STATE OF NEW HAMPSHIRE

Inter-Department Communication

DATE: December 12, 2014
AT (OFFICE): NHPUC

FROM: Barbara Bernstein
Sustainable Energy Analyst

SUBJECT: Application for Certification as REC Eligible Facilities –Mascoma Valley Regional School District, SAU 62
DE 14-301 Mascoma Valley Regional High School
DE 14-302 Indian River School
DE 14-303 Enfield Village School
DE 14-304 Canaan Elementary School
Staff Recommends Approval

TO: Chairman Martin P. Honigberg
Commissioner Robert R. Scott

Debra A. Howland, Executive Director and Secretary

CC: David J. Shulock, Staff Attorney
Michael Sheehan, Staff Attorney

Summary

On October 14, 2014, the Commission received four applications filed by Wilson Engineering Services, PC (WES)[1] on behalf of the Mascoma Valley Regional School District, SAU 62 (SAU 62). WES is requesting interim Class I Thermal renewable energy certificate eligibility[2] for the following schools in the SAU 62's district: Mascoma Valley Regional High School; Indian River School; Enfield Village School; and Canaan Elementary School.

Staff has reviewed the SAU 62 certification requests and has determined that the projects meet the eligibility requirements under RSA 362-F:4, I(e), as interim Class I Thermal facilities, and comply with the New Hampshire Code of Administrative Rules Puc 2500. Staff conducted this review pursuant to the initial proposal for amendments to Puc 2500, as permitted by Order No. 25,678 (June 19, 2014). Staff recommends that the Commission grant interim approval for the SAU 62 thermal biomass facilities as Class I Thermal renewable energy sources, effective as of January 1, 2014[3] Staff further recommends that the Commission condition its approval on WES notifying the Commission that it has engaged an independent monitor for the sources. Staff notes that

[1] WES was approved as an aggregator of thermal RECs on June 17, 2014 (DE 14-135).
[2] Pursuant to Puc 2500 effective as of December 5, 2014.
[3] All four SAU 62facilities began operation in December, 2013.

WES must demonstrate compliance with the adopted rules within 90 days of their December 5, 2014, effective date. Puc 2502.02(e).

Analysis

To qualify as a facility eligible to produce useful thermal energy, Puc 2505.02 (d)[4] requires the source to provide the following:

1) *The name, address and contact information of the applicant:* The application was filed by Daniel A. Wilson, P.E., WES, 902 Market Street, Meadville, PA 16335. The address for SAU 62 is PO Box 789, Enfield, NH 03748. Contact names for the four facilities follows:

Facility Name	Contact Name	Phone
Mascoma Valley Regional High School	Debra Ford	603-632-5563 x3002
Indian River School	Debra Ford	603-632-5563 x3002
Enfield Village School	Debra Ford	603-632-5563 x3002
Canaan Elementary School	Debra Ford	603-632-5563 x3002

2) *The name and location of the facility, the date of initial operation and if applicable, the facility owner and contact information.* The date of initial operation for all four facilities is listed as late 2013. Roger Hutchins is listed as the Facility Operator for all four facilities.

Facility Name	Address	Town	Zip
Mascoma Valley Regional High School	27 Royal Road	Canaan	03748
Indian River School	45 Royal Road	Canaan	03741
Enfield Village School	271 US Route 4	Enfield	03748
Canaan Elementary School	31 School Street	Canaan	03748

3) *A description of the equipment and meters used to measure useful thermal energy including the manufacturer, model, placement of the sensors in the energy production system, temperature operating range, flow operating range, thermal energy operating range, and pressure operating range, if applicable.*

SAU 62, Installed Equipment, and Sellers of Equipment				
School Number	School Name	Seller	Model Number	Capacity, Btu/hr
MSVD-1	Mascoma Valley Regional High School	Froling	P4 Model 80	273,000
		Froling	P4 Model 80	273,000
		Froling	P4 Model 80	273,000
MSVD-2	Indian River School	OkoFEN	PES56	191,000
		OkoFEN	PES56	191,000
MSVD-3	Enfield Villiage School	OkoFEN	PES56	191,000
MSVD-4	Canaan Elementary School	OkoFEN	PES56	191,000
		OkoFEN	PES56	191,000

[4] Initial Proposal 4-04-14.

SAU 62 has installed energy metering equipment that is being commissioned. The final protocol will be submitted to meet the PUC requirements for use following the Interim period. In the interim period, the SAU is proposing an Interim Alternative Metering approach.

The approach is based on measurement of the weight of fuel deliveries. This measurement is done by certified weigh scales, and the record is presented to each school. Additional variables are fuel higher heating value (HHV) and the HHV conversion efficiency of the installed biomass equipment. The proposed calculation for each system is detailed in 12) below.

4) *A description of the manufacturer's recommended methods and frequency for meter calibration.* Attachment 3 of the application provides the Interim Alternative Metering approach being used by WES that is based on fuel deliveries. The schools have installed energy metering equipment that is being commissioned, and will be submitting the final protocol that meets the requirements of Puc 2500 once the rule is finalized.

5) *The rated thermal heating capacity of the facility, expressed in Btu/hour and megawatt equivalent.* The gross output of the boilers at the four schools is listed below:

Facility Name	Rated Thermal Capacity (Btu/hr)	Megawatt (MW) equivalent*
Mascoma Valley Regional High School	819,000	0.24
Indian River School	382,000	0.11196
Enfield Village School	191,000	0.055979
Canaan Elementary School	382,000	0.11196

*MW = Btu/hr/3,412,000

6) *The GIS facility codes.*

Facility Name	GIS Facility Code
Mascoma Valley Regional High School	NON 43521
Indian River School	NON 43520
Enfield Village School	NON 43519
Canaan Elementary School	NON 43518

7) *The name, license number, if applicable, and contact information of the installer of the thermal biomass facility, solar thermal technology or geothermal system, or a statement that the equipment was installed directly by the owner.* The installer for all four locations is Johnson Controls, Inc., 116 Railroad Ave., Albany, NY 12205.

8) *The name and contact information of the seller of the thermal equipment.* The seller for all four locations is listed in 3) above.

9) *The name and contact information of the independent monitor of the facility.* The application states that WES and SAU 62 will go out to bid for the independent monitor.[5]

[5] Staff recommends approval conditioned on notification to the Commission of an independent monitor.

10) *For large thermal sources, the manufacturer's guaranteed accuracy of the meters or sensor used to calculate thermal energy output and, for small thermal sources which shall measure useful thermal energy pursuant to Puc 2506.04 (g)(2) through (g) (4).* Not applicable for the interim certification.

11) *For small thermal sources, a description of the methodology used to calculate the useful thermal energy pursuant to Puc 2506.04 including the equations and values for the variables in the equations.* WES proposes to use an approach based on measurement of the weight of fuel deliveries. This measurement is done by certified weigh scales, and the record is presented to each school. Additional variables are fuel higher heating value (HHV) and the HHV conversion efficiency of the installed biomass equipment. The following equation shows the proposed calculation for the system to be used in the interim period.

Q =Qb * Eff* 0.98

Where:

Qb = Td * HHV

Where:

- Q (Btu) is the total useful thermal energy generated by the facility;
- Qb (Btu) is the energy input to the system;
- Eff (%) is the higher heating value conversion efficiency of the system;
- Td is the tons delivered;
- HHV (Btu/ton) is the energy value on a HHV basis of the fuel; and,
- 0.98 is the factor to account for 2% loss from parasitic loads.

12) *For large thermal sources, a description of the methodology used to calculate the useful thermal energy pursuant to Puc 2506.04.* Not applicable.

13) *The discount factors for meter accuracy pursuant to Puc 2506.05(e) to be applied for REC calculations, if applicable.* As required by draft PUC 2506.05(f) the discount factor is 2%.

14) *The discount factor for operating energy and thermal energy losses pursuant to Puc 2506.05(f) to be applied for REC calculations, if applicable, or a detailed description of the method for determining a discount factor for operating energy and thermal energy losses, if applicable.* The discount factor is 2%.

15) *If a thermal biomass facility, the following documentation, as applicable.* On August 15, 2014 the Department of Environmental Services (DES) provided letters for the four SAU 62 schools listed above recommending the Commission grant Class I Thermal REC eligibility. All four facilities have met all the conditions of Puc 2502

16) *A statement as to whether the facility has been certified under another non-federal jurisdiction's renewable portfolio standard and proof thereof.* The four SAU 62 thermal biomass facilities listed above have not been certified under another non-federal jurisdiction's renewable portfolio standard.

17) Such other information as the applicant wishes to provide to assist in classification of the facility. The applicant provided ample information to complete the evaluation.

18) A statement by the owner that the information provided is accurate and that all other necessary regulatory approvals that are related to REC eligible facilities have been received including any reviews, approvals or permits required by the department. Notarized affidavits signed by Debra Ford attesting to the accuracy of the contents of the application were provided for each of the four SAU 62 facilities.

19) An statement by a professional engineer that is licensed in New Hampshire and in good standing that the project meets the metering requirements of Puc 2506 and that the meters were installed according to manufacturer's recommendation, and that the renewable energy source meets the requirements of this part. Meters have not been installed to date; therefore, not applicable.

(e) For thermal sources requesting eligibility to be issued certificates for the period January 1, 2014 until 60 days following the effective date of this part, the application shall include the following information for that interim period which information shall be submitted no later than 60 days following the effective date of this part:

1) If requesting eligibility to be issued thermal certificates, the information required under Puc 2505.02(d), except as outlined in Puc 2505.02(e)(2). See above.

2) *In lieu of the information required by Puc 2505.02 (d)(11) through (13), a thermal source may submit a detailed explanation of the methodology used to measure and calculate thermal energy and an attestation by a professional engineer that is licensed in New Hampshire and in good standing that the methodology for measuring useful thermal energy and calculating certificates is sound.* Attachment 3 of each of the SAU 62 applications provided the methodology used for the Interim Alternative Metering Method.

Recommendation

Staff has reviewed the SAU 62 applications for Cass I Thermal certification of the Mascoma Valley Regional High School, Indian River School, Enfield Village School, and Canaan Elementary School biomass facilities, and can affirm that the applications are complete pursuant to the initial proposal for amendments to New Hampshire Code of Administrative Rules Puc 2500 with the exception of the identification of an independent monitor. Staff recommends that the Commission grant interim approval for SAU 62 thermal biomass facilities as Class I Thermal renewable energy sources, effective as of January 1, 2014, conditioned on identification of an independent monitor. If the Commission grants conditional approval, the Commission should not notify GIS until WES identifies its independent monitor(s).

SERVICE LIST - EMAIL ADDRESSES - DISCOVERY MATERIALS

Pursuant to N.H. Admin Rule Puc 203.09 (d) and 203.11 (a) (11) Electronic copies of all discovery shall be served on every person designated for discovery filings on the Commission's official servivce list. [Discovery shall not be filed as part of a docket filing pursuant to 203.02]

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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
EXEC 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.**