



Proposed Rules for Thermal Renewable Energy Certificates (T-RECs)
Companion Issues Document
October 1, 2016

This Companion Issues Document sets forth the text of the statute that prompted this rulemaking and then briefly explains how the proposed rules address certain issues. Many of the following issues served as discussion points during stakeholder meetings held by the Oregon Department of Energy (the department) before the formal rulemaking for Thermal Renewable Energy Certificates (T-RECs).

SB 1547 (2016) (excerpt)
Oregon Laws 2016, Chapter 28, Sections 15 and 16

(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.

Issue 1: Definition of “secondary purpose”

Most states with rules for T-RECs use the term “useful thermal energy” to describe eligible end uses. Because SB 1547 uses the term “secondary purpose,” Oregon’s proposed rules also use that term, defining it in a way that mirrors approaches used by other states with T-RECs rules.

The greatest variation in states’ definitions of eligible end uses occurs with respect to whether the end use must displace electricity, fuel, or either electricity or fuel, and whether what’s displaced must be fossil fuel-based. The definition of “secondary purpose” in Oregon’s proposed rules requires displacement of fuel *or* electricity.

While the Oregon Renewable Portfolio Standard (RPS) is focused on electricity, the addition of thermal energy to the Renewable Energy Certificate (REC) system necessitates accommodation of the technical differences between thermal energy and electricity. For example, there are a

number of facilities using thermal energy for secondary purposes for which electricity would never be substituted for efficiency reasons. These facilities would use fossil fuels in place of available thermal energy and many are not even configured to power these processes with electricity. Requiring displacement of only electricity would disqualify these facilities from earning thermal RECs.

Additionally, given the large share of renewables in Oregon’s electricity mix, requiring displacement of only electricity would, at facilities located in Oregon, represent the displacement of a relatively renewable power source. In contrast, much of the fuel use displaced by thermal energy in Oregon is non-renewable.

Issue 2: Definition of “station service”

In Oregon’s proposed rules, any end uses of thermal energy that are in support of the generation of electricity are included within the definition of station service and are not eligible for T-RECs. This is consistent with the most common definitions of station service for the generation of RECs for electricity production. For example, the primary purpose of activities like boiler feedwater preheating, steam deaerator heating, and fuel processing is to support or enhance the conversion of biomass to another energy form (i.e., electricity or a thermal resource). Some end uses of thermal energy (e.g. digesting sewage) may interact indirectly with the biomass electricity generation, but these processes are not classified as station service because their primary purpose is not to serve the electricity generation process.

Because of the variability in the design of facilities using thermal energy, the proposed rules do not provide an exhaustive list of every possible instance of station service. Instead, they explain that station service means energy used to operate an electric or thermal generating plant. When applying to the department for certification, facilities will be required to provide facility schematics and descriptions, and any uncertainties with respect to station service will be resolved at that time.

In many states with existing thermal REC rules, like Massachusetts, North Carolina, and New Hampshire, thermal energy used for on-site fuel processing is not eligible for T-RECs. The Massachusetts definition of “useful thermal energy” explicitly states, “Thermal energy used for the purpose of drying or refining biomass fuel shall not be considered Useful Thermal Energy.”¹ Likewise, North Carolina Public Utility Commission’s Renewable Energy and Energy Efficiency Portfolio Standard (REPS) rules state, “Thermal energy output that is used as station power or to process the facility’s fuel is not eligible for RECs.”² New Hampshire’s rules do not explicitly disallow T-RECs for thermal energy devoted to on-site fuel processing, but such uses are addressed in the application process.

Due to concerns related to crediting thermal energy end uses that are in support of electricity generation (i.e., station service), the proposed rules do not permit thermal energy that is used

¹ [Massachusetts 225 CMR 14.00 Renewable Energy Portfolio Standard – Class I.](#)

² [North Carolina 04 NCAC 11 R8-67\(g\)\(4\) Renewable Energy and Energy Efficiency Portfolio Standards \(REPS\).](#)

to process fuel to be used on-site to generate T-RECs. However, any thermal energy used to process a product, including fuel, that will be sold is eligible for T-RECs.

Issue 3: Retroactive crediting for thermal energy (stranded thermal energy generation)

The proposed rules allow qualifying thermal energy generated on or after the effective date of the statute (March 8, 2016) to be eligible for T-RECs. Under the definition of “stranded thermal energy,” the rules provide deadlines for registering a facility with WREGIS and reporting thermal generation to the department. If generator representatives wish to be issued T-RECs for thermal energy used at facilities between 3/8/16 and the date the rules are effective (estimated to be December 1, 2016), they must register the facility in WREGIS for thermal energy on or before March 1, 2017. Additionally, generator representatives must submit an application to be certified Oregon RPS-eligible to the department on or before March 1, 2017. Once the department certifies a facility as Oregon RPS-eligible, the generator representative then has six months to report retroactive, or “stranded,” qualifying thermal energy use.

Facilities wishing to earn T-RECs for thermal energy used after the date of rule need only register in WREGIS before the date of thermal energy use for which they are seeking T-RECs, unless otherwise constricted by existing statute (i.e., ORS 469A.020, HB 3674 (2010), etc.). Limits have been placed on the span of time during which facilities can apply for retroactive T-RECs due to the issues of data reliability and auditing costs associated with historical generation.

Issue 4: Definition of “thermal renewable energy certificate”

Because there are differences in how electricity and thermal energy are metered and measured, the proposed rules define the resulting RECs as RECs and T-RECs, respectively. However, because SB 1547 directs the department to add RECs from thermal generation to the existing renewable energy certificate system of ORS 469A.130 and provides an equivalency conversion factor for British thermal units (Btu) to megawatt hours (MWh), the proposed rules treat T-RECs as a sub-category of RECs that, once created, will be equivalent for the purpose of complying with the Oregon RPS.

Issue 5: Geographical boundaries for facilities generating T-RECs

Because the thermal energy associated with the generation of a T-REC cannot be delivered to the grid as electricity, T-RECs meet the definition of an unbundled REC under ORS 469A.005(12).

ORS 469A.135 limits the use of RECs for compliance with the Oregon RPS to the following geographic boundaries based on bundling:

- Bundled RECs – facilities within the United States and within the boundaries of the Western Electricity Coordinating Council (WECC).
- Unbundled RECs – facilities within the WECC.

As T-RECs meet the definition of unbundled RECs, the proposed rules allow for the same geographical boundaries for T-RECs as for unbundled RECs. T-RECs may be generated by any facility within the WECC that meets all of the other requirements of the Oregon RPS and its supporting rules.

Issue 6: Integration of electricity generation and thermal energy

Qualifying thermal energy must be the direct result of the generation of electricity using RPS-eligible biomass feedstocks. The proposed rule addresses the integration of the electricity production and the thermal energy in the following ways:

- Requiring that the electric generator has a rated fuel capacity of at least 10 percent of the energy content of the fuel input.
- Disqualifying any thermal energy that bypasses the electricity production device.
- Disqualifying any thermal energy generated while the electricity production equipment is out of service.

Issue 7: Metering thermal energy

The proposed rules for metering focus on best performance criteria, drawing upon sources including stakeholders, the International Performance Measurement and Verification Protocol (IPMVP), and federal requirements for monitoring and reporting CO₂.

Different methodologies for metering are available for facilities based on the capacity for Btus/hour. The proposed rules set a threshold of 3.412 million Btus/hr as the distinction between large facilities and small facilities. The process of converting biomass to electricity is only about 35 percent efficient, resulting in excess thermal energy of about 65 percent. For this reason, the “small facility” threshold, expressed in Btus/hr, is higher than commonly used thresholds for electricity facilities (expressed in megawatt hours).

All facilities must submit to the department a thermal energy measurement plan as part of their application to be certified for the Oregon RPS. While all facilities must meter the thermal energy going to the secondary purpose, small facilities have the option to use as constants in their calculations certain parameters that represent de minimis values and do not vary more than +/-2 percent for the full range of expected operating conditions at the facility. This provides an opportunity to reduce administrative costs without sacrificing data integrity.