

SUBMITTING ENERGY SCHEDULES

In this Section:

- [Overview](#)
- [Designating Transmission](#)
- [Energy Product Codes](#)
- [PSE Assigned Cut Priority](#)
- [Capacity eTags](#)
- [Dynamic Scheduling](#)
- [EIM Scheduling](#)
- [Interruptible Energy](#)
- [Wheelthrough Energy](#)
- [eTag Submission Timelines](#)
- [Submitting Modifications to eTags](#)
- [Real Power Losses](#)

1.0 OVERVIEW

A Request for Interchange (RFI) is an eTag that arranges a new transaction or changes an existing transaction for the current or future operating hour. An eTag is an electronic documentation of the energy transaction describing the source, sink, path, transmission contracts to be used, capacity profiles and parties to the transaction. eTags help to maintain reliability by ensuring that all parties to interchange energy transactions receive relevant reliability information. The OATI electronic tagging system is used to submit, modify and approve or deny energy schedules (eTags).

BC Hydro requires the use of eTags to schedule energy in both Pre-schedule and Real-time for all interchange energy transactions, including internal paths.

These Business Practices provide clarification of the rules, standards and practices used by BC Hydro to implement its OATT, which may supplement but not supersede the terms and conditions specified in non-OATT agreements as approved or exempted under the Utilities Commission Act. While the terms of BC Hydro's OATT and these Business Practices govern, customers should also refer to the NAESB WEQ Business Standards, WECC Regional Criteria, and WECC Regional Standards, which BC Hydro has followed in most, but not all, respects. BC Hydro also complies with the Mandatory Reliability Standards adopted by the BCUC.

2.0 DESIGNATING TRANSMISSION

An important element of the eTag is its specification of which transmission reservation the energy is to be scheduled on.

The CONFIRMED Transmission Service Requests (TSRs) identified through the eTag must satisfy the following conditions:

- be CONFIRMED and **active** in OASIS and BC Hydro’s scheduling system;
- in aggregate have sufficient available energy capacity to accommodate the energy schedule and the transmission allocation profile;
- must have the same POR and POD combination;
- the eTag transmission allocation profile must be greater than or equal to the energy profile; and
- must not cause a Reliability Limit infringement. If eTags had previously been approved, BC Hydro will deny the eTag for insufficient capacity.

If any of the above conditions are not satisfied, the eTag will be DENIED by BC Hydro.

The PSE (Purchasing-Selling Entity) can specify the transmission on its eTag by using any one of the following three approaches:

1. OASIS ID Approach by entering either a single or multiple valid CONFIRMED TSR number(s) on the eTag;
2. Blanket Approach by entering an **active** CONFIRMED TSR number on the eTag; or
3. Stacked Transmission Approach by combining different CONFIRMED TSRs with the same POR and POD to support the committed capacity referenced on the eTag.

These three approaches will be explained below. The eTag will be DENIED if transmission is not entered correctly.

2.1 OASIS ID Approach

A PSE may designate specific MW maximums for each of the CONFIRMED TSR OASIS IDs (ARef) referenced using the transmission allocation value.

2.2 Blanket Approach

As an alternative to specifying each CONFIRMED and **active** TSR OASIS number on the eTag, the PSE may select an **active** CONFIRMED TSR OASIS ID (ARef) and add a “B” (upper or lower case) after the OASIS ID to indicate that it wishes to use a Blanket approach.

The Blanket OASIS ID specifies the Transmission Customer, path, POR/POD, and type of transmission service (Firm or Non-Firm) and tells the BC Hydro scheduling system to retrieve all CONFIRMED and **active** TSRs that match those parameters within the transaction time period.

When assigning energy on Firm transmission service specified from a Blanket OASIS ID, all Firm transmission reservations have the same priority and eTags will be assigned by First In – First Scheduled. When assigning energy on Non-Firm transmission reservations specified from a Blanket ID, the eTags will be assigned to Non-Firm transmission reservations in descending NERC priority (5 NM going down to 2NH). Refer to BC Hydro’s OATT Business Practice on *Curtailed of Transmission and Energy* for information on NERC priorities for transmission service.

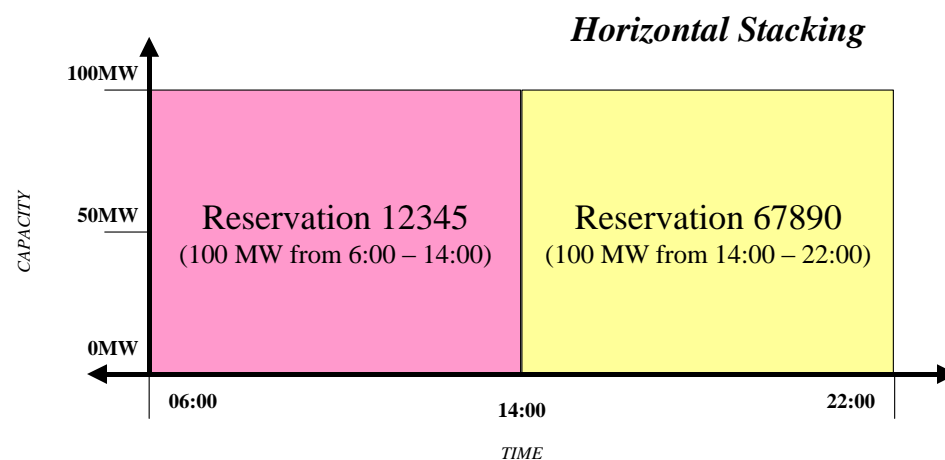
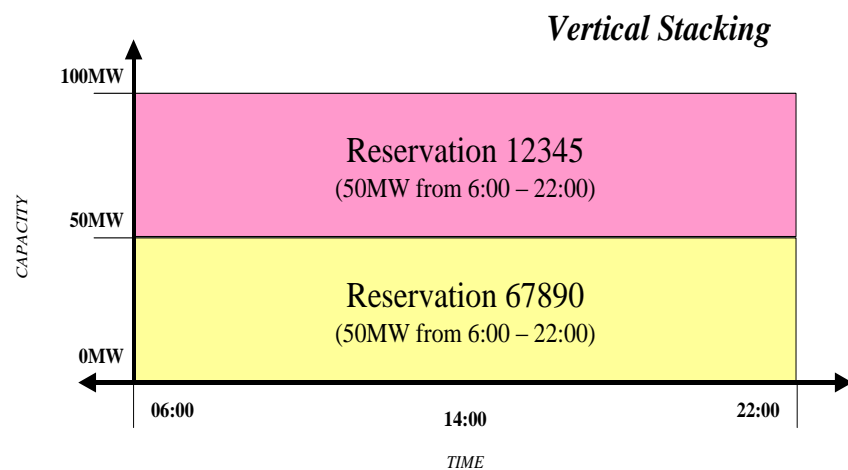
2.3 **Stacked Transmission Approach**

Transmission stacking allows a PSE to combine different CONFIRMED TSRs, with the same POR and POD, to support the capacity committed in an associated energy profile.

There are two types of transmission stacking:

- Vertical Stacking – PSE combines multiple transmission reservations to achieve a certain net level of capacity; and
- Horizontal Stacking – PSE combines multiple transmission reservations to achieve certain capacity over time.

The following diagrams illustrate these concepts more fully. In both cases, the assumed need is 100 MW of transmission capacity for hours 06:00 through 22:00.



If a PSE elects to utilize stacking to support their energy schedules, the PSE must understand the following requirements:

- Stacks must be described through fully qualified profiles for each reservation being used; and
- At no point may the coverage described by the stack be less than the capacity needed for the transaction’s energy flow.

3.0 ENERGY PRODUCT CODES

All GPE (Generation-Providing Entity) and LSE (Load-Serving Entity) segments must include an Energy Product Code as a part of their creation profile. An eTag without an Energy Product Code or with an invalid Energy Product Code will be DENIED by BC Hydro with appropriate messaging on the eTag. The list of valid Product Codes is included below. Refer to the WECC Regional Criteria for the definitions associated with each energy product code.

Valid GSE/LSE Product Codes

G-F	Firm Energy
G-NF	Non-Firm Energy
G-FC	Firm Contingent
G-FP	Firm Provisional Energy
G-F1	Hourly Firm Energy
G-EX	Exchange of Firm Energy
C-SP	Capacity for Spinning Reserve
C-NS	Capacity for Non-Spinning Reserve
C-RE	Capacity associated with energy recallable for reserves

eTags within each Product (uninterruptible, interruptible, capacity and dynamic) can have a priority assigned to them by a PSE.

4.0 PSE ASSIGNED CUT PRIORITY

A PSE can assign a “Cut_Priority” to each eTag. This is a numeric value that indicates to BC Hydro the curtailment order of eTags. “1” is the highest priority and will be curtailed last; “2” is the second highest priority, etc. Refer to BC Hydro’s OATT Business Practice on *Curtailments of Transmission and Energy* for more information on the curtailment process.

To enter the “Cut_Priority”:

1. Click on the Misc Info field on the BC Hydro physical path segment;
2. Enter “Cut_Priority” in the Token column; and
3. Enter a numeric value to indicate curtailment priority in the Value column.

5.0 CAPACITY eTAGS

Capacity eTags are created by selecting the eTag type as Capacity for ConRes or SpinRes. The eligibility requirements and terms and conditions for Spinning Reserve and Contingency Reserve are set out in Attachment Q-3 of BC Hydro’s OATT. Currently BC Hydro only exports Capacity Reserves.

Per WECC Regional Criteria, a PSE wishing to schedule reserves must submit an eTag specifying the correct Firm OASIS ID (ARef) and energy type.

The Load Serving Entity (LSE) will submit an adjustment eTag. Once the adjustment is approved by the Sink and Source BA's, the reserve amount requested is delivered for the duration specified.

To submit a Capacity eTag:

1. Create a Firm energy schedule with a CONFIRMED Firm TSR(s).
2. Enter a Transmission Allocation profile.
3. Enter a zero Energy Profile.
4. Select ConRes or SpinRes (C-NS or C-SP) in the Energy Product Code drop-down list.
5. Select Transaction Type as Capacity.
6. When capacity is called upon, the PSE enters an adjustment to the energy profile on the eTag upto the reliability limit or the transmission allocation profile limit.

The Transmission Allocation profile stated in the Capacity eTag will be used to decrement the Firm capacity that is available for further scheduling on the CONFIRMED TSR specified.

6.0 DYNAMIC SCHEDULING

The requirements for dynamic scheduling are set out in Attachment Q-1 of the Open Access Transmission Tariff. PSEs cannot submit Dynamic Schedules or eTags without BC Hydro approval, which will ensure the necessary reviews and system arrangements have been made.

Prior to the submission of any dynamic eTags, BC Hydro will perform an assessment based on the information provided by the PSE. The PSE should provide as much detail as possible including the expected maximum dynamic capability that is to be enacted between the Sending and Receiving Balancing Authority Areas so that BC Hydro can determine the feasibility of the request. If it is technically feasible, BC Hydro will undertake work within BC Hydro systems to facilitate the submission of Dynamic eTags.

Dynamic Scheduling energy consists of Non-Spinning Reserve (NSPIN), Replacement Reserve (REPL), Positive Supplemental/Incremental (INC), Negative Supplemental/Decremental (DEC), Spinning Reserve (SPIN), Regulation Up (REGUP), and Regulation Down (REGDN).

PSEs must have transmission for dynamic scheduling purposes up to the amount of the total capacity awarded by the Receiving and Sending Balancing Authority Areas. The transmission reservation can be used for scheduling any of the following Dynamic Scheduling Energy types.

Energy Type	Dynamic Operating Reserve
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NSPIN	DSConRes
REPL	DSConRes
INC	DSConRes
DEC	DSConRes
SPIN	DSSpinRes
REGUP	DSRegRes
REGDN	DSRegRes

Dynamic Scheduling Spinning Reserve (DSSpinRes), Dynamic Scheduling Contingency Reserve (DSConRes), and Dynamic Scheduling Regulation Reserve (DSRegRes) are used for the real-time delivery of dynamic schedules and are not available for purchase on OASIS.

To submit a Dynamic eTag:

1. Identify the Transaction Type as Dynamic;
2. Enter Energy Type (from the table above) under the Contract column in the Market Path;
3. Enter the OASIS ID (Aref) of the CONFIRMED Firm TSR under the OASIS column in the Transmission Allocation; and
4. Enter the estimated expected value under the MW column in the Energy Profile and the maximum expected value under the MW column in the Transmission Profile for all energy types.

The Blanket approach as described Section 2.2 above cannot be used for Dynamic eTags.

7.0 Scheduling EIM Transactions

The California Independent System Operator (CAISO) Energy Imbalance Market (EIM) is a real-time market that is comprised of a 15-minute market and a 5-minute dynamic dispatch market. PSEs can schedule on both import and export paths. PSEs participating in the CAISO's EIM should adhere to the CAISO's scheduling timelines.

A PSE has two options for scheduling an EIM transaction.

First, a PSE may use their transmission reservations, of any priority, for EIM transactions.

To submit an eTag for an EIM transaction on a transmission reservation:

1. Identify the Transaction Type as Normal or Dynamic for the 15-minute market and 5-minute market, respectively.
2. In the Misc Info field on the eTag identify the source, interconnection point, sink, and whether it's an export or import transaction using nomenclature as agreed upon with BC Hydro.
3. Enter the appropriate Energy Type under the Contract column in the Market Path; and
4. Enter the OASIS ID (Aref) as provided by OASIS.

Second, a PSE may use EIM Scheduling for EIM transactions. The requirements for EIM Scheduling are set out in Attachment Q-6 of the Open Access Transmission Tariff. To use EIM Scheduling, a PSE may use their own unused transmission service for EIM transactions. This unused transmission can be scheduled upon at no additional cost and will: 1) have the lowest transmission curtailment priority (service priority code 0), and 2) not decrement or effect the posted Available Transfer Capability (ATC) that is offered for higher priority transmission services.

To submit an EIM Scheduling eTag:

1. Identify the Transaction Type as Normal or Dynamic for the 15-minute market and 5-minute market, respectively.
2. In the Misc Info field on the eTag identify the source, interconnection point, sink, and whether it's an export or import transaction using nomenclature as agreed upon with BC Hydro.
3. Enter the appropriate Energy Type under the Contract column in the Market Path; and
4. Enter the OASIS ID (Aref) as provided by BC Hydro.

The Blanket approach as described Section 2.2 above cannot be used for EIM Scheduling.

8.0 INTERRUPTIBLE ENERGY

Interruptible Energy (Non-Firm energy) is energy that the PSE has specified that it may be interrupted. The source Balancing Authority may interrupt the service by giving notice to the sink Adjacent Balancing Authority of the transaction.

As the Balancing Authority for an export Interruptible Energy schedule, BC Hydro has the right to curtail that schedule if the PSE delivering the export fails to meet its Contingency Reserve Obligation with BC Hydro.

To submit an Interruptible eTag:

1. Enter G-NF in the Market Path section in the Product Code drop-down List.

2. Enter the appropriate WECC reserve requirement – the reserve obligation multiplier should be set to 100%.

BC Hydro will deny the eTag if the above settings are not satisfied.

9.0 WHEELTHROUGH ENERGY

There are two approaches to schedule Wheelthrough energy:

- the PSE can submit one eTag that references a matching Wheelthrough CONFIRMED TSR; *or*
- the PSE can submit **one** eTag that references CONFIRMED import and export TSRs.

10.0 eTAG SUBMISSION TIMELINES

eTags should be submitted in accordance with the NAESB Timing Requirements for WECC. RFIs for one hour energy schedules shall be submitted no later than 20 minutes (XX:40) prior to the Start Time of one hour energy schedules.

Refer to BC Hydro's OATT Business Practices on *Processing of Energy Schedules and Intra-Hour Scheduling – Transmission & Energy* for additional energy schedule information and submission times for intra-hour eTags, respectively.

11.0 SUBMITTING MODIFICATIONS TO eTAGS

The Transmission Customer may request modifications to a PENDING, CONFIRMED or IMPLEMENTED eTag for non-reliability related issues according to the NAESB Interchange Timing Requirements for WECC.

1. For an IMPLEMENTED eTag, modifications cannot be made within the scheduling hour and only future hours may be modified.
2. A Correction can only be made to a PENDING eTag. Corrections can be made to:
 - POR and POD
 - Designated transmission reservation
 - Miscellaneous Information Value field on the Load or Generation Line
 - Product Code in the Market Path
3. An Adjustment can only be made to a CONFIRMED or IMPLEMENTED eTag. Adjustments can be made to:
 - Generating Profile
 - Transmission Profile
 - Extension to the energy profile (to include hours not previously specified). The PSE must ensure the necessary transmission capacity for the extension is provided on the eTag.

Refer to BC Hydro's OATT Business Practice on *Processing of Energy Schedules* for further information.

12.0 REAL POWER LOSSES

Pursuant to Section 15.7 of BC Hydro's Open Access Transmission Tariff (OATT), Real Power Losses are associated with all transmission service. The Transmission Customer is responsible for replacing losses associated with transmission service as calculated by BC Hydro in Rate Schedule 10. Refer to Ancillary Services Business Practice for information on Losses.

Document Change History

Issue	Reason for Issue	Date
4	Updated language to include EIM Scheduling, and tariff changes.	September XX, 2017
3	Included references to Intra-Hour BP, simplified & updated current language, & corrected references & typographical errors.	December 30, 2013
2	Updated reference.	June 14, 2011
1	Updated procedures. Previously Business Practices 10 & 11.	December 1, 2010

[Back to Top of Section](#)