

**BEFORE THE WASHINGTON
UTILITIES AND TRANSPORTATION COMMISSION**

Relating to Electricity Markets and Compliance
with the Clean Energy Transformation Act

DOCKET UE-210183

INITIAL COMMENTS OF PUBLIC COUNSEL

June 2, 2021

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I. INTRODUCTION

1. On May 3, 2021, the Washington Utilities and Transportation Commission (“UTC” or “Commission”) issued a Notice of Opportunity to File Written Comments (hereinafter “Notice”) regarding the treatment of energy storage for compliance with RCW 19.405.030 through RCW 19.405.050. The Washington Clean Energy Transformation Act (“CETA”)¹ directed the UTC and the Washington Department of Commerce (“Commerce”) to “adopt rules by June 30, 2022, defining requirements, including appropriate specification, verification, and reporting requirements, for the following: (a) Retail electric load met with market purchases and the western energy imbalance market or other centralized market administered by a market operator for the purposes of RCW 19.405.030 through 19.405.050; and (b) to address the prohibition on double counting of nonpower attributes under RCW 19.405.040(1) that could occur under other programs.”² The current Notice was issued as part of the CETA rulemaking process.
2. Public Counsel appreciates the opportunity to file comments in this matter and has engaged the services of Dr. Ezra Hausman of Ezra Hausman Consulting to assist in our participation in this docket. Dr. Hausman is an expert in energy and environmental economics who has over two decades of experience with energy market issues, including market design and restructuring, planning, ratemaking, environmental regulation, and pricing. A copy of Dr. Hausman’s Curriculum Vitae is attached as Attachment A.

¹ E.2d S.S.B. 5116, ch. 288, 66th Leg. (Wash. 2019) (codified at ch. 19.405 RCW).

² RCW 19.405.130(3).

II. GENERAL BACKGROUND

3. Many of the specific questions raised in the Notice pertain to the interaction between energy storage and renewable or nonemitting resource requirements under Washington law. A rigorous discussion of these questions requires additional background information on the accounting mechanisms relevant to these resources, including Renewable Energy Credit (REC) production and retirement.
4. RECs represent the “environmental attributes” of renewable electric power, as distinct from the power itself, which is otherwise indistinguishable from electric power from any other source.³ As a rule, one REC is “created” every time a megawatt-hour (MWh) of energy is produced by a qualifying renewable resource.⁴ RECs may then be sold to entities that have a renewable energy compliance obligation. Specifically, electric utilities under renewable energy mandates, such as renewable portfolio standards (RPS), frequently purchase RECs to meet this obligation. To prevent double-counting, each REC must be tracked from the time it is created through to the time it is verified and used for compliance, at which point it is deemed “retired.” Accordingly, neither a REC nor the environmental attributes it represents may be used for compliance purposes more than once or in more than one jurisdiction.
5. Under RCW 19.405.040(1)(a)(ii), the acquisition and retirement of RECs is insufficient for compliance by Washington utilities—they must also “**use electricity** from renewable resources and nonemitting electric generation in an amount equal to one hundred percent of the utility's retail electric loads over each multiyear compliance period.”⁵ While the obligation to

³ See RCW 19.285.030(20) for the definition of a REC in Washington.

⁴ See RCW 19.285.030(12) for the definition of qualifying renewable resources.

⁵ RCW 19.405.030(1)(b) permits alternative compliance mechanisms, including “unbundled” RECs, for 20 percent of this obligation through December 31st, 2045.

“use” the electricity in addition to controlling the renewable attributes adds complexity to the picture, it does not change the fact that each REC represents the renewable attributes of exactly one MWh of renewable energy for compliance purposes.

6. Whether a utility meets its compliance obligation by using renewable or nonemitting energy generated from its own portfolio or by purchasing such energy from the market, the only two terms in the equation are (1) the MWh of retail load of the utility, and (2) the documented number of MWh of qualifying renewable and nonemitting energy, either produced or purchased by the utility. The utility’s compliance obligation for each compliance period may be represented as follows:

$$\text{MWh of qualifying energy} \geq \text{RPS obligation (\%)} \times \text{MWh of retail load}$$

7. Note that this equation is independent of transmission and distribution system losses, and of any economy non-retail sales and purchases of power through bilateral markets or a balancing market such as the western regional Energy Imbalance Market. This makes the calculation of a utility’s obligation relatively straightforward.

8. Since January 2012, Washington’s electric utilities have been required to meet an increasing percentage of their retail load⁶ with a combination of their own renewable generation and RECs. That obligation now covers 15 percent of load for each utility.⁷ The required contribution from renewable energy and nonemitting sources will increase under CETA, such that each Washington utility will be required to “use electricity from renewable resources and nonemitting electric generation in an amount equal to one hundred percent of the utility's retail

⁶ Calculated as the average of the utility's load for the previous two years. *See* RCW 19.285.040(2)(c).

⁷ “At least fifteen percent of its load by January 1, 2020, and each year thereafter.” *See* RCW 19.285.040(2)(a).

electric loads over each multiyear compliance period” starting in 2030.⁸ Utilities may still use alternative compliance options, including RECs, to meet 20 percent of this obligation through December 31, 2044.⁹ Importantly, this standard is still defined in terms of each utility’s “retail electric load,” *i.e.*, the number of MWh actually billed to retail customers. Thus, the number of MWh that must be sourced from renewable or non-emitting sources is still easily calculated on a MWh for MWh basis, without regard to energy losses, temporary storage of energy, wholesale energy transactions, or any other such consideration.

9. If the utility fails to satisfy 100 percent of its CETA obligation through renewable and nonemitting energy generation or purchase, the situation becomes significantly more complicated. In such a scenario, the utility must pay a penalty (or make an alternative compliance payment equal to the penalty) calculated to represent “each megawatt-hour of electric generation used to meet load that is not electricity from a renewable resource or nonemitting electric generation.”¹⁰ The penalty is scaled based on the carbon content of the source used to serve each MWh of load.¹¹ Under these circumstances, the calculation becomes subject to assumptions and requires more complex inputs to establish the deemed source and disposition of the energy purchased and used by the utility.

10. As an example, assume a utility falls short of its total renewable and non-emitting energy compliance obligation by 50 MWh, relative to its target for a given compliance period. During this period, the utility produced or purchased enough energy overall to meet its load obligation, and cover line losses and to charge its storage resources; it also made wholesale sales of excess

⁸ RCW 19.405.040(1)(a).

⁹ RCW 19.405.040(1)(b)(ii).

¹⁰ RCW 19.405.090(1)(a).

¹¹ *Ibid.*

energy to other utilities, and purchased energy from the market to cover high-demand periods. Total market purchases would have far exceeded the 50 MWh compliance shortfall, and may have included a combination of MWh from renewable and nonemitting resources, along with power from fossil-fuel plants¹² and undifferentiated power from the energy marketer. Herein lies the complexity: the utility cannot determine which energy physically served its customers versus being used for other purposes, used to charge storage, or lost in transmission.

11. In this case it is necessary to devise a set of rules for accounting purposes. One such rule would be to assume that a blended pool of energy from all sources was used for each purpose, and to apply a weighted average compliance payment based on the standards set in RCW 19.405.090(1)(a) and the mix of sources deemed to have served the utility. This would require another rule to establish the deemed energy mix of any purchases of undifferentiated energy. But whatever the rule, the need to identify specific energy sources only arises for the calculation of a penalty under RCW 19.405.090(1)(a). The compliance requirement for renewable energy and RECs, under either CETA or the Washington RPS, depends only on the total MWh of retail electric load served.
12. With this foundation, Public Counsel offers the following responses to the questions promulgated in the Notice.

¹² Coal generation may only be used through 2025, at which time, utilities are prohibited from including coal-fired resources from its allocation of electricity. RCW 19.405.030.

III. RESPONSES TO NOTICE QUESTIONS

Question 1: What information regarding the use of storage in meeting its CETA requirements should be included in the utility's CETA compliance report?

13. While electric energy storage is a valuable resource for many purposes, including in integrating high levels of variable-output renewable energy resources, CETA has no specific mandate for investment in, nor use of, electricity storage. Each utility must make prudent investments in its operations and infrastructure to meet its own reliability and other requirements, including requirements under CETA. These decisions may include whether it invests in, and uses, energy storage.
14. Assuming each utility's compliance report will include reporting on investments and operational costs of meeting CETA requirements, these may include investments and costs associated with storage. However, any such reporting should clearly distinguish costs that are specifically related to CETA compliance versus those made for other operational purposes. The report should also include any operational benefits derived from storage resources, such as managing load peaks and avoided distribution investments.
15. However, there does not appear to be a requirement to report specific MW or MWh of storage use as part of CETA compliance, as there is no requirement of, or standard for, storage use under the law. Utilities should be required to document existing and proposed or anticipated storage infrastructure as part of their Integrated Resource Plans, including in the analysis of renewable energy integration as set forth in RCW 19.280.030(1)(e).

Question 2: How should the energy used and provided by energy storage resources be accounted for to ensure that nonpower attributes of renewable generation are not double counted? What compliance and reporting requirements would assure verification and prevent double counting?

16. The best way to ensure that use of energy storage resources does not result in double counting of nonpower attributes of renewable generation is to leave storage out of the calculation of CETA compliance entirely. As described above, CETA compliance should be determined based on retail sales versus documented number of MWh generated or acquired from renewable or nonemitting resources. For example, if a storage resource is on the customer's side of the meter and the customer is enrolled in net metering, the retail sales to that customer for CETA compliance purposes should be calculated based on net sales, exactly as they are for billing purposes. Energy used by the customer for any purpose, including to charge the customer's storage, would be counted as part of that customer's retail load. Any energy returned to the grid would be subtracted from the customer's retail load.

Question 3: Should compliance and reporting rules related to energy storage be differentiated based on any of the following:

- a. The storage technology, such as battery storage or pumped hydro storage?***
- b. The location of the storage resource within the grid, such as collocated with a generating resource, interconnected in the transmission or distribution system, or at a retail customer's premise?***
- c. The ownership of the storage resource, such as a utility subject to CETA, a non-utility operator, or a retail end use customer.***

17. Answers to Question 3:

- a. No, compliance and reporting rules related to energy storage does not need to be differentiated based on the storage technology.
- b. Compliance and reporting rules related to energy storage need only be differentiated to the extent that they are either “behind the meter” (i.e., affecting retail load) or “in front of the meter” as part of the distribution system. See response to Question 6 for more discussion of this issue.
- c. Compliance and reporting rules related to energy storage need only be differentiated based on the ownership of the storage resource to the extent that they are either “behind the meter” (i.e., affecting retail load) or “in front of the meter” as part of the distribution system. If storage resources are used for CETA compliance or other operational purpose, the costs and operational characteristics of these resources should be reported to the Commission and included in each utility’s Integrated Resource Plan.

Question 4: For a storage resource that is interconnected in the power grid, one possible approach to compliance is to treat it like a generating resource. The storage resource would be registered in the Western Renewable Energy Generation Information System (WREGIS). It would retire RECs for the renewable electricity used to charge the storage device and report verified data on discharge of electricity into the grid. WREGIS would create renewable energy credits (RECs) for the electricity discharged into the grid. If it used a combination of renewable and fossil sources for charging, a multi-fuel calculation would be applied to ensure that RECs are created only for the renewable portion of electricity generated into the grid. Please comment on the advantages, disadvantages, and necessary elements of this approach.

18. Treating storage like a generating resource for CETA compliance purposes is not advisable. Nor should RECs be retired for energy used to recharge the storage or generated for energy discharged, as long as the storage resource is on the utility side of the meter. Any attempt to include storage charging and discharging would unnecessarily complicate compliance calculations. Losses associated with energy conversion through a storage system are similar to losses associated with the transmission and distribution systems. Transmission and distribution line loss is not calculated to determine CETA or RPS compliance, and neither should loss associated with energy conversion through storage. CETA and RPS compliance is only concerned with retail load *vis-à-vis* documented acquisition of renewable or nonemitting energy or RECs, all of which can be determined independent of a utility's use of storage.

19. If the Commission were to require utilities to retire RECs for charging storage and issue RECs for discharges, that would effectively penalize utilities for using storage resources. Such a requirement would also go beyond the language of CETA, which states that Washington utilities

must “use electricity from renewable resources and nonemitting electric generation in an amount equal to **one hundred percent of the utility's retail electric loads** over each multiyear compliance period.”¹³

Question 5: For a storage resource that is collocated with a renewable generating facility:

- a. Should the storage accounting rules specify that RECs are created based on the amount of electricity generated or on the amount of electricity delivered into the grid?***
- b. How should power from the grid used to charge the storage resource be accounted for?***

20. Answers to Question 5:

- a. RECs should be created based on the amount of energy generated by the renewable energy resource, measured at the meter where the resource is connected to the transmission or distribution system. In the case where storage is integrated behind this meter, RECs should be calculated based on the output of the combined system. As demonstrated in the examples provided in response to Question 9, this approach has been taken in several states to prevent double-counting when energy storage is an integrated part of a renewable resource.
- b. In the case where energy from the grid is used to charge a storage resource that is “behind the meter” at a renewable generating unit, RECs should be awarded based on the net output of the combined system. If the output of the renewable resource is metered and connected to the grid separately from the storage resource, RECs should be created based on the metered output of the renewable resource.

¹³ E.2d S.S.B. 5116, 66th Leg., ch. 288, §4(1)(a)(ii) (Wash. 2019). Emphasis added.

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Question 6: For a storage resource located at a retail customer’s premise, should the electricity used to charge the resource be included in the load of the utility for purposes of CETA? If the storage resource returns electricity to the grid, should this electricity be subtracted from the load of the utility for purposes of CETA?

21. If a storage resource is located behind the meter at a retail customer’s premise, it should be treated as part of that customer’s retail load—both positive and negative—for net metering purposes. For example, if a customer used 100 MWh of energy from the grid to charge behind-the-meter storage during a compliance period and returns 10 MWh to the grid, this should constitute 90 MWh of net load for purposes of calculating renewable and nonemitting energy requirements for the utility, under both CETA and the Washington RPS. This will help to ensure that the utility’s retail load calculated for billing purposes is equal to its retail load for CETA and RPS compliance purposes.

Question 7: Use of a storage resource will result in electricity being delivered to load at a different time than the electricity was generated. WREGIS creates RECs with a vintage specified as month and year. Is month and year vintage information sufficient to ensure that renewable energy claims are accurate and that double counting of renewable generation does not occur? If not, what vintage detail should be required and why?

22. Yes, month and year is sufficient vintage information to ensure that renewable energy claims are accurate and to avoid double counting of renewable attributes. To the extent that the vintage of RECs is relevant to a utility’s compliance obligation, for example under RCW 19.405.040(1)(b)(ii)(B), the vintage specified through WREGIS is an appropriate and

sufficient datum for ensuring that the REC qualifies for use during a specific compliance period. The use of storage does not affect this calculation in any way.

Question 8: If a storage facility operator charges an energy storage facility with a combination of renewable and non-renewable electricity, what verification, documentation, or calculation requirements would ensure that the output of the storage resource is accurately accounted for as renewable or non-renewable?

23. No such documentation is required. Compliance with CETA only requires that the utility can document acquisition of enough MWh of renewable and nonemitting energy generation to accommodate 100 percent of retail load, whether or not storage is used on the system.

Question 9: Are there any energy storage accounting requirements used by other jurisdictions or by voluntary programs or protocols that the Commission should consider, either as guidance in adopting rules for CETA or to avoid potential conflicts in approaches?

24. Numerous other jurisdictions address storage as part of their clean energy policies, including RPS programs. Public Counsel is not aware of any jurisdictions that award RECs specifically for energy discharged from storage, except for the output of integrated renewable energy and storage systems as described below, and in some cases (such as Nevada¹⁴) from pumped storage hydropower. For a general overview of treatment of storage in renewable energy policies, see Edward Holt and Todd Olinsky-Paul's "Does Energy Storage Fit in an RPS?"¹⁵

¹⁴ NEV. REV. STAT. § 704.7811(3) provides limited circumstances in which pumped storage may be used to generate RECs under the Nevada RPS.

¹⁵ Edward A. Holt and Todd Olinsky-Paul, *Does Energy Storage Fit in an RPS?*, CLEAN ENERGY STATES ALLIANCE, prepared for The RPS Collaborative (Rev. Ed. July 2016), available at <https://cdn.cesa.org/wp-content/uploads/Energy-Storage-and-RPS-Holt.pdf>.

25. As some examples:
- California provides credit for integrated renewable energy and storage facilities, based on the net output of the combined facility.¹⁶
 - Kansas defines “Renewable Energy Resources” for the purpose of RPS compliance to include “net renewable generation capacity from . . . energy storage that is connected to any renewable generation by means of energy storage equipment including, but not limited to, batteries, fly wheels, compressed air storage and pumped hydro.”¹⁷ This appears to be similar to California’s approach.
 - Missouri awards RECs for generation from hydrogen fuel cells if the hydrogen was produced using renewable energy, *and* no RECs were created from that same energy.¹⁸ This is analogous to the California and Kansas rules in that it is the output of the combined system—renewable generation to produce hydrogen and fuel cell storage—that is eligible for production of RECs.
26. As noted in response to Question 5, Public Counsel believes that it is appropriate to award RECs for the combined output of integrated renewable energy/storage facilities following the approach used in California. In all other cases, utility-owned storage should be considered neither renewable energy generation, nor retail load and should not be considered for purposes of CETA compliance. This would support both the letter and the intent of CETA, and would help to avoid any conflicts with other jurisdictions.

¹⁶ Cal. Energy Comm’n, *Renewables Portfolio Standard Eligibility*, § 3F (9th ed. Jan. 2017), available at <https://efiling.energy.ca.gov/getdocument.aspx?tn=217317>.

¹⁷ KAN. STAT. ANN. § 66-1257(f) (2012).

¹⁸ MO. CODE REGS. tit. 4, § 4240-20.100(3)(D): “RECs that are generated with fuel cell energy using hydrogen derived from a renewable energy resource are eligible for compliance purposes only to the extent that the energy used to generate the hydrogen did not create RECs.”

IV. CONCLUSION

27. Public Counsel appreciates the opportunity to provide these comments and looks forward to reviewing comments from other stakeholders. Public Counsel looks forward to participating in the workshop scheduled to discuss storage scheduled for June 22, 2021. If you have any questions about these comments, please contact Dr. Hausman at ezra@ezrahausman.com, Sarah Laycock at sarah.laycock@atg.wa.gov, or Lisa Gafken at lisa.gafken@atg.wa.gov.

DATED this 2nd day of June, 2021.

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