

FILE

PUCO EXHIBIT FILING

Date of Hearing: September 28, 2017

Case No. 17-530-EL-BGN

PUCO Case Caption: IMO: The Application of Clean Energy Future - Oregon, LLC for a Certificate of Environmental Compatibility and Public Need for an Electric Generating Facility in the City of Oregon, Lucas County, Ohio

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Technician EC Date Processed 10/11/17

List of exhibits being filed:

Applicant Exhibit	Identified	Admitted
1 Application (Prefiled)	6	34
2 Proof of Service 6-19-17	6	34
3 Proof of Publication for First Legal Notice 7-7-17	6	34
4 Proof of Publication for Second Legal Notice 9-12-17	6	34
5 Direct Testimony of William Siderewicz	6	34

OCE Exhibit	Identified	Admitted
1 Figures-Section 4906-13-04	11	36

Staff Exhibit	Identified	Admitted
1 Prefiled Testimony of Grant T. Zeto	36	41
2 Staff Report of Investigation	36	41

Reporter's Signature: Cynthia L. Cunningham
Date Submitted: _____

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2017 OCT 11 PM 3:13
PUCO

BEFORE THE THE OHIO POWER SITING BOARD

- - -

In the Matter of the :
Application of Clean :
Energy Future-Oregon, LLC :
for a Certificate of :
Environmental :
Compatability and Public : Case No. 17-530-EL-BGN
Need for an Electric :
Generating Facility in the:
City of Oregon, Lucas :
County, Ohio. :

- - -

PROCEEDINGS

before Nicholas Walstra, Administrative Law Judge, at
the The Ohio Power Siting Board, 180 East Broad
Street, Room C, Columbus, Ohio, called at 10:00 a.m.
on Thursday, September 28, 2017.

- - -

ARMSTRONG & OKEY, INC.
222 East Town Street, Second Floor
Columbus, Ohio 43215-5201
(614) 224-9481 - (800) 223-9481

- - -

Applicant Exhibit 2

Proof of Service

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of **Clean Energy**)
Future-Oregon, LLC for a Certificate of)
Environmental Compatibility and Public Need for) Case No. 17-530-EL-BGN
an Electric Generating Facility in the City of)
Oregon, Lucas County, Ohio)

**PROOF OF SERVICE OF THE ACCEPTED COMPLETE APPLICATION
ON LOCAL PUBLIC OFFICIALS AND LIBRARIES**

Pursuant to Ohio Administrative Code ("OAC") Rule 4906-3-07(A)(4), the undersigned states that, as required by OAC Rule 4906-3-07, a disk containing a copy of the accepted complete Application of Clean Energy Future-Oregon, LLC for a Certificate of Environmental Compatibility and Public Need for an Electric Generating Facility in the City of Oregon, Lucas County, Ohio was served on the chief executive officer of each municipal corporation, township and county, as well as the heads of the public agencies charged with the duty of protecting the environment or land use planning in the area in which any portion of the project is to be located.

Carol Contrada
Tina Skeldon Wozniak
Peter Gerken
c/o Laura Llyod-Jenkins
Lucas County Commissioners
1 Government Center, Suite 800
Toledo, OH 43604

Keith G. Earley, P.E./P.S.
Lucas County Engineer
1049 S. McCord Road
Holland, Ohio 43528

James P. Gilmore
Director of Public Service
Commissioner of Building & Zoning
City of Oregon Planning Commission
5330 Seaman Road
Oregon, OH 43616

Mayor Michael J. Seferian
City of Oregon
5330 Seaman Road
Oregon, OH 43616

Michael J. Beazley
Administrator
City of Oregon
5330 Seaman Road
Oregon, OH 43616

Megan Vahey-Casiere
Chief of Planning and Development
Department of Planning and Development
1 Government Center, Suite 800
Toledo, OH 43604

Pursuant to OAC 4906-3-07, a copy Clean Energy Future-Oregon, LLC's accepted complete Application was provided to the following public library:

Toledo-Lucas County Public Library
3340 Dustin Road
Oregon, OH 43616

The method of service of Clean Energy Future-Oregon, LLC's accepted complete Application was sent via UPS Ground on June 19, 2017.

In compliance with OAC Rule 4906-3-07(B)(3), Clean Energy Future-Oregon, LLC has posted a copy of the accepted complete Application online, which can be located at <http://cleanenergyfuturellc.com/wp-content/uploads/2017/06/Oregon-Energy-Center-OPSB-Application.pdf>.

Respectfully submitted on behalf of
CLEAN ENERGY FUTURE-OREGON, LLC



Sally W. Bloomfield (0022038)
Dylan Borchers (0090690)
Devin D. Parram (0082507)
BRICKER & ECKLER LLP
100 South Third Street
Columbus, OH 43215-4291
Telephone: (614) 227-2368; 227-4914; 227-8813
Facsimile: (614) 227-2390
E-Mail: sbloomfield@bricker.com
dborchers@bricker.com
dparram@bricker.com

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6/22/2017 1:49:25 PM

in

Case No(s). 17-0530-EL-BGN

Summary: Text Clean Energy Future-Oregon LLC Proof of Service of Application electronically filed by Teresa Orahood on behalf of Sally W. Bloomfield

Applicant Exhibit 3
Proof of Publication for
First Legal Notice



Bricker & Eckler
ATTORNEYS AT LAW

COLUMBUS | CLEVELAND
CINCINNATI | DAYTON
MARIETTA

BRICKER & ECKLER LLP
100 South Third Street
Columbus, OH 43215-4291
MAIN: 614.227.2300
FAX: 614.227.2390

www.bricker.com
info@bricker.com

Sally W. Bloomfield
614.227.2368
sbloomfield@bricker.com

July 10, 2017

Via Electronic Filing

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

**Re: Clean Energy Future-Oregon, LLC,
OPSB Case No. 17-530-EL-BGN**

Dear Ms. McNeal:

I am attaching for filing in the above-referenced matter, the proof of publication attesting to the publication of the Notice of Proposed Major Utility Facility. The notice was published in *The Blade* on July 7, 2017.

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

Sincerely,

Sally W. Bloomfield

Attachment

The Blade/toledoblade.com 541 N. Superior St. Toledo, OH 43660 419-724-6500

AFFIDAVIT OF PUBLICATION
STATE OF OHIO, LUCAS COUNTY}SS.

Advertiser's Name: Bricker & Eckler LLP

Account # 102592

Width: 4 columns Depth: 18.50 inches Ad# 469958 Price: \$5732.78

Run dates: July 6, 2017 Section: Section A, Main News

I, Stephen A. Wechsner, being first duly Sworn, make oath and say that I am an Advertising Clerk in the employ of THE TOLEDO BLADE CO., the publishers of THE BLADE, that I personally know the facts herein stated, that said BLADE is a daily newspaper printed, and of general circulation in excess of 90,000, in said County, and in said State, and that the notice of which the below is a true copy of the text, was published in said Daily BLADE according to the above run schedule.

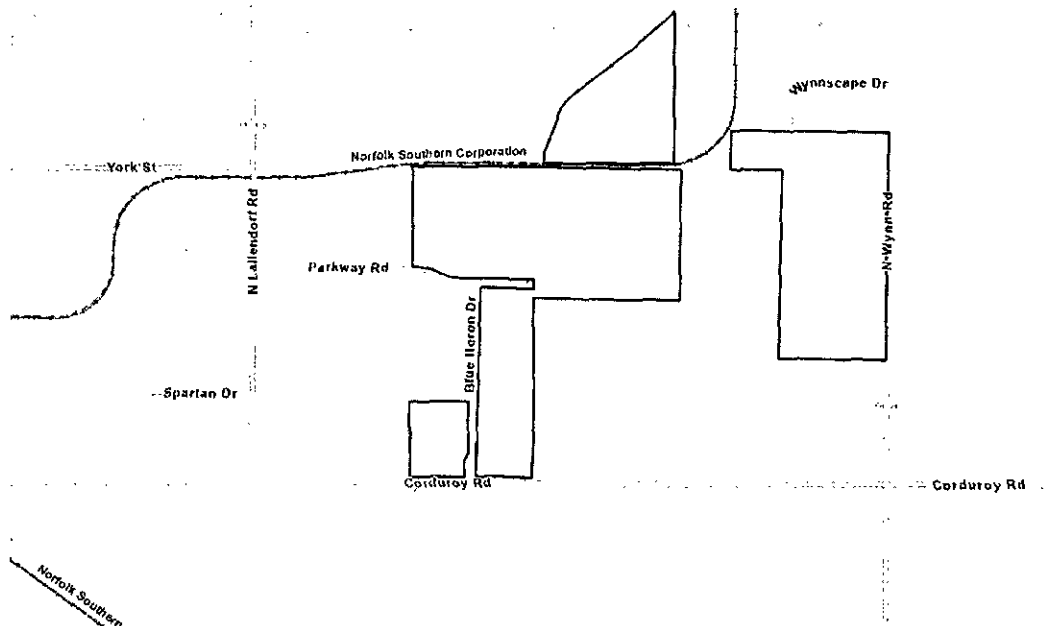
Subscribed in my presence and sworn to before me this 6th day of July, A.D. 2017

Connie Paul

Notary Public, State of Ohio



CONNIE J. PAUL
Notary Public, State of Ohio
My Commission Expires 06-2022



APPLICATION NOW PENDING

Clean Energy Future-Oregon LLC has an Application pending before the Ohio Power Siting Board. The assigned docket number for the Application is Case No. 17-530-EL-BGN, and copies of all filings in the case can be located at the Ohio Power Siting Board website at (<http://www.opsb.ohio.gov>) by scrolling down to "Pending Cases" and selecting the case by name or docket number. To view the filings, click the case number for the case record.

PUBLIC OFFICIALS SERVED WITH COPIES OF THE APPLICATION

The following public officials were served with a copy of the Application: City of Oregon Mayor Michael J. Seferian; City of Oregon Administrator Michael J. Beazley; City of Oregon Planning Commission James P. Gilmore, Director of Public Service; Lucas County Commissioners Carol Contrada, Tina Skeldon Wozniak, Peter Gerken in c/o Laur Llyod-Jenkins; Lucas County Engineer Keith G. Earley; and Chief of the Lucas County Department of Planning and Development Megan Vahey-Casiere. A copy of the Application is also available for public inspection at the Toledo-Lucas County Public Library, 3340 Dustin Road, Oregon, Ohio 43616.

OHIO POWER SITING BOARD APPLICATION REVIEW CRITERIA

Pursuant to Ohio Revised Code Section 4906.10(A) the Ohio Power Siting Board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the Board, unless it finds and determines all of the following: (1) The basis of the need for the facility; (2) The nature of the probable environmental impact; (3) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations; (4) In the case of an electric transmission line, that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability; (5) That the facility will comply with Chapters 3704., 3734., and 6111. of the Revised Code and all rules and standards adopted under those chapters and under Sections 1501.33, 1501.34, and 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under Section 4561.32 of the Revised Code, the Board shall consult with the office of aviation of the division of multi-modal planning and programs of the department of transportation under Section 4561.341 of the Revised Code; (6) That the facility will serve the public interest, convenience, and necessity; (7) In addition to the provisions contained in divisions (A)(1) to (6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the site and alternative site of the proposed major utility facility; rules adopted to evaluate impact under Division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternative site; and (8) That the facility incorporates maximum feasible water conservation practices as determined by the Board, considering available technology and the nature and economics of the various alternatives.

STATEMENT PURSUANT TO OHIO REVISED CODE SECTION 4906.07

Upon the receipt of an application complying with Section 4906.06 of the Revised Code, the Ohio Power Siting Board shall promptly fix a date for a public hearing thereon, not less than sixty nor more than ninety days after such receipt, and shall conclude the proceeding as expeditiously as practicable. The public hearing for this case shall consist of two parts:

- (1) A local public hearing, pursuant to Section 4906.08(C), Revised Code, where the Board shall accept written or oral testimony from any person. The local public hearing date is Wednesday, September 20

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

7/10/2017 2:13:36 PM

in

Case No(s). 17-0530-EL-BGN

Summary: Proof of Pub of the Notice of Proposed Major Utility Facility electronically filed by
Teresa Orahod on behalf of Sally W. Bloomfield

**Applicant Exhibit 4
Proof of Publication for
Second Legal Notice**



Bricker & Eckler
ATTORNEYS AT LAW

COLUMBUS | CLEVELAND
CINCINNATI | DAYTON
MARIETTA

BRICKER & ECKLER LLP
100 South Third Street
Columbus, OH 43215-4291
MAIN: 614.227.2300
FAX: 614.227.2390

www.bricker.com
info@bricker.com

Sally W. Bloomfield
614.227.2368
sbloomfield@bricker.com

September 25, 2017

Via Electronic Filing

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

**Re: Clean Energy Future-Oregon, LLC,
OPSB Case No. 17-530-EL-BGN**

Dear Ms. McNeal:

I am attaching for filing in the above-referenced matter, the proof of publication attesting to the publication of the second Notice of Proposed Major Utility Facility. The notice was published in *The Blade* on September 12, 2017.

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

Sincerely,

Sally W. Bloomfield

Attachment

The Blade/toledoblade.com 541 N. Superior St. Toledo, OH 43660 419-724-6500

AFFIDAVIT OF PUBLICATION

STATE OF OHIO, LUCAS COUNTY}SS.

Advertiser's Name: Bricker & Eckler

Account # 102592

Width: 4 columns Depth: 14 inches Ad# 477553

Price: \$4338.32

Run dates: September 12, 2017

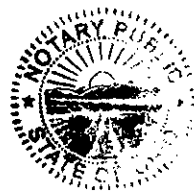
Section: A, Page 4 Main News

I, Matthew C. Wickham, being first duly Sworn, make oath and say that I am an Advertising Clerk in the employ of THE TOLEDO BLADE CO., the publishers of THE BLADE, that I personally know the facts herein stated, that said BLADE is a daily newspaper printed, and of general circulation in excess of 90,000, in said County, and in said State, and that the notice of which the below is a true copy of the text, was published in said Daily BLADE according to the above run schedule.

Subscribed in my presence and sworn to before me this 15th day of Sept. A.D. 2017

Connie Paul

Notary Public, State of Ohio



CONNIE J. PAUL
Notary Public, State of Ohio
My Commission Expires 02-26-2022

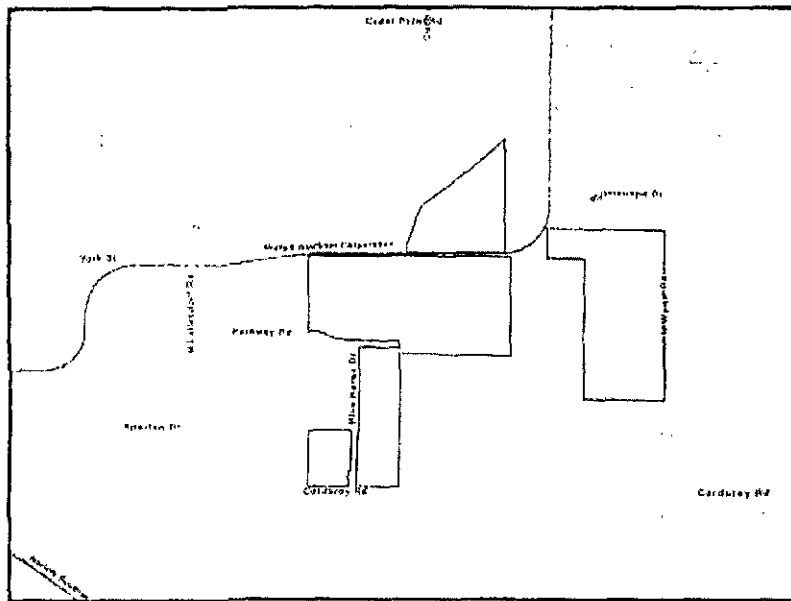
Notice of Proposed Major Utility Facility

FACILITY DESCRIPTION

Clean Energy Future-Oregon, LLC proposes to construct, own and operate an 955 megawatt (MW) gas fired, combined cycle power station, Oregon Energy Center, to be located in the City of Oregon, Lucas County, Ohio. The project will consist of two gas fired, high efficiency combustion turbines with two heat recovery steam generators and a single steam turbine. It will have a cooling tower and state of the art environmental controls. The plant will be served by natural gas from one or multiple pipelines.

LOCATION AND GENERAL LAYOUT

The general location and planned project layout of Oregon Energy Center is shown on the map below:



APPLICATION NOW PENDING

Clean Energy Future-Oregon LLC has an Application pending before the Ohio Power Siting Board. The assigned docket number for the Application is Case No. 17-530-EL-BGN, and copies of all filings in the case can be located at the Ohio Power Siting Board website at (<http://www.opsb.ohio.gov>) by scrolling down to "Pending Cases" and selecting the case by name or docket number. To view the filings, click the case number for the case record.

DATE, TIME AND LOCATION OF PUBLIC HEARING

The public hearing for this case shall consist of two parts

- (1.) A local public hearing, pursuant to Section 4906.08(C), Revised Code, where the Board shall accept written or oral testimony from any person. The local public hearing date is **Wednesday, September 20, 2017, at 6:00 p.m.**, at the Oregon City Council Chambers, 5330 Seaman Road, Oregon Ohio, 43616; and
- (2.) The date for the adjudicatory hearing has been scheduled for **September 28, 2017 at 10:00 a.m.**, at the offices of the Public Utilities Commission of Ohio, 11th Floor Hearing Room 11-C, 180 East Broad Street, Columbus, Ohio 43215-3793.

OPPORTUNITY TO COMMENT ON PROPOSED FACILITY

The public will be given an opportunity to comment on the proposed facility. As noted above, the local public hearing will be held on **Wednesday, September 20, 2017, at 6:00 p.m.**, at the Oregon City Council Chambers, 5330 Seaman Road, Oregon Ohio, 43616.

PUBLICATION OF INITIAL PUBLIC NOTICE

An initial public notice regarding the proposed facility and non-adjudicatory and adjudicatory hearings was published in the Toledo Blade on July 6, 2017.

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9/25/2017 2:54:10 PM

in

Case No(s). 17-0530-EL-BGN

Summary: Proof of Pub of Clean Energy-Future, LLC for the Second Legal Notice
electronically filed by Teresa Orahod on behalf of Sally W. Bloomfield

Applicant Exhibit 5
Direct Testimony of William Siderewicz

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of **CLEAN)**
ENERGY FUTURE-OREGON, LLC for a)
Certificate of Environmental Compatibility and) Case No. 17-530-EL-BGN
Public Need for an Electric Generating Facility in)
Oregon, Ohio, Lucas County)

DIRECT TESTIMONY OF

William Siderewicz

on behalf of

Clean Energy Future-Oregon, LLC

September 22, 2017

1 **1. Please state your name current title and business address.**

2 My name is William Siderewicz and I am the president of Clean Energy Future-Oregon,
3 LLC. My business address is Harbor's Point, 40 Beach Street, Suite 300, Manchester-by-
4 the-Sea, MA 01944.

5 **2. Please state your background.**

6 I have more than thirty-seven (37) years of experience representing equity ownership
7 interest in the development, permitting, funding, construction, and operations of thirty-
8 five (35) privately-owned power projects, having more than 14,300 MW of generation
9 capacity. My experience has been primarily in the U.S., but also includes the
10 international marketplace. My career has included the positions of: vice president of
11 British Gas, Ltd.; senior vice president of Calpine Corporation; co-founder and co-owner
12 of Pure Energy Resources, LLC; co-founder/owner and initial managing partner of
13 Oregon Clean Energy, LLC; and the first president of Clean Energy Future-Lordstown,
14 LLC. I am the President of Clean Energy Future, LLC whose two affiliates in turn have
15 two projects that are pending before the Ohio Power Siting Board ("OPSB"), Clean
16 Energy Future-Trumbull, LLC and this case involving the Oregon Energy Center. The
17 Oregon Clean Energy Center Project, a 960 MW electric generation combined-cycle
18 project, went into commercial operation in June, 2017 and the Oregon 955 MW plant,
19 adjacent to this project, is due to be completed by Summer of 2020. I was also involved
20 in the siting process for the Fremont Energy Center generation project which was
21 certified about 10 years ago.

22 I have a B.S. in Civil Engineering (cum laude) from Merrimack College, an M.S. in Civil
23 and Environmental Engineering from Cornell University, and an MBA in Finance from
24 Northeastern University. In addition, I am a licensed professional engineer in
25 Pennsylvania and New York.

26 **3. What is the purpose of your pre-filed testimony?**

27 My testimony will give background about the application of Clean Energy Future-
28 Oregon, LLC ("CEF-O") which I will refer to as the "Company." It will also address
29 concerns raised by Oregon Clean Energy, LLC ("OCE") about any potential impacts

upon OCE, and to address questions posed in the local public hearing on September 20, 2017.

4. Please provide the background concerning construction of the Oregon Energy Center.

The Company will construct, own, and operate the Oregon Energy Center, located in the City of Oregon, Lucas County, Ohio which is a natural gas-fired combined-cycle power plant with a net capacity of up to 955 MW (the "Project"). The Project site is Zoned Commercial-Industrial and is located within the Cedar Point Development Park, which is designated for development in the City of Oregon's 2025 Master Plan. It is also in an area designated as a Foreign Trade Zone. Other industrial uses are in this general area, including OCE, which is located approximately 300 feet northwest of the Project site.

5. Does the Company plan to enlarge the output of the generating plant in the future?

No, it does not.

6. How long have you been engaged in the development process for this Project?

The development process for the CEF-O began in 2010 with research for the site. Data collected in 2010 pointed to the likely coal and nuclear plant closures in northwestern Ohio, and that 2,000 MW of new combined cycle gas turbine generation would represent a similar replacement for such older technology. On October 22, 2015, CEF-O formally filed an interconnection request for the project with PJM. At that time the project was assigned a queue number, AB1-107. Since that time, development steps have continued on all fronts needed to finance and build the project.

7. Did you encounter any objections to this Project from officials in the area?

No, in fact, just the opposite. Just as the first plant was greeted with open arms by the local officials, so was this project. We have had great cooperation by municipal and school officials.

8. Did you review the Staff Report that was issued on September 5, 2017?

Yes, I did.

57 **9. Do you and Clean Energy Future-Oregon accept the conditions in the Staff Report?**

58 Yes. We have needed some clarification about the process for nighttime activities
59 referenced in Condition No. 17, but we have discussed this with the Staff and are
60 satisfied that we can meet the condition.

61 **10. Will you address the concerns raised by OCE in its issues list?**

62 Yes. OCE stated concerns about whether activities during construction of the Project will
63 interfere with the operations of OCE. I can state emphatically that it will not. The access
64 roads to the Project are away from OCE, and there are no Project facilities that will be
65 installed on, below, or above the OCE property.

66 **11. Would you address the water supply and wastewater disposal to the Project?**

67 Yes, the source of water will be from the City of Toledo, not from the City of Oregon,
68 which supplies water to OCE. Furthermore, the new water line to the Project will be
69 different from the water line to OCE. With respect to wastewater disposal, CEF-O will
70 simply connect by a pipe from the generation facility to the City of Oregon's nearby
71 gravity sewage line.

72 **12. OCE has expressed interest in the gas supply arrangements to the Project. Would**
73 **you comment?**

74 Yes, the Project has not concluded its negotiation with natural gas suppliers and the
75 current discussions are confidential. However, it will be the responsibility of the gas
76 supplier to make arrangements to transport the gas. The Project will not be the one to
77 design the gas route to the Project. CEF-O's new gas lateral will not be installed on,
78 below, or above OCE's property.

79 **13. Concern was also expressed about emissions from the Project. Will you address**
80 **that concern?**

81 Yes. The Project's application to the Ohio Environmental Protection Agency required an
82 analysis to demonstrate compliance with state and federal air quality standards and
83 guidance. The analysis incorporated numerous surrounding sources including OCE,
84 conservatively utilizing each facility's allowable emissions. The analysis concluded that

the Project would comply with the requisite standards and would not affect the ability of OCE to comply with its own permitted emission levels. A copy of the application with the analysis was supplied to OCE in response to discovery.

14. Do you have any responses to the issues raised at the local public hearing regarding tile replacement, noise and a potential North Coast gas line?

Yes, at the public hearing one person expressed concern about underground tiles being disturbed on the plant site and a resulting drainage issue. The Project intends to reinstall (at its sole cost) any tile that is disturbed so that the site will drain appropriately, most probably into Johlin Ditch. In any event, the Project will not create a new drainage problem.

Another person expressed concern about noise. In particular, the person noted concern with noise from the existing OCE project. The new plant will have a number of noise suppression features, but in addition, the Project is required by the conditions to be placed on our certificate, assuming the OPSB grants it, to emit only sounds within certain set standards the Board will authorize. These standards are based on the current ambient noise, which already takes into consideration the noise from the OCE facility.

Finally one person noted a concern about the North Coast line that runs on his property that serves OCE. Specifically, he expressed concern about a potential explosion. North Coast is one of four natural gas transporters who are seeking a contract from the Project. No decision has been made yet, so at this point it is not at all certain that North Coast will be awarded the contract. In addition, North Coast procured a certificate for its existing line from the Board in a proceeding that was separate from the OCE certification proceeding. The pipeline was required to demonstrate the project's safety in that proceeding. It is also required to comply with the state and federal natural gas pipeline safety standards.

15. Do you have any further comments?

Yes, northwestern Ohio and southern Michigan have seen the closures of numerous coal plants. FirstEnergy's unregulated affiliate has experienced serious financial issues which puts the future of the nearby Davis Besse nuclear plant in question. Since regional

114 vintage coal and nuclear plants could eventually lead to a 2,300 MW generation deficit,
115 the development of OCE's and CEF-O's plants with 1,915 MW of new capacity provides
116 an incumbent solution to obsolete generation. Both plants are more economical than their
117 predecessor coal and nuclear plants, meaning that ratepayers receive an immediate
118 economic benefit in the form of lower electricity generation costs.

119 Secondly, CEF-O has been purposely designed to be 100% independent of OCE while
120 also not impeding OCE's ongoing operations.

121 **16. Does this conclude your testimony?**

122 Yes, it does, except that I reserve the right to update this testimony once the parties have
123 concluded their discussions and to respond to any further testimony in this case.

124

CERTIFICATE OF SERVICE

I hereby certify that the foregoing Testimony was served upon the following parties of record via regular or electronic mail this 22nd day of September 2017.



Sally W. Bloomfield

John H. Jones
Assistant Attorneys General
Public Utilities Section
30 East Broad Street, 16th Floor
Columbus, OH 43215
john.jones@ohioattorneygeneral.gov

Barth E. Royer
Barth E. Royer, LLC
2740 East Main Street
Bexley, Ohio 43209
barthroyer@aol.com

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Commission of Ohio Docketing Information System on

9/22/2017 12:08:31 PM

in

Case No(s). 17-0530-EL-BGN

Summary: Testimony of William Siderewicz on behalf of Clean Energy Future-Oregon, LLC
electronically filed by Teresa Orahoad on behalf of Sally W. Bloomfield

**BEFORE
THE OHIO POWER SITING BOARD**

In the Matter of the Application of Clean	:	
Energy Future-Oregon, LLC for a	:	Case No. 17-530-EL-BGN
Certificate of Environmental	:	
Compatibility and Public Need for an	:	
Electric Generating Facility in Oregon,	:	
Lucas County, Ohio.	:	

**PREFILED TESTIMONY
OF
GRANT T. ZETO
SITING, EFFICIENCY, AND RENEWABLE ENERGY DIVISION
RATES AND ANALYSIS DEPARTMENT**

Staff Exhibit 1

September 26, 2017

1 1. Q. Please state your name and your business address.

2 A. My name is Grant T. Zeto, and my business address is 180 East Broad
3 Street, Columbus OH 43215.
4

5 2. Q. By whom are you employed and what is your position?

6 A. I am employed by the Public Utilities Commission of Ohio (PUCO) as a
7 Utility Specialist 2 in the Siting, Efficiency and Renewable Energy
8 Division of the PUCO's Rates and Analysis Department.
9

10 3. Q. Please summarize your educational background and work experience.

11 A. I received a Bachelor of Science degree in Environment and Natural
12 Resources from The Ohio State University, in Columbus, Ohio.
13

14 I have been employed by the PUCO since August, 2011. My responsibili-
15 ties during this time have primarily involved review and analysis of Power
16 Siting cases.
17

18 4. Q. Have you testified in prior proceedings before the Ohio Power Siting Board
19 (Board)?

20 A. Yes, I testified to sponsor the Staff Reports of Investigation in two other
21 cases.
22

1 5. Q. What is the purpose of your testimony in this proceeding?

2 A. With my testimony, I am sponsoring the Staff Report of Investigation (Staff

3 Report) filed September 5, 2017, in the docket of this case.

4

5 6. Q. What is the Applicant proposing in this case?

6 A. The Applicant proposes to develop, finance, construct, own, and operate a

7 natural gas fired combined-cycle power plant with a capacity of 955 MW in

8 Oregon, Lucas County, Ohio.

9

10 7. Q. Please summarize Staff's investigation that was conducted in this case.

11 A. Staff's investigation included reviewing the application, conducting site

12 visits to the proposed facility location, acquiring additional information

13 from the Applicant, obtaining input from state agencies that compose the

14 Board along with other relevant state and federal agencies, and preparing a

15 Staff Report that presents Staff's analysis, conclusions, and recommenda-

16 tions. As a result of Staff's investigation, Staff is recommending that the

17 Board approve the application, subject to the 23 conditions that are pre-

18 sented in the Staff Report.

19

20 8. Q. Do you have any changes or corrections to make to the Staff Report of

21 Investigation?

1 A. Yes. On page 15 of the Staff Report it states that no structures would be
2 placed within the stream in the project area. However, Staff is aware that
3 up to two access roads may cross the stream and require placement of
4 culverts within the stream. The Applicant is aware of the permitting
5 responsibilities associated with this impact through the US Army Corps of
6 Engineers. Staff does not object to this impact provided that the
7 appropriate permitting is obtained. This permit requirement is covered by
8 condition 6 of the Staff Report. Also, the Staff Report does not mention
9 that Blue Heron Drive would be utilized for construction access. This
10 information was provided in the application, and Staff does not object to
11 the use of Blue Heron Drive for construction access. Finally, on page 7 of
12 the Staff Report it states that wastewater discharge would be to the city of
13 Warren's wastewater treatment plant. This should have been the city of
14 Oregon and not the city of Warren.

15
16 9. Q. Does this conclude your testimony?

17 A. Yes, it does. However, I reserve the right to submit supplemental testi-
18 mony as described herein, as new information subsequently becomes avail-
19 able or in response to positions taken by other parties.

PROOF OF SERVICE

I hereby certify that a true copy of the foregoing Prefiled Testimony of **Grant T. Zeto** submitted on behalf of the Staff of the Ohio Power Siting Board, was served via electronic mail, upon the following parties of record, this 26th day of September, 2017.

/s/ John H. Jones

John H. Jones

Assistant Section Chief

Parties of Record:

Barth E. Royer
Barth E. Royer, LLC
2740 East Main Street
Bexley, OH 43209
barthroyer@aol.com

Sally W. Bloomfield
Dylan Borchers
Bricker & Eckler
100 South Third Street
Columbus, OH 43215-4291
sbloomfield@bricker.com
dborchers@bricker.com

Attorney Examiner:

Nicholas Walstra
nicholas.walstra@puco.ohio.gov

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Case No(s). 17-0530-EL-BGN

Summary: Testimony Prefiled Testimony of Grant T. Zeto submitted by Assistant Attorney General John Jones on behalf of the Staff of the Ohio Power Siting Board. electronically filed by Kimberly L Keeton on behalf of Ohio Power Siting Board

Staff Report of Investigation

Oregon Energy Center

Case No. 17-0530-EL-BGN

September 5, 2017



John R. Kasich, Governor | Asim Z. Haque, Chairman

In the Matter of the Application of Clean Energy)
Future-Oregon, LLC for a Certificate of Environmental)
Compatibility and Public Need to Construct an Electric) **Case No. 17-0530-EL-BGN**
Generating Facility in Oregon, Lucas County, Ohio.)

Staff Report of Investigation

Submitted to the
OHIO POWER SITING BOARD

BEFORE THE POWER SITING BOARD OF THE STATE OF OHIO

In the Matter of the Application of Clean Energy)
Future-Oregon, LLC for a Certificate of Environmental)
Compatibility and Public Need to Construct an Electric) Case No. 17-0530-EL-BGN
Generating Facility in Oregon, Lucas County, Ohio.)

Chairman, Public Utilities Commission	Director, Department of Natural Resources
Director, Department of Agriculture	Public Member
Director, Development Services Agency	Ohio House of Representatives
Director, Environmental Protection Agency	Ohio Senate
Director, Department of Health	

To the Honorable Power Siting Board:

In accordance with the Ohio Revised Code (R.C.) 4906.07(C) and rules of the Ohio Power Siting Board (Board), the staff of the Public Utilities Commission of Ohio (Staff) has completed its investigation in the above matter and submits its findings and recommendations in this Staff Report for consideration by the Board.

The findings and recommendations contained in this report are the result of Staff coordination with the following agencies that are members of the Board: Ohio Environmental Protection Agency, the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Natural Resources, and the Ohio Department of Agriculture. In addition, Staff coordinated with the Ohio Department of Transportation, the Ohio Historic Preservation Office, the U.S. Fish and Wildlife Service, the U.S. Army Corps of Engineers, and the Federal Aviation Administration.

In accordance with R.C. 4906.07(C) and 4906.12, copies of this Staff Report have been filed with the Docketing Division of the Public Utilities Commission of Ohio and served upon the Applicant or its authorized representative, the parties of record, and pursuant to Ohio Administrative Code 4906-3-06, the main public libraries of the political subdivisions in the project area.

The Staff Report presents the results of Staff's investigation conducted in accordance with R.C. Chapter 4906 and the rules of the Board, and does not purport to reflect the views of the Board nor should any party to the instant proceeding consider the Board in any manner constrained by the findings and recommendations set forth herein.

Respectfully submitted,



Patrick Donlon
Director, Rates and Analysis
Public Utilities Commission of Ohio

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I. POWERS AND DUTIES

OHIO POWER SITING BOARD

The authority of the Ohio Power Siting Board (Board) is prescribed by Ohio Revised Code (R.C.) Chapter 4906. R.C. 4906.03 authorizes the Board to issue certificates of environmental compatibility and public need for the construction, operation, and maintenance of major utility facilities defined in R.C. 4906.01. Included within this definition of major utility facilities are: electric generating plants and associated facilities designed for, or capable of, operation at 50 megawatts (MW) or more; electric transmission lines and associated facilities of a design capacity of 125 kilovolts (kV) or more; and gas pipelines greater than 500 feet in length and more than nine inches in outside diameter, and associated facilities, designed for transporting gas at a maximum allowable operating pressure in excess of 125 pounds per square inch. In addition, pursuant to R.C. 4906.20, the Board authority applies to economically significant wind farms, defined in R.C. 4906.13(A) as wind turbines and associated facilities with a single interconnection to the electrical grid and designed for, or capable of, operation at an aggregate capacity of 5 MW or greater but less than 50 MW.

Membership of the Board is specified in R.C. 4906.02(A). The voting members include: the Chairman of the Public Utilities Commission of Ohio (PUCO) who serves as Chairman of the Board; the directors of the Ohio Environmental Protection Agency (Ohio EPA), the Ohio Department of Health, the Ohio Development Services Agency, the Ohio Department of Agriculture, and the Ohio Department of Natural Resources (ODNR); and a member of the public, specified as an engineer, appointed by the Governor from a list of three nominees provided by the Ohio Consumers' Counsel. Ex-officio Board members include two members (with alternates) from each house of the Ohio General Assembly.

NATURE OF INVESTIGATION

The Board has promulgated rules and regulations, found in Ohio Administrative Code (Ohio Adm.Code) 4906:1-01 et seq., which establish application procedures for major utility facilities and economically significant wind farms.

Application Procedures

Any person that wishes to construct a major utility facility or economically significant wind farm in this state must first submit to the Board an application for a certificate of environmental compatibility and public need.¹ The application must include a description of the facility and its location, a summary of environmental studies, a statement explaining the need for the facility and how it fits into the Applicant's energy forecasts (for transmission projects), and any other information the applicant or Board may consider relevant.²

Within 60 days of receiving an application, the Chairman must determine whether the application is sufficiently complete to begin an investigation.³ If an application is considered complete, the Board or an administrative law judge will cause a public hearing to be held 60 to 90 days after the

1. R.C. 4906.04 and 4906.20.

2. R.C. 4906.06(A) and 4906.20(B)(1).

3. Ohio Adm.Code 4906-3-06(A).

official filing date of the completed application.⁴ At the public hearing, any person may provide written or oral testimony and may be examined by the parties.⁵

Staff Investigation and Report

The Chairman will also cause each application to be investigated and a report published by the Board's Staff not less than 15 days prior to the public hearing.⁶ The report sets forth the nature of the investigation and contains the findings and conditions recommended by Staff.⁷ The Board's Staff, which consists of career professionals drawn from the staff of the PUCO and other member agencies of the Board, coordinates its investigation among the agencies represented on the Board and with other interested agencies such as the Ohio Department of Transportation (ODOT), the Ohio Historic Preservation Office, and the U.S. Fish and Wildlife Service (USFWS).

The technical investigations and evaluations are conducted pursuant to Ohio Adm.Code 4906-1-01 et seq. The recommended findings resulting from Staff's investigation are described in the Staff Report pursuant to R.C. 4906.07(C). The report does not represent the views or opinions of the Board and is only one piece of evidence that the Board may consider when making its decision. Once published, the report becomes a part of the record, is served upon all parties to the proceeding and is made available to any person upon request.⁸ A record of the public hearings and all evidence, including the Staff Report, may be examined by the public at anytime.⁹

Board Decision

The Board may approve, modify and approve, or deny an application for a certificate of environmental compatibility and public need.¹⁰ If the Board approves, or modifies and approves an application, it will issue a certificate subject to conditions. The certificate is also conditioned upon the facility being in compliance with applicable standards and rules adopted under the Ohio Revised Code.¹¹

Upon rendering its decision, the Board must issue an opinion stating its reasons for approving, modifying and approving, or denying an application for a certificate of environmental compatibility and public need.¹² A copy of the Board's decision and its opinion is memorialized upon the record and must be served upon all parties to the proceeding.¹³ Any party to the proceeding that believes its issues were not adequately addressed by the Board may submit within 30 days an application for rehearing.¹⁴ An entry on rehearing will be issued by the Board within 30 days and may be appealed within 60 days to the Supreme Court of Ohio.¹⁵

4. R.C. 4906.07(A) and Ohio Adm.Code 4906-3-08.

5. R.C. 4906.08(C).

6. R.C. 4906.07.

7. Ohio Adm.Code 4906-3-06(C).

8. R.C. 4906.07(C) and 4906.10.

9. R.C. 4906.09 and 4906.12.

10. R.C. 4906.10(A)

11. R.C. 4906.10.

12. R.C. 4906.11.

13. R.C. 4906.10(C).

14. R.C. 4903.10 and 4906.12.

15. R.C. 4903.11, 4903.12, and 4906.12.

CRITERIA

Staff developed the recommendations and conditions in this *Staff Report of Investigation* pursuant to the criteria set forth in R.C. 4906.10(A), which reads, in part:

The board shall not grant a certificate for the construction, operation, and maintenance of a major utility facility, either as proposed or as modified by the board, unless it finds and determines all of the following:

- (1) The basis of the need for the facility if the facility is an electric transmission line or gas pipeline;
- (2) The nature of the probable environmental impact;
- (3) That the facility represents the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, and other pertinent considerations;
- (4) In the case of an electric transmission line or generating facility, that the facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems and that the facility will serve the interests of electric system economy and reliability;
- (5) That the facility will comply with Chapters 3704, 3734, and 6111 of the Revised Code and all rules and standards adopted under those chapters and under sections 1501.33, 1501.34, and 4561.32 of the Revised Code. In determining whether the facility will comply with all rules and standards adopted under section 4561.32 of the Revised Code, the board shall consult with the office of aviation of the division of multi-modal planning and programs of the department of transportation under section 4561.341 of the Revised Code;
- (6) That the facility will serve the public interest, convenience, and necessity;
- (7) In addition to the provisions contained in divisions (A)(1) to (6) of this section and rules adopted under those divisions, what its impact will be on the viability as agricultural land of any land in an existing agricultural district established under Chapter 929 of the Revised Code that is located within the site and alternative site of the proposed major utility facility. Rules adopted to evaluate impact under division (A)(7) of this section shall not require the compilation, creation, submission, or production of any information, document, or other data pertaining to land not located within the site and alternative site; and
- (8) That the facility incorporates maximum feasible water conservation practices as determined by the board, considering available technology and the nature and economics of the various alternatives.

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II. APPLICATION

APPLICANT

The Applicant, Clean Energy Future-Oregon, LLC, is a subsidiary of Clean Energy Future, LLC, a Massachusetts-based development company focused on non-utility electricity projects in the United States. The Applicant partnered with Fluor Corporation, an international engineering firm, to assist with the development of this project.

HISTORY OF THE APPLICATION

Prior to formally submitting its application, the Applicant consulted with Staff and representatives of the Board regarding application procedures.

On February 27, 2017, the Applicant filed a Motion for Waivers from the requirements to provide an extensive site selection study. Staff did not oppose the waiver requests, and the Administrative Law Judge granted the waiver requests in an Entry dated February May 3, 2017.

On March 30, 2017, the Applicant held a public informational meeting regarding the proposed electric generating facility in Lucas County, Ohio.

On April 19, 2017, the Applicant filed the electric generating facility application.

On June 20, 2017, the Board Chairman issued the Applicant a letter of compliance regarding the application.

On July 24, 2017, Oregon Clean Energy, LLC filed a Petition for Leave to Intervene.

A local public hearing is scheduled for September 20, 2017, at 6:00 p.m., at Oregon City Council Chambers, 5330 Seaman Rd., Oregon, Ohio 43616. The adjudicatory hearing will commence on September 28, 2017, at 10:00 a.m., in Hearing Room 11-C, at the offices of the PUCO, 180 E. Broad St., Columbus, Ohio 43215.

This summary of the history of the application does not include every filing in Case No. 17-0530-EL-BGN. The docketing record for this case, which lists all documents filed to date, is accessible online at <http://dis.puc.state.oh.us>.

PROJECT DESCRIPTION

The Applicant proposes to develop, finance, construct, own, and operate a natural gas fired combined-cycle power plant with a capacity of 955 MW in Oregon, Lucas County, Ohio.

Project Site

The proposed location of the facility consists of a 30-acre parcel of land located at the terminus of Parkway Road approximately 4.25 miles northeast of Interstate 280 and two miles north of Route 2. The project area and proposed facilities are shown in the map on page 9 of this report.

Construction Laydown Areas

The Applicant intends to deliver construction materials directly to the construction project site. The Applicant would use three areas as temporary construction laydown/staging areas for material and equipment storage, construction trailers, and parking. The construction laydown/staging areas consist of the 42.5-acre eastern laydown area, the 22-acre western laydown area, and the 23.5-acre southern laydown area. The 20-acre electrical interconnection property may also be utilized as a laydown area.

Generating Equipment

The Clean Energy Future-Oregon facility would have two combustion turbine generators. The Applicant is considering the Siemens SCC6-8000H model. The combustion turbines would include evaporative cooler systems that use water to increase the density of the turbine inlet air and increase performance on hot summer days. The facility would be capable of year-round operation, but actual hours would depend upon energy needs in the region and would incorporate downtime for planned and unplanned maintenance events.

The project would also include two 3-pressure level heat recovery steam generators (HRSGs)¹⁶ with auxiliary duct burners and one reheat condensing steam turbine generator that would be connected to and utilize both HRSGs. An auxiliary steam boiler would be used to keep the HRSGs warm during shutdowns and to provide steam to the steam turbine generator during facility startup. The project would be designed to operate in combined-cycle mode only. The performance of the combined-cycle power plant would be dependent on the air temperature, relative humidity, and electrical demand of motors and pumps at the facility (i.e., parasitic loads). The maximum net output that the facility would have the potential to generate is 955 MW.

At a reference air temperature of 59°F, the Applicant expects that each combustion turbine would produce 299 MW normally and 314 MW at maximum. The steam turbine generator is expected to produce 357 MW. Overall, the average heat rate for the combined-cycle power plant would be approximately 5,841 British thermal units (Btu) per kilowatt (kW) hour.¹⁷

A standby/backup 1140 kW diesel generator would be used to shut the facility down in the event of a power delivery disruption. The generator would power essential services to protect the equipment.

16. A HRSG is a heat exchanger that recovers heat from a hot gas stream and produces steam.

17. Heat rate is a measure of the efficiency of electric power generation.

Air Emission Control and Monitoring Equipment

In order to minimize emissions of nitrogen oxides (NO_x), the combustion turbines would have dry low NO_x (DLN) burners. Selective catalytic reduction (SCR) systems would be installed and operated in the HRSGs exhaust systems to reduce NO_x concentrations further during operation of the facility. NO_x emissions would be higher during facility start-up and shutdown, due to less efficient combustion during these periods.

The Applicant would use good combustion practices and an oxidation catalyst to control emissions of carbon monoxide (CO) and minimize volatile organic compounds (VOC) pollution. Good combustion practices include efficient operation and proper maintenance of the equipment and using the proper air to fuel ratio in the combustion turbines and HRSGs.

Particulate matter (PM) and sulfur dioxide (SO₂) emissions would be controlled through the use of low-sulfur, pipeline quality natural gas fuel.

A continuous emissions monitoring system (CEMS) would be installed within each HRSG exhaust stack to monitor compliance with air permit requirements.

Water Supply, Treatment, Storage, and Discharge

Potable water would be supplied to the site from the City of Toledo at a flow rate of up to 5.4 million gallons per day.

Most of the water will be used for cooling in the cooling tower. Some of the incoming water would receive demineralization-polishing treatment for use in the evaporative cooler and as makeup water to the HRSGs and steam turbine. Demineralized water would be stored in a 150,000 gallon demineralized water storage tank. Some additional water would be stored on site in a 300,000 gallon tank for fire protection purposes.

Wastewater discharge would be to the City of Warren's wastewater treatment plant and would consist of evaporative cooler blowdown, HRSG blowdown, equipment drains, reverse osmosis rejection water, and sanitary wastewater.

Cooling Towers

The facility would use one 10-cell, mechanical draft cooling tower for steam condensing and other plant cooling needs. The cooling tower provides heat rejection through airflow and evaporation of water.

Electrical System

Electric power generated by the combustion generators and steam turbine generator would be stepped up with two 20 kV to 345 kV transformers and one 20 kV to 138 kV transformer respectively. The step-up transformers would connect to voltage appropriate on-site collector busses and then to 138 kV and 345 kV electric transmission lines, respectively. The 345 kV electric transmission line would be approximately 0.5-mile long and would be connected to the Lallendorf Switchyard, located northwest of the project site. The 138 kV electric transmission line would be approximately 0.2-miles long and run to a new 138 kV utility switchyard.

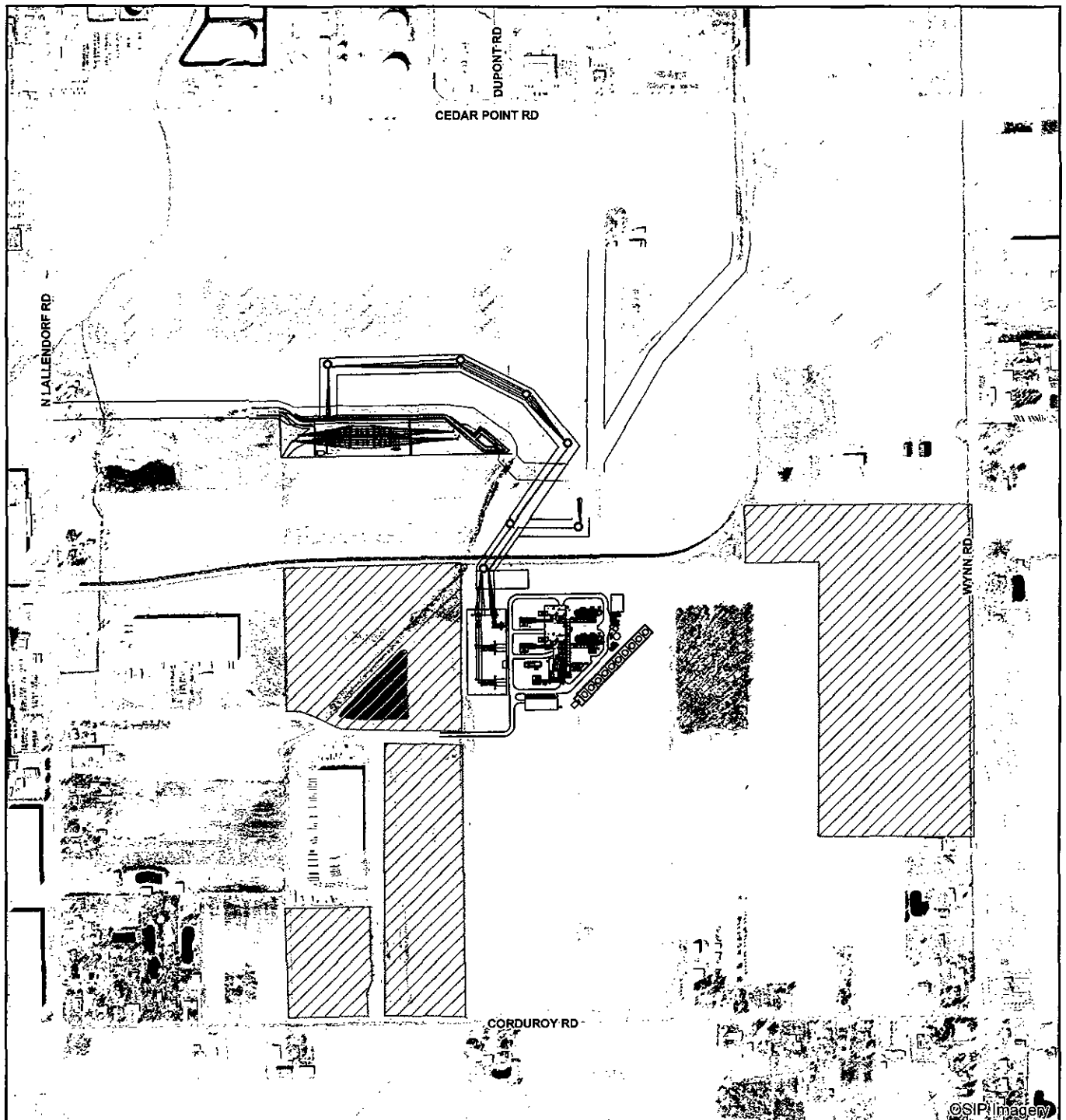
Gas Supply

The facility would be fueled with natural gas supplies from one of three possible transporters. One option is the existing North Coast Gas pipeline that currently connects the neighboring Oregon

Clean Energy Center to the Maumee Hub. Other options include a potential new pipeline to connect the facility to the Maumee Hub or a potential lateral pipeline from the facility to the NEXUS Gas Transmission pipeline.

Project Timeline

The Applicant proposes to commence construction in January 2018 and begin commercial operation by June 2020.



©SIP Imagery



Lucas County



0 500 1,000
Feet

1:10,000

NAD 83 SP Ohio South (Feet)

- Transmission Line Poles
- Facility Layout
- Transmission Lines
- Interconnect Layout
- ▨ Laydown Areas
- Access Options

Overview Map

17-0530-EL-BGN

Oregon Energy Center

Maps are presented solely for the purpose of providing a visual representation of the project in the staff report, and are not intended to modify the project as presented by the Applicant in its certified application and supplemental materials.

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III. CONSIDERATIONS AND RECOMMENDED FINDINGS

In the Matter of the Application of Clean Energy Future-Oregon, LLC for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility in Oregon, Lucas County, Ohio, Staff submits the following considerations and recommended findings pursuant to R.C. 4906.07(C) and 4906.10(A).

Considerations for R.C. 4906.10(A)(1)

BASIS OF NEED

Pursuant to R.C. 4906.10(A)(1), the Board must determine the basis of the need for the facility only if the facility is an electric transmission line or gas pipeline. Staff has found this inapplicable to this application.

Recommended Findings

Staff recommends that the Board find that the basis of need as specified under R.C. 4906.10(A)(1) is not applicable to this proposed electric generating facility, because the facility is neither an electric transmission line nor a gas pipeline.

Considerations for R.C. 4906.10(A)(2)

NATURE OF PROBABLE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(2), the Board must determine the nature of the probable environmental impact of the proposed facility. Staff has found the following with regard to the nature of the probable environmental impact:

Socioeconomic Impacts

Demographics

The Applicant's review included an analysis of existing census data.¹⁸ This table indicates that sizable shifts in existing populations in nearby communities are not projected.

Land Use and Regional Planning

The project would be constructed in the Cedar Point Development Park. This commercial-industrial park has been designated as a foreign trade zone. The development park is a component of the *City of Oregon's 2025 Master Plan*, and the generation facility would be constructed in an area conducive to long-term regional land use planning. The proposed generation facility would be surrounded by similar land uses, including an electric transmission corridor and other electric generation facilities.

The nearest residential land use is located more than 1,250 feet from the proposed facility's fence line. The only other residential land use consists of a cluster of low-density single family homes located further away to the southeast. Active farming operations are also predominant in the surrounding area.

Sensitive institutional land uses such as schools, churches, governmental facilities, elder care facilities, and hospitals are not located in proximity to the project area.

Recreation Areas

Thirty-eight parks, wildlife refuges, recreation areas, or golf courses are located within 5 miles of the project site. The nearest recreational feature is Pearson Metropark, approximately 0.6 mile south of the site. The 624-acre park, located off Seaman Road, includes sports facilities, picnic pavilions, fishing opportunities, and approximately 3 miles of multi-use trails.¹⁹ The second nearest recreational area is Eagle's Landing Golf Club. This 18-hole public golf course is located off Bay Shore Road, along Lake Erie approximately 0.6 mile north of the project site. All other recreational areas are located more than 1 mile from the project site.

Project construction would result in temporary traffic congestion and noise increases in the area. However, due to the industrial nature of the surrounding land and distance from recreational areas, project related impacts are expected to be negligible.

18. *In the matter of the Clean Energy Future-Oregon, LLC for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generating Facility in Oregon, Lucas County, Ohio*, Case No. 17-0530-EL-BGN, *Application* at Table 8-10 (April 19, 2017).

19. "Pearson," *Metroparks Toledo*, accessed August 4, 2017, <https://metroparkstoledo.com/explore-your-parks/pearson>.

Cultural, Archaeological, and Architectural Resources

The Applicant conducted several archaeological studies, including surface collection activities and various subsurface testing as well. These studies did not identify any sites that are eligible for the National Register of Historic Places. Additionally, the Applicant investigated the surrounding 5-mile radius to assess any potential impacts to historic structures. This analysis concluded that impacts to historic structures are not anticipated.

Aesthetics

The proposed electric generation plant would be located among similar industrial facilities that occupy the current view shed. The building would be painted in neutral colors and lighting would be directed downward to reduce aesthetic impacts further. Aesthetic impacts to nearby residences are mitigated by a distance that exceeds 1,000 feet. The intervening agricultural land uses and existing vegetation would provide additional aesthetic relief to nearby residential properties.

Economics

The Applicant estimates the capital and intangible costs for the project at: engineering, procurement, construction - \$655 million; transmission interconnection - \$16.5 million; project development - \$28.7 million; land - \$1.5 million; project financing - \$156.7 million.²⁰

The Applicant enlisted Calypso Communications LLC to analyze the potential economic impacts of the project. Listed below are some of the indirect and direct economic benefits anticipated during the construction and operation of the proposed facility.

- Of the \$853 million in project construction and development costs, \$314 million in construction expenditures for the project would be made in the Lucas County region.²¹
- Annual operations of the facility would add \$30.2 million per year in regional economic activity.²²
- An average of 862 construction jobs would be created in Lucas County during each year of the 2.5-year construction phase. Another 272 construction-related jobs would be created in Ohio, outside of Lucas County, in each year of the construction phase.²³
- Purchase of local water supplies and wastewater services would result in local payments of \$2.5 million annually.²⁴
- The facility would generate \$16.2 million in additional state and local tax revenues (excluding property taxes) during the construction phase.²⁵
- The facility would employ approximately 19 to 22 full-time workers.
- During the construction phase and 40 years of operations, the facility would be expected to contribute to the Lucas County region approximately \$1.88 billion in

20. *Application* at p. 33.

21. *Application* at Appendix F: Economic Impact Assessment, p. 4.

22. *Application* at Appendix F: Economic Impact Assessment, p. 22.

23. *Ibid.*, p. 4.

24. *Ibid.*

25. *Ibid.*

economic activity, payments for services, and tax payments to support local schools and services.²⁶

Delays

According to the Applicant, it is imperative that the proposed in-service date of summer 2020 be achieved in order to meet the anticipated summer peak load demand.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Socioeconomic Conditions** heading of the Recommended Conditions of Certificate section.

Ecological Impacts

Geology, Test Borings, and Soils

The project area lies within Oregon Township, Lucas County. The majority of the bedrock in the county is at a depth that ranges from 20 feet to 160 feet. The bedrock is characterized as mainly limestone and dolomite. Near the surface, outcrops of calcareous sandstone can be found in the area west of Toledo, on a line that trends to the southwest, west of Sylvania and east of Whitehouse.

The glacial lake landscape of the county is characterized by the sandy beach ridges and dunes of an area known as the Oak Openings that extends northeast-southwest from Sylvania to Neapolis. To the northwest of the oak Openings area is a glacial ground moraine, and the area to the southeast is the lake plain of Old Lake Erie. The Oak Openings area is used commercially as a source of sand.

The project area is underlain by dolomite at an estimated depth of 75 feet found in Boring BH-12 (Figure 08-4B Geological Conditions). The other seven preliminary borings submitted by the Applicant for the purpose of developing this cross section of the subsurface referenced in Figure 08-4B Geological Conditions were not advanced into bedrock and were terminated above 75 feet below the surface. Much of the subsoil revealed from the test borings in the project site were characterized as sand, clay, and traces of gravel. The Applicant plans to conduct further drilling as the project progresses toward final design, which would give a more detailed analysis of the subsurface condition.

According to the Soil Survey of Lucas County, the majority of the project area surface is mapped as Lc – Latty silty clay, 0 to 1 percent slopes. Typically, this soil unit is a nearly level, deep, very poorly drained soil on lake plains. Smaller areas of the proposed project are designated as FuA – Fulton silty clay loam, 0 to 2 percent slopes and To – Toledo silty clay, 0 to 1 percent slopes. The Fulton silty clay loam and the Toledo silty clay are identified in small segments in the northeast corner and southwest corner of the project site.

The Fulton silty clay loam is identified as nearly level, somewhat poorly drained soil on the lake plain. This soil unit is found on slight rises and in broad areas on flats. The Toledo silty clay is very poorly drained soil on ancient lake plains and deltas. The soil unit is found on broad flats and in long, narrow depressions.

Seasonal high water table, ponding, low soil strength, and shrinking and swelling in the subsoil are noted limitations to building site development. Subsurface drainage systems can be used to

26. Ibid., p. 29.

lower the water table. Building sites can also be graded so that surface water is drained away from the building foundation. Taking these measures into consideration, the geology and soils do not present site conditions that would restrict or limit the construction of this facility.

Seismology

Oregon Township has a history of seismic activity dating back as recent as 1993. The epicenter of this earthquake occurred several miles southwest of the proposed project along Seaman Street and east of Interstate 280. The magnitude of the earthquake was 2.0 on the Richter scale. The seismic event of 1984 occurred just northwest of the proposed project along N. Lallendorf Road south of the intersection of with Cedar Point Road. The magnitude of the earthquake was recorded at 2.6 on the Richter scale and was felt by local residents. Newspaper accounts reported that residents during the earthquake experienced the rattling of dishes. The Applicant has incorporated design parameters for both soil and rock conditions anticipated to appropriately address seismic considerations for this project.

Surface Waters

The project area contains one stream located within the western laydown area. The Applicant states that impacts to this stream will be avoided through the use of best management practices (BMP) and erosion control measures such as silt fencing. No structures would be placed within the stream. The proposed facility is not located within a Federal Emergency Management Agency flood zone.

No wetlands were identified on the project site. A manmade stormwater pond was identified on the western laydown area. However, the pond would be avoided.

The Applicant plans to file a Notice of Intent to the Ohio EPA for coverage under the National Pollutant Discharge Elimination System (NPDES) General Construction Stormwater Permit. In accordance with federal and state requirements, BMP would be used to ensure erosion and sedimentation would be minimized. The Applicant plans to outline these BMP in its Stormwater Pollution Prevention Plan (SWPPP).

Vegetation

The proposed facility location is primarily within agricultural fields. The proposed electrical interconnection route is currently in use as a temporary construction laydown area as part of the adjacent Oregon Clean Energy Center. No tree clearing would be required for the project site or any of the potential laydown areas. The Applicant states the use of herbicides and pesticides in proximity to surface waters, both during and after construction, would be restricted.

Threatened and Endangered Species

The Applicant requested information from the ODNR and the USFWS regarding state and federal listed threatened and endangered plant and animal species. Staff gathered additional information through field assessments and review of published ecological information. The following table shows the results of the information requests, field assessments, and document review.

REPTILES AND AMPHIBIANS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Blue-spotted salamander	<i>Ambystoma laterale</i>	N/A	Endangered	Due to the project location, and the type of habitat within the project area, this project is not likely to impact this species.
Kirtland's snake	<i>Clonophis kirtlandii</i>	N/A	Threatened	Due to the project location, and the type of habitat within the project area, this project is not likely to impact this species.
Blanding's turtle	<i>Emydoidea blandingii</i>	N/A	Threatened	Due to the project location, and the type of habitat within the project area, this project is not likely to impact this species.
Spotted turtle	<i>Clemmys guttata</i>	N/A	Threatened	Due to the project location, and the type of habitat within the project area, this project is not likely to impact this species.

MAMMALS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Indiana bat	<i>Myotis sodalis</i>	Endangered	Endangered	Historical range includes the project area. Project would not impact suitable habitat.
northern long-eared bat	<i>Myotis septentrionalis</i>	Threatened	N/A	Historical range includes the project area. Project would not impact suitable habitat.

BIRDS

Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
American bittern	<i>Botaurus lentiginosus</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Piping plover	<i>Charadrius melodus</i>	Endangered	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Kirtland's warbler	<i>Setophaga kirtlandii</i>	Endangered	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Black tern	<i>Chlidonias niger</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Common tern	<i>Sterna hirundo</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.

BIRDS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
King rail	<i>Rallus elegans</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Cattle egret	<i>Bubulcus ibis</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Lark sparrow	<i>Chondestes grammacus</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Upland sandpiper	<i>Bartramia longicauda</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.

MUSSELS				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
rayed bean	<i>Villosa fabalis</i>	Endangered	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
snuffbox	<i>Epioblasma triquetra</i>	Endangered	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Eastern pondmussel	<i>Ligumia nasuta</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
black sandshell	<i>Ligumia recta</i>	N/A	Threatened	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Pondhorn	<i>Uniomorus tetralasmus</i>	N/A	Threatened	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
fawnsfoot	<i>Truncilla donaciformis</i>	N/A	Threatened	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
threehorn wartyback	<i>Obliquaria reflexa</i>	N/A	Threatened	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.

FISH				
Common Name	Scientific Name	Federal Status	State Status	Presence in Project Area
Western banded killifish	<i>Fundulus diaphanous menona</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
lake sturgeon	<i>Acipenser fulvescens</i>	N/A	Endangered	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
American eel	<i>Anguilla rostrata</i>	N/A	Threatened	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
Greater redhorse	<i>Moxostoma valenciennesi</i>	N/A	Threatened	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.
channel darter	<i>Percina copelandi</i>	N/A	Threatened	Due to the location, and type of habitat at the project site, this project is not likely to impact this species.

The Applicant did not identify any listed plant or animal species during field surveys. Further, the ODNr and the USFWS did not identify any concerns regarding impacts to listed plant species. In the unexpected event that the Applicant encounters listed plant or animal species during construction, Staff recommends that the Applicant contact Staff, the ODNr, and the USFWS, as applicable. Staff also recommends that if the Applicant encounters any listed plant or animal species prior to construction, the Applicant include the location and a procedure for avoiding impacts in the final access plan to be provided to Staff.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Ecological Conditions** heading of the Recommended Conditions of Certificate section.

Public Services, Facilities, and Safety

Public Services and Traffic

The principal impact on public services would be short-term increases in traffic on routes leading to the proposed facility due to deliveries of equipment and materials during construction. The use of on-site construction laydown areas would minimize construction traffic on public roadways. Workers arriving and departing during construction would also increase traffic. Some traffic management during the construction phase may be necessary in the immediate vicinity of the project area to ensure safe and efficient maintenance of existing traffic patterns and usages. The Applicant has committed to coordinating with local officials to ensure that shift times and travel routes are optimized to the extent possible.

Once the proposed facility is operational, related traffic would be minimal and would not be expected to impact local roadways significantly. Potential emergency service requirements would be coordinated with local officials. Local emergency response personnel would be trained by the proper authorities to be familiar with the facility's emergency response system.

Roads and Bridges

The Applicant's preliminary transportation management plan considers delivery of major components and other materials for the construction phase of the proposed facility. Final transportation to the site would be via road. The transportation management plan would be finalized following the selection of a construction contractor, as would the load and dimensional requirements for equipment transportation. Larger equipment deliveries would be by rail or barge then transported by truck to the site, and would be planned as to minimize impact to local traffic patterns.

Road access to the site would be achieved by Parkway and North Lallendorf Road via Interstate 280. No upgrades to local roads and bridges are anticipated for the transportation of construction vehicles and facility equipment. The City of Oregon has planned for industrial traffic within the area and has upgraded road-bearing capacities.

Staff recommends a requirement for the Applicant to develop a final transportation management plan that would include a road use agreement. Any damaged public roads and bridges would be repaired promptly to their previous condition by the Applicant under the guidance of the appropriate regulatory agency. Any temporary improvements would be removed unless the appropriate regulatory agency request that they remain in place.

Noise

Noise impacts from construction activities would include site clearing and grading, placement of major structural concrete foundations, erection of structural steel, installation of mechanical and electrical equipment, and commissioning and testing of equipment. Many of the construction activities would generate significant noise levels during the final 4 to 6 months of construction. However, the adverse impact of construction noise would be temporary and intermittent, would occur away from most residential structures, and would be limited to daytime working hours. The Applicant would use equipment mitigation practices such as maintaining engines and mufflers in good operating order and according to manufacturers' specifications, personal protective equipment such as hearing protection devices, and limitations on duration of noise exposure in high noise areas in order to reduce noise impacts.

The Applicant conducted a background ambient noise level study in order to understand the existing noise levels near the proposed facility. The study included short-term measurements at four locations and long-term measurements at two locations. The long term monitoring was conducted from October 16 through October 31, 2012. The results of that study showed that for long term measurement location 1, which is located 715 yards from the project area, the equivalent continuous noise level (L_{eq}) for the two-week monitoring period was 56 decibel A-weighting (dBA) for daytime hours and 55 dBA for nighttime hours. For long-term measurement location 2, which is located 200 yards from the project area, the L_{eq} for the two-week monitoring period was 52 dBA for daytime hours and 51 dBA for nighttime hours.

The Applicant estimated noise levels from the operation of the proposed facility by using the Cadna-A noise model software. The project would use noise reduction mitigation such as enclosing noisy equipment inside buildings, and boiler feed pump noise reduction. Noise levels during operation would range from 42 to 50 dBA L_{eq} at the four short-term measurement locations. Long-term ambient nighttime noise levels range from 51-55 dBA L_{eq} . The largest net increase in sound level at a monitoring location was modeled to be 3 dBA.

The noise model incorporated the cumulative sound pressure level impact from the operational Oregon Clean Energy Center and the proposed project. The model results showed that cumulative sound pressure levels at two closest residences would be approximately 54 and 55 dBA respectively. The long term monitoring location with the lowest ambient nighttime level has a nighttime ambient level of 51 dBA. Therefore, the project would be expected to have minimal adverse noise impacts on the adjacent community.

In order to minimize adverse impacts associated with increased noise levels, Staff recommends that the Applicant use the mitigation measures included in the mitigated model, or similar measures, and include procedures in its complaint resolution process for resolving noise complaints.

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the **Public Services, Facilities, and Safety Conditions** heading of the Recommended Conditions of Certificate section.

Recommended Findings

Staff recommends that the Board find that the Applicant has determined the nature of the probable environmental impact for the proposed facility, and therefore complies with the requirements specified in R.C. 4906.10(A)(2), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(3)

MINIMUM ADVERSE ENVIRONMENTAL IMPACT

Pursuant to R.C. 4906.10(A)(3), the proposed facility must represent the minimum adverse environmental impact, considering the state of available technology and the nature and economics of the various alternatives, along with other pertinent considerations.

Site Selection

Based upon an assessment of existing and upcoming closures of several thousand MW of electric generation facilities throughout the 13-state PJM system, the Applicant considered Indiana, Maryland, Pennsylvania, Ohio, and Virginia before focusing on northwestern Ohio for the new facility. The Applicant evaluated key factors such as adequate site size, compatible zoning and land use, availability of natural gas alternatives, water supply and wastewater discharge alternatives, proximity to robust electrical interconnection, strong transportation network, environmental fatal flaws, and community support for the project.

The Applicant identified the project site as their preferred area for the new facility because it appeared to meet all identified site selection criteria. In addition, part of the site was already cleared and graded due to the development of the Oregon Clean Energy Center on an adjacent parcel. The Applicant developed a constraint map for use in designing the project layout. Constraints included wetlands, streams, sensitive land uses, and the location of existing infrastructure. The Applicant's site selection and design criteria help to minimize impacts of the proposed facility.

Minimizing Impacts

The proposed project site is adjacent to the recently operational Oregon Clean Energy Center, and is located in an area zoned for commercial and industrial use within the Cedar Point Development Park in an area designated for development, according to the *City of Oregon 2025 Master Plan*. The facility site is in proximity to other commercial and industrial uses. Land use and residential impacts would be minimal. With design measures in place, potential noise impacts associated with the operation of the proposed facility would be minimal in nature.

The project site lacks suitable habitat for federal and state listed species. Additionally, surface waters would be protected through Ohio EPA and U.S. Army Corps of Engineers permitting as necessary.

The facility is expected to have positive impacts on the local economy. Positive impacts would include purchasing of construction material from local vendors and the use of goods and services by facility personnel. In addition, the proposed facility would generate revenue from construction spending, permanent employment, and state and local taxes.

Conclusion

The project would result in temporary and permanent impacts to the project area. Due to the limited impacts on land use activities and resources, as well as the Applicant's commitments and Staff's recommended conditions, Staff concludes that the proposed facility represents the minimum adverse environmental impact.

Recommended Findings

Staff recommends that the Board find that the proposed facility represents the minimum adverse environmental impact, and therefore complies with the requirements specified in R.C. 4906.10(A)(3), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

CONSIDERATIONS FOR R.C. 4906.10(A)(4)

ELECTRIC GRID

Pursuant to R.C. 4906.10(A)(4), the Board must determine that the proposed electric facilities are consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facilities will serve the interests of electric system economy and reliability.

The purpose of this section is to evaluate the impact of integrating the proposed facility into the existing regional transmission grid. The Applicant proposes to construct a natural gas combined-cycle electric generating facility, capable of producing 955 MW. The proposed facility would have two points of interconnection on American Transmission Systems, Incorporated (ATSI) transmission grid. One point of interconnection would occur on the Bayshore-Chev (GM Powertrain) 138 kV transmission line through a new 3-breaker 138 kV ring bus which would interconnect turbine number one. The other point of interconnection would occur at the existing 5-breaker Lallendorf 345 kV switchyard and would interconnect turbine number two and the steam generation units. The Lallendorf switchyard would be expanded to a 6-breaker ring bus

NERC Planning Criteria

The North American Electric Reliability Corporation (NERC) is responsible for the development and enforcement of the federal government's approved reliability standards, which are applicable to all owners, operators, and users of the bulk power system. As an owner, operator, and/or user of the bulk power system, the Applicant is subject to compliance with various NERC reliability standards, including but not limited to those related to transmission planning for contingency events.

PJM Interconnection

The Applicant submitted their generation interconnection request for the proposed facility to PJM Interconnection, LLC (PJM) on October 22, 2015. PJM gave the application a queue position of AB1-107. The System Impact Study was released by PJM in May 2017.²⁷

PJM studied the interconnection as an injection into ATSI's, Bayshore-Chev (GM Powertrain) 138 kV transmission line and ATSI's Lallendorf 345 kV switchyard. The Applicant requested a maximum facility interconnection of 955 MW, of which 860 MW would be recognized as capacity by PJM and could be sold into the capacity market. Capacity represents the need for adequate generating resources to ensure that the demand for electricity can be met at all times. In PJM's case, that means that a utility or other electricity supplier is required to have the resources to meet its customers' demand plus a reserve amount. Suppliers can meet that requirement with generating capacity they own, with capacity purchased from others under contract, or with capacity obtained through PJM's capacity market auctions.

27. PJM Interconnection, LLC is the regional transmission organization charged with planning for upgrades and administering the generation queue for the regional transmission system in Ohio. Generators wanting to interconnect to the bulk electric transmission system located in the PJM control area are required to submit an interconnection application for review of system impacts. The interconnection process provides for the construction of expansions and upgrades of the PJM transmission system, as needed to maintain compliance with reliability criteria with the addition of generation in its footprint.

PJM Network Impacts

PJM analyzed the bulk electric system with the proposed facility interconnected to the bulk power system. A 2019 summer peak power flow model was used to evaluate the regional reliability impacts. The studies revealed that an overload would occur during multiple contingencies and overloaded circuit breakers. The below chart displays the results of the PJM System Impact Study for the PJM regional footprint.²⁸

PJM REGIONAL SYSTEM IMPACTS	
Generator Deliverability - System Normal and Single Contingency Outage	
Plant Output: Capacity Level - 860 MW	No problems identified
Category C and D - Multiple Contingency Outages	
Plant Output: Capacity Level - 860 MW	Ottawa-Lakeview 138 kV transmission line overloaded

Analysis revealed that ATSI's Ottawa-Lakeview 138 kV transmission line would overload with the proposed facility in-service. The Applicant will be required by PJM to complete new system reinforcements. The reinforcements include installing new relaying at the Ottawa and Greenfield substations and creating a new Greenfield-Ottawa 138 kV circuit. PJM assigned the new system reinforcements ID No. N4173. The status of the reinforcements can be tracked on PJM's website.²⁹

Contribution to Previously Identified Overloads - Network Impacts

PJM studied overloading where the proposed facility may affect earlier projects in the PJM Queue.

CONTRIBUTION TO PREVIOUSLY IDENTIFIED OVERLOADS	
Plant Output: Capacity Level - 860 MW	No problems identified

Potential Congestion due to Local Energy Deliverability- Energy Delivery Impacts

PJM studied the delivery of the energy portion. Network upgrades under this section would allow for the delivery of energy with operational restrictions. The upgrades are at the discretion of the Applicant.

POTENTIAL CONGESTION DUE TO LOCAL ENERGY DELIVERABILITY	
Plant Output: Capacity Level - 860 MW Energy Level - 95 MW	No problems identified

Short Circuit Analysis

The short circuit analysis study, which is part of the System Impact Study, evaluates the interrupting capabilities of circuit breakers that would be impacted by the proposed generation addition. The results identified 14 overloaded circuit breakers at ATSI's Bayshore Substation. The Applicant would be responsible for replacing these breakers at a cost of \$12 million. PJM assigned

28. "System Impact Study, Queue Number AB1-107," *PJM Interconnection*, accessed August 15, 2017, <http://pjm.com/planning/generation-interconnection/generation-queue-active.aspx>.

29. "Transmission Construction Status," *PJM Interconnection*, accessed August 15, 2017, <http://pjm.com/planning/rtep-upgrades-status/construct-status.aspx>.

the new breaker replacements ID Nos. N5241-N5249 and N5305-N5309. Their status can be tracked on PJM's website.³⁰

Conclusion

PJM analyzed the bulk electric system, with the facility interconnected to the transmission grid, for compliance with ATSI, NERC, and PJM reliability criteria. The PJM system studies indicated that reliability violations would occur during multiple contingencies and short circuit events. To correct these violations and meet the required compliance, PJM would require several network upgrades.

The facility would interconnect to the regional grid at two locations on ATSI's transmission grid. The existing Lallendorf 345 kV switchyard would be modified to a 6-breaker ring bus and a new switchyard would be connected to the Bayshore-Chev (GM Powertrain) 138 kV transmission line as a 3-breaker ring bus configuration. Ring bus configurations are more reliable than other types and allow for isolation of bus sections and circuit breakers for maintenance without circuit disruption.

The facility would serve the public interest, convenience, and necessity by providing additional electrical generation to the regional transmission grid, would be consistent with plans for expansion of the regional power system, and would serve the interests of electric system economy and reliability.

Recommended Findings

Staff recommends that the Board find that the proposed facility is consistent with regional plans for expansion of the electric power grid of the electric systems serving this state and interconnected utility systems, and that the facility would serve the interests of electric system economy and reliability. Therefore, Staff recommends that the Board find that the facility complies with the requirements specified in R.C. 4906.10(A)(4), provided that any certificate issued by the Board for the proposed facilities include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

30. "Transmission Construction Status," *PJM Interconnection*, accessed August 15, 2017, <http://pjm.com/planning/rtep-upgrades-status/construct-status.aspx>.

Considerations for R.C. 4906.10(A)(5)

AIR, WATER, SOLID WASTE, AND AVIATION

Pursuant to R.C. 4906.10(A)(5), the facility must comply with Ohio law regarding air and water pollution control, withdrawal of waters of the state, solid and hazardous wastes, and air navigation.

Air

The proposed project site is within an area designated as “unclassified/attainment” for all National Ambient Air Quality Standards criteria air pollutants. Operational impacts on air quality would be minimized through the use of new gas turbine technology, and the incorporation of air pollution controls that satisfy best available control technology (BACT).

Air pollution controls are proposed for the facility to minimize impacts to air quality. The primary air pollution control devices include DLN burners in the gas turbines, SCR systems, good combustion practices, and oxidation catalysts in the HRSG.

The proposed combustion turbines and duct burners would utilize DLN burners within the combustion turbines. The DLN burners would control the formation of NO_x by pre-mixing fuel and air immediately prior to combustion. Pre-mixing inhibits formation of NO_x by minimizing the flame temperature and the concentration of oxygen at the flame.

SCR is an air pollution control technology that is used to remove nitrogen oxides from the flue gases that are produced during combustion of fossil fuels in turbines or boilers. SCR removes nitrogen oxides through a catalyzed chemical reduction of NO_x by ammonia that is introduced as a reactant in the flue gas in the presence of excess oxygen. This reaction generates nitrogen gas and water as the end products that are emitted from the stack into the atmosphere. The proposed SCR systems would reduce emissions of nitrogen oxides to two parts per million by volume. Unreacted ammonia will be limited to five parts per million.

By the exclusive use of natural gas in the combustion turbine generators and duct burners, in conjunction with good combustion practices, PM emissions would be minimized. A PM₁₀/PM_{2.5} emissions limit of 0.006 pound per million Btu (lb/MMBtu) without duct burning and 0.0046 lb/MMBtu with duct burning is proposed for the project. A PM₁₀/PM_{2.5} emissions limit of 0.008 lb/MMBtu is proposed for the auxiliary boiler. Additionally, drift eliminators would be used to catch PM in the cooling tower. The emergency fire pump and emergency generator have been designed with the latest PM reducing technology in order to satisfy BACT.

An oxidation catalyst system would be located within the HRSG to control emissions of CO and VOC. Exhaust gases from the turbines pass over a catalyst bed where excess air would oxidize the CO and VOC. The oxidation catalysts would reduce emissions of CO to two parts per million by volume and VOC to one part per million by volume without duct burning and two parts per million by volume with supplemental duct firing.

Emissions from the facility would be tracked using a CEMS. The CEMS would continuously extract flue gas samples near the exhaust of the HRSG and measure flue gas parameters. The CEMS would detect a deterioration of performance before a failure of the catalyst would occur. The facility would not operate if its SCR system were not to function properly. The Applicant has

taken steps to assure that project emissions under all operating conditions would comply with permit requirements.

The air permit-to-install application for the project was submitted to the Ohio EPA on May 26, 2017. The permit-to-install serves as the air construction permit and the initial operating permit. The Applicant would be required to apply for a Title V air operating permit within 12 months after initial startup. Additionally, the Applicant would need to submit a Title IV Acid Rain Program permit application for emissions of sulfur dioxide SO₂ and NO_x. The Title IV permit must be submitted at least 24 months prior to beginning operation.

Construction impacts on air quality primarily consist of relatively minor emissions from the construction equipment and from fugitive dust emissions. Construction vehicles would emit insignificant amounts of VOC, SO₂, CO, NO_x, and PM. These emissions are not expected to cause any significant adverse impacts to air quality.

Water

Construction of the proposed facility would not require the use of significant amounts of water. However, operation of the proposed facility would require the use of a significant amount of water. The maximum rate of water usage would be 5.4 million gallons per day, while the average rate of usage would be 4.8 million gallons per day. The Applicant plans to obtain potable water from the City of Toledo.

The Applicant would work with the City of Oregon to construct a 1.4-mile long potable water lateral from the City of Toledo's Collins Park Water Treatment Plant in nearby Toledo to the project site. The new lateral would be licensed and built by the City of Oregon, and the Applicant would reimburse the city for the cost of construction.

The Applicant intends to submit a Notice of Intent for coverage under the Ohio EPA NPDES general permit for stormwater discharges associated with construction and industrial activities. The Applicant would submit a SWPPP to the Ohio EPA as part of the NPDES permit. This SWPPP would be developed for the project pursuant to Ohio EPA regulations and would conform to the *ODNR Rainwater and Land Development Manual*. Prior to operation of the facility, the Applicant would obtain a general NPDES permit for stormwater discharges associated with operation, if necessary.

Stormwater flows from the developed site would be controlled through the use of a detention pond and other best management practices that would be identified in the SWPPP. The preliminary design is to discharge clean stormwater runoff from the stormwater collection pond into Johlin Ditch through a bioswale channel from the facility to the ditch.³¹

Sanitary and all other wastewater streams would be collected in a wastewater collection sump before discharge to the City of Oregon publicly owned treatment works (POTW). The POTW discharges to Lake Erie in accordance with its own NPDES requirements. The facility would discharge to the POTW with authorization obtained from the POTW.

31. A bioswale is a trench/depression that receives stormwater runoff and has vegetation.

Solid Waste

The Applicant estimates that approximately 1,200 cubic yards of construction debris could be generated from the project. Solid waste generated from construction activities would include packing materials, office waste, scrap lumber, metals, cables, glass, cardboard containers, and other miscellaneous debris. In addition, during construction and pre-operational cleaning, some solvents and flushing materials would be used. During operation, spent SCR catalysts would be removed and returned to a catalyst vendor for regeneration, salvage, or disposal. Solid waste that can be neither recycled nor reused would be stored in on-site containers for disposal. The Applicant would develop procedures to ensure that potentially hazardous wastes would be separated from normal waste, including segregation of storage areas and proper labeling of containers.

All solid waste generated during both construction and operation would be trucked off site by licensed contractors in accordance with applicable regulatory requirements and managed in licensed facilities. The Applicant would have a spill prevention, containment, and countermeasure plan in place and would follow manufacturers' recommendations for any spill cleanup. The Applicant's solid waste disposal plans comply with solid waste disposal requirements in R.C. Chapter 3734, and the rules and laws adopted under this chapter.

Aviation

The nearest airport to the proposed facility is the Culver Field Airport, a privately owned, private use airport with a single unpaved runway that is located approximately 1.1 miles east of the project site. The Toledo Executive Airport, a public use airport with two paved runways, is the closest public use airport, and is located approximately 7 miles southwest of the project site. The closest heliport is located approximately 1.15 miles northwest of the project. A heliport associated with Saint Charles Hospital is the next closest heliport, located approximately 3.15 miles southwest of the project site. The Applicant stated that a request for review by the Federal Aviation Administration (FAA) and the ODOT Office of Aviation was submitted on April 5, 2017, for the 185-foot stacks. The Applicant received a Determination of No Hazard to Navigation for the proposed facility stacks from the FAA on January 30, 2013 and February 2, 2013. No lighting or marking requirements were identified.

In accordance with R.C. 4561.32, Staff contacted the ODOT Office of Aviation during the review of this application in order to coordinate review of potential impacts of the facility on local airports. As of the filing of this report, no such concerns have been identified.

All Staff recommendations for the requirements discussed in this section can be found under the **Air, Water, Solid Waste, and Aviation Conditions** heading of the Recommended Conditions of Certificate.

Recommended Findings

Staff recommends that the Board find that the proposed facility complies with the requirements specified in R.C. 4906.10(A)(5), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(6)

PUBLIC INTEREST, CONVENIENCE, AND NECESSITY

Pursuant to R.C. 4906.10(A)(6), the Board must determine that the facility will serve the public interest, convenience, and necessity.

Public Safety

The Applicant would limit public access to the facility by installing a security fence around the project site with card-activated gates and operator-controlled access.

The project would be constructed, operated, and maintained in accordance with applicable safety regulations, including Occupational Safety and Health Administration requirements, and industry standards. The facility personnel would be trained to operate the equipment in a safe and reliable manner. The Applicant stated that it would secure pertinent federal and state environmental permits, and construct and operate the facility in accordance with all applicable environmental and safety regulations.

The Applicant has committed to incorporate appropriate safety measures (e.g. containment and access to cleanup chemicals) and design to prevent and contain any accidental spill of on-site chemicals.

Gas Pipeline Safety

In order to operate the natural gas interconnection and associated equipment safely and reliably, and to minimize the possibility of failure in the gas supply system, the equipment should be built, operated, and maintained to meet the requirements in Title 49 CFR parts 191 and 192, the Federal Minimum Pipeline Safety Standards; part 199 and part 40, the Drug and Alcohol Regulations; R.C. 4905.90 through 4905.96, Natural Gas Pipeline Safety Standards; and Ohio Adm.Code 4901:1-16, Gas Pipeline Safety. The Applicant intends to comply with these gas pipeline safety regulations.

Fire Protection System

A complete fire protection/detection system would be provided for the facility. The system would include a sprinkler system, a deluge system, a carbon dioxide monitoring system, fire hose stations, hydrants, portable fire extinguishers, and detection and control systems. The fire protection system would be designed and installed in accordance with local fire department requirements, National Fire Protection Association standards, and insurer's recommendations.

The Applicant has committed to collaborate with local emergency responders to develop an emergency response plan that would address different potential emergencies, levels of response, and resources (such as equipment or personnel).

Gas Supply

The facility would require up to 146 million cubic foot per day (MMCFD) of natural gas from area pipelines. The Applicant is considering three options to supply the facility. One option is the existing North Coast Gas pipeline that currently connects the neighboring Oregon Clean Energy Center to the Maumee Hub and has an approximate total capacity of 272 MMCFD. Other options include a potential new pipeline to connect the facility to the Maumee Hub or a potential lateral pipeline from the facility to the NEXUS Gas Transmission pipeline, both at an approximate capacity of 194 MMCFD. These options would be subject to approval at a later date.

Although pipeline gas is very clean, minor impurities need to be removed prior to entering combustion turbines. The Applicant intends to install a fuel gas heating system, liquids removal system, and gas compression system (as needed) to improve overall plant efficiency.

The Applicant would contract for firm long-term gas transportation service to the facility. The transportation service would be a long-term year round service to ensure uninterrupted supply of gas to the project.

The procurement of adequate natural gas supplies and pipeline capacity are necessary components for the successful operation of the facility.

Public Interaction

The Applicant hosted a public informational open house for this project on March 30, 2017. Attendees were provided the opportunity to speak with representatives of the Applicant about the proposed project and to provide feedback.

The Applicant served copies of the complete application on officials representing Lucas County and the City of Oregon. The Applicant also sent a copy of the complete application to the Toledo-Lucas County Public Library. Additionally, copies of the complete application are available for public inspection at the offices of the PUCO and online at <http://opsb.ohio.gov>. The Applicant provides project updates on the Clean Energy Future website at <http://cleanenergyfuturellc.com/clean-energy-future-in-ohio>.

During the construction of the project, the Applicant has committed to having a manager on site to respond to local issues. The Applicant would implement the complaint resolution program included in Appendix E of the application during construction and would update the complaint resolution program once the project becomes operational. Staff recommends that the Applicant be required to provide Staff with a copy of the operational-period complaint resolution plan at least 30 days before the facility becomes operational.

The Applicant has committed to notifying affected parties at least seven days prior to the start of any construction activities. However, Staff recommends a condition requiring the Applicant to provide at least 30 days notice prior to the start of any construction activities.

The Administrative Law Judge issued an entry on June 28, 2017 scheduling a local public hearing and an adjudicatory hearing for this proceeding. The local public hearing, at which the Board will accept written or oral testimony from any person, is scheduled for September 20, 2017 at 6:00 p.m., at Oregon City Council Chambers, 5330 Seaman Rd., Oregon, Ohio 43616. The adjudicatory hearing is scheduled for September 28, 2017 at 10:00 a.m., at the offices of the PUCO, 11th floor, Hearing Room 11-C, 180 E. Broad St., Columbus, Ohio 43215.

On July 24, 2017, Oregon Clean Energy, LLC filed a petition for leave to intervene. As of the filing of this Staff Report, the Board has received no public comments.

Liability Insurance Plans

The Applicant would carry liability insurance to cover potential claims. During the facility's construction and operation phases, general commercial liability insurance and automobile liability insurance would be utilized.³²

Land Leases

The Applicant has an option to purchase the 30-acre project site. The Applicant has available for its use nine parcels totaling approximately 88 acres that would comprise the three proposed construction laydown/staging areas (identified as the eastern, western, and southern construction laydown areas). The Applicant has an option to purchase the 20-acre ring bus site and proposes to secure easement agreements for the electrical interconnection transmission lines.³³

All Staff recommendations for the requirements discussed in this section of the *Staff Report of Investigation* are included under the Recommended Conditions of Certificate section.

Recommended Findings

Staff recommends that the Board find that the proposed facility would serve the public interest, convenience, and necessity, and therefore complies with the requirements specified in R.C. 4906.10(A)(6), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this *Staff Report of Investigation* entitled Recommended Conditions of Certificate.

32. *Application* at p. 41.

33. *Ibid.*, p. 33.

Considerations for R.C. 4906.10(A)(7)

AGRICULTURAL DISTRICTS

Pursuant to R.C. 4906.10(A)(7), the Board must determine the facility's impact on the agricultural viability of any land in an existing agricultural district within the project area of the proposed facility. The agricultural district program was established under R.C. Chapter 929. Agricultural district land is exempt from sewer, water, or electrical service tax assessments.

Agricultural land can be classified as an agricultural district through an application and approval process that is administered through local county auditors' offices. Eligible land must be devoted exclusively to agricultural production or be qualified for compensation under a land conservation program for the preceding three calendar years. Furthermore, eligible land must be at least 10 acres or produce a minimum average gross annual income of \$2,500.

No agricultural district lands were identified in the study area. No agricultural district land would be disturbed in association with the construction of the proposed facility. No impacts to field operations, irrigation, or field drainage systems associated with agricultural district lands would occur as a result of the construction, operation, or maintenance of the proposed facility.

The Applicant has stated that the risk of damage to tile systems on adjacent properties is minimal due to the characteristics of the site. The presence of I-77 immediately to the east, utility infrastructure and Wills Creek to the south, an existing rail line to the west, and Seneca Lane to the north are significant existing divides between any drainage systems on the facility site and adjacent off-site properties. Any unforeseen drain tile issues would be remedied through the Applicant's complaint resolution process.

Recommended Findings

Staff recommends that the Board find that the impact of the proposed facility on the viability of existing agricultural land in an agricultural district has been determined, and therefore complies with the requirements specified in R.C. 4906.10(A)(7), provided that any certificate issued by the Board for the proposed facility include the conditions specified in the section of this report entitled Recommended Conditions of Certificate.

Considerations for R.C. 4906.10(A)(8)

WATER CONSERVATION PRACTICE

Pursuant to R.C. 4906.10(A)(8), the proposed facility must incorporate maximum feasible water conservation practices, considering available technology and the nature and economics of the various alternatives.

Construction of the proposed facility would not require the use of significant amounts of water. Operation of the proposed facility would require the use of a significant amount of water for process water, fire protection, and domestic uses. The water would be obtained through the City of Toledo water treatment plant (a regulated public water supplier), so requirements under R.C. 1501.33 and 1501.34 are not applicable to this project.

Staff has reviewed the Applicant's proposed water balance and water consumption for the facility. The proposed facility design incorporates significant water conservation measures. These measures include maximizing the cycles of concentration to reduce water intake requirements, a state-of-the-art cooling tower drift elimination system, recycling of water throughout the system, and return of recovered boiler blowdown to the cooling tower.

Recommended Findings

The Staff recommends that the Board find that the proposed facility would incorporate maximum feasible water conservation practices, and therefore complies with the requirements specified in R.C. 4906 (A)(8). Further, the Staff recommends that any certificate issued by the Board for the certification of the proposed facility include the conditions specified in the section of this report entitled Recommended Conditions of Certificate.

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IV. RECOMMENDED CONDITIONS OF CERTIFICATE

Following a review of the application filed by Clean Energy Future-Oregon, LLC, and the record compiled to date in this proceeding, Staff recommends that a number of conditions become part of any certificate issued for the proposed facility. These recommended conditions may be modified as a result of public or other input received subsequent to the issuance of this report. At this time, Staff recommends the following conditions:

GENERAL CONDITIONS

Staff recommends the following conditions to ensure conformance with the proposed plans and procedures as outlined in the case record to date, and to ensure compliance with all conditions listed in this Staff Report:

- (1) The facility shall be installed at the Applicant's proposed site as presented in the application and as modified and/or clarified by supplemental filings, replies to data requests and the recommendations in this *Staff Report of Investigation*.
- (2) The Applicant shall conduct a preconstruction conference prior to the start of any construction activities. Staff, the Applicant, and representatives of the prime contractor and all subcontractors for the project shall attend the preconstruction conference. The conference shall include a presentation of the measures to be taken by the Applicant and contractors to ensure compliance with all conditions of the certificate, and discussion of the procedures for on-site investigations by Staff during construction. Prior to the conference, the Applicant shall provide a proposed conference agenda for Staff review. The Applicant may conduct separate preconstruction conferences for each stage of construction.
- (3) At least 30 days before the preconstruction conference, the Applicant shall submit to Staff, for review to ensure compliance with this condition, one set of detailed engineering drawings of the final project design, including the facility, temporary and permanent access roads, any crane routes, construction staging areas, and any other associated facilities and access points, so that Staff can determine that the final project design is in compliance with the terms of the certificate. The final project layout shall be provided in hard copy and as geographically-referenced electronic data. The final design shall include all conditions of the certificate and references at the locations where the Applicant and/or its contractors must adhere to a specific condition in order to comply with the certificate.
- (4) If the Applicant makes any changes to the project layout after the submission of final engineering drawings, the Applicant shall provide all such changes to Staff in hard copy and as geographically-referenced electronic data. All changes will be subject to Staff review to ensure compliance with all conditions of the certificate, prior to construction in those areas.
- (5) Within 60 days after the commencement of commercial operation, the Applicant shall submit to Staff a copy of the as-built specifications for the entire facility. If the Applicant demonstrates that good cause prevents it from submitting a copy of the as-built specifications for the entire facility within 60 days after commencement of commercial operation, it may request an extension of time for the filing of such as-built specifications. The Applicant shall use reasonable efforts to provide as-built drawings in both hard copy and as geographically-referenced electronic data.

- (6) Prior to the commencement of construction activities in areas that require permits or authorizations by federal or state laws and regulations, the Applicant shall obtain and comply with such permits or authorizations. The Applicant shall provide copies of permits and authorizations, including all supporting documentation, to Staff within seven days of issuance or receipt by the Applicant. The Applicant shall provide a schedule of construction activities and acquisition of corresponding permits for each activity at the preconstruction conference.
- (7) The certificate shall become invalid if the Applicant has not commenced a continuous course of construction of the proposed facility within five years of the date of journalization of the certificate.
- (8) As the information becomes known, the Applicant shall docket in the case record the date on which construction will begin, the date on which construction was completed, and the date on which the facility begins commercial operation.
- (9) The Applicant shall not commence any construction of the facility until it has a signed Interconnection Service Agreement with PJM Interconnection, which includes construction, operation, and maintenance of system upgrades necessary to integrate the proposed generating facility into the regional transmission system reliably and safely. The Applicant shall docket in the case record a letter stating that the Agreement has been signed or a copy of the signed Interconnection Service Agreement.
- (10) At least 30 days prior to the preconstruction conference, the Applicant shall provide to Staff a copy of its public information program that informs affected property owners and tenants of the nature of the project, specific contact information of Applicant personnel who are familiar with the project, the proposed timeframe for project construction, and a schedule for restoration activities. The Applicant shall give notification to property owners and tenants at least 30 days prior to construction.
- (11) At least 30 days prior to the facility becoming operational, the Applicant shall provide to Staff a copy of the complaint resolution procedure to address potential public grievances resulting from facility operation, including noise from the facility. The resolution procedure must describe how the public can contact the Applicant and how the Applicant will work to mitigate or resolve any issues with those who submit either a formal or informal complaint. The Applicant shall immediately forward all complaints to Staff.

SOCIOECONOMIC CONDITIONS

Staff recommends the following condition to address the impacts discussed in the **Socioeconomic Impacts** section of the Nature of Probable Environmental Impact:

- (12) Prior to commencement of any construction, the Applicant shall prepare a landscape and lighting plan that addresses the aesthetic and lighting impacts of the facility on neighboring residences, including lighting locations. The Applicant shall provide the plan to Staff for review and confirmation that it complies with this condition.
- (13) The Applicant shall avoid, where possible, or minimize to the extent practicable, any damage to field tile drainage systems and soils resulting from construction, operation, and/or maintenance of the facility in agricultural areas. Damaged field tile systems shall be promptly

repaired to at least original requirements at the Applicant's expense. If applicable, excavated topsoil shall be segregated and restored in accordance with the Applicant's lease agreement with the landowner. Severely compacted soils shall be plowed or otherwise de-compacted, if necessary, to restore them to original condition unless otherwise agreed to by the landowner.

AIR, WATER, SOLID WASTE AND AVIATION

Staff recommends the following condition to address the requirements discussed in the **Air, Water, Solid Waste, and Aviation** section of the Nature of Probable Environmental Impact:

- (14) The Applicant shall comply with fugitive dust rules by the use of water spray or other appropriate dust suppressant measures whenever necessary.

PUBLIC SERVICES, FACILITIES, AND SAFETY CONDITIONS

Staff recommends the following conditions to address the requirements discussed in the **Public Services, Facilities, and Safety** section of the Nature of Probable Environmental Impact:

- (15) Prior to commencement of construction activities that require transportation permits, the Applicant shall obtain all such permits. The Applicant shall coordinate with the appropriate authority regarding any temporary or permanent road closures, lane closures, road access restrictions, and traffic control necessary for construction and operation of the proposed facility. Coordination shall include, but not be limited to, the county engineer, the Ohio Department of Transportation, local law enforcement, and health and safety officials. The Applicant shall detail this coordination as part of a final traffic plan submitted to Staff prior to the preconstruction conference for review and confirmation by Staff that it complies with this condition.
- (16) The Applicant shall repair damage to government-maintained (public) roads and bridges caused by construction or maintenance activity. Any damaged public roads and bridges shall be repaired promptly to their previous conditions by the Applicant under the guidance of the appropriate regulatory agency. Any temporary improvements shall be removed unless the county engineer request that they remain. The Applicant shall provide financial assurance to the counties that it will restore the public roads it uses to their conditions prior to construction or maintenance. The Applicant shall develop a transportation management plan and enter into a road use agreement with the county engineer prior to construction and subject to Staff review and confirmation that it complies with this condition. The road use agreement shall contain provisions for the following:
 - (a) A preconstruction survey of the conditions of the roads.
 - (b) A post-construction survey of the condition of the roads.
 - (c) An objective standard of repair that obligates the Applicant to restore the roads to the same or better condition as they were prior to construction.
 - (d) A timetable for posting of the construction road and bridge bond prior to the use or transport of heavy equipment on public roads or bridges.

- (17) General construction activities shall be limited to the hours of 7:00 a.m. to 7:00 p.m., or until dusk when sunset occurs after 7:00 p.m. Impact pile driving, hoe ram, and blasting operations, if required, shall be limited to the hours between 10:00 a.m. to 5:00 p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. The Applicant shall notify property owners or affected tenants within the meaning of Ohio Adm. Code 4906-3-03(3)(B)(2) of upcoming construction activities including potential for nighttime construction activities.
- (18) In order to minimize adverse impacts associated with increased noise levels, Staff recommends that the Applicant use the mitigation measures included in the mitigated model, or similar measures.
- (19) At least 30 days before the preconstruction conference, the Applicant shall submit to Staff for review and confirmation that it complies with this condition an emergency response plan to be used during construction. This plan shall be developed in consultation with the fire department(s) having jurisdiction over the area. The Applicant shall coordinate with fire, safety, and emergency personnel during all stages of the project.
- (20) Should site-specific requirements warrant blasting, the Applicant shall submit a blasting plan, at least 60 days prior to blasting, to Staff for review and confirmation that it complies with this requirement. The Applicant shall submit the following information as part of its blasting plan:
- (a) The name, address, and telephone number of the drilling and blasting company.
 - (b) A detailed blasting plan for dry and/or wet holes for a typical shot. The blasting plan will address blasting times, blasting signs, warnings, access control, control of adverse effects, and blast records.
 - (c) A plan for liability protection and complaint resolution.
- (21) Prior to the use of explosives, the Applicant or explosive contractor shall obtain all required local, state, and federal licenses/permits. The Applicant shall submit a copy of the license or permit to Staff within seven days of obtaining it from the local authority.
- (22) The blasting contractor shall utilize two blasting seismographs that measure ground vibration and air blast for each blast. One seismograph shall be placed at the nearest dwelling and the other placed at the discretion of the blasting contractor.
- (23) At least 30 days prior to the initiation of blasting operations, the Applicant shall notify, in writing, all residents or owners of dwellings or other structures within 1,000 feet of the blasting site. The Applicant or explosive contractor shall offer and conduct a pre-blast survey of each dwelling or structure within 1,000 feet of each blasting site, unless waived by the resident or property owner. The survey must be completed and submitted to Staff at least ten (10) days before blasting begins.



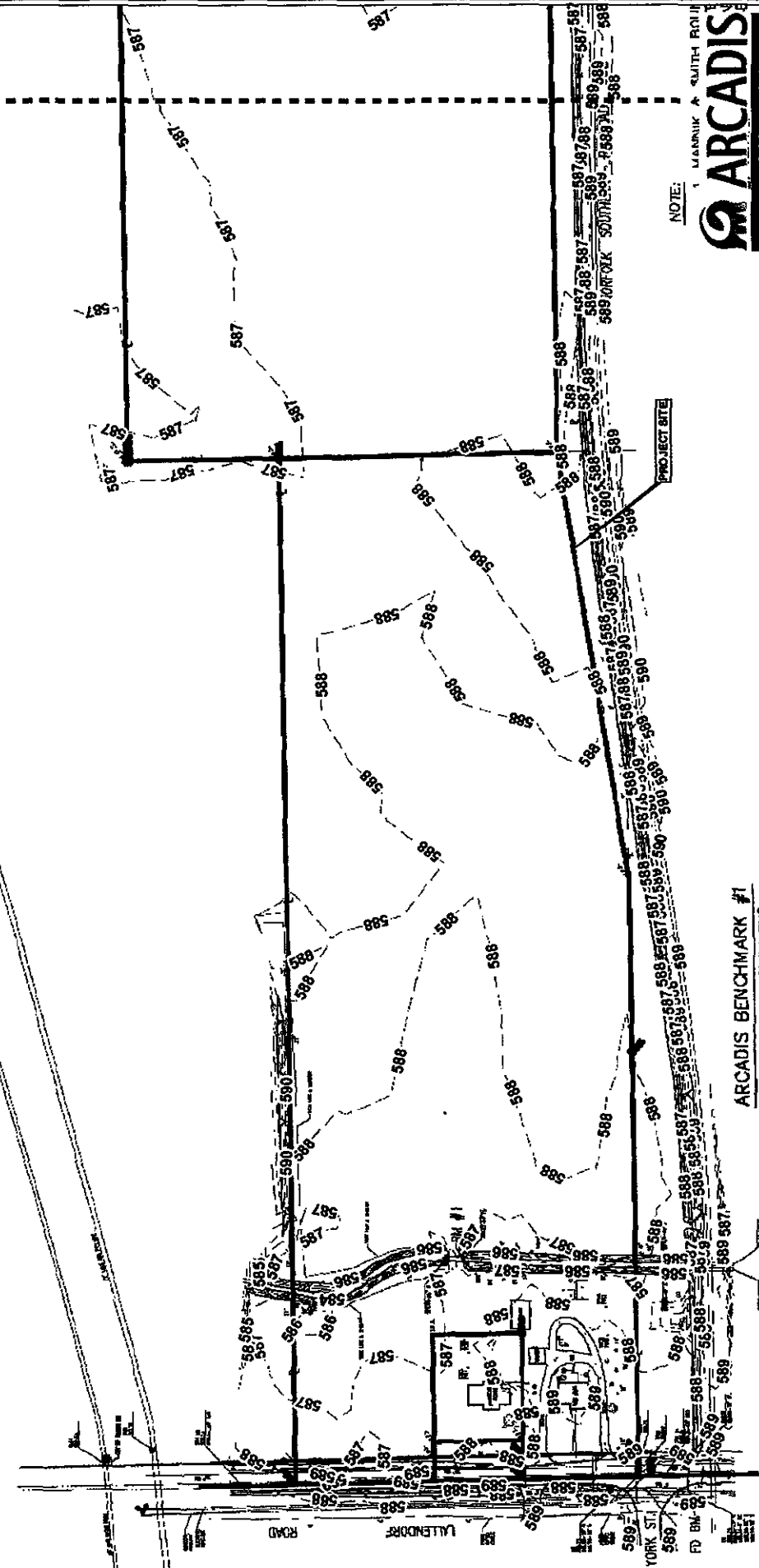
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Figures – Section 4906-13-04

- Figure 04-1 – Site Survey Map
- Figure 04-2 – Soils and Floodplain Map
- Figure 04-3– Soil Boring Locations
- Figure 04-4 – Geological Cross-Section
- Figure 04-5 – Wind Rose
- Figure 04-6 – Aquifers, Water Wells, Oil and Gas Wells and Drinking Water Source Protection Areas



NOTE:

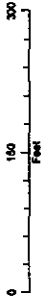
1. LAMAR & SMITH ROLL



OREGON CLEAN
ENERGY CENTER

FIGURE 04-1A

SITE SURVEY MAP



ARCADIS BENCHMARK #1

BOX CUT IN SOUTH END

OF 84" RCF

ELEV: 587.57

Legend

■ = Match Line



LUCAS COUNTY, OHIO

Legend

Project Site

Construction Laydown Parcel

NHD Flowline

Flood Hazard Zone A

Soil Map Unit

MAP UNIT NAME

Dda - Del Rey loam, 0 to 3 percent slopes

Dea - Del Rey loam, sandy substratum, 0 to 2 percent slopes

Fua - Fulton silty clay loam, 0 to 2 percent slopes

Fub - Fulton silty clay loam, 2 to 6 percent slopes

Lc - laty sily d silt

To - Toile do silty clay

Uo - Udorthents, loamy

W - Water

AERIAL SOURCE:

2011 1-foot digital orthophotography acquired from State of Ohio Office of Information Technology, Ohio Geospatially Referenced Information Program

DATA SOURCES:
Soils: USDA Natural Resources Conservation Services
Flowline: National Hydrology Dataset
Flood Hazard: FEMA Map Service

0 500 1,000

Feet

1:8,000



OREGON CLEAN
ENERGY CENTER

FIGURE 04-2
SOIL AND
FLOODPLAIN MAP

Lucas County, Ohio

Date: 01/02/2013