

Response to DTC Workshop Comments

March 3, 2012

A. Puget Sound Energy

In this letter, Puget Sound Energy, Inc. (“PSE”) comments on the Presentation entitled “Dynamic Transfer Capability (DTC) Rates Settlement Update Workshop” (the “DTC Presentation”) posted by the Bonneville Power Administration (“BPA”) on January 19, 2012. PSE thanks BPA for the opportunity to comment and to work cooperatively with BPA on the issues addressed therein.

1. Careful Consideration should be given to BPA's DTC Business Practices and Policy Impacts on Innovation in Energy Products and Services in the Pacific Northwest

As a general concern, BPA’s existing DTC business practices and policy may have the effect of limiting innovation in energy products and services in the Pacific Northwest. Accommodation of increasing variable energy resources will be facilitated by increased access to resources across the region. In their current state, BPA’s DTC business practices and policy may prevent products and services developed in regional forums (i.e., Joint Initiative Dynamic Scheduling System (DSS)) from reaching their full potential and could frustrate development of future solutions such as an energy imbalance market.

PSE acknowledges that BPA has worked on “seams issues” between newly developed products and services and BPA’s existing DTC business practices and policy. Nevertheless, BPA’s existing DTC business practices and policy may inhibit the full realization of the value of such new products and services. In other words, BPA’s existing DTC business practices and policy lack sufficient flexibility to accommodate future developments in energy policy and products in the Pacific Northwest. Broader impacts and benefits should be considered in the development of BPA's DTC business practices and policies, and BPA should work collaboratively with the region in this effort.

[BPA Response](#)

BPA appreciates PSE’s perspective and is committed to working collaboratively with regional stakeholders to develop more effective DTC policies over time. BPA’s objective is not to develop DTC business practices or policies that limit innovation; in fact BPA strives to do just the opposite. The current revised DTC business practices were developed to accommodate, in what we believe is a very innovative manner, the demands of significantly increasing variable energy resource (VER) integration while balancing access to dynamic transfer flexibility and managing operational and reliability risks. BPA believes its DTC pilot program is providing valuable experience implementing new DTC policies in support of more flexible use of resources, such as to supply balancing reserves. At the same time, BPA understands that its policies need to evolve over time to continue to meet customer expectations and demands.



2. **BPA Should Address Shortcomings in the Its Existing Dynamic Transfer Capability Business Practices and Policy**

PSE supports regional, collaborative, and long-term solutions to the issues caused by transfers of output from variable energy resources, including without limitation dynamic transfers and self-supply arrangements with respect to variable energy resources. Such long-term solutions, however, should not delay more immediate efforts to address certain shortcomings in BPA's existing dynamic transfer capability ("DTC") business practices. Indeed, BPA and its stakeholders, in addressing certain shortcomings in BPA's existing DTC business practices, will likely bring, identify and address issues that arise in the development of long-term solutions for the issues caused by transfers from variable energy resources.

BPA Response

BPA is committed to working collaboratively with regional stakeholders to develop more effective DTC policies and looks forward to working with PSE and others to do so. BPA sees the proposed WIST commercial/policy working group that may be created as a forum to engage in discussions on these and related issues. BPA expects to be an active participant in those forums, just as it was in the WIST DTC Task Force.

Some of the shortcomings of BPA's existing DTC business practice that BPA and the region should most immediately address are as follows:

a. BPA's Existing DTC Business Practices and Policy Fail to Recognize that Technical Problems are Caused by Both Dynamic and Static Transfers

A fundamental issue with BPA's existing DTC business practices and policy is the assumption that only resources engaging in a dynamic transfer or self-supply are affecting risk parameters, such as, for example, transmission system voltages, reactive reserve management, Remedial Action Scheme (RAS) arming and state awareness. Variable energy resources (e.g., wind resources) that schedule statically will produce intermittent and occasionally rapid changes in power flow across BPA's internal flowgates. Given the number of internal flowgates that BPA manages on its system, it is inevitable that these statically transferred variable energy resources will increase the power flow variability across BPA's system. BPA's focus on resources that engage in new dynamic transfer or self-supply addresses only a subset of BPA transmission users that affect risk parameters and ignores the fact that all variable energy resources affect the risk parameters.

BPA's existing Dynamic Transfer Limit Study published February 15, 2010 (the "Dynamic Transfer Limit Study Methodology") and BPA's Dynamic Transfer Capability Pilot Workshop 101 (the "DTC Workshop"), held on December 2, 2010, support the above assessment. Specifically, BPA used five-minute supervisory control and data acquisition (SCADA) data from calendar years 2007, 2008, and 2009 to determine "historic uses" of DTC. The SCADA data focused not on specific resources, but rather, net power flows across a flowgate or path. Although not fully described in the Dynamic Transfer Limit Study Methodology, PSE presumes that BPA used this data to determine the largest variations in power flow over 60-minute periods to determine the historic usage of dynamic transfer. It is important

to note, however, that such an analysis of historic usage did not exclude static transfers. Instead, such an analysis examined variability in general, which could originate from a large variety of different sources, including statically scheduled variable energy resources.

In the DTC Presentation, BPA commented that it will adopt the uniform regional methodology for setting forth “Transfer Variability Limits” (TVL)¹. This methodology, developed by the ColumbiaGrid WIST Dynamic Transfer Capability Task Force (the “DTC Task Force”), did not focus exclusively on resources engaging in dynamic transfers. Instead, the DTC Task Force methodology addressed variable energy resources that could produce large variations in power flow across an interface (flowgate or path). The DTC Task Force’s methodology inherently supports the proposition that both variable energy resources balanced by BPA resources and variable energy resources balanced by other resources (whether through dynamic transfer or self-supply) could affect the DTC on a flowgate or path. PSE acknowledges that staff from BPA were active on the DTC Task Force, and that there was consensus among members of the DTC Task Force on the idea of TVLs. PSE suggests that BPA revise its DTC business practices and policies with terms to reflect the findings of, and terms used by, the DTC Task Force.

In sum, as stated above, all variable energy resource uses of transmission consume some non-trivial level of DTC. Important variables to consider include amplitude of variability, frequency of variability and predictability of variability. Therefore, PSE suggests that BPA work within a regional forum, such as the DTC Task Force, to determine whether and how BPA should modify its existing DTC business practices and policies.

BPA Response

BPA understands and agrees with PSE that a variety of factors, not just dynamically transferred generation, contribute to system flow variability, including statically scheduled variable energy generation. BPA takes these factors into account in assessing historic use, in determining dynamic transfer limits on BPA flowgates, and in awarding DTC to customers to support new uses. BPA believes its business practices are consistent with the findings in the WIST report.

BPA’s DTC business practices do not assume any particular methodology is used to assess DTC use or to evaluate DTC requests on BPA’s system. As we engage with regional stakeholders on DTC issues within a future WIST commercial/policy task group that may be formed, or in assessing BPA DTC policies for the next rate period, BPA will consider changes that should be made to its business practices to improve them.

¹ The DTC Task Force also chose to use the term “Variable Transfer Capacity” or “VTC” to identify the remaining capability on a flowgate or path to accommodate high variations in power flow. This definition of the remaining capability (similar to BPA’s DTC) communicates the fact that variable energy resources (whether dynamically or statically transferred) affect DTC on a flowgate or path.

Customers will have the continued opportunity to work with BPA in those forums, as well as to comment on any proposed changes to future BPA business practices as they are proposed.

b. Voltage Change Criteria

According to the Dynamic Transfer Limit Study Methodology, BPA's current DTC inventory is influenced by the methodology used to determine Dynamic Transfer Limits. The Dynamic Transfer Limit Study Methodology sets parameters in power flow to restrict the amount of voltage change at bulk transmission system busses that occur on a frequent basis. BPA based these voltage limits on IEEE 141-1993 "flicker" curves, which describe the interaction of voltage variation frequency and visibility of flicker at low voltage consumption points. In using these curves, BPA inherently assumed that voltage variations at extra-high voltage busses would propagate to high voltage busses, medium voltage buses, and, finally, to the end-user at low voltages. PSE understands that the significance of a given voltage variation is not necessarily uniform across transmission systems. Also, since the "flicker" curves relate the allowable voltage variation inversely to the frequency of occurrence, BPA should not apply the voltage change threshold for frequent voltage variations caused by variable energy resources to an infrequent event such as a thermal generator trip. Further, PSE understands that there has not been a consensus within the DTC Task Force on an acceptable level of voltage variation at a given bus and that more work is necessary to identify appropriate voltage variation parameters. PSE suggests that BPA work with the DTC Task Force to identify limits for frequent voltage variation at different busses across the Pacific Northwest system that will accommodate variable transfers while maintaining system reliability.

[BPA Response](#)

BPA is committed to working collaboratively with regional stakeholders to develop more effective DTC policies, including improving its technical approach to evaluating and awarding DTC on its system. While the DTC task force is no longer meeting, WIST is investigating forming a TVL policy committee that would work on issues involving TVL. BPA believes that TVL now belongs at the WECC level and is committed to continuing work on TVL issues via the appropriate WECC committees.

c. External Paths Create Different Types of Variability than Internal Flowgates

PSE recognizes that variability produced from a dynamic transfer arrangement on BPA's interties (e.g. impact of variation from BC resource balancing wind resource in Columbia Gorge on Northern Intertie) will produce concentrated variation at bulk intertie facilities that represents a different impact on BPA's system than variable transfers across BPA's network interfaces. A study was undertaken by BC Hydro (BCH) that identified improvements that could be made in the BCH system to increase the Transfer Variability Limit (TVL) on the northern side of the Westside Northern Intertie. Similar studies can be performed by path owners on the southern side of the Westside Northern Intertie to see how the Intertie TVL can be raised. Similar consideration should be given to all BPA interties.

[BPA Response](#)

BPA expects to perform TVL studies on a couple of its flowgates using the new WIST methodology to confirm that the new methodology does not result in TVLs that differ significantly from current levels.

BPA has not yet determined whether to engage in additional studies to determine what it would take to increase TVLs on various flowgates. BPA believes the first step in considering whether to grow DTC (increase TVLs) on its system would be to determine the purpose for doing so. Once a purpose is defined, consideration could be given to the technical requirements, cost, timing and other considerations in developing a plan to grow DTC on BPA's system, assuming the region's stakeholders believe doing so is a priority.

BPA asks for all parties wanting increased TVL on the system to submit their requests for DTC so BPA can assess areas where TVLs on the BPA transmission system may need to be increased to accommodate these requests.

d. BPA should hold-back DTC for other joint owners on the internal flowgates and external paths it operates

To the extent that BPA calculates Dynamic Transfer Capability on internal flowgates and external paths on its system that have multiple capacity owners, Dynamic Transfer Capability should be allocated to these owners pro rata with each owner's percentage ownership on the interface. Whether or not a capacity owner decides to award or monitor dynamic transfer limits in the future, this allocated capability of any owner should be assumed to be available to that owner and not assumed to be available to other owners. This is consistent with the assumption made by BPA and other participants in the DTC Task Force with regard to the jointly owned interties.

[BPA Response](#)

BPA understands that assessing and allocating DTC on paths that have multiple owners is an issue that is among the commercial issues identified by the WIST task group. BPA expects to participate in discussions of these issues with regional stakeholders on these and related commercial issues such as the recommended commercial WIST task group that may be formed to address commercial DTC issues.

BPA Should Work Collaboratively with Stakeholders in the Region to Address Shortcomings in BPA's Existing DTC Business Practices and Policy

BPA should address the shortcomings in BPA's existing DTC business practices and policy discussed above within an existing or a new regional forum. If BPA is to sponsor its own regional forum, BPA should solicit participation from members of the DTC Task Force and other stakeholders in the region interested in the technical and commercial issues surrounding dynamic transfers to address these issues in a transparent and collaborative manner. BPA should be open to modification of its DTC business practices and policy based on the analysis and consensus developed in such a regional forum. Given the technical and complicated nature of these issues, PSE recognizes that substantial time may be necessary to address these issues. In order to work

through these issues so that results can fit in and inform decisions made in BPA's rate case processes, PSE suggests that BPA coordinate a number of meetings in March, April, May and June of 2012.

BPA Response

BPA is committed to working collaboratively with regional stakeholders to develop even more effective DTC policies. These discussions will take place in several forums including DTC rate case workshops, in a commercial WIST task group if such group is formed, and in the normal process of revising its DTC business practices in anticipation of requesting, receiving, and awarding DTC for the next rate period.

3. BPA Should Work Collaboratively with Stakeholders in the Pacific Northwest to Develop Long-Term, Flexible Means of Addressing Variability in Power Flows on BPA's Transmission System

As stated above, BPA and its stakeholders should engage in a forum to address in the near term shortcomings in BPA's existing DTC business practices and policy. Further, PSE supports a regional, collaborative, and long-term solution to the issues caused by transfers of output from variable energy resources (which include but are not limited to dynamic transfers and self-supply arrangements with respect to variable energy resources).

As stated above, PSE recognizes that variable energy resources significantly contribute to frequent variability. BPA and stakeholders in the region should address the following questions in any regional, collaborative, and long-term solution:

- To what extent do variable energy resource users of BPA transmission increase BPA's risks regarding voltage fluctuation, reactive management, RAS arming and state awareness?
- Have variable energy resource users of BPA transmission properly mitigated the impacts of unanticipated power flow variability on the bulk transmission system?
- Based on the work already completed by the DTC Task Force, what is required for the region to develop a proactive study process to determine the systems and transmission upgrades required to mitigate the impacts of increasing unanticipated power flow variability?

PSE believes that answers to these questions will assist in the development of a long-term solution to power flow variability. The DTC Task Force has already made significant progress in this area, and PSE recommends that BPA work with members of the DTC Task Force to develop the structure for a new forum that can develop long-term solutions for unanticipated power flow variability.

PSE recognizes the connection between technical analysis and policy development on these issues and believes that a proper forum will include a mix of technical experts and commercial/policy experts. As stated above, PSE suggests that BPA solicit the help of existing

members of the DTC Task. BPA should also consider soliciting assistance from other technical and policy experts in the Pacific Northwest, including but not limited to members of the ColumbiaGrid WIST or the newly-assembled NWPP Market Design Committee. BPA should schedule a DTC workshop with its transmission customers, members of the DTC Task Force and other interested stakeholders to develop a work plan to address these issues.

BPA Response

BPA is committed to working collaboratively with regional stakeholders to address issues relating to integrating an ever increasing regional variable energy wind fleet, including whether variable energy resources may be contributing to DTC issues in the absence of a DTC allocation. BPA agrees with PSE that many of the potential solutions require collaboration among regional stakeholders, including an appropriate mix of technical and policy experts. BPA anticipates working through these issues collaboratively in a number of forums, including the WIST and other appropriate forums. However, BPA does not want to duplicate meetings by hosting a series of separate competing workshops on the same topics the DTC Task Force or newly-forming WIST DTC commercial/policy working group will address. BPA believes it is much more efficient and effective to participate in regional discussions on these issues as described above in light of resource and staffing constraints.

4. BPA Costs To Address Unanticipated Power Flow Variability From Variable Energy Resources Should Be Equitably Allocated

BPA's costs of any long-term solution for mitigating frequent unanticipated power flow variability should be equitably allocated, recognizing that such flows are largely caused by variable energy resources (wind resources), but also recognizing that transmission system upgrades made to mitigate the increased risks from unanticipated power flow will likely provide benefits to users of BPA's transmission system more generally (not just those with variable energy resources).

BPA Response

BPA agrees with PSE's statement that costs should be equitably allocated. Currently, BPA is not proposing a new rate to recover the costs of implementing long-term solutions to mitigate DTC impacts. Any such discussion seems premature given the need to engage with regional stakeholders to work through these issues and the associated uncertainties in determining how best to address these issues. These issues could include discussions of how to recover costs associated with implementing long-term solutions, once they are developed and processed through BPA's typical rate-making forums and process.

5. Conclusion

PSE appreciates BPA's review of these comments and consideration of the recommendations contained herein. By return e-mail, please confirm BPA's receipt of these comments.

B. Renewable Northwest Project

Renewable Northwest Project (RNP) appreciates BPA following through on the commitments made in the BP-12 Transmission Settlement to explore policy issues and adopt commercial practices for determining, allocating, and increasing Dynamic Transfer Capability (DTC). RNP believes that addressing these issues is important to regional efforts to procure balancing area services at the least cost to rate payers.

RNP commends BPA for devoting staff resources to the WIST's Dynamic Transfer Capability Task Force. The methodology developed by the group plays a very important role in the effort to marry commercial operations with the transmission system's limitations.

BPA should clarify if there are any differences between the methodology developed by the DTC Task Force and the methodology "BPA has been using to assess dynamic transfer limits and evaluate DTC request (p. 10, January 19th, 2012 Rate Case Workshop)." This would help customers understand whether or not they should expect to see different DTC levels going forward.

[BPA Response](#)

[The existing BPA DTC limits were calculated using the TVL methodology outlined by the WIST DTC Task Force](#)

Despite the task force's success, there remains much work to be done. The task force did not use its methodology to catalogue the DTC availability across system flowgates, but instead deferred to regional transmission providers. BPA should take a leadership role and apply the described methods on all internal paths and interties. Furthermore, BPA should coordinate with regional balancing authorities to ensure that all regional paths are analyzed in a timely manner.

This inventory of DTC location and availability must be established before durable allocation and cost structures can be established over the long-term. BPA should inform customers immediately as to how long this inventory process would take.

If this process will take longer than is commercially viable for particular DTC applications and pilot programs, then BPA should prioritize the timely resolution of the DTC questions needed to keep those efforts moving forward (e.g. Generator Imbalance Self Supply).

However before BPA and the region can proceed with cataloguing TVL evaluations, several policy questions identified by the task force must be addressed. Please see DTC Task Force Phase 3 Report (Dec 2011), page 4 and page 5, numbers 9 and 10, for example. BPA should discuss with customers how these questions will be handled and the ultimate assumptions should be made transparent.

After settling initial assumptions, RNP encourages BPA to develop a catalogue of path Transfer Variability Limits (TVLs) according to different ramp rates. Understanding TVLs under typical "unrestricted" ramp rates for intermittent resources and loads is an important first step. However, there is still additional value measuring how sensitive the TVL is to slower ramp

rates. For example, customers interested in DTC may require this transmission capability for the purpose of procuring or providing imbalance and following reserves only. Presumably, these less “dynamic” products consume less of a path’s TVL and will be more readily available on the system. These products will also have less of an impact of on path’s static flow capability. RNP encourages BPA to take these additional steps in its analysis because the results will be commercially valuable.

Lastly, the developed catalogue should include the historical and committed use of DTC on each path. This information is important for upcoming commercial operations when customers will need to understand why certain paths and flowgates are limited. The disclosure of the historical and committed use of DTC will be still more important when the region considers how to expand DTC.

BPA Response

BPA expects to apply the new regional methodology, as appropriate, to establish new TVLs for flowgates in evaluating new requests for DTC across the BPA transmission system. Until BPA knows where stakeholders want to utilize dynamic transfer, BPA cannot adequately undertake a study process of potential limitations on anticipated uses.

The principle that slower moving resources may not give rise to voltage excursion is correct. Indeed, if the ramp rate were slow enough little or no DTC would be consumed because the power flow would not change enough to significantly adversely affect the voltage.

However, TVLs are established based on the maximum changes in power flows a flowgate can accommodate over short time intervals. BPA believes the better policy is to evaluate whether a DTC request can be accommodated in light of ramp rates requested by customers for a specific resource because DTC evaluations are technology, location, and use specific. If a particular requested ramp rate cannot be accommodated, BPA may offer to grant the request, but with a more limited ramp rate.

A key policy question is whether BPA should grant DTC requests for longer than two years. BPA agrees with RNP that doing so would raise significant questions concerning the potential costs and risks related to granting long term requests and how those costs should be allocated and who should bear associated risk. BPA does not expect to grant long-term DTC awards in the next rate period in part because doing so raises a host of issues that would have to be resolved, including whether to create a DTC rate to recover costs, before long-term awards would be made.

BPA expects to participate in any WIST commercial policy groups that may be created to address commercial and related policy issues, including those related to granting long term awards. This regional process, however, is expected to take months to complete, given the complexity and breadth of commercial and policy issues to discuss. It is appropriate to take the needed time to have a complete regional discussion of these issues, not rush to conclusions, and draft a thoughtful report to guide the region’s policy makers as they consider modifying existing policies.

RNP appreciates BPA beginning to address these important issues. Increasing the dynamic capability and use of the Northwest transmission system is a critical supporting step toward a cleaner energy future.

BPA Response

BPA appreciates RNP's interest in these issues and for RNP's thoughtful comments and questions. Whether or not increased dynamic capability is immediately needed will depend on user requests and proposed use of such capability. BPA will be an active partner in developing and supporting the region's approach toward a clean energy future.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jimmy Lindsay". The signature is fluid and cursive, with the first name "Jimmy" and the last name "Lindsay" clearly distinguishable.

Jimmy Lindsay
Power Systems Analyst

C. Powerex

These comments are submitted on behalf of Karen McDonald, Powerex.

Powerex has the following comments on DTC related issues:

As a general comment, Powerex is highly supportive of BPA's efforts to systematically quantify the Transfer Variability Limits of its system and then design processes to allocate existing dynamic capacity and develop additional capacity. BPA's DTC initiative is extremely important, and is a valuable tool to assist with the integration of renewable resources in the region. Powerex does have concerns, however, regarding the manner in which BPA is allocating DTC, and with other DTC-related issues.

In this regard, Powerex has the following comments:

1. **Need for a common set of terms:** Given that there are various interpretations in the west as to what DTC is, Powerex would like to see the adoption of a consistent set of terms that could be used in discussions regarding dynamic transfers. The terms listed in the Phase 3 report of the DTC Taskforce could provide a starting point. For our comments below, we continue to refer to DTC.

BPA Response

BPA expects to adopt most, if not all, of the terminology recommended by the WIST DTC Taskforce.

2. **The use of commercially-allocated DTC should have priority over non-commercial use of DTC:** Dynamic transfer capability of the system is used in three ways:
 - o Commercially (i.e. by those who have been granted DTC, paid for Firm Transmission Service and then schedule their dynamic transfers);
 - o Non-commercially (i.e. by inadvertent flows across BPA's transmission system from balancing authorities in WECC); and
 - o Not yet identified commercial use (i.e. the difference between actual flows vs. scheduled flows from variable generators within BPA's BAA).

With respect to inadvertent flows, BPA is not compensated for this dynamic use of its transmission system by its neighboring balancing authorities. Further, although BPA has limited the legitimate commercial use of DTC and has mechanisms in place to rapidly curtail some dynamic transfers, it has not established a mechanism to limit in advance or curtail in real-time the non-commercial dynamic use of its system. Powerex believes that this problem is getting worse as many balancing authorities in WECC are participating in the Reliability Based Control Field Trial, which allows virtually unlimited inadvertent flow during certain conditions.

In addition, the flexibility built into the reliability standards on AGC management and inadvertent flows may give market participants a strong incentive to establish a separate balancing area for VERs within BPA's BAA, and then manage their regulating requirements with inadvertent flows across BPA's system. BPA should take steps to ensure that any new or existing balancing authorities connecting to BPA's BAA cannot use this tactic as a means to avoid or bypass the formal rules associating with requesting and using DTC on BPA's system.

As noted above, DTC is of significant value to BPA's customers, and BPA should take every step possible to ensure that the maximum amount of DTC is available for customer use. Similarly, BPA should take every step possible to limit the uncompensated use of its transmission system by other balancing authorities. Powerex strongly believes that when BPA identifies a need to limit dynamic flows across a flowgate that the customers who have formally requested and compensated BPA for the DTC rights should not face increased real-time curtailment risk because inadvertent from neighboring balancing authorities flows unfettered across constrained flowgates.

BPA Response

BPA agrees that BPA should not allow DTC to be consumed through operating tactics designed to use DTC on BPA's system without having to formally request DTC on BPA's systems and or by inadvertent flow. As BPA's DTC policies evolve, these and related issues will need to be addressed by BPA in collaboration with customers and stakeholders.

BPA believes that the primary issue with inadvertent flows is more of an issue for SOL violations instead of DTC problems. With Reliability Based Control, less control is needed by Balancing Authorities, so there may be an increase or decrease in flows due to inadvertent flows; but in all likelihood these flows would normally be in a single direction and are not likely to vary rapidly over short time intervals such that significant voltage excursions would occur.

BPA does appreciate this insight, however, and will attempt to work with Reliability Coordinators to have them consider this issue.

3. **New variable generation must request DTC:** Non-dispatchable generation with variable and changing output causes dynamic flows. BPA should acknowledge that variable generators that are already connected to the grid have implicitly been allocated some DTC. However, going forward, BPA should require any new variable generation seeking interconnection to formally request the DTC that it will require, and BPA's allocation of DTC to those generators must be done consistent with the OATT framework. A variable generator should not be granted interconnection if the DTC at their interconnection point is already fully utilized, or fully encumbered by requests for DTC that were previously queued by other customers.

BPA Response

BPA appreciates Powerex's views on these matters. As a balancing authority, BPA is obligated to manage its system to keep within applicable operating limits, including voltage

limits—and it has visibility and control over FCRPS resources to make that happen. If a problem develops within the operating hour—including a voltage excursion—BPA takes steps to address the problem, including redispatching resources if necessary. By doing so, it manages around dynamic transfer limits. In effect, it imposes limits on resources moving dynamically in response to a signal from variable energy resources such that voltages excursions stay within limits or are short in duration.

To date, as stated in your comments, BPA has not allocated DTC to variable generators being integrated to the BPA system. BPA agrees that the variability of the resources can cause DTC issues across internal flowgates. However, without having data to support the calculations on the amount of DTC that will be utilized by a variable generator, it would be difficult to allocate DTC prior to the variable generator being fully integrated, online and producing power. BPA could allocate based on the variability of existing plants in the vicinity of the new variable generator and then modify the allocation once real-time data is available.

By contrast, granting DTC to some other resource operator where that operator has control over the movement of that resource over the BPA system within hour requires BPA to have visibility over that resource and the ability to take action to address excessive voltage excursions or other operational problems that may arise from the movement of a resource dynamically on BPA's system where that resource is controlled by another party.

In evaluating whether BPA's system can accommodate a new variable generating resource, BPA takes into consideration a variety of factors, including whether integrating the resource would cause voltage or other operating limits to be violated.

Put another way, BPA would not allow a variable energy resource to interconnect to the federal system knowing that operating that resource would cause unacceptable voltage excursions without severely limiting the conditions under which that resource could operate.

4. **DTC should be awarded in accordance with the principles of the OATT:** As we've indicated previously, Powerex strongly believes that all forms of transmission service, including dynamic transfers, should be awarded in a fair, transparent, and non-discriminatory basis, consistent with the principles of the OATT. As a result, Powerex is very concerned about the provision of BPA's business practice regarding Dynamic Transfer Capability: Requesting and Awarding Access which provides that requests from generators that are part of the Customer Supplied Generation Imbalance Pilot Program will be processed first. This gives preferential access to capacity that can be dynamically scheduled to one class of customers, and is inconsistent with FERC's open access policy. Powerex believes that all of BPA's transmission customers should be given the opportunity to receive DTC in accordance with the principles of the OATT.

BPA Response

BPA appreciates Powerex's views on these issues. BPA adopted the priority as part of its pilot efforts in support the Wind Integration Team Work Plan. BPA's objectives in establishing the priority for the DTC pilot included developing and testing of the DTC methodology, supporting the CSGI pilot, and removing wind from BPA's balancing authority area. BPA

continues to evaluate the terms and conditions of the DTC pilot as the pilot efforts progress. This will include an assessment of the need for these priorities.

BPA has granted substantially all DTC requests received over the past three years, regardless of the purpose for requesting DTC. In one or two instances, BPA limited the amount of DTC awarded, but those limitations had nothing to do with the purpose for which DTC was sought. In sum, the priority did come into play in making DTC awards. As BPA progresses in carrying out its pilot efforts, it does not expect the priority to come into play very often if at all in the near future. Hence BPA is considering dropping the priority largely because the priority does not seem likely to produce any different DTC awards than would be the case without the priority.

5. **Joint Initiative Forum on DTC issues:** Powerex supports the idea of a Joint Initiative Forum to discuss issues related to dynamic transfers. We think the following issues will be particularly important for the region to work on:
- (a) Identifying a common set of terms;
 - (b) Discussing the various uses of DTC as described above;
 - (c) Developing a means to restrict the non-commercial, unauthorized use of DTC via inadvertent flows: and
 - (d) Developing an allocation methodology that is consistent with the OATT framework.

Thank you for the opportunity to provide comments.

BPA Response

BPA expects to also participate in any DTC-related Joint Initiative group that may be formed to address DTC issues.

D. Iberdrola Renewables

Iberdrola Renewables appreciates the information presented at Bonneville's January 19th workshop and Bonneville's efforts to follow-through on rate case settlement commitments related to Dynamic Transfer Capability (DTC). Iberdrola Renewables is very interested in engaging Bonneville on all of the issues listed in Bonneville's presentation on this topic and is particularly supportive of Bonneville's efforts to provide greater certainty through longer-term DTC awards on its system. Bonneville's DTC policies are critical to building on the continued success of the CSGI program as well as facilitating additional mechanisms to enable improved intra-hour balancing capability. Iberdrola Renewables appreciates Bonneville's efforts to seek customer input on this critical initiative and looks forward to participating in the upcoming process.

[BPA Response](#)

[BPA expects to engage with customers and stakeholders in discussing DTC-related issues, including the question of making long-term DTC awards on its system and the implications of doing so.](#)

Henry Tilghman & Associates

Tilghman Associates submits the following comments on behalf of EDPR. EDPR appreciates the opportunity to provide these comments following the “Dynamic Transfer Capability (DTC) Rates Settlement Update Workshop” that took place on January 19, 2012.

EDPR supports the comments of Renewable Northwest Project on this topic. While EDPR agrees that much progress has been made in the region related to improving understanding of the many of issues related to dynamic transfers and while EDPR commends Bonneville on its efforts to date, much work remains to be done.

EDPR agrees with Bonneville that this process should address the following topics:

- Term of DTC Awards
- Priority of DTC Allocation
- Possible Growth of DTC (how much, when, and for what purpose?)
 - Network
 - Interties
- Possible DTC Rate
 - Billing Determinant
 - Segmentation of Facilities
- Possible Direct Assignment of Costs for New Uses
- Standardized Contract Terms and Conditions

In addition to these listed topics, however, EDPR believes that the open and constructive dialogue on dynamic transfer issues must include these additional topics:

- Policy Issues
- Bonneville’s existing obligations to consumers of dynamic transfer capacity
- Whether existing dynamic transfer obligations are transferable between customers
- Establish a Dynamic Transfer Segment for purposes of allocating costs associated with existing dynamic transfer obligations

[BPA Response](#)

[BPA expects to engage with customers and stakeholders in discussing DTC-related issues in rate case work shops, in any DTC-related regional forum that may be created, and in revising its policies over time.](#)

Policy Issues

Many of the topics in Bonneville’s list for discussion have complex policy implications. As variable energy resources continue to increase their market penetration, the demands on the transmission system will change in fundamental ways. Bonneville has done an excellent job of beginning to explore some of the current technical limitations. But in beginning to address the

commercial issues (including term and allocation), this process should consider the longer term policy goals of the region.

For example, a variety of different organizations (from WECC, to NWPP, to a smaller group of customers in the region) are considering whether to form energy imbalance markets of various-sized footprints. The region needs to consider whether allocating dynamic transfer capability to individual customers will limit – or enhance – development of these alternatives. Obviously, these workshops are not the place to decide whether the region will pursue an energy imbalance market.

But while stakeholders in the region (or parts of it) are still weighing the costs and benefits of these alternative imbalance markets, does it make sense to allocate scarce dynamic transfer capacity to individual customers? Or should that capacity be available when one of those markets begins operation? It would be short sighted to establish a mechanism to allocate dynamic transfer capacity to individual customers only to shortly later realize that there is a higher use for that capacity in facilitating a broader market.

BPA Response

For a variety of reasons, BPA has limited the term of new DTC awards to two years. BPA understands that some stakeholders and customers believe longer-term awards would provide greater certainty. It is not clear how creating an energy imbalance market may affect or be affected by regional DTC policies.

BPA expects to engage with customers and stakeholders in discussing these matters, not only in the context of the next rate period, but also in the context of discussions of the design of a regional energy imbalance market.

If an energy imbalance market is to succeed in the Northwest, the deployment of the resources bidding into the EIM must take into account DTC when performing security constrained economic dispatch.

Existing Obligations

Bonneville has consistently rejected disclosing information related to its current contractual obligations to provide dynamic transfer rights.

BPA Response

BPA has not resisted disclosing information related to its current contract obligations to allow resources to be scheduled dynamically on its system. Subject to applicable limitations, contracts are available for EDPR's review. Additionally, EDPR could review e-Tags to determine what resources are being dynamically scheduled on BPA's system.

BPA's dynamic transfer limits take all historic uses of DTC into account. BPA assessed historic uses of DTC on its system by performing a detailed study of flow variability on each system flowgate using five-minute power flow data over a three-year period ending on

December 31, 2009. This historic use is an assessment of the impact on BPA's system of resources dynamically transferred across BPA's system subject to arrangements in place prior to December 31, 2009. These agreements related largely to the supply of regulation and load following services from remote resources, uses of DTC that are small, predictable, and relatively easy to accommodate because they relate to load service, not unpredictable, relatively large movements of wind project output.

BPA has not tried to map historic flowgate power flow variability to particular customers, use, or contracts. Mapping system variability at to a particular customer, use, or contract is not a task that can be easily accomplished. The data available to BPA does not allow BPA to perform such studies and come up with realistic results. Doing so would be fraught with difficulties, would consume significant amounts of staff time, and may not yield useful information that would affect the evaluation of new requests for DTC because these historic uses are small and predictable. In sum, trying to map all historic flowgate flow variable to a particular customer, use, or contract is a poor use of resources that would yield little value at this time.

Further, under the DTC pilot, BPA's policy is that an award of DTC must be used to be preserved. In other words, it is the actual use, not the award of DTC that preserves the ability to continue to dynamically transfer resources. If that use is never exercised or abandoned, BPA's policy is to award it to another customer, if and when requested.

If Bonneville seeks to establish a DTC Rate, a DTC Segment, or Directly Assign Costs for New Uses of Dynamic Transfers, however, then Bonneville will first have to become much more open and transparent regarding its existing obligations to provide dynamic transfers. EDPR suggests Bonneville schedule a workshop to review what information it currently has regarding its existing obligations to provide dynamic transfers and solicit customer input as to the specific types of information that should be included in the inventory. EDPR suggests the following categories as an initial list:

- Total Dynamic Transfer Capacity (Transfer Variability Limit) by flowgate
- Existing committed uses
 - Customer Name
 - Source of obligation (i.e. NT Service, contract, other)
 - Methodology for calculating the obligation (express or inferred)
 - Quantity of dynamic transfer allocated to each customer
- Transfer rights – if any

BPA Response

If BPA were to establish a DTC Rate, a number of questions arise. Among them would be the question of identifying existing equipment and other costs that are used to maintain voltage or otherwise accommodate dynamic transfers. A decision would have to be made to determine what portion of these costs is associated with dynamic transfers. The resulting dynamic transfers costs may have to be allocated between load service (e.g., regulation and load following) and other uses, such as supporting CSGI participant needs or moving wind projects out of BPA's balancing authority area.

This might be done in a manner similar to how BPA allocates the cost of supplying reserves among loads and resources, including wind projects, although other allocation methods may be developed. It is highly likely these analyses would be based on actual use under a “cost causation” principle, rather than “obligations.”

Once these decisions were made, BPA would have to design rates to recover these costs, including defining appropriate billing determinants. For instance, DTC use is a function of the distance between the dynamically transferred resource and the signal it is responding to, the dynamic characteristics of that signal (e.g., supplying regulation versus supply balancing reserves to a wind project), the location of the dynamically transferred resource, and resource specific characteristics such as the desired ramp rate.

Dynamic Transfer Segment

Bonneville should also establish a Dynamic Transfer Capacity segment for the costs associated with meeting customers’ historic dynamic transfer rights. Many PTP customers do not have – or desire - a dynamic component to their service.

EDPR believes it is appropriate to identify the facilities and programs used to support the historic levels of dynamic transfers and allocate the associated costs to those customers who receive the benefit of those services. In workshops, Bonneville staff has stated that load consumes dynamic transfers differently from generators; this assertion, however, has not been supported with evidence. In fact, an NT customer with a mostly residential load probably does consume dynamic capacity much differently from a generator or from an NT customer with large industrial or commercial loads. But the dynamic requirements of large industrial loads and irrigation loads may actually be more similar to generators than to residential loads. Customers who currently consume existing dynamic transfer capacity should pay for that service in proportion to their use. While EDPR concedes that all customers benefit from facilities that provide voltage support for reliability, EDPR notes that customers with a dynamic component to their service benefit disproportionately.

BPA Response

Whether BPA should perform a segmentation study to identify the costs associated with historic and new uses of DTC in anticipation of establishing a DTC rate is a question that BPA will discuss with stakeholders and customers as the next rate case proceeds.