

BEFORE THE PUBLIC UTILITY COMMISSION

OF OREGON

AR 616

In the Matter of Rulemaking Related to
Renewable Portfolio Standard Planning and
Reports

PROPOSED RULE LANGUAGE AND
REQUEST FOR COMMENT ON
ASSOCIATED ENERGY STORAGE

Staff of the Public Utility Commission of Oregon (PUC Staff or Staff) seeks input from stakeholders on the proposed rule language. Please review the following document and submit any comments to the docket by October 22, 2020. Comments can be emailed to filingcenter@puc.state.or.us.

Dated this 8th day of October 2020, Salem, Oregon.

Natascha Smith, Utility Analyst

natascha.smith@state.or.us

503-579-7925

Background

In 2016, the Oregon Legislature passed SB 1547, commonly known as the “coal-to-clean” bill. Section 11 of the bill addresses “Recovery of Costs for Complying with Renewable Portfolio Standard” and, among other things, provides that:¹

(2)(a) The Public Utility Commission shall establish an automatic adjustment clause as defined in ORS 757.210 or another method that allows timely recovery of costs prudently incurred by an electric company to construct or otherwise acquire facilities that generate electricity from renewable energy sources [and for], costs related to associated electricity transmission **and costs related to associated energy storage.**

As part of AR 616, The Commission directed Staff to define the term ‘associated energy storage’ as it pertains to the automatic recovery of costs related to the development of renewable resources. Staff has discussed this term with stakeholders at one workshop and provided two opportunities for written comment. Staff has found no other locations in the OARs in which ‘associated’ or ‘energy storage’ are clearly defined, nor is ‘associated transmission’ defined in the RPS context. Because of this, Staff looked to the practices of other states, including California, how Renewable Energy Certificate (REC) regimes such as WREGIS and Green-e deal with energy storage, and the consequences of adopting various definitions.

Stakeholder Input

Staff consulted stakeholders for their opinions on ‘associated energy storage’ asking them the following questions:

- 1) What was the purpose of including ‘associated energy storage’ in the language SB 1547? What facts or policy reasons support your position?
- 2) Should the administrative rules require ‘associated energy storage’ to be located on the site of a renewable resource? What legal or policy reasons support your position?
- 3) How else might energy storage be connected to a renewable energy resource?
- 4) Besides co-location, what metrics are available for determining if energy storage is associated with a renewable energy resource?

Staff received comments from 5 stakeholders representing Oregon’s utilities, consumer groups, and environmental organizations.² Staff also received input from the Oregon Department of Energy, highlighting important considerations.

Organization	Summary of Comments
AWEC	It is AWEC’s position that the term ‘associated energy storage’ requires the storage facility be directly supportive of one or more renewable facilities which usually, but not necessarily, would be co-located. The rule should create a rebuttable presumption that collocated energy storage is “associated” with renewable energy and specify that any other energy storage system must directly support one or more renewable energy projects to be “associated” with energy storage.

¹ ORS 469A.120(2)(a)

² See Docket No AR 616 for full stakeholder comments.

CUB	<p>Purpose: The language was added to the RPS to reflect the reality that energy storage was beginning to be directly paired with solar. This language was added to the RPS to avoid a situation in which an Oregon utility built a solar plus battery project and had to use two different mechanisms for rate recovery.</p> <p>Rule: Unless an energy storage project is physically connected to an RPS-eligible resource, it should not be eligible for RAC cost recovery.</p>
Renewable NW	<p>Purpose: the bill captures the will of the people to clean up our energy supply and puts us firmly on a path to grow our generous endowment of renewable energy resources to meet our needs.</p> <p>Rule: Requiring co-located resources with a point of common coupling would ensure that an associated storage system eligible for cost recovery via an automatic adjustment clause is most likely to be charged from an RPS-eligible renewable resource and would provide tangible support for its eligibility to apply for the sizable ITC.</p>
PAC	<p>Purpose: The use of the term “associated” was purposeful and recognizes that any storage can be linked to renewable resources, and that such a pairing can provide considerable benefits as increasing levels of renewables are deployed.</p> <p>Rule: It would be most appropriate to conclude that all energy storage resources are associated with renewable resources. Alternately, it would be possible to link storage to renewable resources based on the timing of the acquisition of the storage.</p>
PGE	<p>Purpose: to recognize that storage is a necessary resource for the broad facilitation of compliance with the updated renewable portfolio standards, established within the same bill.</p> <p>Rule: All storage that is necessary to facilitate this integration [of renewable generation] should be considered ‘associated energy storage’ and should be eligible for recovery under ORS 469A.120 in order to match the intentions of lawmakers.</p>

Stakeholders took either a narrow or a broad view of the term ‘associated energy storage.’ Narrowly defined, ‘associated’ could require a physical relationship between the storage and renewable resource. Taking a broader view, all energy storage connected to the grid is associated with renewable generation on that same grid. When considering if a narrow or broad view of the term is appropriate, Staff looked to the impacts of adopting each definition.

Considerations

‘Associated energy storage,’ and its definition relates to several aspects of the RPS. Cost recovery under the Renewable Adjustment Clause (RAC) is a primary consideration, but Staff also considered implication of the definition adopted related to accounting of RECs, eligibility for tax credits, and larger issues defining the status of energy storage technologies.

Context

Staff’s first consideration was the context of the term ‘associated energy storage’ within ORS 469A.120. Specifically, that the term is located in the section that provides automatic recovery of costs for renewable generating facilities, associated transmission and now “associated energy storage.’ Additionally, the section is entitled “Recovery of Costs for Complying with Renewable Portfolio Standard.” Staff views the context of the term within the statute as narrowing the scope of consideration to ‘associated energy storage’ related to the recovery of renewables’ cost through the RAC

Accounting of RECs

Staff has concerns about how a broad view of the term ‘associated energy storage’ might affect REC accounting.

- **Double counting of qualifying electricity.** Double counting of qualifying electricity generation can occur if RECs are generated by both a generating resource and any storage devices that were charged by that same resources. It is important that RPS rules avoid double counting to maintain the credibility of RECs as a certification of renewable energy use and ensure the correct price signals are sent to the market for new project development. As ODOE noted in its comments, the current RPS statute prohibits this form of double counting regarding electricity generated from hydrogen but does not address this for other energy storage technology.³ Adopting a narrow view of ‘associated energy storage’ could help mitigate this concern.
- **Accounting for storage losses.** Energy storage technologies lose energy when converting power from one medium to another. Accounting for these losses under the RPS is, in part, a policy decision. The RPS could ignore storage losses, as it does with transmission losses, and attribute RECs based on the generation resource output. Alternatively, the RPS could require only net electricity be eligible to generate RECs by accounting for these storage losses. Adopting a broader definition of ‘associated energy storage’ would require Staff to investigate and articulate policy to address this challenge.

Existing Regimes and Requirements

Staff considered limitations on energy storage in existing regimes when defining ‘associated energy storage.’

- **WREGIS Requirements.** Currently under Section 9 of WREGIS’ Operating Rules,⁴ electricity from battery storage can generate RECs under a specific condition, namely when co-located with an RPS-eligible resource on the high-side (generator side) of the connection to the grid and coupled with a uni-directional inverter that allows the battery to be charged only by that resource. In this situation, any electricity generated is metered downstream of the generation resource(s) and batteries. RECs are created at the point of grid interconnection and calculated based on the output of the combined generator and battery system. Efficiency losses resulting from the conversion of electricity to battery energy and back to electricity do not impact this generation accounting for RECs because these efficiency losses occur behind the meter.

³ See ORS 469A.025(7) “Electricity generated from hydrogen gas, including electricity generated by hydrogen power stations using anhydrous ammonia as a fuel source, may be used to comply with a renewable portfolio standard if: (a) The electricity is derived from (A) Any source of energy described in subsection (1) or (2) of this section; or (B) A hydroelectric facility that complies with subsection (4) of this section and that is certified as a low-impact hydroelectric facility as described in ORS 469A.020 (4); and (b) The output of the original source of energy is not also used to comply with a renewable portfolio standard.”

⁴ WREGIS storage rules, <https://www.wecc.org/Corporate/WREGIS%20Operating%20Rules.pdf>

- **Green-e Guidance.** Under Green-e’s Renewable Energy Standard for the United States, energy storage is not qualifying sources of renewable generation.⁵
- **Investment Tax Credit (ITC) Requirements.** The full ITC, currently 26%, may only be applied to a developer’s capital expenditure on a hybrid system if the storage is charged “primarily” from renewable energy resources. The ITC allows up to 25% grid charging with prorated rates, then applied to the 26% tax credit depending on how much energy is charged from renewables. A hybrid system is thus eligible to reduce 19.5-26% of its total capital expenditure based on the proportion of storage capacity charged from renewable energy.⁶ Independently located hybrid resources are not allowed to capture this tax credit, except under specified exemptions. Co-located resources thus provide benefits both operationally and financially by easily shifting renewable energy from low load hours to high load hours and the allowing for easy application of tax credits that reduce financial burden on utilities and thus, ultimately, customers.
- **FERC QF Requirements.** While tangential to the issue of associated energy storage, CUB, brought up the Luz Case where FERC reiterated that 75% or more of the total energy input into energy storage must be renewable for the storage system to qualify as a QF.⁷ Though Luz deals with energy storage in the context of PURPA, CUB argues that a similar standard should be applied here, requiring at least 75% of the energy input into an energy storage system coming from qualifying electricity for the system to be considered ‘associated energy storage’ for RPS purposes.

Status of Energy Storage

Different storage technologies can perform different services, including load-leveling, arbitrage, firm or peaking capacity, ancillary services, transmission and distribution upgrade deferrals, or some combination of these. Some of these services are closely related to integration of renewables, while others have value beyond renewable integration or are not directly related to integration of renewables. In addition, for some technologies, there is not always a clear definition of how to define their role in terms of whether they are generation resources, distribution resources, or devices through which energy passes onto the grid.

Staff’s Position

Staff agrees that non-emitting dispatchable capacity resources, such as storage, are valuable for integrating renewables into least cost, least risk resource portfolios, whether they are physically colocated or not. However, adopting a broad interpretation of ‘associated energy storage’ complicates REC accounting, does not align well with similar national and regional definitions, and creates practical issues designating the purpose or role of energy storage resources in a

⁵ Green-e, Appendix D: Green-e Renewable Energy Standard for Canada and the United States, version 3.4, updated Nov. 2019. <https://www.green-e.org/docs/energy/Green-e%20Standard%20v3.4%20US.pdf>.

⁶ Federal Tax Incentives for Energy Storage Systems. <https://www.nrel.gov/docs/fy18osti/70384.pdf>.

⁷ Luz Development and Finance Corp., 51 FERC P 61078, April 1990.

resource portfolio. Therefore, Staff chooses to adopt a narrow view of the term ‘associated energy storage’ in this context.

Proposed Language

860-083-0600

Associated Energy Storage

- (1) Energy storage technologies are not inherently renewable as they are not dependent on the use of a renewable energy resource. However, an energy storage device may be considered associated energy storage, consistent with ORS 469A.120(2)(a), if the device is integrated into the facility, such that the energy storage device is capable of storing only energy produced by the facility, either as an intermediary form of energy during the generation cycle or after electricity has been generated.
 - a. Associated energy storage must be co-located with an RPS-eligible resource on the high-side, generator side, of the connection to the grid
 - b. Associated energy storage must be coupled with a uni-directional inverter
- (2) A facility certified as RPS-eligible may include associated energy storage if it does not conflict with other RPS-eligibility criteria, but the storage unit itself will not be separately certified.