Solar Power

The Details of CoM's Move to Solar

Congregation of Moses

21st Century Judaism

In June of 2026, the Oversight Board voted to move forward with the purchase and installation of rooftop solar panels. The Congregation of Moses Solar Project takes control of growing and unpredictable electrical expenses.

Consumers Energy has sought six rate increases in six years, while Michigan residential rates have risen 75% since 2008. If current trends continue, CoM's annual electrical expenses could rise from about $14,000 today to more than $25,000 within 15 years. Solar offers a practical, long-term response by reducing the synagogue's reliance on purchased electricity, improving efficiency, and keeping more resources available for the congregation's religious, educational and community work.

This project also puts Jewish values into action. Solar generation produces no greenhouse-gas emissions, noise or on-site pollution. The proposal estimates that the system will offset roughly 40 tons of carbon dioxide each year—an expression of Tikkun Olam, our responsibility to help repair and protect the world. Locally generated power also eases demand on the electrical grid during peak-use periods.

A gift to the Solar Project is an investment in CoM's future. Please consider making a donation today at **congregationofmoses.org/solar** and do your part to make clean, economical, locally-produced energy a reality for decades to come.

Q: What were the factors that prompted CoM to make the move to solar energy?

Rising Utility Rates:

- 6 rate hike requests from Consumers Energy in 6 years
- 75% increase in Michigan residential rates since 2008
- 4-6% average annual rate increase trend
- $0.30+ projected rate per kWh within 12-15 years

What We'll Spend Over 15 Years WITHOUT Moving to Solar

Today	$13,990/yr	$0.210/kWh
Year 5	$17,000/yr	$0.255/kWh
Year 10	$20,700/yr	$0.311/kWh
Year 15	$25,200/yr	$0.378/kWh

Economic Benefits of Solar Energy

- Combats rising electricity costs
- Reduces our utility bill and increases energy efficiency
- Redirects approximately $14,000/year spent on electricity currently
- No moving parts to wear down or break

Community Benefits of Solar Energy

- Solar panels make no noise and emit no pollution
- Solar reduces dependence on non-local energy sources
- Solar power protects the electrical grid - it reduces demand especially during hot, high-usage hours

when the grid is under the most strain. Power is produced where it's used, eliminating the need to move electricity long distances through transmission and distribution lines. The utility doesn't have to supply as much power at times of big demand, which can help avoid overloads and make the system easier to manage.

Environmental Benefits of Solar Energy

- Increases our energy independence, using an abundant natural resource
- Photovoltaic (PV) systems emit no greenhouse gases
- Honors our commitment to reduce our carbon footprint
- Tikkun Olam - offsets approximately 40 tons of CO_2 annually, equivalent to:

  132,851 gallons of gasoline saved • 1.3M pounds of coal saved

Cost Savings Through the Inflation Reduction Act

In addition to the cost savings and many economic and environmental benefits, CoM was able to take advantage of Investment Tax Credits through the Inflation Reduction Act. The window was closing on these tax credits but by acting now, CoM will save approximately $40,000 on the purchase and implementation of solar panels, and will cut its costs on electricity dramatically.

Q: How much power will the solar panels generate? How do they supply power during the short days of winter or on cloudy days?

The recommended equipment plan will meet 98% of CoM's electrical needs **on average** for the entire year. In some months, electricity will be drawn from Consumers Energy (Jan, Feb, July, September, October, November and December) and in March, April, May, June and August, the system will produce more electricity than needed, allowing us to sell back excess to Consumers Energy.

Q: How much money will CoM save through the use of solar energy?

At our current rates, we will save approximately $14,000/year. Within five years of rising rates, it is estimated that CoM will save about $17,000/year on electricity.

Q: What kind of panels and inverters will be purchased?

- 98 Sil-Fab photovoltaic panels, made in USA
- Solar Edge Inverter (domestic circuit board assemblies, enclosure, and production)
- Ironridge Bx ballasted racking system (domestic structural fasteners, rails, and production)

No damage to the congregation's new roof will be done during the installation and operation of the system.

Q: Who is the chosen contractor, and what is the cost of the project?

The installation contractor is Chart House Energy (charthouseenergy.com), based in Muskegon. Founded in 2009, Chart House is an independent Michigan-based contractor providing discounted, emission-free solar systems to governmental, commercial, non-profit and private customers. To date, Chart House has installed multiple projects representing nearly 4Mw of capacity, or about 77 Congregation of Moses-sized projects.

The total cost of the project is just under $138,000 for 98 solar panels. With the rebates we were able to secure, the net cost will be around $97,000.

This is an investment with a projected payback of seven years.

Q: Were other companies considered?
Four quotes were obtained from Michigan companies. Chart House had the lowest price and all domestically-made materials. They are a Michigan-based solar provider.

Q: How will the project be paid for?
About $37,000 has been raised through early donations to support the project. We are also working to secure some grant funds. The balance of the money will be raised through fundraising efforts.

Q: Will the solar panels become obsolete at some point? Would we ever have to consider replacing those solar panels with another type of solar panel?
The solar panels should not wear out or become obsolete because there are no moving parts to wear out. They can fail, but there is a long warranty on the equipment and they will not fail en masse.

Q: What is the warranty on the equipment?
The warranty on the panels and inverters is between 20 and 30 years.

Q: Can the solar panels be damaged by hail, storms or anything else?
Yes, they can be damaged by severe weather or “acts of God” which would require an insurance claim.

Q: Do solar panels ever have to be serviced?
An Operations and Maintenance agreement (service contract) is bundled into the project for the first five years but after that time, the cost will be about $500 per year.

Q: Is there a possibility that the solar panels might fail and leave CoM with no electricity?
No, we’ll always have backup power from the Consumers Energy grid. We’ll still be connected to that. This plan does not include battery storage, so in the event that power goes down in the area, we wouldn’t have power either.

Q: Will there be battery back-up for the solar system?
Not immediately, no. The cost of battery storage systems is roughly in the range of $60-80K at the present time. As these systems improve and become less costly, undoubtedly they will be considered.

Q: Has CoM looked at other ways of reducing its energy use? What other steps have been taken?
Yes, the synagogue has been actively working to reduce its energy consumption over the past eight years or so. Most of the changes that are practical and cost-effective to make have been completed, including a replacement of all lighting with LED lamps, and electrification of our kitchen during the recent remodel. The skylights have also been removed, which were a source of wasted energy throughout the building.

Because our building is over 65 years old, built during a time of cheap and seemingly abundant energy,

it is not energy efficient. Its block construction does not allow for insulation to be added in a cost-effective way. The boiler system that provides heat is not likely to need replacement for some time, so more energy-efficient means of heating the building are not in the immediate future.

We plan to continue to improve the efficiency of the building over time but most of the major changes have been made.

Q: Isn't there an environmental cost to solar panel production, manufacturing, shipping, end-of-life disposal etc?

Solar panel production requires mining, manufacturing and eventual recycling but it is not an equal trade with fossil fuel generated electricity. Unlike coal and gas, solar energy does not require continuous fuel extraction and combustion for every kilowatt-hour, so its lifetime greenhouse-gas emissions and direct air-pollution health burden are far lower.

Once installed, a rooftop system produces electricity for decades with no fuel combustion and minimal water use. During operation, solar panels generate electricity without combustion, so they do not emit carbon dioxide, sulfur dioxide, nitrogen oxides or particulates at the point of generation. That fact matters for both climate and public health, as compared with fossil fuel generated electricity.

The harms of mining or manufacturing are not erased with solar energy but the project is not simply exchanging one equal environmental injury for another. It is reducing total climate and air pollution harm, compared with the electricity we would otherwise purchase from Consumers Energy.

If you have other questions, please contact com@congregationofmoses.org.