Statement on Environmental Redispatch and Negative Pricing

Dec. 3, 2010

Action

BPA proposes to establish a policy stating that it will not pay entities to take federal power when BPA must avoid spill to comply with Endangered Species Act and Clean Water Act requirements. When Columbia River system streamflows require full use of federal generation to protect water quality and other prescribed measures have been exhausted, BPA will dispatch federal hydro generation to displace other generation in BPA's Balancing Authority Area without compensation.

Background

In June 2010, BPA and the Federal Columbia River Power System faced a temporary oversupply of generation from surging spring runoff, wind power and thermal power. Lack of market for federal hydropower even at zero cost threatened to create water conditions in the Columbia River dangerous to fish.

Up to certain levels, lower Columbia and Snake river dams are required to spill water in spring and summer to aid the downstream salmon migration. However, excessive spill can produce very high concentrations of total dissolved gas in the water. This can cause gas bubble trauma in fish, similar to the bends in divers. To protect fish, state water quality standards under the Clean Water Act limit allowable levels of total dissolved gas. Adjusted standards apply during the fish migration season. Water that goes through power turbines does not increase dissolved gas levels, so, during these high-water events, fully loading hydropower generators is a primary tool in maintaining safe conditions for fish.

In early June, Snake River streamflows nearly tripled and Columbia River streamflows nearly doubled. BPA worked with the U.S. Army Corps of Engineers, Bureau of Reclamation and Northwest and California utilities to reduce spill and move spill away from the fish passage routes on the Columbia and Snake rivers. BPA conducted forced marketing – sales of surplus power specifically to meet fish protection requirements – and disposed of more than 50,000 megawatt-hours of electricity for free or for less than the cost of transmission in a two-week period. Even so, BPA was not able to find a market for all turbine capacity, and incurred 745,000 megawatt-hours of spill for lack of market in June.

During this time, most Northwest thermal generation shut down or reduced to minimum operating levels. These generation owners obtained low-cost or free federal hydropower to replace thermal generation. However, due to differing economic considerations, the roughly 3,000 megawatts of wind power projects located in BPA's balancing authority area did not shut down and accept free federal hydropower. Wind power output ranged from zero to nearly full output, depending on wind conditions. To help protect fish, and in accordance with processes established in its rate case, BPA reduced balancing reserves – hydro capability set aside to counterbalance gaps between scheduled and actual wind output. Even with this reduction, however, BPA delivered all wind power that was scheduled and produced.

Thermal power plant operators normally save money if they displace their fuel with lower-cost hydropower. But wind power projects that receive federal Production Tax Credits (PTC) and/or state Renewable Energy Credits (REC) have an economic incentive to operate as much as possible, regardless of system conditions. The PTC is currently $21 per megawatt-hour and state RECs are generally about $20 per MWh, so this incentive is significant.

The June 2010 high-water event occurred in an otherwise low-water year. Similar conditions could persist for one to three months in a normal or high-water year. BPA has been working with the region to identify additional steps it could take in future years to assure compliance with the Clean Water Act and Endangered Species Act, should similar overgeneration events occur. A list of steps BPA is actively pursuing is attached.

As part of this process, BPA is establishing an environmental redispatch mechanism that would provide no-cost federal hydropower in place of wind power or other energy from generation projects in BPA's Balancing Authority Area. This

redispatch would occur only when necessary for BPA to comply with ESA and the Clean Water Act. BPA would implement environmental redispatch only after finding as much load as reasonably possible and taking any other prescribed steps. Utilities and consumers who purchase wind power or other energy still would receive full energy deliveries, but the energy would be federal hydropower. Environmental redispatch would simply temporarily substitute renewable, carbon-free hydropower for renewable, carbon-free wind power or other energy to protect fish.

BPA proposal for spring 2011

BPA needs to have tools in place to manage potential overgeneration situations as soon as this coming spring. BPA is therefore developing a formal policy stating that:

1) BPA will use federal transmission to transmit federal power where necessary to ensure compliance with the Clean Water Act and Endangered Species Act.

2) BPA will conduct environmental redispatch when necessary to comply with the Clean Water Act and Endangered Species Act. That is, after BPA has used all other reasonable means to dispose of excess federal generation during a high water event, BPA will provide federal hydropower at no cost in place of scheduled wind power or other energy from generating projects located in the BPA Balancing Authority Area, when necessary to assure BPA compliance with the Endangered Species Act and the Clean Water Act.

3) BPA will not pay entities to take federal power – will not pay negative prices – for energy subject to environmental redispatch.

4) Working with the Corps and Reclamation, BPA will establish and announce steps that it will take to reduce spill during high runoff conditions and specific triggers for environmental redispatch.

5) BPA currently has the contractual authority under generator interconnection agreements to conduct environmental redispatch. To clearly articulate this operational requirement, however, BPA will unilaterally amend Appendix C of the Large Generator Interconnection Agreement (LGIA), Attachment 5 of the Small Generator Interconnection Agreement (SGIA), and related provisions of other interconnection agreements to include such a requirement. BPA also will work with interested stakeholders to develop the criteria, operational process and business practices necessary to implement environmental redispatch.

The economics of PTC and REC

Environmental redispatch does not resolve the issue of PTC and REC economic incentives. These credits would not be recovered during an environmental redispatch under current laws and regulations. While one possible outcome would be for BPA to compensate wind generators the value of the foregone incentives, BPA does not believe that is an appropriate consequence of actions taken to protect fish. Further, implementing environmental redispatch without compensation for these credits is consistent with BPA's statutory obligations to carry out its marketing obligations, including keeping rates as low as possible consistent with sound business principles while protecting fish and wildlife affected by operation of the Federal Columbia River Power System.[1] BPA believes this is an important issue to resolve. Currently, qualifying renewable energy receives PTCs and/or RECs when it generates, and the cost is shared broadly by taxpayers. If BPA were to pay negative prices to comply with ESA and the Clean Water Act during high runoff events, the cost burden would shift and would be narrowly focused on BPA preference customers. We do not think the law was designed to place this cost burden on a narrow class of utility ratepayers, and we are not prepared to initiate this change.

BPA has raised this issue in its discussions of options to manage overgeneration and is open to and willing to work on solutions to this concern. In comments to the California Public Utility Commission, BPA urged that replacement hydro

[1] *See* 16 U.S.C. § 839f(i)(1)(B); 16 U.S.C. § 839f(i)(3); 16 U.S.C. § 839b(h)(10)(A).

under such conditions should qualify and allow those credits to be awarded when an environmental redispatch occurs. Such a solution would ensure wind generators who rely on production incentives are kept whole economically while accomplishing environmental objectives. BPA encourages this approach.

Next steps

We are announcing this course of action and policy development on Dec. 3, 2010, during the second in an ongoing series of public workshops on overgeneration management options.

In January 2011, BPA will produce a draft Record of Decision on this course of action and will provide stakeholders with opportunity to provide written comments.

BPA will issue a Record of Decision on this course of action no later than April 1, 2011.

Concurrent with development of the Record of Decision, BPA will propose, take comment on and establish final specific modifications to generator interconnection agreements and the body of BPA's Open Access Transmission Tariff to document BPA's right to limit the output of non-federal generation and to displace the transmission schedules originating at those generators. BPA will propose modifications to Appendix C of new and existing Large Generator Interconnection Agreements (LGIAs) and Attachment 5 of new and existing Small Generator Interconnection Agreements. BPA will include environmental redispatch provisions for Balancing Authority Area Service Agreements (BAASA).

BPA will also develop an Environmental Redispatch Business Practice that will provide the business rules and the procedures that BPA will use to limit non-federal generation and to displace transmission schedules. BPA expects to post a draft business practice in February 2011. After taking and responding to public comments, BPA will post a final business practice.

For more information

BPA has been working intensively with the region on ways to manage periods of overgeneration since June 2010. We have been working with the region on wind integration issues since development of the BPA-Northwest Power and Conservation Council Northwest Wind Integration Action Plan in 2006-2007. Here are sources of information on both topics.

Columbia River high water management Web page:
http://www.bpa.gov/corporate/AgencyTopics/ColumbiaRiverHighWaterMgmnt/

See particularly:

Report: Columbia River High Water Operations June 1-14, 2010
Letter: Inviting interested parties to Dec. 3 overgeneration management workshop
(responds to stakeholder suggestions at an initial workshop Oct. 12)

BPA wind power Web page:
http://www.bpa.gov/corporate/WindPower/

See particularly:

Fact sheet: BPA wind power pilots launched, working well, October 2010
Comments: To California Public Utility Commission, Sept. 27, 2010
Comments: To Federal Energy Regulatory Commission, April 12, 2010
Fact sheet: BPA's wind power efforts surge forward, March 2010

Federal Columbia River Power System
Steps to Minimize Excess Spill
For Clean Water Act and Endangered Species Act Compliance
Dec. 3, 2010

I. Existing Procedures

- Seek sales through bilateral marketing, down to zero dollars.
- Defer scheduled generation maintenance activities.
- Defer scheduled transmission maintenance activities.
- Increase pumping into Banks Lake at Grand Coulee.
- Seek flow reductions with B.C. Hydro.
- Reduce generation at Columbia Generating Station nuclear plant.
- Request adjustments to mutually agreeable transactions.
- Move generation to mid-Columbia hydro projects under hourly coordination.
- Operate hydro projects inefficiently and at speed-no-load.
- Seek access to additional reservoir storage space at federal hydro projects.
- Ask Corps to use 2 feet of flood control space in John Day reservoir to reduce spill.
- Move spill to FCRPS projects away from primary fish passage route per Corps spill priority list.
- Reduce available balancing reserves to maximize turbine flows.
- Cut prescheduled Pacific Northwest Coordination Agreement storage.
- Reduce generation at upstream projects in light load hours to increase generation on migration path.
- Suspend transmission control system maintenance.
- Work with neighboring utilities to defer non-emergency transmission maintenance, including intertie maintenance, throughout the high-flow period.
- Move generation around the system to minimize capacity reductions on intertie lines to California while maintaining transmission reliability.

II. New Tools and Procedures Now Being Developed

1) Power

- Seek more flexibility in use of Canadian water storage.
- Explore shifting day time irrigation to night time.
- Increase water diversions to replenish irrigation aquifers during high streamflow events.
- Explore ways to incent load shift from day time to night time through demand response.
- Engage now in discussions with thermal plant operators and other power marketers throughout the Western Interconnection to ensure achievable displacement occurs in high water conditions.
- Reduce incremental as well as decremental generation imbalance reserves for wind projects.
- Develop environmental redispatch mechanism.

2) Transmission

- Modify scheduled maintenance that would limit export capabilities.
- Further coordinate outages with other utilities to modify planned maintenance to improve intertie use.
- Issue no-touch declaration during high runoff.
- Participate in Transmission Utilization Group initial study of ways to increase use of the intertie lines to California. TUG is reviewing historical data and engaging intertie users to identify market barriers to greater use, such as scheduling and reservation timeline differences between transmission providers. The TUG expects to issue a report and findings of this study early in 2011. This report will inform BPA and other California-Oregon intertie owners and users to consider ways to make better use of the intertie.

III. Long-term possibilities (more than 2 years to achieve)

- Automate transmission remedial action schemes.
- Build new intertie capability and/or expand transmission paths to Wyoming, Montana
- Construct large energy storage facilities
- Massively expand water heater demand response program
- Work with appliance manufacturers to add demand-response controls (national effort)