



Hourly Firm Monitoring and Evaluation Plan

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Overview

As part of the TC-20 Settlement Agreement the Bonneville Power Administration (Bonneville) agreed to monitor and evaluate (M&E) the Hourly Firm product starting in January 2019.

Bonneville's evaluation of the Hourly Firm product will include:

1. Updates on any operational experience relating to the hourly firm product's impact on reliability, curtailments or other system operations;
2. Evaluations of hourly ATC available at the time of firm curtailments;
3. Any identifiable impacts of hourly firm curtailment priorities to customers that hold long-term firm transmission service agreements, including network integration transmission service ("NT") and long-term firm point-to-point transmission service ("PTP").
4. Customer experience with the hourly firm product regarding usage and marketing and load service impacts. This evaluation will be based on information provided to Bonneville from customers that use the hourly firm product during the monitoring period.

Evaluation Period

Bonneville will conduct monitoring and evaluation of the Hourly Firm product for three time horizons:

- Mid-January 2018 to July 1, 2019 (unlimited sales of the Hourly Firm Product).
- July 1, 2019 through December 31, 2019.
 - Hourly Firm sales will be limited to Bonneville's posted available transfer capability (ATC) calculated in accordance with Bonneville's short-term ATC methodology.
- January 1, 2020 – September 30, 2021
 - Hourly Firm sales will be limited to Bonneville's posted ATC. Hourly firm reservations will not be available in real-time. Hourly firm may only be reserved until the day prior to the operating day at 2340.

Evaluation Concepts and Data Analysis Overview

During the evaluation period, Bonneville will evaluate the Hourly Firm product based off the following concepts:

- Has a demonstrable adverse reliability risk
- A more than de minimis adverse impact to firm transmission service
- Is in conflict with the then applicable market rules

For each of the risk concepts, Bonneville will utilize a process for:

- Measuring the risks
- Investigating these risks for impacts from various factors



The steps the evaluation process are:

- Operationalize the risk concepts into numeric measures
 - Operationalization is the process of taking a concept and converting it into something which can be measured.
- Test the numeric measures for practicality
 - Testing these possible measures for practicality is the process of validating the risk measure works as intended. It should move toward one extreme when the system is faced with significant reliability events and toward the opposite extreme when the system is least stressed.
- Associate the practical risk measures with external drivers
 - Associating these validated measures with external independent variables will allow an estimation of the risk-influencing impacts of these independent variables. It is important to note that an association with risk by an independent variable will not imply causation, but it will imply a probability of a riskier system state.
- Report on any direct or indirect impacts which Hourly Firm might have on these risk measures

These risky system states can then be discussed within the context of the external drivers and managed to acceptable ranges. It is anticipated that the TC-20 evaluation process will then move into an iterative process of monitoring and then revising either policies impacting system risk or improvement of the evaluation process.

Data Collection Methods:

Bonneville will provide information and analysis as described in section [2.d.ii and 2.d.iii of the TC-20 Settlement Agreement \(Page 11 Appendix 1\)](#). Bonneville will also identify specific system events and evaluate the impacts of the Hourly Firm Product to these events. Bonneville will then monitor the frequency and severity of events and determine if events are impacted as Bonneville begins limiting Hourly Firm sales to ATC and changes its Reservation timeline for the Hourly Firm product.

Evaluation:

Bonneville will analyze the data using the three risk concepts of a demonstrable adverse reliability risk, a more than de minimis adverse impact to firm transmission service and is in conflict with the then applicable market rules as the evaluation framework.

A demonstrable adverse reliability risk

Bonneville will focus on time periods where the system has the following indicators of congestion.



1. Curtailments
2. TLR Avoidance events
3. Dispatcher actions
 - a. Configuration changes
 - b. Limiting wind by path and other small solar, hydro and co-generators to schedules
 - c. Redispatch of federal generation
4. Real-time Contingency Analysis tool notifications
5. Instances where actual flows were within 15% of Total Transfer Capability (TTC) for a network flowgate

For each identified event, Bonneville will evaluate and test for contributing factors and correlation. Specifically, Bonneville will look at:

1. System flows and transfer capability:
 - a. Determine the amount of Hourly Firm during congestion events and/or potential reliability events. Also look at flowgate impacts relative to other firm products and TTC
2. State of the system
 - a. Outages – Planned and unplanned
 - b. Peak-load events
 - c. Generation contingencies
3. Posted Hourly Firm and Hourly Non-Firm TTC and ATC
 - a. Determine whether ATC calculation is giving the appropriate signal
 - b. Look at correlation between TTC, ATC and actual flows and the ability to accurately capture availability
4. Schedules by Product (Firm and Non-Firm Hourly, Daily, Monthly, long-term):
 - a. Look at relationship/volume of Hourly Firm usage; is it increasing during events – how is Hourly Firm being used during congestion/reliability events
5. Analysis on the type of Hourly Firm schedule (Original, Redirect, Resale)
 - a. Look into net new Impacts of Hourly Firm; redirects vs. parents vs. new
6. Hourly Firm schedules by Region
7. Timing of Hourly Firm reservations and schedules
8. In what ways is Hourly Firm contributing to dispatcher actions:
 - a. Contrast with dispatcher actions necessary during non-firm during the 3 monitoring time horizons
 - i. Has/will limiting Hourly Firm to ATC improve reliability?

A more than de minimis adverse impact to firm transmission service

Bonneville will monitor and evaluate the following system events to evaluate whether the Hourly Firm product is creating a more than de minimis adverse impact to firm transmission service specifically looking at:



1. Curtailments – Were firm transmission schedules impacted by the curtailment and did hourly firm contribute
2. NT Redispatch – was this impacted by the curtailment and did hourly firm contribute
3. Firm TLR Avoidance events – did hourly firm contribute to this

Conflict with the then applicable market rules

Bonneville will monitor market rules to ensure that the hourly firm product is not in conflict with the changing market landscape. Bonneville will present any information related to changing market rules prior to the TC-22 discussions.

Reporting

[External Reporting Site](#)

Communications

Bonneville is committed to transparency and will share the results of its evaluations and analysis with customers at least **twice** before July 1, 2020.

- Tentative schedule:
 - September 2019
 - March 2020
 - June 2020

Bonneville will share its data and analysis gathered as defined in [2.d.ii and 2.d.iii of the TC-20 Settlement Agreement \(Page 11 Appendix 1\)](#) to our external website.

After the TC-22 proceeding, Bonneville and customers will evaluate options for the Hourly Firm product for the post-TC-22 period based on the results of the above evaluation. Bonneville shall engage in best efforts to come to a collaborative solution that mitigates the identified risks/impacts of hourly firm service with customers.

