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**Sally W. Bloomfield**  
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March 6, 2013

**Via Electronic Filing**

Ms. Barcy McNeal  
Administration/Docketing  
Public Utilities Commission of Ohio  
180 East Broad Street, 11<sup>th</sup> Floor  
Columbus, Ohio 43215-3793

**Re: Oregon Clean Energy, LLC  
Case No. 12-2959-EL-BGN**

Dear Ms. McNeal:

Oregon Clean Energy, LLC, submits for the public record (which was submitted electronically to the Ohio Power Siting Board staff) a copy of the attached System Impact Study.

Please do not hesitate to contact me if you have any questions.

Sincerely,

Sally W. Bloomfield

Attachment

Cc: Chris Cunningham (w/Attachment)



955 Jefferson Avenue  
Valley Forge Corporate Center  
Norristown, PA 19403-2497

**VIA Email**

**February 28, 2013**

**William Martin  
Oregon Clean Energy LLC  
20 Park Plaza, Suite #400  
Boston, MA 02116**

**Dear William Martin:**

**Re: Y1-069 – BAY SHORE – FOSTORIA CENTRAL 345kV – System Impact Study Report**

Enclosed, please find a report documenting the results of the **Y1-069** System Impact Study. The results of this study are predicated on a transmission system study base case year as listed in the Network Impacts section of the System Impact Study report based upon PJM's best assumptions at the present time for load growth and connection of proposed new generation additions. Short circuit duty screening was performed. Stability Analysis will be performed as part of the Facilities Study.

System Impact Studies are performed to determine the facilities required for interconnection and to define the estimated cost and timing for construction of attachment and direct connection network facilities, transmission and local network upgrades required for the reliable interconnection of a generation project to the PJM system. The attachment and direct connection facilities, transmission and local network upgrade costs and associated timing described in the enclosed report are based upon estimates given to PJM by the affected Transmission Owner(s). The costs are your responsibility as the project developer.

Costs for the System Impact Study are being tabulated and you will receive an invoice for any amount owed to PJM for the analysis.

Pursuant to Section 207 of the PJM Tariff, attached is a Facilities Study Agreement for your consideration. The Agreement must be executed and in PJM's possession within thirty days (by close of business on **April 1, 2013**) to maintain the project's position in the queue. Please execute two copies of the signature page. A refundable deposit in the amount of **\$100,000** must accompany the agreement and be in PJM's possession by the deadline stated above. In addition, this and any other queue requests that you may have in the PJM queue must be in good financial standing, and all information requested in the Milestones (Section 6) portion of the Agreement are required to accompany the signed agreement. Failure to meet these requirements will result in the project's withdrawal from the PJM queue. Please send the executed agreement, with two executed copies of the signature page, and required study deposit to:

Jeannette Mittan  
PJM Interconnection, LLC  
2750 Monroe Blvd.  
Norristown, PA 19403

If you prefer, you may provide a wire transfer instead of a check. Send it as follows:

<b>Bank:</b>	PNC Bank, NA, New Jersey
<b>ABA Number:</b>	031-207-607
<b>Account Number:</b>	8013589826

Please e-mail Jeannette Mittan at [mittaj@pjm.com](mailto:mittaj@pjm.com) with the project name, queue number, date, and amount of wire.

Note that Tariff §212.5 milestones require that you have all site permits, water and fuel agreements and associated right of way, and a memorandum of understanding for major equipment at the time you return your executed Interconnection Service Agreement (ISA). It is your responsibility to ensure these requirements are met and if they cannot be met at the time of the return of the ISA, you must demonstrate your due diligence and propose dates when those milestones will be met. PJM will amend ISA §6 to reflect any revised milestone dates.

If you desire to discuss the System Impact Study Report in more detail, please call me at (610) 666-4599 or email me at [SheaM@pjm.com](mailto:SheaM@pjm.com). A meeting or teleconference can be arranged for your convenience.

Sincerely,

*Michelle Shea*

Sr. Engineer  
PJM Interconnection Projects

mIs\jm DMS#741933v1

Attachments

PJM (w/attachments):

File

***PJM Generator Interconnection  
Queue #Y1-069  
Bay Shore – Fostoria Central 345kV and  
Bay Shore – Monroe 345kV  
(799MW Capacity)  
System Impact Study Report***

**February 2013  
DOCS#: 738683v2**

## **Preface**

The intent of this System Impact Study is to determine a plan, with cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

The PJM Reliability Planning Process utilizes PJM planning criteria, NERC Planning Standards, NERC Regional Council planning criteria, and the individual Transmission Owner FERC filed planning criteria. In all cases, PJM applies the most conservative of all applicable planning criteria when identifying reliability problems and determining the need for system upgrades on the PJM system. The application of the NERC Planning Standards is adapted to the specific needs of the PJM system.

In some instances an interconnection customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement. All facilities required for interconnection of a generation interconnection project must be designed in compliance with the technical specifications (on PJM web site) for the appropriate Transmission Owner.

After the System Impact Study Agreement is executed and prior to execution of the Interconnection Service Agreement, an Interconnection Customer may modify its project to reduce the electrical output (MW) (in the case of a Generation Interconnection Request) of the proposed project by up to the larger of 20 percent of the capability considered in the System Impact Study or 50 MW.

The System Impact Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

## **General**

Oregon Clean Energy, LLC (Interconnection Customer) is proposing a 799MW Capacity natural gas facility to be interconnected to the ATSI transmission system and located in Lucas County, OH. ATSI is a FirstEnergy (FE) company. The proposed in-service date is requested for **April 30, 2017**.

The intent of the System Impact Study is to determine system reinforcements, associated costs and construction time estimates required to facilitate the addition of the new generating plant to the transmission system. The reinforcements include the direct connection of the generator to the system and any network upgrades necessary to maintain the reliability of the transmission system.

## **Facilities to Accommodate the Interconnection**

### **Scope of Direct Connection Work**

#### **ATSI:**

The Y1-069 project will simultaneously tap of the Bay Shore – Fostoria Central 345kV line and the Bay Shore – Monroe 345kV line. The facility will consist of two 205MW gas combustion turbines and one 389MW steam generator for combined cycle operation. The Y1-069 Point of Interconnection is approximately 2.1 miles from Bayshore substation and approximately 24.1 miles from the ITC-owned Monroe substation. To accommodate this interconnection, installation of a new 345kV five-breaker ring bus or future breaker-and-a-half substation, disconnect switches, along with relaying, metering, RTU, SCADA and other miscellaneous supporting equipment will be required (See **Figure 1** below). The new 345kV five-breaker ring bus will be located will be paid for by the Interconnection Customer, but will be owned and operated by FirstEnergy. The direct connects are estimated to cost approximately **\$15,137,600** with an extra **\$3,783,200** tax gross-up if applicable (**\$18,920,800** total with tax included), to interconnect and take a minimum of **24 months** after the receipt of an executed Construction Service Agreement to complete the direct connection work (See **Table A** below for cost breakdown). The cost estimate above does not include any of the upgrades listed in the Network Impacts section of the report. It is expected to take up to **6 years and three months** to complete all FE network upgrades associated with thermal violations listed in the Network Impacts section of the report.

The Interconnection Customer is responsible for meeting all criteria as specified in the applicable sections of the “FirstEnergy Requirements for Transmission Connected Facilities” document.

The Interconnection Customer is responsible for constructing all of the Interconnection Customer-owned facilities on the Interconnection Customer’s side of the Point of Interconnection.

The new five breaker ring bus shall include breaker failure relays for each breaker, three phase CCVTs on each ring bus position and line relay panels containing primary and backup protection for each line exit.

ATSI connection requirements specify a wye-grounded high side and delta low side transformer connection for a generation-only facility. Dual independent high speed protection schemes are required at the Y1-069 facility. An additional SEL-351 intertie relay connected to PTs monitoring the 345kV voltages and CTs monitoring the currents on the Y1-069 transformer will also be required. Detailed protection requirements will be furnished with the Facilities Study.

Wave traps and other carrier equipment are required on the line exits to Monroe and Fostoria Central substations. Complete line relay replacements (primary and backup) are also required at each remote 345kV terminal (four total) due to the lines being sectionalized.

Fiber optic communications channels are required between the new sectionalizing ring bus and Bayshore substation for line protection, DRR and other communications. Depending on studies yet to be performed, two independent fiber routes may be required.

ON/OFF and FSK/DTT Power Line Carrier communications channel will be required between both Monroe and Fostoria Central substations and the sectionalizing five breaker ring bus substation for primary line protection.

Detailed protection requirements will be furnished with the Facilities Study. This protection analysis was completed using the information available to ATSI at the time of the study. Any further upgrades identified during the Facilities Study will result in the need to recalculate Short Circuit values and further review applicable protection schemes.

ATSI will complete detailed relay coordination studies to identify off-site relay setting changes required due to this generation interconnection. This may result in additional individual relay replacements being required. The relay replacements will be done at the cost of the Interconnection Customer.

The Interconnection Customer is solely responsible for protecting its own equipment in such a manner that electrical faults or other disturbances on the ATSI system do not damage the Interconnection Customer's equipment.

AEP:

The AEP-owned Fostoria Central substation will require, at a minimum, relay modifications that are estimated to cost approximately **\$300,000**. Please note that this cost estimate is preliminary in nature and was determined without the benefit of detailed engineering studies. Further protection requirements may be required in the Facilities Study. Final estimates will require an on-site review and coordination to determine final construction requirements.

ITC (MISO TO):

The ITC-owned Monroe substation will require, at a minimum, relay modifications that are estimated to cost approximately **\$350,000**. This is a desk-side estimate provided by ITC. The relay modifications cost estimate will be further refined in the Facilities Study. Further study will be done on these MISO facilities in the Facilities Study to identify any other system upgrades and the respective associated cost estimates.

**Direct Connection Cost Estimate**

The total preliminary cost estimate for Direct Connection work performed by ATSI is listed in the following table:

<b>Table 1. Direct Connect Cost Estimate</b>			
<b>Description</b>	<b>Total Cost</b>	<b>Tax</b>	<b>Total with Tax</b>
Loop in the Bayshore-Fostoria Central 345kV line and Bayshore-Monroe 345kV line into the proposed interconnecting substation utilizing steel pole structures	\$ 2,931,600	\$732,700	\$3,664,300
Engineering Oversight and Commissioning	\$134,600	\$33,700	\$168,300
Install new 345kV generation interconnection switching station (5 breaker ring bus)	\$11,747,200	\$2,935,700	\$14,682,900
Updated relaying on the 345kV Fostoria Central and Monroe lines at Bayshore substation.	\$324,200	\$81,100	\$405,300
<b>Total</b>	<b>\$15,137,600</b>	<b>\$3,783,200</b>	<b>\$18,920,800</b>

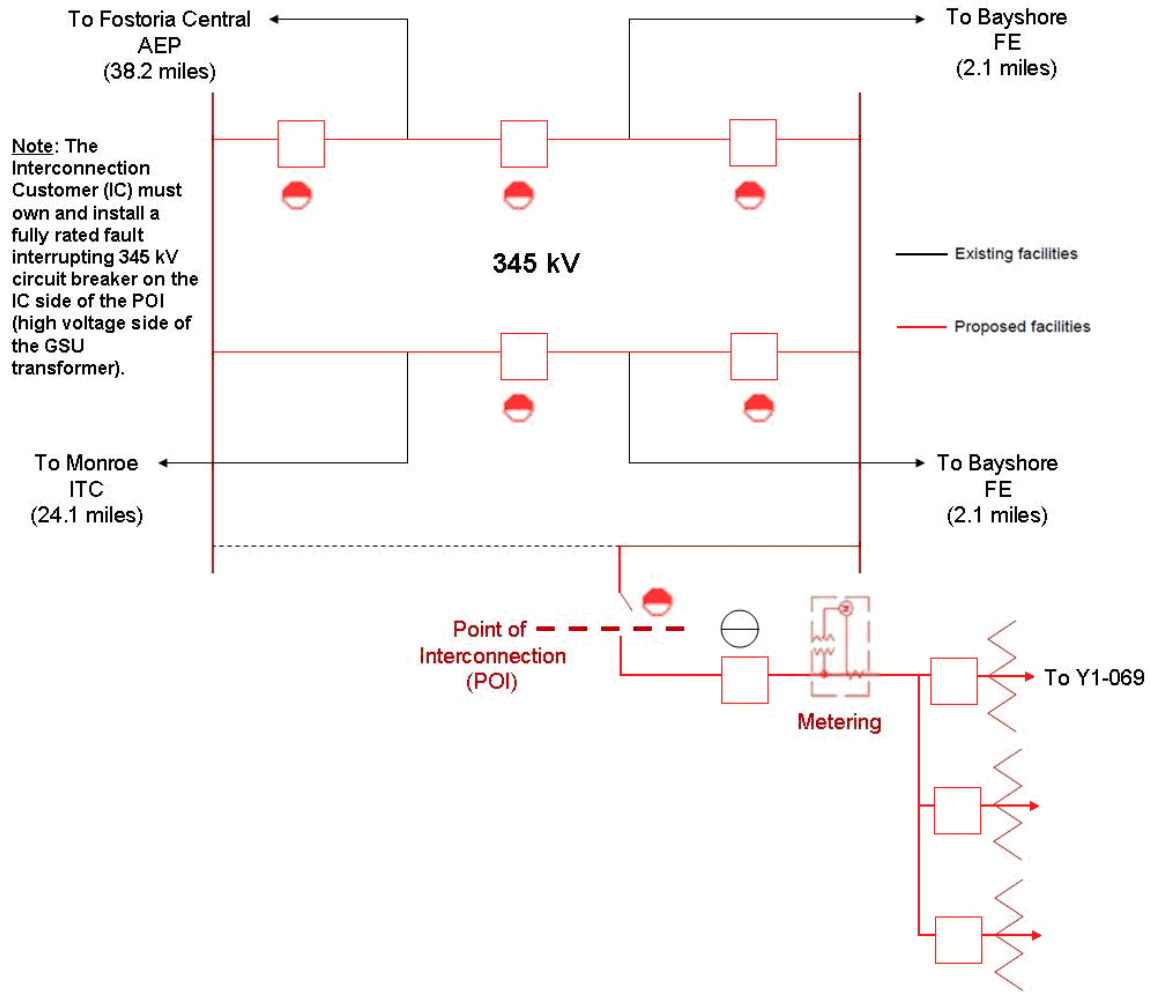
**Please note that the FirstEnergy/ATSI costs include a CIAC (Contribution in Aid of Construction) Federal Income Tax Gross Up charge which may or may not be charged based on whether or not this project meets the eligibility requirements of IRS Notice 88-129.**

**Revenue Metering and SCADA Requirements**

**For PJM:** The Interconnection Customer will install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 24.1 to 24.2.



**For ATSI:** The Interconnection Customer will be required to comply with all FE Revenue Metering Requirements for Generation Interconnection Customers. The Revenue Metering Requirements may be found within the “FirstEnergy Requirements for Transmission Connected Facilities” document located at the following links:  
[www.firstenergycorp.com/feconnect](http://www.firstenergycorp.com/feconnect)  
[www.pjm.com/planning/design-engineering/to-tech-standards.aspx](http://www.pjm.com/planning/design-engineering/to-tech-standards.aspx)



**Figure 1. Interconnection Single Line Diagram**

## Network Impacts

The Y1-069 project was studied as a 799MW Capacity injection into the ATSI area as a simultaneous tap of the **Bay Shore – Fostoria Central 345kV line and Bay Shore – Monroe 345kV line**. Project Y1-069 was evaluated for compliance with reliability criteria for summer peak conditions in 2015.

Potential network impacts were as follows:

Table 2: Contingency List	
Contingency Name	Description
513	CONTINGENCY '513'  OPEN BRANCH FROM BUS 238551 TO BUS 238569 CKT 1 / 238551 02AVON 345 238569 02BEAVER 345 1  OPEN BRANCH FROM BUS 238551 TO BUS 238569 CKT 2 / 238551 02AVON 345 238569 02BEAVER 345 2  END
B_LINE_SY	CONTINGENCY 'B_LINE_SY' /* LINE 02DAV-BE TO 02HAYES 345 CK 1  DISCONNECT BRANCH FROM BUS 238654 TO BUS 239289 CKT 1 /* 02DAV- BE 345.00 02HAYES 345.00  END
C5-TWL-CR040A	CONTINGENCY 'C5-TWL-CR040A' /* DAVIS BESSE-X1-027 + DAVIS BESSE-HAYES 345KV  DISCONNECT BRANCH FROM BUS 238654 TO BUS 239289 CKT 1 /* 02DAV- BE 345.00 02HAYES 345.00  DISCONNECT BRANCH FROM BUS 238654 TO BUS 907710 CKT 1 /* 02DAV- BE 345.00 X1-27A TAP 345.00  END
C5-TWL-CR041A	CONTINGENCY 'C5-TWL-CR041A' /* X1-027-BEAVER + BEAVER-HAYES 345KV  DISCONNECT BRANCH FROM BUS 238569 TO BUS 239289 CKT 1 /* 02BEAVER 345.00 02HAYES 345.00  DISCONNECT BRANCH FROM BUS 907710 TO BUS 238569 CKT 1 /* X1-27A TAP 345.00 02BEAVER 345.00  END

### **Generator Deliverability**

*(Single or N-1 contingencies for the Capacity portion only of the interconnection)*

Table 3 below provides a summary of the impacts caused by Y1-069 on the ATSI transmission system and other TO areas for generator deliverability:

Table 3: Generator Deliverability Impact												
Item #	Contingency		Overloaded Element	Bus		Ckt	Loading		Rating		MW Contribution	Appendix #
	Type	Name		From	To		Initial	Final	Type	MVA		
1a	N-1	B_LINE_SY	02OTTAWA-02LAKVEW 138 kV line	239030	238874	1	95.39	106.29	ER	375	40.67	1

### **Multiple Facility Contingency**

*(Double Circuit Tower Line(DCTL), Line with Failed Breaker(LFFB) and Bus Fault(Bus) contingencies for the full energy output.)*

No violations were found.

### **Contribution to Previously Identified Overloads**

*(This project contributes to the following contingency overloads, i.e. “Network Impacts”, identified for earlier generation or transmission interconnection projects in the PJM Queue)*

Table 4 below provides a summary of the impacts caused by Y1-069 on the ATSI transmission system and other TO areas for contribution to previously identified overloads:

Table 4: Contribution to Previously Identified Overloads												
Item #	Contingency		Overloaded Element	Bus		Ckt	Loading		Rating		MW Contribution	Appendix #
	Type	Name		From	To		Initial	Final	Type	MVA		
2a	DCTL	C5-TWL-CR040 A	02OTTAWA-02LAKVEW 138 kV line	239030	238874	1	155.89	164.74	ER	375	73.64	2
2b	DCTL	C5-TWL-CR040 A	02LAKVEW-02GRNFLD 138 kV line	238874	238768	1	156.41	166.91	ER	316	73.64	3

### **Short Circuit**

*(Summary of impacted circuit breakers)*

PJM has completed the short circuit analysis of the Y1-069 queue project **Bay Shore-Fostoria Central 345kV**. One option was considered during this study: the primary option was a tap of the Bay Shore and Fostoria and the Bay Shore and Monroe 345kV lines.

PJM analysis showed a significant fault contribution (i.e. above 3%) to 9 breakers, which were already identified as over-duty in the ATSI transmission area. The breaker is listed below:

Bus_NO	BUS	BREAKER	Duty % with Y1-069_ATSI	Duty % without Y1-069_ATSI	Duty % Difference	Notes	ID	In-Svc Year
0	GRENFIELD138 138.kV	501-B-68	204.00%	162.40%	41.60%	Over 100%, > 3% contribution	b1617	2011
0	GRENFIELD138 138.kV	501-B-1	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.1	2015
0	GRENFIELD138 138.kV	501-B-21	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.2	2015
0	GRENFIELD138 138.kV	501-B-227	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.3	2015
0	GRENFIELD138 138.kV	501-B-23	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.4	2015
0	GRENFIELD138 138.kV	501-B-242	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.5	2015
0	GRENFIELD138 138.kV	501-B-36	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.6	2015
0	GRENFIELD138 138.kV	501-B-38	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.7	2015
0	GRENFIELD138 138.kV	501-B-40	144.20%	114.40%	29.80%	Over 100%, > 3% contribution	b1281.8	2015

ATSI has verified that all of the Greenfield 138kV circuit breakers are part of a baseline upgrade. Therefore, this project will not be responsible for any cost allocation to upgrading the Greenfield 138kV circuit breakers.

PJM analysis also found **3 new breakers** to be over-duty in the AEP transmission area. **This is originally an ATSI project but an AEP bus is 3 or more buses away.** The new over-duty breakers are listed below:

Bus_NO	BUS	BREAKER	Duty % with Y1-069_ATSI	Duty % without Y1-069_ATSI	Duty % Difference	Notes
0	05E LIMA 138.kV	D1	100.60%	99.60%	1.40%	New Overduty
0	05E LIMA 138.kV	B2	100.60%	99.10%	1.50%	New Overduty
1174	05LINCOL 138.kV	D	100.60%	99.50%	1.10%	New Overduty

The following upgrades listed in **Table 5** will mitigate the overdutied breakers listed above:

<b>Table 5. AEP Breaker Replacement Cost Estimate</b>	
<b>Description</b>	<b>Total Cost</b>
Replace overdutied 138kV circuit breaker D1 at East Lima.	\$850,000
Replace overdutied 138kV circuit breaker B2 at East Lima.	\$850,000
Replace overdutied 138kV circuit breaker D at Lincoln	\$850,000
<b>Total</b>	<b>\$2,550,000</b>

### **New System Reinforcements**

*(Upgrades required to mitigate reliability criteria violations, i.e. Network Impacts, initially caused by the addition of this project generation)*

For Item 1a, the overload of the 02OTTAWA-02LAKVIEW 138 kV line can be relieved by the following proposed by ATSI below in **Table 1a**. The total estimated cost to perform this work is **\$45,095,300** with an extra **\$11,260,600** tax gross-up if applicable (**\$56,355,900** total with tax included). **The upgrades that mitigate this overload are part of baseline upgrade b1959 and this project is not required to pay for these upgrade costs.** The baseline is currently scheduled to go in-service in 2018. **If this project chooses to go in-service before the baseline upgrades are in-service, the project may be curtailed until the baseline is in-service.** Currently it does not appear that advancement of this baseline project is capable. However, if the developer would like for PJM and ATSI to review this again, it will be reviewed as a part of the Facilities Study. If it is found that the baseline project can be advanced and the developer elects to pay for the advancement, then curtailment of this project may be reduced or eliminated.

<b>Table 1a. Reinforcements for Ottawa-Lakeview 138kV Line and Lakeview – Greenfield 138kV line Overloads</b>			
<b>Reinforcement Description</b>	<b>Upgrade Cost</b>	<b>Tax</b>	<b>Total with Tax</b>
Add a new 138kV circuit breaker at the Hayes substation for the new Hayes – West Freemont #2 138kV line and modify relaying for the Groton 138kV substation	\$1,045,100	\$261,200	\$1,306,300
Add two new 138kV circuit breakers at West Freemont substation to create a new line exit for the new Hayes – West Freemont #1 138kV line	\$2,075,500	\$518,700	\$2,594,200

Install new Groton 138/69kV substation near existing Bellvue – Greenfield 69kV line	\$12,148,900	\$3,036,100	\$15,185,000
Upgrade relaying at Hayes on the 138kV line exit to new Groton substation	\$261,400	\$65,400	\$326,800
Update West Fremont substation nameplates and drawings that reference the previous Hayes– Fremont 138kV line. Line will now go to Groton substation.	\$42,600	\$10,700	\$53,300
Update Greenfield nameplates and drawings that reference the previous Bellevue – Greenfield 69kV line. Line will now go to Groton substation.	\$36,800	\$9,200	\$46,000
Update Bellview substation nameplates and drawings that reference the previous Bellevue – Greenfield 69kV line. Line will now go to Groton substation.	\$36,800	\$9,200	\$46,000
Loop new Groton 138/69kV substation into the new Hayes – West Freemont 138kV line	\$1,686,500	\$421,500	\$2,108,000
Loop new Groton 138/69kV substation into the Bellvue – Greenfield West 69kV line	\$204,400	\$51,100	\$255,500
Build new 28 mile Hayes – West Freemont #1 138kV line( <b>15 miles in Toledo Edison and 13 miles in Ohio Edison</b> ). The exact route will be determined after route selection studies are completed.	\$26,234,000	\$6,555,900	\$32,789,900
Install 28 miles of new fiber on new Hayes – Groton – West Freemont #1 138kV line( <b>Ohio Edison 13 miles</b> ). (Assumes fiber will be installed as part of the transmission line installation, meaning no permitting costs included. Transmission easement must include rights for communication.)	\$389,900	\$97,500	\$487,400
Install 28 miles of new fiber on new Hayes – Groton – West Freemont #1 138kV line( <b>Toledo Edison 15 miles</b> ). (Assumes fiber will be installed as part of the transmission line installation, meaning no permitting costs included. Transmission easement must include rights for communication.)	\$447,600	\$111,900	\$559,500
Install approximately 1 mile of new fiber from new proposed West Fremont – Groton – Hayes 138kV line. (Assumes fiber will be installed as part of the transmission line installation, meaning no permitting costs included. Transmission easement must include rights for communication.)	\$53,700	\$13,500	\$67,200
Replace existing relaying at West Fremont substation on Clyde 69kV line	\$288,400	\$65,300	\$353,700
Upgrade 69kV line relaying at Bellevue substation to Flat Rock – Clyde 69kV line	\$143,700	\$33,400	\$177,100
<b>Total estimated cost:</b>	<b>\$45,095,300</b>	<b>\$11,260,600</b>	<b>\$56,355,900</b>

### **Contribution to Previously Identified System Reinforcements**

*(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)*

For Items 2c and 2d, the overloads of the 02OTTAWA-02LAKVIEW 138 kV line and 02LAKVIEW-02GRNFLD 138 kV line can be relieved by the reinforcements for item 1a listed in the above **New System Reinforcements** section.

### **Steady-State Voltage Requirements**

*(Summary of VAR requirements based upon the results of the steady-state voltage studies.)*

None.

### **Light Load Reliability Analysis**

*(Summary of any reinforcements required to mitigate system reliability issues during light load periods. This light load study was evaluated for compliance with reliability criteria for **Light Load conditions** in 2014.)*

Not required.

### **Stability and Reactive Power Requirements**

*(Summary of VAR requirements based upon the results of the dynamic studies.)*

#### **PJM:**

Stability and Reactive Power Requirements will be provided as part of the Facilities Study.

#### **ATSI:**

ATSI requires that a power factor range of 0.95 leading (absorbing VARs) to 0.90 lagging (producing VARs) must be met at the generator terminals.

### **Potential Issues**

PJM has contacted both MISO and ITC. During the Facilities Study, per the JOA between MISO and PJM, any upgrades in MISO will be identified and finalized.

The 02HAYES 345/138 kV transformer is on the edge of being overloaded and potentially could be identified as an overload during the Facilities Study.

### **Potential Congestion Issues**

*PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The Interconnection Customer can proceed with network upgrades to*

*eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.*

*Only the most severely overloaded conditions are listed. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed, which will study all overload conditions associated with the overloaded element(s) identified.*

As a result of the aggregate energy resources in the area, no violations were identified.

## **Appendix 1**

Bus Number	Bus Name	Full Contribution
238564	02BAYSG1	1.37
238565	02BAYSG2	1.39
238566	02BAYSG3	1.43
238567	02BAYSG4	2.16
238568	02BAYSHO	.16
238601	02FRMENG 1	3.32
238602	02FRMENG 2	3.32
238603	02FRMENG 3	6.
238885	02LEMOG1	.74
238886	02LEMOG2	.74
238887	02LEMOG3	.74
238888	02LEMOG4	.74
239064	02RICHG1	.06
239065	02RICHG2	.06
239066	02RICHG3	.06
239067	02RICHG4	.61
239068	02RICHG5	.61
239069	02RICHG6	.61
239202	02STRYCT	.11
240950	BG5	2.06
889031	U2-028A OP1	15.62
891141	U4-028 C	1.18
891151	U4-029 C	1.18
LTF	V2-031	1.06
LTF	V2-032	1.05
LTF	V2-033	.02
LTF	V2-034	.72
LTF	V3-012	6.45
900031	V4-010 C	3.24
900041	V4-011	.17
900061	V4-015 C	.52
900321	V4-039A	.59
LTF	V4-060	.85



LTF	V4-061	.85
LTF	W1-016	.85
LTF	W1-017	.85
LTF	W1-018	.85
LTF	W1-019	.85
LTF	W1-020	.78
901337	W1-072A	2.28
LTF	W1-079	.81
902141	W2-001 C	.52
LTF	W3-083	1.88
LTF	W4-049	.15
LTF	W4-050	.15
LTF	X1-056	.67
LTF	X1-057	.67
LTF	X1-058	.67
LTF	X1-065	.81
LTF	X2-042	9.63
909311	X2-058 C	1.2
910501	X3-001 C	.04
LTF	X3-020	2.9
LTF	X3-021	33.18
910611	X3-023 C OP1	.41
LTF	X3-096	8.37
LTF	X3-097	9.73
LTF	X3-098	9.5
LTF	X4-029D	3.04
LTF	X4-41	6.03
LTF	Y1-002	6.03
LTF	Y1-004	6.98
LTF	Y1-007	4.85
LTF	Y1-041	3.04
LTF	Y1-059	.64
913351	Y1-069	40.67

## **Appendix 2**

Bus Number	Bus Name	Full Contribution
238564	02BAYSG1	1.77
238565	02BAYSG2	1.8
238566	02BAYSG3	1.85
238567	02BAYSG4	2.8
238568	02BAYSHO	.21
239297	02CPPW41	-2.37
238601	02FRMENG 1	3.67
238602	02FRMENG 2	3.67

238603	02FRMENG 3	6.62
240950	BG5	2.83
239276	COLLW 11	-1.93
296146	R-048 E	2.32
889031	U2-028A OP1	20.33
891141	U4-028 C	1.46
891142	U4-028 E	9.75
891151	U4-029 C	1.46
891152	U4-029 E	9.75
893021	V2-006 C	1.25
893022	V2-006 E	8.39
LTF	V2-031	1.77
LTF	V2-032	1.74
LTF	V2-033	.03
LTF	V2-034	1.21
LTF	V3-012	10.8
900031	V4-010 C	3.8
900032	V4-010 E	25.45
900041	V4-011	.25
900061	V4-015 C	.75
900062	V4-015 E	5.08
900321	V4-039A	.65
LTF	V4-060	1.41
LTF	V4-061	1.41
LTF	W1-016	1.41
LTF	W1-017	1.41
LTF	W1-018	1.41
LTF	W1-019	1.41
LTF	W1-020	1.3
901337	W1-072A	4.01
LTF	W1-079	1.35
902141	W2-001 C	.75
902142	W2-001 E	5.08
902161	W2-007 C	.84
902162	W2-007 E	5.59
903231	W3-005 C OP1	5.21
903232	W3-005 E OP1	34.87
LTF	W3-083	3.14
903901	W3-085 C	1.53
903902	W3-085 E	10.25
LTF	W4-049	.27
LTF	W4-050	.27
LTF	X1-056	1.11
LTF	X1-057	1.11
LTF	X1-058	1.11

LTF	X1-065	1.35
LTF	X2-042	15.73
909311	X2-058 C	1.73
909312	X2-058 E	11.84
910501	X3-001 C	.05
910502	X3-001 E	.09
LTF	X3-020	4.82
LTF	X3-021	56.37
910611	X3-023 C OP1	.53
910612	X3-023 E OP1	3.55
LTF	X3-096	13.74
LTF	X3-097	15.93
LTF	X3-098	15.57
LTF	X4-029D	4.99
LTF	X4-41	9.86
LTF	Y1-002	9.86
LTF	Y1-004	11.4
LTF	Y1-007	7.92
913151	Y1-030 C OP1	.75
913152	Y1-030 E OP1	5.05
LTF	Y1-041	4.99
LTF	Y1-059	1.05
913351	Y1-069	73.64

### **Appendix 3**

Bus Number	Bus Name	Full Contribution
238564	02BAYSG1	1.77
238565	02BAYSG2	1.8
238566	02BAYSG3	1.85
238567	02BAYSG4	2.8
238568	02BAYSHO	.21
239297	02CPPW41	-2.37
238601	02FRMENG 1	3.67
238602	02FRMENG 2	3.67
238603	02FRMENG 3	6.62
240950	BG5	2.83
239276	COLLW 11	-1.93
296146	R-048 E	2.32
889031	U2-028A OP1	20.33
891141	U4-028 C	1.46
891142	U4-028 E	9.75
891151	U4-029 C	1.46
891152	U4-029 E	9.75
893021	V2-006 C	1.25

893022	V2-006 E	8.39
LTF	V2-031	1.77
LTF	V2-032	1.74
LTF	V2-033	.03
LTF	V2-034	1.21
LTF	V3-012	10.8
900031	V4-010 C	3.8
900032	V4-010 E	25.45
900041	V4-011	.25
900061	V4-015 C	.75
900062	V4-015 E	5.08
900321	V4-039A	.65
LTF	V4-060	1.41
LTF	V4-061	1.41
LTF	W1-016	1.41
LTF	W1-017	1.41
LTF	W1-018	1.41
LTF	W1-019	1.41
LTF	W1-020	1.3
901337	W1-072A	4.01
LTF	W1-079	1.35
902141	W2-001 C	.75
902142	W2-001 E	5.08
902161	W2-007 C	.84
902162	W2-007 E	5.59
903231	W3-005 C OP1	5.21
903232	W3-005 E OP1	34.87
LTF	W3-083	3.14
903901	W3-085 C	1.53
903902	W3-085 E	10.25
LTF	W4-049	.27
LTF	W4-050	.27
LTF	X1-056	1.11
LTF	X1-057	1.11
LTF	X1-058	1.11
LTF	X1-065	1.35
LTF	X2-042	15.73
909311	X2-058 C	1.73
909312	X2-058 E	11.84
910501	X3-001 C	.05
910502	X3-001 E	.09
LTF	X3-020	4.82
LTF	X3-021	56.37
910611	X3-023 C OP1	.53
910612	X3-023 E OP1	3.55

LTF	X3-096	13.74
LTF	X3-097	15.93
LTF	X3-098	15.57
LTF	X4-029D	4.99
LTF	X4-41	9.87
LTF	Y1-002	9.87
LTF	Y1-004	11.4
LTF	Y1-007	7.92
913151	Y1-030 C OP1	.75
913152	Y1-030 E OP1	5.05
LTF	Y1-041	4.99
LTF	Y1-059	1.05
913351	Y1-069	73.64

## **FACILITIES STUDY AGREEMENT**

(PJM Queue Position #Y1-069)

### **RECITALS**

1. This Facilities Study Agreement ("Agreement"), dated as of February 28, 2013, is entered into by and between Oregon Clean Energy LLC ("New Service Customer") and PJM Interconnection, L.L.C. ("Transmission Provider"), pursuant to Part VI of the PJM Interconnection, L.L.C. Open Access Transmission Tariff ("PJM Tariff").
2. Pursuant to Section 36.2 or Section 205 of the PJM Tariff, Transmission Provider has completed a Generation or Transmission Interconnection Feasibility Study or an Initial Study (as applicable) and a System Impact Study and has provided the results of those studies to New Service Customer.
3. Transmission Provider has informed New Service Customer that the estimated date for completion of a Facilities Study pursuant to Section 206 of the PJM Tariff is **October 1, 2013** and that New Service Customer's estimated cost responsibility for such Facilities Study, subject to revision as provided in this Agreement, is **\$100,000**.
4. New Service Customer desires that Transmission Provider commence a Facilities Study for the New Service Request with Queue Position **Y1-069**.

### **PREVIOUS SUBMISSIONS**

5. Except as otherwise specifically set forth in an attachment to this Agreement, New Service Customer represents and warrants that the information provided in section 3 of the Feasibility Study Agreement, dated May 02, 2012, by and between New Service Customer and Transmission Provider, and to the extent supplemented as set forth in section 4 of the System Impact Study Agreement, dated September 18, 2012, by and between New Service Customer and Transmission Provider, is accurate and complete as of the date of execution of this Facilities Study Agreement.

### **MILESTONES**

6. Pursuant to Section 206.1 of the PJM Tariff, the parties agree that New Service Customer must meet the following milestone dates relating to the development of its generation or merchant transmission project(s) or New Service Request, as applicable, in order to retain the assigned Queue Position of its New Service Request(s) (as established pursuant to Section 201 of the PJM Tariff) while Transmission Provider is completing the Facilities Study:
  - 6.1 Unless New Service Customer previously specified, in its initial drawing submitted to Transmission Provider, the location of the high-side of the generator step-up transformer,

then on or before June 3, 2013, New Service Customer must provide evidence of an ownership interest in, or right to acquire or control the location which shall be on the high voltage side of the Customer Facility generator step-up transformer(s), or in the case of a Customer Facility with a single step-up transformer for multiple generators, the high voltage side of the facility step-up transformer. The evidence of site control shall be a deed, option agreement, lease, or other similar document acceptable to the Transmission Provider.

- 6.2 To the extent New Service Customer intends to elect the Option to Build as provided in Appendix 2 to Attachment P of the Tariff, and to the extent any new or additional property is required to accommodate required Attachment Facilities, on or before June 3, 2013, New Service Customer must provide evidence of an ownership interest in, or right to acquire or control the location which shall be the location of the network substation which shall be built and subsequently transferred to the Interconnected Transmission Owner. The evidence of site control shall be a deed, option agreement, lease, or other similar document acceptable to the Transmission Provider.

Should New Service Customer fail to achieve any of the foregoing milestones, its New Service Request(s) shall be deemed to be withdrawn and terminated and it will have to resubmit its New Service Request(s) for reassignment of a Queue Position and re-initiation of the New Service Request study process.

## **PURPOSE AND SCOPE OF THE FACILITIES STUDY**

7. Transmission Provider, in consultation with the affected Transmission Owner(s), shall commence a Facilities Study pursuant to Section 206 of the PJM Tariff to evaluate the Attachment Facilities, Local Upgrades and/or Network Upgrades necessary to accommodate New Service Customer's New Service Request assigned Queue Position **Y1-069**.
- A. **Scope of Facilities Study:** The purpose of the Facilities Study is to provide, commensurate with any mutually agreed parameters regarding the scope and degree of specificity described in Schedule A attached to this agreement, conceptual engineering and, as appropriate, detailed design, plus cost estimates and project schedules, to implement the conclusions of the System Impact Study regarding the Attachment Facilities, Local Upgrades and Network Upgrades necessary to accommodate the New Service Customer's New Service Request(s). Cost estimates shall be determined in a manner consistent with Section 217 of the PJM Tariff. The nature and scope of the materials that Transmission Provider shall deliver to the New Service Customer upon completion of the Facilities Study shall be described in the PJM Manuals.
- B. **Facilities Study Cost and Time Estimate:** Transmission Provider's estimates of the date for completion of the Facilities Study and of New Service Customer's cost responsibility for the Facilities Study are stated in section 3 of this Agreement. In the event that Transmission Provider determines that it will be unable to complete the Facilities Study by the estimated completion date stated in

section 3 of this Agreement, it shall notify New Service Customer and will explain the reasons for the delay. New Service Customer agrees that its estimated cost responsibility stated in section 3 is subject to revision as provided in sections 14, 15 and 16 of this Agreement.

8. The Facilities Study necessarily will employ various assumptions regarding New Service Customer's New Service Request(s), other pending New Service Requests, and PJM's Regional Transmission Expansion Plan at the time of the study. IN NO EVENT SHALL THIS AGREEMENT OR THE FACILITIES STUDY IN ANY WAY BE DEEMED TO OBLIGATE TRANSMISSION PROVIDER OR THE TRANSMISSION OWNERS TO CONSTRUCT ANY FACILITIES OR UPGRADES OR TO PROVIDE ANY TRANSMISSION OR INTERCONNECTION SERVICE TO OR ON BEHALF OF NEW SERVICE CUSTOMER EITHER AT THIS POINT IN TIME OR IN THE FUTURE.

### **CONFIDENTIALITY**

9. New Service Customer agrees to provide all information requested by Transmission Provider necessary to complete the Facilities Study. Subject to section 10 of this Agreement and to the extent required by Section 222 of the PJM Tariff, information provided pursuant to this section 9 shall be and remain confidential.
10. Until completion of the Facilities Study, Transmission Provider shall keep confidential all information provided to it by the New Service Customer. Upon completion of the Facilities Study, Transmission Provider shall provide a copy of the study to New Service Customer, and to all other New Service Customers whose New Service Requests were evaluated in the Facilities Study, along with (to the extent consistent with Transmission Provider's confidentiality obligations in Section 18.17 of the Operating Agreement) all related work papers. Transmission Provider also shall post on its OASIS the existence of the Facilities Study. New Service Customer acknowledges and consents to such other, additional disclosures of information as may be required under the PJM Tariff or the FERC's rules and regulations.
11. New Service Customer acknowledges that, consistent with Part VI of the PJM Tariff, the affected Transmission Owner(s) will participate in the Facilities Study process and that Transmission Provider may disseminate information to the affected Transmission Owner(s) and may consult with them regarding part or all of the Facilities Study.

### **COST RESPONSIBILITY**

12.
  - A. New Service Customer shall reimburse Transmission Provider for all, or for an allocated portion of, the actual cost of the Facilities Study in accordance with its cost responsibility as determined under Section 206 of the PJM Tariff.
  - B. Prior to initiating the Facilities Study, Transmission Provider shall bill New Service Customer for New Service Customer's share of the cost of work on the study that is scheduled to be completed during the first three months after work commences.



Thereafter, on or before the 5th business day of every third month, Transmission Provider shall bill New Service Customer for New Service Customer's share of the cost of work expected to be completed on the Facilities Study during the ensuing three months. New Service Customer shall pay each bill within twenty (20) days after receipt thereof. In the event New Service Customer fails, other than as provided below regarding billing disputes, to make timely payment of any invoice for work on the Facilities Study, its New Service Request shall be deemed to be terminated and withdrawn as of the date when payment was due. Notwithstanding the foregoing, in the event that the total estimated cost of the Facilities Study does not exceed the amount of the deposit required under Section 206 of the PJM Tariff, Transmission Provider shall apply the deposit in payment of the invoices for the cost of the Facilities Study. Upon written request by the New Service Customer pursuant to Section 206.4.1.1 of the PJM Tariff, Transmission Provider may provide a quarterly cost reconciliation. Subject to the following sentence regarding the final cost reconciliation upon completion of the Facility Study, such a quarterly cost reconciliation will have a one-quarter lag, e.g., reconciliation of costs for the first calendar quarter of work will be provided at the start of the third calendar quarter of work. Within 120 days after Transmission Provider completes the Facilities Study, Transmission Provider shall provide a final invoice presenting an accounting of, and the appropriate party shall make any payment to the other that is necessary to resolve, any difference between (a) New Service Customer's cost responsibility under this Agreement and the PJM Tariff for the actual cost of the Facilities Study and (b) New Service Customer's aggregate payments hereunder, including its deposits.

C. In the event of a billing dispute, Transmission Provider shall continue to perform its obligations under this Agreement so long as (1) New Service Customer continues to make all payments not in dispute, and (2) New Service Customer's aggregate deposits held by Transmission Provider under this Agreement while the dispute is pending exceeds the amount in dispute, or (3) New Service Customer pays to Transmission Provider or into an independent escrow account the portion of the invoice in dispute, pending resolution of such dispute. If New Service Customer fails to meet any of these requirements, then its New Service Request shall be deemed to be terminated and withdrawn as of the date when payment was due.

13. Concurrent with execution of this Agreement, New Service Customer will pay Transmission Provider a cash deposit, as provided by Section 206 of the PJM Tariff, equal to the greater of \$100,000.00 or New Service Customer's estimated cost responsibility for the first three months of work on the Facilities Study. Notwithstanding the foregoing, an Interconnection Customer with a proposed Customer Facility that is: (a) equal to or less than 20 MW but greater than 2 MW shall pay a refundable deposit in the amount of \$50,000; or (b) equal to or less than 2 MW shall pay a refundable deposit in the amount of \$15,000. New Service Customer's quarterly estimated cost responsibility shall equal its estimated cost responsibility for the work on the Facilities Study that is scheduled to be completed during each three-month period after such work commences. If New Service Customer fails timely to provide the deposit required by this section, its New Service Request shall be deemed terminated and withdrawn and this Agreement shall be null and void. New Service Customer acknowledges that it may become obligated to pay one or more additional deposits pursuant to sections 14 and 15 below.

Except as otherwise provided in section 12.B above, Transmission Provider shall continue to hold the amounts on deposit under this agreement until settlement of the final invoice.

14. If the Facilities Study, as described in section 7.A of this Agreement, is to include evaluation of more than one New Service Request and one or more of those requests is terminated and withdrawn, subject to the terms of section 15 of this Agreement, Transmission Provider will redetermine and reallocate the costs of the Facilities Study among the remaining participating New Service Customers in accord with Section 206 of the PJM Tariff. In that event, and subject to the terms of section 15, within 30 days after the date for execution and return of Facilities Study Agreements as determined under Section 206 of the PJM Tariff, Transmission Provider will provide the New Service Customer with a written statement of the New Service Customer's revised responsibility for the estimated cost of the Facilities Study, determined in accordance with Section 206 of the PJM Tariff. In the event that New Service Customer's revised cost responsibility exceeds the sum of its previous deposits for the Facilities Study, it shall deliver to Transmission Provider, within 10 days after New Service Customer's receipt of its revised cost responsibility, an additional cash deposit equal to the amount of the excess. If New Service Customer fails timely to provide an additional deposit that is required under this section, its New Service Request shall be deemed terminated and withdrawn as of the date by which its additional deposit was due. In the event that New Service Customer's revised cost responsibility under the notice described in this section is less than the sum of its previous deposits for the Facilities Study, Transmission Provider shall return to New Service Customer, with its notice of the revised cost responsibility, the amount of the difference.
15.
  - A. This section shall apply prior to commencement of the Facilities Study (1) if the Facilities Study is to include multiple New Service Requests; and (2) if, in Transmission Provider's reasonable judgment, the termination and withdrawal of one or more of those New Service Requests significantly changes the group of New Service Requests to be included in the Facilities Study from the group that was included in the System Impact Study. For the purposes of this section, a change to the group of New Service Requests to be included in the Facilities Study shall be significant if, in Transmission Provider's reasonable engineering judgment, the change is likely to cause the system constraints relating to, and/or the facilities and upgrades necessary to accommodate, the group of New Service Requests remaining to be included in the Facilities Study to differ materially from the system constraints relating to, and/or from the facilities and upgrades necessary to accommodate, the group of New Service Requests that the System Impact Study evaluated.
  - B. In the event of a significant change to the group of New Service Requests that the System Impact Study evaluated, within 15 days after the date for execution and return of Facilities Study Agreements as determined under Section 206 of the PJM Tariff, Transmission Provider shall provide New Service Customer with an explanation of the nature and extent of the change in the affected group of New Service Requests and of the extent to which Transmission Provider has determined that it must re-assess the results of the System Impact Study. Within 30 days after it provides the explanation described in

the preceding sentence, Transmission Provider shall provide New Service Customer with a revised estimate of the time needed, and of the likely cost, to complete the Facilities Study, and, if the study continues to include evaluation of more than one New Service Customer's New Service Request(s), New Service Customer's allocated share of the estimated cost of the revised Facilities Study, determined in accord with Section 206 of the PJM Tariff.

C. In the event that New Service Customer's revised cost responsibility exceeds the sum of its previous deposits for the Facilities Study, it shall deliver to Transmission Provider, within 10 days after New Service Customer's receipt of its revised cost responsibility, an additional cash deposit equal to the amount of the excess. If New Service Customer fails timely to provide an additional deposit that is required under this section, its New Service Request shall be deemed terminated and withdrawn as of the date by which its additional deposit was due. In the event that New Service Customer's revised cost responsibility under the notice described in this section is less than the sum of its previous deposits for the Facilities Study, Transmission Provider shall return to New Service Customer, with its notice of the revised cost responsibility, the amount of the difference.

16. A. If the Facilities Study includes New Service Customer's New Service Request(s) only, New Service Customer may terminate its participation in the study at any time by providing written notice of termination to Transmission Provider. New Service Customer's notice of termination (1) shall be effective as of the end of the business day following the day that Transmission Provider receives such notice and (2) concurrently shall have the effect of terminating and withdrawing New Service Customer's New Service Request(s). New Service Customer will be responsible for all costs of the Facilities Study that Transmission Provider incurred prior to the effective date of the notice of termination. Within thirty (30) days after the effective date of New Service Customer's notice of termination, Transmission Provider will deliver to New Service Customer a statement of New Service Customer's responsibility for the costs of the Facilities Study incurred up to the date of termination. In the event that New Service Customer's cost responsibility as of the date of termination exceeds the sum of its deposits then held by Transmission Provider for the Facilities Study, Transmission Provider's statement will include an invoice in the amount of such excess. New Service Customer will pay that invoice within ten (10) days after it receives it. In the event that New Service Customer does not pay the invoice within ten (10) days after receipt, New Service Customer shall owe the invoice amount plus interest at the applicable rate prescribed in 18 C.F.R. § 35.19a (a)(2)(iii), accrued from the day after the date payment was due until the date of payment. In the event that New Service Customer's cost responsibility as of the date of termination was less than the sum of its deposits for the Facilities Study, Transmission Provider's statement will include a payment to New Service Customer in the amount of the difference.

B. If the Facilities Study includes any New Service Request(s) other than that (those) of New Service Customer, termination and withdrawal of New Service Customer's New Service Request(s) at any time after Transmission Provider has commenced the Facilities

Study will not alter New Service Customer's responsibility for the costs of the Facilities Study under this Agreement and the PJM Tariff.

### **DISCLAIMER OF WARRANTY, LIMITATION OF LIABILITY**

17. In analyzing and preparing the Facilities Study, Transmission Provider, the Transmission Owners, and any other subcontractors employed by Transmission Provider shall have to rely on information provided by New Service Customer and possibly by third parties and may not have control over the accuracy of such information. Accordingly, NEITHER THE TRANSMISSION PROVIDER, THE TRANSMISSION OWNERS, NOR ANY OTHER SUBCONTRACTORS EMPLOYED BY TRANSMISSION PROVIDER MAKES ANY WARRANTIES, EXPRESS OR IMPLIED, WHETHER ARISING BY OPERATION OF LAW, COURSE OF PERFORMANCE OR DEALING, CUSTOM, USAGE IN THE TRADE OR PROFESSION, OR OTHERWISE, INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH REGARD TO THE ACCURACY, CONTENT, OR CONCLUSIONS OF THE FACILITIES STUDY. New Service Customer acknowledges that it has not relied on any representations or warranties not specifically set forth herein and that no such representations or warranties have formed the basis of its bargain hereunder.
18. In no event will Transmission Provider, the Transmission Owners or other subcontractors employed by Transmission Provider be liable for indirect, special, incidental, punitive, or consequential damages of any kind including loss of profits, arising under or in connection with this Facilities Study Agreement or the Facilities Study, even if Transmission Provider, the Transmission Owners, or other subcontractors employed by Transmission Provider have been advised of the possibility of such a loss. Nor shall Transmission Provider, the Transmission Owners, or other subcontractors employed by Transmission Provider be liable for any delay in delivery, or for the non-performance or delay in performance, of Transmission Provider's obligations under this Agreement.

Without limitation of the foregoing, New Service Customer further agrees that the Transmission Owners and other subcontractors employed by Transmission Provider to prepare or assist in the preparation of any Facilities Study shall be deemed third party beneficiaries of this provision entitled "Disclaimer of Warranty/Limitation of Liability."

### **MISCELLANEOUS**

19. Any notice or request made to or by either party regarding this Facilities Study Agreement shall be made to the representative of the other party as indicated below.

#### **Transmission Provider**

PJM Interconnection, L.L.C.  
955 Jefferson Avenue  
Valley Forge Corporate Center  
Norristown, PA 19403-2497

**New Service Customer**

Attn: William Martin  
Oregon Clean Energy LLC  
20 Park Plaza, Suite #400  
Boston, MA 02116

20. No waiver by either party of one or more defaults by the other in performance of any of the provisions of this Agreement shall operate or be construed as a waiver of any other or further default or defaults, whether of a like or different character.
21. This Agreement or any part thereof, may not be amended, modified, assigned or waived other than by a writing signed by all parties hereto.
22. This Agreement shall be binding upon the parties hereto, their heirs, executors, administrators, successors, and assigns.
23. Neither this Agreement nor the Facilities Study performed hereunder shall be construed as an application for service under Part II or Part III of the PJM Tariff.
24. The provisions of Part VI of the PJM Tariff are incorporated herein and made a part hereof.
25. Capitalized terms used but not otherwise defined herein shall have the meaning ascribed to them in the PJM Tariff.
26. This Facilities Study Agreement shall be effective as of the date of the New Service Customer's execution of it and shall remain in effect until the earlier of (a) the date on which the Transmission Provider tenders the completed Facilities Study and, as applicable, a proposed Interconnection Service Agreement or Upgrade Construction Service Agreement to New Service Customer pursuant to Section 212 or Section 213, respectively, of the PJM Tariff, or (b) termination and withdrawal of the New Service Request(s) to which the Facilities Study hereunder relates.
27. **No Third-Party Beneficiaries**  
This Agreement is not intended to and does not create rights, remedies, or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the parties, and the obligations herein assumed are solely for the use and benefit of the parties, their successors in interest and where permitted, their assigns.
28. **Multiple Counterparts**  
This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.
29. **No Partnership**  
This Agreement shall not be interpreted or construed to create an association, joint venture, agency relationship, or partnership between the parties or to impose any

partnership obligation or partnership liability upon either party. Neither party shall have any right, power or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as or be an agent or representative of, or to otherwise bind, the other party.

30. Severability

If any provision or portion of this Agreement shall for any reason be held or adjudged to be invalid or illegal or unenforceable by any court of competent jurisdiction or other Governmental Authority, (1) such portion or provision shall be deemed separate and independent, (2) the parties shall negotiate in good faith to restore insofar as practicable the benefits to each party that were affected by such ruling, and (3) the remainder of this Agreement shall remain in full force and effect.

31. Governing Law, Regulatory Authority, and Rules

For Interconnection Requests, the validity, interpretation and enforcement of this Agreement and each of its provisions shall be governed by the laws of the state of OH (where the Point of Interconnection is located), without regard to its conflicts of law principles. This Agreement is subject to all Applicable Laws and Regulations. Each party expressly reserves the right to seek changes in, appeal, or otherwise contest any laws, orders, or regulations of a Governmental Authority.

32. Reservation of Rights

The Transmission Provider shall have the right to make a unilateral filing with FERC to modify this Agreement with respect to any rates, terms and conditions, charges, classifications of service, rule or regulation under section 205 or any other applicable provision of the Federal Power Act and FERC's rules and regulations thereunder, and the Interconnection Customer shall have the right to make a unilateral filing with FERC to modify this Agreement under any applicable provision of the Federal Power Act and FERC's rules and regulations; provided that each party shall have the right to protest any such filing by the other party and to participate fully in any proceeding before FERC in which such modifications may be considered. Nothing in this Agreement shall limit the rights of the parties or of FERC under sections 205 or 206 of the Federal Power Act and FERC's rules and regulations, except to the extent that the parties otherwise agree as provided herein.

IN WITNESS WHEREOF, Transmission Provider and the New Service Customer have caused this Facilities Study Agreement to be executed by their respective authorized officials.

**Transmission Provider: PJM Interconnection, L.L.C.**

By: \_\_\_\_\_  
Name Title Date  
  
\_\_\_\_\_  
Printed Name

**New Service Customer: Oregon Clean Energy LLC**

By: \_\_\_\_\_  
Name Title Date  
  
\_\_\_\_\_  
Printed Name

**Schedule A**  
**Details of Design and Cost Estimates/Quality**  
**For the Facilities Study**

The Details of Design and Cost Estimates/Quality For the Facilities Study will be per PJM Manual 14A.



**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**3/6/2013 12:31:02 PM**

**in**

**Case No(s). 12-2959-EL-BGN**

Summary: Correspondence Submitting System Impact Study for Filing with the Ohio Power Siting Board electronically filed by Teresa Orahoad on behalf of Sally Bloomfield for Oregon Clean Energy, LLC