



Exploring Solar Energy at Dakota Electric

April 28, 2015

Introductions

- Greg Miller – President & CEO
- Mike Fosse –VP of Energy & Member Services
- Doug Larson –VP of Regulatory Services

Topics

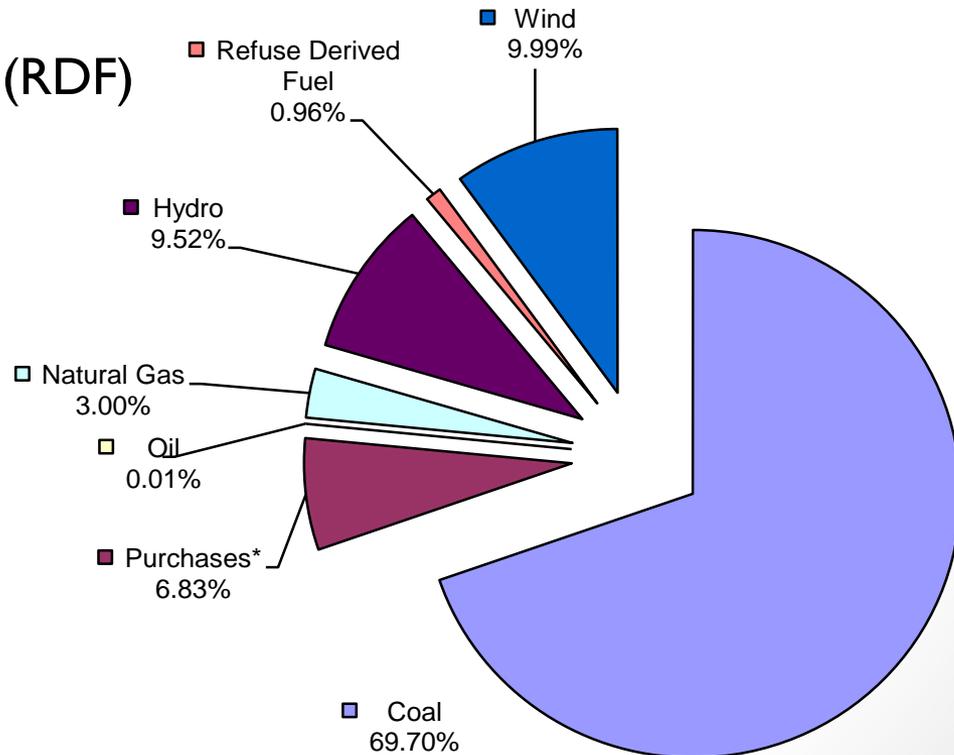
- Background – Renewables at DEA
- DEA Homework
- Wholesale Solar
- Cooperative Solar
- Next Steps

Background

- Wellspring
 - DEA was the first utility in MN to offer renewable energy as a purchase option for retail consumers
 - Approved by the Commission about 20 years ago
 - Cost is only 40¢ per month for a 100 kWh block
 - Participation has always been light (about 1%)
 - A new solar option for Wellspring is coming
- Renewable Energy Objectives (REO)
 - 25% by 2025 (M.S. 216B.1691)
 - GRE is meeting the milestones for the REO

Background (Continued)

- About 21% of the wholesale power GRE provides to Dakota Electric comes from “renewable” resources
 - Wind
 - Large Hydro
 - Refuse Derived Fuel (RDF)
 - Solar



Background (Continued)

- GRE has added 250 kW of solar (to its original 72 kW) at the Maple Grove headquarters
- GRE is in the process of installing 20 kW solar systems at 19 member cooperative locations (20 kW x 19 = 380 kW)
 - Dakota Electric's former Farmington substation site was the first 20 kW installation



Dakota Electric Website

The screenshot shows the Dakota Electric Association website homepage. At the top, there is a navigation bar with the logo and menu items: Residential, Business, Builders & Contractors, Safety & Education, Renewable Energy, News & Events, and About Us. A search bar is also present. Below the navigation bar, there are several featured sections:

- Conservation Gauge:** Shows energy usage for Thursday 4/23 (Normal Use) and Friday 4/23 (Normal Use). It includes a link to "Get gauge e-mail notices".
- Board of Directors 2015 ELECTION:** A large banner with a photo of two people and a "VOTE" button. It includes a "QuikPay Online Billing" section with a "Login / Sign up" button.
- Recent News:** Includes articles such as "See which local students are traveling to Washington, D.C. in June", "Dakota Electric annual meeting held Thursday, April 30", and "Learn about solar at the Solar Fair".
- Farmington Solar:** A section showing solar energy generation statistics: Generated Today: 1.304 kWh, Month to Date: 2367.74 kWh, and Year to Date: 8.376 MWh.

The website also features social media links (Facebook, Twitter, YouTube) and a "Chat Now" button. The footer includes a "Quick Links" section with "Careers" and "Event Calendar" options.

Background (Continued)

- DEA regularly surveys members
- Member priorities are:
 - Rates
 - Reliability
 - Environment
 - As long as the impact on rates is reasonable

DEA Homework

Research and Information:

- Clean Energy Collective (CEC)
- National Renewables Cooperative Organization (NRCO)
- Great River Energy
- Connexus Energy (Ramsey MN)
- St Croix Electric Cooperative (Hammond WI)
- Rocky Mountain Institute (RMI) Study
- Cooperative Research Network (CRN)
- Webinars
- Trade publications

DEA Homework Cont'd.

- **Member Interactions:**
 - Member solar meetings in March 2014 and April 2015
 - Vendors
 - Presentations / concurrent sessions
 - Residential survey
 - Talked with members at Dakota County Fair
 - Key Accounts inquiring with largest accounts gauging interest

DEA Homework Cont'd.

- **Important Considerations**

- Federal Tax Credit reduces from 30% to 10% at end of 2016
- NRECA is working on national discount program
- NRECA will be finalizing SUNDA program through federal grants sometime in 2015
- Recovery of distribution system costs
- Regulatory Agencies
- Board Approval(s)
- Land availability
- Member interest (interest versus actual purchase)
- Learn from other utilities (lower purchases than expected)

Wholesale Solar

- DEA's Power Purchase Contract (PPC) with GRE is an all-requirements contract
 - Includes a provision that allows DEA to purchase up to 5% of our annual system energy from renewable resources
 - Commonly referred to as "The 5% Option"
- The 5% Option is the contractual provision that allows DEA to explore additional renewable energy within the context of our all-requirements wholesale power contract
 - Certain conditions must be satisfied

Wholesale Solar Cont'd.

- Dakota Electric is evaluating the possibility of acquiring wholesale solar energy under the 5% Option
- Framework:
 - 2 MW system (final size to be determined)
 - Coordinated by GRE
 - Issue request for proposals (RFP)
 - Competitive bids for turnkey installation
 - Ownership:
 - Great River Energy
 - Third-Party
 - Dakota Electric
 - Dakota Electric would purchase output from the solar facility from GRE
 - Unique price tied to the project
 - Tax advantages rolled into pricing
 - Maintenance covered by the owner
 - DEA would only pay for what is produced

Wholesale Solar Cont'd.

- DEA annual energy \approx 1,900,000,000 kWh
- 5% Option energy \approx 95,000,000 kWh
- Solar Energy Production:
 - Assume 18% capacity factor
 - About 60 MW of solar capacity needed to produce enough energy to reach the 5% Option allowed maximum threshold
- A 2 MW system is well within the 5% Option threshold

Wholesale Solar Cont'd.

- Why purchase more solar energy?
 - Meet our member expectations
 - Hedge against future wholesale power costs
 - PPA price is locked in for an extended term (on either a flat or preset escalating basis)
 - 2 MW project can be acquired with modest impact on wholesale power costs
 - First year additional wholesale power costs could be around \$175,000 (under a flat pricing scenario)
 - About \$1.70 per member per year (14¢ per month)
 - Net additional cost declines each year as wholesale power costs increase
- Could position us for an individual purchase option

Wholesale Solar Cont'd.

- Regulatory Review?
 - Competitively bid purchase under our wholesale power agreement
 - **M.S. 216B.1691 Subd. 10. Utility acquisition of resources.**
 - A **competitive resource acquisition process** established by the commission prior to June 1, 2007, **shall not apply to a utility for the construction, ownership, and operation of generation facilities used to satisfy the requirements of this section** unless, upon a finding that it is in the public interest, the commission issues an order on or after June 1, 2007, that requires compliance by a utility with a competitive resource acquisition process.
 - What level of Commission and state agency involvement is expected?

Cooperative Solar

- Cooperative Solar
 - (aka Community Solar)
- Charting a course for DEA
 - Community solar garden statute for Xcel not a good fit
 - Sale of panels like other cooperatives not a good fit either
- Need to develop more background information
- Wholesale solar is the likely first step
- Would pursue Cooperative Solar through a miscellaneous regulatory filing



Cooperative Solar

- Contemplating:
 - Retail service
 - Regulated
 - Can accommodate distribution cost recovery
 - Backed by wholesale purchase of solar energy from, or through, GRE
 - Available to all DEA members
 - Limited participation window per offering
 - Could be multiple offerings each with a unique price
 - Member purchases a proportional share of monthly kWh production
 - Supported by physical solar assets
 - Solar kWh offsets portion of monthly consumption
 - Fixed/established price per kWh
 - 20 year life
 - May purchase energy up to average monthly consumption



Next Steps

- Request for Proposals
- Consider options
- DEA Board Presentations / Updates
 - Will be looking for direction on preferred approach
- Regulatory process if needed

Discussion

