Appendix C

Aurora Responses to
EERA Environmental Review Questions

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 1a
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
1a.	On p. 19 of the Site Permit Application, Aurora identifies total construction cost for the project to be approximately $247 million and annual operating costs for the project to be approximately $2.3 million. Do these costs represent costs for a 100 MW project or costs for the 130.5 MW proposed in the application? **Response:** The costs reflect an estimated 100 MW AC project.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 1b
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
1b.	On p. 19 of the Site Permit Application, Aurora identifies total construction cost for the project to be approximately $247 million and annual operating costs for the project to be approximately $2.3 million. Please confirm whether Aurora has any changes or modifications to the costs identified on p. 19 of the application. **Response:** There have been no modifications to the projected costs since it was provided in the Site Permit Application. Final costs may fluctuate based on final grading plans, geotechnical evaluations, and commodity prices.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 1c
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
1c.	On p. 19 of the Site Permit Application, Aurora identifies total construction cost for the project to be approximately $247 million and annual operating costs for the project to be approximately $2.3 million. Please provide a range of construction and operating costs per MW (DC) of installed nameplate capacity. **Response:** Construction costs are projected to be approximately $247 million, or approximately $2.47 million/MW AC. Based on an updated estimate of operating costs, Aurora estimates operating costs will range from $45,000 - $60,000 per MW AC. DC size has yet to be determined.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 2a
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	

2a. Please describe the key determinants (e.g. facility size, proximity to other facilities) in construction duration at individual facilities.

Response: The key determinations are: the amount of grading that will be necessary at each facility; individual facility size; proximity to other facilities; and access preparation needs.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 2b
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
2b.	In Table 3.2-1, Construction Timeline for Individual Facilities, of the Site Permit Application, Aurora estimates that site preparation, grubbing and clearing will take approximately 2 days per acre. Using that estimate, site preparation at some of the larger sites (up to 100 acres) would take approximately 50 days – or approximately 2 months – is this correct? **Response:** Yes, that is correct.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 3
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
3.	On p. 26 of the Site Permit Application, Aurora alludes to the potential that a central laydown area may be used for a group of facilities. If a central laydown area is used, does Aurora anticipate that a temporary location outside of any proposed facility be used? If so, please provide an estimate of the size of such a temporary laydown area. **Response:** If a central temporary laydown area is utilized, it would be located at/within an Aurora facility. The construction contractor may also potentially lease an existing commercial building or storage area and will obtain any local permits as required for the use of that area.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 4a
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
4a.	Please describe the security fencing at each facility. In the Site Permit Application (at p. 23), fencing is described as a chain-link fence approximately 8 feet tall topped with three strands of barbed wire. In at least some of public meetings, the height of the fence was described as six feet. **Response:** The description in the Site Permit Application is correct. The security fence will be approximately 8 feet tall (the chain link fence itself is seven feet tall with another foot of barbed wire).

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 4b
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
4b.	Several commenters requested that facilities be screened from view of nearby residences. Please describe the considerations and constraints that Aurora views in response to these requests.

Response: The need for and ability to screen the facilities will be highly dependent upon the characteristics of the specific location, the viewshed that will be impacted and the current adjacent land uses. Aurora has analyzed the topographic, vegetative, and other relevant characteristics of locations where viewshed concerns were raised to determine the extent of potential viewshed impacts. Aurora has been developing screening solutions when the conditions of the location warrant screening and otherwise indicate that screening would, in fact, mitigate legitimate viewshed impacts to adjacent residential land uses. Aurora has and will consider whether screening would be necessary when the adjacent land uses are agricultural, commercial or industrial or when the viewshed concerns are based on speculative future uses of the land.

Additionally, there are some contracts with the current landowners of the land on which the facilities will be constructed that required some screening. We are currently finalizing those plans with the relevant landowners.

As Aurora finalizes the screening plans with the appropriate parties, Aurora will file the landscape plans to the record for the Aurora eDocket.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 5a
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
5a.	Please provide an estimate of the area of the "blocks" of solar arrays in acres per rated nameplate capacity.

Response: Size and nameplate capacity of blocks are generally determined by the inverter and racking equipment specifications. A typical block will generally be 500 kW to 2 MW of nameplate capacity and range in size from approximately 3 to 14 acres excluding the perimeter buffer areas.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 5b
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
5b.	On p. 23 of the Site Permit Application, "blocks" are described as ranging in size between 0.5 MW to 2.0 MW of rated nameplate capacity. What are the key determinants of the size of the blocks at an individual facility? **Response:** The "blocks" refer to the portion of an array associated with a specific inverter. For example, a 5 MW facility may have two 2 MW blocks and one 1 MW block that make up the 5 MW facility. Key determinants for of the size of blocks are the inverter specifications, racking specifications, parcel shape and the associated facility layouts as well as the nameplate capacity of the entire facility.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 6a
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
6a.	With respect to Minnesota solar facilities beyond those proposed in the Aurora Site Permit Application that are currently proposed or have been, developed, owned, or operated by Aurora Distributed Energy, Geronimo Energy, Enel Green Power or their affiliates: For any existing Minnesota solar facilities, please identify on a map and provide a brief description of the facility (facility name, facility owner, location, nameplate capacity, size of developed area in acres, in-service date). **Response:** Aurora Distributed Energy, Geronimo Energy, Enel Green Power and their affiliates do not have any operating or fully permitted solar projects in Minnesota.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 6b
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
6b.	With respect to Minnesota solar facilities beyond those proposed in the Aurora Site Permit Application that are currently proposed or have been, developed, owned, or operated by Aurora Distributed Energy, Geronimo Energy, Enel Green Power or their affiliates: For any proposed Minnesota solar facilities reasonably expected to be permitted, under construction, or operational by the end of 2015, please identify on a map and provide a brief description for each facility (facility name, developer, anticipated owner, location, anticipated nameplate capacity, anticipated size of developed area in acres, anticipated in-service date, permitting entity). **Response:** Geronimo Energy, Aurora's development consultant, has applied for a Conditional Use Permit for the Paynesville Community Solar Garden project on a parcel adjacent to the Paynesville facility. The anticipated capacity is approximately 15MW. The project is in the early stages of development and has applied for a Conditional Use Permit with Paynesville Township. Timeline for construction has not been established.

The following projects are in the early stages of development and should be considered speculative in nature. Geronimo Energy, Aurora's development consultant is providing them for disclosure purposes.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 6c
Date Received:	November 19, 2014	Response Date: December 4, 2014

Request No.	
6c.	With respect to Minnesota solar facilities beyond those proposed in the Aurora Site Permit Application that are currently proposed or have been, developed, owned, or operated by Aurora Distributed Energy, Geronimo Energy, Enel Green Power or their affiliates: For any existing or proposed solar facility identified in response to items a or b and located within five miles of a facility proposed in the Aurora Site Permit Application, please show the existing or proposed non-Aurora facility in relation to the proposed Aurora facility. **Response:** **See maps below.**

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Docket Nos.:	E6928/GS-14-515		
Response To:	DOC-EERA	Information Request No. 7	
Date Received:	January 7, 2015	Response Date:	January 14, 2015

Request No. 7 Displacement

Please describe the rationale for determining when a residence or business should be removed in development of the proposed solar facilities:

a. In general, what would preclude a PV facility be constructed around an existing residence or business?

7.a. Response:

In general, the following criteria are necessary to construct a PV facility:

- Proximity to a substation
- Available acreage to install PV equipment (e.g. linear axis tracker system) to meet the generation need. The available acreage is typically previously disturbed (e.g. agricultural) or otherwise under an idle land use
- Willing landowner(s)
- Relatively free of difficult siting constraints (e.g. extremely steep topography large open water features)
- Open spaces without permanent obstructions that would cast shadows on the PV facility.

Therefore, general criteria that would preclude a PV facility from being constructed around an existing residence or business would be the lack of or conflict with one of the above criteria.

The Aurora project is designed to provide distributed solar energy to meet Xcel Energy's needs (CN-12-1240 docket) and requires the use of linear axis tracker systems. Linear axis tracker systems require certain acreage and design for each Aurora facility along with an unobstructed view of the sun, which limits the ability to design the Project around an existing residence or business and still maintain the facility's viability as a solar project as part of Aurora.

b. In general, please describe what setbacks, screening, fencing or other mitigation that Aurora believes would be appropriate in situations where a PV facility would be constructed around an existing home or business.

7.b. **Response:**

The installation of PV solar facilities does not generate noise or other emissions that directly conflict with residential or commercial uses nearby. Photovoltaic solar installations are not particularly tall or visible from long distances. Aurora recognizes that screening is desirable in certain situations. Aurora endeavors to provide citizens of Minnesota with low cost energy while also being a good neighbor. Aurora has worked with communities, neighbors, and our landowners to accommodate screening requests where they can be met in cost effective manners without reducing the efficiency of the solar facility.

The structures for the Aurora facilities are, on average, approximately 613 feet from the nearest residence. Over half (14 facilities) are located more than 350 feet away from the nearest residence. Of the 10 facilities located within 350 feet of a residence, 3 have natural buffers (e.g. either existing vegetation or topography) that will serve as adequate landscape screening between the facility and nearest residence. Aurora has assessed the facilities and nearest residences of the remaining 7 facilities within 350 feet of a residence that do not have any natural buffer, regardless of whether or not a concern was raised. Aurora has determined that a landscape plan would be effective in mitigating visual impacts from residences at all 7 facilities. Of these 7 facilities, Aurora has worked with neighboring landowners on a landscape plan for 3 facilities where the landowners raised a concern about visual impacts and 2 facilities required visual screening due to landowner contracts associated with the lease or purchase of the land.

In addition, Aurora worked with a neighboring landowner at one facility that is greater than 350 feet away from a residence for which a landscaping plan would also mitigate concerns that landowner had about visual impacts.

Aurora has not identified any existing businesses that are visually impacted by the facilities.

Aurora's landscaping plans, discussed above, use Aurora's preferred visual screening method consisting of low, dense growing shrubs (4-6 feet tall) as a visual screen to ensure screening effectiveness without reducing the efficiency of the solar facility.

c. With respect to the proposed Mayhew Lake Facility, please describe the rationale for displacing the existing residence.

7.c. **Response:**

At each of the 24 facility locations proposed in Aurora's site permit application, Aurora has found the most suitable location that meets Aurora's siting criteria and also has a landowner willing to sell or lease the land to Aurora. If the Mayhew Lake Facility is built, a home within the preliminary development area would be removed. If the Mayhew Lake Facility is selected to be constructed, Aurora has been and will continue to work

with the landowner regarding the removal of the home, and provide sufficient notice so the landowner can appropriately coordinate with the tenant.

In this instance, and for Aurora's approach to solar facility siting in general, if the landowner provides permission for structure removal (inhabited or not), Aurora considers that acceptable terms and permissions for removing the structure, provided the appropriate demolition permits and requirements are met. For Mayhew Lake, it is anticipated that the tenants would be able to find comparable housing within the same five-mile radius of the Sartell/Sauk Rapids area. Aurora does also not anticipate that the removal of one home will significantly impact the available housing in the area.

d. Is there a photo or other documentation of the remains that Aurora proposed to remove at the proposed Paynesville facility?

7.d. Response:

Please refer to Photo 29 from Aurora's Phase I and II Archaeological Investigations report dated August 11, 2014, which was provided to DOC-EERA under separate cover in December 2014.

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Docket Nos.: E6928/GS-14-515
Response To: DOC EERA Information Request No. 8
Date Received: January 7, 2015 Response Date: January 14, 2015

Request No. 8 **Wetland Impacts**

A. The facility "fact sheets" indicate that wetland delineations were performed at proposed facility locations in the summer of 2014:

1. **Please provide, in a table format if possible, the results of the wetland delineations showing acres and types of delineated wetlands.**

8.A.1. Response:

Please see Table 8.A.1 for a summary of the wetlands delineated for Aurora (acreage and type).

Facility	Wetland ID	Wetland Type	Acreage
Albany	A	1	0.078377
	C	1	0.13005
	D	3	2.774695
	E	3	4.095377
	G	2	0.451182
	H	3	0.07106
	I	4	0.367123
	J	3	0.115421
	K	3	0.522627
	L	7	0.088695
	M	3	0.156758
	N	1	3.813453
	O	1	0.961461
	P	1	1.094529
Annandale	A	6	1.758028
	B	6	0.138725
	C	6	0.958291
Atwater	A	2	2.42

Facility	Wetland ID	Wetland Type	Acreage
	B	1	0.39
Brooten	A	2	0.241858
	B	1	0.111101
Chisago	W1	6	0.513357
Dodge Center	W1	7	2.952239
	A	2	0.18
Eastwood	W1	1	0.308619
	W2	3	0.18745
	A.1	2	0.009326
	W3	3	0.370464
	A	1	0.27362
	B	1	0.318559
	C	1	0.50387
	D	1	0.737171
Fiesta City	A	2	0.06388
	B	1	0.126487
Hastings	No Wetlands Present		
Lake Emily	No Wetlands Present		
Lake Pulaski	A	2	0.27741
	C	2	0.28963
	D	2	0.443361
Lawrence Creek	W2	3	2.53157
	W3	2	0.251549
	W4	1	0.126542
	W5	2	2.952362
	W6	6	1.217862
	W7	3	1.960247
	W8	2	0.14824
Lester Prairie	No Wetlands Present		
Mayhew Lake	A	2	0.52805
Montrose	W1	2 and 3	0.071022
	A	7	0.15095
	B	3	0.016841
	C	6	0.113256
Paynesville	A	3	13.09346
	B	3	3.698801
	C	3	6.845035
	D	6	12.31506
Pine Island	W1	2	0.250273
	W2	2	0.461645

Facility	Wetland ID	Wetland Type	Acreage
Pipestone	No Wetlands Present		
Scandia	No Wetlands Present		
Waseca	No Wetlands Present		
West Faribault	A	6	0.014977
	B	6	0.002
West Waconia	A	3	0.720623
	B	3	0.808539
Wyoming	W1	1	0.269646
	W2	1	0.115873
	W3	3	0.185732
	W4	1	0.302147
	W5	1	0.251068
Zumbrota	W1	7	0.120315
	W2	7	0.156055

Summary of Permitting/Approval Process for Wetland Impacts:

Step 1 = Delineations: As noted in the facility "fact sheets", Aurora performed wetland delineations in the summer of 2014.

Step 2 = Boundary Approval: Following the summer 2014 wetland delineations, Aurora submitted the results of the delineations to the appropriate Local Government Unit (LGU) under the Minnesota Wetland Conservation Act (WCA) and U.S. Army Corps of Engineers (USACE) contacts, requesting boundary and type concurrence. Table 8.A.1 reflects the final wetland acreages/types delineated to date (for some facilities, boundary approval resulted in changes to the wetland acreages/types originally delineated in summer 2014; boundary approval is not complete for all facilities).

Step 3 = Submit Applications: For those facilities with wetland impacts and after LGU and USACE boundary approval (and in some cases concurrent with/parallel to LGU and USACE boundary approval), Aurora will submit applications for its unavoidable temporary and permanent wetland impacts. If the wetland impact exceeds the facility's allowable *de minimis* or exemption thresholds, a replacement plan will be required; replacement plans require wetland mitigation, which can be accomplished via the purchase of wetland mitigation credit with an approved wetland mitigation bank. If the wetland impact is below the facility's allowable *de minimis* or exemption threshold, Aurora will request concurrence with the LGU and the USACE. The replacement plan or *de minimis*/exemption concurrence request will be prepared as a joint submittal to the LGU (City or County depending on facility location) and the USACE.

2. Please indicate whether the delineations represent an assessment of the preliminary development area, the facility land control, or some other area.

8.A.2. Response:

Please see Table 8.A.2 for an assessment of whether the delineations were conducted in the preliminary development area, the facility land control, or both.

Facility	**Preliminary Development Area**	**Facility Land Control**
Albany	X	X
Annandale	X	X
Atwater	X	
Brooten	X	X
Chisago	X	X
Dodge Center	X	X
Eastwood	X	X
Fiesta City	X	X
Hastings	X	X
Lake Emily	X	X
Lake Pulaski	X	
Lawrence Creek	X	
Lester Prairie	X	X
Mayhew Lake	X	X
Montrose	X	
Paynesville	X	
Pine Island	X	X
Pipestone	X	X
Scandia	X	
Waseca	X	X
West Faribault	X	
West Waconia	X	X
Wyoming	X	X

Facility	Preliminary Development Area	Facility Land Control
Zumbrota	X	X

3. If delineations were not performed at any proposed facility locations, please provide the rationale for not pursuing delineation at such facilities.

8.A.3. Response:

Delineations were performed at all Aurora facilities.

B. The Site Permit Application, at p. 73, indicates that, based on communication with USACE, the piers supporting the arrays are not expected to be classified as a jurisdictional fill of wetlands under Section 404 of the Clean Water Act and Wetland Conservation Act.

1. Please describe Aurora's understanding of whether grading, road construction and installation of inverters would constitute an impact requiring a permit under Section 404 of the Clean Water Act and/or approval under the Wetland Conservation Act.

8.B.1. Response:

Grading, access roads and inverters placed in wetlands or other jurisdictional waters will constitute a permanent impact requiring a permit or *de minimis* /exemption concurrence under Section 404 of the Clean Water Act and the WCA. In addition, Aurora is assuming any security fence post located in a jurisdictional wetland or waterbody will constitute an impact requiring a permit or *de minimis*/exemption concurrence under Section 404 of the Clean Water Act (in Minnesota, likely the Regional General Permit MN-03 due to the minimal amount of impacts expected) and the WCA.

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Docket Nos.: E6928/GS-14-515
Response To: DOC EERA Information Request No. 9
Date Received: January 7, 2015 Response Date: January 14, 2015

Request No.
9 Facility Access

Based on the Project design at this time, please identify the anticipated access point for each facility (e.g., "new driveway off of 7th Place East," "Existing driveway off of 7th Place East," or "Extension of 7th Place East into facility").

9. Response:

Substation	Access Point
Albany	New access needed from 360th Street.
Annandale	Existing Access off of Klever Ave NW.
Atwater	Existing Access off of Highway 12.
Brooten	New access needed from CSAH No 29.
Chisago County	Existing Access off of County Road 14 (Lincoln Road).
Dodge Center	New access needed. Undetermined if access will be off of County Road H or 180th Ave.
Eastwood	New access needed from County Road 186.
Fiesta City	New access needed from 24th Street.
Hastings	New access needed from Norell Road.
Lake Emily	New access needed from State Hwy 99
Lake Pulaski	New access needed from Eaken Ave NE.
Lawrence Creek	Existing access off of County Road 37.
Lester Prairie	Existing access off of County Road 9.
Mayhew Lake	New access off of County Road 57.
Montrose	Extension of Bishop Ave to solar facility.
Paynesville	Two new accesses off of 185th Street.
Pine Island	New access off of 511th Street.
Pipestone	New access off of 5th Street NW.
Scandia	Existing access off of CSAH No. 25/Olinda Trail.
Waseca	Existing access off of 120th Street.

Substation	Access Point
West Faribault	Existing access off of County Road 90/Bagley Ave.
West Waconia	New access off of 118th Street.
Wyoming	Existing access off of Highway 61.
Zumbrota	New access off of 445th Street.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 10
Date Received:	January 12, 2015	Response Date: January 16, 2015

Request No. 10 **Useful Life of the Project**

There are frequent references in the application to the "useful life" of the Project. On page 29 of the Site Permit Application, Aurora anticipates an anticipated service life of 25 to 40 years for the proposed facilities.

a. Please describe the factors that influence a PV facility's useful life.

10.a. **Response:**

The factors that influence a PV facility's useful life include the following:

- Energy market conditions
- Regulations
- Lifetime of the equipment used
- Highest and best use of the underlying property
- Operation costs

The equipment itself can typically continue to function up to 40 years or more. Panels, for example may produce energy for several decades past the initial 20-year power purchase agreement. The useful life will ultimately be determined by the economics of the project that take into account the the factors listed above.

b. Please describe the factors that would be considered in a decision whether to decommission or repower a facility at the end of its useful life?

10.b. **Response:**

Factors to be considered when deciding whether or not to decommission or extend/repower a facility include the following:

- Extension of an existing power purchase agreement or the execution of a new power purchase agreement. Factors included in that decision are:
  - The local energy demand
  - The cost of electricity from other sources of generation

- The cost to repower and generate the electricity, including the cost to repair or replace non-power producing equipment such as racking and foundations.
- The cost to decommission
- The opportunity cost to utilize the land differently (best and highest use of the land)
- Regulations
- On-going maintenance and operational costs

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC-EERA	Information Request No. 11
Date Received:	January 12, 2015	Response Date: January 16, 2015

Request No. 11 **Financial impacts to local governments.**

On page 47 of the Site Permit Application, Aurora states that it will pay property and production taxes on the solar facilities.

a. Please describe how property and production taxes would be calculated for each facility.

11.a. Response:

Property taxes will be calculated in accordance with state and county law. Currently, the physical equipment of the solar farm is exempt from taxes, and the land under the project is subject to property taxes. The various classifications and mill rates will vary from locality to locality. Minnesota production taxes in lieu of personal property taxes are $1.20 per MWh, and will be calculated according to project production.

b. Is anything besides the underlying land included in the calculation of the property taxes?

11.b. Response:

As noted in 11.a., Minnesota has adopted a production tax in lieu of personal property taxes for solar energy systems. Only the underlying land is included in the calculation of direct property taxes paid.

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Docket Nos.:	E6928/GS-14-515	
Response To:	DOC EERA	Information Request No. 12
Date Received:	January 12, 2015	Response Date: January 16, 2015

Request No. 12

On page 24 of the Site Permit Application Aurora provides a general description of how power from the Project would be delivered to the electrical grid.

a. **Please describe the types of factors that would require an overhead utility extension at the edge of the facility boundary. In your response, please identify the relationship between "facility boundary," "preliminary development area" and "area of site control."**

12.a. Response:

- Facility boundary is interchangeable with preliminary development area.
- Preliminary development area means the area where the components of the PV facility will be located.
- Area of site control means the land under Aurora's control at each facility.

Xcel Energy is responsible for designing, providing and connecting the infrastructure needed on the utility side of the Point of Interconnection (POI) to interconnect the Aurora facility with Xcel Energy's system. The POI is the location where Xcel Energy will meet the Aurora facility infrastructure with Xcel Energy's infrastructure. Xcel Energy determines the location of the POI and Aurora is responsible for all equipment on the facility side of the POI. The POI is generally at the edge of the preliminary development area for each facility.

All cables and wiring on the facility side of the POI will remain buried, unless required by Xcel Energy to be above ground at the POI, in which event only that portion of the facility cables and wiring required by Xcel Energy to be above ground will be located above ground. For example, there are situations where Xcel Energy could choose to bury its electrical line from the POI to the substation, in which case Aurora would meet Xcel Energy underground at the POI. Another example may be that Xcel Energy has existing overhead lines at the POI, in which case Aurora would connect to Xcel Energy above ground. Typically, an above ground interconnection would require at least one pole within the preliminary development area to extend the electrical line from the facility to the POI on Xcel's system, which is also above ground on poles.

b. Please clarify the point (e.g. "area of site control" "fenceline surrounding developed area"), if any, where the ownership and permitting of the electrical connection changes between Aurora and Xcel Energy?

12.b. Response:

Generally, the edge of the preliminary development area where Xcel Energy has determined it will meet the facility with its infrastructure is where the ownership and permitting of the electrical connection changes between Aurora and Xcel Energy. This is called the Point of Interconnection (POI).

The fenceline surrounding the preliminary development area will be inside the area of site control (i.e., the area owned or leased by Aurora). It is possible that the POI could be located outside of the fenceline, yet still within the area of site control. However, it is important to note that each facility may be unique in terms of where the POI is located in relation to the fenceline, site control, and/or preliminary development area.

c. Has Aurora received design information from Xcel Energy on any of the electrical connections? In particular, several scoping comments addressed local permitting for electrical distribution lines.

12.c. Response:

Aurora has not received detailed design information from Xcel Energy on any electrical connections. Xcel Energy would be responsible for any permitting required for Xcel Energy's infrastructure on the utility side of the POI.

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Docket Nos.:	E6928/GS-14-515		
Response To:	DOC EERA	Information Request No. 13	
Date Received:	January 12, 2015	Response Date: January 16, 2015	

Request No. 13 **Construction Jobs**

On page 47 of the Site Permit Application Aurora describes a construction related workforce of "296 direct construction jobs and 466 construction-related jobs."

a. **Please provide an example of a "construction-related job."**

13.a. Response:

Aurora has utilized the National Renewable Energy Laboratory's (NREL) Jobs and Economic Development Impact Model (JEDI) tool to calculate jobs associated with the design, construction, and installation of the Project. The JEDI tool was "developed to demonstrate the economic benefits associated with photovoltaic systems in the United States."

JEDI describes Construction and Installation Related Services as the following: "engineering, design and other professional services as well as administration and services (e.g. sales, marketing, accounting, etc.) related to project development."

Construction and installation labor is considered "direct construction jobs." This includes the personnel needed to construct and install a PV solar facility.

b. Are the "direct construction jobs" and "construction-related jobs" mutually exclusive?

13.b. Response:

The JEDI tool considers them as separate categories that do not overlap.

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Docket Nos.:	E6928/GS-14-515		
Response To:	DOC-EERA	Information Request No. 14	
Date Received:	January 13, 2015	Response Date: January 20, 2015	

Request No. 14 **Grading**

The Site Permit Application Aurora proposes grading at several of the facilities.

a. Please discuss why grading may be required at what are presumed to be relatively flat sites and describe the criteria Aurora has used to determine where grading is required as part of the site preparation process and to the extent to which each facility will be graded.

14.a. Response:

Grading may be required because single axis trackers have limited ability to accommodate large variations in topography and a relatively non-undulating surface is required to accommodate the tracking mechanism and to maintain power production yields. Construction at many of the facilities will require some amount of grading to provide a relatively uniform, non-north sloping surface for the solar arrays (required for linear axis tracking systems). A north facing slope lowers the angle to the sun causing a decrease in power production. Therefore, the areas of the facilities to be graded were determined by assessing the current grade, the direction of the grade and the useable space for the PV components.

Typically, the single-axis tracker is designed and installed to have a reveal height (height from ground grade to center of the axis of rotation) of approximately 4 vertical feet. A 4-foot reveal height provides optimum clearance above the ground from low growth vegetation and snow mounding. The 4-foot reveal height is more cost effective and provides a safer installation and normal operation and maintenance of the tracking system. To maintain these parameters, grading is required to level the terrain to allow the installation of the tracker. Where projects have north facing slopes or undulating terrain, the reveal height may be increased to 6 vertical feet in small segments in order to reduce the amount of grading.

b. Please describe the grading process, including, but not limited to, a description of equipment, what will be done with the spoils and whether fill will be brought in.

14.b. **Response:**

Grading includes both cut and fill activities. The grading process consists of the excavation and compaction of soil to meet the design requirements of the PV components. Higher areas are excavated (cut) and the material is used to raise the surface of an adjacent lower area (fill). The facilities will be designed as much as practical to have a 'balanced' site for earthwork, which is a site that does not require the import or export of earthen materials. If there are excess soils following the grading activities the material will either be spread across the facility or exported to a location offsite in accordance with local regulations. General fill is not anticipated but structural fill for roadways, foundations, etc. may be used within the facility. The structural fill will be determined with the final engineering design. Standard construction equipment will be used for earthwork moving activities, which may include, but is not limited to a front-end loader, dozer, road grader, backhoe, etc.

Best Management Practices (BMPs) will be used during construction and operation of the Project to protect topsoil and adjacent resources and to minimize soil erosion, whether the erosion is caused by water or wind. Practices may include containment of excavated material, protection of exposed soil, stabilization of restored material, and treating stockpiles to control fugitive dust. A Stormwater Pollution Prevention Plan will be developed for each facility prior to construction that will include BMPs such as silt fencing (or other erosion control devices), revegetation plans, and management of exposed soils to prevent erosion.

c. Please describe how the impacts the grading may have on future agricultural use and the mitigation measures that Aurora proposes to minimize adverse impacts to future agricultural or other uses.

14.c. **Response:**

As stated in Aurora's site permit application, Aurora will work to protect and preserve topsoils during construction to the extent practicable to minimize adverse impacts on future uses of the land. During construction, Aurora will remove and stockpile topsoil where the roads and laydown areas are constructed and in areas that are graded to provide a relatively uniform, non-north sloping surface for the solar arrays. Upon completion of the sub-soil grading, stockpiled topsoil will then be spread back over the disturbed areas. The management of perennial vegetation at each facility will serve to protect the topsoil from wind and water erosion and is expected to lead to soil-building and soil regeneration in a similar fashion to that which occurs in agricultural lands enrolled in the conservation reserve program. Furthermore, grading the facility to be flatter will only reduce slopes at the facility and will serve to reduce the potential for erosion of cultivated land. For the foregoing reasons, Aurora does not anticipate that grading could impact the use of the property for future agricultural use after the facility's useful life.

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Docket Nos.:	E6928/GS-14-515		
Response To:	DOC EERA	Information Request No. 15	
Date Received:	January 13, 2015	Response Date: January 20, 2015	

Request No.

15 **Post-Construction Vegetation**

The Site Permit Application describes revegetation of the disturbed areas:

- **At p. 26 "…temporary staging and laydown areas will be vacated and disturbed non-agricultural areas will be reseeded and revegetated consistent with a project-specific revegetation and restoration plan."**
- **At p. 28 ""low-growing seed mixes will be used under the solar arrays during the restoration process."**
- **At p. 77: "non-cropland areas will be reseeded with non-invasive species and regularly mowed to control for invasive plant species."**

a. **Please discuss generally the criteria for choosing re-seeding mixes.**

15.a. Response:

The general criteria for choosing re-seeding mixes are:

- Height of the seed mix. Aurora is unable to plant tall growing seed mixes that may impact the solar resource by shading the solar arrays.
- Maintenance of the seed mix. For example, Aurora is not able to burn any seed mixes as a way to maintain the seed mix because burning will damage the solar arrays so it must be able to maintain low-growing vegetation using methods other than burning.
- Soil of the facility. The soil type at each facility will dictate the seed mixes that will be successful at each location.
- Hydrology of the facility. The hydrology of the facility can influence the plants that will or will not successfully grow in a given location. For example, upland seed mixes will not grow well in a wetland area.

Currently, Aurora proposes using a low-growing seed mix that meets all of the above criteria at each facility. Aurora has been exploring pollinator seed mixes as well.

b. Are there any disturbed areas that Aurora does not propose to reseed?

15.b. Response:

Aurora will reseed all areas it temporarily disturbs. Aurora will not reseed areas where access roads are constructed.

c. Does Aurora propose to use entirely manual control (e.g. mowing) within the facilities, or are there areas where herbicides may be used?

15.c. Response:

Aurora prefers to manually control the vegetation; however Aurora is aware that invasive species need to be controlled. The seed mixture will not include invasive species, however if they are identified, invasive species will be controlled through targeted herbicide application.