

# Minnesota Solar Schools Menu of Services

POWERING K-12 EDUCATION WITH SOLAR ENERGY



**What can CERTs do for you?** We help schools understand energy efficiency and solar energy options. Our experts will help you figure out how to take the right steps towards clean, renewable energy. We can provide technical assistance on the programs and initiatives below that will lead to energy efficiency, financial savings, community leadership, and STEM education curriculum that will help prepare students for a clean energy future.

## ADDRESS ENERGY EFFICIENCY FIRST

### Get an Energy Assessment

#### 1. **Contact Your Utility**

Many utilities provide energy assessments at either a low cost or free. Contact your utility to find out about available energy assessment options and rebates. A good start to find out about available incentives is the DSIRE website: [dsireusa.org](http://dsireusa.org)

#### 2. **RETAP**

The Minnesota Retiree Environmental Technical Assistance Program (RETAP) employs skilled, retired professionals to provide facility assessments and community sustainability assistance to small businesses, institutions, and communities in Minnesota at no cost.

**Contact:** Ralph Dickinson, 651-233-3374, [rdickinson6881@gmail.com](mailto:rdickinson6881@gmail.com)

**Website:** [pca.state.mn.us/quick-links/minnesota-retap](http://pca.state.mn.us/quick-links/minnesota-retap)

**Service Area:** Statewide

#### 3. **Local Energy Efficiency Program (LEEP)**

LEEP provides technical and contractual assistance to local governments seeking to utilize LEEP to complete detailed energy audits with pre-qualified contractors.

**Contact:** Peter Berger, MN Dept. of Commerce, 651-539-1850, [peter.berger@state.mn.us](mailto:peter.berger@state.mn.us)

**Website:** [mn.gov/commerce/industries/energy/technical-assistance/leep.jsp](http://mn.gov/commerce/industries/energy/technical-assistance/leep.jsp)

**Service Area:** Statewide

### Guaranteed Energy Savings Program

The Guaranteed Energy Savings Program from the Minnesota Department of Commerce promotes awareness and implementation of energy efficient and renewable energy measures in public facilities to provide millions of dollars in annual energy savings in Minnesota. To do this, GESP supports you every step of the way—from identifying good projects at the outset to measurement and savings verification at the conclusion.

**Contact:** Peter Berger, MN Dept. of Commerce, 651-539-1850, [peter.berger@state.mn.us](mailto:peter.berger@state.mn.us)

**Website:** [mn.gov/commerce/industries/energy/technical-assistance/gesp](http://mn.gov/commerce/industries/energy/technical-assistance/gesp)

**Service Area:** Statewide

## Energy Savings Partnership

The Energy Saving Partnership is a municipal lease program offered by the Saint Paul Port Authority in partnership with U.S. Bank. Local governments and schools have access to 100 percent financing and reduced interest rates for projects that incorporate renewable energy or result in energy savings. Interest rates are low due a significant loan loss reserve.

**Contact:** Peter Klein, 651-204-6211, pmk@sppa.com

**Website:** [sppa.com/energy-financing/energy-saving-partnership](http://sppa.com/energy-financing/energy-saving-partnership)

**Service Area:** Statewide

## UNDERSTAND RENEWABLE ENERGY OPTIONS

**Start by getting educated on options.** CERTs provides technical assistance to understand the pros and cons of renewable energy options including community solar gardens, on-site solar, green pricing programs, and green tariffs. Your options and what might work best will vary based on your utility, energy usage, and goals. CERTs has resources on the following, and we'll cover on-site solar in-depth in the next section.

### Community Solar Gardens

Community Solar Gardens are centrally-located solar photovoltaic (PV) systems that provide electricity to participating subscribers. Community Solar Gardens allow participating subscribers to gain many of the benefits of solar without having to install solar on their own building/at their own facility.

**Website:** [cleanenergyresourceteams.org/solargardens](http://cleanenergyresourceteams.org/solargardens)

### Green Pricing

Green pricing is an option offered by electric utilities that allows customers to support investments in renewable energy technologies like wind and solar. Through green pricing, participating customers pay a premium on their electric bill to cover the extra cost of the renewable energy.

**Website:** [cleanenergyresourceteams.org/green-pricing](http://cleanenergyresourceteams.org/green-pricing)

### Green Tariffs

Xcel Energy customers can sign up to utilize a blend of wind and solar energy. The program is fully subscribed but interested customers can sign up on a waitlist.

**Website:**

[xcelenergy.com/programs\\_and\\_rebates/business\\_programs\\_and\\_rebates/renewable\\_energy\\_options\\_business/renewable\\_connect\\_for\\_business](http://xcelenergy.com/programs_and_rebates/business_programs_and_rebates/renewable_energy_options_business/renewable_connect_for_business)

## ADVANCE ON-SITE SOLAR PROCUREMENT

### Choose your Site

#### 1. Solar Site Selection Checklist

Thinking about where best to locate solar at your school property? This checklist helps you walk through your options.

**Checklist:** <https://www.cleanenergyresourceteams.org/sites/default/files/2019-09/Solar-SiteAssessment-Checklist-FinalReport.pdf>

## 2. **Minnesota Solar Suitability App**

Wondering if a particular site in Minnesota is good for solar energy? This app can help.

**Website:** <https://solar.maps.umn.edu/app>

## 3. **Solar for New Construction**

If you are considering solar on a building that hasn't yet been constructed, you may need to conduct an energy model and you should ensure that the building is built solar-ready. You can start with resources from Grow Solar and the Solar Ready Building Design Guidelines report.

**Grow Solar Toolkit:** [betterenergy.org/wp-](https://betterenergy.org/wp-content/uploads/2018/03/MinnesotaToolkitFeb2018_Award-Banner_Web-Version_0.pdf)

[content/uploads/2018/03/MinnesotaToolkitFeb2018\\_Award-Banner\\_Web-Version\\_0.pdf](https://betterenergy.org/wp-content/uploads/2018/03/MinnesotaToolkitFeb2018_Award-Banner_Web-Version_0.pdf)

**Solar Ready Building Design Guidelines:** [mn.gov/commerce-stat/pdfs/solar-ready-building.pdf](https://mn.gov/commerce-stat/pdfs/solar-ready-building.pdf)

## Know the Rules

It is important to check in with your local city and county about ordinances that might be in place that would impact your solar project. Some local jurisdictions require setbacks or structural assessments, for instance. Your solar installer should know this process, but it's worth learning in advance.

## Understanding Financing Options

### 1. **Third-Party Financing**

Third-party financing is a popular means for local governments to finance renewable energy. Typically, the local government enters into a Power Purchase Agreement whereby they pay a fixed price per kWh for power generated by the solar array. The kWh rate is typically lower than the local utility rate. The third-party company installs, owns, operates, and maintains the solar array and can tap into tax benefits not available to the public sector.

**Website:** [cleanenergyresourceteams.org/3rdpartyrfp](https://cleanenergyresourceteams.org/3rdpartyrfp)

### 2. **Energy Savings Partnership Funds**

The Energy Saving Partnership is a municipal lease program offered by the Saint Paul Port Authority in partnership with U.S. Bank. Local governments and schools have access to 100 percent financing and reduced interest rates for projects that incorporate renewable energy or result in energy savings. Interest rates are low due to a significant loan loss reserve.

**Contact:** Peter Klein, 651-204-6211, [pmk@sppa.com](mailto:pmk@sppa.com)

**Website:** [sppa.com/energy-financing/energy-saving-partnership](https://sppa.com/energy-financing/energy-saving-partnership)

**Service Area:** Statewide

### 3. **Solar Incentive and Rebate Opportunities**

Grant and rebate opportunities will largely depend on your utility. A comprehensive list of utilities that provide solar rebates can be found at the link below.

**Website:** [cleanenergyresourceteams.org/utility-rebates-tax-incentives](https://cleanenergyresourceteams.org/utility-rebates-tax-incentives)

#### ○ **Xcel Energy Solar\*Rewards**

Xcel Energy's solar production incentive program provides \$0.06/kWh for 10 years for "commercial" systems up to 40kW. Local governments are considered a commercial system.

**Website:**

[xcelenergy.com/programs\\_and\\_rebates/residential\\_programs\\_and\\_rebates/renewable](https://xcelenergy.com/programs_and_rebates/residential_programs_and_rebates/renewable)

[energy\\_options\\_residential/solar/available\\_solar\\_options/on\\_your\\_home\\_or\\_in\\_your\\_yard/solar\\_rewards\\_for\\_residences](#)

- **Xcel PV Capacity Credit**

Xcel Energy recently worked with the solar industry, regulators, customer advocates and other stakeholders to create a new, more easily understood PV Demand Credit. The new PV Demand Credit Rider is in effect for any customer with solar systems over 40kW with a single production meter. The bill credit is 6.9648 cents per kWh for solar energy generated between 1 p.m. and 7 p.m.

- **OtterTail Power Publicly Owned Property**

OtterTail Power provides cash incentives to publicly owned facilities that install non-residential solar photovoltaic (PV) systems. Publicly owned facilities receive \$1,250/kilowatt (kW) of installed solar PV nameplate (DC) capacity—up to 50% of project costs—for systems 40 kW or less in size, based on nameplate capacity.

**Website:** [otpc.com/ways-to-save/renewable-energy-residential/publicly-owned-property-solar](http://otpc.com/ways-to-save/renewable-energy-residential/publicly-owned-property-solar)

- **Minnesota Power SolarSense**

Minnesota Power's SolarSense program provides rebates to reduce the upfront costs of installing solar. It is an incentive based on how much energy a customer's PV system is expected to produce. Calculating the rebate depends on the design of the solar system—including tilt, orientation and shading profile—and an estimate of annual energy production from PV Watts (an online tool). To calculate the SolarSense rebate, a PV system's estimated energy output is multiplied by \$0.74/kWh. Systems are capped at 40 kW (AC) or less.

**Website:** [mnpower.com/Environment/SolarSense](http://mnpower.com/Environment/SolarSense)

## Get Bids

1. **Model Request for Proposals (RFP)**

CERTs has a Model RFP for Third-Party Solar that you can download and adapt to issue your own request. CERTs will send out the RFP to its list of solar developers on your behalf.

**Website:** [cleanenergyresourceteams.org/3rdpartyrfp](http://cleanenergyresourceteams.org/3rdpartyrfp)

2. **State of Minnesota Solar Master Contract**

A master contract is a base contract with pre-qualified vendors that outlines terms, conditions, and ceiling prices for design-build services. It allows for simpler, faster procurement by purchasing authorities. The State of Minnesota has a master contract for the design and installation of ground mount, pitched-roof, and flat rooftop solar installations. Individual projects may include energy storage and may be stand-alone or interconnected for net metering. The state will assist you through the RFP process. While your entity will "own" the procurement process, the state administers the master contract. To ensure your entity's success, the state will provide templates and documents, will guide you through development of your site-specific RFP, will coordinate the bidding process, and will consult with you on the evaluation methodology.

**Website:** [cleanenergyresourceteams.org/public-solar-procurement](http://cleanenergyresourceteams.org/public-solar-procurement)

**Contact:** Jordan Wente, [jordan.wente@state.mn.us](mailto:jordan.wente@state.mn.us) or 651-201-2606

### 3. Get Quotes from Solar Developers

The Clean Energy Project Builder lists contractors in your area.

**Website:** [cleanenergyprojectbuilder.org/directory](http://cleanenergyprojectbuilder.org/directory)

## Decide on a Developer

Review and evaluate the proposals you receive based on your goals and budget. For an apples-to-apples comparison of financed proposals, you can use the Solar PPA calculator (Xcel version or non-Xcel version). The calculators compare bids and provide estimates of costs and savings over the term of the contract.

**Website:** [cleanenergyresourceteams.org/public-solar-procurement](http://cleanenergyresourceteams.org/public-solar-procurement)

## GALVANIZE YOUR COMMUNITY

### Tell Your Story

You could be inspiration for others! Tell your neighbors, family, friends, colleagues, and local media outlets about your experience so they know how easy and rewarding it is to go solar. You might be surprised how influential you are! Need a helping hand? CERTs can provide guidance on communicating your success and help get the word out to local media.

**Contact:** Shaylyn Bernhardt, [shaylyn@umn.edu](mailto:shaylyn@umn.edu), 612-626-0556

### Host a Community Event

Get out your ribbon, giant scissors and cameras for a fun celebration of your success. CERTs will help get the word out and provide guidance to make your event a big win for your district:

**Contact:** Maggie Kozak, [makozak@umn.edu](mailto:makozak@umn.edu), 612-626-0555

### Host a Screening of *The Power of Minnesota*

*The Power of Minnesota* film is about people, their communities, and their stories about clean energy development around the state. Following the screenings, participants share conversations with their neighbors about what they learned and what surprised them about the film. This can be a great way to engage your broader community in a conversation about clean energy.

**Website:** [powerofmn.com](http://powerofmn.com)

## BRING SOLAR INTO THE CLASSROOM & SCHOOL

### Integrate Renewable Energy into the Curriculum

#### 1. RREAL Solar Schools Curriculum

RREAL's "Our Solar Schools Curriculum Development" project brings age-appropriate, STEAM-integrated solar energy education to the K-12 classroom. Lesson plans include a ton of hands-on activities that cover everything from the basics of electricity, renewable energy public policies, considerations when installing renewable energy and renewable energy careers. This curriculum was designed in 2020 and incorporates the latest science standards. When completed in the fall

of 2020, the curriculum will be available free online.

**Contact:** Erica Bjelland, [erica@rreal.org](mailto:erica@rreal.org), 218-947-3779

**Website:** [rreal.org](http://rreal.org)

## 2. **Climate Generation**

Climate Generation has a comprehensive suite of curriculum for multiple subjects and grade levels, including a specific curriculum on energy that is available online and at no charge. These lessons introduce students to energy basics, emphasizes the connection between our energy use and consumption, the resulting impact on our climate and energy solutions that mitigate its impact.

**Contact:** Lindsey Kirkland, [lindsey@climategen.org](mailto:lindsey@climategen.org), 612-278-7147

**Website:** [climategen.org/our-core-programs/climate-change-education/curriculum](http://climategen.org/our-core-programs/climate-change-education/curriculum)

## 3. **U.S. Department of Energy**

The U.S. Department of Energy has a wide variety of tools and resources for educators, including videos, coloring books, curriculums, teacher research opportunities and more. Resources are available in English and Spanish.

**Website:** [energy.gov/eere/education/education-resources](http://energy.gov/eere/education/education-resources)

## Invite Energy Experts into the Classroom

### 1. **Citizen Utility Board (CUB)**

CUB is a non-profit consumer advocate for Minnesota residential and small business customers. We can help support school district clean energy goals and projects by providing educational activities that complement community goals. Example activities include interactive classroom or community talks and free energy bill consultations for households.

**Contact:** Carmen Carruthers, [carmenc@cupminnesota.org](mailto:carmenc@cupminnesota.org), 651-300-4701 ext. 2

**Website:** [cupminnesota.org](http://cupminnesota.org)

**Service Area:** Statewide

### 2. **Minnesota Energy Center of Excellence**

The Minnesota Energy Center serves as an information highway for energy education opportunities throughout the Minnesota State Colleges and University (MnSCU) system. The Energy Center of Excellence launched an “educate the educator” (E3) program that includes:

- E3 Workshops that help teachers bring math and science classroom instruction alive
- Free classroom presentations, curriculum, lab kits, and industry tours
- Access to the Energy Trailers that bring complete instructional kits and curriculum guides to high schools across the state

**Contact:** Rose Patzer, [rose.patzer@mnwest.edu](mailto:rose.patzer@mnwest.edu), 320-564-5044

**Website:** [energycareersminnesota.com](http://energycareersminnesota.com)

**Service Area:** Statewide

### 3. **CERTs Regional Coordinators**

The Clean Energy Resource Teams have on-the-ground staff in each of our seven regions across Minnesota. Find your coordinator and invite them to provide a presentation and more.

**Contacts:** [cleanenergyresourceteams.org/staff](http://cleanenergyresourceteams.org/staff)

## EMPOWER STUDENTS TO ADVANCE CLEAN ENERGY

### GreenStep Schools

Minnesota GreenStep Schools program a free and voluntary statewide best practices framework, community of practice, and recognition program for public and private K-12 schools and districts to reduce environmental impact and costs, improve health and well-being of students and staff, and provide effective environmental and sustainability education.

**Contact:** Jonee Kulman Brigham, [kulma002@umn.edu](mailto:kulma002@umn.edu), 651-895-7834

**Website:** [sites.google.com/umn.edu/mngreenstepschools/home](https://sites.google.com/umn.edu/mngreenstepschools/home)

### Minnesota Renewable Energy Society (MRES) Solar Boat Regatta

At the MRES' Solar Boat Regatta teams demonstrate knowledge of science, technology, engineering and math (STEM) to design and build boats powered by the sun. They compete in a number of races at a lake in Eden Prairie, culminating with a one-hour endurance race.

**Contact:** Doug Shoemaker, [dougs@mnRenewables.org](mailto:dougs@mnRenewables.org), 612-308-4757

**Website:** [mnrenewables.org/solar-boat-regatta](https://mnrenewables.org/solar-boat-regatta)

**Service Area:** Statewide

### Youth Eco Solutions (YES!) Teams

YES! (Youth Eco Solutions) empowers youth in grades 7 to 12 to create solutions to today's ecological challenges through hands-on. Annually, YES! impacts over 500 students, and as many as 20,000 community members. Through successful completion of over 1,200 ecological action projects in 12 years, YES! has demonstrated that youth are the innovators for solutions to today's challenges while building the skills they need for their future. As one student commented, "I learned the power of what just 5 people can do to make a difference in my community." We hope you will join the network of over 25 school districts that are currently hosting a YES! team and we can work together to make "Solar Possible" along with other earth-friendly projects.

**Contact:** Shelli-Kae Foster, [shelli-kae@yesmn.org](mailto:shelli-kae@yesmn.org), 320-441-9254

**Website:** [yesmn.org](https://yesmn.org)

**Service Area:** Statewide

### Youth Environmental Activists of MN (YEA! MN)

A core program of Climate Generation, Youth Environmental Activists Minnesota (YEA! MN) is a network of high school students taking action for a just transition to a resilient climate future for all.

**Contact:** Jason Rodney, [yeamn@climategen.org](mailto:yeamn@climategen.org)

**Website:** [climategen.org/our-core-programs/yea-mn](https://climategen.org/our-core-programs/yea-mn)

## CONSIDER ELECTRIC SCHOOL BUSES

**The MPCA is using Volkswagen settlement funds to reduce harmful air pollution, address climate change, and invest in a cleaner transportation future.** Minnesota will receive \$47 million total from the national settlement, and will distribute these funds in three phases over 10 years. In Phase 2 (2020-2023), MPCA will spend about \$23.5 million, or half of Minnesota's total. MPCA can use VW funds in two primary ways: fund vehicle replacements that take older, more polluting diesel vehicles off the road and replace them with new, cleaner models, and invest in electric vehicle infrastructure. To distribute funds, MPCA offers grant opportunities with a competitive application process.

**Website:** [pca.state.mn.us/air/volkswagen-settlement](https://pca.state.mn.us/air/volkswagen-settlement)