AGENDA
PUBLIC UTILITIES COMMISSION
June 4, 2025
3:00 P.M.

A. Call to Order

B. Roll Call

C. Approve Agenda

D. Solar Interconnection Process and Policy

E. Other Items

F. Adjourn

Public Utilities Commission Meeting
Minutes
May 7, 2025

The meeting was called to order by Commissioner Schulte at 3:00 p.m.

Members present: Craig Schulte and Charles Hathaway
Absent:
Staff Present: Mike Roth, Scott Warner, and Patrick Knight

Motion By Hathaway to approve the Quality Flow proposal of $17,680 for one week of programming and travel/hotel to update and optimize the Water Treatment Plant PLC and control systems. Updates include correcting pump sequencing, addressing alarm issues, integrating new equipment, and enabling remote programming support. Approved Unanimously

Water/Wastewater Superintendent Scott Warner updated the commission on recent MPCA concerns about permit limit exceedances at the wastewater plant, which came to light during the permitting process for the Heights development extension. Warner explained that exceedances in the past year were traced to excess sludge accumulation in the clarifiers, caused by manual pump timing settings. He has implemented an updated operational table for staff to prevent future issues and noted that recent exceedances have been minimal and unrelated to new system connections.

The meeting adjourned at 3:42 p.m.

City of Grand Marais

MEMO

TO: Chair Schulte
Public Utility Commission Members
FROM: Shane Steele, Sustainability Coordinator
DATE: May 29th, 2025
SUBJECT: Solar Interconnection Process and Policy

The purpose of this memo is to inform Public Utility Commission members about the utility's current policy for managing customer-owned distributed energy resources (such as solar and battery storage), and to present scenarios that may warrant future policy consideration.

Solar Interconnection Overview

As solar adoption in Grand Marais has grown, the Utility has established a formal application process to assess customer-owned solar installations before they are interconnected to the city's electric distribution system. The city contracts with Star Energy Services for policy guidance and engineering screenings. The utility uses Star's NOVA Power Portal, an online application management tool, to streamline communication between the solar customer, the installer, the utility, and Star's engineers. This process ensures that all solar systems meet state and utility technical, safety, and operational standards. It also protects the integrity of the local grid and provides a consistent framework for integrating distributed generation in a way that is fair to all customers.

Cogeneration Rate Structure

Most solar facilities connected to the utility's grid are rooftop residential or commercial systems under 40 kW. Per Minnesota law, solar facilities under 40 kW are compensated through net metering. Electricity generated by the solar system and used on the customer's property offsets their retail energy consumption at the full retail rate. Any electricity exported to the grid (i.e., when generation exceeds on-site usage) is credited to the customer at the full retail rate. The 2025 retail rate is $0.114/kWh.

Systems over 40 kW are not eligible for net metering and do not receive the retail rate for exported electricity. Instead, energy consumed on-site offsets retail consumption but any energy exported to the grid is purchased at the avoided cost rate, which is determined by the utility's wholesale power provider, SMMPA. The 2025 avoided cost rate is $0.033/kWh.

The Interconnection Process

1. **Pre-Application**
   Interested customers begin by consulting with a solar installer and reviewing GMPUC's interconnection resources, which are hosted on the NOVA Power Portal. Additionally, the applicant files for a land use permit with the city.

2. **Application Submission**
   Applicants submit a complete interconnection application through the portal. Typically the installer submits the application on behalf of the customer. Required materials include: detailed system specifications (location, inverter type and spec, system size, capacity, cost), one-line electrical diagram, site layout, proof of insurance, and $100 application fee.

3. **Infrastructure Site Review**
   The utility conducts a survey of the electric infrastructure at the site where the solar system will be installed and records the information on NOVA for Star to use in their engineering review.

4. **Engineering Review**
   Star Energy Services conducts a technical screening and engineering review which includes: evaluation of anti-islanding protection, transformer sizing and voltage regulation impacts, total circuit hosting capacity, and suggests needed system upgrades or mitigation measures.

5. **Contract and Utility Approval**
   Upon passing the engineering review, the applicant enters into a standard interconnection agreement- Uniform Contract for Cogeneration and Small Power Production. An interconnection fee of $500 is paid via NOVA and GMPUC provides approval for installation.

6. **System Installation and Electrical Inspection**
   The customer's installer constructs the solar system in accordance with the approved design. The new system must pass inspection by the state electrical inspector before moving on to the next step.

7. **Commissioning and Testing**
   Utility staff perform an on-site inspection to verify correct installation, code compliance, and functioning of disconnect and safety systems. A production meter is installed by the utility to monitor the net generation of the facility.

8. **Authorization to Operate**
   After successful testing, GMPUC issues formal approval for the system to generate in parallel with the grid.

Solar Adoption in Grand Marais

As of May 2025, there are 42 solar facilities interconnected with the utility. These range in size from 1.7kW to 39.7kW with most being between 5-10kW. The total rating for all interconnected solar facilities adds up to 402.65kW, with another 55.2kW currently in queue. In 2020, the year the utility began using the process outlined above, there was only 1 application for interconnection. In 2024 alone 12 applications completed the process. There is one customer who has linked battery storage to their solar installation. The city itself owns and operates 81kW of solar in two locations, at the public works garage and at the Gunflint Hills near the municipal golf course.

Distributed Generation and the Grand Marais Climate Action Plan

The Grand Marais Climate Action Plan sets an ambitious goal for the city to drastically reduce its carbon emissions. This is to be accomplished by transitioning away from fossil fuels and increasing the use of renewable energy. The city has relied on actions taken by SMMPA to decarbonize the electric grid mix. Through their SMMPA 2.0 initiative the agency has committed to reducing its carbon emissions by 90% by 2030 compared to 2005 levels. This commitment involves diversifying its energy generation portfolio by incorporating significant amounts of wind and solar energy, expanding natural gas generation, and shutting down its primary source of generating unit, the Sherco 3 Coal Plant.

The alignment of SMMPA's power sourcing with the utility's decarbonization goals directly supports the city's broader climate objectives. While utility-scale renewable energy remains the most cost-effective path to reducing emissions, distributed generation still plays an important complementary role. Customer-owned solar systems serve as a highly visible symbol of the community's commitment to sustainability and offer residents a meaningful, hands-on way to participate in the city's clean energy transition.

However, a strategic balancing must be struck between investments in local distributed generation projects and larger-scale renewable energy initiatives through SMMPA. The growth of solar adoption in Grand Marais presents policy challenges, particularly for a small utility with limited resources. While GMPUC supports its customers' initiative to produce their own power, the utility also must address the concerns that affect the entire public utility. Solar customers offset a significant portion of their retail energy costs and yet still rely heavily on the utility to provide infrastructure, grid maintenance and power when the sun is not shining. This leads to cost shifting that is borne by non-solar customers. Over time, this creates a subsidy for solar customers paid by non-solar customers that will eventually reduce the utility's revenue stability, lead to higher utility rates, and strain efforts to equitably fund grid investments that benefit all customers.

As GMPUC continues to support SMMPA's utility-scale renewable transition, local policy decisions concerning distributed generation must:

- Balance the desire to accommodate customer-owned solar with the need to protect rate equity.
- Reliably maintain operational integrity of the distribution system.
- Affordably advance decarbonization through the most cost-effective means.

Policy Scenarios

With the growth of solar in Grand Marais, the utility is encountering an increasing number of complex scenarios that require clear policy direction to ensure consistent and sustainable integration of distributed energy resources into the local grid.

- **Aggregate Cap Per Customer**: The current cogeneration rules define a customer as "the person named on the utility bill for the premises". If a customer owns multiple properties, the total amount of solar they can interconnect to the utility and export power at the net metering rate is 40kW.

- **Cross-Metering**: A customer who owns multiple properties, including one with an interconnected solar facility, can apply the generation only to the local load. The solar energy is not transferable to other loads even if they are owned by the same customer. Some utilities make exceptions in the case of exceptionally large customers who operate campuses with many large buildings and large loads.