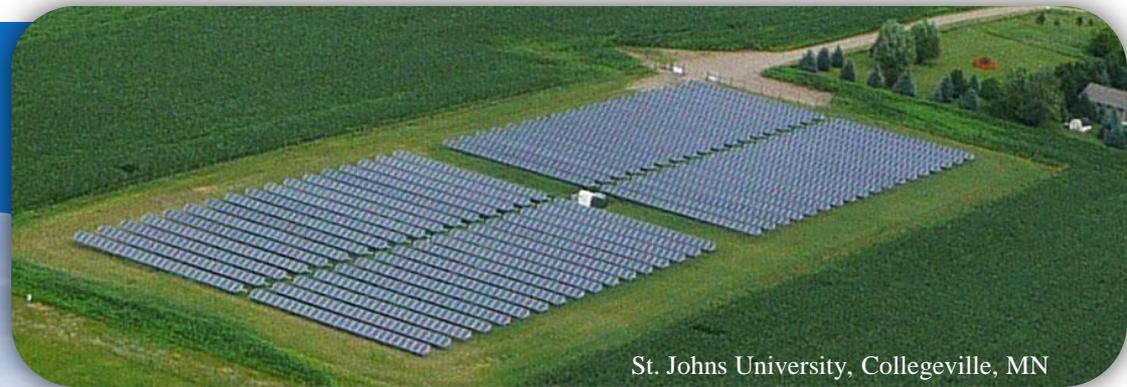


Current Options for Customer Use of Solar Resources



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Factors in Renewable Success

1. Viable Technology
 - Technical viability, productivity and reliability
 - Cost profile which allows positive financial results
2. Adequate Resource
3. Physical access to electric customers/transmission grid
 - Adequate capability to accept or deliver power
4. Consistency with other environmental goals and permitting requirements
 - Avoidance of environmental and permitting litigation and conflicts
5. Market for Power
 - Load to Serve
 - Competitive pricing relative to other power sources
 - Renewable energy credits
 - Government support
 - PTC/ITC or other tax benefits; RPS/RES; subsidies, grants

Solar Advantages



Uniquely situated for ownership and use by ultimate customers

- Costs lower, value higher
- Technically cheaper, easier
- Resource easy to identify
- Grid access straightforward
- Limited permitting/land use/environmental issues
- Market for power exists; substantial tax, other benefits
- Scalable, flexible as to size and location

Traditional Net Metering

Allows customer to install facility up to 40 kW in size behind retail meter
Output serves customer load (offsetting utility retail purchases) with excess sold to utility

Minn. Stat. Section 216B.164; Minn. Rules Chapter 7835

Success depends on (i) ability to use power; (ii) cost of equipment; (iii) price of utility retail power (capacity credit); (iv) price of excess power; (v) ability to use tax benefits

Recent example: DeLaSalle High School – 31.02 kW

Customer-owned Behind the Meter (> 40 kW)

- Distributed generation rules allow customer-owned facility larger than 40 kW behind the meter
- See Minn. Stat. Section 216B.1611
- Success depends on same factors as net metering
- DG rules allow for investors/co-owners
- Examples: Luther College
Big box stores - IKEA



Possible Expansion of Customer Options

- Other states are beginning to allow third-party sales to customers
- SZ Enterprises, LLC v. Iowa Utilities Board
Iowa Supreme Court, Dkt. No. 13-0642
July 11, 2014
See Minn. Stat. Sections 216B.37-40 (2014)

Community Solar Gardens

Common array owned by utility or third party; sell production participation interests to individual customers which entitle them to receive a portion of the production of the facility over time for credit against their retail bills – virtual net metering.

Allows individual customers who may not have a good location for solar, financial ability, or a tax appetite to receive direct benefits of a tangible solar facility.

Similar to existing programs selling blocks of wind or other renewables to customers (Wind Source).

Commercial/industrial customer may benefit without owning behind the meter, benefits to utility.

Examples: Colorado, Traer/Kalona Iowa, Wright-Hennepin Cooperative

Minnesota – NSP Program

Minn. Stat. Section 216B.1641

NSP Proposed Program for CSGs as outlined in:

Minnesota Public Utilities Commission Docket No. E002/M-13-867, Orders dated April 7, 2014 and September 17, 2014 and NSP Compliance Filing submitted September 29, 2014

- Array size up to 1 MW; no cap on total CSG capacity
- Each array must have at least five subscribers, no one can own more than 40%
- Must be in NSP service territory and subscribers within same county or adjacent county
- Starting rate applied to subscriber bills = 15 cents/kWh (residential)
- Can subscribe for up to 120% of average retail load over prior 2 years, minimum of 200 Watts.

Minnesota – NSP Program (cont'd)

Example: Customer P – uses 6,000 kWh/yr

Install 1 kW rooftop - \$5,000 produce 1,500 kWh/yr

Offset retail at 9-10 cents

Subscribe to N. Sun CSG – 90 410 kW modules, 559 kWh/yr/module

3 modules at \$923 each is \$2,769

Receive output of 1,677 kWh applied to bill at 15 cents/kWh

CSG Program Issues

- Eligibility (meter or customer)
- Subscription size
 - Size limit to increase participation
 - Tie to module size
- Subscription price/value
 - percentage of total facility costs
 - guaranteed positive payback/return
 - dependent on ITC, other financing and capital and operating costs
- Transferability
- Use of subscriber funds/consumer protection

About Jeffrey C. Paulson

- Jeffrey C. Paulson is the principal in his own law firm in Minneapolis, and has been practicing in the area of energy law for over twenty years, with his practice focusing on representing clients developing and owning renewable energy projects, including community wind and solar projects in Minnesota, Iowa, Wisconsin, the Dakotas, Nebraska, Texas, Pennsylvania and Virginia.
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