SUBMITTING ENERGY SCHEDULES

In this Section:

1.0   OVERVIEW

A Request for Interchange (RFI) is an e-Tag that arranges a new transaction or changes an existing transaction for the current or future operating hour.   An e-Tag 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.   e-Tags 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 (e-Tags).

BC Hydro requires the use of e-Tags 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 Open Access Transmission Tariff (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, The Transmission 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 e-Tag is its specification of which Transmission Reservation the energy is to be scheduled on.

The Transmission Reservation(s) identified through the e-Tag must satisfy the following conditions:

- be **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 e-Tag transmission allocation profile must be greater than or equal to the energy profile; and
- must not cause a Reliability Limit infringement. If e-Tags had previously been approved, BC Hydro will deny the e-Tag for insufficient capacity.

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

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

1. OASIS ID Approach by entering either a single or multiple valid Transmission Reservation ARef(s) on the e-Tag;
2. Blanket Approach using one Transmission Reservation on the e-Tag; or
3. Stacked Transmission Approach by combining different Transmission Reservations with the same POR and POD to support the committed capacity referenced on the e-Tag.

These three approaches will be explained below. The e-Tag 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 Transmission Reservation ARef referenced using the transmission allocation value.

2.2   Blanket Approach

A PSE may select an **active** Transmission Reservation ARef and add a "B" (upper or lower case) after the ARef to indicate that it wishes to use a Blanket approach (Blanket ARef).

The Blanket ARef 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 **active** Transmission Reservation(s) that match those parameters within the transaction time period.

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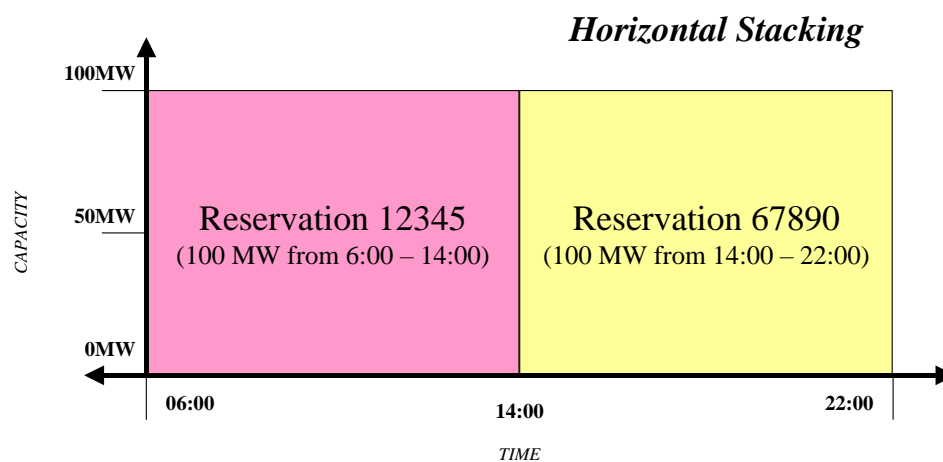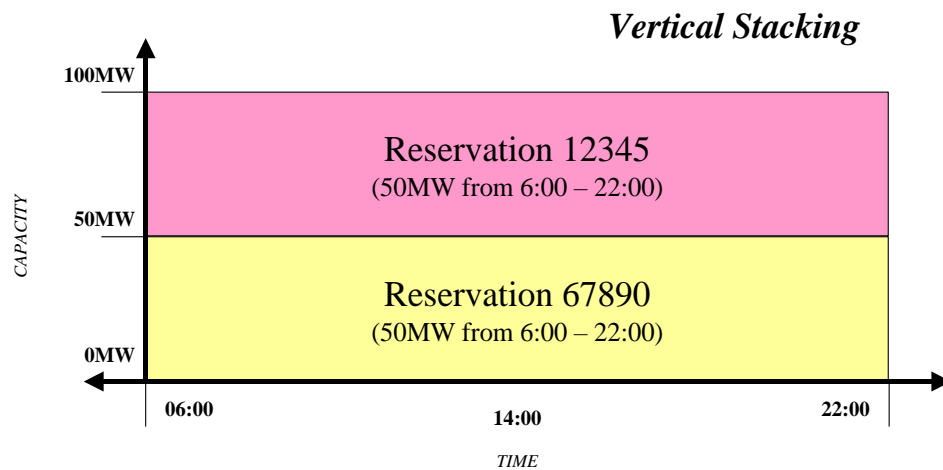
Refer to BC Hydro's OATT Business Practice on *Curtailment of Transmission and Energy* for information on NERC priorities for transmission service.

2.3 Stacked Transmission Approach

Transmission stacking allows a PSE to combine different Transmission Reservations, 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.

Vertical Stacking

CAPACITY

100MW

Reservation 12345
(50MW from 6:00 – 22:00)

50MW

Reservation 67890
(50MW from 6:00 – 22:00)

0MW

06:00   14:00   22:00

TIME

Horizontal Stacking

CAPACITY

100MW

Reservation 12345
(100 MW from 6:00 – 14:00)

Reservation 67890
(100 MW from 14:00 – 22:00)

50MW

0MW

06:00   14:00   22:00

TIME

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

- Stacks <u>must</u> 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 e-Tag without an Energy Product Code or with an invalid Energy Product Code will be DENIED by BC Hydro with appropriate messaging on the e-Tag. The list of valid Product Codes is included below. Refer to the WECC Regional Criteria for the definitions associated with each energy product code.

<u>Valid GSE/LSE Product Codes</u>

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

e-Tags 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 e-Tag. This is a numeric value that indicates to BC Hydro the curtailment order of e-Tags. "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" on the e-Tag:
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 e-TAGS

Capacity e-Tags are created by selecting the e-Tag type as Capacity for Contingency Reserve or Spinning Reserve. 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 e-Tag specifying the correct Firm Transmission Reservation ARef and energy type.

The Load-Serving Entity (LSE) will submit an adjustment e-Tag. Once the adjustment is approved by the Sink and Source Balancing Authorities, the reserve amount requested is delivered for the duration specified.

To submit a Capacity e-Tag:

1. Create a Firm energy schedule with Firm Transmission Reservation(s).

2. Enter a Transmission Allocation profile.

3. Enter a zero Energy Profile.

4. Select Contingency Reserve (C-NS) or Spinning Reserve (C-SP) in the Energy Product Code drop-down list.

5. Select Capacity in Transaction Type drop-down list.

6. When capacity is called upon, the PSE enters an adjustment to the energy profile on the e-Tag up to the reliability limit or the transmission allocation profile limit.

The Transmission Allocation profile stated in the Capacity e-Tag will be used to decrement the Firm capacity that is available for further scheduling on the Transmission Reservation(s) 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 e-Tags without BC Hydro approval, which will ensure the necessary reviews and system arrangements have been made.

Prior to the submission of any dynamic e-Tags, 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 techncially feasible, BC Hydro will undertake work within BC Hydro systems to facilitate the submission of Dynamic e-Tags.

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
NSPIN	DSConRes
REPL	DSConRes
INC	DSConRes
DEC	DSConRes
SPIN	DSSpinRes
REGUP	DSSpinRes
REGDN	DSSpinRes

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 e-Tag:

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 Transmission Reservation, of any priority, 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 in Section 2.2 above can be used for Dynamic e-Tags.

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 may use its Transmission Reservations, of any priority, for EIM transactions.

To submit an e-Tag 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 e-Tag 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 ARef as provided by OASIS.

The Blanket approach as described Section 2.2 above can 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 e-Tag, enter G-NF in the Market Path section in the Product Code drop-down list.

9.0   WHEELTHROUGH ENERGY

There are two approaches to schedule Wheelthrough energy:
- the PSE can submit one e-Tag that references a matching Wheelthrough Transmission Reservation; or
- the PSE can submit **one** e-Tag that references import and export Transmission Reservations.

10.0   EMERGENCY ENERGY

An Emergency e-Tag is like any other e-Tag except the Transaction Type is EMERGENCY. Similar to all other e-Tags, the Emergency e-Tag requires to be scheduled on a valid ARef. If transmission is not reserved and referenced in the e-Tag, a penalty charge will be applied to all unauthorized usage in accordance with OATT Rate Schedule 01.

Refer to BC Hydro's OATT Business Practices on *Intra-Hour Scheduling – Transmission & Energy* and *Settlements & Billing* for additional information.

11.0   e-TAG SUBMISSION TIMELINES

e-Tags 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 e-Tags, respectively.

12.0   SUBMITTING MODIFICATIONS TO e-TAGS

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

1. For an IMPLEMENTED e-Tag, modifications cannot be made within the scheduling hour and only future hours may be modified.

2. Correction(s) can only be made to a PENDING e-Tag. 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. Adjustment(s) can only be made to a CONFIRMED or IMPLEMENTED e-Tag. 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 e-Tag.

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

13.0   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 BC Hydro's OATT Business Practice on *Ancilllary Services* for further information.

14.0 Other Conditions

The practice of creating e-Tags that transmit energy in opposite directions through BC Hydro's Transmission System using either the US border (BC.US.BORDER) or the Alberta border (AB.BC) as a wheeling point is not permitted, and such e-Tags will be denied (see e-Tag Example 1).

e-Tag Example 1:

POR	POD
KI	BC.US.BORDER
BC.US.BORDER	AB.BC

Furthermore, any e-Tag that transmits energy from the BC Hydro Transmission System to a point into Alberta or into the US and, on the same e-Tag, transmits the energy back into the BC Hydro Transmisison System will be denied (see e-Tag Example 2).

e-Tag Example 2:

POR	POD
KI	BC.US.BORDER
BC.US.BORDER	ABC (imaginary point in the US)
ABC (imaginary point in the US)	BC.US.BORDER
BC.US.BORDER	DEF (imaginary point in the BC Hydro Transmission System)

Document Change History

Issue	Reason for Issue	Date
10	Added Section 14.0, Other conditions	March 2, 2023
9	Updated Language	September 1, 2022
8	Section 8 was amended to conform with *WECC Standard BAL-002-WECC-2a — Contingency Reserve* to remove the requirement for Interruptible imports to provide reserve obligation multiplier of 100%.	December 9, 2021
7	Revised language in Section 6.0 that the Blanket approach can be used for Dynamic Scheduling. Revised language in Section 7.0 that the Blanket approach can be used for EIM Scheduling	October 6, 2021
6	Included Emergency Energy section and updated section numbers.	April 13, 2020
5	Corrected typo.	April 9, 2018
4	Included EIM Scheduling, tariff changes, & updated overall language.	March 26, 2018
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

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