

BPA NEWS

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BONNEVILLE POWER ADMINISTRATION
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CONTACT: Doug Johnson, 503-713-7658 or 503-230-5131

Federal hydro system powers region through arctic blast

BPA served record energy demand; lower Snake River dams peaked to more than 1,000 MW daily

Portland, Oregon – Plunging temperatures across the Pacific Northwest that stayed below freezing for four days from Jan. 12-16 were no match for the Federal Columbia River Power System. Despite record-breaking energy demand and other challenges, the federal power system supported its utility customers and the region through the most intense cold snap the Northwest had seen in 20 years.

“The federal dams and Columbia Generating Station, the region’s one nuclear plant, were vital to keeping the lights on during this dangerous freezing weather event,” said Power Services Senior Vice President Suzanne Cooper. “While other generation experienced outages, federal generation operated reliably. This performance combined with activity in the wholesale power market allowed us to meet our customers’ load and help supply others during this event.”

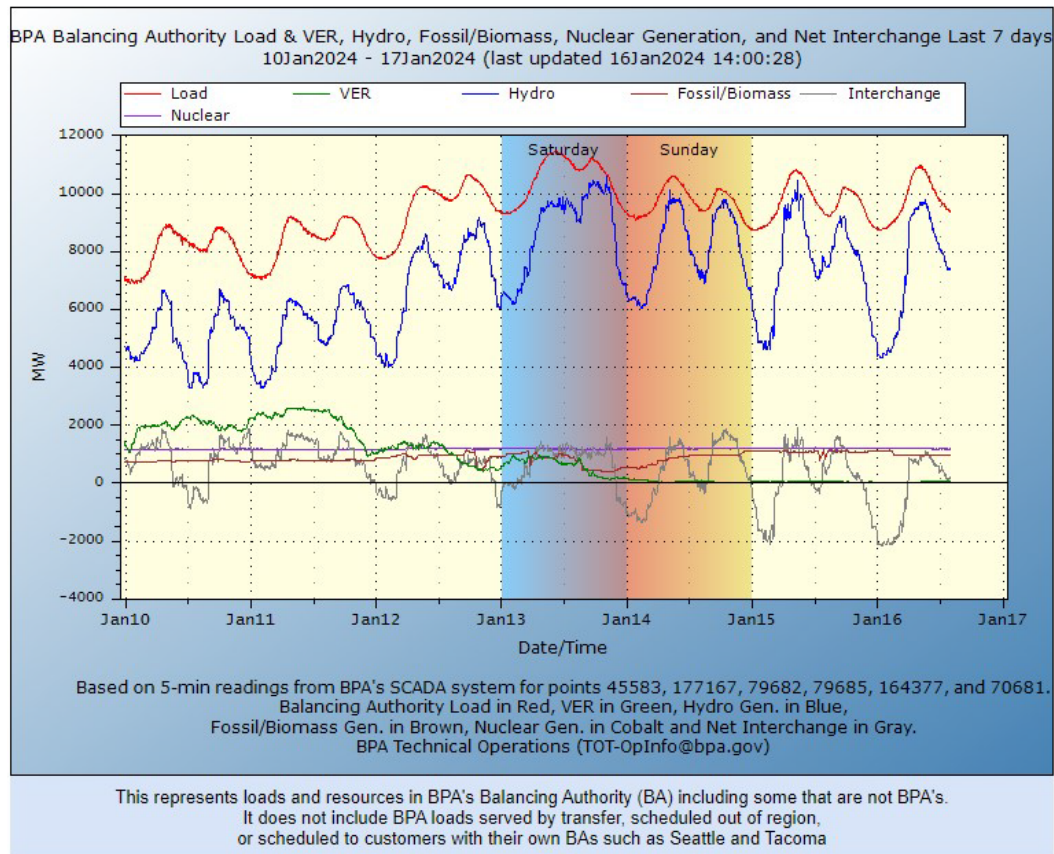
“There were challenging pockets throughout the system caused by physical damage to equipment, but our real-time staff made adjustments to preserve reliability, and our field teams did an excellent job of safely responding to interruptions in really challenging weather conditions,” said Ricky Bustamante, acting vice president Transmission System Operations.

BPA’s area load peaked at 11,396 megawatts during the morning of Saturday, Jan. 13, which is a modern era energy demand record since the time aluminum smelters were served with federal power. The previous post-aluminum record was set on Dec. 22, 2022, with 11,068 MW. The all-time peak load, which includes service to aluminum smelters, was set in 1990 with 11,930 MW. For context, area loads above 10,000 MW are uncommon and tend to only be observed during significant cold snaps.

Also on Jan. 13, BPA’s aggregate customer load climbed even higher, peaking at 13,267 MW.

“Serving consistently high energy demand took significant coordination with multiple partners for both proactive planning ahead of the weather and real-time adjustments as conditions evolved,” said Vice President of Generation and Asset Management Michelle Cathcart. “The dependability of the federal power system in extreme and dangerous weather events demonstrates its value and importance to BPA’s power customers and the broader region.”





On the chart above, VER= Wind and Solar.

Hydro power performance and operational considerations

BPA ramped up the output of the FCRPS during the day as electricity demand climbed and used power imports or purchases, during light load hours at night to hold water back to maximize power generation and meet peak demand. This helped BPA keep the lights on for the duration of the cold snap. During the cold snap, BPA did successfully work to optimize system conditions and operations to limit the potential financial exposure but ended the period as net buyer.

Leading up to the event, BPA coordinated with the U.S. Army Corps of Engineers and the Bureau of Reclamation to delay planned maintenance, ensuring the FCRPS had as many units available as possible. In addition, BPA requested restricted maintenance for CGS through Jan. 18.

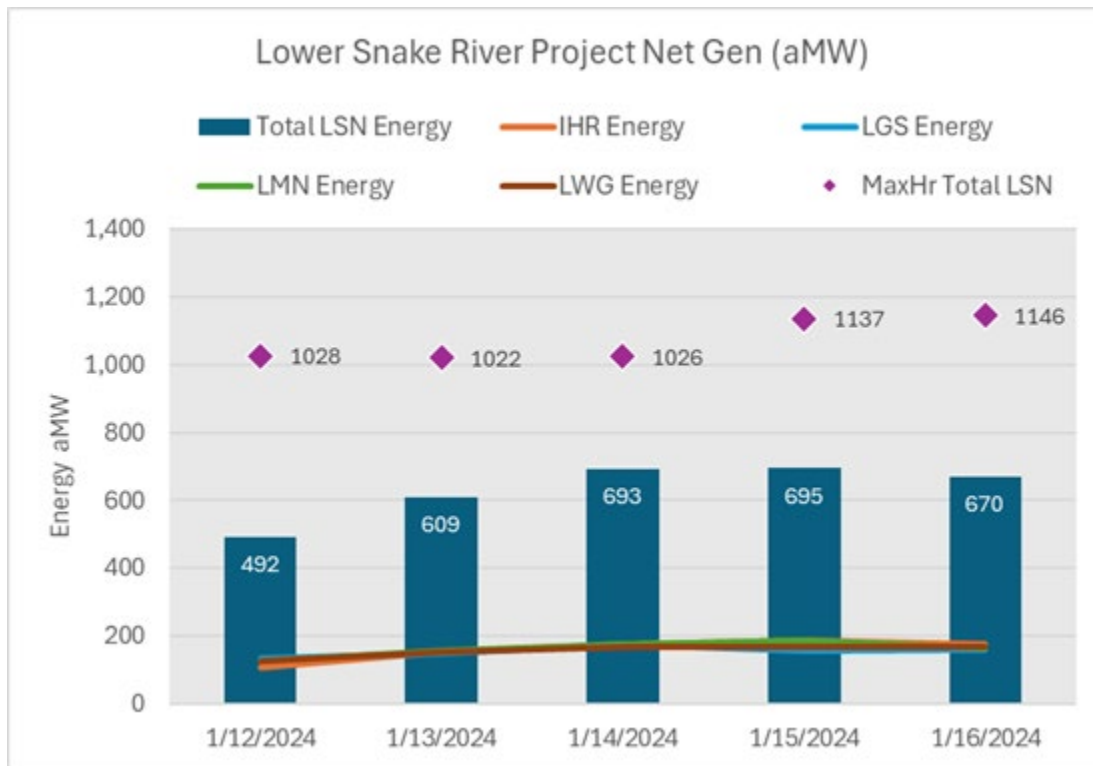
Due to a low water year this year, BPA's planned winter operations are managing the river to minimum flows. The requirement to save water above Grand Coulee for spring fish operations limited the amount of additional generation during the arctic event; however, creative management of the lower Columbia projects allowed BPA to increase generation without reducing the amount of water in Grand Coulee's reservoir needed for springtime. Leading up to the impending cold snap, operations focused on creating storage space in the lower Columbia projects so upstream projects could increase generation without increasing flows below Bonneville Dam above the minimum needed to protect Endangered Species Act-listed chum salmon redds. This led to 525 average megawatts of extra generation from Jan. 12-16.

BPA also worked with Canada to release extra water from Canadian storage reservoirs. This provided an additional 600 aMW from Jan. 13-16.

Lower Snake River dams performance

The lower Snake River dams made major contributions to BPA’s efforts to keep the lights on during the cold snap. Combined, Lower Granite, Little Goose, Lower Monumental and Ice Harbor dams peaked to more than 1,000 aMW each day from Jan. 13-16 with the highest one-hour peak of 1,146 MW achieved on Tuesday, Jan. 16. This was accomplished by reducing generation late at night into the early morning hours to less than 200 MWs and ramping to over 1100 MWs during the peak daytime hours.

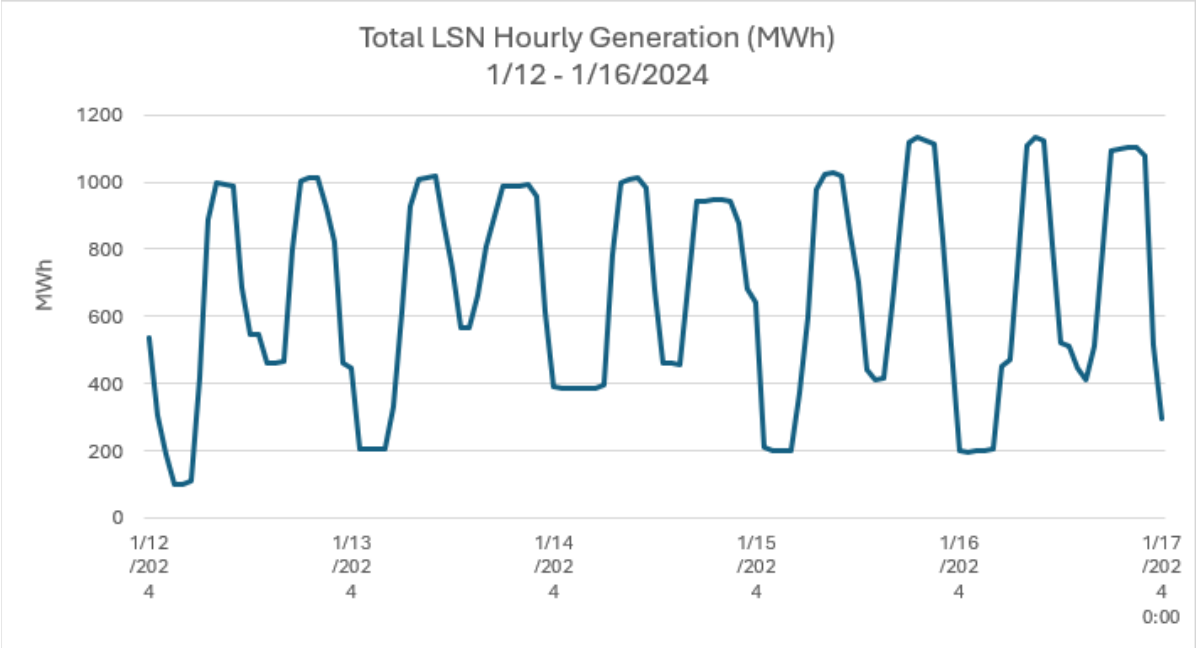
In addition to peaking performance, Ice Harbor Dam provided much needed local energy in the Tri-Cities area by increasing minimum generation throughout the extreme weather event.



The lower Snake River dams also registered an impressive, 18-hour sustained peak during the cold snap. Sustained peak measures the highest six hours per day of generation over a three-day period. The chart below demonstrates that sustained peak was 1,071 MW.

18Hr Capacity	IHR	LGS	LMN	LWG	Total LSN
(MW)	274	277	285	236	1071

Below is an hourly view of lower Snake River dam generation from Jan. 12-16. Generation at these dams can follow load demand, increasing to meet morning and evening peaks while lowering generation during nighttime hours.



About BPA

The Bonneville Power Administration, headquartered in Portland, Oregon, is a nonprofit federal power marketer that sells wholesale, carbon-free hydropower from 31 federal dams in the Columbia River Basin. It also markets the output of the region’s only nuclear plant. BPA delivers this power to more than 140 Northwest electric utilities, serving millions of consumers and businesses in Washington, Oregon, Idaho, western Montana and parts of California, Nevada, Utah and Wyoming. BPA also owns and operates more than 15,000 circuit miles of high-voltage power lines and 261 substations, and provides transmission service to more than 300 customers. In all, BPA provides nearly a third of the power generated in the Northwest. To mitigate the impacts of the federal dams, BPA implements a fish and wildlife program that includes working with its partners to make the federal dams safer for fish passage. It also pursues cost-effective energy savings and operational solutions that help maintain safe, affordable, reliable electric power for the Northwest. www.bpa.gov

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