \$37 to \$42.50 per SREC – estimating \$38 for modeling
- 4) No Costs estimated for maintenance

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- ✓ PPL Electricity Savings: \$642,180
 - ✓ SREC Payments to Zion: \$ 107,500
 - ✓ Total: \$749,680

Financial Contribution – Costs

Assumptions:

- 1) \$200,000 estimated cost – could swing 12.5% either way (\$175K - \$225K)
- 2) No maintenance costs modeled on panels – 25-year warranty
- 3) No maintenance costs on optimizers – 25-year warranty
- 4) No maint. costs on inverters – 12-year warranty upgradeable to 20 - 25 years
- 5) No Costs estimated for other maintenance

- ✓ **Estimated Total: \$200,000**
- ✓ **Rebate from U.S. Treasury \$ 60,000**
- ✓ **Committed Funds by Creation Care (to-date) \$50,000**
- ✓ **Out of Pocket Costs to Zion \$90,000**
- ✓ **Break-Even between Years 4 and 5**

Financial Summary – 25 Year Estimate

- ✓ Zion's Out of Pocket Cost of \$90,000 Yields:
- ✓ \$749,680 in cost savings and revenue
- ✓ **Break-Even between Years 4 and 5**

Estimate without any additional fund-raising effort. Many ideas for fund raising to be considered. One example - Supporters could sponsor panels:

- 180 panels could be sponsored at \$500 each
- Each Panel will produce \$4,165 over 25 years resulting in 733% return on donation. 29.32% per year for first 25 years.

If all the panels were sponsored, Zion's net cost would be \$0.00 and break-even would be immediate!

Mennonite Churches with Solar – Partial List

Sourced from Mennonite Creation Care Network – July 5, 2023

AZ	Shalom Mennonite Fellowship
CO	Glennon Heights Mennonite Church
CO	Mountain Community Mennonite Church
IL	First Mennonite Church of Champaign/Urbana
IL	First Mennonite Church of Normal
IN	Assembly Mennonite Church
IN	Belmont Mennonite Church
IN	Benton Mennonite Church
IN	Berkey Avenue Mennonite Fellowship
IN	College Mennonite Church
IN	East Goshen Mennonite Church
IN	Eighth St. Mennonite Church
IN	Prairie St. Mennonite Church
IN	Sunnyside Mennonite Church
IN	Walnut Hill Mennonite Church
IN	Waterford Mennonite Church
IN	First Mennonite Church, Indianapolis
IN	Paoli Mennonite Fellowship

IN	Kern Road Mennonite Church
KS	Southern Hills Mennonite Church
MD	Hyattsville Mennonite Church, MD
NM	Albuquerque Mennonite Church, NM
OH	Millersburg Mennonite Church, OH
ON	Hillcrest Mennonite Church, ON
ON	Waterloo-Kitchener United Mennonite Church
PA	Akron Mennonite Church, PA
PA	Landisville Mennonite Church, PA
PA	University Mennonite Church, PA
SK	Wildwood Mennonite Church, SK
VA	Community Mennonite Church, VA
VA	Immanuel Mennonite Church, VA
VA	Park View Mennonite Church, VA
VA	Huntington Mennonite Church
VT	Taftsville Chapel Mennonite Fellowship

+ at least 5 in process. Over 40, I am sure.

Plus: AMBS, Goshen College, EMU, Multiple MCC Locations

Community Interest and Engagement

Data Collection from MCCN

- 1) Community members notice the panels and generate interest in the church and how solar energy works.
- 2) Younger generations show enthusiasm toward solar energy adoption and sees this as an example of the church at work.
- 3) Models stewardship and care for creation and the environment to the community.
- 4) Signs could be erected on Zion's property for awareness of why this was done and how Zion benefits the community.
- 5) After seeing the benefits of solar, church members and surrounding community members tend to install solar at an accelerated rate.

Discussion Time

- General Question and Answers
- Is any of this new information or a surprise to you?
- What would you like to know more about?
- What are other benefits do you foresee that haven't been mentioned?
- What are your affirmations or concerns?

Draft Appendix

2025 - 2049 Capital Revenue vs Facility Projects

Solar Benefit Total:	\$749,680
MEF Grants	\$875,000
Annual Budget	\$250,000
Total Available	\$1,874,680

Facility Project Spend \$1,565,710

Surplus: \$308,970