



 <b>Relevant Documents</b>	<b>Date</b>
<b>Commission Order</b>	March 8, 2017
<b>DOC EERA – Report - Solar Wind Decommissioning Working Group Report (2 parts)</b>	August 31, 2018
<b>DOC EERA – Comments and Recommendations Concerning Solar and Wind Decommissioning Working Group</b>	January 24, 2019
<b>Commission - Notice of comment period on the Department of Commerce Decommissioning Report and Recommendations</b>	July 22, 2019
<b>DNR – Comments</b>	Sept. 25, 2019
<b>MPCA – Comments</b>	Sept. 25, 2019
<b>Xcel Energy – Comments</b>	Oct. 4, 2019
<b>Clean Grid Alliance - Comments</b>	Oct. 4, 2019
<b>Minnesota Department of Agriculture – Comments</b>	Oct. 4, 2019
<b>DOC EERA – Reply Comments</b>	Nov. 18, 2019
<b>Xcel Energy – Reply Comments</b>	Nov. 18, 2019
<b>DOC EERA – Comments – Recommendations on review of solar and wind decommissioning plans</b>	March 16, 2020
<b>Commission – Notice of Comment Period</b>	April 10, 2020
<b>Minnesota Department of Natural Resources – Comments and Attachment (2 parts)</b>	May 8, 2020
<b>Minnesota Power - Comments</b>	May 8, 2020
<b>Avangrid Renewables – Comments</b>	May 8, 2020
<b>Xcel Energy – Comments</b>	May 8, 2020
<b>Jane Youngkrantz – Public Comment</b>	May 12, 2020
<b>MPCA – Public Comment</b>	May 12, 2020
<b>DOC EERA – Reply Comments</b>	May 22, 2020
<b>DOC EERA – Decommissioning Status Update</b>	October 29, 2020

## I. Statement of the Issues

How should the Commission proceed in the matter of decommissioning plans?

## II. Background

As noted in the Department of Commerce Energy Environmental Review and Analysis (DOC EERA) memos to the Commission:

Commission-issued site permits for wind and solar facilities require that permittees file a decommissioning plan for each project prior to the project coming online. These plans are required in order to ensure that developers restore sites developed for wind or solar generation to their original condition at the end of the energy facility's useful life and that the cost of the restoration is borne by the developers. The decommissioning plans to date have not specified what type of financial assurance is required to accomplish decommissioning tasks. Ensuring adequate funding of project decommissioning is particularly timely given that a number of older wind projects are entering into the final portion of their power purchase agreements.

In response to the January 25, 2017 and February 17, 2017 memoranda from the DOC EERA, the Commission issued an order on March 8, 2017 authorizing the creation of the Solar and Wind Decommissioning Working Group (DWG). The working group was tasked to gather stakeholder input regarding decommissioning best practices and provide the Commission with a report.

On August 31, 2018 the DOC EERA issued its *Report - Solar and Wind Decommissioning Working Group Report and Recommendations*. In this report, DOC EERA provided background on the decommissioning of solar and wind facilities and a list of recommendations the working group came to after meeting. The group recommended that decommissioning plans be required, detailed, and adaptable.

On January 24, 2019 the Department of Commerce issued its *Comments - Solar and Wind Decommissioning Working Group Findings and EERA Recommendations*. This memo provided additional information and recommendations and notified the Commission of DOC EERA's intention to incorporate some of the DWG's recommendations and considerations into its application guidance material in order to review decommissioning plans earlier in the permitting process. DOC EERA also made recommendations for future Commission actions in relations to decommissioning plans.

On July 22, 2019 the Commission issued a notice of comment period on the Department of Commerce Decommissioning Report and Recommendations. The Commission subsequently extended the initial and reply comment periods on September 19, 2019. Then on November 1, 2019, the Commission extended the Reply comment period again.

On September 25, 2019 the Minnesota Department of Natural Resources (DNR), (letter dated September 20, 2019), and the Minnesota Pollution Control Agency (MPCA) submitted comments.

On October 4, 2019 Xcel Energy, the Clean Grid Alliance (CGA), and the Minnesota Department of Agriculture (MDA) submitted comments.

On November 18, 2019, Xcel Energy and DOC EERA submitted reply comments.

On March 16, 2020 DOC EERA submitted *Comments and Recommendations on Review of Solar and Wind Decommissioning Plans*. This document is based on DOC EERA's review of submitted decommissioning plans and augments on the Department's earlier recommendations. This document also contains a proposed schedule for implementing a five-year review of decommissioning plans.

On April 10, 2020 the Commission issued a notice of comment period regarding the DOC EERA *Comments and Recommendations on Review of Solar and Wind Decommissioning Plans*.

On May 8, 2020 the DNR, Minnesota Power, Avangrid Renewables, LLC, and Xcel Energy submitted comments.

On May 12, 2020 (Email dated May 8, 2020) Jane Youngkrantz and the MPCA submitted comments.

On May 22, 2020 DOC EERA submitted reply comments.

### **III. Statutes and Rules**

Minn. Stat. 216F.05, subd. 5

This section outlines rules that the commission shall adopt governing the consideration of an application for a site permit for a LWECS. This includes the specification that the rules contain a requirement to restore, to the extent possible, the area affected by construction of the LWECS to the natural conditions that existed immediately before construction of the LWECS.

Minn. R. 7854.0500 subp. 13

This section of the rules outlines the Large Wind Energy Conversion System (LWECS) application content requirements. The requirements include information regarding the decommissioning of a project and restoring a site, for example: the anticipated life of the project; the estimated decommissioning costs in current dollars; the method and schedule for updating the costs of decommissioning and restoration; the method of ensuring funds will be available for

decommissioning and restoration; and the anticipated manner in which the project will be decommissioned and the site restored.

#### IV. Comments

In Response to the *Notice of Comment Period on Department of Commerce Decommissioning Report and Recommendations* issued July 22, 2019, the Commission received comment letters from the DNR, the MPCA, Xcel Energy, Clean Grid Alliance, and the MDA. The Commission subsequently extended the initial and reply comment periods on September 19, 2019. The Commission further extended the deadline for Reply Comments on November 1, 2019 and received Reply Comments from Xcel Energy and DOC EERA.

The Commission initiated a comment period in response to the March 16, 2020 DOC EERA submission, *Comments and Recommendations on Review of Solar and Wind Decommissioning Plans*. In Response to the *Notice of Comment Period* issued April 10, 2020, the Commission received comment letters from the DNR, the MPCA, Xcel Energy, Minnesota Power, Avangrid Renewables, and Jane Youngkrantz<sup>1</sup>. The Commission received reply comments from DOC EERA.

The Comments below are summarized by the major themes of the many comments received rather by the individual party or person.

##### A. Reviewing Decommissioning Plans Earlier in the Permitting Process

In DOC EERA's comments and recommendations, the Department suggested that decommissioning plans should be available earlier in the process, specifically as part of the application contents, which would allow for greater review of the plans during the permitting process.<sup>2,3</sup> DOC EERA also stated that it had updated its application guidance materials to recommend that new applications contain a draft decommissioning plan incorporating the elements required in Minn. Rule 7854.0500, subp. 13.<sup>2,3</sup> The Department asserted that this would allow for wider review of the plans that could inform the permitting process.<sup>3</sup> The DNR agreed that decommissioning plans should be available earlier in the permitting process and if it were included in the application, it provide the DNR an opportunity to review and provide comments.<sup>4</sup> Additionally, the MPCA agreed with the DOC EERA that a draft decommissioning plan should be part of new application.<sup>5</sup> Additionally, MPCA recommended that current installations update their plans at the next 5 year milestone to incorporate the elements

---

<sup>1</sup> Ms. Youngkrantz is one of the Directors for the Minnesota Association of Townships; Board member for the Kandiyohi County SWCD and Board member on the County Planning Commission

<sup>2</sup> *DOC EERA Reply Comments*. Submitted November 18, 2019. Document ID: [201911-157639-01](#)

<sup>3</sup> *DOC EERA's Solar and Wind Decommissioning Working Group Findings and EERA Recommendations*. Submitted January 24, 2019. Document ID [20191-149545-01](#)

<sup>4</sup> *DNR Comments*. Submitted September 25, 2019. Document ID: [20199-156071-01](#)

addressed in agency comments.<sup>5</sup> Finally, Xcel Energy agreed with the DWG that the decommission plan, including an initial cost estimate, prior to operation and that the plan updated every five years.<sup>6</sup>

### Staff Analysis

The current LWECS and solar permit templates require the permittee to submit the decommissioning plan to the Commission 14 days prior to the pre-operation meeting.<sup>7,8</sup> The permit also requires the decommissioning plan to be submitted to local government units with direct zoning authority in the area of the project.<sup>7, 8</sup>

Staff believes DOC EERA is correct in providing application guidance that encourages applicants to submit draft decommissioning plans as part of the initial application. This allows for greater public review of the documents from entities including the Commission, the general public, state agencies, and local governing units potentially affected by a proposed project.

## **B. Content of a Decommissioning Plan**

### 1. Stand Alone Public Document

DOC EERA recommends decommissioning plans serve as stand-alone documents, containing sufficient information for any reader, including, but not limited to, local government representatives, to understand basic information about the facility and how it will be decommissioned.<sup>9</sup> The MPCA supported the recommendation that decommissioning plans be stand-alone documents that contain all of the planning and project information that may be needed by the general public and state and local government to understand what is being planned and implemented.<sup>10</sup> DOC EERA also stated that decommissioning plans should be filed as public documents due to the public interest in the decommissioning of a project and the restoration of the site, especially to the communities directly impacted by a facility.<sup>9</sup> Xcel Energy also agreed that the documents should be filed as public documents.<sup>11</sup>

### Staff Analysis

Staff agrees with DOC EERA's recommendation that decommissioning plans be standalone public documents. This will assist in providing more transparency for the communities and the

---

<sup>5</sup> *MPCA Comments*. Submitted September 25, 2019. Document ID: [20199-156062-01](#)

<sup>6</sup> *Xcel Energy Comments*. Submitted October 4, 2019. Document ID: [201910-156357-01](#)

<sup>7</sup> Solar Site Permit, Section 9 *Decommissioning and Restoration*

<sup>8</sup> Large Wind Energy Conversion System Site Permits, Section 11 *Decommissioning Plan, Restoration, and Abandonment*.

<sup>9</sup> DOC EERA Recommendations on Review Of Solar And Wind Decommissioning Plans. Submitted March 16, 2020. Document ID # [20203-161292-01](#)

<sup>10</sup> *MPCA Comments*. Submitted May 12, 2020 (Document dated May 8, 2020). Document ID: [20205-163119-01](#)

<sup>11</sup> *Xcel Energy Reply Comments*. Submitted May 8, 2020. Document ID: [20205-163036-01](#)

local government units hosting the projects. Staff believes it will help interested persons and entities find a singular public document, rather than having to look through larger documents in the record in order to locate the decommissioning plan. The Commission may want to instruct Commission staff to update the LWECS and Solar site permits to reflect that a decommissioning plan is to be a standalone public document.

## 2. More Detailed Content

The DWG recommended decommissioning plans be detailed. The DWG members stated detailed plans require additional upfront work, and they can potentially allow for easier revisions to the plan over the lifetime of the facility.<sup>12</sup> The DWG also recommended that the required information in a decommissioning plan not be overly prescriptive and should allow for incorporating new technologies, best practices, and evolving regulations.<sup>12</sup> It is likely that the plans would become more detailed as a facility moves closer to decommissioning. The group did not recommend different guidance between solar and wind facilities, suggesting that the facility-type differences would come out in the details of each decommissioning plan.<sup>12</sup>

The current LWECS site permit requires information that meets the requirements of Minn. R. 7854.0500, subp. 13 and other specific cost information.<sup>8</sup>

*The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration of the project in accordance with the requirements of Minn. R. 7854.0500, subp. 13. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of turbines, turbine foundations, underground collection cables, access roads, crane pads, substations, and other project components. The plan may also include anticipated costs for the replacement of turbines or repowering the project by upgrading equipment.*

The current solar site permit includes<sup>7</sup>:

*The plan shall provide information identifying all surety and financial securities established for decommissioning and site restoration. The decommissioning plan shall provide an itemized breakdown of costs of decommissioning all project components, which shall include labor and equipment. The plan shall identify cost estimates for the removal of solar panels, racks, underground collection cables, access roads, transformers, substations, and other project components. The plan may also include anticipated costs for the replacement of panels or repowering the project by upgrading equipment.*

---

<sup>12</sup> DOC EERA Report - Solar and Wind Decommissioning Working Group Report and Recommendations. Submitted August 31, 2018. Document ID: [20188-146145-02](#)

The DNR agreed that plans should be adaptable and supported periodic reviews and updates to existing plans as best practices, technologies, and regulations evolve.<sup>4</sup> MDA supported the proposed requirement for a “detailed and complete decommissioning plan, updated at appropriate intervals, and fully funded by the end-of-life for the facility.”<sup>13</sup> The DNR and Xcel Energy also noted that decommissioning plans would likely become more detailed as they move closer to decommissioning.<sup>4,14</sup> Similarly, the MPCA recommended decommissioning plans contain updates regarding adjusted funding levels and mechanisms with fund levels increasing as a facility’s end-of-life approaches.<sup>5</sup>

DOC EERA recommended decommissioning plans contain the following information:

**Table 1<sup>9</sup>**

Information	Description
<b>Project Description</b>	A brief description of the project including size in MW, project ownership, location, commercial operation date, acreage, number and type of turbines, miles of access roads, and an anticipated date for decommissioning.
<b>Use of the Generation Output</b>	A general statement of where the generation goes (e.g. sold under a PPA, part of a utility generation portfolio, sold directly into the MISO market). For any portion of the output sold through a PPA, this description should include the expiration date of any PPA(s).
<b>Decommissioning Objective</b>	A clear statement of the objective of decommissioning. It is anticipated that the objective for most facilities will be to restore the site to its prior use as required in site permits. It is possible that in the future, restoration to a more neutral use (e.g. commercial or residential), may be sought as urban areas expand towards solar facilities on what had been exurban areas.
<b>Notification</b>	A statement on how the permittee will notify landowners, local governments, and the Commission when decommissioning activities are to begin and when restoration is complete.

<sup>13</sup> MDA Comments. Submitted October 4, 2019. Document ID: [201910-156342-01](#)

<sup>14</sup> Xcel Energy Reply Comments. Submitted November 18, 2019. Document ID: [201911-157615-01](#)



<p><b>Decommissioning Tasks and Timing</b></p>	<p>A description of the tasks involved in decommissioning, the types of equipment, whether site condition improvements will be required for decommissioning (e.g. new crane paths, access road improvements) including information on disposal and recycling.</p>
<p><b>Detailed Cost Estimate</b></p>	<p>A detailed cost estimate prepared by a knowledgeable independent party. Cost estimates should include both total and net (total costs less the estimated salvage value) costs. Cost estimates should be broken down by task (e.g. turbine or solar array dismantling, foundation removal, access road removal, transportation off site, disposal fees, mobilization, project management). Estimated scrap or salvage value should also be broken down. This estimate should also include a description of cost assumptions (e.g. major equipment needs, what type of disposal sites are required for component disposal, depth of removal, scrap value).</p>
<p><b>Financial Surety</b></p>	<p>Consistent with the working group’s recommendation that financial assurances be implemented in a step-wise manner – the decommissioning plan should begin with initial payments in approximately year 10 increasing over time to ensure full funding no later than the end of the power purchase agreement. For those projects that do not have a PPA, a somewhat shorter timeline, perhaps 15 to 20 years, may be appropriate. The plan should identify potential financial assurance mechanisms in its initial version and specific information by year 10 of operation. The plan should identify the beneficiary of the financial surety and the amount of the surety. Updating the plans every five years allows for adjustments in the amount of surety and beneficiary.</p>

In Avangrid Renewables, LLC's (Avangrid) comments on the content of decommissioning plans, the developer stated that project description information should be included in the decommissioning plan.<sup>15</sup> General statements about where the power generated goes may be included, but details of output and Power Purchase Agreements (PPAs) are often trade secret and Avangrid did not believe this information should be included.<sup>15</sup> Additionally, Xcel Energy stated it agreed with the "recommendations for inclusion of project descriptions, use of generation output, decommissioning objectives, notification of restoration completion, decommissioning tasks and timing, detailed cost estimates."<sup>11</sup>

In Reply Comments, DOC EERA maintained its recommendation that permittees provide general information about power output and that part of the information include expiration dates of PPAs.<sup>16</sup>

### Staff Analysis

Staff agrees that decommissioning plans need to balance the specificity needed to ensure decommissioning requirements are met while also allowing for changing technology, best practices, market conditions and other sensitive information. This being said, the decommissioning plan content recommendations outlined in DOC EERA's March 16, 2020 recommendations (Table 1) add much greater detail into the Commission's LWECs and solar site decommissioning plans. The additional specificity may help current and future applicants and existing permittees be better prepared to meet regulatory expectations in the event of decommissioning and to help local project communities understand what steps a permittee would be required to complete when decommissioning is to occur. It may also provide reassurance to local communities that the facility owner has a plan and the funds available to appropriately decommission a project when the time comes. The additional required financial information related to decommissioning costs and financial assurance funding are important. The Commission may want to instruct Commission staff to update the LWECs and Solar site permit templates to require the details described in DOC EERA's recommendations to be provided in a final and regularly updated plan, including the details listed under: a project description, the use of general output, the decommissioning objective, notification, decommissioning tasks and timing, detailed cost estimate, and financial surety information.

### 3. Financing Surety Instruments and Funding Timeline

The DWG declined to recommend a specific form of financial assurance, rather the group recommended that there be a broad range of financial assurance mechanisms as individual owners will have different access to capital.<sup>12</sup> Avangrid Renewables also stated that financial assurance mechanisms should be flexible including letters of credit and corporate guarantees.<sup>15</sup> CGA stated that the Commission should consider many different forms of financial assurances

---

<sup>15</sup> Avangrid Renewables, LLC Comments. Submitted May 8, 2020. Document ID: [20205-163042-01](#)

<sup>16</sup> DOC EERA Reply Comments. Submitted May 22, 2020. Document ID: [20205-163419-01](#)

to ensure flexibility for different business models.<sup>17</sup> The DWG did not believe a financial surety mechanism would be needed at the outset of a project, but the group did recommend that assurances be implemented step-wise beginning in approximately year 10 and stepping up to full funding no later than the end of the power purchase agreement.<sup>12</sup> CGA noted there is common agreement among Independent Power Producers (IPPs) that a financial surety should not be required until year 10 because of the value of the facility would more than cover the costs to decommission.<sup>17</sup> Avangrid also stated that decommissioning plans should identify specific financial costs by year 10 and be reviewed every 5 years thereafter.<sup>15</sup> Xcel suggested a regulatory framework that allows for use of multiple types of financial assurance mechanisms to account for the diversity of owners that were identified by the Working Group.<sup>11</sup> Xcel Energy stated that the financial assurance mechanisms defined in Minnesota Administrative Rules 7035.2705 to 7035.2751 provide good examples of the array of mechanisms that have been employed to provide options for owners that account for their specific conditions.<sup>14</sup>

The MPCA agreed that forms of financial surety should be flexible; but environmental and financial standards need to be the same commensurate with the facility.<sup>5</sup> The MPCA recommends financing mechanisms be in place and fully funded before decommissioning, but not necessarily at the time of construction.<sup>5</sup> MPCA also stated that financing mechanisms can be put in place after permitting and installation when there is cash flow from the PPA.<sup>5</sup> The MPCA also stated that financing needs to reflect repairs not covered by operating funds and “reflect replacement costs not covered by insurance, warranty, or other operating fund in case of a catastrophic event.”<sup>5</sup> DOC EERA also recommended that the Commission establish a timeline for establishing a funding mechanism.<sup>3</sup>

### Staff Analysis

Staff agrees with DWG members that the form of the financial surety should be flexible given the different abilities of permittees to access capital. There are a broad range of applicants that are applying for solar and wind permits, and among current permittees that already have permits. This diversity should be recognized in how permittees are able to fund their decommissioning financial instruments.

Current LW ECS and solar site permits require that decommissioning plans provide information on all surety and financial securities that have been established for decommissioning and site restoration.<sup>7, 8</sup>

Staff notes that starting to fund the financial surety by year 10 and then increasing the annual contributions to the financial instrument to ensure the surety is fully funded before the end of the PPA aligns with the DWG recommendation (the majority of permitted projects have a PPA<sup>9</sup>).<sup>12</sup> The DWG noted that if a facility’s owner were to go insolvent prior to a facility being 10

---

<sup>17</sup> Clean Grid Alliance comments. Submitted October 4, 2020. Document ID: [201910-156352-01](#)

years old, the value of the asset would be an attractive asset for a potential buyer.<sup>12</sup> The ten year timeline is also reflected in DOC EERA's most recent recommendations.<sup>9</sup>

### 1. *Without a Power Purchase Agreements (PPA)*

DOC EERA noted that most large independently-owned wind and solar facilities in Minnesota sell their power through a multi-year PPA which lay out the conditions of the transaction.<sup>12</sup> DOC EERA noted that the working group did not discuss facilities selling directly into the Midcontinent Independent System Operator (MISO) market.<sup>3</sup> A few producers sell into the market, but the Generator Interconnection Agreement does not address decommissioning.<sup>12</sup> DOC EERA also stated that without the assured revenue stream from a multi-year PPA there is increased possibility that revenue may fall off while operational costs increase as a facility ages.<sup>3</sup> The MPCA stated that IPPs may not have the same financial or technical resources and capacity as a regulated utility, so financing mechanisms need to reflect their resources capacity to ensure full and proper decommissioning.<sup>5</sup> The MPCA also stated that the environmental standards and funding requirements for decommissioning should be the same for all owners, commensurate with the facility.<sup>5</sup> DOC EERA recommended facilities have a specific date set to fully fund their financial surety.<sup>3</sup> DOC EERA stated it may be appropriate to consider, in individual dockets, whether full funding of the financial surety at some earlier date in a project's lifespan is appropriate.<sup>16</sup> DOC EERA also recommended that for projects that do not have a PPA, a somewhat shorter timeline, perhaps 15 to 20 years, may be appropriate.<sup>9</sup>

Avangrid Renewables stated that in their experience, PPAs hold no bearing on financial surety and that landowner wind leases and easements provide a contractual requirement for the project owner to decommission and restore land to previous conditions.<sup>15</sup>

### Staff Analysis

Staff agrees with the DOC EERA's analysis that facilities selling directly into the market without a long-term PPA may likely present greater risks for the host community as a facility ages. With this concern in mind, setting a specific date may be more appropriate. DOC EERA suggested a shorter timeline, such as 15-20 years, and this may be a reasonable guide.

### 2. Scrap/Salvage Value

In comments received since the DWG report was filed, there were comments for and against allowing permittees to include scrap/salvage value in its determination of the total decommissioning costs. On the issue of the amount of financial surety, DOC EERA noted that the inclusion or exclusion of salvage value when calculating the amount of surety needed for a project was not part of the recommendations of the DWG.<sup>16</sup> The DWG recommended periodic reviews to address cost changes.<sup>3</sup> CGA, Xcel Energy, and Avangrid all believed that scrap value should be included in determining the net cost.<sup>17, 14, 15</sup> CGA stated that if estimating salvage value were not heavily weighted, requiring a surety at approximately year 10 would be

recommended with review every five years thereafter.<sup>17</sup> DOC EERA requested Commission guidance on the level which salvage values should be included in the cost and surety calculations.<sup>16</sup>

CGA stated that the Commission should allow project salvage values to be counted toward decommissioning costs.<sup>17</sup> CGA asserted that incorporating these values provides a more accurate decommissioning cost estimate, not including the values would artificially inflate the costs.<sup>17</sup> CGA also noted that the scrap values can vary based on many factors, but the values could be revised at the five year review and this would help to ensure accurate and up-to-date valuations.<sup>17</sup>

Avangrid Renewables stated that decommissioning cost estimates should include total costs and net costs.<sup>15</sup> Avangrid Renewables further asserted that financial surety should be based on net costs (total minus scrap/salvage value).<sup>15</sup> Finally, Avangrid also stated that decommissioning plans should include total and net costs and assumptions for calculations.<sup>15</sup>

In its comments, Xcel Energy stated that utility depreciation expenses includes the net salvage rate (gross salvage less the cost of removal) and this expense has been accepted by the Commission and should be used as part of determining decommissioning costs.<sup>14</sup> Xcel Energy also noted that while some factors in the calculations are variable (e.g. inflation, market price of scrap, changing environmental procedures, etc.), these could be adjusted to reflect market conditions at the five year compliance review intervals.<sup>14</sup>

In its comments, the MPCA cautioned against reliance on scrap value because the value will change over a project's lifespan and may not materialize when decommissioning occurs, which could impact the ability for decommissioning in an environmentally sustainable manner.<sup>5</sup> The MPCA stated that salvage values are volatile and unpredictable, and also incentivize permittees to overestimate the salvage value and underfund the project.<sup>10</sup> The MPCA also warned that the recommendations do not address a potential situation where equipment does not have any value or have the ability to produce income that would be used to fund decommissioning.<sup>5,10</sup> The MPCA gave the example of potential default scenarios like a destructive storm or other circumstances where the equipment no longer has value or the ability to produce income needed to help finance decommissioning.<sup>5</sup> If the funds do not materialize, the permittee will be short of funds and unable or unwilling to decommission in an environmentally sustainable manner.<sup>5</sup> The agency noted that salvage values should be a bonus to a well-planned decommissioning project and cannot be the foundation of a decommissioning plan.<sup>10</sup>

In DOC EERA's March 16, 2020 recommendations, the Department recommended decommissioning plans include both total and net (total costs less the estimated salvage value) costs.<sup>9</sup> Estimated scrap or salvage value should also be broken down and the estimate "should also include a description of cost assumptions (e.g. major equipment needs, what type of disposal sites are required for component disposal, depth of removal, scrap value)."<sup>9</sup> Lastly,

DOC EERA requested guidance from the Commission on the level to which salvage values should be included in the cost, and surety, calculations.<sup>16</sup>

### Staff Analysis

Staff believes that ensuring there is enough funding to decommission a facility when that time comes is one of the most important factors in determining how to fund a decommissioning financial instrument. Staff also believes that the cost of decommissioning a facility should be fully paid for by the permittee, not the local community. As the DWG<sup>3,12</sup> report states and Xcel Energy<sup>6</sup> agreed, these plans are required to ensure that a site is restored at the end of the facility's life and the cost of restoration should be borne by the facility's owner.

Staff also believes if scrap/salvage funds are going to be used to pay for decommissioning cost, scrap/salvage value estimates should be updated, along with the entirety of the decommissioning plan, at the five-year reviews. This will help to ensure decommissioning plans have the scrap value estimations based on more current market conditions. Further, if scrap value significantly changes, it is an opportunity for the permittee to adjust financial surety values needed to ensure the decommissioning costs are fully funded. The Commission may want to consider a provision requiring those who include scrap values as part of their decommissioning plans to review and recalculate the values on a more frequent basis to ensure the valuation is more closely aligned with market values.

Staff notes that Big Blue Wind Farm, LLC's recent decommissioning plan included net costs, after scrap values have been taken out of the total decommissioning costs. The permittee then would fund the financial instrument by 2032. This was submitted in its July 2020 decommissioning plan.<sup>18</sup>

### 3. Third Party Estimates

DWG group members recommended that decommissioning plans include cost estimates prepared by an experienced engineer.<sup>3</sup> The MPCA agreed that a third party estimate of decommissioning costs should be required.<sup>5</sup> CGA also stated that in order to fairly and accurately calculate the salvage value, an agreed upon third party evaluator could be used to decide the actual value.<sup>17</sup> DOC EERA agreed with the DWG and recommended that plans include a cost estimate from an experienced engineer.<sup>3</sup> In its comments, Xcel Energy suggested to change the recommendation from requiring an "experienced engineer" to give a cost estimate to something broader, like a "knowledgeable authority."<sup>6</sup> Xcel stated this would allow for local knowledge and project specific knowledge to inform any potential cost estimate.<sup>6</sup> In its most recent recommendations, DOC EERA incorporated that a "knowledgeable independent party" produce the estimate in their recommended decommissioning plan content.<sup>9</sup>

---

<sup>18</sup> Big Blue Wind Farm, LLC, Docket No. 10-1238. *Updated Decommissioning Plan Submission*. Submitted July 17, 2020. Document ID: [20207-165037-01](#)

### Staff Analysis

Staff agrees that a knowledgeable third-party estimate of decommissioning costs should be part of the decommissioning plan. A third-party will help ensure an independent cost estimate for additional neutrality and transparency.

#### 4. Beneficiary

The DWG members, CGA, and Avangrid recommended a government entity, county or state, be the beneficiary for the financial surety.<sup>3,17,15</sup> The DWG asserted that rather than landowners being in such a position, it would be simpler for a government entity to administer and monitor the funds.<sup>3</sup> CGA suggested that the Commission clarify that decommissioning and financial surety requirements be retained by the government unit issuing the permit.<sup>17</sup> DOC EERA also stated that a government entity should be designated as the beneficiary<sup>16</sup>, noting the Commission may want to consider whether the Commission itself would be the appropriate designee.<sup>3</sup>

### Staff Analysis

Generally speaking, staff agrees that the Commission or the permitting governmental unit should consider being the beneficiary of the surety. A government entity would provide transparency and could be held accountable by local communities in the event of a facility becoming insolvent. Further, as stated in comments, it would be administratively simpler for government to administer the benefits compared to having the permittee or individual landowners do so.

The Commission may want to allow permittees to find an agreement with a local governmental unit (LGU) to be the financial surety beneficiary. With the Big Blue Wind Farm, LLC, the permittee entered into an agreement where Faribault County would be provided the financial assurance.<sup>18</sup> Additionally, LGUs are closer to the communities impacted by LWECs and solar facilities. If a county and a permittee choose to enter into this type of agreement for a Commission permitted facility, the Commission may want to ensure there is language in the decommissioning plan or permit requiring the financial institution and/or permittee to notify the Commission in the event that their agreement is dissolved. This would allow for the Commission to ensure there is an assigned beneficiary, outside of the regular decommissioning plan reviews.

As noted by DOC EERA, the Commission itself, may want, as the permitting authority, to consider being the governing unit to act as a beneficiary of these financial sureties.

#### 5. Recycling and Waste Disposal

The MPCA recommended that decommissioning plans be required to maximize recycling and minimize landfill or incineration disposal.<sup>5</sup> The Agency also recommended that permittees take



a 'no-waste' or 'no landfill' approach to decommissioning as a sign of their commitment to long term sustainable use of resources.<sup>10</sup> The MPCA recommended that owners be required to recycle all solar panels, electrical/electronic components, racking, and other physical infrastructure.<sup>5</sup> Xcel Energy stated it agrees that decommissioning activities should minimize use of landfills or incinerations and the plans should maximize use of recycling, however the company cautioned against setting specific recycling targets in initial and subsequent revisions of decommissioning plans.<sup>14</sup> Due to the wide range of materials and components used in solar panels and wind turbines, Xcel Energy believes it is premature to establish recycling targets when there is currently limited practical means to recycle some of the major components of each type of facility.<sup>14</sup>

The MPCA also stated it supports for a more detailed evaluation by the permittee of reuse/repurpose and recycling of components.<sup>10</sup> The MPCA noted that reuse/repurpose can have higher value than scrap and would also conserve energy.<sup>10</sup> The MPCA recommended having a separate permit condition for reporting waste generated and materials recycled during installation, operational, and decommissioning phases.<sup>5</sup>

In regards to decommissioning recycling and reclamation, DOC EERA stated plans should emphasize recycling and reclamation, but the DOC EERA was hesitant to recommend specific treatment of components as the market is evolving.<sup>16</sup> In DOC EERA's March 16, 2020 recommendations, the Department included language that would have permittees provide information on waste disposal and recycling tasks associated with decommissioning.<sup>9</sup> EERA also noted MPCA's recommendations on the use of environmentally sustainable project materials and encouraged MPCA to file those comments during the permit review process.<sup>16</sup>

Finally, the MPCA recommended that an environmental checklist be developed for facility design and decommissioning.<sup>10</sup> The checklist would help to guide project development and decommissioning and ensure permittees are managing materials in compliance with state standards.<sup>10</sup> The Agency also stated that owners should be required to: disclose the hazardous waste status of solar panels to relevant regulators (PUC, Commerce, MPCA) and to be financially prepared for recycling without reliance on scrap value.<sup>5</sup>

Ms. Jane Youngkrantz commented on locally permitted wind and solar projects. She mentioned the importance of properly disposing of solar and wind components, especially the parts that are potentially hazardous materials.<sup>19</sup> Ms. Youngkrantz stated that a power company or developer should be responsible for disposing of waste related to a wind or solar project, including storage if recycling or landfill space are not available.<sup>19</sup>

### Staff Analysis

---

<sup>19</sup> Jane Youngkrantz Comments. Submitted May 12, 2020. Document ID: [20205-163120-01](#)



Staff believes incorporating language on what methods of disposal will be used for decommissioned materials into decommissioning plans would be useful in order to develop decommissioning best practices for wind and solar generation facilities. Descriptions of how materials are planned to be disposed of can be updated at the regular reviews to incorporate future technological and market changes in material disposal or recycling. Also, cost estimates for decommissioning various components will likely evolve over time as recycling technologies improve and become more prevalent in the market. Further, including this information will add to the value of the annual report DOC EERA has proposed to file into Docket No. E999-M-17-123 (discussed later).

### C. Regulated Utilities

Xcel Energy proposed that facilities owned by regulated utilities be treated differently because they are highly regulated entities and already comply with many of the recommendations proposed by the DWG.

Xcel Energy stated that as a rate regulated utility it complies with many of the proposed reporting requirements and already has the financial assurances in place.<sup>6</sup> Xcel Energy is required to submit a decommissioning study every five years in Docket No. D-77-1086A, which Xcel Energy believes to meet many of the recommendations contained in the DWG report, for all the company's generation facilities, including wind and solar.<sup>6,11</sup>

Xcel stated that the rates established in the utility's five-year decommissioning plan are incorporated into rate cases allowing the company to collect revenues to fund decommissioning activities of its generation facilities.<sup>6</sup> With this in mind, the company recommended there be a carve-out for regulated utilities from committing further financial obligations outside of rate recovery.<sup>6,14,11</sup>

Xcel also stated that if the Commission sees fit to adopt financial assurance requirements for regulated utilities, the company urged the Commission to allow for multiple types of assurance mechanisms to account for different business types.<sup>14</sup> The company provided Minnesota Administrative Rules 7035.2705 to 7035.2751 as a set of examples of different kinds of mechanisms that have been used.<sup>14,11</sup>

DOC EERA stated that the working group did not discuss in detail the treatment of facilities owned by regulated utilities.<sup>3</sup> DOC EERA stated it cannot find any reason to treat utility-owned wind and solar facilities differently from other types of generation assets.<sup>3</sup> DOC EERA recommended that Xcel Energy file a copy of the most recent Five-year Depreciation Study into the siting docket for each wind and solar facility.<sup>16</sup> DOC EERA continued to recommend that a decommissioning plan for each project be filed as a stand-alone document in the appropriate siting docket.<sup>16</sup> DOC EERA deferred on Xcel's comments as to whether additional financial surety beyond that provided through rates should be required rate regulated utilities.<sup>16</sup>

### Staff Analysis

Staff believes that a rate regulated utility like Xcel Energy does meet many of decommissioning plan goals and requirements, including the financial requirements proposed to be required.

Staff believes that the Commission should consider requiring rate regulated utilities to file an individual decommissioning plan if granted a permit for a solar or wind facility. This decommissioning plan should contain the same information as required of all other facilities. Staff agrees with DOC EERA that this plan should be a standalone plan filed publicly in each solar or wind generation facility docket. The financial surety may be the information included in the Five-Year Depreciation Study, but the information contained in the decommissioning plan should be specific to the facility. Providing this information in each decommissioning plan will help ensure the public and state and local governmental units are able to understand how decommissioning will be funded.

Also rate regulated utilities often will take ownership of a facility after it is permitted. The Commission may want to consider if a rate regulated utility should be filing the decommissioning plan when a rate regulated utility anticipates taking ownership of a facility.

#### **D. Permit Review Procedures and Schedule**

##### 1. Periodic Five-year Review

Recent permits issued by the Commission required updates of the decommissioning plans every five years<sup>8</sup>. Older permits issued by the Commission do not specify a decommissioning plan review schedule. The DWG did not recommend altering the review intervals from the five-year review cycle in recently issued permits.<sup>12</sup> Additionally, several commenters, including the MPCA, CGA, and Avangrid Renewables supported the five-year decommissioning plan review schedule.<sup>5,17,15</sup>

The MPCA recommended that all aspects of decommissioning costs be included in the initial plan and at five year updates.<sup>5</sup> The MPCA also recommended obtaining an update from the permittee with adjusted funding levels and mechanisms.<sup>5</sup> Additionally, the MPCA believed these periodic reviews should start no later than the five year review closest to halfway of the permitted life.<sup>5</sup> The Department of Agriculture stated it “fully supports the proposed requirement for a detailed and complete decommissioning plan, updated at appropriate intervals, and fully funded by the end-of-life for the facility.”<sup>13</sup>

### Staff Analysis

Staff believes that the current five-year review schedule in recently issued site permits is a reasonable timeline for reviewing decommissioning plans. Staff also believes that all information should be reviewed and updated at the five-year review.

The Commission may want to consider if updating the financial information in a decommissioning plan every five years is an appropriate timeline to ensure that items like scrap/salvage values are up to date given the volatility of the scrap/salvage market. Specifically, the Commission may want to use a shorter update interval for financial information in order to ensure the financial surety funding levels more closely align with current market prices, especially as a project's materials get closer to the end of their useful life.

## 2. Other Triggers for Decommissioning Plan Review

DOC EERA recommended that, in addition to requiring a decommissioning plan at the time of permit application and a review of that plan at five year intervals, notifications of ownership changes and permit amendment requests, including repowering, should also be triggers for review and updates of decommissioning plans.<sup>12,3</sup> DOC EERA believes the permit transfer process is an opportunity to review and assess decommissioning obligations for the new permittee while giving the new permittee a chance to propose changes.<sup>2</sup> DOC EERA stated that the permit amendment process may be an appropriate time to review the decommissioning plan if there are going to be substantive changes to a project.<sup>3</sup> The DWG also recommended that changes in facility ownership would be an appropriate time to make certain that new owners are aware of their decommissioning obligations.<sup>3</sup> CGA stated it also generally agrees that a change in ownership should trigger a review.<sup>17</sup> However, the MPCA stated that five year reviews of decommissioning plans should be sufficient to cover ownership changes.<sup>5</sup> The MPCA also stated the decision to review permit amendments should be dependent on the type of amendment requested and its impact on decommissioning.<sup>5</sup>

### Staff Analysis

Staff believes that review at initial application, notification of ownership changes, permit amendment requests, and repowering serve as useful times to review the decommissioning plans in addition to the five-year review required in current wind and solar site permits. During repowering, for instance, individual components or more may need to be decommissioned, and the Commission should know what the plans for decommissioning are at that time. Further, the Commission may want to allow staff the discretion of which of these review points are an appropriate time for a review of a project's decommissioning plan is appropriate, based on the impact of the changes being requested.

## 3. How to Review Plans

DOC EERA made recommendations on how to review decommissioning plans, with the goal of reviewing all decommissioning plans on a rolling five-year timeline.<sup>9</sup> DOC EERA's recommendations are as follows:

**Table 2<sup>9</sup>**

Facility Phase	Action
Current Applications, not yet permitted	DOC EERA has updated its application guidance materials to include recommendations that new applications and requests for repowering include a draft decommissioning plan. Plans be made available for public and agency review. Additionally, DOC EERA, other State agencies and local governments can review decommissioning plans and make recommendations to improve the plan during the permitting process. This also allows for the Commission to address decommissioning plans in its permit order.
Facilities in pre-construction or construction	The facilities in pre-construction or construction have permits that require a decommissioning plan to be filed prior to commercial operation. DOC EERA plans to review the plans and submit an evaluation letter identifying any issues with the decommissioning plans.
Facilities in operation	DOC EERA created a review schedule. DOC EERA would, if approved to, file a request for an updated decommissioning plan, review the eFiled updated plan, and then submit a decommissioning plan evaluation letter identifying any issues necessitating Commission review and action.

DOC EERA recommended that these five-year updates be treated as compliance filings and follow typical procedures of compliance requirements in the permit.<sup>2</sup> DOC EERA did not see a need to re-open the entire permit and recommended that the five-year review of decommissioning plans be conducted under a condition in their permits.<sup>2</sup> In older permits

without the five-year review language, DOC EERA suggested that a request from the Commission that it initiate a review of a project's decommissioning plan in order to request an update on how the Permittee is fulfilling its decommissioning obligation.<sup>2,20</sup> While the Memorandum of Understanding between the Commission and Department delegates the initial review of required compliance filings to the Department, DOC EERA asked for clarification on which agency should initiate the compliance review of decommissioning plans for facilities in operation that do not clearly require periodic review.<sup>20</sup>

Additionally, DOC EERA stated it would file an annual summary of the status of wind and solar decommissioning plan reviews and the development in decommissioning best practices in Docket No. E999-M-17-123.<sup>9</sup> DOC EERA anticipates this report will include a summary of the status of decommissioning plans for projects, as well as best practices.<sup>16</sup>

The MPCA supports the proposed order and timeline for reviewing the decommissioning plans and the associated financial assurance requirements.<sup>10</sup>

With respect to the recommended plan review timeline, Avangrid Renewables requested the Commission move the proposed review start date from 2020 to 2021 to allow project owners time to budget for and implement the work.<sup>15</sup> The developer noted 2020 budgets were developed in 2019 and to require new decommissioning plans in 2020 would be an unbudgeted expense and a financial hardship.<sup>15</sup> DOC EERA stated it supported Avangrid's recommendation to move the reviews of its facilities into 2021, with the exception of the Trimont Wind Farm that the Commission recently approved a repowering Permit Amendment for and Avangrid had submitted an updated decommissioning plan in March 2020.<sup>16</sup>

As to the review order proposed by DOC EERA, Xcel Energy requested that all of the company's wind farms in-service as of that date be reviewed in the same year and that the year coincide with the five-year decommissioning study.<sup>6,11</sup> Xcel Energy specifically requested that Nobles Wind and Pleasant Valley Wind be reviewed in year 2020.<sup>11</sup> **Error! Bookmark not defined.** DOC EERA stated it supports Xcel Energy's recommendation to consolidate their decommissioning plan reviews, however DOC EERA noted that Xcel's timeline is unclear as Xcel Energy recently filed for at least a three month extension in the five-year depreciation docket.<sup>16</sup> DOC EERA did shift the review of Xcel-owned facilities into year 2020.<sup>16</sup> DOC EERA submitted an updated review schedule in October 2020 reflecting decommissioning reviews accomplished to date.

Table 3<sup>20</sup>

Review Year	Count	Projects
2020	10	Big Blue Wind, Buffalo Ridge Wind, Chanarambie Wind, Community Wind North, Fenton Wind, Jeffers Wind, Lake Benton I Wind, Lake Benton II Wind, Mower County Wind, Nobles 2 Wind, Trimont Wind
2021	23	Blazing Star I Wind, Buffalo Ridge Wind, Chanarambie Wind, Community Wind North Wind, Elm Creek Wind I, Elm Creek Wind II, Freeborn Wind, Grand Meadow/Wapsipinicon Wind, Grant County Wind, Jeffers Wind, MinnDakota Wind, Lakota Ridge Wind, Moraine Wind I, Moraine Wind II, Nobles Wind, Pleasant Valley Wind, Plum Creek Wind, Prairie Rose Wind, Prairie Star Wind, Ridgewood Wind, Shaokatan Hills Wind, Taconite Ridge Wind, Walleye Wind
2022	5	Bent Tree Wind, Lakefield Wind, Lakeswind
2023	3	Community Wind South, Oak Glen Wind, Palmer’s Creek Wind, Red Pine Wind
2024	8	Aurora Solar, Black Oak Wind, Blazing Star II Wind, Getty Wind, Marshall Solar, North Star Solar, Odell Wind, Stoneray Wind
2025	6	Big Blue Wind, Mower County Wind, Lake Benton Wind, Mower Wind, Nobles 2 Wind, Trimont Wind

Minnesota Power also stated it “supports the proposed order and timeline for reviewing open wind and solar dockets, as well as procedures for reviewing decommissioning plans.”<sup>21</sup>

Staff Analysis

- Staff agrees with DOC EERA’s proposed procedures for reviewing decommissioning plans (Table 2).
- Staff agrees with DOC EERA’s five year rolling review timeline, incorporating the changes requested by Avangrid Renewables and Xcel Energy and the Department. (Reflected in Table 3.)
- Staff agrees with the DOC EERA in some ambiguity between the older permits and the Memorandum of Understanding. Staff believes this kind of decommissioning plan compliance review could be considered a part of the delegated compliance review responsibilities completed by the Department. This interpretation of the delegated responsibilities would also add administrative efficiency and consistency to the decommissioning plan review procedures.

<sup>20</sup> DOC EERA, EERA Decommissioning Status Update. Submitted October 29, 2020. Document ID: [202010-167762-01](#)

<sup>21</sup> Minnesota Power Comments. Submitted May, 8, 2020. Document ID: [20205-163047-01](#)

- Staff believes DOC EERA's plan to file an annual summary of the status of decommissioning plan activities and developments in decommissioning best practices in Docket No. E999-M-17-123 is a good method to track the status of decommissioning plan reviews. This will ensure there is a single location for the Commission to review decommissioning plan activities and aggregate best practices as they develop.

### **E. Agency Coordination**

DNR, MDA, and MPCA recommended coordination with all relevant state agencies to ensure appropriate oversight on the decommissioning of facilities.<sup>22, 13, 10</sup> DOC EERA stated it supports agency coordination in developing decommissioning plans and prior to executing decommissioning activities.<sup>16</sup>

The DNR recommended that decommissioning plans require relevant state agency coordination due to the likelihood that decommissioning activities may necessitate other state permits or licenses.<sup>4</sup> The DNR also noted that agency coordination was needed to protect rare and unique species.<sup>4</sup> The MPCA noted that it may be appropriate to establish a process of interagency/intergovernmental review of decommissioning plans.<sup>10</sup> DOC EERA also noted that a table identifying anticipated permits needed to decommissioning a project would be useful for permittees, contractors, and agencies.<sup>16</sup>

#### Staff Analysis

Staff agrees that agency coordination would benefit the solar and wind facility host communities. The Commission may want to consider having the permittee describe how it will notify various state regulatory agencies and local governments about any upcoming decommissioning in the notice plan DOC EERA proposed to add to decommissioning plans in Table 1. This could be an opportunity for state agencies and local governments to look further into any upcoming decommissioning plans and assess what level of involvement will be required. Also, earlier and additional public review of the decommissioning plans should allow for regulatory agencies and local governments to help ensure there are more detailed decommissioning plans, including what their involvement and any required permits may be necessary.

### **F. Decommissioning Completion Report**

The MPCA recommended the permittees file a final report with the Department of Commerce and the MPCA when decommissioning is complete.<sup>10</sup> The report would describe the decommissioning activities that took place and how/if they varied from the plan.<sup>10</sup> The MPCA recommended the final report describe waste management methods and destination facilities for project materials, specifically identifying the management method and destination of

---

<sup>22</sup> DNR Comments. Submitted May 8, 2020. Document ID: [20205-163051-01](#)

photovoltaic (PV) recyclable components and the results of any analysis carried out on the PV panels.<sup>10</sup> The MPCA also recommended the permittee include recommendations for improving the decommissioning planning process and implementation in the report.<sup>10</sup>

DOC EERA supported MPCA's recommendation that there be a final capstone report summarizing a permittee's decommissioning.<sup>16</sup>

### Staff Analysis

Staff agrees a final report on a project's decommissioning activities, how practices varied from the plan, how waste was managed, and other details is an appropriate requirement to establish. This would help the Commission and DOC EERA develop best practices for decommissioning wind and solar facilities.

## **G. Miscellaneous Items**

### **1. Other Types of Systems**

The MPCA noted that battery energy storage systems and ancillary equipment were not discussed in the DOC EERA reports.<sup>10</sup> MPCA stated that these systems are likely to be a significant part of energy supply in the future.<sup>10</sup> The agency stated that such systems have many parts and ancillary systems that would require end-of-life attention due to hazardous or regulated materials.<sup>10,16</sup> All of the parts can be recovered and recycled but more research is needed in order to provide decommissioning suggestions.<sup>10</sup>

DOC EERA noted that the Commission has issued permits for three gas-fired power plants for IPPs. Several high voltage transmission line route permits associated with wind facilities have also been issued to IPPs.<sup>3</sup> DOC EERA stated the Commission may wish to consider if these types of project components present decommissioning concerns and how to address any potential end of useful life decommissioning concerns.<sup>3</sup>

### **2. Solar Panel Management Recs Coming**

The MPCA also noted that it, along with Department of Commerce staff, is conducting a stakeholder process to develop recommendations for end-of-life management of photovoltaic panels and equipment used in solar energy installations.<sup>10</sup> The agency expects the recommendations will result in legislative and regulatory proposals and will communicate these to the Commission for inclusion in the decommissioning plan recommendations as appropriate.<sup>10</sup>

### **3. Community Based Energy Development (C-BED) Projects**

CGA noted that many of the early wind projects built in Minnesota were small community wind projects designed and built as C-BED projects.<sup>17</sup> One of the key aspects of C-BED is that the contracts are front loaded with higher payments in the first 10 years of a 20-year contract.<sup>17</sup> As



these projects age, operation and maintenance costs increase leading to less revenue in the remaining 10 years of the contract.<sup>17</sup> CGA expressed some concern that some community wind projects may not have the financial means to fund decommissioning.<sup>17</sup>

CGA noted that in conversations it has had with a few counties, they indicate that most do not require surety. In fact, county officials told CGA that most of the decommissioning documents are vague and have not been updated or revisited since they were filed with the county.<sup>17</sup>

While a majority of these smaller projects are not under the jurisdiction of the Commission, CGA believes this is an important issue that needs further consideration.<sup>17</sup>

#### 4. Facility Design

The MPCA recommended encouraging permittees to design facilities with materials that will be reusable and recyclable at the time of decommissioning. The agency also recommended encouraging permittees to specify components that have environmental certifications.<sup>10</sup>

The MPCA also stated that permittees should minimize leave-in-place disposal (e.g. wind tower foundations).<sup>5</sup> If tower foundations are left in place, the MPCA requires a solid waste disposal permit. Permittees could research alternatives to leaving tower foundations in place, or alternative foundation designs that can be more easily removed.<sup>5</sup>

#### 5. Enforcement Language

The MPCA noted that enforcement of the proposed requirements would be needed to ensure compliance.<sup>5</sup> The Agency recommended including any appropriate general or specific enforcement language, possibly including statutory or regulatory citations.<sup>11</sup>

Section 15 of the wind site permit template and section 13 of the solar site permit template, detail the Commission's ability to revoke or suspend a permittee's permit and the process that action would be considered under.<sup>8, 7</sup>

#### Staff Analysis

The Commission may want to consider if more enforcement language is needed outside of the current site permit language specifying the reasons that the Commission may revoke or suspend a permit.

#### 6. Other

The DNR recommended that decommissioning plans include maps of areas likely to be disturbed during decommissioning.<sup>4</sup>

MDA recommended that plans include a requirement for third-party monitors during the decommissioning process that report to state agencies, like those involved during facility construction.<sup>13</sup>

The MPCA recommended that the Department of Commerce and the Legislature establish a 5 MW permitting threshold for permitting solar facilities to ensure consistency among the large number of small facilities currently being permitted at the local level, whether owned by utilities, Independent Power Producers, or others. This is also consistent with the state permitting threshold for wind facilities.<sup>5</sup>

## **V. Staff Analysis**

Included throughout the briefing paper.

## **VI. Decision Options**

### **A. Reviewing Decommissioning Plans earlier in the Permitting Process**

1. Encourage DOC EERA to advise applicants to file a plan at the time they file their application, as recommended by DOC EERA, DNR, MPCA.
2. Take no action.
3. Take some other action determined appropriate.

### **B. Content of a Decommissioning Plan**

1. *Standalone Document*
  - a) Amend the sample wind and solar site permits to require that decommissioning plans be a stand-alone document and publicly efiled into the associated docket as recommended by DOC EERA and the MPCA.
  - b) Take no action.
  - c) Take some other action deemed appropriate.
2. *More Detailed Content*
  - a) Amend the sample wind and solar site permits to include the requirement that decommission plans provide the detail described in DOC EERA's March 16, 2020 Recommendations (Table 1).
  - b) Take no action.

c) Take some other action deemed appropriate.

3. *Financial Surety Instruments and Funding Timeline*

a) Amend the sample wind and solar site permits to include language allowing for a wide range of financial assurance mechanisms, as recommended by the Avangrid Renewables, CGA, DWG, Xcel Energy, and the MPCA.

b) Amend the sample wind and solar site permits to include language requiring permittees to adopt a financial assurance mechanism that is defined in Minnesota Administrative Rules 7035.2705 to 7035.2751, as suggested by Xcel Energy.

c) Amend the sample wind and solar site permits to include language requiring permittees with a 20 year or greater PPA to indicate the type of financial surety that will be used in funding decommissioning, to begin funding the financial surety at year 10 of operation, who the beneficiary will be, the amount of the financial surety and to have the financial surety fully funded by the end of the term of the PPA, as recommended by DOC EERA.

d) Take no action.

e) Take some action deemed appropriate.

4. *Without a Power Purchase Agreements*

a) Amend the sample wind and solar site permits to include language requiring facilities operating without a power purchase agreement to have the financial surety fully funded by year 15 or 20, as recommended by DOC EERA.

b) Amend the sample wind and solar site permits to include requiring facilities operating without a power purchase agreement to have the financial surety fully funded by a date deemed appropriate by the Commission.

c) Take no action.

d) Take some other action deemed appropriate.

5. *Scrap/Salvage Value*

- a) Amend the sample wind and solar site permits to include language that requires decommissioning cost estimates include both total and net costs (total minus estimated scrap value), including the assumptions for the cost estimates, and allow financial surety calculations to be based on net costs as recommended by Avangrid Renewables, CGA, Xcel Energy.
  - b) Amend the sample wind and solar site permits to include language that requires decommissioning cost estimates used in a decommissioning plan include both total and net costs (total minus estimated scrap value), including the assumptions for the cost estimates and allow financial surety calculations to be based on total costs, as recommended by MPCA.
  - c) Provide guidance on the level of salvage value that should be included in the cost and surety calculations, as requested by DOC EERA.
  - d) Take no action.
  - e) Take some other action deemed appropriate.
6. *Third Party Estimates*
- a) Amend the sample wind and solar site permits to include language that requires decommissioning cost estimates be prepared by a knowledgeable independent third party, as recommended by CGA, DOC EERA, the DWG, MPCA, and Xcel Energy.
  - b) Take no action.
  - c) Take some other action deemed appropriate.
7. *Beneficiary*
- a) Amend the sample wind and solar site permits to include language designating the Minnesota Public Utilities Commission as the beneficiary of a permittee's financial surety, as suggested by DOC EERA.
  - b) Amend the sample wind and solar site permits to include language designating a local government unit (like a city or county) to be the beneficiary of the financial surety, as recommended by CGA, the DWG, and Avangrid Renewables.

- c) Amend the sample wind and solar site permits to include language requiring some other entity to administer the financial surety.
  - d) Take no action.
  - e) Take some other action deemed appropriate.
8. *Recycling and Reclamation*
- a) Amend the sample wind and solar site permits requiring permittees to include waste disposal and recycling tasks in decommissioning plans, as recommended by DOC EERA.
  - b) Amend the sample wind and solar site permits to include language requiring decommissioning plans to maximize recycling and minimize use of landfills or incineration for disposal, as recommended by the MPCA.
  - c) Amend the sample wind and solar site permits to include language requiring permittees to take a “no-waste” or “no-landfill” approach to decommissioning, as recommended by the MPCA.
  - d) Amend the sample wind and solar site permits to include language requiring permittees to recycle all solar panels, electrical/electronic components, racking, and other physical infrastructure, as recommended by the MPCA.
  - e) Amend the sample wind and solar site permits to include language requiring the permittee to give a more detailed evaluation by the permittee of reuse/repurpose and recycling options for facility components, as recommended by the MPCA.
  - f) Amend the sample wind and solar site permits to include language requiring the permittee disclose the hazardous waste status of solar panels to relevant regulators (PUC, Commerce, MPCA), as recommended by the MPCA.
  - g) Request DOC EERA develop a 'facility design and end of life environment and sustainability checklist' for permittees to be included in 'decommissioning tasks and timing' and in the 'detailed cost estimate,' as recommended by the MPCA.
  - h) Amend the sample wind and solar site permits to include a condition that would require permittees to report waste generated and materials recycled during

installation phase, operational phase (intermittent generation of panels or invertors) and decommissioning phase, as recommended by the MPCA.

- i) Take no action.
- j) Take some other action(s) deemed appropriate.

### **C. Rate Regulated Utilities**

1. Amend the sample wind and solar site permits to include language requiring rate regulated utilities to file a standalone decommissioning plan with the same information as other permittees, except for:

(a) Rate regulated utilities would not be required to have a financial surety in addition to that included in the most recent Five-Year Depreciation Study.

2. Amend the sample wind and solar site permits to include language requiring rate regulated utilities to comply with the same requirements as other wind and solar permittees, as recommended by DOC EERA.

3. Amend the sample wind and solar site permits to include to require rate regulated utilities to file the most recent version of the Five-Year Depreciation Study into each rate regulated utility owned solar and wind generation asset docket, as recommended by DOC EERA.

4. Amend the sample wind and solar site permits to include to require rate regulated utilities to file a standalone decommissioning plan, as recommended by DOC EERA.

5. Amend the sample wind and solar site permits to include language stating rate regulated are not required to have a financial surety in addition to that included in the most recent Five-Year Depreciation Study, as recommended by Xcel Energy.

- 6. Take no action.
- 7. Take some other action deemed appropriate.

### **D. Permit Review Procedures and Schedule**

1. *Periodic Five-Year Reviews*

- a) Request DOC EERA process the review of decommissioning plans as compliance filings, not requiring the entire permit to be reopened, as recommended by DOC EERA.
  - b) Instruct Commission staff to request and initiate a decommissioning plan review from permittees with permits not containing the five-year review decommissioning plan review language, as suggested may be needed by DOC EERA.
  - c) Request DOC EERA staff request and initiate a decommissioning plan review from permittees with permits not containing the five-year review decommissioning plan review language.
  - d) Amend the sample wind and solar site permits to include language clarifying that five-year decommissioning plan reviews will be performed as compliance filings by DOC EERA.
  - e) Take no action.
  - f) Take some other action deemed appropriate.
2. *Other Triggers for Decommissioning Plan Review*
- a) Amend the sample wind and solar site permits to initiate a decommissioning plan review during: the permit transfer process, the permit amendment process, and repowering requests, as recommended by DOC EERA.
  - b) Amend the sample wind and solar site permits to include language allowing staff to initiate a decommissioning plan review during: the permit transfer process, the permit amendment process, and repowering requests, as deemed necessary.
  - c) Take no action.
  - d) Take some other action deemed appropriate.
3. *How to Review Plans*
- a) Request DOC EERA review solar and wind generation facilities in the order proposed in its October 29, 2020 Comments (Table 3 in briefing paper), as recommended by DOC EERA.

- b) Request DOC EERA to issue written requests for an updated decommissioning plan from the permittees with facilities currently in operation, review updated efiled decommissioning plans as a compliance filing, then file a review letter identifying any issues necessitating possible Commission review and action, as recommended by DOC EERA.
- c) Instruct Commission staff to request and initiate a decommissioning plan review from permittees with permits not containing the five-year review decommissioning plan review language, as suggested may be needed by DOC EERA.
- d) Request DOC EERA to file a summary of the status of wind and solar decommissioning plan activities and developments in decommissioning best practices in Docket No. E999-M-17-123, as recommended by DOC EERA.
- e) Take no action.
- f) Take some other action deemed appropriate.

#### **E. Agency Coordination**

1. Request DOC EERA to develop a table identifying anticipated permits needed for decommissioning activities, as suggested would be useful by DOC EERA.
2. Amend the sample wind and solar site permits to include the table of anticipated permits needed for decommissioning activities.
3. Amend the sample wind and solar site permits to include language requiring the permittee to describe how it will notify state regulatory agencies of upcoming decommissioning plans (this could be added to the Table 1 recommendations from DOC EERA).
4. Take no action.
5. Take some other action deemed appropriate.

#### **F. Decommissioning Completion Report**

1. Amend the sample wind and solar site permits requiring permittees to file a report describing decommissioning activities and how they varied from the plan filed with the Commission, identify final destinations for project materials, specifically identifying the management method and destination of photovoltaic (PV) recyclable



components, and make recommendations for improving the decommissioning planning process and implementation, as recommended by the MPCA.

2. Take no action.
3. Take some other action deemed appropriate.

#### **G. Miscellaneous Items**

1. *Other Types of Systems*
  - a) Request DOC EERA investigate the feasibility of requiring decommissioning plans for Independent Power Producer owned gas-fired power plants and high voltage transmission lines.
  - b) Take no action.
  - c) Take some other action deemed appropriate.
2. *Solar Panel Management Recs Coming*
  - a) No action needed.
3. *Community Base Energy Development Projects*
  - a) Request DOC EERA to investigate the status of C-BED projects in Minnesota and provide further recommendations.
  - b) Take no action.
  - c) Take some other action deemed appropriate.
4. *Facility Design*
  - a) Request DOC EERA to encourage permit applicants to design facilities with materials that will be reusable and recyclable at the time of decommissioning during the pre-application process, as recommended by the MPCA.
  - b) Request DOC EERA to encourage permit applicants to specify components that have environmental certifications, as recommended by the MPCA.

- c) Take no action.
  - d) Take some other action deemed appropriate.
5. *Enforcement Language*
- a) Amend the sample wind and solar site permits requiring decommissioning plans to include general or specific enforcement language for decommissioning plan compliance violations.
  - b) Take no action.
  - c) Take some other action deemed appropriate
6. *Other*
- a) Amend the sample wind and solar site permits requiring decommissioning plans include maps of areas likely to be disturbed during decommissioning, as recommended by the DNR.
  - b) Amend the sample wind and solar site permits requiring third party monitors during the decommissioning process that report to state agencies, as recommended by MDA.
  - c) Take no action.
  - d) Take some other action deemed appropriate.
7. Authorize Commission staff to modify the sample wind and solar site permits to correct typographic and formatting errors, improve consistency, and ensure agreement with the Commission's final order in the matter.

**Staff Recommendations:** A1; B1a; B2a; B3a, c; B4a; B5c; B6a; B7c; B8a-b; C1; D1b; D2a; D3a-d, f, g; E1-3; F1; G1a; G3a; G4a-b; G5b; G6c, G7