

STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: September 15, 2014
AT (OFFICE): NHPUC

FROM: Barbara Bernstein 
Sustainable Energy Analyst

NHPUC 15SEP'14PM1:50

SUBJECT: DE 14-209, Bridgewater Power Company, L.P, Application for
Certification as a REC Eligible Facility
Staff Recommends that Eligibility be Granted.

TO: Chairman Amy L. Ignatius
Commissioner Robert R. Scott
Commissioner Martin P. Honigberg
Debra A. Howland, Executive Director and Secretary

CC: Jack K. Ruderman, Director of the Sustainable Energy Division 
Suzanne Amidon, Staff Attorney

Summary

On August 1, 2014, the Commission received an application from Robert A. Olson, Esq. on behalf of the Bridgewater Power Company, L.P. (BPC), 15 megawatt (MW) biomass facility (Facility), located in Bridgewater, New Hampshire. BPC is requesting Class III (existing biomass) New Hampshire renewable energy certificate (REC) eligibility for the Facility. The Facility has been ineligible to produce Class III RECs due to its inability to achieve particulate matter (PM) emissions requirements.¹

Effective January 1, 2012, a biomass facility otherwise meeting Class III eligibility requirements, but unable to achieve PM emission requisites may consult with the Department of Environmental Services (DES) and submit a plan to meet an alternative requirement.² BPC and DES have developed a Plan, titled *Plan for Particulate Matter Compliance Pursuant To RSA 362-F:11, IV for Bridgewater Power Company, L.P. dated July 11, 2014* (the "Plan") to mitigate the PM emissions from the Facility. Through the Plan, BPC has contracted with the American Lung Association of the Northeast (ALANE) to implement a wood stove change-out program in the City of Keene and surrounding Cheshire County to reduce PM emissions in the area. The reductions in PM attributable to wood stove change-outs under the program will be

¹ Pursuant to Puc 2505.04.

² Pursuant to RSA 362:F:11, IV, A biomass facility otherwise meeting the eligibility requirements of class III, but which as of January 1, 2012 was not an eligible biomass technology due to the inability to achieve the particulate matter emissions rate specified in RSA 362-F:2, VIII(a), may consult with the department and submit a plan to meet the alternative requirement under that paragraph. The plan shall contain reductions, in the aggregate or individually, in emissions from other emission sources and demonstrate that the reductions will be quantifiable.

LINKED

credited to the Facility for PM emission compliance.³ DES will monitor the Plan's progress through ALANE's obligation to submit status reports every six months and through an annual meeting with BPC and ALANE. Pursuant to the Plan, full implementation is not required until December 31, 2018. If the Plan isn't met, a Shortfall Contingency will be implemented. In addition, to maintain its Class III eligibility, the Facility must continue to comply with NOx emission requirements through DES quarterly verification that the Facility is operating in conformance with Puc 2502.16⁴.

DES recommends that the Commission certify the BPC Facility as a Class III renewable energy source eligible to generate RECs, with the following conditions:

1. The Facility shall continue to emit NOx at a quarterly average rate less than or equal to 0.075 lb/MMBtu; and,
2. The Facility shall continue to comply with the Plan for reductions in PM.⁵

Staff has reviewed the BPC Class III certification request utilizing the Plan and supporting documentation and has determined that the project meets the eligibility requirements under RSA 362:F:1,(k)(2).⁶ Staff recommends that the Commission approve the BPC project as a Class III renewable energy source.

Analysis

Emissions Mitigation. According to DES, the Plan is required to limit PM emissions from other sources and demonstrate that the reductions will be quantifiable. The Plan's reductions are determined based on the difference between the Facility's PM emissions and the New Hampshire Renewable Portfolio Standard (RPS) emission requirements⁷ calculated as follows:

- a) The Facility is limited by the Title V Permit to 250 MMBtu annual gross heat input. It operates no more than 8,700 hours per year, and based on its recent stack test, controlled PM emissions to 0.06lbs./MMBtu;
- b) Using this data, the Facility's PM is $(0.06 \times 8,700 \times 250) / 2,000$ or 65.25 tons;
- c) The RPS PM emission rate of 0.02 lbs./MMBtu equates to $(0.02 \times 8,700 \times 250) / 2,000$ or 21.75 tons; and,
- d) The difference between b) and c) for the Facility is 65.25 tons minus 21.75 tons or 43.50 tons.⁸

³ Pursuant to RSA 362-F:2VIII(a).

⁴ In DE 08-051, Pinetree Power – Tamworth, Inc., the Commission determined that the appropriate effective date for biomass facilities is the date on which the Commission receives notification from DES that the Facility meets the emission requirements, thereby completing an application in accordance with NH Code Admin. Rules Puc 2505.01 (c) and 2505.02.

⁵ Pursuant to a letter from Joseph Fontaine, DES to Debra Howland regarding the Application of Bridgewater Power Company, L.P. ("Bridgewater") For Renewable Energy Source Eligibility, Class III (DE 14-209; GIS Facility ID Number: 13876), dated August 1, 2014.

⁶ Upon DES approval the Commission must certify the source in accordance with the Plan pursuant to RSA 362-F:11.

⁷ Pursuant RSA 362-F:2,VIII (a).

⁸ Plan for Particulate Matter Compliance Pursuant to RSA 362-F:11, IV for Bridgewater Power Company, L.P., I. Shortfall Contingency, D. The New Hampshire RPS Class III Air Emissions Standards, page 3.

The applicant states that the difference of 43.5 tons is a conservative “high-side” number calculated using larger input numbers than may be experienced in the Facility’s actual operations. The Facility generally operates less than 8,700 hours in the year; its operational time is closer to 8,600 hours annually and the Facility at times operates at less than 250 MMBtu gross heat input. DES has certified that the use of this alternative methodology for RPS Class III eligibility constitutes a beneficial approach to PM reduction as it allows for PM reductions in the City of Keene and surrounding Cheshire County, a part of the State that has been identified in the DES “Small Particles Report”⁹ as problematic for PM emissions. Small particle PM is a public health concern that potentially affects the health of people with heart or lung diseases and respiratory conditions, as well as older adults and children.

The Plan. The Plan proposes to reduce residential and other wood heating PM emissions in the City of Keene and the surrounding Cheshire County area. Under the contract, BPC will provide \$500,000 to ALANE to administer a program to replace high PM-emitting wood stoves with EPA certified lower emitting wood stoves or other lower PM-emitting energy sources. The Plan has determined that the number of stove replacements needed to remove 43.50 tons of PM emissions is 243 if all replaced stoves were wood pellet stoves and 400 stoves if all the stoves replaced were wood stoves. Replacement of a conventional wood stove, or an outdoor wood boiler with a conversion to natural gas, or propane will also qualify for PM reduction under the Plan. The reduction factor calculation for replacement of an outdoor wood boiler with either natural gas or propane will be done by agreement with DES on a case-by-case basis. Replacement of an outdoor wood boiler with another outdoor wood boiler, even if EPA certified, does not qualify for PM reduction under the Plan.

Regardless of the mix of Phase II stoves and pellet stoves used as replacement stoves, or conversion to natural gas or propane, the Plan is intended to result in a PM reduction of 43.50 tons of annual PM reduction. Once the 43.50 tons of PM reduction is achieved, that emission reduction amount continues for all subsequent years. DES has determined that BPC will be compliant with the PM emissions requirements for Class III eligibility for the full calendar years 2015, 2016 and 2017. Further, DES has determined that BPC will be compliant with the PM emissions requirements for Class III eligibility for calendar years 2018 and thereafter if BPC meets the PM reduction goal of 43.50 tons per year for each year after 2018 as described in the Plan and BPC either:

1. Achieves a total of 174 tons of PM reduction between the date of issuance of the notice to proceed and December 31, 2018; or,
2. BPC complies with the requirements of Section I, “Shortfall Contingency”. The shortfall contingency states that if PM reductions are less than 174 tons, the difference between 174 and the PM reductions achieved shall constitute the “Shortfall PM Amount.” BPC shall make up for the Shortfall PM Amount by achieving additional PM reductions in an amount equal to the Shortfall PM

⁹ New Hampshire Mobile Air Monitoring Special Study on Small Particles (PM2.5) 2015-2011 and 2011-2012.

Amount. The Shortfall Amounts shall be monitored and certified by DES in accordance with the Plan.¹⁰

Puc 2505.02 (b) Requirements. To qualify BPC as a REC eligible facility, Puc 2505.02 (b) requires the source to demonstrate its eligibility by completing the following:

- 1.) *The name and address of the applicant:* The applicant is Bridgewater Power Company (BPC). The application was prepared by Michael O’Leary, Asset Manager, BPC, PO Box 678, Ashland, NH 03217.
- 2.) *The name and location of the facility:* The BPC facility (Facility) is located on Route 3, Bridgewater, NH 03222. The mailing address is PO Box 678, Ashland, NH 03217-0678.
- 3.) *The ISO-New England asset identification number (if available).* The ISO-New England asset identification number is MSS357 as verified by the GIS Administrator.
- 4.) *The GIS facility code if available.* The NEPOOL GIS facility code is not applicable as verified by the GIS Administrator.
- 5.) *A description of the facility including fuel type, gross nameplate generation capacity, the initial commercial operation date, and the date it began operation, if different.* The Facility, located in Bridgewater, New Hampshire, is a 17.5 megawatt gross capacity steam-electric power generating facility capable of producing approximately 15 MW of net electrical output. It commenced initial commercial operation in September 1987. The Facility combusts biomass fuel in a 250 MMBtu/hr. wood-fired boiler with a Detroit Stoker vibrating grate and utilizes a General Electric condensing steam turbine-generator set to produce its electrical output. The boiler operation uses approximately 230,000 tons per year of whole tree chips and other clean and untreated wood as its primary fuel in the electrical production process.
- 6.) *If a biomass source, NO_x and PM emission rates and a description of pollution control equipment or proposed practices for compliance with such requirements.* The Facility utilizes multi-cyclone and gravel bed filter air emissions control devices installed in the Facility during its original construction. In 2007, BPC made a capital investment in the Facility to add additional emissions control equipment in the form of a regenerative selective catalytic reduction (RSCR) to reduce NO_x emissions. The operation of the RSCR allows the Facility to reduce NO_x emissions to meet a quarterly average rate of at least 0.075lbs./MMBtu. The Facility’s PM emissions were 0.059 lbs./MMBtu as measured in August 2009 compliance emissions testing.¹¹

¹⁰ *Plan for Particulate Matter Compliance Pursuant to RSA 362-F:11, IV for Bridgewater Power Company, L.P., I. Shortfall Contingency, page 8.*

¹¹ Pursuant to RSA 362-F:2 VIII (a), eligible biomass technologies must have an average PM rate of less than or equal to 0.02 lbs/Mmbtu and verified under RSA 362-F:12 or participate in a plan approved by DES for reductions in PM.

- 7.) *All other necessary regulatory approvals, including any reviews, approvals or permits granted by the department.* The applicant provided the following approvals and permits:
- a. A letter from DES, dated August 1, 2014, recommending that the Commission grant the BPC Facility conditional approval as a Class III facility, effective January 1, 2015 based on its capability to:
 - i. Meet the quarterly average NOx emission rate pursuant to RSA 362-F:12 and approved and verified by DES; and,
 - ii. Meet the conditions of the Plan including submittal for status reports completed every six months and through an annual meeting with BPC and ALANE.¹²
 - b. A link to the Facility's Title V permit.
<http://www2.des.state.nh.us/OneStopPub/Air/330090002110-0141TypePermit.pdf>.
 - c. A letter from DES, dated October 6, 2009, summarizing the compliance emissions test report and a table that demonstrates the Facility's emissions.
 - d. A letter from BPC to Kimberley Santopietro, State of Connecticut, Department of Public Utility Control, with supporting documentation for the 1st quarter 2014 NOx emissions, including an affidavit and daily NOx emission reporting.
 - e. State of Connecticut approval for the Facility to qualify for Connecticut Class I RECs.
 - f. An execution copy of the *Plan for Particulate Matter Compliance Pursuant to RSA 362-F 11, IV for Bridgewater Power Company, L.P.* (the Plan).
 - g. An execution copy of the Bridgewater Power Company, L.P. and the American Lung Association of the Northeast Agreement for a Wood Stove Change-out Program, dated July 2, 2014.
 - h. Other supporting documents listed in the following analysis.
- 8.) *Proof that the applicant either has an approved interconnection study on file with the commission, is a party to a currently effective interconnection agreement, or is otherwise not required to undertake an interconnection study.* An Interconnection Agreement between Bridgewater Steam Power Company and Public Service Company of New Hampshire (PSNH), dated July 31, 1986 was provided with the application.
- 9) *If a biomass facility, proof that a copy of the completed application has been filed with the department.* The Commission received a letter from DES, dated August 1, 2014, recommending that the Commission grant the BPC Facility conditional approval as a Class III, REC eligible facility.

¹² Pursuant RSA 362-F:11 IV.

- 10) *A description of how the generation facility is connected to the distribution utility.* The Facility operates in parallel with PSNH's system and is interconnected to the transmission system.
- 11.) *A statement as to whether the facility has been certified under another non-federal jurisdiction's renewable portfolio standard and proof thereof.* The Facility has been certified as a Connecticut Class I renewable resource. A copy of State of Connecticut Qualification, Docket No. 07-09-02RE01 was included with the application.
- 12.) *A statement as to whether the facility's output has been verified by ISO New England.* PSNH reports revenue meter data to BPC and to ISO-NE daily thereby providing verification of energy generation.
- 13) *A description of how the facility's output is reported to the GIS if not verified by ISO-England.* The Facility's output is verified by ISO-NE using meter data provided by PSNH.
- 14.) *An affidavit by the owner attesting to the accuracy of the contents of the application.* An affidavit signed by Michael O'Leary Asset Manager, Bridgewater Power Company, L.P., was provided with the application.
- 15) *The name and telephone number of the facility's operator, if different from the owner.* The Facility is operated by Michael O'Leary, 603-968-9602 x 11.
- 16) *Such other information as the applicant wishes to provide to assist in classification of the generating facility.* The applicant provided ample information to complete the review of the application.

Recommendation

Staff has reviewed the BPC biomass facility application, the Plan and the DES letter recommending conditional approval and can affirm the application is complete pursuant to Puc 2500. The applicant has provided all the necessary information and documentation demonstrating that BPC anticipates meeting the requirements set forth in RSA 362-F:11, IV and Puc 2502.16 for Class III eligibility.

Staff recommends that the Commission grant BPC conditional approval for Class III eligibility. The facility will be eligible to produce RECs effective the date that the Commission receives DES verification that the facility is operating in conformance with Puc 2502.16¹³ for NOx emissions. If NOx emissions rates are met, the facility will be approved to generate RECs effective January 1, 2015 conditioned on reporting every six months to DES on the implementation of the Plan.

¹³ In DE 08-051, Pinetree Power – Tamworth, Inc., the Commission determined that the appropriate effective date for biomass facilities is the date on which the Commission receives notification from DES that the facility meets the emission requirements, thereby completing an application in accordance with NH Code Admin. Rules Puc 2505.01 (c) and 2505.02.

SERVICE LIST - EMAIL ADDRESSES - DOCKET RELATED

Pursuant to N.H. Admin Rule Puc 203.11 (a) (1): Serve an electronic copy on each person identified on the service list.

Executive.Director@puc.nh.gov
amanda.noonan@puc.nh.gov
barbara.bernstein@puc.nh.gov
Jack.ruderman@puc.nh.gov
leszek.stachow@puc.nh.gov
ocalitigation@oca.nh.gov
roanolson@gmail.com
suzanne.amidon@puc.nh.gov
tom.frantz@puc.nh.gov

Docket #: 14-209-1 Printed: September 15, 2014

FILING INSTRUCTIONS:

- a) Pursuant to N.H. Admin Rule Puc 203.02 (a), with the exception of Discovery, file 7 copies, as well as an electronic copy, of all documents including cover letter with:**
- DEBRA A HOWLAND
EXECUTIVE DIRECTOR
NHPUC
21 S. FRUIT ST, SUITE 10
CONCORD NH 03301-2429
- b) Serve an electronic copy with each person identified on the Commission's service list and with the Office of Consumer Advocate.**
- c) Serve a written copy on each person on the service list not able to receive electronic mail.**