



## Customer Supplied Generation Imbalance Pilot Program, Version 4

Effective: 09/17/13

In September 2010, BPA initiated its **Customer**<sup>1</sup> Supplied Generation Imbalance (CSGI) Pilot Program. Under the CSGI Pilot Program, a wind Customer may self-supply only the Generation Imbalance component of BPA's Variable Energy Resource Balancing Service (**VERBS**<sup>2</sup>) from its own resources. BPA will continue the CSGI Pilot Program through the 2014-2015 Rate Period.

BPA has also adopted a new policy, referred to as Self Supply of **Balancing Services**<sup>3</sup> Program that allows any Customer, including a **Dispatchable Energy Resource**<sup>4</sup> Balancing Service (DERBS) Customer, to self-supply all components of Balancing Services, which is comprised of Regulation, Following, and Generation Imbalance. BPA's policies for self-supplying Balancing Services are subject to a separate Self Supply of Balancing Services Business Practice because BPA's policies for self-supplying Balancing Services are significantly different than BPA's policies under the CSGI Program. The essential differences are that under the CSGI Program the Customer deploys its resources to meet its Generation Imbalance needs whereas under the Self Supply Program, the Customer makes its resources available for BPA to deploy to meet the Customer's need for all three components of VERBS.

Changes to this business practice are needed to more accurately reflect the distinctions between BPA's CSGI Program and BPA's Self Supply of Balancing Services Program.

Specific changes to Version 4 include:

- The title of this Business Practice has been changed from Customer Supplied Wind Balancing Pilot Program to Customer Supplied Generation Imbalance Pilot Program.
- Customer Supplied Wind Balancing Services has been replaced with Generation Imbalance Services throughout the Business Practice

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

<sup>2</sup>"Variable Energy Resource Balancing Service," as described in the ACS-12 rate schedule and General Rate Schedule Provisions. Also referred to as "Wind Balancing Service" in the ACS-10 rate schedule.

<sup>3</sup>Regulation Reserves, Following Reserves, and Imbalance Reserves as those terms are described in BPA's Rate Schedules.

<sup>4</sup>Any non-federal thermally-based generating resource 3 MW or greater that schedules its output or is included in BPA's Automatic Generation Control system. This includes generation behind the meter where a generation estimate is used as the resource schedule.

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- Section A:
  - Deleted step 1.e and 1.i
  - Step 1.k: Added "Dynamic Transfer Capability<sup>1</sup> is not required for"
  
- Section C:
  - Step 1: Deleted "shall identify the" and "for which it intends to self-supply by providing"
  
- Section D:
  - Section title change from "Procedures for Submitting a Self-Supply Schedules" to "Procedures for Submitting a CSGI Schedule"
  - Step 3.a-b: Added "CSGI"
  
- Section E:
  - Section title change from "Amount of Imbalance Reserves a Self-Supplying Entity<sup>2</sup> Must Supply to "Amount of Generation Imbalance Reserves a CSGI Participant<sup>3</sup> Must Supply"
  - Step 1, 2 and 3: Replaced "Reserves the Self-Supplying Entity" with "CSGI Participant"
  - Replaced step 4
  
- Section G:
  - Step 1-2: Added "CSGI Participant"
  
- Section H:
  - Section title change from "Billing Procedures for a Self Supplying Entity<sup>4</sup>" to "Billing Procedures for a CSGI Participant"

## A. Eligibility Criteria

1. An applicant must:

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<sup>1</sup>The capability of the transmission system to accommodate continuous ramping of a resource (s) over a pre-determined range, such that the control of the electrical output of such resources(s) can be varied from moment to moment by an entity other than the host utility/host Balancing Authority Area operator.

<sup>2</sup>An entity that operates Wind Facility within BPA's Balancing Authority Area and that has agreed to supply one or more Wind Balancing Services for that Wind Facility.

<sup>3</sup>An entity that operates a Wind Facility or other Variable Energy Resource within BPA's Balancing Authority Area and that has signed a Supplemental Service Agreement agreeing to supply or purchase Supplemental Services for that Wind Facility.

<sup>4</sup>A load, generator, generation provider, Transmission Customer, or other party.

- a. Execute a Customer Supplied Generation Imbalance Participant Agreement;
- b. Identify the Wind Facilities for which it desires to self-supply;
- c. Identify transmission reservations for Wind Facilities for which the Participant desires to self-supply;
- d. Certify that it is the operator of those Wind Facilities, or otherwise has the contractual right to cause Wind Facilities to operate pursuant to the applicant's instructions;
- e. Indicate the date on which it will be able to begin self-supplying Generation Imbalance Services;
- f. Identify the INC Resources and DEC Resources it intends to rely on for Generation Imbalance Services;
- g. Identify its use of Market Purchases to manage its **Netted Station Control Error**<sup>1</sup> under this program and such Market Purchases must be backed by, or otherwise made available by, other deployable INC Resources;
- h. Apply for and receive Dynamic Transfer Capability for each **INC Resource**<sup>2</sup> and **DEC Resource**<sup>3</sup> it expects to use to self-supply Generation Imbalance Services. Dynamic Transfer Capability is not required for an **On Demand Resource**<sup>4</sup> or a **Market Purchase**<sup>5</sup>; and
- i. Meet the requirements of all applicable BPA Business Practices.

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<sup>1</sup>The Station Control Error that results from combining the positive (meaning actual generation exceeds the amount scheduled) and negative (meaning actual generation is less than the amount scheduled) Station Control Errors of more than one generating plant into a single "netted" error.

<sup>2</sup>A generating plant or a Dispatchable Load that a Self-Supplying Entity has qualified as available to increase generation or drop load at the request of the Self-Supplying Entity. An On Demand Resource may be qualified as an INC Resource.

<sup>3</sup>A generating plant or a Dispatchable Load that a Self-Supplying Entity has qualified as available to decrease generation or increase load at the request of the Self-Supplying Entity. An On Demand Resource may be qualified as a DEC Resource.

<sup>4</sup>a. A resource located within BPA's Balancing Authority Area; b. An arrangement with a neighboring Balancing Authority that allows the delivery of power on BPA's system to or from a neighboring system; or c. A Demand Response Resource capable of meeting the technical requirements for an On Demand Resource.

<sup>5</sup>A short-term purchase from a supplier of Generation Imbalance Service. A Market Purchase may not be used as a DEC Resource.

## B. Procedures for Identifying Wind Facilities for which the Applicant will Supply Balancing Reserves

1. An entity that wishes to self-supply Generation Imbalance Services for a **Wind Facility**<sup>1</sup> shall provide:
  - a. The name of the Wind Facility;
  - b. The nameplate capacity rating;
  - c. The interconnection point on BPA's system;
  - d. The Owner and Operator of each Wind Facility;
  - e. Each transmission contract pursuant to which the Wind Facility operator has a right to schedule power from that Wind Facility; and
  - f. Any other pertinent information requested by BPA Transmission Services.
2. Approval of the identified Wind Facilities by BPA is required prior to their inclusion in the Customer Supplied Wind Balancing Services Pilot Program.

## C. Procedures for Qualifying an INC Resource or a DEC Resource to Supply Balancing Reserves

1. An entity that wishes to self-supply **Generation Imbalance Service**<sup>2</sup> from an INC Resource or a DEC Resource shall submit a request in writing to their Transmission Account Executive in which the following information is provided:
  - a. The name of the INC or DEC Resource;
  - b. The nameplate capacity rating;
  - c. The interconnection point on BPA's system;
  - d. The maximum amount of Generation Imbalance Service the entity expects to supply from that INC or DEC Resource; and
  - e. Ramp rates and other limitations on the use of that resource to supply Wind Balancing Services.
  - f. The requirements of Sections C.1.a through C.1.e apply to an INC Resource located within BPA's Balancing Authority Area, but do not apply to a Market Purchase from an INC Resource located outside BPA's Balancing Authority Area.
  - g. With respect to a Market Purchase from an INC Resource located within BPA's

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<sup>1</sup>A collection of individual wind generating turbines operated as a single generation resource with a common point of interconnection to BPA's transmission system.

<sup>2</sup>The Generation Imbalance component of Variable Energy Resource Balancing Service (VERBS).

Balancing Authority, the supplying resource must be approved in advance as provided in Section C.1.a through C.1.e.

- h. A Market Purchase may not be used as a DEC Resource.
2. An entity that wishes to self-supply Generation Imbalance Service shall supply any other pertinent information required by this Business Practice, Transmission Services Dynamic Scheduling Business Practice, or as may be requested by Transmission Services.
3. BPA will review a request to self-supply Generation Imbalance Service from an INC or DEC Resource and provide a written response within 30 days of receipt of the request in the form of:
  - a. Approval of the request as submitted; or
  - b. Offer to approve the request in part, or upon agreement of conditions BPA may propose; or
  - c. Denial of the request and setting forth the basis for the denial and describing the steps, if any, that must be taken to revise the request to increase the likelihood of approval.
4. The entity making the request shall have ten Business days to accept a partial or conditional offer from BPA, or it will be deemed REJECTED.
5. BPA shall designate a “Centroid<sup>1</sup>” for each Self-Supplying Entity.
6. The Point of Receipt<sup>2</sup> (POR<sup>3</sup>) for an INC Resource located within BPA’s Balancing Authority is the point where the INC Resource is connected to BPA’s transmission system.
7. The POR for an INC Resource located outside BPA’s Balancing Authority is the interchange point with the adjacent Balancing Authority from which power from an INC Resource is scheduled into BPA’s Balancing Authority.
8. The POR for a DEC Resource, regardless of location, is the Centroid.

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<sup>1</sup>A unique scheduling point designated by Transmission Services for delivery of power from an INC Resource when actual generation is less than scheduled output, and from that point to a DEC Resource when actual generation exceeds scheduled output, to supply Wind Balancing Services to a Virtual Wind Facility.

<sup>2</sup>Point of Receipt is an interconnection on the Transmission Provider’s Transmission System where capacity and energy will be made available by the Delivering Party; An OASIS field on a TSR that is the scheduling POR.

<sup>3</sup>Point of Receipt is an interconnection on the Transmission Provider’s Transmission System where capacity and energy will be made available by the Delivering Party; An OASIS field on a TSR that is the scheduling POR.

9. The **Point of Delivery**<sup>1</sup> (**POD**<sup>2</sup>) for an INC Resource, regardless of location, is the Centroid.
10. The POD for a DEC Resource located within BPA's Balancing Authority is the point where the DEC Resource is connected to BPA's transmission system.
11. The POD for a DEC Resource located outside BPA's Balancing Authority is the interchange point with the adjacent Balancing Authority to which power is scheduled from the Centroid to remove it from BPA's Balancing Authority.

## D. Procedures for Submitting Self-Supply Schedules

### 1. Dynamic Schedules

- a. A reservation is not required to submit a **Dynamic Transfer**<sup>3</sup> INC or DEC Schedule.
- b. A **Dynamic Transfer INC Schedule**<sup>4</sup> or a **Dynamic Transfer DEC Schedule**<sup>5</sup> submission must comply with all applicable timelines and other requirements for submitting a schedule, except as outlined below:
  - i. A Dynamic Transfer INC or DEC Schedule will bear the designation "SERVICE-BR" ("Balancing Reserve") in the **OASIS**<sup>6</sup> Reference field of the e-Tag.
  - ii. The energy profile of the dynamic e-Tag will populate the use account.
  - iii. No losses will be assessed to a Dynamic Transfer INC or DEC Schedule.

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<sup>1</sup>Point of Deliver (POD) is a point on the 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.

<sup>2</sup>Point of Delivery is a point on the 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.

<sup>3</sup>A term that refers to methods by which the control response to load or generation is assigned, on a real-time basis from the Balancing Authority to which such load or generation is electrically interconnected (native Balancing Authority) to another Balancing Authority (attaining Balancing Authority) or other controlling entity on a real-time basis. This includes Pseudo-Ties, Dynamic Schedules, and dynamic arrangements within the BPA Balancing Authority Area.

<sup>4</sup>A Type-Dynamic e-tag submitted in advance of the operating hour for delivery of power from an INC Resource to a Centroid when needed to provide generation when actual generation from a Virtual Wind Facility is less than scheduled output.

<sup>5</sup>A Type-Dynamic e-tag submitted in advance of the operating hour for delivery of power from a Centroid to a DEC Resource when actual generation from a Virtual Wind Facility exceeds scheduled output.

<sup>6</sup>Open Access Same-Time Information System

- c. The transmission profile for a Dynamic Transfer INC or DEC Schedule may not exceed the Dynamic Transfer Capability allocated to the INC or DEC Resource as set forth in the [Balancing Plan](#)<sup>1</sup>.
  - d. For delivery of Generation Imbalance Service using Dynamic Transfer Capability, the Self-Supplying Entity may use transmission rights it has purchased from BPA for delivery of power from its Wind Facilities comprising the [Virtual Wind Facility](#)<sup>2</sup> provided sufficient Dynamic Transfer Capability is available, even though transmission paths used for balancing purposes may differ from those described in the Self-Supplying Entity's transmission contract with BPA.
  - e. BPA will treat each Dynamic Transfer INC or DEC Schedule as a "no charge" schedule for which it will not charge an additional transmission fee or require the Self Supplying Entity to obtain transmission rights beyond those rights the Self-Supplying Entity has to schedule power from the Wind Facilities comprising the Virtual Wind Facility.
2. On Demand Schedules
- a. A firm reservation is required to submit a On Demand INC or DEC Schedule.
  - b. An On Demand INC or DEC Schedule submission must comply with all applicable timelines and other requirements for submitting a schedule, except as outlined below:
    - i. An On Demand INC or DEC Schedule will bear the designation "-ODB" ("On Demand Balancing") in the OASIS Reference field of the e-Tag.
    - ii. The energy profile of the On Demand e-Tag will populate the use account.
  - c. The transmission profile for an On Demand INC or DEC Schedule may not exceed limits specified in the Balancing Plan for the underlying On Demand Resource.
3. Market Purchases
- a. A CSGI Participant that desires to use a Market Purchase as an INC Resource must arrange to supply information in a form acceptable to BPA concerning the amount of INC Resources available each hour.
  - b. A CSGI Participant that uses a Market Purchase as an INC Resource must maintain

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<sup>1</sup>A list of INC Resources and DEC Resources approved in advance by Transmission Services as eligible to supply Wind Balancing Services, including my associated limitations on their use.

<sup>2</sup>A collection of Wind Facilities for which a Self-Supplying Entity will supply one or more Wind Balancing Services.

documentation for at least one year from the date each schedule for a Market Purchase is submitted showing that:

- i. The Participant had capacity available to supply reserves necessary to meet applicable performance metrics; and
  - ii. The Participant is not using Market Purchases to avoid purchasing or otherwise arranging to have capacity available to meet applicable performance metrics in advance of the delivery hour.
- c. A Market Purchase must be scheduled on an e-Tag with a NERC priority of “1NS.”.
- d. The right to use Market Purchases to supply balancing may be withdrawn at any time should use of a Market Purchase:
- i. Result in a failure to supply sufficient reserves to stay within applicable metrics; or
  - ii. For a purpose other than balancing a wind error.

#### **E. Amount of Generation Imbalance Reserves a CSGI Participant Must Supply**

1. The amount of Generation Imbalance Service a CSGI Participant must supply is determined by the Netted Station Control Error of the Wind Facilities which is equal to the Virtual Wind Facility's deviation from its respective schedules minus the Regulation and Following Reserves provided by BPA.
2. A CSGI Participant supplying Generation Imbalance Reserves must meet the following performance metrics that BPA will designate for each CSGI Participant and include as a performance requirement in the CSGI Participant Agreement. The CSGI Participant shall comply with any directives issued by BPA in accordance with the CSGI Participant Agreement to comply with the performance metrics.
  - a. The amount that the instantaneous Netted Station Control Error may not exceed;
  - b. The amount that the instantaneous Netted Station Control Error may not fall below;
  - c. The amount that the rolling 30 minute average of integrated Netted Station Control Error may not exceed or fall below;
  - d. The amount that rolling 60 minute average of integrated Netted Station Control Error may not exceed or fall below;
  - e. A maximum ramp rate that an INC Resource may not exceed when increasing

- generation or decreasing load;
- f. A maximum ramp rate that a DEC Resource may not exceed when decreasing generation or increasing load.
3. A CSGI Participant shall deploy its Virtual Wind Facility, DEC Resources and INC Resources in such a manner that the Netted Station Control Error of those resources equals the combined amount of Regulating and Following Reserves BPA is providing within 10 minutes if the total reserve deployment in the BPA Balancing Authority Area exceeds 80% of the reserve set aside and the Netted Station Control Error is contributing to the reserve deployment (Netted Station Control Error and BPA reserve deployment have opposite signs).
  4. BPA reserves the right to selectively curtail a CSGI Participant's wind schedules so as to reduce Netted Station Control Error to an acceptable level should a Participant fail to meet these metrics.
  5. Failure to Comply charges, if any, will be applied in the same manner as they would apply in the absence of the Customer Supplied Generation Imbalance Pilot Program.
  6. After notice and an opportunity to comment, Transmission Services may change the limits set forth in step E.2 above to account for changes in the Virtual Wind Facility or to adjust the metric as needed to improve the efficacy of the Customer Supplied Generation Imbalance Pilot Program.

## F. Curtailment Priority for Self Supply Schedules for INC and DEC Resources

1. A Dynamic Transfer INC or DEC Schedule will be given a “1-NS” NERC curtailment priority.
2. Should it be necessary to curtail schedules on a transmission path that is being used or will be used by a Dynamic Transfer INC or DEC Schedule, BPA Transmission Services will curtail the Dynamic Transfer INC or DEC Schedule ahead of any other transmission schedule, including other non-self supply schedules with a “1-NS” NERC curtailment priority.
3. An On Demand INC or DEC schedule will be given a “7-F” NERC curtailment priority.
4. A Market Purchase will be given a “1-NS” curtailment priority.

## G. Compliance with Dispatcher Directives

1. A CSGI Participant is subject to Dispatcher directives, including directives issued under [Dispatch Standing Order \(DSO\)](#)<sup>1</sup> No. 216.
2. A CSGI Participant that does not respond appropriately to a Dispatcher directive is subject to a [Failure to Comply Penalty](#)<sup>2</sup>.

## H. Billing Procedures for a CSGI Participant

1. VERBS charges will be offset by billing credits for the service components that are self-supplied.
2. BPA Transmission Services shall calculate Generation Imbalance charges, including Persistent Deviation charges, for the Virtual Wind Facility as one project, instead of individually for the Wind Facilities that comprise the Virtual Wind Facility. The charges will apply to the remaining imbalance after taking into account the Generation Imbalance Reserves scheduled to and from the Centroid.
3. Generation Imbalance charges, or [Energy Imbalance](#)<sup>3</sup> charges, including Persistent Deviation charges, shall be applied to INC or DEC Resources in the same manner as they would apply in the absence of the Customer Supplied Generation Imbalance Pilot Program, taking into account the Generation Imbalance Service schedules to and from the Centroid.

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<sup>1</sup>A published order pursuant to which a dispatcher may order a transmission customer to take action necessary to protect system reliability.

<sup>2</sup>The consequences of non-compliance as defined in the Failure to Comply Business Practice in effect at the time.

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

4. Unless treated otherwise in this Business Practice, all other rates and charges shall be applied in the same manner as they would in the absence of the Customer Supplied Generation Imbalance Pilot Program.

## I. Managing Contingencies

1. If one of the Wind Facilities comprising a Virtual Wind Facility declares a contingency, for purposes of applying Generation Imbalance charges, the contingency shall be treated as a contingency for the Virtual Wind Facility.
  - a. During a contingency, no Generation Imbalance charges will accrue for the Virtual Wind Facility or for any of the Wind Facilities comprising the Virtual Wind Facility.
  - b. During a contingency, schedules for the Wind Facility experiencing the contingency will be supported with Contingent Reserves in lieu of self-supply of Generation Imbalance Service.
2. If the operator of an INC Resource in the BPA Balancing Authority Area supplying Generation Imbalance Service declares a contingency, no Generation Imbalance Service may be supplied from that INC Resource in the same hour to the extent of the contingency until the contingency is terminated.
3. If the operator of a DEC Resource supplying Generation Imbalance Service declares a contingency, Generation Imbalance Service may be supplied from that DEC Resource in the same hour to the extent actual generation can be reduced, notwithstanding the contingency, until the contingency is terminated.

## J. Additional Information

### Related Business Practices

- Requesting Transmission Service
- Scheduling Transmission Service
- Generation Imbalance
- Failure to Comply
- Requesting and Awarding Access to Dynamic Transfer Capability
- Dynamic Transfer Operating and Scheduling Requirements
- On Demand Resource Scheduling
- Oversupply Management Protocol

### Version History

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Version 4	09/17/13 Changes to this business practice are needed to more accurately reflect the distinctions between BPA's CSGI Program and BPA's Self Supply of Balancing Services Program.  Specific changes to Version 4 include:
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- The title of this Business Practice has been changed from Customer Supplied Wind Balancing Pilot Program to Customer Supplied Generation Imbalance Pilot Program.
- Customer Supplied Wind Balancing Services has been replaced with Generation Imbalance Services throughout the Business Practice
- Section A:
  - Deleted step 1.e and 1.i
  - Step 1.k: Added "Dynamic Transfer Capability is not required for"
- Section C:
  - Step 1: Deleted "shall identify the" and "for which it intends to self-supply by providing"
- Section D:
  - Section title change from "Procedures for Submitting a Self-Supply Schedules" to "Procedures for Submitting a CSGI Schedule"
  - Step 3.a-b: Added "CSGI"
- Section E:
  - Section title change from "Amount of Imbalance Reserves a Self-Supplying Entity Must Supply to "Amount of Generation Imbalance Reserves a CSGI Participant Must Supply"
  - Step 1, 2 and 3: Replaced "Reserves the Self-Supplying Entity" with "CSGI Participant"
  - Replaced step 4
- Section G:
  - Step 1-2: Added "CSGI Participant"
- Section H:
  - Section title change from "Billing

	<p>Procedures for a Self Supplying Entity" to "Billing Procedures for a CSGI Participant"</p>
<p>Version 3</p>	<p>10/30/12 Version 3 includes the following changes:General: Replaced Self-Supply Pilot Agreement with Self-Supply Participant Agreement throughout Business Practice.</p> <p>Definitions:</p> <ul style="list-style-type: none"> <li>• Customer Supplied Wind Balancing Services Pilot Agreement: Updated term to Customer Supplied Wind Balancing Services Participant Agreement</li> <li>• Added Dynamic Transfer DEC Schedule and Market Purchase</li> <li>• <b>Wind Balancing Service<sup>1</sup></b>: Updated definition</li> </ul> <p>Section A:</p> <ul style="list-style-type: none"> <li>• Deleted step A.1</li> <li>• Added step A.1.c</li> <li>• Added A.1.h</li> <li>• Added “or a Market Purchase; and” to step A.1.j</li> </ul> <p>Section C:</p> <ul style="list-style-type: none"> <li>• Added step C.1.f - C.1.h</li> <li>• Added step C.2</li> <li>• Deleted step C.1.f</li> </ul> <p>Section D:</p> <ul style="list-style-type: none"> <li>• Deleted “for INC and DEC Resources” from title of section</li> </ul>

<sup>1</sup>The Variable Energy Resource Balancing Service (VERBS) for Wind Resources described in BPA's applicable Transmission and Ancillary Services Rate Schedule.

	<ul style="list-style-type: none"> <li>• Added steps D.3.a- D.3.d.ii</li> </ul> <p>Section E:</p> <ul style="list-style-type: none"> <li>• Deleted “Imbalance Reserves” from step E.3</li> <li>• Deleted step E.4</li> </ul> <p>Section F:</p> <ul style="list-style-type: none"> <li>• Added step F.4</li> </ul>
Version 2	05/31/11 BPA has recently completed its review of the Pilot and concluded that the program should be extended with modest changes to the Pilot. These proposed changes are incorporated into this revised Business Practice. These changes include revising dates, making clear that On Demand Resources may qualify as an INC or DEC Resource, and clarifying language in several provisions
Version 1	06/17/10 New business practice.