

# **BP-14 Generation Inputs Workshop**

March 27, 2012



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# Introduction

- This is the second generation inputs workshop of the BP-14 Rate Case. More workshops are being scheduled through July 2012.
- Workshops will be posted on the BPA agency calendar. Tech Forum notices for the dates and also for where the workshop materials are posted.
- These workshops are discussions between BPA and customers and stakeholders prior to BPA crafting an Initial Proposal.



# Preliminary BPA Installed Resource Forecast

- Preliminary Forecast as of 1 March 2012 for BP-14 Rate Period
  - Wind
  - Solar
  - Biomass, Cogeneration
  - Non-Federal Thermal
  
- Assumptions
  - Production Tax Credits (PTC) may not be renewed for 2013
  - Downturn in the economy impacts
  - Assume PTC renewed for FY 2014-2015
  - Economy rebounds
  - Slower wind and other renewable growth
  - Will have better forecast at end of this year, either way.



# Preliminary BPA Installed Resource Forecast

	Wind	Solar	Hydro	Thermal
9/1/2011	3792	0	2550	5631
10/1/2011	3792	0	2550	5631
11/1/2011	3792	0	2550	5631
12/1/2011	3792	0	2550	5631
1/1/2012	3792	0	2558	5745
2/1/2012	4135	0	2558	5745
3/1/2012	4135	0	2558	5745
4/1/2012	4135	0	2558	5745
5/1/2012	4135	0	2558	5745
6/1/2012	4425	0	2558	5745
7/1/2012	4425	0	2558	5745
8/1/2012	4525	0	2558	5755
9/1/2012	4525	0	2558	5755
10/1/2012	4525	0	2558	5755
11/1/2012	4525	0	2558	5755
12/1/2012	4916	0	2558	5755
1/1/2013	4916	0	2558	5755
2/1/2013	4916	0	2558	5775
3/1/2013	4966	0	2558	5775
4/1/2013	4966	0	2558	5775
5/1/2013	4966	0	2558	5775
6/1/2013	4966	0	2558	5775
7/1/2013	4770	0	2558	5775
8/1/2013	4770	15	2558	5810
9/1/2013	4770	15	2558	5810
10/1/2013	4770	15	2558	5810
11/1/2013	4770	15	2558	5810
12/1/2013	4770	15	2558	5810



# Preliminary BPA Installed Resource Forecast

	Wind	Solar	Hydro	Thermal
1/1/2014	4770	15	2558	5810
2/1/2014	4770	15	2558	5810
3/1/2014	4770	15	2558	5810
4/1/2014	4770	15	2558	5810
5/1/2014	4770	15	2558	5810
6/1/2014	5033	15	2558	5810
7/1/2014	5033	15	2558	5810
8/1/2014	5033	15	2558	5810
9/1/2014	5133	15	2558	5810
10/1/2014	5133	15	2558	5810
11/1/2014	5133	15	2558	5810
12/1/2014	5583	15	2558	5810
1/1/2015	5583	15	2558	5810
2/1/2015	5583	15	2558	5810
3/1/2015	5583	15	2558	5810
4/1/2015	5583	15	2558	5810
5/1/2015	5583	15	2558	5810
6/1/2015	5583	15	2558	5810
7/1/2015	5583	15	2558	5810
8/1/2015	5738	15	2558	5810
9/1/2015	5938	15	2558	5810
10/1/2015	5938	15	2558	5810
11/1/2015	5938	15	2558	5810
12/1/2015	5938	15	2558	5810

# Preliminary Forecast of Installed Wind Capacity for FY 2014-2015 (Compared to FY 2012-2013)

<i>Forecast</i>	<i>BP-12 FY 2012- 2013</i>	<i>BP-14 FY 2014- 2015</i>
Installed Wind Capacity - Beginning of Rate Period (MW)	3,792	4,770
Installed Wind Capacity - End of Rate Period (MW)	5,525	5,938
Installed Wind Capacity - Annual Average Over Rate Period (MW)	4,693	5,208

- BP-12 values are based on the rate case final study.
- BP-14 values are based on the March 2012 preliminary forecast.



# **BP-14 Generation Inputs Game Plan Feedback**





# BP-14 Rate Case Generation Inputs Game Plan Feedback

- Feedback from Survey
  - See separate document “March 8th Survey Results on BP-14 Workshop Game Plan”



# **Experience with Dispatchable Energy Resource Balancing Service (DERBS)**



# Experience with DERBS

- Dispatchable Energy Resource Balancing Service (DERBS) began 1 October 2011
- Follow-Up from BP-12 Record of Decision
  - **Calculation of station control error for DERBS**
  - Decision from BP-12 Record of Decision 3.5.2.10.
  - *“BPA will work with interested generators to ensure that they receive an unambiguous real-time basepoint through BPA’s GenICCP. BPA will also coordinate with its customers on the development of a business practice that describes the conditions, such as dispatch orders, where DERBS charges do not apply so that there is a clear basis for the calculation of station control error for the DERBS rate. BPA will also supply hourly billing data to interested customers.” Issue at pages 416-418.*
  - **Size of DERBS dead band**
  - Decision from BP-12 Record of Decision 3.5.2.3.
  - *“BPA establishes a 2 MW dead band of inc and dec balancing reserve capacity under the DERBS rate. The DERBS charge will not apply within the dead band. BPA is open to revisiting the size of the dead band in a future rate proceeding.” Issue at pages 399-402.*



# Experience with DERBS, Cont'd

- The annual revenue requirement for DERBS capacity for the FY2012-2013 is \$5,753,443.
- Monthly Billing so far:

October	\$407,226
November	\$532,327
December	\$431,061
January	<u>\$343,237</u>
	\$1,713,851
- 1/3 into the year, DERBS billings are within 9% of forecast.



# Experience with DERBS, Cont'd

- The current billing factor for DERBS is the 1-minute Station Control Error (SCE). In general this has worked OK, but there are instances where communication problems result in less than reliable data. In those cases, DERBS charges are not applied for the affected hours.
- We now have MV90 billing meter capability to integrate power over 5 minutes. We are open to discussion about a rate change to use 5-minute meter data average SCE as the billing factor.
- We are not proposing to change the 2 MW “dead band” at this time but are willing to discuss if customers have issues.



# Experience with DERBS, Cont'd

- BPA would also like to remind synchronous generators that our Interconnection Standards require that governor response (Automatic Voltage Regulator) be unblocked and set to “ON” (Automatic Voltage Control mode), including Power System Stabilizers.
- Western Electricity Coordinating Council (WECC) standards require the droop setting to be between 3% and 5%. Maintaining system frequency is important to the Balancing Authority Area and all generators have an obligation to help support stable frequency.
- We have some evidence that in some instances under/over frequency governor response is causing the maximum SCE that is the basis for DERBS charges, mostly during hours where there is no ramping by the generator. We are looking at developing a methodology for filtering out these events and once we have this developed there may be some billing adjustments.



# Experience with DERBS, Cont'd

Example of Governor response  
Green=System Freq.



# ***Dec Acquisition Pilot Update***





# Objectives of *Dec* Acquisition Pilot

- Test and verify how such a purchase agreement allows us to reduce our within-hour *dec*ing reserve requirements on the Federal Columbia River Power System (FCRPS).
- Gain additional operational experience integrating multiple non-federal resources into the federal resource stack.
- Test and verify the responsiveness of using these resources under various operational conditions and across various seasons.
- Better understand how to price and value such acquisitions should we enter into additional or longer-term agreements in the future.
- Provide quantifiable data to better support future decisions regarding wind integration costs.
- Gain additional experience working through internal/external deployment issues with non-FCRPS resources.



# Dec Acquisition Pilot Developed in BP-12 Rate Case

- Direct assignment of \$4 million per year to Variable Energy Resource Balancing Service (VERBS) rate.
- \$3 million per year for acquiring non-FCRPS *dec*ing balancing reserve capacity.
- Cost of a *dec* acquisition assumed to be equal to variable cost of FCRPS *decs*.
- \$3 million of *dec* acquisitions “displaced” \$3 million of variable costs for no net effect on the VERBS rate.
- \$1 million per year for system development and upgrades.
- Overall impact of the *Dec* Acquisition Pilot on the VERBS rate is \$1 million per year.



# Dec Acquisition Pilot Request for Proposals

- The Request for Proposal (RFP) for the *Dec* Acquisition Pilot for the 2012-2013 rate period.
  - It was estimated that the RFP would be for up to 300-400 MW of *decs*, depending upon the actual cost of the acquisitions.
  - \$3 million per year is allocated for acquisition of *decs*.
  - BPA had estimated that after selection of the winning bids, approximately 6 months would be required to carry out all the telemetry and integration work required prior to the start of service.



# Responses to Request for Proposals

- BPA received four responses to the RFP.
- Capacity prices bid for *decing* capacity were about three to four times the variable cost of *dec* balancing reserves from the FCRPS.
- Capacity prices were also impacted by the willingness of suppliers to pay BPA for the replacement energy provided to suppliers during a *dec* request.
- Two of the suppliers' bids included the optional economic displacement clause provided by the RFP, the other two bids were firm 100% of all LLHs.
- All bids but one met the minimum volume for *dec* bids (75 MWs) with one bid offering 200 MW of *decs* for all months in the RFP except one.
- One bid was from a single source of generation, while the other three were based on multiple resources providing the *decing* capacity.



# BPA Decision for FY 2012-2013

- BPA elected not to proceed with any of the *dec* purchases.
- BPA's decision was based on the price being significantly higher than the rest of *decs* provided by BPA.
- BPA expects to provide the forecasted *decing* capability through the FY 2012-2013 rate period without these purchases.
- BPA is proceeding with spending the money set aside for systems development (\$1 million) in anticipation of the need to acquire *incs* for the FY 2014-2015 rate period.



# Level of Service Issue for *Dec* Balancing Resources for FY 2014-2015

- Based on the bids received in the *Dec* Acquisition Pilot, BPA would forecast a cost of \$3.00-4.00 per kW per month to purchase these reserves in months other than the spring. This cost does not include potential compensation losses for the make-up energy provided by BPA to the supplier from the FCRPS when *dec*ing the contract resource.
- BPA is interested in customer feedback whether the expected cost of making these purchases to maintain a 99.5% level of service for *dec*ing is worth the expected benefit from reduced feathering of wind plants for overgeneration.
- An estimate of the expected increase in DSO 216 for only overgeneration using BP-12 data, is about 3 more instances per month for each 5% decrease in *dec* balancing reserves. For the BP-12 data, 5% of *dec* balancing reserves is approximately 50 MW.



# Level of Service Issue for *Dec* Balancing Resources for FY 2014-2015

Estimated Number of DSO 216 Events for <i>Decing</i> Balancing Reserves for BP-12 Rate Period (FY2012-2013)						
Level of Service for <i>Dec</i> Balancing Reserves	99.5%	95%	90%	85%	80%	75%
BP-12 Rate Period Total	165	200	252	297	349	422
BP-12 Annual Average	82	100	126	149	175	211
BP-12 Month Average	7	8	10	12	15	18



# Request for Wind Generation Data

- BPA is requesting the total Potential Generation for all wind plants, who have or can calculate and archive such data, connected to the BPA system in the smallest time increment available (one minute average preferred) for the period of 1 October, 2009 to Present.
  - If data is unavailable for this entire time period, please provide whatever data you do have.
- For those that are able to provide data to BPA immediately, please provide it (MW) in digital format (via email or mail a CD/DVD) to BPA in one of the following formats: Comma Separated Variable (\*.csv), Excel (\*.xls or \*.xlsx), MatLab (\*.mat), or text (\*.txt).
  - For wind plants consisting of multiple phases, please include each phase as a separate total generation if possible.
  - Provide data to Frank Puyleart: [frpuyleart@bpa.gov](mailto:frpuyleart@bpa.gov)  
OR Frank Puyleart, TOT-DITT-2, P.O. Box 491, Vancouver, WA 98663
- Please contact Frank Puyleart at [frpuyleart@bpa.gov](mailto:frpuyleart@bpa.gov) with any questions.





# Next Steps

- Next Generation Inputs discussion workshops planned.
  - 12 April 2012, 1:00-4:00
  - 26 April 2012, 1:00-4:00
- A Tech Forum announcement will be sent to confirm dates and times.

