



Attachment A

Clean Energy Trade Standard Framework And Specifications

Clean Energy Trade Standard

Framework and Specifications

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This document is intended to communicate the specifics of the Clean Energy Trade Standard and its application. It includes sufficient detail for entities to adopt the Clean Energy Trade Standard and for their export customers to be confident that the clean supply they procure from such entities is not increasing emissions elsewhere in the western grid. These specifics are set forth in a manner that is not intended to be in the form of a regulation or statute as would be developed by a regulatory agency or legislative body. It is expected that each entity adopting the standard will develop an implementation document containing additional detail on how the standard is applied in light of the specific circumstances and considerations of that entity.

It is expected that the standard, as well as each entity's specific implementation of it, will evolve over time to reflect experience and evolving conditions.

V1: April 2021

V2: April 2022

V3: April 2026

I. Definitions

Clean Attributes: The fuel, technology and other generation attributes of a Clean Generating Resource that determine the GHG emissions associated with or attributed to such generating resource. For the purposes of this Clean Energy Trade Standard, a contract for delivery of electricity from an identified Clean Generating Resource includes the associated Clean Attributes unless expressly excluded.

Clean Generating Resource: An electricity generating facility that does not produce GHG emissions, including solar, wind, hydro, and geothermal resources. An entity adopting this Clean Energy Trade Standard may also define a Clean Generating Resource to include facilities that produce *de minimis* non-biogenic emissions.

Clean Requirements: Total Retail Sales plus total Specified Clean Exports during the applicable Reporting Period.

Eligible Clean Supply: Electricity (MWh) produced by Clean Generating Resources located in or delivered to the Source Region, together with associated Clean Attributes, provided that such Clean Attributes have not been sold or committed to any purpose other than for Retail Sales or Specified Clean Exports.

Renewable Energy Certificate (“REC”): A certificate of proof associated with the generation of electricity from a Clean Generating Resource, issued through Western Renewable Energy Generation Information System (“WREGIS”) or through comparable attestation, that one MWh of electricity was generated by a Clean Generating Resource.

Reporting Period: A defined yearly or multi-year period over which adherence to the Clean Energy Trade Standard is evaluated.

Retail Sales: The amount of aggregate electrical energy (MWh) delivered, and/or sold to electricity consumers within the Source Region.

Source Region: A geographic region (*e.g.*, municipality or district) or a defined electrical system associated with an entity that has adopted or is otherwise subject to the Clean Energy Trade Standard. The Source Region may refer to a clearly defined scope of activity, such as imports into and exports out of a particular geographic region or a particular defined electricity system but excluding transactions that neither source nor sink in that geographic region or electricity system.

Specified Clean Export: An electricity (MWh) export generated and delivered from the Source Region from one or more Clean Generating Resources together with associated Clean Attributes, where the delivery is verifiable through e-tags or other records.¹

¹ Including deliveries into jurisdictions with a Cap-and-Trade program where the importer to the jurisdiction is required to represent the GHG intensity of the delivered electricity.

Specified Clean Import: An electricity (MWh) import generated and delivered into the Source Region pursuant to an agreement for the delivery of the output from one or more Clean Generating Resources, together with associated Clean Attributes, where the delivery is verifiable through e-Tags or other records and with appropriate measures implemented to ensure the Specified Clean Import is not supported by activity that increases GHG emissions elsewhere in the western grid.^{2, 3, 4}

Treaties And Inter-Utility Arrangements Associated With Clean Generating Resources: Electricity (MWh) imports delivered into, and electricity (MWh) exports delivered from, the Source Region that are associated with treaties, inter-utility agreements and other long-standing arrangements, where the specific generating facilities are not explicitly identified in the underlying agreements, but the entity adopting this Clean Energy Trade Standard has reasonably determined that the arrangement is associated with Clean Generating Resources.⁵

Unspecified Export: An electricity export delivered from the Source Region that is not a Specified Clean Export.⁶

Unspecified Import: Electricity delivered to the Source Region that is not a Specified Clean Import.

Unspecified Supply: Electricity produced in, or delivered to, the Source Region that is not Eligible Clean Supply.⁷

Verification Report: A report prepared by an independent verifier evaluating the Source Region's adherence to the Clean Energy Trade Standard for the applicable Reporting Period.

² The entity implementing this Clean Energy Trade Standard for a Source Region must develop objective criteria for identifying eligible sources of Specified Clean Imports in advance of transacting or scheduling associated deliveries.

³ For specified electricity imports from a system resource that is comprised of Clean Generating Resources as well as other resources, a quantity that is proportional to the reported Clean Generating Resources comprising the system resource may be reported as Specified Clean Imports. To qualify for this reporting treatment, the specified electricity imports must include representations regarding the GHG intensity and/or the fuel mix of the system resources. The remaining quantity of such specified electricity imports must be reported as an Unspecified Import. An example of a specified electricity import from a system resource is an import contracted for and delivered from the system of a California Air Resources Board-registered Asset Controlling Supplier whose fuel mix is reported under the California Energy Commission's Power Source Disclosure.

⁴ Specified Clean Imports may include quantities from a prior Reporting Period that were not used to satisfy Section III.C, provided that such quantities qualified as Specified Clean Imports in the Reporting Period in which they occurred.

⁵ Numerous entities have obligations to receive or deliver electricity pursuant to treaties, inter-utility agreements, and other longstanding arrangements. In many cases, specific generating facilities are not explicitly identified in the underlying agreements, yet many of these arrangements relate to the hydroelectric systems in B.C. and the Northwest U.S., reflecting historical efforts to coordinate the development and operation of specific hydroelectric facilities and waterways in the region. As a result, an entity adopting this Clean Energy Trade Standard for a Source Region that receives or delivers electricity pursuant to treaties, inter-utility agreements, and other longstanding arrangements will need to make a reasonable determination as to whether or not the electricity the Source Region receives or delivers under such arrangements should be reported as supply from Clean Generation Resources. If the entity makes a reasonable determination that the electricity is sourced from a system resource that is comprised of Clean Generating Resources as well as other resources, the deliveries may be treated as a Specified Clean Import and apportioned between Clean Generating Resources and Unspecified Imports according to Footnote 3.

⁶ For purposes of this Clean Electricity Trade Standard, "Unspecified Export" includes electricity exports from unspecified sources as well as from identifiable GHG-emitting resources, since all resources that are not Clean Generating Resources are similarly ineligible to support Specified Clean Exports.

⁷ For purposes of this Clean Electricity Trade Standard, "Unspecified Supply" includes electricity produced by unspecified sources as well as by identifiable GHG-emitting resources, since all resources that are not Clean Generating Resources are similarly ineligible to contribute toward meeting the standard.

II. Overview

The Clean Energy Trade Standard is comprised of four discrete requirements:⁸

Requirement 1: Specified Clean Exports Must Be Sourced And Delivered From A Clean Generating Resource.

This requirement links Specified Clean Exports to the specific Clean Generating Resource producing the clean electricity.

Requirement 2: Specified Clean Exports From A Clean Generating Resource May Not Exceed The Metered Output Of The Associated Clean Generating Resource In The Applicable Hour.

This requirement limits the total amount of electricity that can be claimed to be produced by a particular Clean Generating Resource to the actual quantity of electricity generated by that resource in the applicable hour.

Requirement 3: The Total Quantity Of Specified Clean Exports From A Source Region Over Each Reporting Period Must Be No Greater Than The Quantity By Which Eligible Clean Supply Exceeds Retail Sales Over That Reporting Period.

Requirement 3 constrains the total quantity of Specified Clean Exports that can be made by a Source Region adopting the standard. Specifically, Requirement 3 limits a Source Region's Specified Clean Exports to the Source Region's *surplus* Eligible Clean Supply. Absent this provision, any Specified Clean Exports to other regions in excess of this surplus would have the potential to leave the Source Region "short" of the supply needed for Retail Sales. This would raise the potential for "backfilling" Retail Sales in the Source Region with increased production from fossil-fueled generation or unspecified imports over the course of the Reporting Period.

Requirement 4: Each Export From The Source Region Should Identify Whether It Is A Specified Clean Export Or Whether It Is An Unspecified Export.

This requirement supports transparency regarding whether any given export from the Source Region may be identified and claimed as clean electricity or identified as unspecified electricity.⁹

⁸ Requirement 1 and Requirement 2 are well-established and are already in use and required by some existing state environmental programs, such as the California Air Resource's Board Mandatory Reporting Regulation. *Regulation for the Mandatory Reporting of Greenhouse Gas Emissions*, Title 17 of the California Code of Regulations, § 95100-95163.

⁹ Whereas Requirement 3 prevents overstatement of Eligible Clean Supply in the *Source Region*, Requirement 4 helps prevent overstatement of claims to Specified Clean Exports in a *receiving region* (under its clean procurement or carbon programs). In particular, Requirement 4 provides transparency to purchasers and regions that receive exports so they may correctly identify them.

III. Verifying That A Source Region's Specified Clean Exports Do Not Exceed Surplus Eligible Clean Supply

For each Reporting Period, an entity adopting this Clean Energy Trade Standard will be required to demonstrate that the total Eligible Clean Supply of the associated Source Region is at least equal to 100% of the Source Region's Retail Sales *plus* Specified Clean Exports. As such, total Specified Clean Exports from the Source Region are limited to the *surplus* Eligible Clean Supply of the Source Region.

This section examines each of the components that must be determined in order to verify that this criterion is satisfied.

A. Components Of Eligible Clean Supply

See definition of "Eligible Clean Supply" in Section I.

Eligible Clean Supply is comprised of electricity from Clean Generating Resources (discussed further below), provided that such electricity includes Clean Attributes, and that those Clean Attributes are not sold or committed to any purpose other than Retail Sales or Specified Clean Exports. For example, Eligible Clean Supply would not include:

- a) Electricity produced by a Clean Generating Resource but where Clean Attributes are expressly excluded; or
- b) Electricity produced by a Clean Generating Resource with Clean Attributes conveyed to the entity implementing this standard, where the entity sells the RECs related to this electricity on a stand-alone basis (*i.e.*, separate from the delivery of electricity produced by the Clean Generating Resource).¹⁰

The requirements related to Eligible Clean Supply for different types of arrangements are discussed below:

1. Clean Generating Resources Located Within The Source Region

See definition of "Clean Generating Resource" in Section I.

The entity adopting the Clean Energy Trade Standard will include the aggregate electricity production from Clean Generating Resources located within the Source Region, provided that the entity responsible for serving Retail Sales in the Source Region either:

- a) Owns the Clean Generating Resource and Clean Attributes for the associated output (unless otherwise specified); or
- b) Receives electricity produced by Clean Generating Resources it does not own, together with associated Clean Attributes.

¹⁰ This requirement implies that the entity adopting this Clean Energy Trade Standard is prohibited from selling stand-alone RECs for any output from a Clean Generating Resource that was previously reported as Eligible Clean Supply if doing so would cause the aggregate Eligible Clean Supply to be insufficient to satisfy the Clean Energy Trade Standard Reporting Metric in Section III.C.

2. Specified Clean Imports

See definition of “Specified Clean Imports” in Section I.

The entity adopting the Clean Energy Trade Standard will include the aggregate electricity received pursuant to Specified Clean Imports, which may be from the following specified sources:

- a) New Clean Generating Resources, with associated Clean Attributes;
- b) Existing Clean Generating Resources, with associated Clean Attributes, where appropriate measures have been implemented to ensure the Specified Clean Import is not the result of backfilling activity that increases GHG emissions elsewhere in the western grid; or
- c) Existing system resources with representations regarding the GHG intensity and/or the fuel mix where the system resources are comprised of a mix of Clean Generating Resources and other resources. The eligible quantity will be proportional to the reported Clean Generating Resources comprising the applicable system resources, and where appropriate measures have been implemented to ensure the Specified Clean Import is not the result of activity that increases GHG emissions elsewhere in the western grid.

3. Treaties And Inter-Utility Arrangements Associated With Clean Generating Resources:

See definition of “Treaties And Inter-Utility Arrangements Associated With Clean Generating Resources” in Section I.

The entity adopting this Clean Energy Trade Standard, upon reasonably determining that the Source Region *receives* net supply from Clean Generation Resources pursuant to the aggregate of these obligations, may include this net quantity in the Eligible Clean Supply of the Source Region.

The entity adopting this Clean Energy Trade Standard, upon reasonably determining that the Source Region must *deliver* net supply from Clean Generation Resources pursuant to the aggregate of these obligations, must deduct this net quantity from the Eligible Clean Supply of the Source Region.

B. Components Of Clean Requirements

See definition of “Clean Requirements” in Section I. Generally speaking, Clean Requirements are comprised of:

1. Retail Sales

See definition of “Retail Sales” in Section I.

The Clean Energy Trade Standard requires Clean Requirements to include 100% of Retail Sales.¹¹

¹¹ This is consistent with the requirements of various western states that have adopted a 100% clean energy standard.

2. Specified Clean Exports

See definition of “Specified Clean Exports” in Section I.

Specified Clean Exports include facility-specific electricity exports where the delivery is verifiable through e-Tags or other records and includes representation of GHG intensity, which may also include representation of fuel mix and/or RECs.

C. Clean Energy Trade Standard Reporting Metric

For each Reporting Period, the Verification Report for the Source Region must demonstrate that:

$$\frac{\text{Eligible Clean Supply}}{\text{Retail Sales} + \text{Specified Clean Exports}}$$

Stated differently, this requirement necessarily limits the total Specified Clean Exports from the Source Region to no greater than the surplus Eligible Clean Supply in the Source Region for each Reporting Period:

$$\text{Specified Clean Exports} \leq \text{Eligible Clean Supply} - \text{Retail Sales}$$

IV. Additional Measures To Support Transparency

The requirements in Section III, above, ensure that the Eligible Clean Supply in a Source Region is at least equal to 100% of Retail Sales plus all Specified Clean Exports from the Source Region. As such, retail customers in the Source Region, as well as purchasers of Specified Clean Exports from the Source Region, are assured of receiving 100% Clean Supply, without increasing GHG emissions elsewhere in the western grid.

This section specifies additional requirements that support transparent and accurate records related to the standard. Specifically, these additional requirements ensure that:

- Exports are consistently reported to ensure they are not miscounted, double counted or otherwise inflated; and
- Battery-like services with Clean Generating Resources can support renewable integration without increasing Eligible Clean Supply.

A. Ensuring Exports Are Not Miscounted, Double Counted Or Otherwise Inflated

This Clean Energy Trade Standard ensures that the amount of potential Specified Clean Exports from a Source Region is accurately calculated and not overstated. Overstatement of Specified Clean Exports can also occur through the process of how electricity exports from a Source Region are *claimed* under various programs in receiving regions. This can occur in at least two ways:

- a) If Unspecified Exports from the Source Region are improperly claimed by any entity to represent clean electricity; and
- b) If a Specified Clean Export is claimed under programs of two or more receiving regions.

The Clean Energy Trade Standard requires Source Regions to take steps to prevent both types of improper claims.

1. The Entity Adopting This Clean Energy Trade Standard Should Take Reasonable Steps To Support Transparency In Identifying Specified Clean Exports

There is the potential for a Source Region's Unspecified Exports to be inaccurately identified by a purchaser or a receiving region as Clean Supply. While the entity adopting this Clean Energy Trade Standard for a Source Region can only be held directly accountable for its own reporting, there are reasonable steps that it can take to provide greater clarity regarding which exports are Specified Clean Exports, and which ones are not.

For example, an entity may include affirmative statements that describe an export as "unspecified" in appropriate fields in an e-Tag and/or other documentation. This is particularly important because the source identified on e-Tags for Unspecified Exports may appear, absent additional information, to represent non-emitting supply. Inaccurate identification as Eligible Clean Supply can occur even though the export is unspecified, however it does not convey any Clean Attributes or represent facility-specific clean generation and does not entitle the purchaser to represent the exported supply as Eligible Clean Supply to any other entity or region.

2. The Entity Adopting This Clean Energy Trade Standard Will Put In Place Procedures To Ensure It Does Not Double-Count Its Specified Clean Exports

It is anticipated that the entity adopting this Clean Energy Trade Standard for a Source Region will enter into commitments for delivery of Specified Clean Exports to counterparties in receiving regions that have adopted one or more programs to achieve GHG-related policy goals. At present, there is little or no alignment in these programs, and the differences in requirements offer the potential for the same megawatt-hour of clean generation to satisfy the requirements of more than one receiving region.

An entity adopting the Clean Energy Trade Standard must put in place procedures to ensure that it does not seek to satisfy the requirements of more than one receiving region with reference to the same Specified Clean Export. To the extent a receiving region has implemented complementary programs addressing multiple attributes of electricity supply, it is expected that the receiving region has sufficient visibility and awareness of its programs to obviate the above concerns.

B. Ensuring Transparent Reporting Of Clean Generating Resources Providing Battery-Like Services To Support Renewable Integration

Integrating variable renewable generation, such as wind and solar resources, is important for meeting climate goals. Regions with flexible clean resources, such as hydro storage, are well suited to receive electricity from Clean Generating Resources during one period with excess wind or solar output to avoid curtailments and then return equal quantities of electricity in a later period. While these battery-like services enable renewable integration and do not increase GHG emissions in the western grid, the associated deliveries to and from the Source Region must generally be reported as Unspecified Imports and Unspecified Exports, respectively unless Clean Attributes are specifically conveyed under the contract. Entities adopting this Clean Energy Trade Standard are encouraged to consider reporting deliveries associated with Clean Generating Resources providing battery-like services as a distinct subset of Unspecified Imports and Unspecified Exports. Doing so would distinguish such deliveries from Unspecified Imports and Unspecified Exports that may reflect electricity from fossil-fueled generation, supporting greater transparency.

Clean Generating Resources providing battery-like services under arrangements where Clean Attributes are provided with the respective deliveries may be reported as Specified Clean Imports and Specified Clean Exports.

V. Additional Measures Beyond Requiring Eligible Clean Supply For All Retail Sales and Specified Clean Exports

In practice, there will be residual electricity needs within the Source Region beyond Retail Sales and Specified Clean Exports. The principal such residual need is electricity for transmission losses. Transmission losses are generally limited in magnitude, arise due to conditions at both the high-voltage and distribution levels, and vary depending on how all entities use the grid, making it difficult to quantify this residual electricity need except after the fact. These factors implicitly limit any potential concern that the residual electricity need for transmission losses could enable an increase in GHG emissions in a matter inconsistent with the objectives of this Clean Energy Trade Standard.

The Clean Energy Trade Standard requires an entity adopting the Standard to have a credible plan to ensure they do not result in a material increase in GHG emissions associated with those residual needs.

Entities adopting this Clean Energy Trade Standard shall include in their respective implementation details the following:

- a) An assessment of the materiality of estimated residual electricity needs in the Reporting Period;¹² and

¹² 3% of the sum of Source Region's Retail Sales and Net Exports is suggested as the materiality threshold. Entities that have previously identified residual energy needs as material may simply acknowledge the needs as being material rather than re-calculate their materiality each period.

b) If estimated residual electricity needs are deemed material, the entity will implement measures to ensure it did not deliberately increase the use of GHG-emitting resources (or Unspecified Imports) associated with those residual electricity needs. Such measures may include, but are not necessarily limited to:

- Demonstrating that GHG-emitting resource output and Unspecified Imports in the Source Region are fully accounted for by a combination of Unspecified Exports from the Source Region and other measures to address GHG emissions associated with Unspecified Imports.¹³ (*i.e. and therefore are not associated with residual electricity needs in the Source Region*);
- Demonstrating that there has been no increase in the use of GHG-emitting resources and Unspecified Imports to meet these residual electricity needs unless such increase is fully accounted for by other measures to address GHG emissions associated with Unspecified Imports; or
- Demonstrating that Specified Clean Exports did not increase the use of GHG-emitting resources and Unspecified Imports to meet these residual electricity needs by ensuring that, Specified Clean Exports, (including unbundled REC sales) over the Reporting Period, they were not larger than Specified Clean Imports combined with any clean surplus beyond source region residual electricity needs.¹⁴ ¹⁵

For purposes of this section, GHG-emitting resources shall include the output of all resources in the Source Region known to emit GHGs (other than those that produce de minimis non-biogenic emissions associated with their grid-delivered electricity).

VI. Independent Verification

The entity adopting this Clean Energy Trade Standard is required to engage an independent verifier and provide all necessary data in order to verify the Source Region's adherence to the Clean Energy Trade Standard for the applicable Reporting Period. This verification process will be in accordance with ISO 14065. The independent verifier will issue a verification statement for the Reporting Period, which will be posted publicly.

¹³ For example, by acquiring and retiring an unbundled REC from outside the Source Region provided such REC is generated within the Reporting Period.

¹⁴ Clean surplus beyond source region residual electricity needs may be calculated as the greater of zero and the sum of: (a) The output of Clean Generating Resources within the Source Region (b) Treaties and Inter-Utility Arrangements Associated With Clean Generating Resources, less Retail Sales and estimated residual electricity needs.

¹⁵ Unbundled REC sales will also include any bundled REC commitments that did not result in a Specified Clean Export.