



## Comments on Thermal Renewable Energy Certificates July 2016

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# Oregon

Kate Brown, Governor  
Mike Kaplan, Director



OREGON  
DEPARTMENT OF  
ENERGY

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## SB 1547 – Renewable Energy Certificates for Generation of Thermal Energy

Section 15. Section 16 of this 2016 Act is added to and made a part of ORS 469A.005 to 469A.210.

Section 16. If a facility that generates electricity using biomass also generates thermal energy for a secondary purpose, the State Department of Energy, as part of the system established under ORS 469A.130, shall provide that renewable energy certificates must be issued for the generation of the thermal energy. For purposes of issuing renewable energy certificates under this section, 3,412,000 British thermal units are equivalent to one megawatt-hour.

Following are questions for stakeholders regarding areas where the rule for the generation of thermal renewable energy certificates (or T-RECs) will need to provide clarity:

1. What biomass feedstocks should be eligible for T-RECs?
  - a. A current list of RPS-eligible biomass is listed in 469A.025(2)-(3) and can be found [here](#).
  - b. Other definitions of biomass and lists of eligible biomass in statute and in ORS rules can be found [here](#).
  - c. Should a distinction be made between biomass and biomass by-products?
2. How should electricity production be integrated with the production of thermal energy? Should there be an electricity generation threshold? For example, should a facility generate electricity for a minimum number of hours per month in order to be eligible to generate thermal RECs?
3. How should the rule define “secondary purpose”?
  - a. Other states have defined eligible thermal energy as “useful thermal energy,” with some or all of the following attributes (see matrix of state thermal rules [here](#)):
    - i. Used for heating, cooling, or mechanical work.
    - ii. Used for processes related to the generation of the power/energy (e.g. drying biomass fuel before combustion).
    - iii. Used for end use for which electricity or fuel would otherwise be consumed.
    - iv. Used for end use for which electricity or fuel from conventional (i.e. non-renewable) sources would be used.
  - b. Definitions of “useful thermal energy” in Oregon statute and rules can be found [here](#).

4. How should the rule address multi-fuel facilities?
  - a. Per ORS 469A.025 (8), if a facility uses multiple fuels for electricity generation, only the portion that is generated from RPS-eligible resources is eligible for use to comply with the RPS.
  - b. Similarly, other states allow the use of electricity and thermal generation *only* from eligible resources at facilities that use both eligible and non-eligible fuel sources.
5. What should be the first date for which generation of thermal energy per SB 1547 is eligible for RECs? For example, this could be the date of statute (March 8, 2016) or the date of the rule (estimated late 2016).
6. How should the rule address metering requirements for facilities? What should be metered and where? How often? Should there be different requirements based on the size/generation capacity of the facility?
  - a. New Hampshire requires metering for systems larger than 150,000 Btus; smaller facilities may either install thermal meters or meters that measure a parameter that can be used to calculate thermal output (i.e. operating hours, fuel input, etc.)
  - b. Massachusetts requires meters for large facilities and these meters must collect data in intervals of five minutes or less, among other requirements, such as time stamping, exporting, etc. Smaller facilities may use an equation to determine net useful thermal energy.
7. Should the rule address the efficiency of biomass cogeneration facilities and if so, how?
  - a. As an example, the ODOE Energy Incentives Program targets 10 percent better than 50 percent efficient plants.
8. Other items that might be helpful for the group to discuss?

*Please provide written comments to Rebecca Smith at the Oregon Department of Energy by the close of business on Friday, July 15 at [rebecca.smith@state.or.us](mailto:rebecca.smith@state.or.us)*



**Portland General Electric Company**  
*121 SW Salmon Street • Portland, Oregon 97204*

Rebecca Smith  
Oregon Department of Energy  
625 Marion St. NE  
Salem, OR 97301

Via email

Dear Ms. Smith,

Thank you for the opportunity to provide comment in the Oregon Department of Energy (“department”) process developing rules around thermal renewable energy certificates. Portland General Electric (“PGE”) submits these limited comments in this process and looks forward to additional steps in this rulemaking process. This letter will address topics provided in the questions for stakeholders document produced after the June 20, 2016, stakeholder meeting. If certain topics are not addressed below, the department may assume that PGE has no comments on that area at this time.

#### Biomass feedstocks eligible for T-RECs

PGE notes that the Renewable Energy Standard (“RPS”) does not define biomass. Instead, it allows biomass **and** biomass by-products to be used to generate electricity that qualifies for compliance with the RPS. There is a clear split in the list provided in ORS 469A.025 (2) between biomass (e.g., woody debris) and biomass by-products (e.g., landfill gas). We do not argue for a prohibition of the use of biomass by-products to generate thermal renewable energy certificates (“T-RECs”), but we do note that the language in Senate Bill 1547 allows the generation of T-RECs for “electricity using biomass.” If the department and the group determines to include biomass by-products as eligible for generating T-RECs, there should be some discussion and record developed as to why that should be the case. One possible argument would be that “using biomass” could mean using it in altered forms – the transition to those other forms should not alter the basic understanding that the biomass is being “used.”

#### How should electricity production be integrated with the production of thermal energy?

There is no threshold for electricity generation for qualification for the RPS. It does not seem like there should be a limitation here either. On the other hand, T-RECs generated should be associated with the thermal energy produced while generating electricity. Stated another way, each MWh of electricity production produces a regular REC and whatever increment of T-RECs is produced along with the MWh. There should be no production of T-RECs without the underlying production of a REC.

#### How should the rule define “secondary purpose?”

PGE would ask that the department consider ensuring that secondary purpose includes processes for drying biomass fuel before combustion. Associated by-products, such as syngas, produced during the process phase, could also be produced from the drying or torrefaction process. That syngas, if captured and utilized in the generation phase, could also qualify for generating a REC/T-REC and should also be allowed.

How should the rule address multi-fuel facilities?

The most consistent method to address multi-fuel facilities would be to allow T-RECs only for the portion of electricity that is generated using RPS-eligible resources. The department has rules and procedures related to the registration and certification of multi-fuel facilities. Rules developed regarding T-RECs should be consistent with these existing requirements.

Thank you for your consideration of these limited comments. We look forward to further conversations on this topic.

Respectfully,

Brendan McCarthy  
Portland General Electric  
Environmental Policy

# Davison Van Cleve PC

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July 15, 2016

Rebecca Smith  
Senior Policy Analyst  
Oregon Department of Energy  
625 Marion St. NE  
Salem, OR 97301

*Re: SB 1547 – Renewable Energy Certificates for Generation of Thermal Energy*

Dear Ms. Smith,

On behalf of the Industrial Customers of Northwest Utilities (“ICNU”), I am submitting this letter to respond to questions the Oregon Department of Energy (“ODOE”) has provided to stakeholders in order to inform its development of rules for the allocation of renewable energy certificates (“RECs”) for thermal energy (“T-RECs”). This rulemaking was instigated by passage of Senate Bill 1547 in the 2016 regular legislative session, which authorized the issuance of one T-REC for every 3,412,000 British thermal units (“btus”) of thermal energy produced for a secondary purpose.

ICNU is a non-profit trade association that represents large energy users primarily with respect to their electricity rates. ICNU’s members operate over 160 facilities in Oregon and Washington. A number of ICNU’s members own facilities that have the potential to generate T-RECs. As a trade association, ICNU responds in this letter to ODOE’s legal- and policy-related questions, and leaves the response to questions related to operational specifics to stakeholders that own or operate potentially eligible facilities.

## **Question 1: What biomass feedstocks should be eligible for T-RECs?**

Because SB 1547’s provision for T-RECs is incorporated into Oregon’s renewable portfolio standard (“RPS”) law, ICNU feels that any biomass that qualifies under the RPS should also qualify as biomass that can generate thermal energy eligible for T-RECs. This interpretation maintains consistency in the meaning of the word “biomass” throughout the RPS, which is a standard rule of statutory construction a court reviewing ODOE’s rulemaking likely would employ.<sup>1/</sup>

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<sup>1/</sup> See, e.g., *Wetherell v. Douglas County*, 342 Or. 666, 678 (2007) (“[t]his court does not look at one subsection of a statute in a vacuum; rather, we construe each part together with the other parts in an attempt to produce a harmonious whole”).

**Question 2: How should electricity production be integrated with the production of thermal energy? Should there be an electricity generation threshold? For example, should a facility generate electricity for a minimum number of hours per month in order to be eligible to generate thermal RECs?**

ICNU does not believe there should be an electricity generation threshold as an eligibility requirement for producing T-RECs. Quite simply, there is no such limitation in the statute. The language of the statute imposes a mandatory obligation (“shall provide”) on ODOE to provide T-RECs for the generation of thermal energy for a secondary purpose. So long as the facility uses biomass to generate that thermal energy, T-RECs “must be issued” for that thermal energy. Introducing a minimum electricity threshold as an eligibility requirement for T-RECs would introduce restrictions the legislature did not authorize and would be inconsistent with the plain language of the statute.<sup>2/</sup>

**Question 3: How should the rule define “secondary purpose”?**

ICNU agrees with ODOE’s proposal to adopt the definition of “useful thermal energy” in other Oregon statutes in order to define “secondary purpose.” Specifically, ICNU supports use of the definition in ORS 469.320(7) and OAR 345-001-0010, “the verifiable thermal energy used in any viable industrial or commercial process, heating or cooling application.” As these are statutes and rules that apply to ODOE (through the Energy Facility Siting Council), it appears reasonable to adopt a similar definition for other ODOE rules.

**Question 4: How should the rule address multi-fuel facilities?**

ICNU agrees with ODOE that T-RECs should be limited to the percentage of electricity generation that comes from biomass.

**Question 5: What should be the first date for which generation of thermal energy per SB 1547 is eligible for RECs?**

SB 1547 contains an emergency clause, meaning that it took effect upon its passage, March 8, 2016. ICNU, therefore, feels that facilities became eligible to generate T-RECs as of this date. ICNU also understands, however, that issuing T-RECs beginning on March 8, 2016 before a system has been established for measuring and tracking those T-RECs would require retroactive action that could be administratively difficult. Therefore, if ODOE feels that issuing T-RECs from the date of SB 1547’s passage is feasible, then ICNU recommends this option. If not, then ICNU recommends the earliest possible alternative date.

**Question 6: How should the rule address metering requirements for facilities?**

ICNU does not have a position on this issue.

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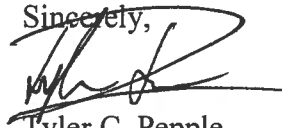
<sup>2/</sup> *State v. Gaines*, 346 Or. 160, 171 (2009) (“there is no more persuasive evidence of the intent of the legislature than the words by which the legislature undertook to give expression to its wishes”).

**Question 7: Should the rule address the efficiency of biomass cogeneration facilities and if so, how?**

ICNU does not believe the rule should address the efficiency of biomass cogeneration facilities. It is difficult to understand how the rule could do so while maintaining adherence to the statute. Regardless of how efficient a cogeneration facility is, the statute requires the issuance of one T-REC for every 3,412,000 btus generated. Indeed, by calculating T-RECs in this manner, the statute likely already implicitly considers efficiency. An efficient biomass facility can generate more thermal energy relative to an inefficient facility by burning the same amount of biomass and, therefore, the efficient facility should, all other things being equal, be able to generate more T-RECs.

ICNU appreciates ODOE's efforts in this rulemaking as thanks the agency for encouraging broad stakeholder participation. ICNU looks forward to continuing to contribute to the process in this docket. If you have any questions about ICNU's responses to the questions above, or would like to discuss anything else related to this matter, please feel free to contact me.

Sincerely,



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July 15, 2016

Rebecca Smith  
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625 Marion St. NE  
Salem, OR 97301-3737

**RE: Comments of Renewable Northwest  
SB 1547—Renewable Energy Certificates for Generation of Thermal  
Energy**

Oregon Department of Energy's July 8, 2016 notice of opportunity for  
Thermal RECs Small Group Meetings and Written Comment.

**SB 1547—Renewable Energy Certificates for Generation of Thermal Energy**

Section 15. Section 16 of this 2016 Act is added to and made a part of ORS 469A.005 to 469A.210.

Section 16. If a facility that generates electricity using biomass also generates thermal energy for a secondary purpose, the State Department of Energy, as part of the system established under ORS 469A.130, shall provide that renewable energy certificates must be issued for the generation of the thermal energy. For purposes of issuing renewable energy certificates under this section, 3,412,000 British thermal units are equivalent to one megawatt-hour.

Renewable Northwest is grateful for the opportunity to respond to the Oregon Department of Energy's ("ODOE's") questions. Below are ODOE's questions for stakeholders and our responses regarding areas where the rule for the generation of thermal renewable energy certificates ("T-RECs") will need to provide clarity.

- Q 1. What biomass feedstocks should be eligible for T-RECs?
- a. A current list of RPS-eligible biomass is listed in 469A.025(2)-(3) and can be found [here](#).
  - b. Other definitions of biomass and lists of eligible biomass in statute and in ORS rules can be found [here](#).
  - c. Should a distinction be made between biomass and biomass by-products?

A 1. Renewable Northwest does not see a reason to deviate from the "biomass" products that are currently eligible for compliance with the RPS, as identified in ORS 469A.025(2)-(3). Renewable Northwest observes that unlike ORS 469A.025(2) (which includes both biomass and biomass by-products), Section 16 of SB 1547 refers to only "biomass" and does not include biomass by-products. Hence, while the combustion of biomass byproducts may generate eligible RPS electricity, "useful

thermal energy” generated from the combustion of biomass byproducts for RPS electricity should not be eligible for T-RECs. (See also question 3 below regarding “useful thermal energy”).

Q 2. How should electricity production be integrated with the production of thermal energy? Should there be an electricity generation threshold? For example, should a facility generate electricity for a minimum number of hours per month in order to be eligible to generate thermal RECs?

A 2. Section 16 of SB 1547 uses the phrase, “generates thermal energy *for a secondary purpose*” (emphasis added). As a result, the electrical energy generated by the eligible facility, which is the implied primary purpose of the facility, should be greater than the “useful thermal energy” generated (see question 3 below). Put another way, the number of T-RECs generated should not be greater than the number of RECs generated from electricity generation.

Q 3. How should the rule define “secondary purpose”?

a) Other states have defined eligible thermal energy as “useful thermal energy,” with some or all of the following attributes (see matrix of state thermal rules [here](#)):

i. Used for heating, cooling, or mechanical work.

ii. Used for processes related to the generation of the power/energy (e.g. drying biomass fuel before combustion).

iii. Used for end use for which electricity or fuel would otherwise be consumed.

iv. Used for end use for which electricity or fuel from conventional (i.e. non- renewable) sources would be used.

b) Definitions of “useful thermal energy” in Oregon statute and rules can be found [here](#).

A 3. Each and every RPS definition in ORS 469A.005(1)-(12) makes repeated and consistent reference to “electricity” and “electric”. In light of this, Renewable Northwest believes that “useful thermal energy” should be the thermal energy that is used for an end use for which *electricity* would otherwise be consumed.

Q 4. How should the rule address multi-fuel facilities?

a. Per ORS 469A.025 (8), if a facility uses multiple fuels for electricity

generation, only the portion that is generated from RPS-eligible resources is eligible for use to comply with the RPS.

- b. Similarly, other states allow the use of electricity and thermal generation *only* from eligible resources at facilities that use both eligible and non-eligible fuel sources.

A 4. ORS 469A.025 (8) is clear that if multiple energy sources are employed, only that portion of the electricity generation that is attributable to RPS-eligible sources may be used to comply with the RPS. For example, if a cogeneration facility generated electricity using 60% dedicated energy crops (eligible for the RPS under ORS 469A.025(2)(f)) and 40% wood treated with creosote (ineligible for the RPS under ORS 469A.025(3)), only 60% of the MWh would be eligible for RECs. Similarly, in such a scenario, only 60% of the useful thermal energy should be eligible for T-RECs.

Q 5. What should be the first date for which generation of thermal energy per SB 1547 is eligible for RECs? For example, this could be the date of statute (March 8, 2016) or the date of the rule (estimated late 2016).

A 5. The earliest date for which generation of thermal energy per SB 1547 is eligible for T-RECs should be the date of the statute (March 8, 2016). There is no basis for the eligibility date being any earlier.

Q 6. How should the rule address metering requirements for facilities? What should be metered and where? How often? Should there be different requirements based on the size/generation capacity of the facility?

- a. New Hampshire requires metering for systems larger than 150,000 Btus; smaller facilities may either install thermal meters or meters that measure a parameter that can be used to calculate thermal output (i.e. operating hours, fuel input, etc.)

- b. Massachusetts requires meters for large facilities and these meters must collect data in intervals of five minutes or less, among other requirements, such as time stamping, exporting, etc. Smaller facilities may use an equation to determine net useful thermal energy.

A 6. Renewable Northwest sees the practicality in requiring metering for larger facilities, while giving small facilities the option of: a) installing a thermal meter; b) installing a meter to measure an appropriate proxy parameter as determined by an independent professional thermal engineer; or c) parametric monitoring of a proxy metric such as operating hours, fuel input or feedstock purchase records as determined by an independent professional thermal engineer.

Q 7. Should the rule address the efficiency of biomass cogeneration facilities and if so, how?

a. As an example, the ODOE Energy Incentives Program targets 10 percent better than 50 percent efficient plants.

A 7. Renewable Northwest believes that the rule does not need to address the efficiency of facilities. There is already sufficient incentive to maximize the amount of electricity and useful thermal energy generated for the minimum amount of feedstock.

Q 8. Other items that might be helpful for the group to discuss?

No. This concludes Renewable Northwest Comments.

Sincerely,

Michael H O'Brien  
Senior Policy Analyst  
([michael@renewablenw.org](mailto:michael@renewablenw.org))  
Renewable Northwest  
421 SW 6th Avenue, Suite 1125  
Portland, OR 97204  
503-223-4544

From: Bill Carlson [mailto:CSPC@shasta.com]  
Sent: Tuesday, July 12, 2016 10:40 AM  
To: SMITH Rebecca \* ODOE <Rebecca.Smith@oregon.gov>  
Cc: CANNON Linc <linc@ofic.com>  
Subject: RE: Progress on Thermal REC Policy

Rebecca:

Thanks for the opportunity to provide supplemental comments. They are provided below. I have chosen not to comment on items that I previously sent detailed comments on.

Question 2:

The thermal portion should be fully integrated with the electrical production through the process of cogeneration. If you look at the legislation, it is clear that electrical production is driving this and the thermal portion is only secondary. So, you should not be eligible if you do electrical and thermal in two separate processes. That means that the electrical production must be continuous and only that thermal that is a byproduct of that process should be counted. At all costs, you must avoid the installation of a "token" generator that then qualifies all your existing thermal for REC's. Folks can send you a process flow diagram that will make it readily apparent whether all the steam is flowing to the turbine first and then some or all is being diverted to process use. These are the only arrangements that should count.

The only issue for ODOE is what to do when the generator is legitimately down for maintenance and the process load must still be served. In that case, we would suggest that this should be very rare as the turbine-generator is far more reliable than the boiler, and perhaps a 100 hour annual allowance could be provided during which you can count thermal REC's without generating electricity.

Question 3a:

Items i, iii and iv should all be fully counted, as well as most of item ii.

We do not believe that fuel drying ahead of the boiler should count. Any internal use of heat in the power generation cycle should count if it would otherwise be provided by electricity or another fuel. Thus, the use of a steam driven boiler feed pump would count as that pump would otherwise be driven by an electric motor. Again, let me emphasize that the source of the heat is important in determining eligibility. It must be traced back to the turbine or the boiler exhaust gas to count.

Question 4:

As we previously asked, that portion (%) by heat value that comes from biomass would be counted, but there should be a de minimus allowance for those that only use fossil fuel for startup, as no product is being generated during this time.

Question 6:

Smaller facilities, perhaps less than 1 million Btu/hr, should be allowed to propose an alternative method of measuring output, such as hours of operation based on a demonstrated use per hour. Larger facilities must be metered in real time with a totalizing meter to maintain program credibility. If you want to allow self reporting of use, then the plant must submit meter calibration data along with results.

Question 7:

The use of efficiency data, like emissions data, is a slippery slope that we would urge you to avoid. It is better for you to focus your energy on allowing in only those facilities for which the legislation was intended (OR biomass cogeneration facilities), and not to seek to establish an efficiency standard as well. The problem with efficiency is that the calculation can be easily manipulated. Secondly, different process uses, while all legitimate, result in widely varying efficiency even though all are state-of-the art facilities. At Freres Lumber, for instance, extraction steam is used for veneer drying, which uses a high temperature/pressure steam which results in a much lower overall efficiency. At Rough & Ready Lumber, a backpressure turbine is used, with all turbine exhaust steam going to low temperature/pressure dry kilns resulting in a very high overall efficiency.

Both are appropriate for this program.

The back story in MA is that they have placed such high standards on biomass plants in terms of emissions for electrical REC's and efficiency for thermal REC's that virtually no one can comply, and the program is basically worthless.

Thanks again for the opportunity to provide supplemental comments. You are obviously getting a lot of pressure to open this program up to various arrangements in disparate locations. We would urge you to resist and confine the program, as intended, to those doing generation of electricity and process heat simultaneously in an integrated operation. To broaden it beyond that basically destroys the value for those who advocated for the program in the first place. REC's do indeed respond to the laws of supply and demand, as values have tumbled with the rise of wind generation in OR.

Don't let thermal REC's go down the same path, as, defined correctly, they can help to stabilize and expand the biomass cogeneration facilities in OR, and that was the goal

Bill Carlson  
Carlson Small Power Consultants  
for OFIC

**From:** Bill Carlson [mailto:CSPC@shasta.com]  
**Sent:** Wednesday, June 29, 2016 8:34 PM  
**To:** 'Smith, Rebecca' <rebecca.smith@state.or.us>  
**Cc:** 'Linc Cannon' <linc@ofic.com>  
**Subject:** RE: Thermal REC Meeting

Rebecca:

Good talking to you today. Attached are our positions on various issues that you will have to wrestle with developing the program. Feel free to give me a call tomorrow or Friday to discuss.

Bill Carlson

### **Issues to be addressed in Thermal REC program**

#### **“Thermal Energy for a Secondary Purpose”**

The interpretation of this phrase is perhaps the trickiest part of this exercise. OFIC believes that the intent was to award TREC's only to biomass cogeneration operations that simultaneously produce electricity and useful thermal energy in an integrated operation. Thus, either backpressure or extraction/condensing turbine-generators (T-G's) would qualify, as would the use of the boiler exhaust gas for a useful purpose.

What OFIC believes the rules should guard against is the current large boiler only operation that subsequently installs a very small non-integrated T-G in order to qualify all of its thermal output for TREC's. Requiring an integrated T-G would prevent this. This situation is addressed in the NC program, which does not allow TREC's for Pressure Reducing Valve (PRV) steam or T-G bypass steam.

In terms of acceptable end uses, the language defining “useful thermal energy” adopted by MA and NH seems broad enough to cover any anticipated uses.

#### **Definition of Biomass for Program Use**

OFIC would prefer the expanded biomass definition utilized in the ORS listed below.

As used in ORS 526, ORS 526.005 defines biomass and woody biomass:

*(1) “Biomass” means any organic matter, including woody biomass, agricultural crops, wood wastes and residues, plants, aquatic plants, grasses, residues, fibers, animal wastes, municipal wastes and other waste materials.*

.....

*10)(a) "Woody biomass" means material from trees and woody plants, including limbs, tops, needles, leaves and other woody parts, grown in a forest, woodland, farm, rangeland or wildland-urban interface environment that is the by-product of forest management, ecosystem restoration or hazardous fuel reduction treatment*

### **Finer Points of Acceptable Uses**

If cogen steam exiting the T-G is used as a steam turbine drive displacing an electric motor it would be an acceptable use. This is true of boiler feed pump (BFP) turbines within the boiler complex as well, as the alternative is an electric drive.

A more complicated issue is the use of extraction/backpressure steam for feedwater heating within the boiler facility including the deaerator. The NH program calls this a parasitic load and does not award REC's. Clearly if the internal feedwater heating was provided through a PRV it would not be awarded TREC's, but if it has passed through the T-G it warrants further discussion as a source of TREC's.

All legitimate downstream uses such as drying of lumber, veneer, paper or panel furnish; space heating or cooling through a steam absorption chiller would be awarded TREC's. The NC program does not recognize drying of fuel for boiler combustion as generating TREC's, and that is acceptable.

### **Dual-Fueled Facilities**

Most of the other programs allow dual-fueled units to be able to generate TREC's, but only proportional to the percentage of biomass fuel heat input. This is correct.

In CA's RPS program, the MA TREC program, as well as federally, a biomass facility that uses fossil fuel only for startup and maintenance counts all of its output for RPS purposes. Participants in the OR TREC program should be able to demonstrate this de minimus use and thus not be subject to TREC discounting for that minor increment of fuel.

### **BTU Equivalency/Metering**

There is no meter that can directly measure the amount of process heat supplied in BTU's. Instead, the measurement must include flow, temperature, pressure and specific heat of the working fluid; with flow clearly being the most important. In all cogen operations I know of in



OR, temperature, pressure and specific heat remain relatively constant, such that flow is the only real variable in determining heat delivered.

ODOE should focus on flow measurement when reviewing program applications. It may be necessary to specify a type of meter, or at least a meter calibration schedule, in order to maintain program integrity.

The reading and reporting of the flowmeter is also critical to maintaining program integrity. All other states require third party verification of meter readings, though NH seems to allow participant reporting as long as they accept a discount on the reading.

This is a key point in the OR TREC program since TREC's would be worth little today and some of the likely participants are quite small. The purchasing utilities currently provide third party verification and reporting of electrical output and perhaps they would be willing to add thermal verification and reporting as well to keep costs down. WREGIS should be consulted on this point also.

The final outcome on meter reading should not be overly burdensome or costly to the participants. Perhaps, if the facility wants full credit for TREC's it needs to provide third party verification, but if it is willing to accept a small discount (say 5%), it could read the meter itself. In any event, meter calibration data should be supplied to ODOE and ODOE should have audit rights over the data. Program integrity will be important.

### **Gross Versus Net Heat Energy**

The state programs vary on the treatment of gross versus net heat energy, with some silent on the topic (NH, SC), while others (NC) are specific about deducting remaining heat in the condensate from that supplied to the process use. Netting, in a steam system, is complex, with another flowmeter required as well as temperature/pressure monitoring. In cogen systems that use flue gas or hot water as the exchange medium, the netting is far more straightforward, as the in/out flow is the same and temperature differential is the only real variable. In these cases, netting would seem appropriate.

Steam systems undergo a phase change when condensed, and nearly 90% of the heat energy is given up at that point in the process. Condensate remaining after process use is returned to the boiler primarily to save the cost of treatment chemicals. It would seem that in steam systems, accounting for the remaining heat in the condensate is not worth the effort involved.

### **Qualification of Facilities**

At the current time, it appears that only a dozen or so OR facilities can meet the requirements to generate TREC's, so the prequalification of these facilities should not be excessively

burdensome on ODOE. The NC program has an excellent initial questionnaire that has the appropriate level of detail on both the generating facility and the thermal host. ODOE could use this form to develop a good understanding of each applicant, and OFIC would urge ODOE staff to visit each applying facility.

ODOE could develop a simple evaluation matrix similar to:

Question 1: Is the facility in OR

If yes, go to 2. If not, not qualified (this still to be debated)

Question 2: Is the primary fuel biomass as defined by the program?

If yes, go to 3. If no, not qualified or more info.

Question 3: Is the facility an integrated combined heat and power facility?

If yes, go to 4, if no, not qualified

Question 4: Is the thermal use on the qualified list?

If yes, facility approved. If no, not qualified or more info needed

An approval would include requirements for metering, calibration and meter verification.

### **Involvement of WREGIS**

OFIC would propose that ODOE supply a list of all approved facilities to WREGIS. Each approved facility would be expected to obtain its own TREC account at WREGIS and be responsible for any sales/transfers of TREC's. The verified meter information (converted to Btu's) could be first supplied to ODOE for forwarding to WREGIS, allowing ODOE to exercise its audit rights, if necessary.

### **Start Date**

OFIC would propose that the start date be retroactive to the first of the month following the date of the Governor's signature on SB1547. In order to obtain this retroactivity, the applicant would need to demonstrate, to ODOE's satisfaction, sufficient records to support the claim, and to do so within 60 days of the issuance of final program rules by ODOE.

**From:** Ian Bledsoe [mailto:IBledsoe@clatskaniepud.com]  
**Sent:** Tuesday, July 12, 2016 11:19 AM  
**To:** rebecca.smith@state.or.us  
**Cc:** Eric Hiaasen <EHiaasen@clatskaniepud.com>  
**Subject:** RE: Thermal RECs Small Group Meetings and Written Comment

Rebecca,

I'm providing written feedback on the questions from the .pdf that was attached.

1. We believe that the definitions of rps-eligible biomass in 469a.025 should be sufficient for TRECs as well.
2. We don't think there should be a minimum required amount of generation. We think that requiring accurate, revenue quality meters on electric/steam production will do a lot to weed out people trying to game the system. We can't see that there is a fair, impartial place to put a cutoff at any point on the generation spectrum.
3. 3.IV Seems like a good definition to us, since the purpose of the RPS reduce consumption of non-renewable resources, or delay production of new non-renewable power generation.
4. The definition of 469A.025 seems sufficient, and keeps requirements for RPS RECs and TRECs consistent.
5. We recommend starting eligibility at the beginning of a month to provide consistency with past actions. Of course there should also be a requirement that adequate metering is in place in order to back-create TRECs.
6. We certainly don't like the idea of allowing estimations to create TRECs. We're okay with requiring more stringent metering standards for large facilities than for small facilities, however. Mass. 5 minute data collection requirements seems overkill. Hourly or even monthly collection would be sufficient. I can't think of what additional value you would get from 5 minute intervals, since demand doesn't factor in anywhere.
7. I don't think there's any justification for doing this in the legislation.

Sincerely,

**Ian Bledsoe** - Energy Services Assistant

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