



Integrated Resource Planning 101

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Agenda

- Introduction
- Division of Energy Resources
- Integrated Resources Planning 101
- Public Engagement Opportunities
- Case Study-Sherco Solar
- Questions

- About me
- Minnesota has a long commitment to clean energy
 - 2001: Renewable Energy Objective
 - 2007: Renewable Energy Standard
 - 2014: Solar Energy Standard
 - 2023: Carbon Free by 2040
- What does this mean and what will it look like?

Division of Energy Resources

Division serves as the State Energy Office

- Affordability
- Clean Energy Development
- Energy Reliability and Security
- Regulatory Affairs and Analysis

Primary Functions:

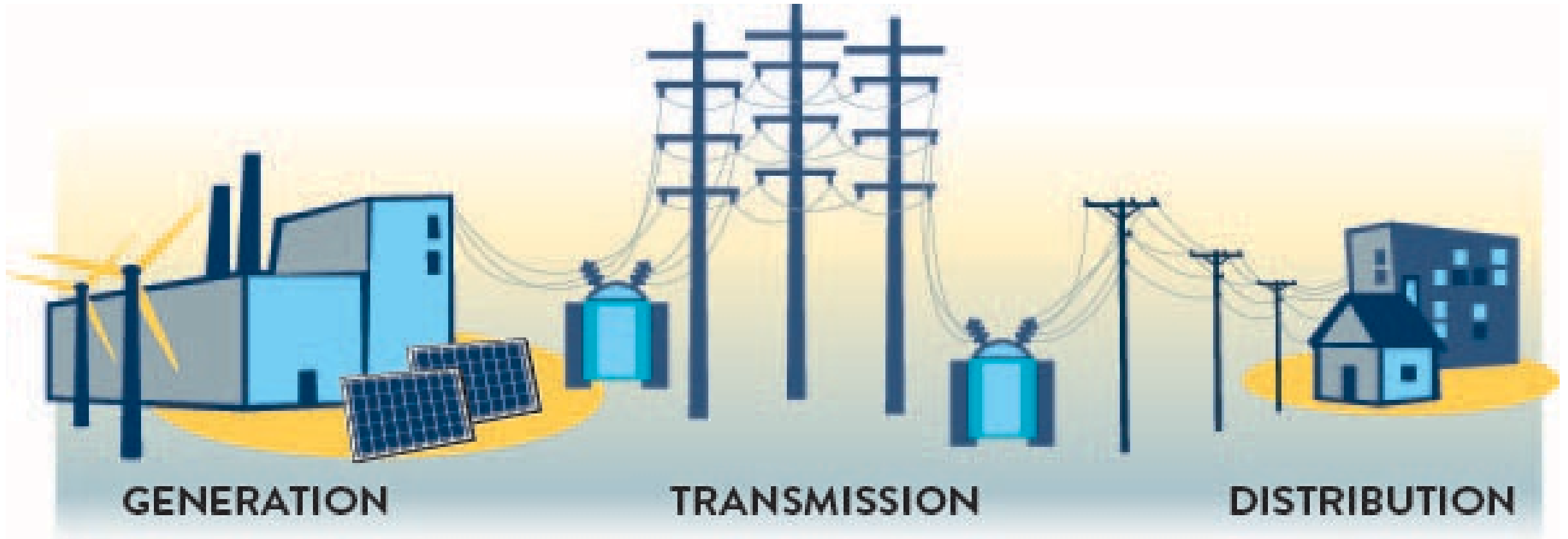
1. Administer programs to help Minnesotans save money and save energy
2. Conduct analyses needed to advocate on behalf of consumers to promote reliable, affordable, low risk, and environmentally sound energy resources for Minnesota's citizens and businesses.

Technical and subject matter experts in:

- Energy Planning, Policy, and Telecommunications
- Utility Finances and Rates
- Energy Conservation and Optimization
- Energy Reliability and Security

Represent the Division on matters before the Public Utilities Commission

Generation and Distribution Flows



- **RESOURCE PLAN**

- Identifies generic size, type, and timing of plants needed.
- Minn. Stat. 216B.2422,
- Minn. Rules 7843.

- **CERTIFICATE OF NEED**

- Identifies specific large energy facilities.
- Minn. Stat. 216B.243,
- Minn. Rules 7849, 7851, 7853, and 7855.

- **ROUTING AND SITING**

- Determines the location of new large energy facilities.
- Minn. Stat. 216E,
- Minn. Rules 7850, 7852, and 7854.

- **RATE CASE**

- Determines the charges applied to customer bills for all utility services.
- Minn. Stat. 216B.16,
- Minn. Rules 7825.

Public Engagement Opportunities



- Examines addition of new supply- and demand-side resources to determine the size, type and timing of resource additions.
- Filed every two to four years by all major generator-owning utilities (8 total).
- All interested parties or individuals can comment.
- Requires a minimum of 9 months to complete the process.
- 2 utilities file “Optional IRPs.” We do not participate in those proceedings—lack of data to review.

What's in an IRP?

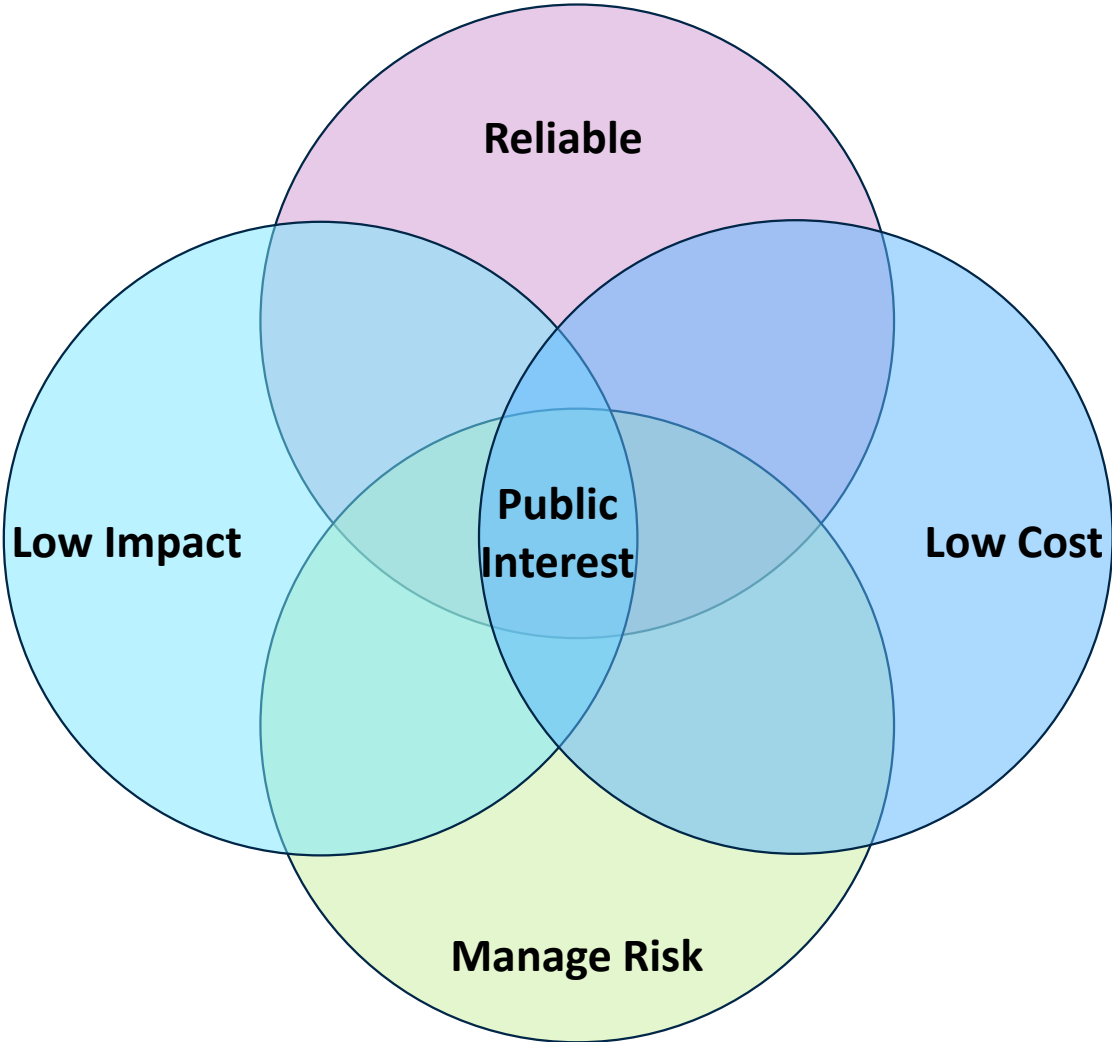
- Detailed analysis performed for a minimum 15-year planning horizon,
- Demand and energy forecast bands,
- Existing and forecasted resources (both supply- and demand-side),
- Available alternatives (supply- and demand-side),
- Compliance with state policies and Commission orders, and
- Other, one-time analysis of interest such as natural gas transportation risks, risk associated with lack of dispatchable resources, etc.

Modelling Inputs

- Capital Cost calculations,
- Fuel Prices,
- Heat Rates,
- Externality Costs,
- Load Curves,
- Generation Profiles (wind and solar output pattern), and
- Discount Rates

Goals in IRP and Resource Acquisition Proceedings

All four goals are rooted in Minn. Stat. & Minn. Rules.



Case Study: Sherco Solar

*Xcel's 2015-2030 IRP

Alternatives

*Acquisition

Project Development: 460 MW

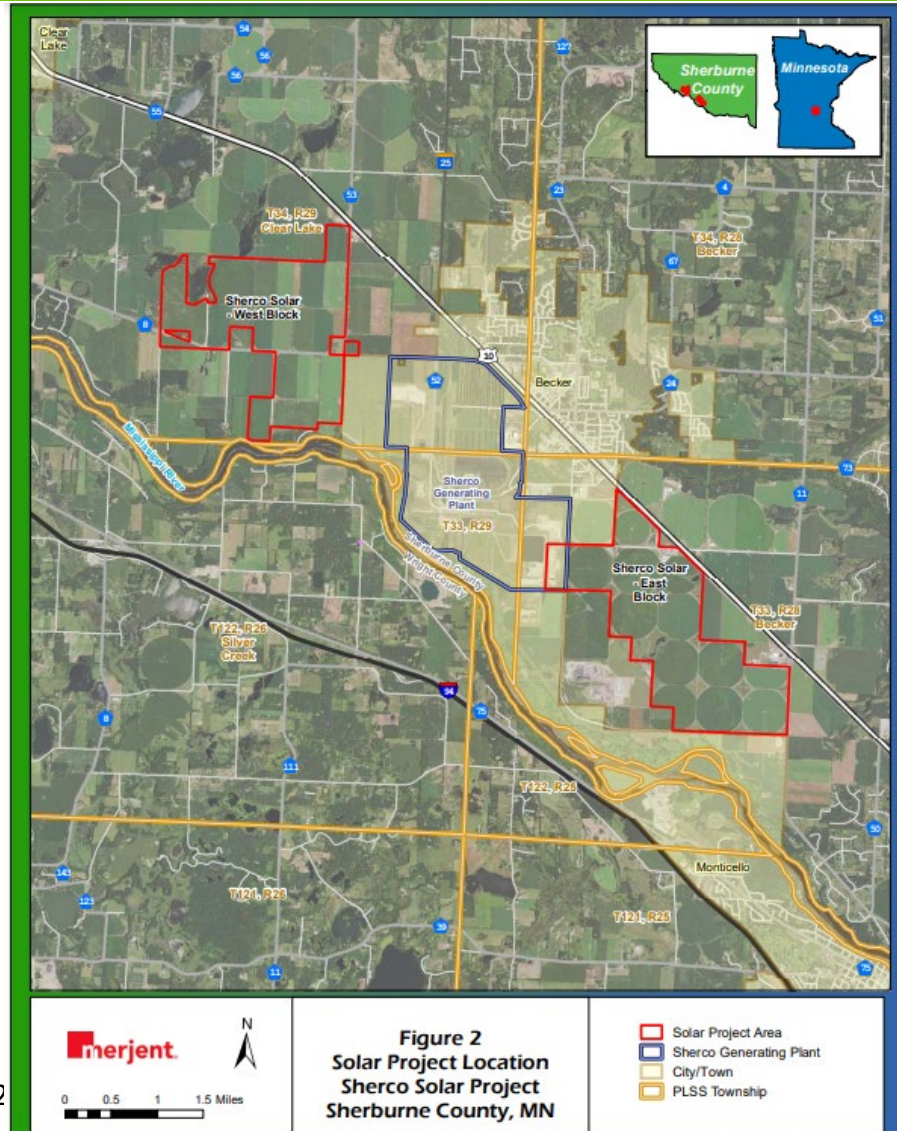
*Permitting-Site Application submitted in 2021

Construction

Operation/In-Service: November 2024

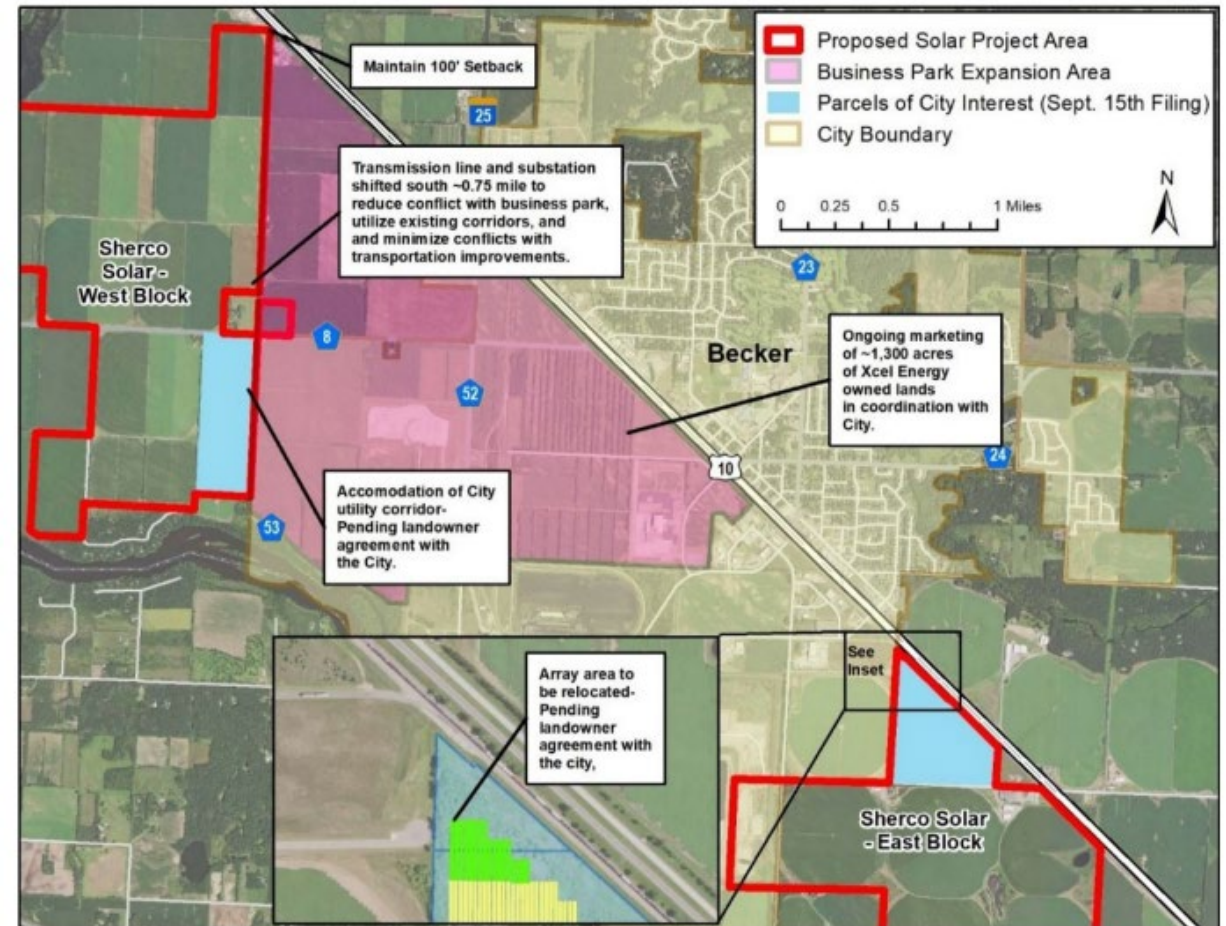


Case Study: Sherco Solar



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Habitat Friendly Solar Co-Benefits

- Pollinator Habitat
- Habitat for Other Species
- Surface Water Quality
- Groundwater Quality
- Soil Health
- Plant Diversity
- Conservation Grazing
- Carbon Sequestration
- Aesthetics
- Increased Panel Efficiency
- Jobs/Local Economies



Thank you!

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Resources:

MISO: <https://www.misoenergy.org/>

MN PUC: <https://mn.gov/puc/>

Routing and Siting:

<https://apps.commerce.state.mn.us/eera/web/page/home>

eDockets: <https://www.edockets.state.mn.us/>