



UM 2273

Commission Workshop on Renewable Energy Certificates

June 29, 2023

Emissions Policy Approaches

Points of regulation

- **Load-based (aka consumption-based)**
 - **Focus:** Regulating emissions associated with electricity consumed/delivered/sold
 - **Responsible for emissions:** Entity that buys the energy
 - **Requires:** Contractual tracking instrument outside the grid to trace energy transactions to the end use, such as RECs
- **Source-based (aka generation-based, production-based)**
 - **Focus:** Regulating emissions associated with electricity generation
 - **Responsible for emissions:** Entity that generates the energy
 - **Requires:** Tracking energy from resources owned or controlled by a supplier

Compatibility

Questions when load-based programs and source-based programs exist simultaneously

- Can the policies complement each other by measuring different things?
 - e.g., a floor for RE generation added to the grid versus a cap for emissions from thermal resources
- Are there double counting concerns with the claims being made and by whom?
- Are voluntary buyers driving reductions BEYOND regulation – creating regulatory surplus or are they paying for covered entities' compliance?

- Oregon's Renewable Portfolio Standard is a *load-based* program with a long history of REC-based accounting
- Other voluntary load-based programs with RECs exist in Oregon
 - e.g., community solar, net metering, green tariff, unbundled RECs

HB 2021 Key Provisions

Emissions reductions

ORS 469A.410 (HB 2021, Section 3)

- Subject utilities are required reduce emissions below designated targets in 2030, 2035 and 2040.
 - if OPUC has not excused compliance based on reliability (Section 9) or cost (Section 10)
- Emissions are measured based on the information reported by utilities to DEQ under ORS 468A.280 and associated administrative rules*.
- “Nothing in [HB 2021] may be construed as establishing a standard that requires a retail electricity provider to track electricity to end use retail customers.”

Compliance determination

ORS 469A.420 (HB 2021, Section 5)

- Utilities provide annual emissions reports to DEQ and DEQ reports its findings to the Commission using *DEQ's methods*.
- The Commission must use the annual emissions reported from DEQ “to determine whether or not the retail electricity provider has met the clean energy targets.”

Compliance determination

ORS 469A.430 (HB 2021, Section 7)

- “For the purposes of determining compliance with [HB 2021], electricity shall have the emission attributes of the underlying generating resource.”

ORS 469A.430 (HB 2021, Section 8)

- The Commission must exclude unplanned emissions that were required to meet load and emissions associated with electricity from net metering and Public Utility Regulatory Policies Act (PURPA) qualifying facilities.
- DEQ must treat specified power from Bonneville Power Administration consistent with *DEQ’s Methods*.

Complexities

ORS 469A.400 (HB 2021, Section 1)

- DEQ establishes the baseline emissions level upon which emissions reduction targets are set. Baseline emissions are calculated based on historical emissions “associated with the electricity sold to retail electricity consumers as reported under [*DEQ’s Methods*].”

ORS 469A.430 (HB 2021, Section 5)

- Direct Access providers’ compliance is based on “annual greenhouse gas emissions associated with electricity sold by the electricity service supplier to retail electricity consumers”.

Complexities cont.

ORS 469A.460 (HB 2021, Section 13)

- No modification of the RPS statute.

ORS 469A.475 (HB 2021, Section 15)

- Goal of aligning accounting methodologies with markets where possible, while also ensuring market rules do not undermine state policy objectives.
- Recognition that practices may need to change as markets evolve.
- Consideration for review of DEQ's regional emissions assumptions over time.

Interim considerations

ORS 469A.420 (HB 2021, Section 5)

- DEQ will verify projected emissions reductions in utility plans using *DEQ's Methods* and report to the Commission during the OPUC's plan review process.

ORS 469A.415(HB 2021, Section 4)

- The Commission shall ensure that utilities demonstrate continual progress in line with the projections in their plans.

Prior to 2030, utilities will continue to report their emissions to DEQ annually under *DEQ's Methods*.

Are there considerations for the UM 2273 accounting and REC issues during this interim reporting and progress monitoring period?

DEQ's Methods

DEQ GHG Emissions Accounting

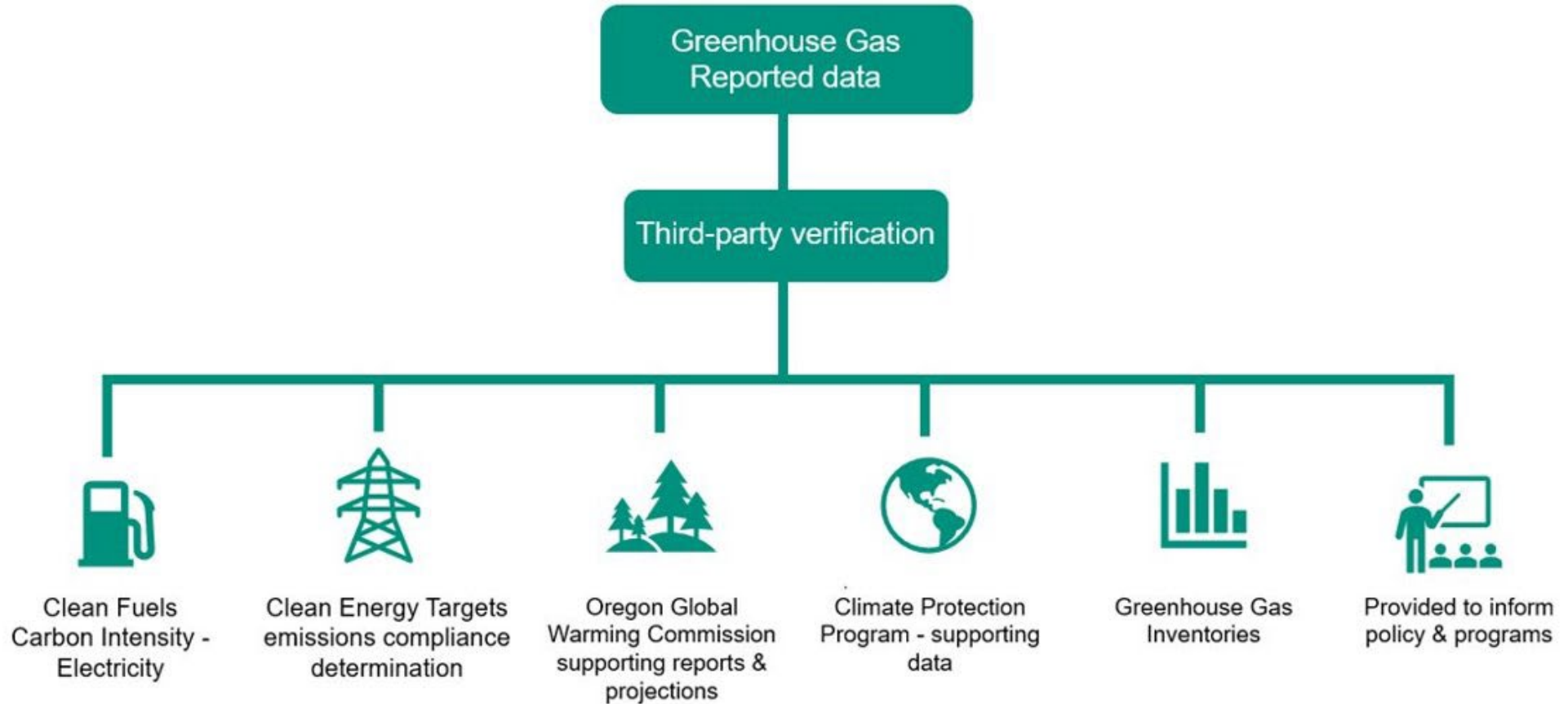
Overview of Electricity Supplier Reporting

June 29, 2023

Elizabeth Elbel,

Oregon DEQ Greenhouse Gas Reporting Program

DEQ GHG Reporting Program



Background: GHG Reporting Authority

Oregon Revised Statute 468A provides authority to the Environmental Quality Commission to require GHG reporting from certain sources:

- ORS 468A – Air Quality
- ORS 468A.050 - Classification of air contamination sources; registration and reporting of sources; rules; fees
- ORS 468A.280 – Electricity; fossil fuels; registration and reporting requirement rules

Rules adopted by the commission under this section for electricity that is imported, sold, allocated or distributed for use in this state may require reporting of information necessary to determine greenhouse gas emissions from generating facilities used to produce the electricity and related electricity transmission line losses.

Background: GHG Reporting Rules

Oregon Administrative Rules Chapter 340, Division 215 include applicability and requirements for reporting:

- Applicability for Electricity Suppliers (OAR 340-215-0030(5))

Electricity suppliers. All investor-owned utilities, multi-jurisdictional utilities, electricity service suppliers, consumer-owned utilities, and other persons that import, sell, allocate, or distribute electricity **to end users in the state** must register and report in compliance with this division.

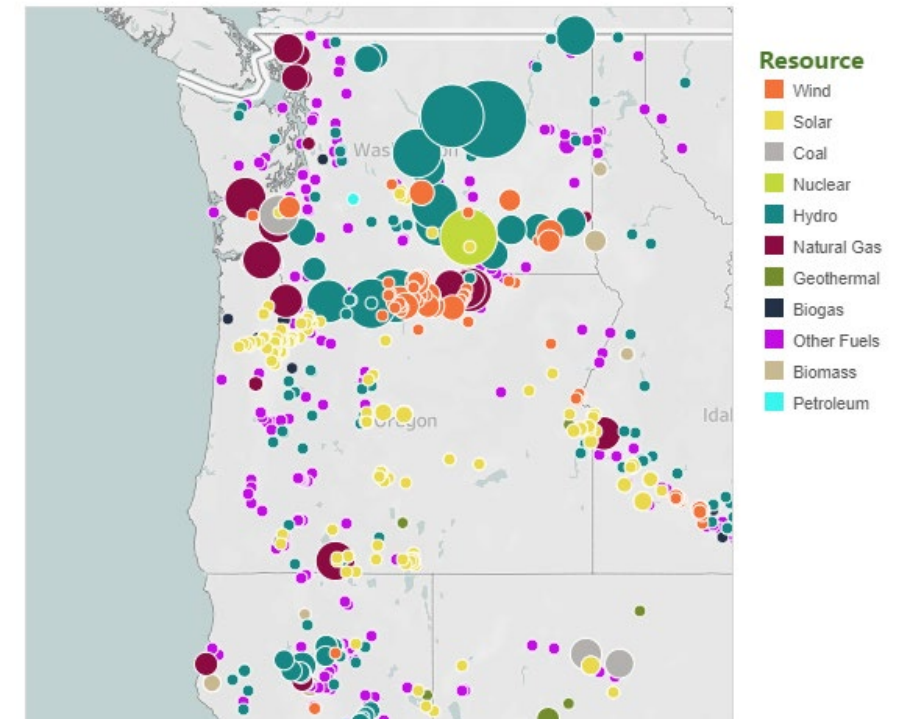
Emission Quantification Methodology

DEQ's GHG reporting rules require electricity suppliers to report the **megawatt-hours** and **associated greenhouse gas emissions from the generation of electricity supplied** to end users in Oregon, regardless of where the electricity was generated.

They must:

- Use DEQ assigned emission factors for calculating direct GHG emissions based on generating resource.
- Separately report for each specified and unspecified source
- Apply a 2 % transmission loss correction factor for power not measured at the busbar

Western Generation



DEQ Assigned Emission Factors

For reporting purposes, DEQ annually calculates and assigns emission factors to specified source facilities:

- The emissions factors account for actual greenhouse gas emissions resulting from the generation of electricity occurring at each specified facility
- Separately account for anthropogenic and biogenic emissions
- Utilize 100-year time horizon Global Warming Potentials (GWP) and publicly available emissions and generation data

Greenhouse gas reporting rules prescribe a default emissions factor for unspecified power.

Unspecified Source Emission Factor

GHG RP rules require the use of the default emission factor of **0.428 (MTCO₂e/MWh)** for energy originating from an unspecified source. This includes power that was not designated for delivery from a specific source at the time of entry into the transaction.

Energy Markets: The GHG RP rules also currently assign the default unspecified emission factor rate to power purchases from the energy imbalance or other centralized.

Specified Source Emission Factors

Under Oregon's GHG RP rules, a specified source refers to a source of electricity that is either owned by the utility, purchased through a pre-existing contract or from a DEQ-approved Asset Controlling Supplier.

DEQ assigns facility-specific emission factors to each specified source annually based on facility specific data.

- **Non-emitting sources:** For non-emitting resources such as solar, wind, hydro, nuclear and closed-loop geothermal, the emission factor is zero, as no direct emissions are produced from those generation facilities.
- **GHG-emitting sources:** DEQ totals the facility-level emissions for the calendar year from electricity generation in metric tons of carbon dioxide equivalent (MTCO₂e) and divides that total by the net electricity generation in MWh.

$$\frac{\text{Source Annual GHG Emissions MTCO}_2\text{e}}{\text{Source Annual Net Generation MWh}} = \text{Facility Specific Emission Factor} \left(\frac{\text{MTCO}_2\text{e}}{\text{MWh}} \right)$$

Resource: [Specified source emission factor methods](#)

Multi-jurisdictional Utility Reporting

The Multi-Jurisdictional (MJ) approach applies to utilities that is an electricity retail provider to customers in Oregon and at least one other state.

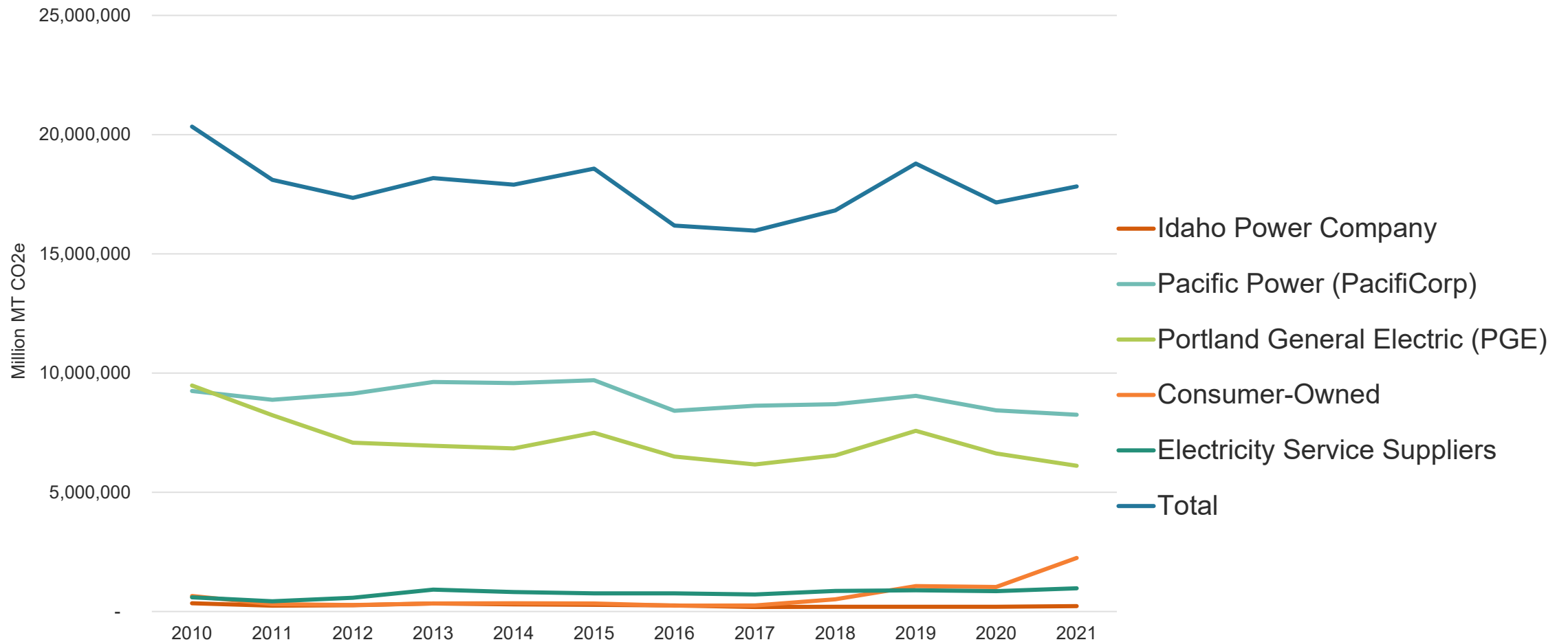
Report total MWh and greenhouse gas emissions from the generation of electricity from specified and unspecified sources in the **utility's service territory or power system** and report the following:

- (A) Wholesale electricity purchased and taken from specified sources (MWh);
- (B) Wholesale electricity purchased from unspecified sources (MWh);
- (C) Wholesale electricity sold from specified sources (MWh); and
- (D) Retail sales (MWh) to customers in Oregon's portion of the utility's service territory or power system

To calculate total emissions from a multijurisdictional entity, the DEQ calculated system emission factor is applied to the MWh delivered to end-users in Oregon.

$$\text{CO}_2\text{e} = \text{MWh delivered in OR} \times \text{TLF} \times \text{system emission factor}$$

GHG Electricity Supplier Emissions



Additional considerations for HB 2021

What modifications are made for HB 2021?

- HB 2021 excludes emissions associated with electricity from net metering or a qualifying facility.
- Targets apply specifically to anthropogenic emissions
- For the purpose of HB 2021, DEQ has also developed default emission factors for use in Clean Energy Plans.
- Assessment of compliance in a target year will be based on DEQ prescribed emission factors.

Resource: [Assigned emission factors for use in 2023 Clean Energy Plans](#)

Thank you!

DEQ Resources:

- [DEQ Greenhouse Gas Reporting Program](#)
- [DEQ specified source emission factor methodology](#)
- [DEQ's HB 2021: Clean Energy Targets Website](#)
- [Overview of HB 2021 emissions quantification methodology](#)
- [DEQ assigned emissions factors for use in 2023 Clean Energy Plans](#)
- Contact us: GHGreport@deq.Oregon.gov

Questions to consider

Is HB 2021 a generation-based program with a carve out for generation sold?

Or, is HB 2021 a load-based program that does not consider attributes or tracking energy to end use customers?

How does participation in centralized markets rather than controlling dispatch in each BA impact this discussion?

Emissions Accounting in Centralized Markets

Why join an electricity market?

- Benefits identified in HB 2021 Section 15:
 - “The Legislative Assembly finds that existing and future electricity markets will play a critical role in the transformation of the electric sector to nonemitting sources, as well as enabling load serving entities to reduce costs and serve load reliably by accessing resource and load diversity.”
- Security-constrained economic dispatch
 - Optimizes dispatch of all resources in the market footprint to minimize cost while conforming to the operational and reliability constraints of the generating fleet and transmission system.

GHG regulation varies in the West

- Western markets must manage multiple state GHG regulation regimes.
 - **GHG cap** on generation that serves load in state, including electricity imports: OR, CO, NV, NM.
 - **GHG pricing** on in-state generation and electricity imports (“cap and trade/invest”): CA and WA.
 - **No GHG regulation**: ID, MT, WY, UT, AZ.
- Pricing and non-pricing GHG regulation in the same market footprint results in different energy costs between regulated and unregulated generators.

Markets dispatch utility resources

- Today, Oregon utilities dispatch their own resource fleets from their own control centers.
 - They can comply with an emissions cap by choosing whether to operate resources based on emission rather than economics.
- In a market, the utilities turn over dispatch control of their resources to the market operator's dispatch algorithm.

Challenge for GHG caps in market

- Market dispatch is optimized for economics, not emissions.
- GHG pricing affects market dispatch. GHG caps do not.
 - A state's GHG price is embedded in the price of electricity from any emitting generator located in the state or exporting to the state.
 - Clean energy will be drawn into GHG pricing states because, with a \$0 GHG price, it's cheaper than emitting energy.
 - Emitting energy will be more economical to serve load in states with no GHG price than states with GHG pricing.

Options for GHG caps in market

- Utilities subject to a GHG cap could “self-schedule” their resources during bidding.
 - Forces the resource to run and makes it ineligible for economic dispatch and export to other loads.
 - Reduces the value of market participation.
- The market could incorporate a “shadow GHG price” on generation serving load in the GHG cap state.
 - A [proposal](#) exists to allow utilities subject to a GHG cap to set emission constraints on their load bids, resulting in a shadow price that would influence the economic dispatch decisions.

RECs don't follow market dispatch

- Today, utilities comply with Oregon's RPS 'bundled RECs' requirement by dispatching renewable energy resources to serve their load and retiring the associated RECs.
- In a market, the utilities will relinquish dispatch control, and there is no mechanism to include RECs in the market transaction, so the link between the RPS and dispatch will be severed.
- In existing organized markets in the U.S., utilities comply with state RPSs by using RECs to demonstrate they have contributed an amount of renewable energy to the market footprint.

Challenge using RECs for HB 2021 compliance

- Imports to Oregon:
 - If the market dispatches excess solar generation from California to serve Oregon load, there is no way for the Oregon utility to acquire (and retire) RECs for that imported electricity.
 - If RECs are required, how would imports be counted toward HB 2021 requirements?
- Exports from Oregon:
 - If the market dispatches excess wind generation from Oregon to serve Washington load, the wind will be treated as emissions-free in Washington's cap-and-invest program, even without RECs.
 - Would that make the wind ineligible to count toward Oregon's RPS?

Summary

- Centralized markets will provide significant economic and reliability benefits and cost-efficient access to a greater diversity of clean resources but will disrupt the way utilities demonstrate compliance with state RPS and GHG mandates.
- Interpreting HB 2021 as generator-based regulation, consistent with the Commission's inclination expressed in Order 23-194, will allow OR utilities to operate most effectively in a market that includes CA and/or WA GHG pricing programs.
- Western markets are still under development and many uncertainties remain.

Participant Comments

How does today's discussion impact consideration of the accounting and REC treatment questions in UM 2273?

What are the implications for how HB 2021 interacts with other states/programs?

