

Solar Power Project at Minnehaha United Methodist Church

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Background



- MUMC Mission Statement:
 - We will meet the spiritual, social, and practical needs in our changing community by praising God, welcoming everyone, offering unconditional love and acceptance, and working for social justice for all.
- MUMC Vision Statement:
 - We seek, we serve, we celebrate, we carry our Christian faith into our community and the world. We provide a caring gathering place to worship God and grow spiritually.
- How did we decide to look into solar power?
 - The Minnehaha UMC community is interested in doing what we can to reduce our use of fossil fuel energy. Prior efforts to reduce consumption have been successful. Our next option is to replace fossil fuel energy with renewable energy such as solar.
- Project sponsors: Board of Trustees, Pastor Becky Sechrist

Project Process

- Project Goal: Evaluate the options to use solar power to reduce or eliminate the use of electricity generated by fossil fuels while minimizing risk to MUMC. For all options, identify return on investment, feasibility, and risks.
- Planning Phase **(completed)**
 - Define Project Charter
 - Identify options
 - Investigate requirements; define return on investment, costs, and financing options
- Decision making Phase **(in progress)**
 - Review with project sponsors; gain approval to move forward (or not)
 - Review with congregation; gain approval to move forward (or not)
- Execution / Risk management Phase
- Close / Monitor Phase

Path to Solar: Options Identified

1. Subscribe to community solar gardens
 2. Purchase and install rooftop solar
 - a. MUMC buys panels and pays for installation to offset usage,
 - b. MUMC finances installation and leases panels to offset usage, or
 - c. Lease roof space for use as a community solar garden (electricity produced is not exclusively to offset MUMC usage)
 3. Combine 1 & 2, a subscription to community solar with a rooftop installation
- Committee recommendation: Option #3

Rooftop option: Made in MN incentive



- “Made in Minnesota” is a state incentive program
 - Available for installations less than 40 kW
 - The rebate is paid for 10 years.
 - The rebate rate is based on the solar panel manufacturer and the amount of energy produced annually.
 - Selection is by lottery. For commercial applicants, 1 in 6 were awarded in 2016.
- **MUMC entered the lottery for this incentive and we won!**
- Getting the incentive makes it economically feasible to finance the installation of 40 kW of solar panels on MUMC’s roof

Proposed Implementation Process

- Work with Cooperative Energy Futures to manage project
- Finance installation with Innovative Power Systems
 - Anticipated financing agreement terms:
 - No upfront cost to MUMC
 - MUMC leases the panels for 15 years
 - Leasing cost is covered by solar panel energy production and the state incentive
 - MUMC receives remaining savings
 - After year 15, MUMC has the option to buy the panels for fair market value (expected to be minimal)
 - Electricity production warranted through year 25; MUMC could potentially operate panels up to year 40
- After installing panels, buy into Community Solar provided by Cooperative Energy Futures, SunShare, or other community garden.
 - Purchase power under a 25-year contract with fixed rate increases

Implementation Partners & Resources

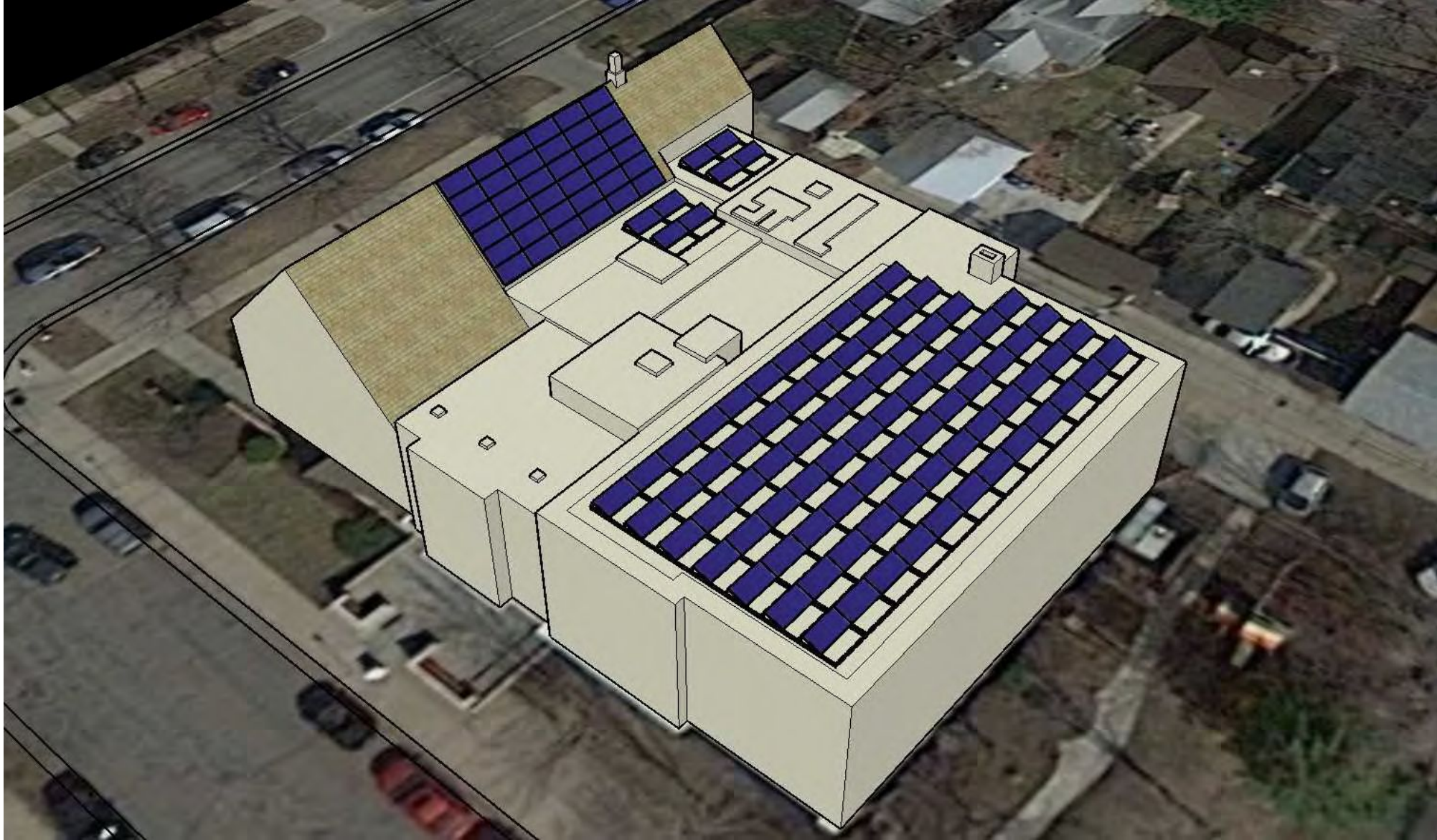
- MN Interfaith Power and Light <http://www.mnipl.org/>
- Video: 24 hours of Reality: Field Report - Energy Stewards
www.youtube.com/watch?v=kKIXFLxMZhE
- Cooperative Energy Futures <https://cooperativeenergyfutures.com/>
- Innovative Power Systems <http://ips-solar.com/>
- Clean Energy Resource Teams <http://www.cleanenergyresourceteams.org/>
- Sun Share Community Solar <https://www.mysunshare.com/>

Rooftop installation

- Maximizes cost savings long-term
- Provides visible symbol of MUMC's commitment to solar
- Roof space could produce ~40 kW total
- Could offset ~40% of MUMC electricity usage
- MUMC would need 96 kW system to offset all annual usage at current usage rate



Rooftop option: concept drawing



Projected Financial Benefits

- Years 1-15: Save \$1,300-2,500/year (~\$27,000 total)
- Years 16-25: save \$8,000-10,000/year (~90,000 total)
- Years 25+: Continued savings until panels are replaced/removed
- Total projected savings: \$120,000+

Next Steps & Timeline

- Update congregation and trustees (now)
- Financing decision (Fall 2017)
 - Receive and review proposed financing terms
 - Seek approval from trustees, congregation
 - If approved, sign financing agreement
- Installation (~6 weeks in late 2017 or early 2018)
 - Structural engineering review of building
 - Update electrical connections
 - Install panels
 - Install meters, other wiring
- Fulfill remaining electricity needs by contracting with a community solar garden (mid/late 2018)



Questions?