



**Date: August 3, 2016**

**Subject: RPS Rulemaking – Notes from Stakeholder Meeting #2**

**Location: Portland State of Oregon Office, Room 1E (800 NE Oregon St)**

**Scheduled Time: 8:30 a.m. – 12:30 p.m.**

**Actual Duration: 2 hours, 38 minutes**

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Call to Order/Introductions:

The meeting was called to order at 8:30 a.m. by ODOE staff. The purpose of this meeting was to discuss draft rules relating to the Renewable Portfolio Standard and continue the discussion started at the first stakeholder meeting on the RPS that was held on June 20, 2016. The floor was opened to introductions:

**In Attendance:**

Tyler Pepple - ICNU  
Bill Carlson - OFIC  
Dave Modal - ETO  
Alex Schay - Wellons  
Jenna Brown – Dalton Advocacy  
Tom Prevish - NWESI  
Phil Zirngibl - GP  
Aaron Stando- GP  
Gary Bauer – NW Natural  
Danny Brady – City of Portland

**From ODOE:**

Rebecca Smith  
Andrew Warren  
Jessica Reichers  
Andy Ginsburg  
Wendy Simons  
Marty Stipe  
Jason Sierman  
Robin Freeman

**On Phone:**

Andrea Coon – WREGIS  
Mary Frantz – WREGIS  
Christine Mahler – WREGIS  
Meagan Nuss – Wisewood  
Jeff Maag – City of Gresham  
Alan Johnston – City of Gresham  
Brendan McCarthy - PGE  
Michael O'Brien – RNW  
Robert Bissell – Farm Pacific  
Ian Bledsoe – Clatskanie PUD  
Tillman Associates

ODOE staff then opened the floor for discussion on the draft rules:

Comment - Bill Carlson (OFIC) – Harmonize measurements and reporting of electric RECS with TRECs, while great goal, they are fundamentally different. One records everything that flows through the meter. High degrees of accuracy. TRECs, there is no universal equivalent. Meters that measure thermal energy consist of a series of outputs and inputs integrated into a number. Rightfully, there have been exclusions proposed. For instance, if it bypasses a turbine because turbine is out of service, meter will not know that. Entire data collection and verification program is far more complex than Qualified Reporting Entity report to WREGIS. Bear in mind that as many places as possible, find constants to deal with. IE condensate return is always a safe number. Rather than have someone come verify meter and look at Calibration data, perhaps assume it is always that temperature. Remember TRECs and RECs are fundamentally different. Concept of what to do about WECC-wide application of rule. Anyone in WECC can qualify for TRECs. Understand that WECC includes territory in BC and Baja California. Oregon falls to only 4<sup>th</sup> largest generator of TRECs by including Canada and Mexico. Complicate process by including BC and Mexico. Finite group of people in Oregon that would qualify, increase by five-fold the work load by including all of WECC. To address this, there is a parallel in ORS 469a.145 – Bundled vs. unbundled RECs. RECs in Oregon are bundled, apply same standard that out of state RECs are unbundled. Higher market for Oregon RECs that can be bundled. Broader market to Oregon RECs than to out-of-state RECs. Remember requirement that unbundled RECs make up a maximum of 20% of the total RECs for large utilities.

Tom Previsi (NWESI) – Measuring thermal energy is more complex than reading electrical meter. Third party independent measurement will need to be project and facility specific. Some of processes are able to monitor on regular basis, some may be very burdensome, adding equipment to verify, consider yearly calibration/recommissioning or yearly verification to alleviate some of financial burden on installing monitoring equipment.

Rebecca Smith (ODOE) – Want to be aware of hurdles or burdens.

## **DRAFT RULES**

### **Thoughts on Definitions Section:**

Bill Carlson – Definition 21 – Station Service. Make one exclusion that if an entity extracts steam from turbine and uses it to drive what would have traditionally required electricity within station itself, exclude what would be needed to drive system. This should not be included in station service. This is more of a displacement of electricity that would otherwise be utilized.

Rebecca Smith – Suggesting that ODOE excludes a pump that is an actual part of the generation itself? Basis for this exclusion?

Bill Carlson – Yes, exclude pump that is an actual part of the generation. The party has gone to the trouble of being as energy efficient as possible, otherwise would be penalized for being energy efficient. They could just buy the electricity to run the pump and be done with it, but in this instance, they have already run it through a turbine and discharged it to another turbine that drives the pump. This is

something that should not be considered as part of station service. More general, unless such portion station service is supplied by steam that passes through the turbine.

Rebecca Smith – Secondary Purpose, did receive thoughts from stakeholders. Some discussion focused around whether or not there should be a displacement requirement? If so, what would a displacement requirement look like? Should there be a fuel or electricity displacement? Should it just be electricity, since the RPS is so electricity-focused? Some states require displacement is of conventional fuel sources.

Alex Schay (Wellons) – Secondary purpose should be both fuel and electricity. You don't dry lumber with electricity.

Michael O'Brien (Renewable Northwest) – All statutory references all refer to electricity and electric. Of the opinion that should be about displacing electricity. There are already programs out there that focus on displacing fuels.

Tom Previsch – Why haven't you made distinction for conventional vs. nonconventional fuels?

Rebecca Smith – part of rationale was to receive additional feedback, want wider view of what industry individuals think. If rule makes distinction that secondary purpose must displace conventional fuel sources, may exclude digesters, which displace RPS-eligible/renewable electricity with thermal energy, not yet comfortable at this point to with the idea of potentially excluding digesters.

Brendan McCarthy (PGE) – Definition of "Station Service" mentions 'Auxiliary Facilities.' What is included in that term? What about a biomass facility using thermal heat in drying phase or production of material that can be fed into biomass facility itself, would production facility for biomass be considered 'auxiliary facility'? If so, does that set up conflict between the allowance of the use of that heat for production of fuel and the definition of "Station Service"?

Rebecca Smith – Left ambiguous at this point, draft rule does not touch on this yet. Have not yet decided that drying of biomass fuel as eligible heat or if this would be considered 'station service'. Looking for stakeholder input here.

Alex Schay – There are many things to consider regarding heat that is being used to dry fuel. Because fuel being dried will then be used to generate electricity or some other useful process (dry lumber, etc.). This process seems like double counting because RECs are earned to burn the fuel used to make more RECs. Would argue that you should not be able to earn RECs for that portion of energy that is used specifically to dry product.

Bill Carlson - Agrees with Alex. Typically, size reduction of fuel would be considered "station service". What is the difference between size reduction and drying? Could have designed boiler to dry the fuel ahead of the combustion process. Also, seems like there are opportunities to game system. Measuring thermal energy in a steam system will be difficult enough. Flue gas used to dry fuel, for example, would be virtually impossible to come up with a system with any kind of verification that could be done in terms of drying fuel for your own purpose. If drying fuel as a business may be a different situation, but to simply dry fuel for the purpose of creating electric RECs does seem like double counting.

Rebecca Smith – Would you say the distinction is that if you were drying feedstock that you yourself were not going to use as a fuel, but were going to sell offsite, that would not be considered Station Service?

Bill Carlson – Correct. FERC makes same distinction in their regulations.

Rebecca- What are the implications for facilities using digesters? They are not drying fuel, but are using thermal energy to heat digesters and facilitate digestion process. Does this fall under station service or would it be eligible?

Bill Carlson – This process would be station service. Very similar to the drying issue.

Alex Schay – Agree this would be station service. I understand the desire to add additional revenue for any digester system, but that portion of the methane that is being burned, the portion of the waste heat generated to heat digester is clearly station service. No different from running feed water pump to a boiler. This is part of running the digester, so it seems like it should be station service.

Brendan McCarthy – If one of the RPS goals is to reduce use of fossil fuels statewide and ensure we are not contributing to overall carbon profile, it seems as if the double counting issue is a bit of a red herring. If thermal energy can be used to displace fossil fuels that would otherwise be used to dry the same biomass, why wouldn't it be counted? There is heat there that can be used and otherwise will have to be created in another way, the other way will likely utilize fossil fuels. Whether it does ultimately create fuel and then also creates a REC, it seems irrelevant because the fossil fuel has been displaced and it's still a good thing that's being done.

Michael O'Brien – When you say fossil fuels could potentially be used to dry the fuel, do you mean directly or indirectly through the generation of electricity? Do you mean fossil fuels burned to generate electricity that is then used to dry the fuel?

Brendan McCarthy – Consider torrefaction, this would be direct. Natural gas will be used in the torrefaction process. If torrefier was defined as Auxiliary facility, you would lose some ability then to at least get some benefit from channeling heat from generation of electricity by burning of biomass in to the torrefaction production process, which can be done and would otherwise be achieved through VOC coming off of material and by natural gas itself.

Rebecca Smith – Suggesting the addition in rule that fossil fuel displacement distinction to definition? Should there be the requirement that fuels displace fossil fuels?

Brendan McCarthy – Hadn't considered that aspect yet. It already states "for which electricity would otherwise be consumed."

Rebecca Smith – Does not make the distinction that it must replace conventional fuel or conventional electricity generation.

Brendan McCarthy – True. Had read in to it, that more than likely the fuel would be something not renewable. No opinion.

Michael O'Brien – If thermal RECs are moving in to the realm of displacing fuel, does this have any effects on the RPS targets themselves, which are based on a percentage not of fossil fuels, not for electricity but for fossil fuels burned for the production of electricity? For example, if utility is using

fossil fuels to dry fuel for torrefaction, should that amount of energy be BTUs to MWh into the amount of total energy, thermal electricity that the RPS applies to?

Rebecca Smith – Good question. As we go through this process, sensitive to the impacts on the RPS. No answer right now, but is an area of concern.

Tom Prevish – Conventional vs. nonconventional, in a typical biomass system with CHP, best use of heat will go back into the system for drying. This really should be included somehow. That heat returned is usually the most efficient use of heat rather than trying to store the heat somehow and doing something with it. Therefore should be considered.

Rebecca Smith – Will be accepting written comments as well.

### **OAR 330-160-0030**

#### **Allowed Vintage of RECS**

Rebecca Smith – One addition (number 6), replaces first eligible date as date of statute. First date any thermal generation would be eligible for RPS would be the date of the statute.

Danny Brady (City of Portland) – Does that mean all metering must be in place in order to capture those RECs?

Rebecca Smith – Not yet finalized, we welcome any comments. We are sensitive to use of reliable data. Want to abide by WECC rules and reticence to estimating. There may be options as to how we can get some recent historical data that may be less strenuous than some of the metering comments. Please get back to us if there are any comments.

Aaron Stando (Georgia Pacific) – Mentioning of third party needed to verify meters, how can they read meter today and then go back and say they were good on March, 2016? Difficult because when you register with WREGIS, you are approved in WREGIS on a certain day.

Rebecca Smith – Would we be able to incorporate a discount factor?

Marty Stipe (ODOE) – May be facilities with metering or metering practices in place already, meters may have been calibrated and records retained. All data needed would have been recorded already.

Tom Prevish – Agree. Especially something that has been refurbished or installed recently. Facilities should have all or 80-90% of readings needed, third party verifier creating an energy model to begin with, facilities should be able to verify through consistent monitoring, with high confidence before the date of the actual statute.

Rebecca Smith – Any facilities with site-specific case (not metering, different type of meter), this information will be helpful in creating final rules. If not metering currently, what system are you using?

Bill Carlson- A discount factor could be another way. If you do not in the past have the accuracy, but do have basic raw data, a discount factor could be used as backward looking, then meet all of the requirements on a forward looking basis.

Tom Previs - As part of commissioning, establish a confidence factor. That could be basis for discounting.

Linc Cannon (OFIC) – There ought to be some mechanism to show RECs generated after date of statute.

Rebecca Smith – Will be adding language in next draft of rule that further addresses the registration/WREGIS dates, etc.

## **FACILITY REQUIREMENTS 0080**

Rebecca Smith – This section addresses thermal energy from the generation of electricity using biomass. Section will lay out the facility requirements and what will be eligible thermal generation. This is a new section of rule.

Bill Carlson – Comment on 2b, the Age of generating facility, if you go to ORS 469A.020, has not been updated for pre-1995, it should be referenced that this will be updated to include new legislation.

Linc Cannon– 2015 ORS will be replaced by 2016 legislation in SB 1547. All references to the restriction on biomass utilization not available until 2026 should be removed.

Rebecca Smith – For this rule, we refer to the entirety of ORS 469A.020, which also includes language referring to post-1995 facilities Important to make distinction that like other facilities governed by the RPS, we have existing statute on post-1995 facilities and pre-1995 facilities. Sensitive to make sure this is in harmonization with statute and recent statutory updates. It is intention to keep with what is updated statute.

Andy Ginsburg (ODOE) – Suggesting ORS has not yet been updated to reflect the bill, is it possible we are pointing to the wrong language?

Bill Carlson – No, just that it might be worth mentioning that the law has been repealed.

Tyler Pepple (ICNU) – My understanding is that any biomass facility built before 1995, you could generate RECs, they just couldn't use them prior to SB 1547. Now my understanding is that any biomass facility built at any time can generate RECs.

Linc Cannon– Statute referenced is irrelevant because SB 1547 replaced all previous language. Unclear as to why there is still any reference to age of a facility is a mystery, because that piece of law is gone.

Rebecca Smith – There is language that states pre-1995 biomass facilities must be in the state while post-1995 biomass facilities simply must be in the WECC.

Bill Carlson – Agrees with Rebecca, this is why the language needs to stay in rule, it just is not current.

Wendy Simon (ODOE) – Online there is table of sections to be changed. Not sure when these sections will be updated.

Andy Ginsburg – Will check with DOJ. Whatever current amended language of statute will be adopted. We can also add notes at end of rule that we will clarify as necessary.

Brendan McCarthy – Legislative Counsel works on a supplement for short sessions, don't think they change statutes on web until full session. This is a point of confusion for casual readers, but from a legal point, you should be fine.

Michael O'Brien – What do people think the Impact of SB 1547 change on pre-1995 biomass would be on thermal REC generation?

Tyler Pepple – The impact would be you could use those RECs today instead of having to wait, which is important because utilities can only bank those for five years.

Michael O'Brien – But thermal RECs could not have been generated until after the passage of the bill.

Tyler Pepple – But this issue is that Pre-1995 facilities can generate RECS, but they can't be used until 2026. New law repeals this.

Rebecca Smith – Pre-1995 facilities could generate RECs, but they had to be banked until 2026. Now fall under category of unlimited banking.

Tyler Pepple – But prior to 1547, no thermal RECs had been generated.

Michael O'Brien – Referring to thermal RECs, just trying to understand how people think thermal REC generation will be impacted.

Bill Carlson – There are several large facilities that were pre 1995 that can now be included from first date of statute, rather than wait 10 years to have those RECs considered. At least three large facilities in Oregon that will now qualify for this.

Rebecca Smith – Station service might have large impact on who is able to generate TRECs.

Michael O'Brien – Is the issue at hand is whether a pre1995 biomass co-gen facilities post passage of SB 1547 can generate thermal RECs?

Tyler Pepple – Not so much a question of whether they can generate RECs, it's a question if they can generated them for use in the RPS today.

Rebecca Smith – Michael, Is the question is this draft allowing pre-1995 biomass facilities, at a facility level, to be eligible for the generation of thermal RECs?

Michael O'Brien – Yes.

Rebecca Smith – The current draft rule states at a facility level, they would be eligible for participation with thermal RECs, depending on set up of facility, meter, connected to grid.

Linc Cannon – That's what the bill says, rule can't change what law states.

Andy Ginsburg – Do people like how we refer to the statute in rule? The benefit is then you are precisely identical to the statutory language. Disadvantage is you have to see the statute to get the exact language. Sometimes we repeat statute in rule, sometimes simply refer to statute. Is this a workable approach?

Robin Freeman (ODOE) – This approach works nicely because if statute changes, rule language doesn't need to be changed as well.

Rebecca Smith – Comments on requirements eligible generation?

Michael O'Brien – In regards to a comment made earlier about rule being applicable to all of WECC, some discussion of applying the exemption for Oregon QFs where they don't count towards the unbundled part, but the pre1995 exemption, that is a step up on Oregon biomass thermal RECs, out of state RECs, does OFIC see that as a positive rather than counting them as bundled?

Bill Carlson – Would like to see both, Oregon facilities being only older facilities that qualify, out of state facilities are relatively new, so they would qualify. The potential largest single recipient of TRECs does not have a single facility in Oregon, but they would all qualify as new facilities. We would like to see both bundled and unbundled.

Tyler Pepple – How do you generate a bundled REC from Thermal Energy?

Bill Carlson – You don't. Basically, in the category of bundled, all Oregon electric RECs by definition are considered bundled. Suggest all TRECs in Oregon are also bundled by definition. Could be used across 100% of RPS spectrum, rather than by the 20% of RPS that is allowed to be serviced by unbundled.

Tyler Pepple – Agrees, but that would likely require a statutory change. May need to change definition of bundled REC in statute.

Rebecca Smith – Which specific part of 145 are you referring to?

Bill Carlson – It discusses you have to be directly connected to Bonneville and have a delivery path to be considered bundled, but the caveat is that all Oregon RECs are considered bundled by definition.

Rebecca Smith – Can't find this specific section, could be under subsection discussing Bonneville.

Bill Carlson – Will research and respond.

Tyler Pepple – It seems the definition of "bundled REC" would need to be changed in statute.

Michael O'Brien – ORS 469A.145 (3) is the reference. It's not that they count as bundled, but they don't count towards the unbundled part of the RPS.

Bill Carlson – Section 2d of draft rule states "the facility's electric generator must have a rated capacity of at least 10 percent of the energy content of the fuel input." We agree with the concept, but think the language is cumbersome. Suggest "the facility's electric generator must have a rated capacity expressed in BTU equivalents of at least 10 percent of the rated fuel input capacity of the combustion units." You aren't actually putting any fuel to the generator. Same idea and metrics, just expressed differently.

Brendan McCarthy – Explain purpose of including 2d. Not sure exactly understand the point of this rule.

Marty Stipe – Trying to find a way to assure we didn't end up with a minimal amount of electrical generation being added to a thermal system solely for the purpose of being able to claim thermal RECs with a minimal amount of electrical generation. Whereas the original currently operating operation is purely thermal for only thermal reasons, what we looked at is if a facility were biomass electric generating facility, it would be in the efficiency range of 30%. Could not mandate something above minimum being at maximum. Something less than 30% of the energy content would assist in trying to keep the primary purpose of generating electricity at a reasonable number is why we arrived at 10%.



Tyler Pepple – Regarding 3a, If generator is multi-fuel, are we referring to just energy content of biomass?

Marty Stipe – That is probably reasonable as well. There are facilities that have multiple fuel sources.

Rebecca Smith – This all speaks to the primacy of the electric generation as the primary purpose, and the thermal energy being secondary. Brendan, was this explanation satisfactory?

Brendan McCarthy – Gives understanding as to why it was added. More curious from a rural sufficiency point. PGE doesn't have a position, just curious to know what it was about and if drafted, if there is support for it. The concept of drawing a line between primary and secondary purposes is legitimate.

Rebecca Smith – There are thermal energy certificate rules in place in other states, but Oregon is currently only state that makes the distinction that thermal must be for secondary purpose. ODOE is looking for the easiest way, from a management stand point, to make sure the primary/secondary relationship is happening.

Alex Schay – That particular part of the rule makes sense. Have seen facilities where a minimal amount of electricity is being generated and a bulk of the RECs being earned are thermal, rather than electricity-based RECs. This is a good stop gap to prevent that issue from happening here.

Tyler Pepple – Regarding 2c , to get back to a point made earlier, you might reference sub 2 and also 3 in this section referring to Qualifying Facilities essentially getting all of the RECs.

Bill Carlson– Regarding 4b, as written, is not technically correct. You don't exclude condensate, you may exclude heat value of condensate, but you don't subtract the condensate from the steam in order to net, you have to look at the heat value. You could potentially exclude the heat value returning to the boiler, but you don't exclude the condensate itself. It is a deduction instead of an exclusion. Will send suggested revised language.

Brendan McCarthy – Regarding Subsection 4, Questions about most, if not all of exclusions. My interpretation of the law is that as long as TREC is generated from electricity, the secondary purpose is fairly wide-open. It would seem that in a combined cycle gas plant where you take the heat and put it back in to the process, to keep the heat through in to the secondary turbine, that is a beneficial use of that thermal energy, so not sure why it would be excluded under 4(b). It seems like 4(d) is irrelevant as long as the thermal REC was generated from the electricity. If the electricity production equipment is out of service after that thermal energy is produced, that seems irrelevant. What is the department trying to get at by exclusions in section 4 once that thermal REC is generated, as long as that thermal REC is being put to a productive, secondary purpose.

Rebecca Smith – Goes back to definition of secondary purpose and station service. Depends where we draw the box around the generation unit in terms of what is considered parasitic load and what isn't. Sounds like the definition of secondary purpose should be wider and possibly include some of the heat that is returning to the generation system, opposed to having that heat netted out?

Brendan McCarthy – Absolutely, as long as that heat would have to be created some other way. Then certainly, yes.

Michael O'Brien– Do wind and solar generate RECs for serving the parasitic load of their station?

Rebecca Smith – We are constrained by what is in statute, and statute explicitly refers to electricity that is produced by Biomass.

Michael O'Brien – But we are discussing if biomass can generate thermal RECs to serve some its station uses, because otherwise that would have come from another source. Wondering whether wind and solar, which also have parasitic load, do they also generate RECs from serving their own station needs?

Rebecca Smith – Parasitic load is much more straight forward for electricity generation, but ODOE will look to see if any parasitic load from solar or wind qualifies.

Brendan McCarthy – My question goes further than just the parasitic load. If you are trying to make biomass energy facility more efficient, you would seek to utilize what would be waste thermal energy. If you're creating an incentive to generate a thermal REC with electricity, the incentive would carry forward to the entity that has facility by allowing them to retain value for it by increasing the efficiency and using the thermal REC in the process itself. It is unfortunate that this would be cut out, not sure if anyone would actually do this, but excluding it explicitly by rule prohibits this from consideration.

Rebecca Smith – Regarding 4(b), will work on language, will look into what is the larger goal for TRECs and what we are trying to incentivize.

Bill Carlson – Goes back to legislature, the purpose was to reward those who have true co-gen systems that increase efficiency by running steam through turbine, discharging it at some lower pressure or temperature, using it for some other purpose other than generating electricity. In these exclusions, if you bypass the turbine and aren't doing true co-gen, or station is out of service, facility is not doing CHP at the time. Exclusions are logical for that reason. This may complicate metering/monitoring/reporting, but it preserves the integrity of the program.

Tyler Pepple – Comes back to secondary purpose. If no generation of electricity, there is no primary purpose to spur the secondary purpose.

Rebecca Smith – Brendan, are you suggesting that if a facility has these processes for heat that makes it more efficient, then perhaps the drying of biomass fuel may fall in to that. Is that something that should be included?

Brendan McCarthy – Yes, but also if you have heated the boiler, you only get a TREC when generating electricity. If there is left over heat after generating that electricity, while you generate the electricity and are running the process, you can't get t TREC without generating MWh, once that TREC is created and stored in the boiler, that thermal energy should be available for use and shouldn't go to waste. Maybe there is a Co-gen facility where you can capture additional elements of the heat to make it more efficient and 4b would exclude that.

Alex Schay – The heat that is retained in biomass co-gen system in the economizer, that heat circulates back to deaerator and ends up being used again. It's Low amount of heat. Energy lost through steam conversions, but energy that is retained is recycled to generate energy again. Seems like you are already getting credit for this since you are receiving electric RECs for that same process.

Bill Carlson – There are broader systems this may apply to. For instance, in a district heating system, what is being sent out to customers is hot water. The hot water went out at 250 degrees but came back at 230 degrees. If you give credit for every 250 degrees and don't deduct the 230 degrees, they will

raise it to 300 before sending. Alex's point is valid where you collapse the steam back in to water, that is where the heat is. You could dispense with the reduction because it may be only 8% of the total that was sent out. In other systems, very little heat is used, most of it is sent back to where it came from in an incremental amount.

Andy Ginsburg – Regarding 4(d), Brendan, you mentioned if you Generate thermal energy while electricity generation was in service, then before being used, the generator went offline. There would be a gap between generation as co-gen but not used while the co-generation was running. Is this also a concern?

Brendan McCarthy – If there were a way to store that thermal energy in some fashion, in hot water for example. That strikes me that even if no longer running turbine, if you're using that heat that was created, why would it be excluded? More of a temporal issue, not a question of whether it was created as the law intended.

Andy Ginsburg – should word “used” be changed? Change to “generated”?

Brendan McCarthy – That would be correct, and would agree to that.

Bill Carlson – Normally, it's metered as it leaves the turbine not as it is utilized. In actuality, C and D are the same thing. Do away with D and cover in C.

### **330-160-0090 METERING**

#### **Subsection 1 - Qualifying Thermal Energy**

Bill Carlson – Regarding 1(a), suggest replacing “heat meter” with “thermal energy system”. It can be used in cooling or humidity control under the definition and they will be systems, because that is how they are manufactured and sold.

Tom Previs – Also suggests removing “Heat Meter”, keep in mind that the system could be a relatively complex system, stating something like “equipment appropriate for accurate metering of system” would open it to all eligible aspects.

Rebecca Smith – Would that be specific enough to indicate all systems must be metered?

Tom Previs – Yes, but I would leave in section that states must be metered. Maybe state “in accordance with manufacturer's specifications, to *meter qualifying thermal energy*”. Might be appropriate time to mention equipment must include the calibration frequency, accuracy, overall accuracy of model. Most importantly, broad enough for equipment appropriate for actual metering.

Bill Carlson – How were levels/percentages decided?

Marty Stipe – Mostly looked at other states, especially New Hampshire, to get an idea how this has been implemented elsewhere. We looked at heat metering standards in Europe, American standards still draft and only for liquid. Absent an American standard on heat metering, we tried to get some accuracy classes. +/- 5% is broader than what is required in many places, ASTM standard also calls out +/- 5%.

Tom Prevish – Perhaps +/- 5% is too tight. In a complex system, you might have variations just to reach temperature measurement. When you add flow, you may be lucky to get 5% on a flow meter in many cases. Some may be excluded from achieving this.

Marty Stipe– Multiple meters tolerance stack. The overall accuracy of the Energy measurement system can get broader as each component comes into the system.

Tom Prevish – Perhaps something like “Overall energy metering must be accurate to +/- 10%.” Worried as written may be too stringent.

Phil Zirngibl (Georgia Pacific) – Regarding 1(a), where thermal energy must be metered at secondary purpose. Understand the reason for this, but in practicality at a large paper mill, there are maybe up to 30 secondary purposes where the low pressure steam may go, much easier to measure at the extraction or discharge of the turbine. Trying to meet measuring standards would be restrictive and cost prohibitive.

Tom Prevish – Maybe “metered or accurately modeled at secondary purpose”. This is key to having third party professional there, it’s what you can use and be accurate. In many cases, most people will not invest in additional equipment to measure/monitor/meter.

Bill Carlson – In this instance, where there are multiple purposes for the heat, you can measure at the extraction and still capture the value, if you deduct what condensate does come back. You don’t have to meter at every purpose, just once at least per turbine.

Tyler Pepple – What we might end up leaning toward is an overall accuracy of the model of +/- 10%, for instance.

Rebecca Smith – Am I understanding correctly that you could simply measure the thermal energy as it comes out from the primary purpose of the turbine then measure the parasitic station service and essentially capture good data with that?

Bill Carlson - Station service is usually electricity driven rather than thermal. You are deducting heat return to the boiler. You know what left turbine at various extractions. You don’t care where it went, you deduct what comes back. This would be verifiable data. System would be easier to monitor with two primary monitoring locations, where it leaves the turbine and where it comes back to the boiler. Do as much as you can in the certification process to make it easier in the verification process.

Bill Carlson – Do not fully understand steam-based over liquid-based systems. One is 5% and one is 3%?

Marty Stipe – Attempt to model after other state’s language. When we get down to the actual steam accuracy, we would want to consider that number more carefully. There are industry standards for steam measurement accuracy using various technologies. We would look at what technologies are being used and what industry standard.

Tom Prevish – Perhaps Marty and others could discuss how to finalize this section.

Rebecca Smith – will work to coordinate.

Bill Carlson – Regarding 1(d)(B) – Correction in language, missing words. Currently reads “Installation and use of meters that do not comply with the accuracy of Subsection (1)(d)(A) provided that the

manufacturer's guaranteed accuracy...". Should read "Installation and use of meters that do not comply with the accuracy of Subsection (1)(d)(A) *may be used* provided that the manufacturer's....".

## **Section 2**

Tom Prevish – Propose to add two sub-bullets under this. First, third party monitor must be retained upon initial commissioning, or retro commissioning in the case of existing equipment. Second, third party retained for recommissioning per the calibration schedule based on the equipment. Not all of the equipment will be able to be measured once per hour, so recommissioned based on the calibration schedule requirements of system or once per year (or what is agreeable).

Rebecca Smith – One area where this draft has not covered in detail is the specificity of requirements of independent third party monitors. Language from other states say these third party monitors can't be paid on a per credit basis, etc. Any additional criteria, submit for consideration. We will be looking for more detail in this area.

Bill Carlson – We have to be careful making requirements to stringent. This will not generate a whole lot of revenue and there are small systems that will not want to make large investments, because it wouldn't be worth the financial hurdles. Language should be as broad as possible, costs would be prohibitive for smaller facilities. Can see where it could cost small facilities up to \$10,000 a year to be in compliance.

Rebecca Smith – Some states have considered categories for large/small facilities, self-reporting with a discount factor, etc. Aware that transaction costs for smaller facilities could be considerable. We want to make sure we have good data, but are not being overly burdensome.

Tom Prevish – Regarding Section 3, Add third category (c) for Certified Energy Management Professional (EMP) as certified by the ACG (AABC [Associated Air Balancing Council] Commissioning Group).

## **Section 5 – “An independent monitor must be certified as a QRE for thermal energy by WREGIS”**

Bill Carlson – Has this been discussed with WREGIS?

Rebecca Smith – This is currently the only thermal program within WREGIS. We can decide how information is reported to WREGIS, wants states to determine what works best for the programs. As long as WREGIS gets data that is within the integrity of the programs, WREGIS will adapt to the way states structure their programs. Andrea, or WREGIS staff, anything to add?

Andrea Coon (WREGIS) – Nothing add, WREGIS wants to allow each state to determine what works best for their programs and WREGIS will try to meet those needs. As long as WREGIS gets sufficient data integrity and our system is protected, WREGIS will probably be okay with what the state wants to do.

## **Section 7 – Duties of the Independent Monitor**

Rebecca Smith – We have added language that outline the duties of the monitor, including performing an initial inspection, measure and verify quarterly, report consumption to WREGIS and the customer (would include netting out of station service to be reported to WREGIS), and not compensated on a per credit basis.

Tom Previsch – Worried that quarterly may be too burdensome. Suggest per equipment calibration schedule or at least yearly.

Rebecca Smith – Would this be burdensome for smaller facilities?

Tom Previsch – More likely burdensome for larger facilities. Will not want to interrupt multi-million dollar processes to monitor. State “measure *and report* quarterly” rather than “measure and verify quarterly”.

Aaron Stando – if there is a multi-fuel facility, will this remain consistent with current WREGIS requirements? Steam can be measured at extraction point, but not all of the steam will qualify. At some point, another calculation on top of this will be needed.

Marty Stipe – Various discussions with multi fuel. Maybe have group discussion with multi-fuel industry. Will contact.

Linc Cannon – Should it say “measure and AUDIT”?

Tom Previsch – That’s a good idea. Could reduce confusion as to who can perform the duties of the independent third party monitor.

Marty Stipe – Word “audit” in CPA has very specific connotations. “Review” may be more appropriate.

Tom – Marty has a good point. Perhaps “review” is the most appropriate.

Brendan McCarthy – Regarding Independent monitors – how often will they have to verify, will department put a cycle of three years/five years? Will they need to recertify once they reach a decision?

Rebecca Smith – Not yet addressed.

## **ADDITIONAL AREAS TO BE ADDRESSED BY NEXT DRAFT OF RULE**

Rebecca Smith – Will need to add language for metering, nameplate capacity, whether to create categories for large/small/medium facilities. Will need to make adjustments to rules for ease of retroactive crediting. This will also cover facilities that are not yet registered in WREGIS. We will want to discuss what changes should be made to requirements for retroactive credits. Any thoughts on data recording and storage requirements? Areas that should be here but aren’t?

Bill Carlson – The actual process of certification is not included, but should be.

Rebecca Smith – To add to that, ODOE is looking at the applications themselves. Will need to get input on what ODOE’s application process will look like.

Bill Carlson – Maybe consider using the term “Certification/Retroactivity”. Should maybe be handled all at once. Combine certification and retroactivity into one process to take care of all of that on the front end at once.

Rebecca Smith – During the certification process, ODOE will be looking at applications and to what degree information will be coming from PE, independent third party, etc. Still questions as to what the application process will look like.

Bill Carlson – Appropriate discussion here would be what does that certification process look like. Get a good process in place so applicants can start figuring what is necessary.

Phil Zirngibl – Will that be coordinated with WREGIS? When you register with WREGIS, they will need methodology, as will the state. How will process work? Certify first with state and then register with WREGIS? What will be the order of how certification/WREGIS registration work? If both need methodology, simplify the process in some way.

Rebecca Smith – Working closely with WREGIS, there will need to be a separate ODOE process and a WREGIS process.

Phil Zirngibl – Methodology will be key component. There will be uniqueness for all applicants. But considering PE signatures or other processes, as much as ODOE/WREGIS processes can sync together will facilitate the overall certification process.

Marty Stipe – Application process will need to include steps as to who to contact first. We can make clear who is responsible for what process.

Phil Zirngibl – If the facility is approved by WREGIS or the state, streamline process so that there isn't the need to register with multiple organizations.

Bill Carlson – Be careful not to put too much burden on WREGIS with data requirements for state programs.

Rebecca Smith – WREGIS is looking to states to put detail around programs, states bear the burden of making sure facilities meet the requirements that the state has determined.

Tom Previsch – Agree and add that there could be a mapping of the certification process at the same time.

Andy Ginsburg – Not everyone requesting TRECs will be retroactive, correct?

Rebecca Smith – Will have a sub application. Additionally, there will be offline conversations regarding metering, any other discussions about metering/equations/calculations not yet addressed by rule?

Danny Brady – Question on metering, dealing with digester, meter is on primary use, not secondary. Thermal generated through digestion process, primary use is for electricity generation, but some goes to other uses. What type of metering requirements and what will account for how much of the secondary use could be claimed? If 30% is from electrical generation as a primary use, how will the rest be metered and what are those metering requirements?

Bill Carlson – If it doesn't go through the electrical generation process, it doesn't qualify.

Marty Stipe – Do you have metering on the gas going to the engines?

Danny Brady – Not currently, but could.

Marty Stipe – But there are temperatures and flow rates on the jacket water and heat exchangers? That is the thermal load because that is what is related to the electrical generation. It's not the component of thermal related to the direct combustion of the biomass.

Rebecca Smith – Should the rule consider Categories for facility size based on nameplate capacity?

Alex Schay – There should be a minimum size where you require recording of actual data. Rely on some sort of modeling.

Bill Carlson – Agree with Alex. Possibly the criteria the facility can generate 1 TREC per hour as a threshold. If you can't generate 1 TREC per hour, that facility could have a streamlined process.

Linc Cannon – Would that translate to a nameplate capacity in MWh?

Bill Carlson – If secondary purpose is 1 MW thermal or less, maybe 300kW.

Linc Cannon – Note that a small scale renewable is 20MW.

Rebecca Smith – Some states that have implemented these categories for size rely on BTU measurement as a threshold.

Linc Cannon – Agrees there should be a category process. The process needs to be cost efficient. Perhaps something financially viable. Would support the concept of categories for size.

Rebecca Smith – Anyone against the idea of size categories? We will not discuss estimation of data, need to keep data integrity in line. Are there any considerations if we did not create size categories?

Robert Bissell (Farm Pacific) – Interested in what divisions people would suggest for small scale biomass or small rural applications, also when looking at small municipalities, not the massive generation capabilities as wood products facilities. How do small rural facilities fit in to the picture for rural Oregon? Absolutely in favor of size categories. This will be biggest key for helping states in the area with large rural areas with small populations that are agriculturally oriented that could fit in to this program that may be excluded because people are thinking on a larger scale instead of the other way around.

Rebecca Smith – At this point, no clear distinction on what scale facilities should be, but will consider and make suggestions.

Robert Bissell – There are facilities in mid-west that can be looked at for suggestions on how to include size categories in Oregon.

Andy Ginsburg – Once that size threshold is established, how would streamlining work to maintain data integrity?

Tom Previs – Maybe a 3-tiered structure, Under 1 MW, then 1 MW to 10Mw or larger with certain amount of modeling allowed, then finally the largest scale, which would require full retro-commissioning every five years or whatever is decided.



Bill Carlson – Would like to get smaller systems down to how many hours system runs each month or each quarter.

Phil Zirngibl – EIA has 1 MW threshold for generating reporting forms. There are references out there.

Tyler Pepple – Anyone in room, concept of how many potential TRECs are out there?

Rebecca Smith – At this point, still determining where we draw boundary on facility, secondary purposes, still considering what the universe for TRECs looks like.

Alex Schay – In addition to understanding how many TRECs overall, interesting to also understand how many would be from in-state and out of state facilities, and whether the amount of TREC generation will not meet, meet, or exceed the 8% carve out by 2025? Understanding these issues may be helpful in determining potential value of TRECs.

Michael O'Brien – 8% carve out is on capacity basis, not energy basis.

Bill Carlson – Rough estimate that facilities in Oregon could create 1 million TRECs each year, maybe 6 million in the WECC.

Rebecca Smith – Regarding retroactive crediting, will need to add to initial certification. Will add language to draft that states facilities not yet registered in WREGIS should be able to register at this point in rule. Wants to double check there is no statutory contradiction. Do not want to disqualify facilities not yet registered in WREGIS from claiming TRECs. Any other areas of discussion?

Andy Ginsburg – We discussed data availability, if not 100% of data is available to verify TRECs going forward, how would retroactive work if not available?

Bill Carlson – If you come in with incomplete set of data, also come in with suggestion as to how data should be discounted. Example, if only 80% of data, compromise that 30% of TRECs should be generated. There should be a discount mechanism as to what will be allowed to submit to WREGIS as a discounted number.

Tom Previs - Perhaps the 3<sup>rd</sup> party certifier should be responsible for proposing discount mechanism?

Andy Ginsburg – Should there be a limiting date to how far back retroactive credits should go back? Some period of time after the rules are adopted?

Bill Carlson – Perhaps 60 days within rule being filed to alert ODOE that there are retroactive credits? Then an additional 90 days to process?

Phil Zirngibl – How long are these RECs available before they are no longer usable? Is there a sunset on their eligibility? If they wait 5 years to claim retroactive TRECs, are they still available?

Tyler Pepple – There is a five year limitation, SB 1547 has adjusted the life of RECs.

Alex Schay – For purposes of TRECs, five year window.

Bill Carlson – Implement intent to file deadline and actual filing deadline.

Linc Cannon – 90 days' notice and 90 days to file may be not enough time.

Rebecca Smith – Will discuss timeline with stakeholders to make sure timeline is reasonable. Any other issues with monitoring/verification requirements?

Bill Carlson – Has ODOE looked at California Energy Commission for requirements? Their certification system in place is not overly burdensome and well done.

Rebecca Smith – Will need to add more detail around data requirement and storage requirements.

Bill Carlson – Suggest ODOE add the need for ODOE to retain audit rights. ODOE will want the ability to audit over a set period of time.

Andy Ginsburg – Is this data typically stored onsite?

Bill Carlson – Yes.

Andy Ginsburg – For how long?

Phil Zirngibl – 2 years, typically.

Michael O'Brien – Will TRECs mirror the life of regular RECs, all unlimited?

Rebecca Smith – Likely will mirror electrical RECs, feedback is that TRECs and RECs are similar from compliance standpoint.

Linc Cannon – There is nothing explicit in statute that says TRECs last longer.

Rebecca Smith – We will be accepting written comments with deadline COB August 12. Deadline will ensure enough time to process before next draft is released. Next work group meeting in September 7. Will reach out to stakeholders for location of next meeting that is the most convenient.

Linc Cannon – Later start time would be helpful, avoiding traffic.

Bill Carlson – Should meeting be held at a facility that will be effected by this bill? Facility in Roseburg, Lyons, Eugene, etc. Could also include a tour of the facility.

Rebecca Smith – Will distribute draft rule language to stakeholders prior to next stakeholder meeting. Still on schedule to submit rule language to Secretary of State.

The meeting was adjourned at 11:08 a.m.