

Committed Scheduling, Version 6

Effective: 10/01/2015

Version 6 includes the following changes:

- *Removed Committed 30/30 Scheduling from the business practice.*
 - *Replaced Scheduling Performance Metrics with the application of Intentional Deviation Penalty Charge.*
 - *Aligned Direct Assignment Charge provisions with the applicable rate schedule.*
 - *Removed rate period specificity.*
 - *Scheduling requirements for Solar resources.*
 - *Certain Section numbering has changed.*
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This Business Practice implements the scheduling requirements for Solar generators and the committed scheduling options that are available for Wind Generator election in accordance with the applicable BPA Ancillary and Control Area Services rate schedule.

Committed Scheduling for a Wind Generator is as follows:

- Committed 30/60 Scheduling: Committed 30/60 must schedule in a way that meets or exceeds the accuracy of schedules that use the 30 minute BPA-provided schedule value for a 60 minute hourly schedule.
- Committed 40/15 Scheduling: Committed 40/15 must schedule in a way that meets or exceeds the accuracy of schedules that use the 40 minute BPA-provided schedule value for a 15 minute intra-hour schedule.
- Committed 30/15 Scheduling: Committed 30/15 must schedule in a way that meets or exceeds the accuracy of schedules that use the 30 minute BPA-provided schedule value for a 15 minute intra-hour schedule.

Committed Scheduling for a Solar Generator is as follows:

- Schedule in a way that meets or exceeds the accuracy of schedules that use the BPA-provided schedule value from the Solar Matrix for a 60 minute hourly schedule. The Solar Matrix will be provided by BPA Transmission Operations to the Solar Generator annually, at a minimum.

BPA will provide participants with the schedule value that meets the accuracy standard for each schedule interval. BPA strongly encourages participants to automate scheduling to the BPA-provided schedule value.

A. Eligible Committed Scheduling Participants and Resources

1. Wind Generators

- a. Any Customer¹ that operates a wind facility within BPA's Balancing Authority Area (BAA) and elects to participate in Committed Scheduling. For a wind facility being developed in phases, any phase of a wind facility may participate in Committed Scheduling so long as each phase is metered and scheduled independently and is not otherwise interdependent with any other phase.
 - b. The Wind Generator must comply with BPA's Technical Requirements for Interconnection to the BPA Transmission Grid, specifically section 12.2.2 Data Requirements for Balancing Authority Area Services.
 - c. Wind generators that elect Committed Scheduling are (i) eligible for a reduced Variable Energy Resource Balancing service (VERBS) rate; (ii) subject to Intentional Deviation penalties; and (iii) exempt from Persistent Deviation penalties for Generation Imbalance.
2. Solar Generators
- a. Any Customer¹ that operates and schedules a solar facility within BPA's Balancing Authority Area (BAA) is required to participate in Committed Scheduling.
 - b. The Solar Generator must comply with BPA's Technical Requirements for Interconnection to the BPA Transmission Grid, specifically section 12.2.2 Data Requirements for Balancing Authority Area Services.
 - c. Solar generators are (i) subject to the Variable Energy Resource Balancing Service (VERBS) for Solar rate, (ii) subject to the Intentional Deviation Penalty Charge, and (iii) exempt from Persistent Deviation penalties for Generation Imbalance.

B. Eligibility Information Required

1. Potential Participants are required to:
 - a. Elect participation in Committed scheduling in accordance with the Balancing Service Election for Dispatchable Energy Resource Balancing Service (DERBS) and Variable Energy Resource Balancing Service (VERBS) business practice.
 - b. If the POD² for a Committed 40/15 or Committed 30/15 Scheduling Resource is to load inside BPA's Balancing Authority Area, the Potential Participant must provide the following to their Transmission Account Executive:
 - i. Written confirmation from the load that it has a Balancing Resource that it will schedule to load on each 15 minute interval in order to offset any changes in the wind facility output to the load.
 - ii. The balancing resource name and POR.

¹Any customer taking service under Use of Facilities (UFT), Formula Power Transmission (FPT), Integration of Resources (IR), Generation Integration Services, Part II or Part III of the OATT.

² Point of Delivery is a point on the Transmission Provider's Transmission System where capacity and energy transmitted by the Provider will be made available to the Receiving Part; An OASIS field on a TSR that is the scheduling POD.

- iii. The information required in B.1.c.i and B.1.c.ii, for the portfolio of balancing resources, if applicable.
- d. Provide any other pertinent information requested by BPA Transmission Services.

C. Generation Imbalance and Energy Imbalance

1. Energy Imbalance³ risk:
 - a. For each Wind or Solar generator sinking to load within the BPA BA using Committed 40/15 or Committed 30/15 Scheduling, a Balancing Resource⁴ must be identified, as noted above in B.1.b and B.1.c. If the intra-hour schedule is adjusted for the Committed Scheduling generator without also adjusting the Balancing Resource schedule, such patterns of imbalance could result in Persistent Deviation penalties for Energy Imbalance
 - b. For a Committed 40/15 or a Committed 30/15 Balancing Resource that is scheduling to loads within the BPA BA, BPA will also verify that the Balancing Resource is adjusting in conjunction with the schedule changes of the Committed 40/15 or Committed 30/15 Scheduling Resource. BPA will check the intra-hour change in the sum of schedules for the Balancing Resource against the intra-hour change to ensure that use of FCRPS balancing reserve capacity is reduced. Persistent Deviation penalty charges may apply to the Balancing Resource and the resource may no longer qualify as a balancing resource.
2. Generation Imbalance Risk:
 - a. Generation Imbalance for Committed Scheduling Resources and Balancing Resources is calculated on the shortest schedule interval submitted within the hour. Each hour would be calculated on 15 minute, 30 minute, or 60 minute interval, but would not be calculated on a combination of time intervals. (See the Generation Imbalance Business Practice). Committed Scheduling Resources are exempt from Persistent Deviation penalties for Generation Imbalance.
 - b. Balancing Resources are subject to Persistent Deviation penalties for Generation Imbalance.

D. Compliance with Dispatch Orders

1. Committed Scheduling participants are subject to Dispatch Orders⁶, including Curtailments, generation limits and directives issued under the Operational Controls for Balancing Reserves.

³Difference between hourly scheduled amount and hourly metered (actually-delivered) amount associated with transmission to a load located in the BPA Balancing Authority area or from a generation resource located within BPA's Balancing Authority Area.

⁴A dispatchable resource within or outside of the BPA Balancing Authority that is available to the load served by the Committed Scheduling Resource on the half hour.

2. A Committed Scheduling participant that does not respond appropriately to a Dispatch Order⁵ is subject to a Failure to Comply Penalty⁶.

E. BPA-Provided Schedule Value (Intentional Deviation Measurement Value)

1. Through a mutually agreed-to data link (signal), BPA will provide to the Participant the scheduling value corresponding to the Committed Scheduling option elected by the customer.
2. The BPA-provided scheduling value is the Intentional Deviation Measurement Value in the Ancillary and Control Area Service (ACS) Rate Schedules.
3. For Wind Generators, the BPA-provided scheduling value will be updated every 5 minutes to meet the requirements of the various committed scheduling elections. The BPA-provided scheduling value is either:
 - a. Persistence value: The generator's schedule for the next schedule interval is the generator's 1-minute average of the actual generation, or;
 - b. Generation forecast value: The generator's schedule for the next schedule interval is;
 - i. The Potential Generation value telemetered to BPA from the Participant's wind plant, or, when not available, then;
 - ii. the forecast value from the BPA Official Wind Power Forecast.
4. For Wind Generators, BPA will determine the BPA-provided scheduling value as follows:
 - a. For periods where there is NO generation limit or NO schedule curtailment in effect a persistence value will be calculated and provided for the subsequent schedule period.
 - b. For periods where there IS a generation limit or IS a schedule curtailment in effect that would affect the calculation of the persistence value then the Generation Forecast value defined in E.2.b will be provided as the scheduling value.
5. The following table identifies when to utilize the BPA-provided scheduling value for each type of Committed Scheduling election and for Solar Generators.
 - a. For Wind Generators the Posted Period for the applicable scheduling election is used to determine the applicable BPA-provided scheduling value when determining scheduling accuracy performance.
 - b. For Solar Generators the hourly value from the Solar Matrix provided to each solar generator at least annually is used to determine the applicable BPA-provided scheduling value when determining scheduling accuracy performance.

⁵An order or directive from Transmission Services to dispatch, curtail, redispatch, limit output, or shed load. Dispatch orders may be communicated by various methods including, but not limited to: phone call (e.g. to redispatch generation up or down); electronic signal (e.g. via direct telemetry or private web application to limit generation according to directives issued under the Operational Controls for Balancing Reserves; or NERC e-tagging system (e.g. to curtail transmission schedules and the generation using those schedules).

⁶The consequences of non-compliance as defined in the Failure to Comply Business Practice in effect at the time.

Period Start	xx:00			xx:15			xx:30			xx:45		
Scheduling Election	Calculation Period	Posted Period	Schedule Period	Calculation Period	Posted Period	Schedule Period	Calculation Period	Posted Period	Schedule Period	Calculation Period	Posted Period	Schedule Period
30/15	xx:29 - xx:30	xx:30 - xx:35	xx:01-x1:15	xx:44 - xx:45	xx:45 - xx:50	x1:15-x1:30	xx:59 - xx:00	xx:00 - xx:05	x1:30-x1:45	xx:14 - xx:15	xx:15 - xx:20	x1:45-x2:00
40/15	xx:19 - xx:20	xx:20 - xx:25	xx:01-x1:15	xx:34 - xx:35	xx:35 - xx:40	x1:15-x1:30	xx:49 - xx:50	xx:50 - xx:55	x1:30-x1:45	xx:04 - xx:05	xx:05 - xx:10	x1:45-x2:00
30/60	xx:29 - xx:30	xx:30 - xx:35	x1:00-x2:00	NA	NA	NA	NA	NA	NA	NA	NA	NA
Solar	Monthly, Hour of Day	NA	x1:00-x2:00	NA	NA	NA	NA	NA	NA	NA	NA	NA

- For Wind Generators, BPA will update the BPA-provided schedule value within 1 minute after the start of the Posting Period for each Committed Scheduling election. In the event BPA does not update the BPA-provided schedule value within 2 minutes of the start of the Posting Period, BPA will deem this a BPA system failure in accordance with Section F.4 of this business practice.

F. Committed Scheduling for Curtailments, Data Link System Failures, and Operational Controls for Balancing Reserves

- During an Operational Controls for Balancing Reserves limit generation event or transmission schedule curtailment, or when Oversupply Management Protocol is in effect, the Participant's performance will be measured on the BPA-provided schedule value as defined in Section E, above.
- During an Operational Controls for Balancing Reserves schedule curtailment the Committed Scheduling Resource does not need to limit its generation in response to the Operational Controls for Balancing Reserves schedule curtailment if there are no other transmission curtailments affecting e-Tags sourced at the Committed Scheduling Resource.
- During a transmission schedule curtailment, Participants are expected to comply and limit generation to not exceed the sum of remaining approved e-Tags during the curtailment.
- During an iCRS Generation Advisor or other data link failure the scheduling value that BPA provides to the Participant may not be sent.
 - The participant should schedule the subsequent scheduling interval as accurately as possible by using the BPA Customer Portal to obtain the BPA-provided schedule value.
 - In recognition that inaccuracy could result from unavailability of the scheduling value, BPA will exclude the subsequent schedule interval from scheduling accuracy performance requirements.
 - The participant should notify their BPA Transmission AE as soon as possible.

G. Application of the Intentional Deviation Penalty Charge (ID)

- Committed Scheduling Participants are subject to the Intentional Deviation (ID) penalty charge as defined in BPA's ACS Rate Schedule.
 - The Committed Scheduling Participant is expected to schedule to the BPA-provided schedule value from the data link established for the Participant's resource.
 - The ACS Rate Schedule provides the performance measures that determine when an Intentional Deviation penalty charge will be applied.
 - A Committed Scheduling Participant scheduling to the BPA-provided schedule value for their elected scheduling paradigm will satisfy the schedule

accuracy performance requirement to avoid the Intentional Deviation Penalty Charge.

2. For schedule Intervals with no curtailments:
 - a. ID applies, in accordance with the ACS Rate Schedule, when the resource schedules to a value other the BPA-provided schedule value (Intentional Deviation Measurement Value), except;
When the resource schedules to another value and the imbalance from a different schedule value meets or beats the imbalance that would have otherwise occurred had the resource scheduled to the BPA-provided schedule value, as defined in Section E above.
3. For schedule periods with curtailments issued after the close of the scheduling window for each scheduling period, ID will apply in accordance with Sections G.1 and G.2, above.
4. For scheduling periods with curtailments issued prior to the close of the scheduling window, ID will be measured on the approved sum of schedules at the close of the scheduling window for that scheduling period as follows:
 - a. When the sum of schedules is equal to the BPA-provided schedule value then ID does not apply in accordance with G.1 and G.2.a, above.
 - b. When the sum of schedules is less than the BPA-provided schedule value then ID will apply in accordance with G.1 and G.2.b, above.
 - c. When the sum of schedules is greater than the BPA-provided schedule value then ID will apply in accordance with G.1 and G.2.b, above.

H. Notification of Participation in Committed Scheduling

1. When resources change their election in accordance with the rate schedule applicable at the time, such as at a mid-period election, their BPA Transmission AE will confirm the change with the resource.
2. BPA encourages Wind Generators to automate their scheduling at the time they elect committed scheduling. BPA encourages Solar Generators to automate their scheduling at the time they elect to take VERBS service from BPA.
3. In planning the time necessary for testing, participants are encouraged to build in time for edits and revisions to systems and processes.

I. Notification of Performance Failure and Termination

1. BPA may initiate billing a committed scheduling participant at its elected VERBS base rate plus any applicable Direct Assignment Charges as described in Section III.E. of BPA's ACS Rate Schedule, within 30 calendar days, starting the first day of the next billing cycle if:
 - a. the Participant fails to convert to automated scheduling using the BPA-provided schedule value within two calendar weeks of receiving the new signal from BPA; or
 - b. the Participant chooses to routinely schedule to a longer scheduling period than elected for; or
 - c. the Participant routinely fails to perform at its elected scheduling paradigm.
2. When a Committed 40/15 or Committed 30/15 Scheduling Resource is sinking to load within the BPA BAA and the Balancing Resource is not changing schedules

in response to the intra-hour adjustments, BPA will issue a notice to the Committed Scheduling participant and the Balancing Resource.

- a. BPA may disqualify the poorly performing Balancing Resource upon 14 calendar days notice if, over a rolling 30 calendar day period, the Balancing Resource routinely fails to change schedules as required in Section G.3 and G.4, above.
 - i. Failure of a Committed Scheduling participant to qualify a new Balancing Resource within the 14 calendar days notice period mentioned in a. above will result in termination from participation in Committed Scheduling and the application of Direct Assignment Charges as described in Section III.E. of BPA's ACS Rate Schedule.
 - ii. During this period the Balancing Resource is expected to exercise due diligence to continue to achieve the expected response.
- b. BPA may disqualify a non-performing Balancing Resource upon seven calendar days written notice.
 - i. If the Committed Scheduling Participant does not have another qualified Balancing Resource the Committed Scheduling Resource will be billed at its elected VERBS base rate plus any applicable Direct Assignment Charges as described in Section III.E. of BPA's ACS Rate Schedule starting on the first day of the next billing cycle.
 - ii. During this period the Balancing Resource is expected to exercise due diligence to continue to achieve the expected response.
- c. A resource may re-qualify as a Balancing Resource after 30 days and at the start of the next billing cycle by providing documentation to BPA Transmission Technical Operations and receiving approval from BPA, that it has corrected the causes for its disqualification. BPA will work with the Committed Scheduling Resource and the Balancing Resource to develop solutions.

J. Additional Information Policy Reference

- BPA Transmission, Ancillary, and Control Area Service Rate Schedules

Related Business Practices

- Redispatch and Curtailment
- Requesting Transmission Service
- Scheduling Transmission Service
- Generation Imbalance
 - Energy Imbalance
- Failure to Comply

- On Demand Resource Scheduling
- Oversupply Management Protocol
- Balancing Service Election for Dispatchable Energy Resource Balancing Service (DERBS and Variable Energy Resource Balancing Service (VERBS)

Version History

Version 6	10/1/15 Includes updates for the BP-16 rate period and changes to the BP-16 Ancillary and Control Area Services Rate Schedule. Changes include the elimination of performance metrics, the inclusion of the Intentional Deviation Penalty Charge, and the inclusion of Solar Generators.
Version 5	10/1/14 Provides for the inclusion of a generation forecast value in the scheduling metrics during periods where a generation limit or schedule curtailment has affected the calculation of the persistence value.
Version 4	4/1/14 Adds the requirements for Committed 40/15 and Committed 30/15 scheduling.
Version 3	<p>02/05/14 Version 3 of this business practice refines the requirements for Section B Prequalification Information Required and Section H Notification of Failure to Meet Scheduling Accuracy and Termination to align the provisions with the ACS-14 Rate Schedule. Version 3 includes the following changes:</p> <p>Section B</p> <ul style="list-style-type: none"> • Step B.1.f: Revised language • Step B.1.g: Replaced "Uncommitted Scheduling" with "elected" and added "Rate plus any applicable Direct Assignment Costs as described in Section III.E. 6.2 of BPA's ACS-14 Rate Schedule" <p>Section H</p> <ul style="list-style-type: none"> • Step H.3.a: Added "by assessing any applicable Direct Assignment Costs as described in Section III.E. 6.2 of BPA's ACS-14 Rate Schedule" • Step H.4: Deleted step • Step H.4: Revised language • Step H.6: Deleted step • Step H.5: Replaced "moved to a longer" with "who has failed to perform at its elected" and deleted "option by BPA" • Steps H.9.a-d: Deleted steps
Version 2	10/01/13 Version 2 of this business practice implements requirements for providing additional data if necessary to qualify a resource for committed scheduling and to provide clarity for the application of the BPA provided signal from different sources for Committed Scheduling Participants. This Business Practice takes effect on October 1, 2013 and describes BPA's

	<p>requirements and other details for participation in Committed Scheduling. The specific changes to Version 2 include:</p> <ul style="list-style-type: none">• Section B: Added step 1.h.• Section E:<ul style="list-style-type: none">• Title change replaced "iCRS" with "Data Link"• Step E.4: Deleted "iCRS ceases to produce" and added "or another mutually agreed to data link" and "ceases to be produced"• Section F:<ul style="list-style-type: none">• Step F.1.a: Added "The committed scheduling participant is expected to schedule to the value provided in the data link established for their resource."• Step F.1.b: Added "or another mutually agreed to data link"• Step F.2.a: Added "The committed scheduling participant is expected to schedule to the value provided in the data link established for their resource."• Step F.2.b: Added "or another mutually agreed to data link"• Section H: Step H.2: Added "or another mutually agreed to data link" and "Waiver requests will be evaluated against the persistence value provided by BPA from the mutually agreed to data link."
Version 1	07/03/13 New business practice