# List of Comments

<table>
<thead>
<tr>
<th>Comment</th>
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<tbody>
<tr>
<td>City of Troutdale McCallum Comment</td>
<td>March 1, 2013</td>
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<td>City of Troutdale McCallum Comment attachment 4</td>
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<td>City of Troutdale McCallum Comment attachment 5</td>
<td>March 1, 2013</td>
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<tr>
<td>City of Troutdale Ward Comment</td>
<td>April 10, 2013</td>
</tr>
<tr>
<td>CRGC Nichols Comment – Hatfield wilderness map</td>
<td>May 1, 2013</td>
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<tr>
<td>CRGC Nichols Comment</td>
<td>May 1, 2013</td>
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<tr>
<td>MCDD Woltersdorf Comment</td>
<td>April 19, 2013</td>
</tr>
<tr>
<td>MCDD Woltersdorf Comment attachment</td>
<td>April 19, 2013</td>
</tr>
<tr>
<td>Multnomah County Valencia Comment</td>
<td>April 30, 2013</td>
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<tr>
<td>ODFW Ruther Comment</td>
<td>May 3, 2013</td>
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<tr>
<td>ODOT Danielson Comment</td>
<td>May 1, 2013</td>
</tr>
<tr>
<td>OWRD Sauter Comment</td>
<td>April 18, 2013</td>
</tr>
<tr>
<td>SHPO Franklin Comment</td>
<td>April 10, 2013</td>
</tr>
<tr>
<td>USFS air technical report to DEQ</td>
<td>June 26, 2013</td>
</tr>
<tr>
<td>USFS Burdick Comment to DEQ</td>
<td>July 10, 2013</td>
</tr>
<tr>
<td>USFS Oliver Comment</td>
<td>May 1, 2013</td>
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</tbody>
</table>
MEMORANDUM

TO: Chris Green, Siting Analyst
   Oregon Department of Energy

FROM: Elizabeth A. McCallum, Senior Planner
      on behalf of the City of Troutdale
      219 E Historic Columbia River Highway
      Troutdale, Oregon 97060
      (503) 674-7228
      Elizabeth.mccallum@troutdaleoregon.gov

THROUGH: Craig Ward, City Manager

DATE: May 1, 2013

Re: Special Advisory Group Comments from the City of Troutdale
Site Certification for the Troutdale Energy Center Final ASC Submittal

General Comments

a. The City of Troutdale’s recommendations regarding any applications for
   permits administered by the City that are applicable to construction or
   operation of the proposed energy facility are:

   1. All building, electrical, mechanical and plumbing permits are
      applied for through the City of Troutdale within the city limits.
      Submit a commercial building permit application to Jodi Rogers,
      the City Building Safety Division Permit Specialist. The
      commercial building permit application shall also include the
      application for the temporary construction trailer permits for the
      staging area construction trailers on Tract D of the T.R.I.P.
      subdivision (identified in the narrative and exhibits as Lot 6). Ms.
      Rogers may be contacted via telephone at (503) 674-7229 or email
      at Jodi.rogers@troutdaleoregon.gov. The Building Safety Division
      is located at 2200 SW 18th Way, Troutdale, Oregon 97060 and
      office hours are Monday through Friday, 8 a.m. to 5:00 p.m.
      excluding federal holidays.

   2. Obtain an NPDES 1200-C erosion and sediment control permit
      through the City of Troutdale for the entire project.
3. A City of Troutdale Public Works Permit is required for each utility connection to the City’s water, sewer and storm sewer systems, for each driveway access onto a City street, for construction of any other public works facilities and for construction of public or private facilities within the City’s public rights-of-way.

4. Infrastructure associated with this development will be constructed in areas of contaminated groundwater and soil. This infrastructure has the potential to become a conduit for offsite contamination migration if not properly designed and constructed. As such, additional engineering controls are necessary and will be reviewed at the time of plan submittal for the various permits needed from the City.

b) Issues significant to the City of Troutdale not covered in the application to the City’s satisfaction include:

1. Identification of the off-site staging area as Lot 6. This lot has not been recorded. At this time the subject property for the off-site staging area is still part of Tract D of the plat of Troutdale Reynolds Industrial Park (T.R.I.P.).

2. The plan includes encroachment into the toe of the levee managed for flood control by the Sandy Drainage Improvement Company (SDIC). That portion that encroaches shall be designed to comply with SDIC standards and the applicant shall obtain any necessary approvals and easements from the SDIC prior to issuance of the City’s Site Development Permit. (Reference is comment #7 of the City’s August 22, 2012 comments.)

3. FAA Form 7460-1 shall also be submitted to the Oregon Department of Aviation (ODA) for comment and review as previously referenced in the City’s August 22, 2012 comments. Page K-12 of the application only references the submission to the FAA, which is required, but submission of a copy of the Form 7460-1 is also required to the ODA. The ODA contact is:

Sandra Larsen, Aviation Planning Analyst
Oregon Department of Aviation
3040 25th St., SE
Salem, Oregon 97302-1125
Phone: (503) 378-4880; Toll Free: (800) 874-0102; Fax (503) 373-1688

4. Parking lot landscaping requires a tree planter at the ends of all parking bays no matter how many parking spaces are in that bay (row). Parking lot tree planters shall be added to the row of parking spaces as shown on the attached copies of exhibits K-3.1 and K-3.2 (Attachment 2).
City of Troutdale Comments on the Troutdale Energy Center / May 1, 2013

5. Temporary construction signs used for addresses and directing traffic during construction do not require permits from the City of Troutdale provided the signs are within the boundaries of the private property, do not exceed five feet in height and are a maximum of 15 square feet in area.

6. Applicant shall ensure no interference or disruption of radio communication to the Supervisory, Control And Data Acquisition radio terminals at the City’s two sanitary sewer pump station in the vicinity of the proposed transmission lines. This was not specifically addressed in Exhibit AA.5.

7. Transmission line routes.
   i. Easements for the transmission line routes outside of Lot 3 of Troutdale Reynolds Industrial Park must be obtained.
   
   ii. There is insufficient space within the existing NW Swigert Way easement to accommodate the proposed transmission lines. The applicant will need to obtain additional easements, outside the bounds of the existing Swigert Way easement, to place the transmission lines.
   
   iii. Route 1 transmission line poles west of SW Sundial Road and Route 2 transmission line poles on the east side of SW Sundial Road extending north of NW Swigert Way appear to be within the Special Flood Hazard Area (SFHA) of Salmon and Arata Creeks as recently mapped on Flood Insurance Rate Map 41051C0216H as revised July 27, 2012. All development within the SFHA must comply with 44 CFR Parts 59, 60, 65 and 70 pertaining to the National Flood Insurance Program, the state of Oregon Building Codes, and the City of Troutdale Flood Management Area development standards (TDC 4.600).

c) The City has concluded that the proposed facility can be constructed in compliance with ordinances of the City of Troutdale provided the plan is modified as requested by the City and provided permits required from the City are approved and issued prior to commencement of that work.

d) The City’s site certification conditions are:

1. Apply for all building, electrical, mechanical, plumbing, grading, public works, and erosion control permits through the City of Troutdale Building Safety Division Permit Specialist. Fees are payable to the City of Troutdale. The contact is Jodi Rogers: phone: (503) 674-7229 and e-mail Jodi.rogers@troutdaleoregon.gov.
2. Revise all exhibits and narrative to identify Lot 6 as Tract D of the Troutdale Reynolds Industrial Park as this is the current legal description of the property to be used for the staging area.

3. Encroachment into the toe of the levee is prohibited unless approved by the Sandy Drainage Improvement Company (SDIC). The applicant shall obtain any necessary approvals and easements from the SDIC prior to issuance of the building permit.

4. Submit copies of the FAA Forms 7460-1 to the Oregon Department of Aviation (ODA). Construction shall comply with conditions ODA may deem necessary. Submit the determination from FAA and comments from ODA with the building permit application package submittal to the City.

5. Add tree planters at both ends of the parking bays as shown on the attached copies of exhibits K-3.1 and K-3.2 (Attachment 2).

6. If construction signs will be used, they shall be located within private property, not exceed five feet in height, and not exceed 15 square feet in area. Any temporary signs not meeting these dimensional standards will require a sign permit from the City of Troutdale.

7. All aspects to any proposal to implement a Recycled Water system for the project shall be subject to special agreement with the City, to be negotiated with the City Manager, including fees to use the City's existing wastewater effluent outfall.

8. All transmission line poles within the Special Flood Hazard Area as mapped by FEMA on Flood Insurance Rate Map panel number 41051C0216H, effected December 18, 2009 and as revised by LOMR 11-10-1884P, effective July 27, 2012 shall be constructed in compliance with the applicable standards of 44 CFR Parts 59, 60, 65 and 70 pertaining to the National Flood Insurance Program, the state of Oregon Building Codes, and the City of Troutdale Flood Management Area development standards (TDC 4.600).

c) Other information that the City of Troutdale believes will be useful to the Council in reviewing the site certificate application includes the following:

1. Tax Revenues. In Section U.4.1.3 on page U-6 of the ASC, where the applicant referred to the Oregon Strategic Investment Program (SIP), the applicant has acknowledged that the comment is out of date and no longer accurate. The applicant has also indicated that they would amend that section to reflect that they have obtained an Enterprise Zone Extended Tax Abatement Agreement with the City, and are no longer pursuing the SIP tax abatement.
Additional Special Advisory Group Comments

a) The City has assessed that the applicant has accurately identified all applicable substantive criteria except as identified in these comments; and

b) A separate report will not be submitted from the City of Troutdale as the City’s position is that the review of application materials and the comments herein sufficiently address the City’s standards (substantive criteria) for the development of this site with a permitted major utility.

Attachments

1. Reference table for comments
3. City of Troutdale Floodplain Management Area development standards, TDC chapter 4.600.
<table>
<thead>
<tr>
<th>Permit for Temporary Construction Trenches on Tract D of TRP if Required</th>
<th>Pages K-6 and K-20</th>
<th>K 2.1 &amp; 20</th>
<th>K 3.4</th>
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<td>Pages K-12 and K-13</td>
<td>K 5.4</td>
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<td>Height Limitation and Airport Landing Field Overhead Discharge, Components, and Siting</td>
<td>Pages K-20, Para. 4</td>
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<tr>
<td>Security Division is Required</td>
<td>K 3.4.3</td>
<td></td>
<td></td>
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<tr>
<td>Property located as far as 10 feet has been planned.</td>
<td>K 3.4.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Siting area location reference to Lots 6 of Trousdale Ryde Road Industrial Area Use in the General</td>
<td>K 3.4.4</td>
<td></td>
<td></td>
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<tr>
<td>General Industrial Zone is Correct</td>
<td>K 3.4.5</td>
<td></td>
<td></td>
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<tr>
<td>The various permits needed from the City, standards are necessary and will be reviewed at the time of plan submitted for construction, as such additional enhancements will be considered. Such enhancements will be considered in areas of appropriate adjacency.</td>
<td>Attachment I-2</td>
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<td>The property located as far as 10 feet has been planned, the application will need to accommodate the proposed creation of a new transmission line.</td>
<td>Page AV-1, AS 1.2.1</td>
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<td>There is insufficient space within the existing existing SW/gy barrier to allow</td>
<td>Page AV-1, last para.</td>
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<td>Attachment B.1</td>
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<td>Enlargement into the toe of the levee requires SDIC authorization.</td>
<td>Referencing as needed (as needed)</td>
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<td>The property located as far as 10 feet has been planned</td>
<td>Exhibit Section No. 105.3 (as needed)</td>
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**Splendid Energy Center**

**Trousdale Energy Center**

**ATTACHMENT I**
<table>
<thead>
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<tr>
<td><strong>ATTACHMENT I</strong></td>
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<tr>
<td><strong>Comment</strong></td>
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<tr>
<td>From City of Trousdale</td>
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<tr>
<td>Comments on the complete application for the Certificate of Trousdale Energy Center</td>
<td></td>
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</table>
City of Troutdale McCallum Comment attachments 4-5 available upon request to Oregon Department of Energy Siting Division.

Contact Chris Green, Siting Analyst at 503-378-5050
625 Marion Street NE
Salem OR 97301
Thank you Chris. Our preference is to use the emails to supplement the record rather than revising the ASC.

As you note, the applicant’s plans regarding the SIP or other tax abatement programs do not affect compliance with EFSC standards. While the applicant could propose a revision to the ASC to correct this information, I’m not sure if going through that process would help or hurt the clarity of the information for ODOE/EFSC purposes. We could address the issue Mr. Ward raises by bringing yours and Mr. Ward’s emails into the record as comments. That way, the record would contain an explanation of any discrepancy between the tax programs described in the ASC and those actually in effect.

Thanks,
Chris,

Per our discussion just now, Craig Ward with the City of Troutdale notified us of an error in Exhibit U of the Troutdale Energy Center Application for Site Certificate (ASC) (see attached). Section U.4.1.3 on page U-6 of the ASC reads:

```
Development of the Facility will increase the annual property tax revenue to the City of Troutdale and City of Fairview. The site is located within an enterprise zone that has a 3-year Business Tax Holiday for eligible companies that add full-time jobs. However, the Applicant plans to pursue a 15-year partial tax abatement agreement through the Oregon Strategic Investment Program (SIP). After that time, the Facility will be paying property tax that will average approximately $3.4 million per year after the initial 3 to 15 years.
```

The underlined portion of the text above is no longer accurate. Rather than pursue a 15-year partial tax abatement agreement, TEC intends to utilize a 2-year extension to the Business Tax Holiday that the City has agreed to provide. Therefore, the text should read:

```
Development of the Facility will increase the annual property tax revenue to the City of Troutdale and City of Fairview. The site is located within an enterprise zone that has a 3-year Business Tax Holiday for eligible companies that add full-time jobs. The Applicant will also utilize a 2-year extension to the Business Tax Holiday that has been negotiated with the City of Troutdale. The Applicant does not plan to pursue a partial tax abatement agreement through the Oregon Strategic Investment Program (SIP). After the initial 5 years, the Facility will be paying property tax that will average approximately $3.4 million per year.
```

We understand that there may be a number of items in the ASC that will need to be modified based on agency review and comment, and that the responses to agency comments and modifications to statements in the ASC will be reflected in the Draft Proposed Order (DPO) rather than a formal amendment or revision to the ASC. In this particular circumstance, the information regarding tax revenue provided in the ASC is not required by the Division 21 or 22 standards, and as such, the draft findings of fact for the DPO that we provided you did not discuss the Applicant’s plans to utilize the SIP. Therefore, a revision to the draft DPO to correct the above misstatement is not necessary. At the same time, we wanted the record to show that the City of Troutdale commented on the tax revenue error included in the ASC, and we wanted to provide you with the most accurate information related to this issue.

Please let us know if you have any questions or if you need anything else for the record – thank you,

Paul Seilo, AICP  
CH2M HILL  
2020 SW Fourth Avenue  
3rd Floor  
Portland, OR 97201  
Tel: 503.736.4012  
Fax: 503.736.2000
Oregon Department of Energy  
Chris Green  
625 Marion St. NE  
Salem, Oregon 97301  

Via email only to chris.green@state.or.us  

Subject: Agency Comments for Troutdale Energy Center  

The Columbia River Gorge Commission has reviewed the application to the Oregon Department of Energy for the Troutdale Energy Center and the January 2013 Columbia River Gorge National Scenic Area Evaluation prepared for the Oregon Department of Environmental Quality.  

The Commission’s comments focus on the applicant’s evaluation of impacts to protected areas pursuant to OAR 345-022-0040. The Columbia River Gorge National Scenic Area is a listed protected area, and a number of locations within the National Scenic Area are also listed areas. The Gorge Commission is concerned that the applicant’s evaluation of impacts to protected areas listed in OAR 345-022-0040 is incomplete.  

OAR 345-022-0040(1) states in relevant part, “To issue a site certificate for a proposed facility located outside the areas listed below, the Council must find that, taking into account mitigation, the design, construction and operation of the facility are not likely to result in significant adverse impact to the areas listed below.”  

Subsection 0040(1)(g) lists the Columbia River Gorge National Scenic Area; subsection 0040(1)(c) lists wilderness areas; and subsection 0040(10)(h) lists state parks and waysides.  

Exhibit L to the application contains the applicant’s analysis of protected areas. The applicant notes that there are 35 protected areas within a 20-mile radius of the proposed facility; however, the applicant does not appear to have addressed newly designated wilderness areas within (and adjacent to) the National Scenic Area that are also within the 20-mile radius. Maps of these wilderness areas are available at  
https://fs.usda.gov/Internet/FSE_MEDIA/stelprdb5182601.pdf and  

Additionally, the applicant’s analysis was virtually entirely focused on visibility of the proposed facility from the National Scenic Area and other protected areas within the National Scenic Area. While visibility is one of the listed criteria (OAR 345-021-0010(i)(l)(C)(v)), the application requirement states that the list of factors (i) through (vi) is non-exclusive. The standard is that the project must not cause “significant adverse impact.”
Although the land use standards for the National Scenic do not directly apply outside the National Scenic Area (16 U.S.C. § 544o(a)(10)), Oregon’s own rules independently protect the National Scenic Area from significant adverse impacts, and Oregon could independently elect to use the National Scenic Area standards to ensure no significant adverse impacts. ORS 196.155 provides additional support for this approach; this statute is Oregon’s commitment for state agencies, “to carry out their functions and responsibilities in accordance with the [Columbia River Gorge Compact] and Columbia River Gorge National Scenic Area Act.”

Exhibit L did not discuss a statutory or regulatory definition of “significant adverse impact.” The National Scenic Area Act contains a definition of “adversely affect” applicable to the National Scenic Area (16 U.S.C. § 544(a). The Council should use the Scenic Area definition of “adversely affect” as a baseline for determining whether the project causes a significant adverse impact under OAR 345-022-0040(1), and use the development guidelines in the Management Plan for protection of Gorge resources as specific review criteria. The Management Plan for the National Scenic Area is available at www.gorgecommission.org. The applicant’s analysis in Exhibit L considered some of the regulatory approaches in the Management Plan (see discussion of key viewing areas in Exhibit L, section L.2.4), so the applicant has opened the door for the Council to use the Scenic Area authorities (although the Commission believes the Council could use Scenic Area authorities even if the applicant had not also done so).

Finally, the Gorge Commission notes that the applicant’s modeling of nitrogen deposition in its January 2013 Columbia River Gorge National Scenic Area Evaluation prepared for the Oregon Department of Environmental Quality (see, e.g., Figure 4-1) shows an area of impact that appears to exceed the 20-mile radius that the applicant analyzed in Exhibit L of its application. The Gorge Commission recommends the Council require the applicant analyze all protected areas within affected areas, not just a 20-mile radius.

Thank you for the opportunity to provide agency comments on this project.

Sincerely,

Darren Nicholls
Executive Director

c. Gorge Commissioners
   U.S. Forest Service, National Scenic Area Office
Columbia River Gorge Commission Comment attachment - Hatfield Wilderness Map available upon request to Oregon Department of Energy Siting Division.

Contact Chris Green, Siting Analyst at 503-378-5050
625 Marion Street NE
Salem OR 97301
Chris
I am not sure what you mean about a federally delegated permits? I have been in contact with them and have some preliminary design for evaluation but nothing in stone.

Byron Woltersdorf, PE,
District Engineer
Multnomah County Drainage District #1
Peninsula Drainage District #1
Peninsula Drainage District #2
Sandy Drainage Improvement Company

1880 NE Elrod Dr.
Portland Oregon, 97211
(503) 281-5675 x308
(503) 200-0458 Cell
(503) 281-0392 Fax
bwoltersdorf@mcdd.org
www.mcdd.org

This e-mail, may contain information that is confidential. This e-mail, including attachments, may constitute non-public information intended to be conveyed only to the designated recipient(s). If you are not the intended recipient, please delete this e-mail, including attachments, notify me by e-mail at bwoltersdorf@mcdd.org or at (503) 281-5675 x 308. The unauthorized use, dissemination, distribution or reproduction of this e-mail, including attachments, is prohibited and may be unlawful.

Byron,

Thank you for your comments on the Troutdale Energy Center. At first glance it looks like the approval would fall under the category of federally delegated permits that the Siting Council could include as a condition of approval in the site certificate. I will need to do some research to confirm this. Have you been in communication with the applicant about this requirement? If not, I will suggest that they contact you.

Feel free to call or email me if any questions come up about the state energy facility siting process.

Thanks,

Chris Green, Siting Analyst
Energy Facility Siting Division
Oregon Department of Energy
625 Marion Street NE
Salem, OR 97301-3737
From: Byron Woltersdorf [mailto:bwoltersdorf@mcdd.org]
Sent: Wednesday, April 17, 2013 7:42 AM
To: chris.green@state.or.us
Subject: FW: Troutdale Energy Center - Application for Site Certificate

Importance: High

Chris

This facility is adjacent to a federal flood protection system that was authorized by congress in 1936 and 1950 by flood acts. Any development activity adjacent to the facilities requires analysis and review by the USACE and the Local Sponsor. I have attached the design guidance that the Sandy Drainage Improvement Company uses to evaluate the potential injurious impacts to the levee system. Please include me in any and all correspondence with this project.

The Power facility is required to get an encroachment permit approval from the Corps through the Drainage District.

Byron Woltersdorf, PE,
District Engineer
Multnomah County Drainage District #1
Peninsula Drainage District #1
Peninsula Drainage District #2
Sandy Drainage Improvement Company

1880 NE Elrod Dr.
Portland Oregon, 97211
(503) 281-5675 x308
(503) 200-0458 Cell
(503) 281-0392 Fax
bwoltersdorf@mcdd.org
www.mcdd.org

This e-mail, may contain information that is confidential. This e-mail, including attachments, may constitute non-public information intended to be conveyed only to the designated recipient(s). If you are not the intended recipient, please delete this e-mail, including attachments, notify me by e-mail at bwoltersdorf@mcdd.org or at (503) 281-5675 x 308. The unauthorized use, dissemination, distribution or reproduction of this e-mail, including attachments, is prohibited and may be unlawful.

From: Elizabeth McCallum [mailto:elizabeth.mccallum@troutdaleoregon.gov]
Sent: Thursday, April 11, 2013 10:13 AM
To: Byron Woltersdorf; Bouillion, Tom; Rose,Oral L (BPA) - TERR-3
Subject: FW: Troutdale Energy Center - Application for Site Certificate

Importance: High

April 11, 2013

Byron (SDIC), Tom (Port of Portland), and Oral (BPA):

I am passing along this opportunity to comment as it appears the State left your agencies out of the loop of the review of this application. Your comments should go directly to the State as specified in this forwarded e-mail: however, please cc me for the City’s records.
Elizabeth A. McCallum, Senior Planner
City of Troutdale

Please make a note of the following:
The new official mailing address is:
**219 E. Historic Columbia River Hwy, Troutdale, OR 97060-2078**
elizabeth.mccallum@troutdaleoregon.gov
phone: 503-674-7228
fax 503-667-0524

**My office is located at:** 2200 SW 18th Way, Troutdale, OR 97060.

---

**From:** Green, Chris [mailto:chris.green@state.or.us]
**Sent:** Monday, April 01, 2013 5:22 PM
**To:** adam.t.barber@multco.us; ann_e_gray@fws.gov; MARTIN Art C; BURNS Bill; chrisr@ci.happy-valley.or.us; doug_young@fws.gov; RUTHER Elizabeth J; Elizabeth McCallum; GEIST Gregory; PECK Heather; JOHNSON Ian; JOHNSON James Wallace; Jerry Sauter; MORGAN Jim; POULEY John; ORDONEZ Jorge; karen.c.schilling@multco.us; ‘lbleakney@nwccouncil.org’; MORRISSEY Michael; THOMPSON Michael; MCCABE Mike; SWECKER Mitch; CURRIN Rebecca; FRANCE Renee M; Rich Faith; LARSEN Sandra; WARNER Stacy; PAPISH Uri
**Cc:** Jeremy.Sande@ch2m.com; Paul.Sello@CH2M.com; FRANCE Renee M; WHITMAN Richard M * GOV; Shribbs, Shanda; Cornett, Todd; Gustafson, Virginia
**Subject:** Troutdale Energy Center - Application for Site Certificate

Good afternoon,

The Oregon Department of Energy (ODOE), staff to the Energy Facility Siting Council (EFSC), received an application for site certificate from Troutdale Energy Center, LLC (Applicant), a wholly owned subsidiary of Development Partners Funding I, LLC, for the construction and operation of a 652-megawatt natural gas-fueled electric generating facility. Under Oregon law, the applicant must obtain a Site Certificate from EFSC before constructing and operating the proposed facility. ODOE has determined the application is complete and filed the application March 22, 2013.

ODOE has identified your organization as a “Reviewing Agency” for this application, as defined in Oregon Administrative Rule (OAR) 345-001-0010(52). You are receiving this email because you have agreed to receive this information digitally rather than in paper form. If your agency also requested a hardcopy of the application, it should arrive at your office within the next few days. Attached is the Memo to Reviewing Agencies describing this phase of the process and your role in it. The complete Application for Site Certificate submitted by the applicant has been posted to our GovSpace site where each application exhibit is available for download. Please go to:


At that address, you will find:

- ODOE’s Memo to Reviewing Agencies (also attached to this email)

- A sample response form for your use in providing comments (also attached to this email)

- A list of exhibits in the Application for Site Certificate with suggested reviewing agencies (also attached to this email)

- Each exhibit of the Application for Site Certificate submitted by the applicant
Your comments, questions, list of applicable substantive criteria, etc. are requested by May 1, 2013 and can be submitted to me by mail or email. I’ve attached a comment table template – feel free to use this, add your letterhead, or use a different format if you prefer.

If you have any questions do not hesitate to contact me.

Thanks,

Chris Green, Siting Analyst
Energy Facility Siting Division
Oregon Department of Energy
625 Marion Street NE
Salem, OR 97301-3737
Office: (503) 378-5050 | Toll-free in Oregon: (800) 221-8035
chris.green@state.or.us | www.oregon.gov/energy
GUIDANCE
FOR WORK PROPOSED NEAR OR WITHIN
A FEDERALLY CONSTRUCTED FLOOD CONTROL PROJECTS
“ENCROACHMENTS”

General Information

1. **Purpose.** It is imperative for Multnomah County Drainage District #1 (MCDD) and the US Army Corps of Engineers (USACE) to know what construction activities are happening within the levee system to evaluate potential impacts to the flood control system. The following information has been compiled to provide general guidance regarding encroachments, engineering, operation and maintenance aspects of construction within the right-of-way of the flood control system (levee system) operated and maintained by MCDD and constructed and improved by the US Army Corps of Engineers (USACE). The critical area is generally considered the area from 300 feet riverward to 500 feet landward of a flood control system centerline.

2. **Responsibilities.** MCDD is responsible for controlling all construction which occurs within the critical area. Therefore a permit application to MCDD is required for any construction projects occurring in the area of the flood control system. In addition to MCDD’s review, the USACE provides engineering review to ensure that any work within or near the flood control facilities does not reduce the level of protection and to assure the continued integrity of the flood control system. USACE comments, recommendations and permissions are provided to MCDD for our utilization.

3. **Applicants Engineering Responsibility.** The Applicants Engineer should verify they have the most recent guidance on allowable construction in right-of-way of flood control projects prior to start of design. References for USACE publications at: [http://publications.usace.army.mil/publications](http://publications.usace.army.mil/publications)

   a) Both the temporary construction and permanent installation should be addressed within the submittal. In general, the applicants engineer should address the impacts these will have on the flood control project in accordance with USACE standards, which include:

   (i) seepage (through and under), modeling and analysis that accurately reflect the locations of the encroachments identified on cross-sections below,

   (ii) stability (earthen and structural), modeling and analysis that accurately reflect the locations of the encroachments identified on cross-sections below,

   (iii) ponding area storage,

   (iv) hydraulic conveyance (channels, drainage structures, and ditches),

   (v) restoration of all features to original condition,

   (vi) maintenance and operation of flood protection within the critical area during construction,

   (vii) all reports stamped, signed and dated by applicants engineer(s) registered in the state of Oregon, responsible for hydrologic, hydraulic, geotechnical, structural and general civil engineering design and analysis.

   b) The applicants engineer shall provide opinion and facts as to the integrity of the levee with the proposed encroachment. The engineer should coordinate with the
MCDD and become familiar with features of the flood control project in the vicinity of the proposed work. Common features of a flood control project include: Earthen embankments, flood walls, stability berms, underseepage berms, rock slope protection, foreshore and landward blankets, pressure relief wells, collector pipes, toe drains, drainage structures and ditches, ponding areas, closure structures, pump stations, levee ramps, and levee turnouts.

c) The Application should include but is not limited to analysis, plans, full cross-section, specifications and report in accordance with the below responsibilities and below references.

4. Submittals. The following information should be included in the project’s application:

a) Required Information. Each submittal should clearly identify on the cover page the official levee project, system and segment name with river mile designation, project name and description/purpose, location by levee station of project (this information can be requested from MCDD), the applicant’s name, civil engineer’s point of contact, and date of submittal. In addition technical memos, design information, drawings, specifications to support the proposed construction activity request as identified below in section 4.

b) Required statements. The engineer will be required through the analysis under section 3 to provide a statement to the fact that the proposed encroachment will not be injurious to the integrity of the flood protection project, and will not impact the efficient and effective operation and maintenance of the flood protection project.

c) Engineering plans. The plans in the submittal shall include:

(i) Sufficient detail to show proposed construction of the encroachment within the flood protection facilities,

(ii) Full cross-sections should clearly identify the minimum levee section, centerline, and overbuild. All proposed encroachments should be illustrated/shown on these sections,

(iii) Sufficient number of cross-sections to illustrate the entire encroachment,

(iv) All utilities proposed and existing to ensure conflicts between proposed and existing utility lines do not exist,

(v) Existing and proposed property boundaries, easements and rights-of-way. This should also include levee right of way,

(vi) Existing and proposed contours with a one (1) foot maximum contour interval, unless the District’s engineer determines a lesser interval is sufficient. Elevation datum to be used will coincide with the flood protection approval. Typically this is; Mean Sea Level (MSL), Columbia River Datum (CRD), NGVD 29 or NGVD 49 adjusted. If plans are being used for multiple jurisdictions place flood protection elevations in parentheses () and note conversion on plans.

(vii) All plans will be stamped, signed and dated by applicants engineer(s) registered in the state of Oregon, responsible for hydrologic, hydraulic, geotechnical, structural and general civil engineering design and by the project engineer responsible for the preparation of the final encroachment plan.
d) **Copies.** Six (6) complete sets of documents and one CD with PDF files of the whole submittal package shall be provided to the MCDD. If additional copies are necessary, the Applicant’s engineer will be notified. Each submittal package should include all applicable analyses, design, plans and specifications. Partial submittals should be avoided; however, there are special circumstances where partial submittals will be necessary (such as large phased (staged) construction projects and construction projects where some of the design is completed during construction). These should be coordinated with MCDD in advance.

e) **Transmittal.** Submittals regarding proposed construction and encroachments are to be processed through MCDD. MCDD is the permitting entity for work on or near the flood control projects it operates and maintains, including Peninsula Drainage District #1, Peninsula Drainage District #2 and Sandy Drainage Improvement Company, which MCDD manages through contracts. No USACE reviews will proceed without permission of MCDD. The point of contact for MCDD is Byron Woltersdorf, P.E., the District Engineer (503-281-5675 Ex. 308, bwoltersdorf@mcdd.org). MCDD is located at 1880 NE Elrod Drive, Portland Oregon, 97211.

f) **Review Schedule.** The project applicant and applicants engineer should allow two to three weeks for MCDD’s review. An additional 12 to 16 weeks for USACE coordination, scheduling, comment development and consolidation, and mailing of comments to the MCDD for each submittal review. Review duration should be considered by the Applicant’s engineer within the construction documents when design and/or submittals are required as part of the construction contract and timing.


6. **Additional Reviewers.** The focus of this guidance is the engineering aspects of new construction as it pertains to federally constructed flood control projects. The USACE Regulatory Branch (jurisdictional wetlands) and potentially the Operations Technical Support Branch and Hydraulic Section (if there is a potential impact to navigation structures) should be engaged during the design process to ensure compliance with USACE regulation. The USACE Portland District general number is 503-808-5150. The applicants engineer can work with MCDD to coordinate engagement with these organizations to ensure a complete submittal is provided.

7. **Interior Drainage.** In general, USACE sited and sized drainage structures through levees and flood walls based on drainage areas, storage areas, and run-off quantities at the time the federally flood control project was being designed for construction. Changes such as pavements, sewer lines, excavation, and filling may increase the interior run-off or reroute the run-off such that the designed drainage structures can no longer effectively discharge without induced interior ponding/flooding. MCDD is responsible for interior drainage (not the USACE) and will address proposed alterations which may increase or reroute (redistribute) interior run-off.
8. **Guidance Updates.** The posted information is subject to change and modification, so users are advised to check mcdd.org and USACE’s web site for any updates. We welcome any comments that users may have regarding improvements or additional topics. Please contact us via E-Mail, phone, or mail as stated in section 4e.
MEMORANDUM

TO: Chris Green, Energy Facility Siting Analyst, Oregon Department of Energy

CC: Brian Vincent, County Engineer
    Pat Hinds, Program Manager
    Greg Kirby, Engineer
    Alan Young, ROW Permit Specialist
    Katherine McQuillan, Transportation Planner

FROM: Joanna Valencia, AICP, Senior Transportation Planner
    Multnomah County Land Use and Transportation Planning
    1600 SE 190th Ave, Portland, OR 97202
    503-988-3043 extension 29637
    joanna.valencia@multco.us

DATE: April 30, 2013

SUBJECT: Multnomah County’s Comments for Application for Site Certification (PASC) and Condition of Approval: Troutdale Energy Center – proposed 653 MW natural gas fueled, combined cycle and simply cycle combustion turbine facility

1N3E23 / Tax Lots 106 (ptn.) & 110 and 1N3E24 / Tax Lot 403 (ptn.) and 404 County Case No. EP-2012-2115d

The Multnomah County Transportation Program has been working with the applicant to address our comments in our August 22, 2012 memorandum. The proposed project is located on Lot 3 of the Troutdale Reynolds Industrial Park (TRIP) plat and portion of TRIP Tract D off of NW Swigert Way and NW Sundial Rd parallel to Salmon Creek. Sundial Road is a county road with a functional class of Major Collector.

County Transportation does not object to this proposal provided that the following is addressed as part of the permit process and the identified condition of approval is incorporated in the final decision as part of this preliminary permitting process.

Transportation Impacts and Condition of Approval: Construction and Operations:

The applicant has provided estimated traffic volumes and roadways during construction operations. A maximum of 1,025 daily trips had been estimated for the 24 month construction
period. Identified trips will include delivery of heavy equipment. The identified likely route of workers and equipment are on I-84, NE Marine Drive, NW Sundial Road, and NW Swigert Way. Operations identified include three daily shifts ranging from 6 to 10 people and will result in a potential for 44 additional daily trips to I-84, I-205, NE Marine Drive and Sundial Road. Both Marine Drive and Sundial are county facilities.

In reviewing the preliminary traffic generation numbers and the potential for impacts, the following condition of approval has been identified. The application acknowledges this in pages U-14 and U-15.

Multnomah County requests that this be included as a final condition of the requested site certification and any other applicable permits.

Condition of Approval

1. Prior to issuance of any construction permits and start of construction, the applicant shall provide a detailed analysis of all transportation impact related to the project and work with the county to identify appropriate mitigations to address the identified impacts both during construction and as part of the operations. This may include agreements to address impacts during construction and requirements for restoration of the road and/or mitigation for on and/or off-site improvements. Prior to commencement of the analysis, the applicant shall contact the Multnomah County Engineer, Brian Vincent, at (503) 988-3588 to determine the required scope. A final mitigation plan and/or agreement shall be reviewed and approved by the county, and shall be in place prior to start of construction.

Other:

Multnomah County’s Land Use Planning Program has reviewed the proposal and determined the project lies outside of the county’s land use planning jurisdiction which includes the unincorporated areas of Multnomah County. Troutdale is the land use jurisdiction for this area.

Please contact Joanna Valencia at (503)988-3043 ext 29637 or via email at joanna.valencia@multco.us if you have any questions regarding this memo.

II.

The comments provided in this memorandum are based on the documents and site plans received from ODOE via email on April 1, 2013. While every effort has been made to identify all related standards and issues, additional issues may arise and other standards not listed may become applicable as more information becomes available.
May 1, 2013

To: Chris Green, Siting Analyst
   Oregon Department of Energy
   625 Marion St. NE
   Salem, OR 97301

From: Elizabeth Ruther, Habitat Conservation Biologist
   Oregon Department of Fish and Wildlife
   18330 NW Sauvie Island Rd.
   Portland, OR 97231

RE: Oregon Department of Fish and Wildlife's Comments on the Complete Application for Site Certificate for the Proposed Troutdale Energy Center

Dear Mr. Green:

This correspondence is in response to the request for comments received by the Oregon Department of Fish and Wildlife (ODFW) from the Oregon Department of Energy (ODOE) memo, dated April 1, 2013 regarding the Complete Application for Site Certificate (ASC) submitted by the Applicant on March 22, 2013 for the proposed Troutdale Energy Center (TEC). The location of the project is on part of Troutdale Reynolds Industrial Park.

Comments are organized by the listed categories of requested information from ODOE on Pg 3 of the Memo and reflect comments and concerns summarized from ODFW staff within the North Willamette Watershed District.

A) Applicable Permits

There are no applicable permits needed from ODFW at this time.

B) Significant Issues

Habitat Maps
Although the narrative in Exhibit P, the Mitigation Plan and Figure P-5 appear to accurately assess acreages and display habitat categories, all other maps in Exhibit P label habitat categories inaccurately. ODFW recommends the complete application reflect accurate habitat categories on all maps so that inaccurate records are not maintained or contradictory to the rest of the document.
Potential Residual Noise Impacts
Without further noise analysis, including quantification of ambient noise levels at various distances from the point(s) of generation within the facility, operational noise levels within 400 feet of the point(s) of generation, and potential residual noise effects to wildlife utilizing the habitats surrounding the proposed facility, ODFW is not able to determine, with certainty, if any residual displacement effects to wildlife will likely occur. ODFW concurs that development of the facility will likely result in year-round loss of some uses of habitat within a portion of the project boundary (see Exhibit P: Section P.S.1.5, Pg P-32). ODFW is not able to quantify, with certainty, any potential residual displacement effects or decreased habitat use or habitat loss to wildlife with the supplied information. However, the applicant’s proposed mitigation appears to be robust enough to account for both direct and indirect affect to habitats and displacement affects to wildlife, if any, from noise generated from the operation of the facility.

Mitigation Plan
The proposed mitigation appears to meet or exceed recommended mitigation for wildlife habitat impacts per ODFW’s Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0000 through 0025). ODFW understands that mitigating habitat functions associated with Category 3 and 4 habitats is an imprecise exercise. Because the proposed mitigation may, in some aspects, exceed mitigations expectation under OAR635-415-0000 through 0025, ODFW will continue to work with the applicant to help evaluate alternate mitigation should the applicant so desire.

C) Compliance with ORSs and OARs
The application appears to have adequately listed and addressed possible impacts to species of concern as well as other various applicable Statutes and Administrative Rules. From ODFW’s perspective, the applicant has satisfied expectations under the Fish and Wildlife Habitat Mitigation Policy (OAR 635-415-0025) as adopted by reference in ODOE’s Wildlife Habitat Siting Standard OAR 345-022-0060.

To comply with OAR 635- 044-0130, Nongame Wildlife Protected, the applicant should obtain a wildlife salvage authorization from ODFW to move amphibians and reptiles to safe locations outside of the active construction area if discovered.

D) Recommended Site Certificate Conditions
ODFW recommends the following conditions be included in the site certificate for the TEC project:

- Provide cottonwood trunks (crowns on) over 10" DBH to Port of Portland (Carrie Butler, Mitigation Site Manager, #503.415.6319) for future use at mitigation sites. Because of possible soil contamination root wads are not usable. Port will arrange stockpile site.
- Plant 43 native trees, no less than half native cottonwood, on Lot 3 (Exhibit Q: Section Q6.1).
- Contact USFWS and ODFW if Bald Eagle is nesting within 660 feet of project site or roosting on site during pre-construction surveys (Exhibit Q: Section Q6.1) to discuss avoidance.
- Remove all vegetation outside of nesting season. If nesting season cannot be avoided, in addition to pre-construction nesting surveys, place reflective flagging and other deterrents in trees and shrubs to be removed in advance of nesting season to deter use and reduce likelihood of nest establishment.
- Provide ODFW with a written summary of all results of biological pre-construction surveys within 10 days of survey completion (Exhibit Q: Section Q.7). These include nest surveys (Exhibit P: Section P.5.1.5 and Attachment P-3: Section 2.1), streaked horned lark surveys (Attachment P-3: Section 2.1, Exhibit Q: Section Q6.2), yellow breasted chat surveys and little willow flycatcher surveys (Exhibit P: Section P.10, Pg P-50 and Attachment P-3: Section 2.1). If nests are located contact ODFW as soon as possible to discuss nest buffers.

- Provide ODFW with a revegetation plan for areas temporarily disturbed prior to implementation of plan for coordination (Exhibit P: Section P.9.3 and Attachment P-3: Section 2.1).

- Obtain approval from ODFW for native seed mix used in post-construction temporary impact site restoration (Exhibit P: Section P.8.1 and Attachment P-3: Section 2.1) Include forbs in restoration seed mix for temporarily disturbed areas. ODFW recommends at least 3 forbs be included in the mix, one of which should be big-leaf lupine, a dominant native, likely seeded previously, as effort to return to pre-construction conditions (see Attachment Q-2 and Q-3 Plant Surveys).

- Obtain Wildlife Salvage Authorization from ODFW for salvage of herpetofauna and provide ODFW with summary report for Wildlife Salvage Authorization within 30 days of project completion (Exhibit P: Section P.5.1.4 and P.8.2 and Exhibit Q: Section Q.6 and Attachment P-3: Section 2.1).

- Use native plantings in the landscape plan for the facility from the Portland Plant List (September 2011).

E) Other Information

ODFW has no other information to supply.

ODFW appreciates the efforts the applicant has taken to reduce impact to the habitat on and surrounding the project site including preserving existing oaks, avoiding wetlands, planting removed trees, conducting pre-construction surveys, providing mitigation for impacted habitats, and considering temporary impact mitigation at a higher ratio than required. ODFW also appreciates the information supplied during the review process so that assessment of habitat impacts and minimization of impacts through design and BMPs could take place. If you have any questions or seek clarification about the comments above, please contact Elizabeth Ruther at 503.621.3488 x228 or write elizabeth.j.ruther@state.or.us.

Sincerely,

[Signature]

Elizabeth J. Ruther
Habitat Conservation Biologist
North Willamette Watershed District

Cc: Art Martin
    Jeff Boechler
    Susan Barnes
    Don VandeBergh
MEMORANDUM

May 1st, 2013

To: Chris Green, Siting Analyst
   Oregon Department of Energy

From: Marah Danielson, Senior Planner
      ODOT Region 1 Planning
      123 NW Flanders St
      Portland, OR 97209
      503-731-8258
      Marah.b.danielson@odot.state.or.us

Re: Troutdale Energy Center Application for Site Certificate
   ODOT Comments

Table U-3 “Transportation Route Traffic Volumes and Number of Lanes”,
identifies I-205 and US 30 to be transport routes for delivering heavy equipment
to the Troutdale Energy Center site. ODOT Motor Carrier Over Dimension
Permits may be required for transporting oversized loads. Katie Scott, Motor
Carrier OD Permit Specialist will be contacting you to discuss this project and
what types of permits will be necessary. Ms. Scott can be reached at 503-373-0000.
Thanks, Chris. I appreciate the information and will let people know. Quite a few members will be attending the April 24 public information hearing at Glen Otto Park, I appreciate the reminder.

Mary

Mary Rosenblum
The New Writers Interface
http://www.newwritersinterface.com/

On Mon, Apr 22, 2013 at 3:40 PM, Green, Chris <chris.green@state.or.us> wrote:

Mary,

Thank you for checking in on the review process for TEC. We accept comments throughout the process, but comments are not included in the record of the contested case unless they are made during the 30-day comment period following the date that ODOE issues a Draft Proposed Order. At this point, we tentatively anticipate issuing the DPO in late May or early June, so keep your eye on your email or mailbox around that time for a public notice. There are a few other opportunities to learn about the project in the meantime.

- We are hosting a Public Information Meeting at the Sam Cox Building at Glen Otto Park in Troutdale this Wednesday, March 24, at 7 pm.

- As you probably noticed, the Application for Site Certificate is available online (broken into exhibits, but still a long read) at http://www.oregon.gov/energy/Siting/Pages/TEC.aspx.

Let me know if you have any questions.

Thanks,

Chris Green, Siting Analyst
Dear Chris,

Mary Rosenblum here, President-elect of the Oregon Pilots Association. I have a question about public comment on the proposed TEC project for the land adjacent to the Troutdale Airport. There is no deadline listed for public comments to be included in the record for the Draft Proposed Order hearing on the DOE EFSC page for the project. Oregon Pilots Association definitely wants to comment on the project and we want to be certain that our comments are part of the record. Are you open to such comments now, or will you be open to receive them later on?

If you could please let me know what the time-frame is for public comment for the record, I'd appreciate it.

Thank you so much!

Mary

Mary Roseblum

President-elect Oregon Pilots Association
MEMORANDUM

TO: Chris Green, Siting Analyst
    Oregon Department of Energy

FROM: Jerry Sauter
    Oregon Water Resources Department
    725 Summer Street NE, Suite A
    Salem, Oregon 97301
    503.986.0817
    jerry.k.sauter@wrd.state.or.us

DATE: April 18, 2013

RE: Oregon Water Resources Department’s Comments on the complete Application for Site Certificate for the Troutdale Energy Center

General Comments: The stated sources of water are municipal in nature. Municipalities have the authority to sell water as long as they are within the limits of their existing water rights.

Specific Comments:
<table>
<thead>
<tr>
<th>Exhibit</th>
<th>Section No.</th>
<th>Pg. / Para. / Sentence Reference (as needed)</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>O</td>
<td>0.3</td>
<td>Sources of Water</td>
<td>City of Troutdale and purchased GW from Port of Portland are listed as sources for construction and operations. These would not require any further water rights as long as these sources and amounts are available within the amounts described in the existing pertinent water rights.</td>
</tr>
</tbody>
</table>
April 10, 2013

Mr. Todd Cornett
ODOE
625 Marion Street NE
Salem, OR 97301-3737

RE: SHPO Case No. 12-0016
   Troutdale Energy Center Thermal Combustion Power Project
   NOI/Final App for site certification (r'cvd 4/8/13)
   ODOE/TROUTDALE Energy Center LLC
   Troutdale Reynolds Industrial Park, Troutdale/Fairview, Multnomah County

Dear Mr. Cornett:

In our role as an advisory agency to the Energy Facility Siting Council, our office has reviewed the Project Order, Draft Technical Report for historic, cultural, and archaeological resources (Wilt and McClintock 2012), and the Exhibit S of the Application for Site Certificate for the Troutdale Energy Center, in the City of Troutdale, Multnomah County, Oregon. Upon review, it continues to be our opinion that the required Section 404 permit under the Clean Water Act constitutes a federal nexus sufficient to render the project a federal undertaking, requiring application of Section 106 of the National Historic Preservation Act (NHPA). This opinion appeared to be recognized in the Notice of Intent, which indicated in part J.5 (page J-5) that the cultural resources study would meet the standards set forth by Section 106. The report by Wilt and McClintock fails to meet those standards. As a result, no consideration was given to possible indirect, especially visual, impacts to historic resources.

Although the US Army Corps of Engineers, which oversees the issuance of Section 404 permits, feels that such issuance does not trigger the normal application of NHPA (as layed out in 33 CFR Part 325, Appendix C), the issue is far from settled, and it is the expressed opinion of most, if not all SHPO's, the National Park Service, the Society for American Archaeology, and the Advisory Council on Historic Preservation (among many others) that it does. With this in mind, it is our responsibility as an advisory agency to advise that this and all EFSC projects requiring a Section 404 permit be conducted to the standards of Section 106, in order that the EFSC, the site certification process, and the facility proponents may be inoculated from potential litigation or significant project delay. As stated above, despite the stated intention in the NOI to do so, the cultural resources study fails to meet the standards of Section 106, resulting in the possibility of adverse effects to historic resources.

Sincerely,

Jason Allen, M.A.
Historic Preservation Specialist
(503) 986-0579
jason.allen@state.or.us

RECEIVED
APR 16 2013
DEPARTMENT OF ENERGY
Forest Service Technical Comments on the Air Quality Impact Analysis of the Troutdale Energy Center

Prepared By: Rick Graw  
Region 6 Air Quality Program Manager  
June 12, 2013

Project Description

We understand that the proposed facility is a natural-gas-fired power plant, which will generate up to 653 megawatts of energy, of which approximately 70% will come from a combined-cycle plant, used to generate power during periods of peak demand, and the remainder from a simple-cycle plant, used to generate base load power. The plant is proposed to be located in the City of Troutdale, adjacent to the Troutdale Airport and the western boundary of the Columbia River Gorge National Scenic Area. During periods of natural gas curtailment, the facility may operate using ultra low-sulfur diesel fuel.

Class I Area Impact Analysis

The Class I area impact assessment consists of an analysis of air quality related values (i.e., those elements of the environment which are sensitive to air pollution, e.g., visibility, sensitive plants, etc.) against which Federal Land Managers may evaluate and determine whether or not the project is likely to cause or significantly contribute to an adverse impact. Federal Land Managers have developed guidance to help clarify the expected analyses and how the results are interpreted.

For the Class I Area impact analysis, the analysis of impacts of nitrogen and sulfur deposition to the nearby Class I wilderness areas revealed that impacts are all below deposition analysis thresholds (DATs). The visibility analysis was conducted for two different phenomenon. For those class I wilderness areas greater than 50 km from the proposed source, an analysis was conducted for regional haze. This was conducted for Mt. Hood Wilderness, Mt. Adams Wilderness and more distance wilderness areas. Additionally, a plume blight analysis was conducted for the nearest portion of the Mt. Hood Wilderness which was closer than 50 km to the proposed source—primarily the area near West Zigzag Mountain.

The regional haze analysis revealed that impacts in all nearby Class I areas are below thresholds of concern. Although the plume blight analysis for West Zigzag Mountain failed level-1 and level-2 screening analysis, the applicant was able to demonstrate that impacts are below thresholds of concern using a level-3 analysis. As such, the US Forest Service does not have concerns regarding impacts in nearby Class I areas from the proposed Troutdale Energy Center.

Applicability of CALPUFF and PLUVUE II

Visible impacts from the air pollution emissions from the Troutdale Energy Center may be realized in the form of a coherent plume near the source, and in the form of haze, when the plume is more well mixed with the surrounding air, as typically occurs further downwind from the source. Two different models are needed to address these two phenomenon: PLUVUE II is used for the near-field coherent plume assessment and CALPUFF is used to characterize haze.

On page 3-2 of the Revised Troutdale Energy Center, Columbia River Gorge National Scenic Area Evaluation\(^2\) (hereafter, referred to as the “Evaluation Report”), the applicant assumes that the coherent plume would not occur past the bend in the Gorge which occurs just beyond 16 km east of the facility. As such, PLUVUE II is applied for the first 16 km east of the facility and CALPUFF should be applied beyond 16 km from the source.

Background Visual Range used in CALPUFF

In characterizing the range of visual impacts likely to occur from the proposed project, numerous variables exist which may affect a visitor’s visual experience. One of these factors is the background visual range, against visual emissions from the proposed project would be viewed in contrast. On those very clear days, the same emissions are more likely to be visible due to the greater contrast with background visual range, as compared with the same emissions with less clean air (i.e., lower background visual range). The applicant was asked to compare the visibility modeling results to both average annual background conditions, and the 20% best days for visibility.

The applicant explains “The 20 percent best background values represent the mean of the lowest 20 percent deciview days at the station. In other words, the 20 percent best background values reflect visibility at the station that is better than the visibility there during all but approximately 7 days per year”.

This is a mischaracterization of the number of clean days in the CRGNSA. During the years of 2009 – 2001, which was used as the period in which the CALPUFF model was used to evaluate regional haze, visibility is monitored in the Columbia River Gorge at an interval of one sample, collected over a 24-hour period, once every three days. The one in three day sampling interval is chosen to be representative of an entire year of data, while balancing considerations associated with sampling every day of the year. In essence, the representation of the 20% best days represents 20% of the entire year, 365 days. Twenty percent of 365 days is 73 days a year, not seven days as indicated in the report. Thus, comparing model-predicted impacts against the 20% best visibility days in the Gorge helps characterize the impacts of the proposed facility during a considerable number days each year, not just a few as suggested in the text of the report.

CALPUFF Modeling Results

The model results reported in Table 2-1 of the Evaluation Report could not be regenerated using the information found in the model output. A comparison of the two is presented in Table 1 below.

---

Table 1. Reported vs. Model Output CALPUFF Modeling Results

<table>
<thead>
<tr>
<th>Year</th>
<th>Reported</th>
<th>Model Output Files</th>
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<tbody>
<tr>
<td></td>
<td>Max Δ% dv</td>
<td>Max Δ% dv 98%Δdv</td>
</tr>
<tr>
<td>2009</td>
<td>2.928</td>
<td>4.436</td>
</tr>
<tr>
<td>2010</td>
<td>2.377</td>
<td>3.652</td>
</tr>
<tr>
<td>2011</td>
<td>2.006</td>
<td>3.204</td>
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</tbody>
</table>

Additionally, the CALPUFF need only be reported for distances greater than 16 km beyond the source to assess impacts to haze in the Columbia River Gorge, whereas PLUVUE II is to be used to assess coherent plume characteristics within 16 km from the facility.

**Threshold Criteria for Evaluation of CALPUFF Modeling Results**

The Forest Service characterizes increases in source emissions which result in Δdv ≥ 0.5 as significantly contributing to visibility impairment and Δdv ≥ 1.0 as causing visibility impairment, with considerations to the frequency and magnitude of these impacts (refer to the FLAG 2010 document for more detail).

The applicant, however, chose to use different criteria for judging the acceptability of its model predicted visibility impacts. It chose to use a threshold based upon a proposed, but ultimately rejected, criteria considered by EPA for evaluation of visibility in urban areas, not national scenic areas.

The target threshold of 30 deciviews (dv) is not applicable and inappropriate for determining the acceptability of the predicted impacts to visibility from this facility. As discussed in the National Ambient Air Quality Standards (NAAQS) for Particulate Matter; Final Rule³, the 30 dv threshold was one of several candidate protection levels (CPLs) being considered as a secondary particulate standard to address visibility in urban areas.

In developing its standard, the Visibility Assessment Committee reviewed studies of urban visibility preferences by study participants, which judged the acceptability of visibility of various urban visual air quality conditions. No definition was given for what participants judged as “acceptable” or “unacceptable”. The term acceptable was not defined so that each person’s response was based on his/her own values and preferences for visual air quality. However, when answering the questions, participants were instructed to consider the following three factors: (1) the standard would be for their own urban area, not a pristine national park area where the standard might be stricter; (2) the level of an urban visibility standards violation should be set at a visual air quality standard considered to be unreasonable, objectionable, and unacceptable visually, and (3) judgments of standard violations should be based on visibility only, not on health effects. Differences were found between the eastern US and the western US. The 30 dv threshold suggested by the applicant was developed from the 50 percentile acceptance criteria for eastern US cities such as Washington DC, whereas a 20 dv threshold was found to be more applicable to western cities such as Denver and Phoenix.

³ National Ambient Air Quality Standards for Particulate Matter; Final Rule. Federal Register, Vol. 78, No. 10, Tuesday, January 15, 2013
EPA ultimately rejected all the CPLs in its final rule. As such, the 30 dv threshold is not applicable for judging the acceptability of the impacts of a proposed source in the Columbia River Gorge National Scenic Area.

**Coherent Plume Blight Analysis**

For the near-field analysis, when air pollutants emitted from a source are not well mixed with the atmosphere, a coherent plume which is perceptible in either its color or contrast is the visibility phenomenon of interest and subject of the analysis. This is typically performed in various stages proceeding from level-1 screening which utilizes very conservative assumptions, to level-2 where hourly meteorological conditions are taken into account, to level-3 where more realistic assumptions about plume-observer-sun geometry are considered. If a screening analysis (i.e., level-1 or level-2) of a new or modified source can demonstrate that its emissions will not cause a plume with any hourly estimates of the change in the color difference index (ΔE) less than 2.0 and the absolute value of the contrast values (|C|) below 0.05, the Federal Land Managers (FLMs) will not likely object to the issuance of the PSD permit based on the near field visibility impacts and no further near field visibility analyses will be requested. More refined analysis (i.e., PLUVUE II) would be undertaken if the above conditions are not met and would be compared against lower levels of concern. For PLUVUE II analyses, the FLM would likely not object if ΔE < 1.0 and |C|< 0.02.

The applicant was not able to demonstrate that the emissions from the proposed Troutdale Energy Center will not cause a plume with any hourly estimates of ΔE < 2.0 and (|C|) < 0.05 using a level-1 or a level-2 screening analysis, a more refined analysis was required. A level 3 analysis is the final assessment. Therefore, the applicant conducted a Level-3 analysis using the PLUVUE II model.

The EPA Workbook for Estimating Visibility Impairment says: In a Level-3 analysis, the objective is broadened from conservative analysis of worst-case conditions to a more realistic analysis of all conditions that would be expected to occur in a typical year in the region that includes both the emission source and the observer. Level-3 analysis is no longer considered screening because it is a comprehensive analysis of the magnitude and frequency of occurrence of plume visual impacts as observed at a sensitive Class I area vista.

It is important to determine the frequency of occurrence of visual impact because the adversity or significance of impact is dependent on how frequently an impact of a given magnitude occurs. For example, if a plume is perceptible from a Class I area a third of the time, the impact would be considered much more significant than if it were perceptible only one day per year. The assessment of frequency of occurrence of impact should be an integral part of the Level-3 visual impact analysis. Upon review of the Level-3 near-field visibility impact analysis, the following issues were noted.

**Periods of Day Light**

On page 3-5 of the Evaluation Report, the applicants states that “In order to estimate the potential daytime (6:00 am to 6:00 pm) frequency of visible plumes, frequency of occurrence for each of these stability class/wind speed categories was calculated from meteorological data compiled in ISC3 format”
Table 2 below presents the range of time sunrise and sunset during each month of the year and the times modeled by the project proponent. Note, for the winter months, the assumption of daytime (6:00 am to 6:00 pm) overstates the length of daylight hours and for summer time this assumption underestimates the length of daylight hours.

Table 2. Sunrise, Sunset and Hours Evaluated

<table>
<thead>
<tr>
<th>Month (15 day)</th>
<th>Sunrise</th>
<th>Sunset</th>
<th>Length</th>
<th>Hours Modeled</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>7:47 am</td>
<td>4:54 pm</td>
<td>9 hr, 7 min</td>
<td>11:00 and 13:00</td>
</tr>
<tr>
<td>February</td>
<td>7:12 am</td>
<td>5:37 pm</td>
<td>10 hr, 27 min</td>
<td>11:00 and 13:00</td>
</tr>
<tr>
<td>March*</td>
<td>7:23 am</td>
<td>7:17 pm</td>
<td>11 hr, 54 min</td>
<td>10:00 and 14:00</td>
</tr>
<tr>
<td>April*</td>
<td>6:25 am</td>
<td>7:59 pm:</td>
<td>13 hr, 32 min</td>
<td>10:00 and 14:00</td>
</tr>
<tr>
<td>May*</td>
<td>5:40 am</td>
<td>8:35 pm</td>
<td>14 hr, 55 min</td>
<td>10:00 and 14:00</td>
</tr>
<tr>
<td>June*</td>
<td>5:21 am</td>
<td>9:01 pm</td>
<td>15 hr, 40 min</td>
<td>09:00 and 13:00</td>
</tr>
<tr>
<td>July*</td>
<td>5:37 am</td>
<td>8:56 pm</td>
<td>15 hr, 19 min</td>
<td>09:00 and 13:00</td>
</tr>
<tr>
<td>August*</td>
<td>6:12 am</td>
<td>8:17 pm</td>
<td>14 hr, 5 min</td>
<td>09:00 and 13:00</td>
</tr>
<tr>
<td>September*</td>
<td>6:49 am</td>
<td>7:21 pm</td>
<td>12 hr, 31 min</td>
<td>10:00 and 14:00</td>
</tr>
<tr>
<td>October*</td>
<td>7:27 am</td>
<td>6:24 pm</td>
<td>10 hr, 57 min</td>
<td>10:00 and 14:00</td>
</tr>
<tr>
<td>November</td>
<td>7:10 am</td>
<td>4:40 pm</td>
<td>9 hr, 29 min</td>
<td>10:00 and 14:00</td>
</tr>
<tr>
<td>December</td>
<td>7:44 am</td>
<td>4:28 pm</td>
<td>8 hr, 43 min</td>
<td>11:00 and 13:00</td>
</tr>
</tbody>
</table>

*Indicates Daylight Savings Time

Note, Sunrise and Sunset are for Portland, Oregon 2013 (Ref: www.timeanddate.com)
Daylight savings begins March 10, 2013 at 2:00 am, move clocks forward 1 hour.
Daylight savings time ends November 3, 2013 at 2:00 am, when clocks are moved back 1 hour.
However the times shown here are kept in Pacific Standard Time year round for consistency with the model.

The assumption of daylight hours occurring from 6:00 am to 6:00 pm has greater implications during the summer months, when the wind blows more frequently from the proposed source location into the CRGNSA, as illustrated by Figure 1 (winter shown in upper right pane, spring shown in the upper left pane, summer shown in the lower right pane, and autumn shown in the lower left pane). The frequency distributions shown in Figure 1 were derived 5 years (2006-2010) of 1 minute wind observations from the Troutdale Airport, processed with AERMET, as provided by the applicant.

Representation of the plume characteristics throughout the day

Because PLUVUE II’s inability to evaluate more than one hour of impact per model run, applicants must develop a reasonable subset of conditions to model which represent the full range of conditions which can occur during a customary 5-year period in order to ascertain the frequency and magnitude of the near-field impact to visibility. Thus, the selection of representative conditions ought to be representative of the full array of conditions or at least the worst-case conditions that can occur. Typically, worst-case conditions occur 1-hour after sunrise or 1 hour before sunset. Table 1 presents the specific hours modeled by the applicant during each season. The modeling of only 2 hours each day, none of which occur 1-hour after sunrise or 1-hour after sunset during the summer does not fully disclose the frequency or magnitude of potential impacts. Thus the conclusions described in the Evaluation Report are not reasonably representative of potential impacts from this facility.
Joint frequency distribution of meteorological conditions

The frequency distribution of stability and wind speed categories is a critical component of the near-field plume blight analysis because it identifies the frequency of meteorological conditions which are then input into the model to quantify the change in the color difference index and the absolute value of the contrast.

Early on in the application process, the Forest Service raised concern regarding the unusually large percentage of calm winds (38.39%) in the hourly observations from the Troutdale airport weather station. The large percentage of calms is believed to be derived from the Automated Surface Observing System (ASOS) and the METAR data coding system. EPA discusses issues
with ASOS data in its March 8, 2013 memorandum. “Beginning in July 1996, the METAR coding system imposed a strict wind speed threshold of 3 knots (1.54 m/s), such that all cases with wind speeds below 3 knots were treated as calms. Additionally, the METAR coding system also introduces the variable wind designation into the standard hourly reports. An observation is classified as a variable wind, and the wind direction is considered to be missing, if the wind direction varies more than 60° during the 2-minute averaging period for the observation and the wind speed is less than or equal to six knots (3.09 m/s), based on the wind direction varying by more than 60°, but the wind direction is not treated as missing in those cases.

To address concerns regarding the impact of large data gaps on the adequacy and representativeness of ASOS wind data for regulatory dispersion modeling under the Guideline, EPA developed a preprocessor to AERMET (version 11059 and later) in February 2011, called AERMINUTE, that can read 2-minute average ASOS winds (reported every minute) in the NCDC DSI-6405 dataset, and calculate hourly average wind speeds and directions. Currently, EPA recommends that AERMINUTE be routinely used in general practice in AERMOD modeling as the hourly average winds better reflect actual conditions over the hour as opposed to a single 2-minute observation.”

For this project, ASOS derived meteorological data from the Troutdale airport should have been processed with AERMINUTE for use with PLUVUE II. As shown with the AERMOD modeling, the use of the AERMINUTE preprocessor significantly increased the data retrieval rate for ASOS wind data and improved the adequacy of the representativeness of the data.

However, this is not the data that was used to derive Table 3-2 of the revised evaluation of the Troutdale Energy Center on the CRGNSA. Rather, the applicant used a different method in which the meteorological data was processed in the ISC3 format (by passing the use of AERMINUTE). A separate analysis is presented in Appendix D (Table D-1) was provided in which frequencies of daytime winds less than 0.5 m/s are reported. However, neither Table 3-2 nor Table 3-1, nor combination thereof presents the desired information.

A single approach should have been used to derive a single joint frequency stability-wind speed-wind direction table to characterize the frequency of occurrence of meteorological conditions used as input to the PLUVUE II model. The joint frequency distribution should have been derived from AERMINUTE/AERMET processed surface data, and then applying the Golder Method to convert the surface roughness length and Monin-Obukuv length (contained in the AERMET surface data files) to calculate the PG-stability class needed for input into PLUVUE II.

Table 3 presents the joint stability-wind speed frequency analysis using the above described method for winds blowing from 255° - 285° during daylight hours, expressed as a percentage of total hours per year. To obtain the number of hours per year, multiply the value shown in each box by 8760 hours. For example, for the period between June 1 and August 31st, the winds during the daylight hours blow from 255° - 285° approximately 315 hours. If every combination

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FS Technical Comments on the Air Quality Impact Analysis of the Troutdale Energy Center

of stability class and wind speed were to result in a noticeable plume, then this would represent the upper end of the frequency of how often the plume would be visible during the summer months for an average year.

Table 3. Joint Frequency Distribution of Stability Class and Wind Direction during Daylight hours for Troutdale, Oregon.

<table>
<thead>
<tr>
<th>Stability</th>
<th>WS (m/s)</th>
<th>Dec-Feb</th>
<th>Mar-Apr</th>
<th>Jun-Aug</th>
<th>Sep-Nov</th>
</tr>
</thead>
<tbody>
<tr>
<td>F</td>
<td>1</td>
<td>0.0386</td>
<td>0.0724</td>
<td>0.1448</td>
<td>0.0604</td>
</tr>
<tr>
<td>F</td>
<td>2</td>
<td>0.0362</td>
<td>0.0941</td>
<td>0.2607</td>
<td>0.0869</td>
</tr>
<tr>
<td>F</td>
<td>3</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0048</td>
<td>0.0000</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>0.0048</td>
<td>0.0072</td>
<td>0.0290</td>
<td>0.0024</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>0.0241</td>
<td>0.0700</td>
<td>0.0772</td>
<td>0.0531</td>
</tr>
<tr>
<td>E</td>
<td>3</td>
<td>0.0024</td>
<td>0.0386</td>
<td>0.0676</td>
<td>0.0217</td>
</tr>
<tr>
<td>E</td>
<td>4</td>
<td>0.0000</td>
<td>0.0048</td>
<td>0.0048</td>
<td>0.0000</td>
</tr>
<tr>
<td>D</td>
<td>1</td>
<td>0.0048</td>
<td>0.0121</td>
<td>0.0072</td>
<td>0.0097</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>0.0410</td>
<td>0.0435</td>
<td>0.0531</td>
<td>0.0483</td>
</tr>
<tr>
<td>D</td>
<td>3</td>
<td>0.0338</td>
<td>0.0845</td>
<td>0.0748</td>
<td>0.0507</td>
</tr>
<tr>
<td>D</td>
<td>4</td>
<td>0.0314</td>
<td>0.1110</td>
<td>0.0314</td>
<td>0.0483</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
<td>0.0169</td>
<td>0.0821</td>
<td>0.0217</td>
<td>0.0097</td>
</tr>
<tr>
<td>D</td>
<td>6</td>
<td>0.0024</td>
<td>0.0169</td>
<td>0.0072</td>
<td>0.0024</td>
</tr>
<tr>
<td>D</td>
<td>7</td>
<td>0.0000</td>
<td>0.0048</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>D</td>
<td>8</td>
<td>0.0000</td>
<td>0.0048</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>D</td>
<td>9</td>
<td>0.0000</td>
<td>0.0024</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>D</td>
<td>10</td>
<td>0.0000</td>
<td>0.0024</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>0.0097</td>
<td>0.0097</td>
<td>0.0700</td>
<td>0.0362</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>0.1086</td>
<td>0.1255</td>
<td>0.2680</td>
<td>0.1521</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>0.0217</td>
<td>0.2366</td>
<td>0.3790</td>
<td>0.1448</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>0.0048</td>
<td>0.0507</td>
<td>0.1014</td>
<td>0.0193</td>
</tr>
<tr>
<td>C</td>
<td>5</td>
<td>0.0000</td>
<td>0.0048</td>
<td>0.0048</td>
<td>0.0000</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>0.0266</td>
<td>0.0579</td>
<td>0.2149</td>
<td>0.1014</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>0.0483</td>
<td>0.4249</td>
<td>1.0042</td>
<td>0.4901</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>0.0048</td>
<td>0.2897</td>
<td>0.5504</td>
<td>0.1328</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0048</td>
<td>0.0000</td>
</tr>
<tr>
<td>A</td>
<td>1</td>
<td>0.0121</td>
<td>0.0893</td>
<td>0.0869</td>
<td>0.0555</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>0.0097</td>
<td>0.1473</td>
<td>0.1304</td>
<td>0.0435</td>
</tr>
<tr>
<td>% time</td>
<td></td>
<td>0.4828</td>
<td>2.0882</td>
<td>3.5994</td>
<td>1.5691</td>
</tr>
</tbody>
</table>

Criteria for the change in the color difference index (ΔE)

Section 3.3 presents the results of the criteria against which the PLUVUE II modeling analysis will be compared. The applicant inappropriately uses the criteria of ΔE > 2.0. This criteria is appropriate for Level-1 and Level-2 screening analyses (using VISCREEN). However, for the level-3 refined analysis using PLUVUE II, the Forest Service uses a ΔE criteria of > 1.0, as stated in the FLAG 2010 guidance. Hence, the frequency of occurrence of periods when this
criteria is incorrectly reported in Tables 3-9, 3-13, 3-17, 3-21, C-1b-e, C-2a-e, C-3c, C-3g, C-3k, and C-3o. Consequently, the conclusions based upon these results are also incorrect. (Note, Table C-3a is missing from the report).

Use of ultra-low sulfur diesel fuel.

The Forest Service agrees that combustion of ultra-low sulfur diesel (ULSD) in the simple-cycle turbines would be more likely to create situations where perceptibility could be affected than combustion of natural gas in those turbines. Given the proposed restriction of 720 hours per year or so of operation on ULSD, even though unlikely, should be considered in the evaluation of this permit and its impacts to the Columbia River Gorge National Scenic Area.

Frequency and Magnitude of Plume Blight

The results presented in Section 3 of the Evaluation Report and associated appendices underestimate both the magnitude and frequency of occurrence of plume blight in the CRGNSA for the above stated reasons. Additional modeling was conducted using PLUVUE II to assess the plume characteristics at 7:00 am on the longest day of the year – June 21st. Table 4 presents the results from PLUVUE II model runs for June 21 at 7:00 am and 8:00 pm. Values reported are for the worst-case scenario (i.e., typically black background for a wind direction of 280°). The results reveal that for all combination of wind speeds and stability classes at 7:00 am, the plume would exceed either one or both criteria for the change in the color difference index (ΔE) and the absolute value of the contrast values |C|. The magnitude of the impacts is as much as 15 times the color difference index, but varies depending upon meteorology and viewing background.

At 8:00 pm, the magnitude of the impacts decreases to about 1/3 of that in the morning, but with several, but not all stability and wind classes resulting in a perceptible plume. The magnitude of these impacts is dependent upon both the stability class and the wind speed.

Table 5 presents the average number of days during the summer season (June – August) when the wind blows from Troutdale east into the CRGNSA by hour of the day. The results were derived using five years of meteorological data (2006-2010) from the Troutdale Airport. During the early morning hours (5:00 am – 8:00 am), the wind blows from the proposed source location into the CRGNSA between 12-15 days each summer, on average. The frequency increases as the day progresses where by 2:00 pm, the frequency increases to 27 days/season, and then decreases again around 4:00-5:00 pm, to only 15 days/season, then increases again in the last hours before sunset to 25 days/season.
Table 4. PLUVUE II Results for June 21st at 7 am and 8 pm local time

<table>
<thead>
<tr>
<th>Stability Class</th>
<th>Wind speed (m/s)</th>
<th>7:00 AM</th>
<th>8:00 PM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>∆E</td>
<td></td>
<td>C</td>
</tr>
<tr>
<td>F 1</td>
<td>15.627</td>
<td>0.413</td>
<td>5.935</td>
</tr>
<tr>
<td>F 2</td>
<td>9.142</td>
<td>0.228</td>
<td>3.401</td>
</tr>
<tr>
<td>F 3</td>
<td>6.63</td>
<td>0.162</td>
<td>2.445</td>
</tr>
<tr>
<td>E 1</td>
<td>9.006</td>
<td>0.225</td>
<td>3.314</td>
</tr>
<tr>
<td>E 2</td>
<td>3.931</td>
<td>0.094</td>
<td>1.425</td>
</tr>
<tr>
<td>E 3</td>
<td>2.779</td>
<td>0.066</td>
<td>1.006</td>
</tr>
<tr>
<td>E 4</td>
<td>2.164</td>
<td>0.051</td>
<td>0.784</td>
</tr>
<tr>
<td>E 5</td>
<td>1.766</td>
<td>0.042</td>
<td>0.640</td>
</tr>
<tr>
<td>D 1</td>
<td>5.346</td>
<td>0.13</td>
<td>1.933</td>
</tr>
<tr>
<td>D 2</td>
<td>2.944</td>
<td>0.071</td>
<td>1.111</td>
</tr>
<tr>
<td>D 3</td>
<td>2.122</td>
<td>0.052</td>
<td>0.813</td>
</tr>
<tr>
<td>D 4</td>
<td>1.685</td>
<td>0.041</td>
<td>0.615</td>
</tr>
<tr>
<td>D 5</td>
<td>1.394</td>
<td>0.035</td>
<td>&lt; 1.00</td>
</tr>
<tr>
<td>D 6</td>
<td>1.201</td>
<td>0.03</td>
<td>&lt; 1.00</td>
</tr>
<tr>
<td>D 7</td>
<td>1.053</td>
<td>0.027</td>
<td>&lt; 1.00</td>
</tr>
<tr>
<td>D 8</td>
<td>0.943</td>
<td>0.024</td>
<td>&lt; 1.00</td>
</tr>
</tbody>
</table>

Table 5. Average Number of Days Wind Blows from Source into the CRGNSA.

<table>
<thead>
<tr>
<th>Period</th>
<th>Hour</th>
<th>Average Number of Days Wind Blowing East into the CRGNSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>June – August</td>
<td>5 am</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>6 am</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>7 am</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>8 am</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>9 am</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>10 am</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>11 am</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>12 pm</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>1 pm</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>2 pm</td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>3 pm</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>4 pm</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>5 pm</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>6 pm</td>
<td>15</td>
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Based upon the above information and the information presented in the applicants Evaluation Report, it is estimated that a coherent plume would be perceptible approximately 15–27 days each summer, with varying duration in time. Most likely the plume would be perceptible in the first few hours after sunrise and the last few hours before sunset, and seldom be seen in the middle of the day.

Outside of the summer period, the frequency of winds blowing from the proposed source to the east, into the CRGNSA occur far less frequently than in the summer. As such, a coherent plume caused by the proposed source would occur far less frequently.

The modeling analysis also revealed that the emissions from the facility are projected to reduce visibility in the western portion of the CRGNSA, from the western boundary of the Scenic Area, past Crown Point, but not as far as Multnomah Falls.

**Nitrogen Deposition**

The Forest Service is concerned with the projected increase in nitrogen deposition in the western portion of the CRGNSA, particularly the Sandy River Delta. This area’s close proximity to the majority of Oregon’s population and abundant beauty cause the area to receive high levels of public use. Restoration of the mouth of the Sandy River is the top priority identified in the Sandy River Basin Aquatic Habitat Restoration Strategy. As part of this strategy, the Forest Service is working with its partners towards reconnecting isolated habitats for native salmon and steelhead, restoring water quality and marine derived nutrients, restoring riparian vegetation, and in-stream habitat. In addition to the investment made to restore the aquatic habitat, the Forest Service has also invested its time and resource to make other improvements to the Sandy River Delta including parking areas, miles of new trails, new picnic areas, new signage, and vegetation management. Given the high public use of the area, the efforts to restore native salmon and steelhead in the Sandy River Basin, and improvements to the multi-use Sandy River Delta public area, the Forest Service is concerned that nitrogen deposition from the Troutdale Energy facility would significantly contribute to threaten the progress towards achieving the ecological and recreation goals of this area.

Sufficient information is not known at this time whether or not the nitrogen deposition will result in unwanted impacts on the aquatic ecosystem. While the applicant states that dominant water bodies (i.e., Sandy River and Columbia River) are fast flowing, there is a concern about how the nitrogen deposition would affect wetlands in this area. Any information or studies would be greatly appreciated toward understanding the likely effects of additional nitrogen on the most sensitive elements of the aquatic ecosystem and how this may affect the restoration efforts underway.

The situation is different for terrestrial ecosystems, including the western portion of the Columbia River Gorge, which already receives deposition in excess of amounts below which significant harmful effects are not expected to occur (i.e., critical loads for lichen). Ideally, nitrogen deposition would decrease in the future to levels below critical loads. Thus, the incremental increase in nitrogen deposition in this area is not consistent with restoration efforts.
Columbia River Gorge Air Study and Strategy

It is difficult to see how the predicted impacts to visibility are congruent with goals of the Scenic Area Act\(^6\) and the Columbia River Gorge Air Study and Strategy\(^7\). The goals of the Scenic Area Act are (1) to protect and enhance the scenic, natural, cultural and recreational resources of the Columbia River Gorge; and (2) to protect and support the economy of the Columbia River Gorge area by encouraging growth to occur in urban areas and allowing future economic development consistent with resource protection. The Forest Service and the Columbia River Gorge Commission have responsibility under the Scenic Area Management Plan to protect and enhance natural, scenic, cultural, and recreational resources in the Columbia River Gorge.

In May 2000, the Gorge Commission approved an air quality amendment to the National Scenic Area Management Plan. The amendment language states: “Air quality shall be protected and enhanced, consistent with the purposes of the Scenic Area Act. ...The States shall develop and implement a regional air quality strategy to carry out the purposes of the Scenic Area Act, with the U.S. Forest Service, the Southwest Air Pollution Control Authority [now the Southwest Clean Air Agency] and in consultation with affected stakeholders."

The Air Quality Project Goal is stated in Section III.A. (Page 6) of the Gorge Air Strategy document. “The National Scenic Area Act does not establish or mandate a specific air quality standard or numeric goal for the Gorge. Instead, its charge is to “protect and enhance” the scenic, natural, cultural, and recreational resources of the Gorge. Nevertheless, the air agencies have established an air quality goal for the Gorge. The goal for visibility in the Gorge is continued improvement using the same approach used in the federal Regional Haze Program”.

General Standards for Siting Facilities (OAR 345-022)

Oregon Administrative Rule (OAR) 345, Division 22 addresses the general standards for siting energy facilities. Within that rule, there is consideration for protected area as identified in OAR 345-022-0040. The rule states that “To issue a site certificate for a proposed facility located outside the areas listed below (i.e., protected areas), the Council must find that, taking into account mitigation, the design, construction, and operation of the facility are not likely to result in significant adverse impact to the areas listed below. The protected areas include wilderness areas (not just the Class I areas), national and State wildlife refuges, national and state fish hatcheries, national recreation and scenic area (including the Columbia River Gorge), state parks and waysides, etc.

Based upon the modeling analyses, the CRGNSA will be adversely impacted by the proposed facility due to the magnitude and frequency plume blight, particularly during the summer months, and the added contribution of nitrogen to an ecosystem which is already exceeding critical loads for lichen. It’s also worth noting the apparent lack of analyses of impacts to other protected areas listed in OAR 345-022-0040.

END DOCUMENT


Mr. Andy Ginsberg  
Air Quality Administrator  
Oregon Department of Environmental Quality Air Quality Division  
811 SW 6th Avenue  
Portland, OR 97204

Dear Mr. Ginsberg,

The USDA Forest Service appreciates the opportunity to provide comments on the proposed Troutdale Energy Center. The facility is a natural gas-fired power plant that will be located adjacent to the western border of the Columbia River Gorge National Scenic Area (CRGNSA). It will provide both base load and additional power during periods of peak demand or periods of reduced generation capacity. The facility has many positive features. The Forest Service has engaged with ODEQ, the project proponent, and the project proponent’s consultants during the development of the air quality impact analysis. We appreciate the ongoing professional dialogue during this process. The following represent our findings.

The analysis of Class I area impacts has adequately demonstrated that impacts to air quality related values are below thresholds of concern. This analysis was conducted for impairment to visibility as well as nitrogen and sulfur deposition in the nearby Class I areas including Mt. Hood Wilderness, Mt. Adams Wilderness, and more distant Class I areas.

The Columbia River Gorge National Scenic Area (CRGNSA) is recognized as a world class scenic resource and the Oregon Department of Environmental Quality (ODEQ) Columbia River Gorge Air Study and Strategy (September 2011) identifies that visibility impairment (haze pollution) is the primary air quality concern within the Gorge. ODEQ’s strategy recommends continued visibility improvement in the Gorge.

The proponent’s analysis of air quality impacts to the CRGNSA is lacking in several areas that include: an accurate assessment of the frequency and magnitude of the occurrence of plume blight; accurate characterization of regional haze impacts; and use of appropriate thresholds for evaluating impacts. The visibility analysis consisted of two components: a near-field analysis to assess the frequency and magnitude of a coherent plume and an assessment of the contribution of this source to regional haze. Unfortunately the results of the regional haze analysis were not consistent with the values reported in the modeling files, nor were they compared with the appropriate threshold criteria used by federal land manager. As such, the haze analysis should be revised accordingly.

The plume blight analysis was re-evaluated by the Forest Service to better characterize the frequency and magnitude of plume blight. Based on the Forest Service analysis, the emissions
from the proposed power plant are estimated to result in a perceptible coherent plume at least a few hours a day, for somewhere between 15-27 days of the summer season and a few days in the spring and fall. The impacts would occur during the peak recreation season and during the key viewing periods of sunrise and sunset and could affect a number of state and federal managed areas within the CRGNSA. The magnitude of these impacts varies greatly but can be as much as 15 times the Federal Land Manager’s criteria for the change in the color difference index (ΔE) and the absolute value of the contrast values (|C|). The frequency and magnitude of impacted days could increase further in the event of natural gas curtailment if back-up diesel fuel is used for operations.

In addition to these considerations, the incremental increase in nitrogen deposition is also of concern, particularly in an ecosystem which is already experiencing damage from air pollution. The Forest Service has invested a considerable amount of effort and funds to restore National Forest System lands adjacent to the proposed facility at Sandy River Delta and we are concerned about the effects of nitrogen deposition to this and other natural areas within the Gorge.

The Portland-Vancouver area emissions have already been identified as contributing to haze during the summer months in the Gorge (ODEQ, Columbia River Gorge Air Study and Strategy, page 32). As the project is currently proposed, it is difficult to see how it would be consistent with ODEQ’s goals for their Columbia River Gorge Air Study and Strategy or the General Standards for Siting Facilities (OAR 345-022).

Given these concerns, the Forest Service would like to see that the proposed impacts from this facility are mitigated to the extent that it will be congruent with ODEQ’s recommended Columbia River Gorge Air Study and Strategy as well as Oregon Administrative Rules for General Standards for Siting Facilities. Technical details of our comments are provided as an attachment to this letter. Should you have any questions, please contact Mr. Rick Graw, the regional air quality program manager for the Forest Service at (503) 808-2918.

Sincerely,

LYNN BURDITT
Area Manager

cc: George Davis (DEQ), Phil Allen (DEQ)

Enclosures
Comments on the complete Application for Site Certificate for the Troutdale Energy Center Application

To: Chris Green – Energy Facility Siting Analyst

The USDA Forest Service, Columbia River Gorge National Scenic Area appreciates the opportunity to comment on the Troutdale Energy Center Application submitted by Troutdale Energy Center, LLC (TEC) to the Oregon Energy Citing Council (EFSC). Comments are listed below.

EXHIBIT R – SCENIC RESOURCES

R3.3.3 Follow Standard Visual Assessment Methods
It would be helpful for this section to include a discussion on what would constitute a significant adverse impact using the Federal Highway Administration (FHWA) visual impact assessment methodology.

R.6.3 Cooling Tower Plume and R.6.4 Potential Impacts to Scenic Resources
The analysis describes two types of plumes as seen at the cooling tower. The analysis does not identify that the plumes may move from west to east down the Columbia River Gorge before they will dissipate. It would be helpful to see a description of the plume under these conditions. Additional photo simulations may need to be included as well as a visual impact analysis as seen from key viewpoints.

R.8 Map of Scenic Resources
See comment concerning the variable size of the analysis areas.

R.9 Monitoring
There may be concerns for potential impacts to scenic resources in the CRGNSA. The applicant could address these concerns through the development of a monitoring program as required in OR 345-021-0010(1)(r)(F): The applicant’s proposed monitoring program, if any, for impacts to scenic resources.

EXHIBIT T – RECREATIONAL FACILITIES

T.2 Recreational Opportunities in the Analysis Area
See comment concerning the variable size of the analysis areas.
T.2.2 Recreational Opportunities Located within the Columbia River Gorge National Scenic Area

Section T.2.1 identifies the CRGNSA as an important recreational opportunity and identifies Crown Point as a notable example. It is unclear why Crown Point was not included in the analysis, regardless of whether it is outside the five-mile analysis area for recreational facilities.

EXHIBIT P – FISH AND WILDLIFE HABITAT
The Forest Service would like to see a description of how the nitrogen deposition may impact the aquatic food web and existing/future riparian restoration efforts in the Sandy River Delta.

EXHIBIT Q – THREATENED AND ENDANGERED PLANT AND ANIMAL SPEICES
The Forest Service would like to see a description of how nitrogen deposition may impact lichen populations within the CRGNSA in the long-term.

OTHER
Visibility Impacts and Nitrogen Deposition
The Forest Service would like to see a quantification of the visibility impacts and nitrogen deposition for each individual protected area within the CRGNSA. To facilitate the ease of interpreting the analysis, we would like to see maps, showing the individual Protected Areas an overlay of the nitrogen deposition, and a separate map of the Protected Area with an overlay showing visibility impacts.

Variable Size of Analysis Areas – Exhibit L, R, T
The analysis areas identified for Protected Areas (Exhibit L) uses a 20-mile analysis area, the Scenic Aesthetic Values (Exhibit R) use a 10-mile analysis area, and Recreational Facilities (Exhibit T) use a 5-mile analysis area. The visibility assessment prepared by TEC contractors used three primary wind directions (260, 270, and 280 degrees) with the furthest observation point located 20 km/~12.5 miles east of the proposed facility. It is unclear the rationale for the selection of a different sized analysis area for each of these resources. Could you provide an explanation?

It would be much clearer to use the same analysis area for both the Scenic Aesthetic Values and the Recreational Facilities.

END DOCUMENT
PREPARED BY

/s/LYNN OLIVER
Resource-Planning Officer
Columbia River Gorge National Scenic Area
Hood River, Oregon
541-308-1716
loliver@fs.fed.us
ATTACHMENT P-3

Wildlife and Habitat Monitoring and Mitigation Plan
Wildlife and Habitat Monitoring and Mitigation Plan
Troutdale Energy Center

Prepared for
Troutdale Energy Center, LLC

February 2013
Contents

1  Description of the Facility ....................................................................................................................... 1

2  Avoidance and Minimization ................................................................................................................... 2
   2.1  Facility .................................................................................................................................................. 2
   2.2  Transmission Line ................................................................................................................................ 4
   2.3  Access Road ......................................................................................................................................... 4
   2.4  Water Line ........................................................................................................................................... 4

3  Mitigation ............................................................................................................................................... 4
   3.1  Calculation of the Size of the Mitigation Area ..................................................................................... 4
   3.2  Description of the Mitigation Area ...................................................................................................... 6
   3.3  Habitat Enhancement Actions ............................................................................................................. 6
   3.4  Mitigation Area Monitoring ................................................................................................................. 7

4  Amendment of the Plan .......................................................................................................................... 7

5  References .............................................................................................................................................. 8

Table
1  Facility Impacts and Mitigation Area Requirements by Habitat Category ...................................................... 5

Appendix
A  Agreement Regarding Habitat Mitigation for the Trousdale Energy Center
## Acronyms and Abbreviations

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<td>ACFM</td>
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<td>VECO</td>
<td>Vegetation Corridor and Slope District</td>
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<td>WHMMP</td>
<td>Wildlife and Habitat Monitoring and Mitigation Plan</td>
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<td>WPCF</td>
<td>Water Pollution Control Facility</td>
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Wildlife and Habitat Monitoring and Mitigation Plan for the Troutdale Energy Center

This Wildlife and Habitat Monitoring and Mitigation Plan (WHMMP) describes Troutdale Energy Center, LLC’s (Applicant, certificate holder) plans to avoid, reduce, and mitigate potential adverse impacts to wildlife habitat from the construction and operation of the Troutdale Energy Center (Facility). This WHMMP summarizes the avoidance and minimization measures the Applicant has proposed to reduce potential impacts to wildlife habitat. In addition, this WHMMP describes the Applicant’s plan to preserve and enhance an area of land near the Facility to mitigate for permanent and temporary impacts to wildlife habitat. This WHMMP also specifies the monitoring procedures the Applicant plans to use to evaluate the success of the mitigation actions listed herein.

1 Description of the Facility

The Applicant proposes to permit the construction and operation of a natural gas-fired power plant at the Port of Portland-owned Troutdale Reynolds Industrial Park (TRIP) located in the City of Troutdale, Oregon. The average electrical generating capacity of the proposed Facility will depend on the specifications of the specific equipment selected, but is expected to be up to 653 megawatts (MW) with both power blocks. The Facility site on Lot 3 was historically an aluminum reduction plant and a portion of the staging area on Lot 6 was previously a landfill. More recently, the site has been identified by the U.S. Environmental Protection Agency (EPA) as a brownfield site. The site is zoned General Industrial by the City and is currently unused and vacant. The Facility will constitute a reuse of the site consistent with EPA standards for allowed uses. In 2007, the Port of Portland purchased the property and the surrounding area with the intention of developing it as an industrial park.

The main portion of the Facility is proposed on TRIP Lot 3, a 38.4-acre parcel of land that the Applicant seeks to purchase from the Port of Portland. The Applicant is also seeking additional area for two utility corridors, which are also included within the site boundary. One corridor is an 80-foot-wide easement for the proposed 230-kilovolt (kV) overhead transmission line between the main Facility site and the point of interconnection. A second corridor is required for a 20-foot-wide easement to run two underground process water pipelines between the main Facility on Lot 3 and the City of Troutdale Water Pollution Control Facility (WPCF) located to the southeast. The remaining areas within the site boundary include a temporary construction area and the improvement and extension of NW Swigert Way, which provides access to Lot 3. An area for temporary construction laydown, stockpiling and staging for the main Facility, and related and supporting facilities will be located on Lot 6, within TRIP immediately south of Lot 3. A portion of Lot 6 would be used as a staging area during facility construction.

The vast majority of habitat within the permanent and temporary impact area (93 percent) consists of Grassland habitat. This habitat type includes the nearby Sandy Drainage Improvement Company (SDIC) levee to the north of the Facility site, open fields that may or may not be mowed on a regular basis and contain weedy species, and fallow fields that consist of Himalayan blackberry (Rubus discolor) thickets and blackberry scrub. An occasional tree or small cluster of trees (native and non-native) may be present in the middle of a field or along a habitat edge. Most of the Grassland habitat is routinely disturbed and is dominated by non-native, weedy vegetation. During the process of site remediation, portions of Lots 3 and 6 were gravel-capped and monitoring wells were installed. Therefore, the disturbed grassland habitat within Lot 3 and Lot 6 is growing on top of gravel-capped land that is still undergoing site remediation and monitoring. Other habitat types in the impact area include Westside Riparian, Open Water, Riverine, and Urban and Mixed Environs.

Approximately 85 percent of the vegetation within the soil-capped area consists of non-native species such as tall fescue (Schedonorus arundinacea [Festuca arundinacea]), silver hairgrass (Aira caryophyllea), Queen Anne’s lace (Daucus carota), and Scotch broom (Cytisus scoparius). Former activities at the proposed Facility site, including operation of the aluminum plant, operation of the landfill, and remediation activities, have impacted the site’s native habitat. As discussed in the EPA’s Record of Decision for the site, several significant remedial actions were
conducted to remove contaminated soil and waste material from portions of Lot 3 and 6 (EPA, 2006). Portions of Lot 6 are covered with asphalt or gravel and decontamination washing sites are still present onsite and Lot 3 contains several monitoring wells.

Ongoing land uses, such as maintenance of the levee or fields for the regional airport, typically preclude habitat restoration to prior conditions. Although the fields in the survey area are disturbed fairly regularly, these fields nonetheless provide some value to wildlife, especially given the surrounding industrial land uses and other urban development.

2 Avoidance and Minimization

This section outlines the avoidance and minimization strategies proposed for the various Facility components.

2.1 Facility

The proposed Facility has been sited and designed to avoid as many disturbances to fish and wildlife habitat as possible and to avoid wetlands and streams. The Facility location embodies the concept of beneficial reuse of a brownfield site. The TRIP is the location of a former aluminum reduction plant owned and operated by Reynolds Metals Company and then Alcoa Inc. In 1994, the site was listed by the EPA as a Superfund site. The EPA issued its Record of Decision in September 2006, indicating that the level of clean up within TRIP rendered the site suitable for industrial use, but not for residential or commercial use. Siting the proposed Facility on a brownfield site as opposed to an undeveloped greenfield parcel has minimized habitat disturbance and avoided impacts to higher-value, previously undisturbed habitat.

In addition to siting the Facility at a brownfield site, the following avoidance measures will be taken:

- Facility construction and operation will generally occur on the western one-third of the parcel to avoid the existing wetlands and riparian habitat on Lot 3. The site is zoned General Industrial and development will generally occur on the most disturbed, lowest quality habitat in that parcel.

- The Facility will comply with the City of Troutdale’s Vegetation Corridor and Slope District (VECO) standards. Moreover, oak trees on Lot 3 and Lot 6 will be preserved.

Apart from impact avoidance measures, the Applicant also proposes a series of impact minimization strategies. For example, the Applicant will develop a Revegetation Plan to offset temporary construction-related impacts within the Facility site boundary. Temporarily disturbed Category 3 and 4 Grassland habitat will be restored onsite according to the Revegetation Plan. The Revegetation Plan will be developed in coordination with Oregon Department of Fish and Wildlife (ODFW) and will consist primarily of the following activities:

- Soil disking to treat soil compaction and aid revegetation efforts
- Broadcast or hydroseeding temporarily disturbed areas with a native erosion control seed mix approved¹ by ODFW to provide cover and forage for wildlife
- Weed management to control invasive species
- Category 6 Urban and Environ habitat impacted during construction will be returned to pre-construction conditions.
- In addition to the restoration measures described above, the Applicant will restore impacts to the VECO buffer impacts on Lot 3 in accordance with the Facility’s VECO Mitigation Plan (see Figure K-9 of the Applicant’s ASC [TEC, 2012]). Temporary impacts of approximately 0.3 acre will be mitigated by removing non-native vegetation and planting native species throughout the balance of the VECO on Lot 3. The VECO Mitigation Plan also outlines how undisturbed portions of the VECO buffer will be enhanced by removing non-native plants and noxious weeds, and planting native vegetation listed on the Metro Native Plant List (City of

¹ Suggested seed mix is Sunmark Seeds International’s Native E/C Mix. Online at: www.sunmarkseeds.com/spec_sheets/Native%20EC.pdf
Portland, 2012). The portion of the 50-foot VECO buffer that is not disturbed will be conserved and maintained as open space. The Applicant will install construction fencing at the edge of the VECO buffer (as well as delineated wetlands and the toe of the levee) to prevent stockpiling, vehicle entry, and compaction of the soils.

- The following impact minimization strategies are also proposed: The Applicant proposes to ensure necessary equipment selection and specification criteria to ensure compliance with the Oregon noise standards (Oregon Administrative Rule [OAR] 340-035-0035). While the Facility is anticipated to operate in compliance with the Oregon noise standards without unusual noise mitigation measures, implementation of Applicant-proposed noise-reduction measures will further minimize noise impacts to surrounding wildlife.

- The Applicant proposes a series of measures to minimize impacts related to Facility lighting. For example, the Facility’s proposed lighting plan was designed to include the minimum amount of lighting necessary to satisfy essential safety and security needs of the Facility. In addition, construction and operations lighting will be shielded and installed to satisfy the maximum light level standard contained in Troutdale Development Code (TDC) Section 9.090, which will direct lighting to stairways, equipment platforms, and machinery and will limit the amount of light directed off of Lot 3. Therefore, construction and operational light impacts to wildlife and migrating birds from the Facility will be minimized.

- The Applicant will install perch and nest deterrents such as spikes, galvanized wire mesh, or metal siding, on top of cooling towers, exhaust stacks, or other facility structures in order to discourage perching and nesting within the Facility.

- In the event that construction during the nesting season cannot be avoided, disturbances to Category 2, 3, and 4 habitats will be minimized by conducting a pre-construction survey for nesting birds within 30 days of ground disturbance, between January 1 and August 31 for eagles and raptors and between March 1 and August 31 for songbirds. If there is any lapse greater than 1 week between vegetation clearing and commencement of construction activities, surveys will be repeated. If nesting birds are located within disturbance areas, then ODFW will be contacted for guidance regarding appropriate construction phase nest buffers. Pre-construction surveys and subsequent buffers will help to reduce noise impacts on migratory and nesting birds using the site.

- Pre-construction nest surveys will be conducted to ensure compliance with the Migratory Bird Treaty Act. If nesting willow flycatchers or yellow-breasted chats are documented during preconstruction nesting surveys, avoidance and mitigation measures will be developed in coordination with ODFW.

- The Applicant will adhere to mitigation measures related to wetland and waters before and during construction, which are discussed in Exhibit J of the Applicant’s Application for Site Certificate (ASC) (TEC, 2012).

- In addition to the best management practices (BMPs) listed in the National Pollutant Discharge Elimination System (NPDES) 1200-C construction permit (see Attachment I-1 in the Applicant’s ASC [TEC, 2012]), the Applicant proposes to implement the following BMPs to protect Riverine habitat:
  - Install fencing along the channel to prevent siltation entering the water.
  - To the extent feasible, limit construction to the lowest flow period of the year.
  - Prevent any construction debris from falling into the stream channel. Any material that does fall into a stream during construction should be immediately removed in a manner that will minimally disturb the streambed and water quality.
  - Locate areas for fuel storage, refueling, and servicing of construction equipment in an upland location.
  - Prior to use, clean all equipment to remove external oil, grease, dirt, or mud.
  - Prevent petroleum products, fresh cement, or deleterious materials from entering the stream channel.
− Locate wash sites in upland locations so that dirty wash water does not flow into the stream channel or wetlands.
− Implement erosion-control measures during construction. Do not start construction until all temporary control devices (straw bales, silt fences, etc.) are in place downslope or downstream of project site.
− Obtain an ODFW wildlife salvage permit to remove reptiles or amphibians during construction if discovered.
− Cover trenches each night and inspect them each morning to reduce wildlife entrapment. At the close of each working day steep-walled holes or trenches more than 2 feet deep will be covered by plywood or similar materials or will have an escape ramp constructed of earthfill or wooden planks. Trenches will be inspected each morning to ensure that animals are not trapped.

2.2 Transmission Line

• The proposed transmission line has been sited to limit direct disturbance to wildlife habitats and avoid direct disturbance to wetland habitats. No monopoles will be placed in Salmon Creek.
• Transmission structure and conductor spacing will meet the Avian Protection Guidelines (APLIC and USFWS, 2005) to reduce the potential for collision and electrocution. To further minimize electrocution risk, perch and nest deterrents, such as spikes, will be installed on the monopoles along Salmon Creek.
• The Applicant proposes to reduce potential avian collisions with the proposed transmission line by installing bird flight diverters. These diverters are designed specifically to prevent avian collision with power lines by increasing power line visibility. Flight diverters will increase the visibility of new transmission line and are expected to reduce, but not eliminate, potential avian collisions. Researchers have found that diverters are effective for many species, including those with low wing loading such as swans and ducks (Frost, 2008). Research results vary, but studies indicate that diverters can reduce bird mortality from collisions by 60 percent or more (Janss and Ferrer, 1998; Yee, 2008).
• The Applicant will also propose a number of BMPs to protect Riverine habitat, as discussed in Section 2.1.

2.3 Access Road

The Facility was sited to make use of existing roads, including NW Swigert Way, which provides direct access to the Facility for construction and operation. Therefore, minimal road improvements are necessary. As a result of careful siting, the road improvements and extension will be limited to the open grassy habitat primarily located within the existing road right-of-way. The non-paved portions of the road extension will be restored to previous conditions after access road construction is complete.

2.4 Water Line

To the extent feasible, the two buried water lines have been sited within already disturbed habitat, including the north-south gravel road to the east of Lot 6 and in the right-of-way for NW Graham Road. No permanent disturbances will occur as a result of the water line installations.

3 Mitigation

3.1 Calculation of the Size of the Mitigation Area

The off-site habitat mitigation area (HMA) selected for the Facility will be large enough to achieve, within a reasonable time, the ODFW habitat mitigation goals and standards described in OAR 635-415-0025 (see Appendix A). For Category 2 impacts, ODFW goals require mitigation to achieve “no net loss” and a “net benefit” in habitat quantity or quality for impacts. Therefore, the Applicant proposes to restore and protect 2 acres for every 1 acre of Category 2 that is permanently impacted (2:1 mitigation ratio). For Category 3 and 4 impacts, ODFW goals require mitigation to achieve “no net loss” of habitat. Therefore, the Applicant proposes to restore and protect 1 acre for every 1 acre of Category 3 and 4 habitat that is permanently impacted (1:1 mitigation ratio).
For Category 6, mitigation is achieved by actions that minimize direct habitat loss and avoid impacts to offsite habitat. No Category 5 habitat will be impacted by the proposed Facility.

To address the temporal loss of habitat quality during the recovery of Category 2 or 3 Riverine and Westside Riparian habitats temporarily disturbed during construction of the Facility, the HMA will also include 0.5 acre for every 1 acre of Category 2 or 3 habitat affected (0.5:1 mitigation ratio). If the revegetation success criteria are not met in the affected areas of temporarily disturbed Category 2 and 3 habitats, as determined under the Revegetation Plan, then the Council may require the certificate holder to provide additional mitigation. Restoration of temporary impacts to Grassland habitat (Category 3 and 4) will occur onsite as discussed in Section 3.2.

Permanent and Temporary impacts of the proposed Facility are shown in Table 1.

### Table 1
Facility Impacts and Mitigation Area Requirements by Habitat Category

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<th>Permanent Impacts</th>
<th>Temporary Impacts</th>
<th>Offsite Mitigation Area Requirement (acres)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Facility Impact</td>
<td>Mitigation Ratio</td>
<td>Offsite Mitigation Area Requirement (acres)</td>
</tr>
<tr>
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</tr>
<tr>
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</tr>
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<td>1:1</td>
<td>0.0</td>
</tr>
<tr>
<td>Mitigation Area Subtotal</td>
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<td>--</td>
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</tr>
<tr>
<td>Mitigation Area Grand Total</td>
<td>--</td>
<td>--</td>
<td>17.9 acres</td>
</tr>
</tbody>
</table>

a The Applicant will mitigate for 27.0 acres of temporary impact to Category 3 and 4 Grassland habitat onsite. Mitigation will take place at a 1:1 ratio (twice the ratio required by ODFW) and will involve regrading and reseeding using a native seed mix. Offsite mitigation will take place for the remaining temporary impacts to Category 2 and 3 habitat (that is, Westside Riparian and Riverine) associated with the Facility.

b The Applicant proposes to mitigate for temporary impacts to Category 2 and 3 habitats (that is, Westside Riparian and Riverine) at a mitigation ratio of 0.5:1. Temporary impacts to Grassland habitat (Category 3 and 4) will be recontoured and restored to original condition onsite.

c ODFW does not require mitigation for impacts to Category 6 habitat. However, the Applicant proposes to return all Category 6 habitat that is temporarily disturbed to pre-construction condition.

The following calculations further illustrate how the size of the offsite HMA was determined:

**Category 2**
- Permanent Impacts: 0.1 acre (2:1 mitigation ratio)
- Temporary Impacts: 0.6 acre (0.5 mitigation ratio)

**Category 2 Mitigation Area Requirement**: (0.1 acre x 2.0) + (0.6 acre x 0.5) = 0.5 acre

**Category 3**
- Permanent Impacts: 5.4 acres (1:1 mitigation ratio)
- Temporary Impacts (Riverine habitat only): 0.6 acres (0.5 mitigation ratio)

**Category 3 Mitigation Area Requirement**: (5.4 acres x 1.0) + (0.6 acre x 0.5) = 5.7 acres
**WILDLIFE AND HABITAT MONITORING AND MITIGATION PLAN FOR THE TROUTDALE ENERGY CENTER**

**Category 4**
- Permanent Impacts: 11.7 acres (1:1 mitigation ratio)
- Temporary Impacts: N/A

**Category 4 Mitigation Area Requirement:** \( \text{(11.7 acres x 1.0)} = 11.7 \text{ acres} \)

**Total Mitigation Area Requirement:** 17.9 acres

Based on the calculations shown above, the size of the HMA required is 17.9 acres.

### 3.2 Description of the Mitigation Area

In coordination with ODFW, the certificate holder has selected an HMA in proximity to the Facility where habitat protection and enhancement are feasible and consistent with this WHMMP.\(^2\) The HMA is located on an approximately 800-acre parcel of U.S. Forest Service (USFS) land in the Sandy River Delta that is being restored and managed by Ash Creek Forest Management, LLC (ACFM) (see Appendix A). ACFM is a qualified not-for-profit (§501(C)(3)) conservation organization firm that specializes in developing complex mitigation projects and has agreed to provide habitat services as mitigation for the 17.9 acres of habitat impacts. The HMA is a highly degraded portion of the Sandy River Delta, where invasive species, including Himalayan blackberry, reed canary grass \((\text{Phalaris arundinacea})\), and clematis \((\text{Clematis vitalba})\), dominate the understory. Left untreated, these invasive species are likely to replace the remaining stands of Oregon ash \((\text{Fraxinus latifolia})\) and cottonwood forest in the HMA. The mitigation actions will build upon existing efforts at the Sandy River Delta, pursuant to which the approximately 800 acres have been targeted for ongoing restoration activities.

ACFM has a Memorandum of Agreement with the USFS that establishes ACFM’s authority to develop restoration activities. The certificate holder has an option with ACFM pursuant to which ACFM would conduct habitat restoration activities on 20 acres of land in the Sandy River Delta (see Appendix A). Mitigation proposed for the Sandy River Delta will implement the Sandy River Delta Plan (Plan) (USFS, 1995), the supporting document for USFS National Environmental Policy Act (NEPA) review and approval. The Plan is the guiding document for all restoration and management activities at the Delta. The proposed activities associated with the construction and operations of the Facility are consistent with the Plan. Target conditions to be restored are approved by USFS and derived from evaluation of site potential, historical conditions, and sustainability of restored habitat. Target condition on proposed mitigation acres is native cottonwood/ash forest community characteristic of intact floodplain habitats of the Lower Columbia Gorge region. Proposed activities utilize BMPs proven at the Delta to achieve target conditions. The proposed mitigation area contains suitable habitat to achieve the ODFW goals of no net loss of habitat in Categories 2, 3, and 4 and a net benefit in habitat quantity or quality for impacts to Category 2 habitat as described above through appropriate enhancement actions. Before beginning construction, the certificate holder will determine the final size and boundaries of the HMA in consultation with ODFW and ACFM and subject to the approval of the Oregon Department of Energy (ODOE). Before beginning construction of the Facility, the certificate holder will provide payment to ACFM, consistent with its agreement with ACFM, to create, maintain, and protect the HMA.

The mitigation actions will occur on a site totaling 20 acres at the Sandy River Delta, which would include mitigation for an additional 2.1 acres above and beyond the 17.9 acres of offsite mitigation outlined above that the Applicant anticipates it will need to secure a Site Certificate.

### 3.3 Habitat Enhancement Actions

ODFW and the Applicant collaborated in the selection of a mitigation parcel that best serves the interests of the public and mitigates the significant adverse impacts of the Facility. The objectives of habitat enhancement are to protect habitat within the HMA from degradation and to improve the habitat quality of the HMA. By achieving these goals, the certificate holder can address the permanent and temporal habitat impacts of the Facility and

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\(^2\) OAR 635-415-0005 defines “in-proximity habitat mitigation” as follows: “habitat mitigation measures undertaken within or in proximity to areas affected by a development action. For the purposes of this policy, ‘in proximity to’ means within the same home range, or watershed (depending on the species or population being considered) whichever will have the highest likelihood of benefiting fish and wildlife populations directly affected by the development.”
meet the ODFW goals of “no net loss” of habitat in Categories 2, 3, and 4 and a “net benefit” in habitat quantity or quality for impacts to habitat in Category 2. ACFM will initiate the habitat enhancement actions pursuant to its agreement with the Applicant, and as soon as the final design configuration of the Facility is known and the size of the mitigation area has been determined and approved by ODOE and the Council.

ACFM’s specific habitat enhancement actions within the HMA will include:

- Mowing/cutting of non-native species including blackberry and reed canary grass
- Cutting holly (*Ilex sp.*), hawthorn (*Crataegus sp.*), and other invasive species and treating stumps with herbicides
- Applying herbicides to all re-growth of targeted invasive species twice each year for 2 years
- Seeding the site with native grass and herbaceous species
- Installing native, site-adapted tree, shrub, and perennial herbaceous species throughout the HMA
- Conducting annual spring mowing treatments as needed between planted trees and shrubs
- Conducting summer and fall herbicide treatments as needed throughout the HMA
- Monitoring the site for plant establishment and forest health
- Adapting management actions to achieve long-term site objectives

### 3.4 Mitigation Area Monitoring

Pursuant to the certificate holder’s agreement with ACFM, ACFM will restore and maintain the HMA for a period of at least 5 years after receiving payment from Troutdale Energy Center LLC, and the certificate holder will renew this agreement as necessary during the life of the Facility. Specifically, ACFM will ensure that the site achieves at least a 60 percent survival rate of planted trees and shrubs, that no more than 20 percent of the ground cover within the HMA is taken up by non-native broadleaf weedy species, and that the majority of trees within the HMA achieve a free-to-grow status within the initial 5-year timeline.

Monitoring to ensure the HMA achieves these benchmarks will be conducted through visual surveys by trained restoration ecologists provided by ACFM. ACFM will visit the site as necessary to:

- Assess the success of the weed control (including area seeding) and erosion control programs and recommend remedial action, if needed.
- Assess the survival rate and growth of planted/seeded native vegetation.

ACFM will report its findings and recommendations regarding the monitoring of the HMA to ODOE and ODFW on an annual basis. In the annual report, AFCM will describe all habitat mitigation actions carried out within the HMA during the reporting year. The report to ODOE may be included as part of the annual report on the Facility.

If ACFM cannot demonstrate that the HMA is trending toward meeting the benchmarks within 5 years after the date construction of the Facility begins, then ACFM will propose remedial action. ODOE may require supplemental planting or other corrective measures, which may include increasing the size of the HMA.

### 4 Amendment of the Plan

This WHMMP may be amended from time to time by agreement of the certificate holder, ACFM, and Energy Facility Siting Council (EFSC). Such amendments may be made without amendment of the Site Certificate. EFSC authorizes ODOE to agree to amendments to this WHMMP. ODOE will notify EFSC of all amendments, and EFSC retains the authority to approve, reject, or modify any amendment of this WHMMP agreed to by ODOE.

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3 See “Agreement regarding habitat mitigation for the Troutdale Energy Center between Ash Creek Forest Management LLC and Troutdale Energy Center, LLC.” Final Agreement.
5 References


Appendix A

Agreement Regarding Habitat Mitigation for the Troutdale Energy Center
AGREEMENT REGARDING HABITAT MITIGATION
FOR THE TROUTDALE ENERGY CENTER
Between
Ash Creek Forest Management LLC and Troutdale Energy Center, LLC

This Agreement Regarding Habitat Mitigation for the Troutdale Energy Center ("Agreement") is entered into by and between Ash Creek Forest Management LLC ("Ash Creek") and Troutdale Energy Center, LLC ("Troutdale Energy Center") (together, the "Parties") to provide habitat restoration services at the Sandy River Delta as mitigation for the development of the Troutdale Energy Center at the nearby Troutdale Reynolds Industrial Park.

RECITALS

A. Troutdale Energy Center proposes to construct and operate a natural gas-fired power plant, the Troutdale Energy Center (the "Facility"), at the Port of Portland-owned Troutdale Reynolds Industrial Park located in the City of Troutdale, Oregon.

B. Troutdale Energy Center has submitted an Application for Site Certificate to the Oregon Energy Facility Siting Council ("EFSC" or the "Council") for authorization to construct and operate the Facility.

C. To secure a Site Certificate, Troutdale Energy Center is required to comply with the Council’s Fish and Wildlife Habitat Standard set forth at OAR 345-022-0060, which requires the Council to find that the design, construction, and operation of the Facility, taking into account mitigation, are consistent with the fish and wildlife habitat mitigation goals and standards of OAR 635-415-0025.

D. The Parties expect the conditions of the Site Certificate to include a requirement that Troutdale Energy Center mitigate the impacts to approximately 17.4 acres of habitat. The Oregon Department of Fish and Wildlife believes the majority of these acres to be Category 4 grassland habitat, with some Category 3 grassland habitat and a very small amount of Category 2 westside riparian habitat.

E. Ash Creek is a natural resource restoration firm that specializes in developing complex mitigation projects and has agreed to provide habitat services as mitigation for the 17.4 acres of habitat impacts (the "Project").

F. The mitigation actions outlined in this Agreement will occur on a site totaling 20 acres (the "Project Area") at the Sandy River Delta, which would include mitigation for an additional 2.6 acres above and beyond the 17.4 acres of mitigation that Troutdale Energy Center anticipates it will need to secure a Site Certificate.

G. The Project Area is a highly degraded portion of the Sandy River Delta, where invasive species, including blackberry, reed canary grass, and clematis, dominate the understory. Left untreated, these invasive species are likely to replace the remaining stands of ash and cottonwood forest in the Project Area.
H. The Project mitigation actions will build upon existing efforts at the Sandy River Delta, pursuant to which 800 acres have been targeted for ongoing restoration activities.

**AGREEMENT**

NOW, THEREFORE, in consideration of the mutual covenants made in this Agreement and contingent upon Troutdale Energy Center securing a Site Certificate from the Council and the Council finding that the mitigation proposed is sufficient to satisfy the Council’s Fish and Wildlife Habitat Standard, the Parties agree as follows:

1. **Mitigation.** After receiving payment from Troutdale Energy Center as described in Section 4 below, Ash Creek agrees to conduct habitat restoration activities within the Project Area, which totals 20 acres at the Sandy River Delta, as mapped on Exhibit 1.

2. **Specific Mitigation Actions.** Specific restoration actions will include:
   a. Mowing/cutting of non-native species including blackberry and reed canary grass;
   b. Cutting holly, hawthorn, and other non-native species and treating stumps with herbicides;
   c. Applying herbicides to all re-growth of targeted non-native species twice each year for two years;
   d. Seeding the site with native grass and herbaceous species;
   e. Installing native, site-adapted tree, shrub, and perennial herbaceous species throughout the Project Area;
   f. Conducting annual spring mowing treatments as needed between planted trees and shrubs;
   g. Conducting summer and fall herbicide treatments as needed throughout the Project Area;
   h. Monitoring the site for plant establishment and forest health; and
   i. Adapting management actions to achieve long-term site objectives.

3. **Maintenance and Monitoring.** Ash Creek agrees to restore and maintain the site for a period of at least 5 years after receiving payment from Troutdale Energy Center. Specifically, Ash Creek will ensure that the site achieves at least a 60% survival rate of planted trees and shrubs, that no more than 20% of the ground cover within the Project Area is taken up by non-native broadleaf weedy species, and that the majority of trees within the Project Area achieve a free-to-grow status within the 5-year Project timeline. Monitoring to ensure the Project achieves these benchmarks will be conducted through visual surveys by trained restoration ecologists provided by Ash Creek.
4. **Payment Terms and Third-Party Trust.** Ash Creek has determined that the cost of conducting this work is $174,810. Contingent upon Troutdale Energy Center securing a Site Certificate for the Facility and the Council finding that the mitigation proposed is sufficient to satisfy the Council’s Fish and Wildlife Habitat Standard, and prior to the initiation of restoration activities, Troutdale Energy Center agrees to provide a lump-sum payment of $174,810 to a private trust, established by Ash Creek exclusively for the completion of Project restoration actions in the Project Area.

5. **Application for Site Certificate.** During the Application for Site Certificate process, Ash Creek will work with Troutdale Energy Center’s consultant to provide documents or data concerning Project mitigation actions or the Project Area to the Oregon Department of Fish and Wildlife or Oregon Department of Energy.

6. **Indemnification.** Ash Creek will be responsible and accountable for any loss or damage that may happen to the work or any part thereof, for any material or equipment used in performing the work, for injury or damage to any person or persons (either workmen or the public), or for damage to adjoining property arising from Ash Creek’s implementation of the Project. Ash Creek will defend, indemnify, and hold harmless Troutdale Energy Center and its officers, employees, and agents from any suits, claims, or actions brought by any person or persons for or on account of any injuries or damages sustained or arising in the performance of the work for the Project or in consequence thereof. Ash Creek agrees to hold Troutdale Energy Center, its officers, agents, and employees, harmless from all claims for damage or bodily injury that may arise in the fulfillment of the Project.

7. **Insurance.** Ash Creek will procure and maintain, during the term of this Agreement, the following insurance:

   a. **Comprehensive General Liability.** Ash Creek will maintain CGL insurance, covering personal injury and property damage, with minimum limits of $1 million per occurrence. Such insurance will include coverage against third-party claims.

   b. **Workers’ Compensation.** Ash Creek will maintain workers’ compensation and employers’ liability insurance as prescribed by applicable law, and including Employer’s or Stop-Gap Liability coverage with a minimum limit of $1 million per occurrence.

   c. **Automobile Liability.** Ash Creek will maintain coverage for owned, hired, and non-owned vehicles with a combined single limit for both bodily injury and property damage of $1 million per occurrence.

   Ash Creek will provide thirty days’ advance written notice to Troutdale Energy Center of any cancellation, termination, or alteration of the above.

8. **Third-Party Beneficiaries.** Nothing in this Agreement shall be construed to make any other person or entity not executing this Agreement a third-party beneficiary to the Agreement, and the Agreement is not enforceable by any third party.
9. **Entire Agreement.** This Agreement constitutes the entire agreement between the Parties and supersedes any previous agreements, understandings, or commitments by duly authorized representatives.

10. **Counterparts.** This Agreement may be sent via facsimile or email and executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

11. **Amendments.** Amendments to this Agreement may be proposed at any time by any Party, and shall become effective upon approval by all.

12. **Signatory Authority.** Each Party warrants and represents that the individual executing this Agreement on the Party's behalf, as set forth in the signature blocks below, is fully authorized to enter into this Agreement on behalf of the Party.

IN WITNESS WHEREOF, the Parties have executed this Agreement as of the last date written below.

**ASH CREEK FOREST MANAGEMENT LLC**

By: [Signature]

Name: [Name]

Its: [Title]

Date: [Date]

**TROUTDALE ENERGY CENTER, LLC**

By: [Signature]

Name: [Name]

Its: [Title]

Date: [Date]
EXHIBIT 1

[Map of Project Area]
Troutdale Energy Center Mitigation Site

- Troutdale Energy Center Mitigation Site - 20 Acres
- Existing Restoration Areas - 755 Acres
- Other Proposed Restoration Areas - 405 Acres
FIGURE S-2
Areas of Remediation and Recommended Shovel Probe Investigations

Troutdale Energy Center
Application for Site Certificate

General Notes:
Site Location - Troutdale, OR
(T1N, R3E, S23-24)

Data Source:
Color Airphoto (Google Earth Pro, 2011)

Note: For portions of the transmission line routes along NW Swigert Way, shovel probes are only recommended on the north side of the road.
MEMORANDUM OF UNDERSTANDING
THE CLIMATE TRUST AND TROUTDALE ENERGY CENTER, LLC
CARBON DIOXIDE STANDARD IMPLEMENTATION
MONETARY PATH PAYMENT REQUIREMENT
WITH A STANDBY LETTER OF CREDIT

THIS MEMORANDUM OF UNDERSTANDING (this “Agreement”) is entered into as of the ___ day of __________, 201_, by and between Troutdale Energy Center, LLC (the “Project Owner”) in its capacity as owner of the Troutdale Energy Center, and The Oregon Climate Trust (“The Trust”).

RECITALS

1. The Project Owner intends to design, finance, construct, own and operate a natural gas-fired combined-cycle combustion turbine electric generating facility consisting of two generator blocks with power augmentation capable of generating up to a total nominal electric power output of about 652 MW in the cities of Troutdale and Fairview, Oregon (“the Facility”).

2. The State of Oregon requires new energy facilities to meet a carbon dioxide emissions standard as described in OAR 345-024-0550 through -0710.

3. As a condition to the siting of the Project, the Project Owner is required to provide offset funds (“Offset Funds”) and selection and contracting funds (“Selection and Contracting Funds”) to The Trust. In accordance with Condition P.8 of the Site Certificate for the Troutdale Energy Center (the “Site Certificate”) that the Oregon Energy Facility Siting Council (the “Council”) granted to the Project Owner, dated XXXX, the Project Owner shall establish a third-party standby letter of credit (the “Letter of Credit”) in The Trust’s name, acceptable to the Council, sufficient to meet the monetary path requirement. Under the terms and conditions of this Agreement, the monetary path payments will be disbursed to The Trust as specified in the Site Certificate and this Agreement and then by The Trust as specified in OAR 345-024-0710.

4. The Trust is a qualified organization within the meaning of OAR 345-001-0010(46).

NOW, THEREFORE, in consideration of the premises and mutual promises herein contained, the parties hereto agree as follows:

1. Initial Base-Load Monetary Path Payment and Initial Power Augmentation Monetary Path Payment for the Facility.
1.1 The Project Owner has used the monetary path payment requirement calculations described in Conditions P.3 through P.5 of the Site Certificate to calculate the Initial Base-Load Monetary Path Payment amount for the Facility and has submitted them to the Oregon Department of Energy (the “Department”) for verification. The Trust acknowledges that the calculation of the Initial Base-Load Monetary Path Payment in [Index date] dollars presented in Appendix A is correct and consistent with the Site Certificate.

1.2 The Project Owner has used the monetary path payment requirement calculations described in Condition P.4 of the Site Certificate to calculate the Initial Power Augmentation Monetary Path Payment amount for the Facility and has submitted them to the Department for verification. The Trust acknowledges that the calculation of the Initial Power Augmentation Monetary Path Payment in [Index date] dollars presented in Appendix A is correct and consistent with the Site Certificate.

1.3 The Site Certificate requires that the Selection and Contracting Funds portion of both the Initial Base-Load Monetary Path Payment and the Initial Power Augmentation Monetary Path Payment for The Facility be adjusted for inflation to the date of disbursement to The Trust using the U.S. Gross Domestic Product Implicit Price Deflator, Chain-Weight, published in the then current “Oregon Economic and Revenue Forecast” (the “Index”). The Project Owner shall pay to The Trust the Inflation-Adjusted Selection and Contracting Funds in the amount of $___________ before beginning construction of the Project. The Trust acknowledges that the calculations of the Inflation-Adjusted Selection and Contracting Funds presented in Appendix A are correct and consistent with the Site Certificate.

1.4 Based on the verified calculations of the Initial Base-Load Monetary Path Payment and the Initial Power Augmentation Monetary Path Payment set forth in Appendix A, the Project Owner shall pay to the Trust $___________ in Offset Funds in [Index date] dollars pursuant to Sections 1.6, 1.7, 1.8, and 1.9 below. The Site Certificate requires that the Offset Funds portion of both the Initial Base-Load Monetary Path Payment and the Initial Power Augmentation Monetary Path Payment be adjusted for inflation from the [Index date], to the date of disbursement to The Trust using the Index.

1.5 The Project Owner shall establish a Letter of Credit in the amount of $___________ in favor of The Trust, in the form attached as Appendix B to this Agreement. The effective date of the Letter of Credit shall be on or prior to the date on which Project Owner commences construction of the Project. The Trust shall be entitled to draw the entire amount of the Offset Funds secured by the Letter of Credit pursuant to Section 1.7 or Section 1.8 below and the terms of the Letter of Credit. The Project Owner shall pay the costs of establishing and maintaining the Letter of Credit and shall pay any transaction fees assessed by the issuer of the Letter of Credit.

1.6 The Trust shall have the right to request Offset Funds from the Project Owner as provided in ORS 469.503(2(d)(A) upon execution of a letter of intent to acquire an offset project. At the sole discretion of The Trust, the amount of Offset Funds drawn may equal the entire amount of Offset Funds available. The Trust may request from the Project Owner less than the entire amount of the Offset Funds, but in no case shall
the cumulative amount of all requests exceed the total Monetary Path Payment Requirement, as adjusted for inflation.

1.7 If the Project Owner fails to pay Offset Funds as requested by The Trust within ten (10) business days from the date of such request, The Trust may draw the sum of the Letter of Credit for the full or remaining amount of the Offset Funds.

1.8 Notwithstanding Sections 1.6 and 1.7, if the Project Owner fails to renew the Letter of Credit in a timely manner, The Trust may draw the sum of the Letter of Credit for the full or remaining amount of Offset Funds prior to the Expiration Date of the Letter of Credit pursuant to Exhibit B of the Letter of Credit.

1.9 Because of the need to establish a Letter of Credit with sufficient funds to cover withdrawal up to the end of a future period calculated by application of the Index, the amount of the Letter of Credit on any date may be greater than the entire amount of Offset Funds required by the monetary path, as adjusted for inflation. If there are funds available under the Letter of Credit after The Trust has withdrawn the entire amount of Offset Funds under the Monetary Path Payment Requirement, the Project Owner may terminate the Letter of Credit after The Climate Trust certifies to the Department that it has received full monetary path payments and verification by the Department that the funds remaining in the Letter of Credit are excess of the Project Owner’s obligations pursuant to Section 1.

2. **Year One True-Up Base-Load Monetary Path Payment and Year One True-Up Power Augmentation Monetary Path Payment.**

2.1 The Project Owner shall, within 30 days of filing its Year One Test reports to the Council, calculate the Year One True-Up Base-Load Monetary Path Payment, if any, and the Year One True-Up Power Augmentation Monetary Path Payment, if any, as required by Conditions P.10 and P.11 of the Site Certificate. The Project Owner shall submit these calculations to the Oregon Department of Energy for verification, as required by Conditions P.7, P.10, and P.11 of the Site Certificate.

2.2 Both the Year One True-Up Base-Load Monetary Path Payment and Year One True-Up Power Augmentation Monetary Path Payment, if any, shall be adjusted for [Index date] dollars to the date of disbursement using the Index.

2.3 If any Year One True-Up Base-Load Monetary Path Payment or Year One True-Up Power Augmentation Monetary Path Payment is due, the Project Owner shall pay this amount directly to The Trust within 30 days of filing its Year One Test report to the Council.

2.4 In no case shall the calculations under this Section 2 cause the funding for the Initial Base-Load Monetary Path Payment and the Initial Power Augmentation Monetary Path Payment made available to The Trust by direct payment by the Project Owner or through a Letter of Credit to diminish.

3. **Periodic Five-Year Power Augmentation Monetary Path Payments.**
3.1 Each five years after beginning commercial operation, the Project Owner shall report
the annual average hours of usage of power augmentation to the Department as
required by Condition P.12(a) of the Site Certificate.

3.2 If the Department of Energy determines that there are excess emissions for the five-
year report period, the Department will specify the amount of Selection and
Contracting Funds and Offset Funds that the Project Owner shall make available to
The Trust. Each Periodic Five-Year Power Augmentation Monetary Path Payment, if
any, shall be adjusted for inflation from [Index date], to the Disbursement Date using
the Index.

3.3 For any Periodic Five-Year Power Augmentation Monetary Path Payment, the
Selection and Contracting Funds shall equal 20 percent of the value of any Offset
Funds up to the first $250,000 ([Index year] dollars) and 4.286 percent of the value of
any Offset Funds in excess of $250,000 ([Index year] dollars).

3.4 The Project Owner shall pay to The Trust the specified amount of any Periodic Five-
Year Monetary Path Payment within 30 days of its notification by the Department of
the amount that the Project Owner owes.

4. Undertaking by The Trust.

4.1 The Trust shall use the Initial Base-Load Monetary Path Payment and Initial Power
Augmentation Monetary Path Payment, as well as any Year One True-Up Base-Load
Monetary Path Payment, Year One True-Up Power Augmentation Monetary Path
Payment, and/or Periodic Five-Year Power Augmentation Monetary Path Payments in
accordance with OAR 345-024-0710.

4.2 With respect to the Offset Funds portions of any Initial Base-Load Monetary Path
Payment, Initial Power Augmentation Monetary Path Payment, Year One Base-Load
Monetary Path Payment, Year One Power Augmentation Monetary Path Payment, or
Periodic Five-Year Power Augmentation Monetary Path Payments, The Trust shall
spend at least 85 percent of the Offset Funds for contracts to implement offsets, and
may use up to 15 percent of the Offset Funds for monitoring, evaluation,
administration, and enforcement of contracts to implement offsets. The Trust shall
spend Offset Funds solely for contracts to implement offsets or for monitoring,
evaluation, administration, and enforcement of contracts to implement offsets.

4.3 The Selection and Contracting Funds portions of any Initial Base-Load Monetary Path
Payment, Initial Power Augmentation Monetary Path Payment, Year One Base-Load
Monetary Path Payment, Year One Power Augmentation Monetary Path Payment, and
Periodic Five-Year Power Augmentation Monetary Path Payments shall compensate
The Trust for its costs of selecting offsets and contracting for the implementation of
offsets and administrative costs related to operating The Trust as a qualified
organization.

4.4 The Trust shall use its best efforts to remain a qualified organization, as defined in
OAR 345-001-0010(45), until The Trust has used all funds received from the Project
Owner.
5. **Limited Obligation of Project Owner.**

   The Trust acknowledges that, pursuant to OAR 345-024-0710(3), the Project Owner and the Project shall have no obligation with regard to offsets for the Project other than to make available to The Trust the total amount of the monetary path payments.

6. **Limited Participation by Project Owner in The Trust Decision Making.**

   The Project Owner may appoint one nonvoting member to the Board of Directors of The Trust for a term lasting until The Trust has completed the contracting for the offset funds provided by the Project Owner for The Facility. The Project Owner shall have no approval rights over The Trust’s offset contracts, disbursement of Offset Funds, or other day-to-day operations of The Trust.

7. **Project Owner Agreement to Indemnify and Hold The Trust Harmless.**

   The Project Owner agrees to defend, hold harmless and indemnify The Trust from and against any and all claims, costs, liabilities, and expenses of any nature whatsoever, including reasonable attorneys' fees, resulting from or arising out of any failure by the Project Owner to make any payments required by this Agreement, or to establish and maintain the Letter of Credit described in Section 1.5 in a timely manner; PROVIDED, that the maximum amount of the Project Owner's liability to The Trust for claims, costs, liabilities and expenses, including attorneys' fees, arising out of the failure to make a payment or establish the Letter of Credit required by this Agreement in a timely manner shall not exceed twice the differential between the amount payable to The Trust on a particular date and the amount actually paid or made available to The Trust on or before that date. FURTHER PROVIDED, The Trust must make reasonable efforts to mitigate any losses, liabilities or expenses for which it seeks indemnification from the Project Owner.

8. **General Provisions.**

   8.1 **Governing Law:** This Agreement shall be governed by and construed in accordance with the laws of the State of Oregon. Any ambiguity that may arise under this Agreement shall be given a fair and reasonable construction in accordance with the intention of the parties and without regard to which party caused or is deemed to have caused such ambiguity to exist.

   8.2 **Amendments and Waivers:** This Agreement may not be modified, supplemented, altered or amended, or any provision hereof or rights hereunder deemed be waived, except by an instrument in writing designated as an amendment of or waiver under this Agreement and signed by both parties. The waiver of any particular breach or default hereunder shall not constitute a waiver of any other breach or default. Failure or delay by any party to enforce any provision of this Agreement shall not in any way be construed as a waiver of such provision, nor shall it prevent such party from thereafter enforcing each and every provision of this Agreement.

   8.3 **Entire Agreement:** This Agreement constitutes the entire agreement between the parties hereto as to the matters set forth herein, and all prior proposals, commitments,
understandings and agreements, whether oral or in writing, as to such matters are superseded by this Agreement.

8.4 Assignment: The rights of the Project Owner under this Agreement may be assumed by any entity that acquires an ownership interest in the Project. Upon such assumption, such entity shall be deemed to be a party to this Agreement. The Trust may not assign this Agreement without the prior consent of the Project Owner and Council; provided that, if the proposed assignee is a “qualified organization” as defined in OAR 345-001-0010(45), the Project Owner shall not unreasonably withhold such consent.

8.5 Third-Party Beneficiaries: Nothing in this Agreement, whether express or implied, is intended to confer any rights or remedies on any persons other than the parties hereto and their respective authorized successors and permitted assigns.

IN WITNESS WHEREOF, the parties have caused this Memorandum of Understanding to be executed by their respective duly authorized representatives, as of the day and year first above written.

TROUTDALE ENERGY CENTER, LLC       THE OREGON CLIMATE TRUST
By:                                    By:
Name:                                  Name:
Title:                                 Title:
Date:                                  Date:

APPENDIX A:  CALCULATION OF INITIAL BASE-LOAD AND POWER AUGMENTATION MONETARY PATH PAYMENT REQUIREMENT [NOT INCLUDED IN SITE CERTIFICATE]

APPENDIX B:  STANDBY LETTER OF CREDIT
APPENDIX B TO MEMORANDUM OF UNDERSTANDING

[FORM OF CLIMATE TRUST LETTER OF CREDIT]

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER [Insert number]

[Date]

THE OREGON CLIMATE TRUST
516 SE Morrison, Suite 300
Portland, OR 97214-2343

Ladies and Gentlemen:

At the request and for the account of Troutdale Energy Center, LLC (TEC), address 1 Martine Avenue, 9th Floor, White Plains, New York, for its Troutdale Energy Center, we, [INSERT BANK NAME HERE], hereby establish effective immediately, in favor of you, THE CLIMATE TRUST ("Beneficiary"), this Irrevocable Standby Letter of Credit Number [Insert number ] (the "Letter of Credit") in the amount of USD ____________ (as such amount may be reduced from time to time by partial draws hereunder, the "Stated Amount").

This Letter of Credit is being issued in connection with Site Certificate for the Troutdale Energy Center with the STATE OF OREGON, dated _____as may be amended from time to time.

This Letter of Credit is issued, presentable, and payable at our offices at [Drawing address], and expires with our close of business on ________ (the present or any future expiration date is referred to herein as the "Expiration Date").

It is a condition of this Letter of Credit that it shall be automatically extended without amendment for successive one (1) year periods from the present or any future Expiration Date hereof, unless we provide you with written notice of our election not to renew this Letter of Credit at least sixty (60) days prior to any such Expiration Date. For the purposes hereof, "Business Day" shall mean any day on which commercial banks are not authorized or required to close in _____. Subject to the terms and conditions herein, funds under this Letter of Credit are available at sight against your draft drawn on us bearing upon its face the clause "Drawn under _____________ and accompanied by the following documents:

1. The original of this Letter of Credit and all subsequent amendments, if any; and
2. Your sight draft drawn on us; and
3. A dated draw certificate purportedly signed by an authorized officer of the Beneficiary and on Beneficiary's letterhead in the form of attached Exhibits A or B to this Letter of Credit (incorporated herein by reference and made an integral part hereof).

Partial and multiple draws are permitted under this Letter of Credit, provided that the Stated Amount of this Letter of Credit shall be permanently reduced by the amount of each such draw. This Letter of Credit may not be transferred or any of the rights hereunder assigned. Any purported transfer or assignment shall be void and of no force or effect. _____ agrees that a draft drawn and
presented in conformity with the terms of this Letter of Credit will be duly honored upon presentation. If a draft made by Beneficiary does not conform to the terms and conditions of this Letter of Credit, we will give Beneficiary prompt notice that the demand for payment will not be effected. Such notice will include a statement of reasons for the denial. Upon being notified that the demand for payment was not effected in conformity with this Letter of Credit, Beneficiary may attempt to correct the nonconforming demand; provided, however, that any draft or document prescribed to correct such nonconforming demand must be provided on or prior to the Expiration Date.

This Letter of Credit sets forth in full our undertaking and such undertaking shall not in any way be modified, amended, amplified or limited by reference to any documents, instruments or agreements referred to herein, except only the exhibits referred to hereby and any such reference shall not be deemed to incorporate by reference any document, instrument or agreement except for such exhibits.

This Letter of Credit shall be governed by the Uniform Customs and Practice for Documentary Credits, 2007 Revision, International Chamber of Commerce Publication No. 600 (the "UCP"), As to matters not covered by the UCP, this Letter of Credit shall be governed by the laws of the State of Oregon without regard to the principles of conflicts of laws thereunder.

_____________________________________
Authorized Signature
[DATE]

[To Issuing Bank]
Drawn under Irrevocable Standby Letter of Credit Number __________
Any capitalized term used herein shall have the meaning defined for that term by the Letter of Credit.
The undersigned, the duly elected and acting _________ of the Beneficiary, hereby certifies as follows:

1. Troutdale Energy Center has failed to pay Offset Funds to The Climate Trust for the Monetary Path Payment Requirements described in the Site Certificate for the Troutdale Energy Center, as amended from time to time, (the "Site Certificate") within the time provided in the Memorandum of Understanding between The Climate Trust and Troutdale Energy Center, LLC for the Carbon Dioxide Standard Implementation of the Monetary Path Payment Requirement With A Standby Letter Of Credit (“Memorandum of Understanding”).

2. As a result of said failure to pay, the Beneficiary is entitled pursuant to the provisions of the Site Certificate and the Memorandum of Understanding to make demand under the Letter of Credit in the amount of $__________.

3. The undersigned has concurrently presented to you its sight draft drawn in the amount specified in Paragraph 2 above, which amount does not exceed the lesser of (a) the amount the Beneficiary is entitled to draw pursuant to the provisions of the Site Certificate and Memorandum of Understanding, and (b) the Stated Amount as of the date hereof. The date of the sight draft is the date of this Certificate, which is not later than the Expiration Date.

4. Funds paid pursuant to the provisions of the Letter of Credit shall be wire transferred to the Beneficiary in accordance with the following instructions:

_______________________
_______________________
_______________________

IN WITNESS WHEREOF, the Beneficiary has executed and delivered this certificate as of [Date].

THE CLIMATE TRUST as Beneficiary

By: ____________________
Title: ____________________
EXHIBIT B
[THE CLIMATE TRUST LETTERHEAD]

DRAW CERTIFICATE

[Date]

[Insert Bank Information]

Attention: Letter of Credit Manager

Drawn under Irrevocable Standby Letter of Credit Number ____________

Ladies and Gentlemen:

Any capitalized term used herein shall have the meaning defined for that term by the Letter of Credit.

The undersigned, the duly elected an acting ________ of the Beneficiary, hereby certifies as follows:

1. [Bank] as heretofore provided written notice to the Beneficiary of the Bank's intent not to renew the Letter of Credit following the present Expiration Date thereof.

2. Troutdale Energy Center, LLC is required to deliver to the Beneficiary and keep in effect, a letter of credit that satisfies the requirements of Condition P.8 of the Site Certificate for the Troutdale Energy Center, as amended from time to time (the "Site Certificate").

3. Neither Troutdale Energy Center, LLC nor any person acting on its behalf has, at least twenty (20) days prior to the present Expiration Date of the Letter of Credit, delivered to Beneficiary a letter of credit that satisfies the requirements of Condition P.8 of the Site Certificate.

4. As a result of said failure to deliver a replacement letter of credit at least 20 days prior to the present Expiration Date of the Letter of Credit, the Beneficiary is entitled pursuant to the provisions of the Site Certificate and the Memorandum of Understanding to make demand under the Letter of Credit in the amount of $ ____________.

5. The undersigned has concurrently presented to you its sight draft drawn in the amount specified in Paragraph 4 above, which amount does not exceed the lesser of (a) the amount the Beneficiary is entitled to draw pursuant to the provisions of the Site Certificate and the Memorandum of Understanding, and (b) the Stated Amount as of the date hereof. The date of the sight draft is the date of this Certificate, which is not later than the Expiration Date.
6. Funds paid pursuant to the provisions of the Letter of Credit shall be wire transferred to the Beneficiary in accordance with the following instructions:

_______________________
_______________________

IN WITNESS WHEREOF, the Beneficiary has executed and delivered this certificate as of the [Date].

THE CLIMATE TRUST as Beneficiary
By: ____________________
Title: ____________________