



Solar Siting and Environmental Review Working Group

Final Report

March 2015

Abstract

As of September 2014, Minnesota's installed solar capacity is 19.3 megawatts (MW), a nine-fold increase since 2009. To date the largest solar installation in Minnesota is two MW. Recently announced utility-scale solar projects, ranging in size from 25 to 100 MW, would increase Minnesota's solar capacity to over 300 MW if all are constructed.

In 2013, the Minnesota Legislature established a stand-alone solar energy standard that requires, with certain exceptions, 1.5 percent of an Investor-owned utility's utility electrical sales come from solar sources by 2020. This requirement is anticipated to increase Minnesota's installed solar capacity to over 400 MW. The Legislature, also in 2013, established a goal of achieving 10 percent of the state's total electrical sales from solar sources by 2030.

The growth in installed solar capacity will come from a mix of smaller rooftop residential and commercial installations that have represented the bulk of solar installations to date, but will also include much larger ground installations ranging in size from one to at least 100 MW. With approximately seven to ten acres of land per MW required for ground installations, this increase in solar capacity has the potential to result in noticeable changes in the landscape.

Recognizing that Minnesota is entering a period of unprecedented solar growth and development, the Minnesota Department of Commerce (Department) convened the Solar Siting and Environmental Review Working Group (Working Group) to discuss and identify issues and opportunities related to reviewing, permitting, and siting new solar facilities.

The Working Group – a small but broad stakeholder group of advocates, developers, local governments, state agencies, and utilities – agreed there is a state interest in permitting solar facilities below the current 50 MW specified in the Minnesota Power Plant Siting Act. Participants also agreed that a local permitting option should exist for local governments that have ordinances addressing solar facilities. The Working Group reached consensus on the following thresholds:

- State permitting, and associated environmental review, for solar facilities greater than 10 MW.
- A local permit delegation option for solar facilities greater than 10 MW but less than 25 MW if local governments have ordinances that adequately address solar facilities.
- No state permitting requirements for solar facilities 10 MW or less.

Acronyms, Abbreviations, and Definitions

Department	Minnesota Department of Commerce
EA	Environmental Assessment
EAW	Environmental Assessment Worksheet
EERA	Department of Commerce Energy Environmental Review and Analysis
EIS	Environmental Impact Statement
MW	megawatt or 1,000,000 watts
PPSA	Minnesota Power Plant Siting Act
PUC	Minnesota Public Utilities Commission
PV	Photovoltaic
Working Group	Solar Siting and Environmental Review Working Group

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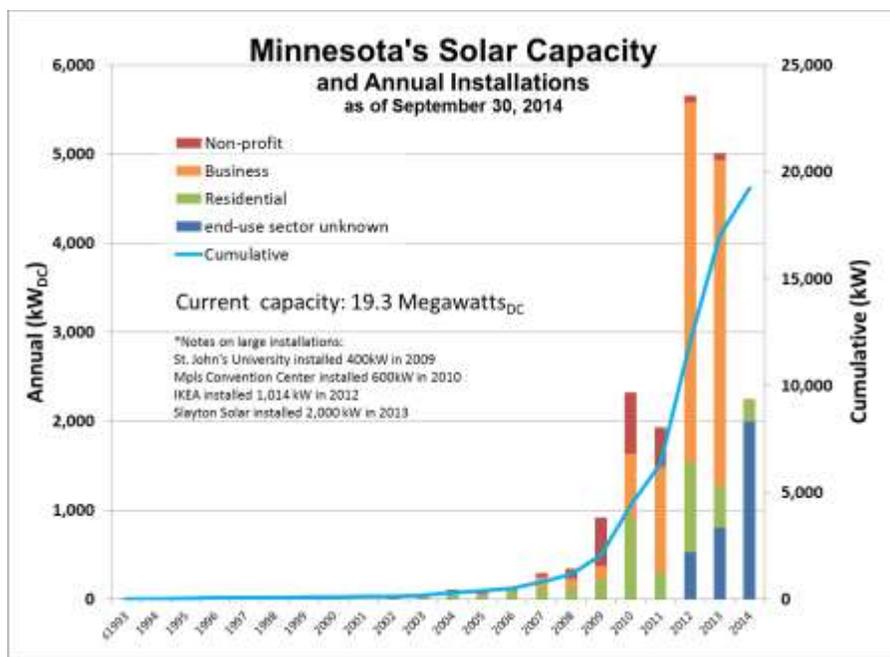
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1 Background

In the United States, installed photovoltaic (PV) capacity increased 41 percent in 2013,¹ and the generation of electricity utilizing solar energy was the fastest growing sector of the renewable energy market, outpacing the installed capacity of new wind generation facilities by 60 percent or 2,338 megawatts (MW).²

As of September 2014, installed solar capacity in Minnesota was 19.3 MW. As shown in Figure 1, installed capacity has increased more than nine-fold since 2009.

Figure 1. Installed Solar Capacity (MN)



Source: Minnesota Department of Commerce

Currently, the largest solar facility in Minnesota is a 2 MW PV facility located in Slayton. The Slayton facility became operational in January 2013. The output of the Slayton facility is sold to Xcel Energy and is expected to provide power to 376 homes annually. Currently the only other Minnesota solar facility with an installed capacity greater than 1 MW is located on the roof of the IKEA store in Bloomington. A 3 MW PV facility is currently under construction at the Minneapolis – St. Paul Airport.

¹ Solar Energy Industries Association. (2014). *Solar market Insight Report 2013 Year in Review*. Retrieved November 17, 2014, from SEIA: <http://www.seia.org/research-resources/solar-market-insight-report-2013-year-review>

² Federal Energy Regulatory Commission. (2014(a)). *Office of Energy Projects Energy Infrastructure Update for December 2013*. Retrieved October 8, 2014, from <http://www.ferc.gov/legal/staff-reports/2013/dec-energy-infrastructure.pdf>

Minnesota's installed solar capacity, as well as the overall size of individual facilities, is expected to increase significantly over the next several years. This increase is in response to a combination of federal and state government policies promoting solar generation and market forces that have significantly reduced the installed cost per watt of solar generating capacity.

In 2013, the Minnesota Legislature established a stand-alone solar energy standard that requires, with certain exceptions, 1.5 percent of investor-owned utility electrical sales come from solar sources by 2020. This requirement is anticipated to increase Minnesota's installed solar capacity to over 400 MW. The 2013 legislation also established an ambitious goal of achieving 10 percent of the state's total electrical sales from solar sources by 2030.³

Upcoming Solar Projects

Aurora Distributed Energy, LLC proposes to construct the 100 MW Aurora Distributed Energy Project in response to a competitive resource acquisition process to meet Xcel Energy's identified generation need. The Aurora project would consist of PV facilities at up to 24 locations throughout Xcel Energy's service territory. Individual facilities would vary in size between 1.5 and 10 MW.

In a separate proceeding, Xcel Energy requested approval from the Minnesota Public Utilities Commission (PUC) to acquire 187 MW of PV generating capacity from three projects:

- 62.25 MW Marshall Solar Project near Marshall
- 24.75 MW Minnesota Solar I Project near Tracy
- 100 MW North Star Solar Project near North Branch

Utility-scale PV facilities are anticipated to occupy approximately seven to ten acres of land per MW of installed capacity. As a result, the increase in installed solar capacity has the potential to result in noticeable land use changes in various locations throughout the state.

Permitting

Permitting requirements for solar facilities vary by generation capacity. Minnesota Statute 216E, the Minnesota Power Plant Siting Act (PPSA), requires all non-wind electric generating facilities capable of generating 50 MW or more of electricity to obtain a site permit from the PUC prior to construction.⁴ Groups of solar facilities determined to be a single development,⁵ and capable of generating 50 MW or more of electricity also fall under PUC's permitting authority. As part of the PUC permitting process, an environmental review document in the form of an Environmental Impact Statement (EIS) or Environmental Assessment (EA) is prepared by the Department of Commerce (Department).

Solar facilities with installed capacity of less than 50 MW are permitted locally. Under the PPSA, applicants may seek local permitting for facilities capable of generating between 50 MW and 80 MW of electricity, with the local government responsible for preparing an EA for

³ Minnesota Statutes 216B.1691, subd. 2f(c)

⁴ Minnesota Statutes 216E.03. Subd. 1.

⁵ Minnesota Statutes 216E.021

the project. Typically, construction would require a conditional use permit and may be precluded in certain areas.

Environmental review for solar facilities with a generating capacity of less than 50 MW varies by project size:

- Projects between 25 and 50 MW require preparation of an Environmental Assessment Worksheet (EAW) by the Environmental Quality Board (EQB).
- Projects between 5 and 25 MW are subject to a discretionary EAW at the request of the applicant, responsible government unit, or through a citizen petition process.⁶
- Facilities under 5 MW are exempt from any state environmental review.
- Additionally, an EAW is required for land conversion projects that convert more than 80 acres of agricultural, native prairie, forest, or naturally vegetated land.⁷

Recognizing that Minnesota is entering a period of unprecedented solar growth and development, the Department convened the Solar Siting and Environmental Review Working Group (Working Group) to discuss and identify issues and opportunities related to reviewing, permitting, and siting new solar facilities.

2 Working Group Composition

The Department worked with a small but broad stakeholder group of advocates, developers, local governments, state agencies, and utilities to participate in the Working Group:

- Barr Engineering
- Ecos Energy
- Fresh Energy
- Geronimo Energy
- Invenergy
- Izaak Walton League
- Minnesota Association of Townships
- Minnesota Department of Agriculture
- Minnesota Department of Commerce
- Minnesota Department of Natural Resources
- Minnesota Environmental Quality Board
- Minnesota Public Utilities Commission
- Murray County
- Stearns County
- Sun Edison
- SunShare
- Wind on the Wires
- Westwood Professional Services

⁶ Minnesota Rules 4410.4500; 4410.4600 Subp. 3.

⁷ Ibid. 4410.1100

- Xcel Energy

3 Process

The Working Group met six times between April 2014 and January 2015. Participants focused on the following questions:

- At what level of government and at what threshold of committed or anticipated generating capacity in a given geographic area should solar development be regulated?
- For projects not regulated by the Minnesota Power Plant Siting Act (PPSA), what is the appropriate means or process to conduct an environmental review and how should the cumulative effects be addressed?
- Are amendments to the PPSA, other state laws and/or rules necessary to better address the environmental issues specific to solar power?
- Are new rules and/or standards specific to solar power necessary to effectively consider environmental issues?

At the initial meeting, Invenergy provided a presentation regarding the construction of the Grand Ridge Project, a 20 MW PV project in Illinois. The Working Group also heard from a panel of solar developers. These presentations provided useful background for participants.

Over the course of the meetings, participants discussed a variety of issues related to solar facilities:

- The existing permitting and environmental review process.
- The need for general background material for members of the public as well as officials and staff at various levels of government who are likely to review permit applications for solar facilities.
- The likely characteristics of solar installations in Minnesota in the near future.
- The anticipated impacts related to solar facilities.

4 Recommendations

Following discussion of issues and impacts related to solar facilities, the Working Group developed the following recommendations in response to the focus questions:

At what level of government and at what threshold of committed or anticipated generating capacity in a given geographic area should solar development be regulated?

- Participants agreed there is a state interest in permitting solar facilities below the current 50 MW threshold specified in the PPSA (Minnesota Statute 216E). Participants also agreed that a local permitting option should exist for local governments that have ordinances addressing solar facilities. The Working Group reached consensus on the following thresholds:

- State permitting, and associated environmental review, for solar facilities greater than 10 MW.
- A local permit review option for solar projects between 10 MW and 25 MW if local governments have ordinances that address solar facilities.
- No state permitting requirements for solar facilities less than 10 MW.

For projects not regulated by the PPSA, what is the appropriate means or process to conduct an environmental review and how should the cumulative effects be addressed?

- Lowering the state permitting threshold for solar facilities to 10 MW would result in environmental review conducted as part of the PUC permitting process as outlined by the PPSA. For projects between 10 and 25 MW seeking local review, the local government with jurisdiction would develop an EA for the project.
- An EAW is discretionary for projects between 5 and 10 MW.

Are amendments to the PPSA, other state laws and/or rules necessary to better address the environmental issues specific to solar power?

- Although the Working Group did not develop specific legislative language related to a threshold for permitting solar facilities, there was general agreement that proposed changes at this time should be made within the PPSA, rather than developing a separate statute for solar facilities or incorporating solar facilities into the Minnesota Statute 216F, which addresses Wind Generation Facilities.

Are new rules and/or standards specific to solar power necessary to effectively consider environmental issues?

- Participants did not identify a need for a statute specific to solar power.

4.1 Additional Recommendations

In addition to the recommendations detailed above, the Working Group identified a need for information providing an overview of solar energy generation including:

- Definitions and descriptions;
- Discussion of characteristic of different size installations
- Overview of probable impacts;
- Best practices for permitting, if available; and
- Background on policy and market forces influencing the increase in solar.

Appendix A

Working Group Participants

The following groups and individuals participated in the Solar Siting and Environmental Review Working Group:

- Barr Engineering – John Wachtler
- Ecos Energy - Steve Broyer, Chris Little
- Fresh Energy – Ross Abbey, Erin Stojan Ruccolo
- Geronimo Energy – Jeremy Duehr, Betsy Engelking, Nathan Franzen
- Invenergy – Joel Schroeder
- Izaak Walton League – Eric Jensen
- Minnesota Association of Townships – Eugene Dupault, Gary Pedersen
- Minnesota Department of Agriculture – Becky Balk, Bob Patton
- Minnesota Department of Commerce – David Birkholz, Bill Grant, Alison Groebner, Kim Havey, Deborah Pile
- Minnesota Department of Natural Resources – Kevin Mixon
- Minnesota Environmental Quality Board - Kate Frantz, Anna Hendrickson, Caroline Magnuson
- Minnesota Public Utilities Commission – Tricia DeBleeckere, Scott Ek, Cesar Panait
- Murray County – Jean Christoffels
- Stearns County – Angie Berg
- Sun Edison – Dan Rogers
- SunShare – Ross Abbey, Will Cooksey
- Wind on the Wires – Christopher Finke, Beth Soholt
- Westwood Professional Services – Eric Hansen, Jack Hayes, Mallory Lindgren
- Xcel Energy – Ani Backa, Grania McKiernan, Jim Pearson

Staffing for the Working group was provided by Andrew Levi and Suzanne Steinhauer of the Department of Commerce.

Appendix B

Meeting Notes



Solar Siting and Environmental Review Working Group

Meeting Summary

April 15, 2014

Attendees

Angie Berg (Stearns County); Jean Christoffels (Murray county); Tricia DeBleeckere (PUC); Jeremy Duehr (Geronimo); Kate Frantz (EQB); Bill Grant (Commerce); Alison Groebner (Commerce), Kim Havey (Commerce); Jack Hays (Westwood); Anna Henderson (EQB); Eric Jensen (Izaak Walton League); Mallory Lindgren (Westwood); Bob Patton (Department of Agriculture); Jim Pearson (Xcel); Gary Pedersen (MN Association of Townships – by phone); Erin Stojan Ruccolo (Fresh Energy); Beth Sohlt (Wind on the Wires)

Meeting Discussion

After introductory remarks from Bill Grant and participant introductions, Commerce staff asked participants to identify key issues in determining appropriate level of siting and environmental review. In addition to identifying issues, participants had a number of questions about the development and construction of solar generating facilities and how solar developments may differ from other types of power generation facilities.

Questions about Solar Development

- Different Solar Technologies - the consensus among group members was that most of the near term solar development will use photovoltaic (PV) technology, but different technologies may emerge as the market evolves. Impacts would also be expected to vary to some degree depending upon the solar technology (e.g. reflection from concentrating solar facilities in the western states does create possible hazards to aircraft and annoyance to residents or people travelling through or near the project, in contrast the dark PV panels would not be expected to create this type of hazard or annoyance)
- Decommissioning and disposal – what is the lifespan of a solar project? How deep are foundations?
- Question about natural breaks in size (MW)
 - Distribution level interconnection (<5-10 MW range)
 - Transmission level interconnection (> 10 MW range)
- What is a project – questions about geographically dispersed projects by the same developer
- Eminent Domain – do solar developers have that?
- Aesthetic impacts – what do the facilities look like? Is reflection or glare an issue?



- Do solar projects provide an opportunity for multiple uses (e.g. low-growing crops, animal grazing)?
- How are potential sites prioritized for development?
- What factors are relevant to solar development?
- Greenfield vs brownfield development – what are opportunities and costs?

There was general agreement among the participants that a presentation on solar development and construction would provide useful background and context to assist in identifying issues related to siting and environmental review.

Land Use Issues

- How would a proposed solar project fit into a comprehensive plan?
- Different standards for different land use categories
- How much land would be converted? What is the current land use?
- Potential conflict with proposed developments and Metropolitan Agricultural Preserves (Minn. Stat. 473H, 7-county metro area) and the Agricultural Land Preservation Program (Minn. Stat. 40A, greater Minnesota)
- Cities & zoning authority
- Orderly annexation plans and agreements – how would solar development fit in with areas identified as potential urban development areas?
- Associated infrastructure (e.g. undergrounding of transmission /distribution)
- Understanding that planning resources and experience vary by locale

Social and Environmental Issues

- Wildlife Impacts
- Stormwater runoff and erosion control
- Water quality
- Impact on animal agriculture (e.g. loss of land currently used for manure application)
- Fiscal impacts to local governments (Revenue/taxes/payments in lieu of taxes)
- Cultural impacts related to the sense of place
- Aesthetics and public safety related to reflection from the installation
- Impacts from associated infrastructure or other development (e.g. transmission, distribution, roads)

Potential Thresholds for Environmental Review

- Area of the project
- Project Size (MW)
- Land Use
- Level of Commission Involvement
- Disturbance of prime ag land or soil quality



- Phased or Connected Actions - Projects that are in different locations or developed over a longer timeframe may be considered to be phased or connected actions under environmental review rules

Other Issues

- Department of Agriculture role as advisory to the Commission and local government
- Ag preservation policy through state agency policy – 10 acres requires Department of Agriculture review (separate from environmental review)
- Local option for permit decisions
- Respect for private use of land
- Need for a summary of solar legislation

Working Group Priorities

Following the discussion of issues, working group participants identified three general priorities for the group to address:

- Solar Siting Guide and Road Map – Development of a resource for developers, local units of government, and members of the public. This guide would address:
 - Understanding what is specific to solar generation compared to other types
 - Local vs. State Thresholds
 - Multiple sites – permitting and environmental review
 - Case study for siting
- Development of Solar Best Practices for Minnesota
 - Siting
 - Decommissioning
 - Life Cycle
- Possible Recommendations for Legislation and Rulemaking – recommendations, if any, are unknown at this time.

Priority Work Products for next meeting

Based on the discussion, participants identified priority work products for the next meeting:

- Phased and connected actions (from EQB)
- Legislative Review
 - Review of 2014 Omnibus Energy Bill
 - Review of 2013 Solar Legislation
- Contact League of Minnesota Cities
- Material on Solar Siting Best Practices
- Begin pulling together existing solar ordinances
- Continue developing a list of related laws/standards potentially related to solar
- Developing Solar/Solar 101 for Photovoltaics



Solar Siting and Environmental Review Working Group

Meeting Summary

June 5, 2014

Attendees

Grania McKiernan (Xcel); Eric Hansen (Westwood); Kevin Mixon (DNR); Joel Schroeder (Invenergy); Becky Balk (Agriculture); Caroline Magnuson (EQB); Angie Berg (Stearns County); Ani Backa (Xcel); John Wachtler (Barr Engineering); Tricia DeBleeckere (PUC); Gary Pedersen (Minnesota Townships Association); Steve Broyer (Ecos Energy); Nathan Franzen (Geronimo); Eric Jensen (Izaak Walton League); Kim Havey (Commerce); Ross Abbey (Fresh Energy); Beth Soholt (Wind on the Waves); Dan Rogers (Sun Edison); Kate Frantz (EQB); Bill Grant (Commerce); Deborah Pile (Commerce); David Birkholz (Commerce), Alison Groebner (Commerce); Suzanne Steinhauer (Commerce); Erin Spaeth (Commerce)

Meeting Discussion:

Solar Legislation 2013-2014 [Alison Groebner, Minnesota Department of Commerce]

Alison summarized recent legislation- the 2013 Omnibus Energy Bill, 2014 Omnibus Energy Bill and the 2014 Tax Bill, chapter 308.

- **Distributed Generation Highlights**
 - 2013 - Changes only apply to investor owned utilities; allow net metering for less than 1 MW, standby charges; meter aggregation. 4 % limit on cumulative distributed generation for each IOU.
 - 2014 - Utilities are required to request certain data from applicants seeking to interconnect.
- **Value of Solar Highlights** - "Alternative Tariff"- Credit for using interconnected Solar PV
- **Solar Energy Standard** - 1.5% solar by 2020 (10 % from installations < 20kW) **in addition to** 25% renewable by 2025. 10% of the 1.5 from installations.
- **Additional Solar Energy Policy highlights**
 - Solar Incentive Program - Applies to projects < 20kWCommunity Solar Gardens
 - Made in Minnesota
 - On-bill Repayment
 - Property Assessed Clean Energy
 - Financing Terms
 - Supplemental Funding Sources
- **Utility-Scale Solar Regulation (216E)**



- Definition of “Solar Energy Generating System”
- Size Determination - Individual projects in different locations that are built within a 12 month period and exhibit characteristics of being a single development may be considered to be a single project subject to PUC siting if over 50 MW.
- Solar projects over 50 MW may pursue permitting through the alternative permitting process.
- **Certificate of Need Exemption** - Solar/Wind facilities not owned, operated and producing energy for use in Minnesota are exempt from obtaining Certificate of Need.

Tax Bill highlights

- Solar Energy Production Tax- amends existing exemption of solar photovoltaic devices to include “solar energy-generating systems.”
- Solar Energy Property Classification:
 - > 1 MW: Classified as 3a (commercial-industrial property) and taxed at a rate of \$1.20 / MWh
 - ≤1MW: classification stays the same as before solar installation; not taxed for solar energy production
- Tax distribution- 80% to counties, 20% to cities/townships.
- Department of Revenue study looking at due Feb. 2015

Solar 101 [Joel Schroeder - Invenergy]

Joel provided general background on PV installations and illustrated the construction process with a video of construction of the 20 MW Grand Ridge PV project in Illinois.

- Posts are direct-embedded – no concrete foundations unless loose soils require a more secure foundation.
- Optimal conditions for solar location
 - Flat, strong soil, consistent slope, close to electrical infrastructure, high solar resource area
 - No shade, cobble rock not desirable
- Compatibility of solar with other land uses compared to other generation types: low height, no emissions or dust, limited noise, limited visual disturbance due to overall height.
- Costs generally increased in brownfield developments compared to greenfield locations
- Decommissioning – expected life of ~ 30 years
 - States/Provinces with decommissioning models: Georgia, California, Texas, Ontario

Considerations/discussion points:

- Solar compatibility with other land uses (e.g. quarries, farmland);
- Need to avoid shade may require setbacks from property lines, height restrictions on adjacent land uses – may use payments to neighbors not to build above a certain height.
- Concern about reaction of farmers, many of whom have been approached about pipelines and wind energy. Who’s representing farmers when it comes to selling/leasing land?
- Desire among developers for a well-developed, consistent set of rules to follow.

- What would help local governments designate areas for solar through a comprehensive plan or other policy?
- Development of Model Ordinances – after some discussion, there was general agreement that Stearns County ordinance or CR planning guidance already serve to provide the basis for a model ordinance.

Priority Work Products for next meeting [Monday, July 7th]

Based on the discussion, participants identified priority work products for the next meeting:

- Fact Sheet about Solar
- Solar Siting Best Practices
- Overview of Solar drivers (policy and economics) from both the government (state and federal) and developers that combine to create solar growth



Solar Siting and Environmental Review Working Group

Meeting Summary

July 7, 2014

Attendees

Angie Berg (Stearns County); Jean Christoffels (Murray County); Jim Pearson (Xcel); Caroline Magnuson (EQB); Kate Frantz (EQB); Nathan Franzen (Geronimo); Erin Stojan Ruccolo (Fresh Energy); Beth Soholt (Wind on the Waves); Dan Rogers (Sun Edison); Bill Grant (Commerce); Deborah Pile (Commerce); Alison Groebner (Commerce); Suzanne Steinhauer (Commerce);

Meeting Discussion:

Potential 2015 Legislative Action:

The group's major focus at this meeting was a discussion of potential legislative actions for the upcoming 2015 legislative session. Prior to the meeting, Department of Commerce staff distributed a draft discussion document outlining five categories of legislative action. After discussion, participants were asked to vote on the categories to determine which category of alternatives should be moved forward for further development and discussion. Results of voting were as follows:¹

- Exempt Solar: 0 (1)
- New Solar Statute: 8 (13)
- Include Solar with Wind: 1 (2)
- Amend PPSA: 6 (7)
- Status Quo: 6 (7)

There was agreement among participants that there is a state interest in permitting of solar generation facilities at some size. Although there was not consensus on the appropriate size threshold, there was agreement that exempting all levels of solar development from state permitting was not desirable.

There was some discussion about moving solar legislation to Section 216F (The Wind Statute), to group what might be termed "non-traditional" or "alternative" power generation

¹ First number represents votes of meeting participants; number in parenthesis includes votes from meeting and verbal "votes" from follow-up calls. Each entity participating in the working group (e.g. EQB, Department of Agriculture, Wind on the Wires) received 3 votes to gauge the level of support for the different alternatives



together. The general consensus of the group was that solar generation and wind generation are sufficiently different that grouping them together may be problematic.

There was some support for keeping with the “status quo option.” Although this may not cover everything related to solar, we can’t perfectly anticipate what potential problems are and a “wait and see” approach may allow for more targeted fixes as problems arise.

The group discussed potential legislative changes, but with uncertainty as to whether changes would best be placed in the PPSA or in a new solar statute.

Participants expressed an interest in providing more certainty about permitting in the 5 – 50 MW window, currently below the state permitting under the PPSA.

Significant discussion about what is the appropriate size for state permitting:

- 5 MW – electric generating facilities under this size are exempt from environmental review requirements under environmental review rules;
- 10 MW – tipping point at which solar facilities typically require a transmission interconnect rather than distribution;
- 25 MW – Triggers mandatory EAW under environmental review rules

Nationally the trend in solar projects has been moving from larger projects (80 -200 MW) to smaller projects in the 20 – 30 MW range.

There was an acknowledgement among participants that, regardless of the actual threshold set, there will probably be some degree of “right sizing” projects that are approaching a permitting threshold to avoid triggering some type of permit or environmental review. There was no agreement about the number of projects this might affect in the long –term. Earlier precedent (wind size determination and local permitting delegation) indicates that this is more true in the timeframe near these transitions, but does not appear to be an issue with a significant number of projects going forward.

There was also considerable discussion of providing for some local permitting of projects, in places where local governments have the interest and resources to do the permitting. Participants wanted more exploration of the differences between local delegation (similar to wind permitting) and a local review option (used in power plant siting).

There was also discussion about what size threshold would be appropriate for delegation or local review (5 – 25 MW?).

Commerce staff asked if there was a need to change the definition of a “Solar Energy Generation System” or add additional clarification as to the types of solar generation that are covered. The group’s consensus was that there was no need at this time to change the definition and that any changes should wait until there is an issue identified.

There was also some discussion about whether there is there a state interest in energy output of solar facilities, and what type of data is necessary to ensure state policy goals are being met.

Participants also wanted to see cost and timeline estimates for state permitting.

Working Group Report Outline

Participants discussed the proposed report outline prepared by EERA staff. In general, participants believed that the outline captured the issues that the group has discussed.

There was some discussion as to the intended audience for the report and about the meaning of the term “utility scale” in the proposed outline. Participants identified a need for a user-friendly overview of solar that would briefly discuss the various “buckets” or thresholds for solar. There was discussion of a general breakdown of installation sizes in the following categories: residential rooftop, commercial rooftop, solar gardens (≤ 1 MW), distributed solar (1-10 MW), large solar (> 10 MW).

Participants recommended that the executive summary of the resulting report be developed in a way that allowed it provide a stand-alone overview of these different installation sizes.

Supplement – Meeting Follow Up

Following the July 7 meeting, Suzanne Steinhauer attempted to contact working group participants that were unable to be at the July 7 meeting to see what their opinions were regarding potential Legislative Actions.

Participants contacted: Kevin Mixon (DNR), Bob Patton (Agriculture), Gary Pedersen (MN Association of Townships), Chris Little (Ecos Energy), Eric Jensen (Izaak Walton League)

Working Group participants contacted after the July 7 meeting expressed:

- Agreement that there is a state interest in permitting of solar facilities, but uncertainty about just where the interest kicks in in terms of size;
- A desire for a predictable process in review and permitting of solar facilities;
- A desire to see more consistency among local governments in permitting and ordinances;
- A desire to ensure local input in permitting decisions;
- If delegation is pursued, a desire to make that option available to townships that have planning and zoning.



Solar Siting and Environmental Review Working Group

Meeting Summary

August 6, 2014

Attendees

Eric Hansen (Westwood); Dan Rogers (Sun Edison); Angie Berg (Stearns County); Caroline Magnuson (EQB); Eric Jensen (Izaak Walton League); Scott Ek (PUC); Nathan Franzen (Geronimo); Beth Soholt (Wind on the Wires); Jean Christoffels (Murray County); Erin Stojan Ruccolo (Fresh Energy); Kevin Mixon (DNR); Bill Grant (Commerce); Alison Groebner (Commerce); Kim Havey (Commerce); Chris Little (Ecos); Jack Hays (Westwood); Jim Pearson (Xcel); Bob Patton (MN Dept of Agriculture); Caroline Magnuson (EQB); Cezar Panait (PUC); Anna Hendrickson (EQB); Suzanne Steinhauer (Commerce);

Meeting Discussion:

The group's focus at this meeting was a discussion of potential legislative actions for the upcoming 2015 legislative session. Following the discussion at the July 7 meeting Department of Commerce staff prepared and distributed discussion drafts of potential legislation:

- a stand-alone solar statute
- potential amendments to the Power Plant Siting Act (PPSA) incorporating solar-specific changes, and
- a copy of the PPSA incorporating 2014 amendments.

Department staff reviewed the proposals and opened discussion on potential approaches to permitting and related issues.

Participants discussed whether permits should cover only the construction and restoration phase, as with site and route permits under the PPSA, or whether the permits should be for some longer length of time, such as the wind permits which are for 30 years. There was considerable discussion about the intersection between the length of a power purchase agreement, the lifespan of a solar project, potential for repowering constructed projects, and the dynamic nature of planning and land use changes.

After discussion of the proposals, participants voted on the preferred approach to permitting, state permitting threshold, and option for local permitting of solar facilities, and the permit term.



There was no clear consensus from the working group as to an approach after the last meeting.

- Statutory Change– Status Quo (6 votes); Solar Stand-Alone Statute(2 votes); PPSA amendment (2 votes)
- Permitting Process: 2 review standards (5 votes); single review procedure for all projects (0 votes)
- Permitting Threshold – 50 MW (5 votes); Combination of MW and acreage(4 votes); 10 MW (2 votes); 5 MW (1 vote)
- Local Permitting: Local Review Option (7 votes); Local Assumption of Permitting (2 votes)
- Term of Permit: Construction and Restoration (9 votes); Construction, Operation, & Maintenance (1 vote)

Participants supported the concept of 2 review standards (a standard and alternative process) for differentiating projects at some level. Participants also supported a permit that covered the construction and restoration of the project – as do permits for transmission lines and power plants, rather than a permit that covers the operation phase of a project as a wind permit does.

In other areas, however, separating the voting by issue resulted in conflicting messages – more people supported some change in the permitting threshold and allowing some mechanism for local control, even though the majority voted for no change in the current PPSA statute.

Following the voting and the interest in exploring a permitting threshold that combined generation size and acreage, there was some discussion but no consensus about what the acreage threshold would be.

Participants expressed an interest in better understanding of the impacts resulting from solar projects. Participants also thought that there would be benefit to developing a Model Solar Ordinance.

Solar Siting and Environmental Review Working Group

Meeting Summary

September 30, 2014

Attendees

Kevin Mixon (DNR); Will Cooksey (SunShare); Dan Rogers (Sun Edison); Angie Berg (Stearns County); Caroline Magnuson (EQB); Betsy Engelking (Geronimo); Ross Abbey (SunShare); Anna Hendrickson (EQB); Bill Grant (Commerce); Deb Pile (Commerce); Bob Patton (MN Dept of Agriculture); Jean Christoffels (Murray County); Eric Hansen (Westwood); Jim Pearson (Xcel Energy); Eugene Dupault (MN Association of Townships); Kim Havey (Commerce); Christopher Finke (Wind on the Wires) ; Suzanne Steinhauer (Commerce); Andrew Levi (Commerce)

Meeting Discussion

The group's focus at the meeting was identifying the respective roles of state and local governments for permitting solar facilities. After a discussion of advantages and challenges with both state and local approaches to permitting, the group discussed potential avenues for permitting, and thresholds as they might relate to the array of options.

There was considerable discussion regarding the advantages and challenges of both state and local permitting. The group did not rank individual issues. In general, group discussion highlighted on the State's relative advantages in balancing competing interests and applying consistency and predictability to the permitting process and local government's ability to better engage local publics and understand local interests and concerns. More specifically:

- State/Advantages
 - Ensure state policies are followed to ensure the orderly implementation of solar siting to meet the solar standard as set by the state legislature.
 - Support the cost effective and efficient review of solar projects consistently across jurisdictions.
 - Balance competing priorities regarding the public interest.
 - Analyze cumulative impacts.
 - Preserve significant state resources.
 - Develop and maintain the knowledge resources and needed.
- State/Challenges
 - No direct experience permitting a solar facility – this will change with time.

- Permitting process may be more time consuming and expensive compared to local permitting.
- Lack of understanding of local concerns or resources of significance.
- Local/Advantages
 - Provide better consistency with local comprehensive plans.
 - Provide choices regarding the level of permitting (e.g. permitted vs. conditional use) required to site a solar facility.
 - Engage in more active and direct communication with local constituents, potential to create increased public buy-in and project acceptance.
 - Develop focused on-the-ground mitigation measures to reduce impacts.
 - Preserve significant local resources.
 - Permitting is generally faster at a local level than at the state level.
- Local/Challenges
 - Inability to provide permitting consistency and predictability across the state.
 - Inability to address cumulative impacts across the state.
 - May be difficult to dedicate the necessary resources to develop and adapt to permitting solar facilities.
 - Possible disconnect between state needs and local concerns.

Overall options discussed were as follows:

- Permitting
 - State only process.
 - Two-tiered process involving local zoning and permitting.
 - Is this simply an RGU question?
 - Economic or business model that takes into account permitting costs.
 - Advisory task force process to include local interests.
 - Local governments developing land conversion thresholds.
- Thresholds
 - Distribution vs transmission level projects.
 - The utility type, e.g., local, co-op, etc.
 - The projects size (MW or acreage), land usage, length, purpose, or interconnection type.
 - Various environmental triggers.
 - Links to other process, such as EAW or MISO reviews.

Consensus Points

After discussion, the group reached consensus on the following:

- There are too many differences between solar facilities and wind facilities to combine them in the same statute.

- Because a great deal is unknown regarding solar permitting the group could not view the issue from the position of “what is wrong with the permitting process now.”
- A stand-alone statute is unnecessary, and solar permitting – at this time – can be addressed through changes to the PPSA.
- Both state and local governments have an interest in permitting solar facilities at some level below 50 MW.

Reaching consensus that both state and local governments have an interest in permitting solar facilities below 50 MW, the group then discussed how these facilities should be permitted, and what thresholds should be used to trigger a permit. Many options were discussed, but the group reached consensus on the following thresholds:

- State permit for solar projects equal to 10 MW or greater. This threshold is linked to the transmission interconnection process through the Midwestern Independent System Operator (MISO).
- Local permitting for solar projects 10 MW or less.
- A local review option for solar projects between 10MW to 25 MW if local governments have ordinances addressing solar facilities.

Future Discussion Points

- Who decides on the local review option - the local government or the applicant?
- Is state or local planning for solar needed?
 - development of solar overlays in county zoning ordinances (could identify either preferred zones or exclusion zones), or
 - local thresholds for land conversion
- Is there a way to address concerns with willing sellers and local zoning preferences/planned development?
- How can the State assist local governments, e.g., model ordinance?
- How to best address cumulative impacts?
- Any recommendations for rule changes?

Follow-up

- Ensure MW figures are correct based on MISO and EQB rules.

Solar Siting and Environmental Review Working Group

Meeting Summary

January 9, 2015

Attendees

Will Cooksey (SunShare); Betsy Engelking (Geronimo); Ross Abbey (SunShare); Bill Grant (Commerce); Deb Pile (Commerce); Cesar Panait (PUC); Jim Pearson (Xcel Energy); Kim Havey (Commerce); Suzanne Steinhauer (Commerce); Andrew Levi (Commerce)

Attending by Phone: Kevin Mixon (DNR); Jean Christoffels (Murray County); Beth Soholt (Wind on the Wires); Dan Rogers (Sun Edison);

Meeting Discussion

The group's focus at the meeting was on the draft report provided by Department Staff prior to the meeting. Participants agreed that the information in the report was good, and properly reflected the group's work. Participants also felt that the draft report lacked identification of next steps and legislative guidance.

The Department has a placeholder for legislative changes related to solar permitting at the Governor's office, with specific language to be developed. The Department anticipates that the language would reflect what was heard from the group:

- a desire to keep solar in with the Power Plant Siting Act (Minn. Stat. 216E).
- a lower permit threshold for solar (10 MW).
- an option for local governments to assume permitting for projects in the 10-25 MW range.

Department staff didn't believe that the final report should include specific legislative language, as the group did not endorse a specific proposal.

Participants generally discussed what might happen if the solar changes were not part of the Administration's legislative proposals. Participants agreed that there were likely to be a number of new solar projects to be permitted and sited within the next year, and there was a sense that participants would like to have greater clarity on siting and permitting of solar facilities. There was general agreement that, given the broad range of working group participants, the group's recommendations could move forward legislatively through other avenues.



There was some discussion about the way in which local permitting for wind projects evolved, and how that may be a model for local permitting of solar facilities. The Wind Statue (Minn. Stat. 216F) directs the Commission to develop minimum standards, including setbacks. The Department anticipates that the Commission would do this by opening a docket on general permit standards for solar (as it did for wind in Docket Number E,G-999/M-06-1102) to take public comments, which it would consider in making its order in the matter.

The standards developed by the Commission provide the basic standards to be implemented by the Commission and by local governments who assume permitting authority. Local governments can establish more restrictive standards and the Commission is directed to consider any more restrictive standards established by the local unit of government. If the Commission elects not to apply the more restrictive local standards, it must find that there is good cause not to apply the more restrictive standards.

Xcel Energy informed the group that they have received many interconnection requests for solar facilities of 1 MW. There was discussion by the group that it would be helpful for local governments to know whether or not these smaller projects (1MW) were inter-related. Participants recommended that applicants seeking local permits for solar facilities be required to provide a size determination from the Department in their application to the local unit of government, as they do for wind projects under Minn. Stat. 216F.011, subd. 3c.

There was some discussion of what information the Department could provide to assist local governments and members of the public. It is anticipated that permit standards would be developed through the Commission's docket and the final order that comes out of that proceeding.

Follow-up

- Comments on Draft Report due January 16, 2015.
- Commerce will let participants know about its legislative proposals prior to introduction;