

Reply Comments for Aurora Distributed Solar, LLC

On June 30, 2015, the Minnesota Public Utilities Commission (the “Commission”) issued Aurora Distributed Solar, LLC (Aurora) a Site Permit to construct a distributed solar energy project. This filing is submitted following the notice of comment period on the Aurora Solar Project issued by the Commission on July 13, 2017.

Specifically, the Commission requested comments on the following topics:

- Is the Agricultural Impact Mitigation Plan and Vegetation Management Plan sufficient or should it be modified?
- Should the Commission modify the site permit to contract for inspection services as part of the terms and conditions of the Site Permit in accordance with Minn. Rule 7854.1300? If so, Staff proposes the following language:

Independent Inspector: The Permittee shall retain an independent third-party inspector. The selection of the inspector and scope of the inspection effort shall be approved by the Department of Commerce and Commission’s Executive Secretary. The inspector shall monitor the construction and restoration process and ensure that the project conforms to the site permit terms, conditions, and the specifications outlined in the record. The inspector shall file reports at 30-day intervals with the Commission addressing compliance during construction and restoration.

- Should the Commission amend the permit to limit the sites to the 16 which proceeded with construction?
- Should the Commission take any other action in accordance with Minn. Rule 7854.1300, including other amendments or revocation of the Aurora Site Permit?

Comment letters were submitted to the project docket by Minnesota Department of Agriculture (MDA), the City of Annandale, Department of Commerce, Energy Environmental Review and Analysis (EERA) and the Minnesota Department of Natural Resources (DNR), Division of Ecological & Water Resources.

Aurora appreciates the comments received from MDA, EERA, MDA and the City of Annandale and is generally in agreement with most of the changes suggested by the commenters to the Agricultural Impact Mitigation Plan and Vegetation Management Plan (“AIMP/VMP”) and the Site Permit. Aurora agrees with the overarching conclusion reached by DNR and EERA that changes to the AIMP or the Site Permit relating to construction activities are not relevant since the Project construction is substantially complete and all 16 facilities are operating commercially. Remaining construction-related activities are limited to punch-list construction items and restoration activities, including permanent seeding and landscaping, drain-tile repair, and soil and erosion control activities. Major soil disturbance activities such as electrical cabling installation and road construction are complete. Accordingly, any changes made to the AIMP should focus on those restoration activities and vegetative maintenance activities to help ensure the long-term success of the permanent vegetation currently being planted and established at each of the facilities.

Aurora is supportive of the amendment to the Site Permit that requires an independent third-party inspector, as modified by EERA. As indicated by EERA, an independent third-party inspector is already required by the AIMP/VMP. Formalizing this requirement for an independent third-party inspector to

inspect the facilities for compliance with the entire site permit is reasonable. Below is EERA's modification to Commission staff's proposed language:

Independent Inspector: The Permittee shall retain an independent third-party inspector. The selection of the inspector and scope of the inspection effort shall be approved by the Department of Commerce and Commission's Executive Secretary. The inspector shall monitor the construction and restoration process and ensure that the project conforms to the site permit terms, conditions, and the specifications outlined in the record. The inspector shall file reports at 30-day intervals with the Commission addressing compliance during construction and ~~restoration~~ through the Permittee's submission of the Notice of Termination of the National Pollutant Discharge Elimination System construction permit at all sites.

Aurora is supportive of amending the site permit to limit the sites to the 16 sites constructed by Aurora. Accordingly, references to Brooten, Fiesta City, Lester Prairie, Mayhew Lake and Scandia can be removed from the Site Permit.

Aurora does not believe any other Commission action is necessary. Aurora has constructed the 16 facilities in accordance with the site permit and is operating commercially at all 16 facilities. Restoration activities will continued to be completed in accordance with the site permit and the AIMP/VMP. Revisions to the AIMP/VMP as provided in these reply comments will help ensure restoration activities are successful. The oversight of an independent third party inspector will help ensure that the site permit conditions are followed through restoration.

The comments from each comment letter and Aurora's reply to each, in *italics*, are provided below.

Minnesota Department of Agriculture (MDA), Comment letter dated August 10, 2017, Document ID 20178-134627-01

"Is the Agricultural Impact Mitigation Plan and Vegetation Management Plan sufficient or should it be modified?"

MDA Comment 1 - We believe the measures in the AIMP need to be revised to allow for establishment of vegetation through the operational life of the project and to allow a successful return to agricultural use after decommissioning. Specifically:

- a. A robust personnel training program is needed. The current AIMP mentions training as a responsibility of the Environmental Monitor (EM) before construction begins, but does not address training of personnel involved in restoration or operation and maintenance phases, and doesn't provide a sufficient level of detail. The training should be comprehensive in covering environmental and agricultural concerns, and should be provided to all contractor and sub-contractor personnel whose work or presence on a site may impact such resources. Training should be developed or approved by the Agricultural Monitor (AM), and administered by the AM, the EM, or other party who is fluent in the requirements of the AIMP/VMP. It should probably be separate from and in addition to the regular safety training personnel receives, and should be of sufficient length, to ensure adequate time and attention is given. Additional training sessions should be provided as personnel replacement occurs.

Aurora Reply – Agreed. Aurora will develop a training program for personnel involved in restoration and maintenance activities being conducted under the requirements of the AIMP. The training program will be developed cooperatively with the AM and EM to

ensure compliance with the intent of the AIMP/VMP. It is important to note that the AM developed a training program for construction-related activities that was used by Aurora to train project personnel. Aurora will build upon that training program to further focus on restoration and vegetative maintenance activities.

- b. There should be a minimum standard of qualifications for individuals serving in the EM role. The AIMP/VMP includes the roles and responsibilities for the EM role, but no specific education or experience requirements. At a minimum, knowledge, skills, and abilities for this role should include stormwater erosion and sediment control, knowledge of agriculture fields and drain tiles, environmental monitoring of heavy construction activities, implementation of construction best management practices (BMPs), familiarity with vegetation being established, and restoration of construction sites.

Aurora Reply – Agreed. Considering the status of construction and restoration activities at the facilities, the EM should have sufficient knowledge, skills and abilities to include stormwater erosion and sediment control, drain tiles, and native vegetation establishment. It should be noted that Aurora specifically chose Barr Engineering to occupy the EM role due to its specific knowledge, skills and experience related to all of the knowledge areas mentioned by MDA above.

- c. There should be provision for independent monitoring post-construction and post-restoration. There does not appear to be provision for independent monitoring for successful establishment of vegetation for the years after construction and restoration, or for any future repair or maintenance activities that could damage vegetation, soils, or drain tiles. This should be clarified.

Aurora Reply – Agreed. Aurora notes that this comment is also reflected in comment letters provided by EERA and DNR and discussed below and includes specific recommendations which Aurora agrees to formally implement in a revision to the AIMP/VMP.

- d. Provisions for operation and maintenance should include compliance with the AIMP construction and restoration provisions as necessary. During the operation and maintenance phase, there may be repair or maintenance activities that could damage vegetation, soils, or drain tiles, and so compliance with the AIMP construction and restoration provisions should be required as applicable.

Aurora Reply – Agreed. The intent of the AIMP/VMP is to cover the life of the project and includes best practices to be followed during operations and decommissioning activities at the sites to ensure the land could be used for agricultural activities after the project ceases operation. Specifically, Sections 6.4 (e), 6.5 (c) and 6.5 (d) require that the AIMP/VMP include measures related to the operational life of the facilities. In addition, pages 23-25 of the AIMP/VMP provide guidelines as to measures that should be taken during operations and decommissioning activities at each facility.

- e. References to landowners in the AIMP should be reexamined and adjusted appropriately. This issue was also raised in Enel Green Power's filing of 6/21/2017. The AIMP provisions were in large part modeled on previous AIMPs for pipelines and transmission lines. Pipelines and transmission lines are in rights-of-way over private land, and for the most part, farmers and landowners continue to be able to use the land above the pipelines and between towers. Many of the provisions for the AIMPs for those types of projects were

designed to provide for landowners to have land restored to their requirements or to be compensated for damages. However, in the case of solar projects, the solar facility operator controls land use across the site, whether the site is owned or leased by the solar facility operator. Consequently, references to landowners may have limited relevance and should be reexamined and adjusted as appropriate; for example, in Section 4.3:

- i. Procedures for Determination of Damages and Compensation should probably be oriented mainly to adjoining/nearby affected landowners.
- ii. Damages to drain tile under Agricultural Drain Tile need to be repaired regardless of ownership. References to landowners should again probably be oriented mainly to adjoining/nearby affected landowners.
- iii. In Soil Compaction and Rutting, emphasis should be on how compaction is to be avoided, how wet conditions are to be addressed, and how compaction is to be mitigated, rather than determining damages and compensation to landowners, since the purpose is to ensure that land is suitable for establishment of vegetation during the life of the facility, and can be restored to productive agricultural use after decommissioning.

Aurora Reply – As indicated by EERA in its comment letter, amending the site permit to require an independent third party inspector is adequate to ensure the requirements of the AIMP/VMP and Site Permit are followed. Aurora has and continues to repair drain tile that were damaged during construction regardless of whether the drain tile damages affect the underlying landowner or adjacent landowners. Changes specific to soil compaction and rutting are no longer applicable because major land disturbance activities are completed. De-compaction activities have been and will continue to be completed by the restoration contractor as compacted soils, if any, are encountered during restoration. Aurora found a resource entitled Temporary Stream, Wetland & Soft Soil Crossings, prepared by the Minnesota Erosion Control Association to be useful. The Commission may wish to provide this document to future applicants for incorporation in AIMP/VMPs.

<http://mnerosion.org/wp-content/uploads/2010/10/2011Temporary-Stream-Wetland-Soft-Soil-Crossings-MECA-high-res2.pdf>

- f. There should be more detail regarding establishment of vegetation in the years following construction and restoration. There may be a need for metrics and benchmarks for successful establishment, possibly including soil testing for organic matter and other soil components, and mitigation measures, such as bringing new topsoil onto sites. It is our understanding that there are locations where topsoil has been lost through erosion or mixing, and successful establishment of vegetation may be very difficult.

Aurora Reply –Aurora agrees with the DNR that the Board of Water and Soil Resources (“BWSR”) Pollinator form should be utilized to establish the benchmark for restoration success. Additional detail regarding Aurora’s proposed vegetation monitoring in accordance with DNR comments is provided below.

- g. Drain tile may need to be properly located and repaired during restoration. From the 6/21/2017 Enel filing and other communications, it is our understanding that in many instances drain tile was not accurately located, and tile damage may have resulted. Unfortunately, the effects of tile damage may not show up for years after the damage occurred. Restoration may be the most opportune time to anticipate future problems by accurately locating drain tile systems in the relation to below- ground disturbance (such as piles driven for solar panels), inspecting suspect drain tile locations for damage, and making repairs.

Aurora Reply – Aurora has and continues to repair drain tile that were damaged during construction regardless of whether the drain tile damages affect the underlying landowner or adjacent landowners. Damaged drain tile will be documented and repaired as discovered through the life of the project.

“Should the Commission modify the site permit to contract for inspection services as part of the terms and conditions of the Site Permit in accordance with Minn. Rule 7854.1300”

MDA Comment 2 - An independent inspector may be beneficial. It is our understanding that there have been instances of non-compliance with site permit requirements that were beyond the scope of the AIMP/VMP and the roles of the AM or EM. An independent monitor would help fill those gaps.

Aurora Reply – Aurora is supportive of the amendment to the Site Permit that requires an independent third-party inspector, as modified by EERA. Aurora does not have any information related to MDA’s reference to “instances of non-compliance with the site permit requirements”. Aurora takes compliance with the site permit seriously and does not believe there has been any instances of non-compliance with the site permit requirements.

“Should the Commission amend the permit to limit the sites to the 16 which proceeded with construction?”

MDA Comment 3 - We have no recommendation at this time.

“Should the Commission take any other action in accordance with Minn. Rule 7854.1300, including other amendments or revocation of the Aurora Site Permit?”

MDA Comment 4 - We have no recommendation at this time.

City of Annandale, Comment letter dated August 10, 2017, Document ID 20178-134624-01

Annandale Comment 1 - In February of 2016, the City entered into a settlement agreement with Aurora/Enel Green which included a Vegetation Screening Plan to mitigate the visual impacts of the solar array on the adjacent properties. Enel Green initially installed the required trees, however a number of trees "did not take" and need to be replaced. The City is further concerned with the reports of noxious weeds on the site. Enel Green has acknowledged their obligation and provided a written assurance that they will replace the trees and complete restoration of the site in accordance with the permit requirements and the settlement agreement. The City reserves its rights to comment further on this issue, pending completion of Enel Green's site restoration work.

Aurora Reply – As noted by the city of Annandale, approximately 10% of the trees planted in late fall of last year will need to be replaced. The trees utilized for screening are large conifers, as required by the settlement agreement, which had to be dug and transplanted directly from the grower to the site. Transplanting large trees carries with it additional risk that a portion of the trees will not survive the transplanting process. As noted in the city’s comment, Aurora has provided written assurance that the trees will be replaced and site restoration will be completed in accordance with the permit requirements and the settlement agreement. Replacement of the

trees that did not survive will occur in early-mid fall of this year when conditions are more suitable to transplant trees of that size. Aurora is appropriately managing noxious weeds in accordance with the AIMP/VMP through its vegetation restoration and maintenance contractor, Minnesota Native Landscapes.

Annandale Comment 2 - The City is in favor of the proposal to modify the permit to require an independent inspector to periodically review the sites and monitor compliance with permit requirements. It would be the City's preference that the inspector monitor the various sites throughout the life of the permit. The City remains concerned that there is not adequate security to restore the various sites owned by Enel Green upon permit termination.

Aurora Reply – While we agree that the role of the independent inspector should be addressed, Aurora disagrees with the City of Annandale's recommendation that the independent inspector be retained for the full duration of the site permit. Aurora agrees with EERA that the independent third party inspector should be retained until Notices of Termination ("NOT") are filed with the Minnesota Pollution Control Agency ("MPCA") pursuant to the project's National Pollutant Discharge Elimination System ("NPDES") permits, which require, in part, that NOT's may be filed when the permanent vegetation achieves 70% density. One of the primary reasons why Aurora chose to use native, low growing vegetative seed mixes, as approved by the DNR, is because such a vegetative cover will not require intensive long-term vegetation management activities once established. Ensuring adequate establishment of vegetation will preclude the need for longer term monitoring for the life of the project.

Department of Commerce, Energy Environmental Review and Analysis (EERA), Comment letter dated August 10, 2017, Document ID 20178-134623-01

EERA Comment 1 - AIMP Modifications

Section 6.4 of the site permit requires that Aurora develop an AIMP. The AIMP details measures to be taken during construction and operation of the facility to ensure that the site maintains viability as an agricultural site after decommissioning. The AIMP addresses many of the conditions of the site permit (e.g. topsoil preservation, maintenance of drain tile, reduction of soil compaction and rutting, and removal of construction debris), but provides additional detail about how impacts are to be minimized.

Following review of the AIMP, EERA staff believes that the enforcement and drain tile sections of the AIMP are areas where revisions are appropriate, either for the Aurora AIMP as the project moves into the restoration phase or for future AIMPs.

Aurora Reply - Agreed

EERA Comment 2 - EERA staff recommends that the AIMP be amended to include the role of an independent third-party inspector...and address the relative responsibilities and reporting requirements for each inspector.

Aurora Reply – Agreed. Aurora will draft updated language for the AIMP to be submitted to EERA and Commission staff for review and approval.

EERA Comment 3 - The AIMP requires that the Agricultural Monitor remain engaged through post-construction stabilization of the re-vegetated sites. EERA staff believes that the continued engagement of the Agricultural Monitor and their coordination with an independent third-party

inspector, through at least this season of restoration is important to ensuring that the provisions of the AIMP are followed.

Aurora Reply – Aurora agrees that soil disturbance and soil restoration activities are expected to be completed by the end of 2017. Accordingly, any monitoring for compliance with the AIMP/VMP that would be required of the Agricultural Monitor should be completed by the end of 2017 and as such the Agricultural Monitor will no longer be necessary to complete AIMP/VMP inspections.

EERA Comment 4 - For future permits, EERA staff recommends that the role of Environmental Monitor in the AIMP be designated as an independent third party.

EERA staff recommends that ownership of the site be identified during the record and that future AIMP/VMPs be written to ensure an appropriate enforcement mechanism to ensure that the provisions of the AIMP are followed.

Aurora Reply – Aurora agrees with EERA and notes that ownership of each of the Aurora sites was provided in the record for this project.

EERA Comment 5 - EERA staff believes that most of the impacts to site drainage were the result from construction activities, and it unlikely that restoration activities would result in additional damage. Given these factors, EERA does not believe that revision of the sections of the AIMP related to drain tile at this time for this project would be useful.

Aurora Reply – Aurora agrees with EERA's comment regarding drain tile.

EERA Comment 6 - Looking forward, EERA staff recommends that future AIMP/VMPs provide detailed information on drain tile location and how the project design and construction will avoid impacts to drain tile to the extent possible.

Aurora Reply – No comment.

EERA Comment 7 - EERA staff believes it appropriate to elevate the role of environmental inspection to a permit condition, and supports a permit amendment requiring Aurora to retain an independent third-party inspector. Staff from the Department of Commerce and the Commission's would review the inspector's qualifications to assure independence and appropriate experience. EERA staff believes that the text proposed in the notice is generally consistent with the requirement in other solar permits.

EERA staff is unclear on the relative benefit of monthly status reports following the end of this growing season, and recommends that the requirement identify an appropriate termination of the monthly reporting requirement, perhaps at the point where Aurora files a Notice of Termination (NOT) for the National Pollutant Discharge Elimination System (NPDES) construction permit.

EERA staff proposes the following amendment to Commission staff's text:

Independent Inspector: The Permittee shall retain an independent third-party inspector. The selection of the inspector and scope of the inspection effort shall be approved by the Department of Commerce and Commission's Executive Secretary. The inspector shall monitor the construction and restoration process and ensure that the project conforms to the site permit terms, conditions, and the specifications outlined in the record. The inspector shall file reports at 30-day intervals with the Commission addressing compliance during construction and restoration.

through the Permittee's submission of the Notice of Termination of the National Pollutant Discharge Elimination System construction permit at all sites.

Aurora Reply – Aurora feels that this proposed amendment, as modified by EERA is both reasonable and prudent. Aurora will work with EERA and Commission staff on the selection of the inspector and the scope of the inspection effort. Aurora also requests that the reporting requirements include a project-specific template for inspections.

EERA Comment 8 - EERA Staff proposes technical amendments to the Cover Sheet and Sections 1.0, 2.0, 2.1, and 3.0 of the site permit to clarify the extent of the Project. In instances where the amendments require the substitution of numbers, the text is shown below with strikeout and underline. Sections 2.1 and 3.0 include tables identifying specific sites, rather than including the entire table; rather than including the complete tables, the comments below identify which sites should be removed. EERA staff also recommends that the amendments to the permit include only current site maps of the 16 constructed sites.

Aurora Reply – Aurora is in agreement with EERA's comments and suggested revisions to remove Brooten, Fiesta City, Lester Prairie, Mayhew Lake and Scandia from the Site Permit.

**Minnesota Department of Natural Resources (DNR), Division of Ecological & Water Resources,
Comment letter dated August 10, 2017, Document ID 20178-134622-01**

DNR Comment 1- Vegetation Monitoring

To ensure successful site restoration, the DNR recommends ongoing site monitoring to meet benchmarks and evaluate success. The following actions are recommended for the establishment and maintenance phases:

Establishment Phase

For the establishment phase (through year three), the DNR recommends that each site be mapped individually, including a summary of weed problems and a general timeline for addressing these weeds with a brief justification for the designated actions.

Photo documentation of each site is suggested to track the progression of vegetation establishment at the site over time. It would be helpful to establish fixed photo points so the pictures are taken from the same place, facing the same direction.

Aurora Reply –Aurora has already initiated a very similar effort for the establishment phase of the vegetative restoration, which will be adjusted to be consistent with these recommendations.

DNR Comment 2 –

Maintenance Phase

For the maintenance phase, the DNR suggests including a timeline for when monitoring will occur and how it will be accomplished. The Minnesota Board of Soil and Water Resources (BWSR) assessment form is recommended to facilitate monitoring. The BWSR assessment form will ensure that pollinator habitat standards are met and diversity is maintained through time. Monitoring with the use of the assessment form need not occur annually, but should occur on a set timeline (e.g., every 3-5 years).

Aurora Reply –Aurora intends to utilize the BWSR pollinator assessment form for this purpose. Aurora proposes to initiate the assessment of each site using the BWSR pollinator assessment form starting in year 3 after permanent seeding has been completed. The DNR has indicated in informal discussions with Aurora that full establishment of the diversity of the vegetative community will take several years and as such the assessment form is not especially informative during periods prior to year 3 of the establishment phase. Aurora proposes to re-assess each site using the BWSR pollinator assessment form every five years thereafter for the life of the project.

DNR Comment 3- For each site, a plan describing the type of maintenance that will be used (e.g., grazing prescribed burn, etc.) should be developed. If grazing is used, a grazing plan that includes the stocking rate and pasture rotation should be provided.

Aurora Reply – Aurora is willing to implement this recommendation, but requests that the DNR provide further guidance prior to execution. Aurora will coordinate with its vegetation contractor and the DNR on the development of these site-specific maintenance plans.

DNR Comment 4-The DNR strongly recommends securing monitoring services from a company specializing in native seed and installing/maintaining prairie restoration projects for the duration of the project for both the establishment and maintenance phases. An experienced company with a history of successful prairie restoration projects should be selected.

Aurora Reply –As previously noted, Aurora has retained the services of Minnesota Native Landscapes for this purpose. Minnesota Native Landscapes is a reputable restoration company with a history of successful prairie restoration projects.

DNR Comment 5-

Additional Considerations for Future Projects

Site Selection

To avoid issues such as compaction, erosion, and vegetation establishment, the DNR suggests placing more emphasis on appropriate siting of solar facilities. The DNR offers the following recommendations that would prevent many of the water-related issues that occurred at the Aurora Solar sites. Although these suggestions are primarily related to future projects, they are worth noting now.

Greater efforts are necessary to avoid wetlands. Wetlands should have a buffer of at least 25 feet. The buffer will keep construction equipment from getting into the soil saturation zone during high water and prevent sediment deposits/impacts to the wetlands.

Greater efforts are necessary to avoid farmed wetlands. During significant rain events, farmed wetlands retain water and stay wet which results in equipment getting stuck, trenches filling with water, and surface erosion.

Avoid locating solar facilities in floodplains. Facilities are damaged by floodwaters and additional erosion can occur at the site during construction.

Locate solar facilities outside of the shoreland zone to prevent flooding issues.

Require an outer 25 foot buffer around the perimeter of the site that is planted to a pollinator friendly mix with a cover crop that is planted a minimum of 30 days prior to construction. The

buffer would be marked so no contractors go into the planted area. This would help prevent soil runoff from the site.

Construction Practices

Sites currently under cultivation should be required to plant a cover crop to stabilize the soil if more than 21 days will elapse after grading and before construction. After grading the site, the site should be immediately planted with a cover crop if construction activities are not expected to start within 21 days. The cover crop will prevent erosion and reduce issues during rain events.

Construction activity should be limited to areas that are going to be disturbed. That is, areas not needed for actual construction should be marked as off limits, not disturbed if vegetated, or planted if in bare soil. Establishing construction area boundaries limits impacts to a smaller surface area and would result in fewer issues with contractors accessing areas where they should not be working.

Aurora Reply – Aurora greatly appreciates the input and hopes that these recommendations help to facilitate siting and approval processes for future solar development in Minnesota.

Conclusion

Aurora appreciates the comments received from MDA, EERA, MDA and the City of Annandale and is generally in agreement with most of the changes suggested by the commenters to the AIMP/VMP and the Site Permit. Aurora agrees with the overarching conclusion reached by DNR and EERA that changes to the AIMP or the Site Permit relating to construction activities are not relevant since the Project construction is substantially complete and any changes made to the AIMP should focus on those restoration activities and vegetative maintenance activities. Aurora is supportive of the amendment to the Site Permit, as modified by EERA, that requires an independent third-party inspector. Aurora is supportive of amending the site permit to limit the sites to the 16 sites constructed by Aurora. Aurora does not believe any other Commission action is necessary. Aurora has constructed the 16 facilities in accordance with the site permit and is operating commercially at all 16 facilities. Restoration activities will continue to be completed in accordance with the site permit and the AIMP/VMP. Revisions to the AIMP/VMP as provided in these reply comments will help ensure restoration activities are successful. The oversight of an independent third party inspector will help ensure that the site permit conditions are followed through restoration.