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The happy result for these preference customers has traditionally been some of the cheapest electricity rates in the country. But with the rapid development of California's ambitious renewable energy policy, hydropower's long joyride on the Columbia River appears to be slowing down.

#### California solar changes Pac NW profits

The contrast between California's energy transformation and the Pacific Northwest's aging, mid-20th century dams is startling. Since the early 2000s, California has built over 12,000 megawatts of solar power. In terms of capacity, this's nearly equal to what those 31 dams on the Columbia produce.

California has taken a giant leap toward modernizing its energy system to reflect 21st-century realities.

By contrast, the Columbia River's flagship power plant, Grand Coulee Dam in Washington, was built in 1937. The average life expectancy of a dam is 50 years. (More than half of the dams in the United States have exceeded that time frame.)

But the trouble isn't limited to infrastructure that's aging out.

The economics of solar power are providing utilities as well as consumers with unprecedented opportunity to make the switch. The price of a solar panel has dropped 89% since 2010, according to the International Renewables Agency.

Last year marked the beginning of a solar mandate for residential construction in the Golden State, with every new home there required to feature solar panels on its roof.

Utility-scale solar projects have spread across California. Last year, the 8Minute solar energy company inked a deal with the city of Los Angeles to provide 400 megawatts of solar power, with 1,200 megawatts of battery storage to boot, for less than \$25 a megawatt hour.

For comparison's sake, the four lower Snake River dams average 900 megahighest — thanks in large part to solar panels' peak production that occurs then.

So much electricity is available now in midday, in fact, that prices routinely dip below \$10 a megawatt hour, and occasionally head into negative territory — meaning producers are paying consumers to take it.

The duck curve helps explain why the BPA's debt problems — \$15 billion in the red — are mounting. Cash reserves of almost a billion dollars in 2009 were reduced to near zero in 2019 on the agency's power sales ledger.

A profitable summer of 2020 — good water supply and a hot Southern California summer — helped shore up finances in the short term. But with historic drought gripping the West this summer, quick profits are less likely.

The long-term outlook isn't so rosy. And it isn't just critics of the BPA who are pointing this out.

The Northwest Power and Conservation Council is an interstate compact between Idaho, Washington, Oregon and Montana, created with the passage of a 1980 federal law that aimed to balance the needs of salmon recovery and electricity production in the Columbia River Basin. The governors of each state appoint two representatives to the eight-person voting body, which ultimately ratifies or denies a range of council policies.

Council staff writes plans and recommendations for the Bonneville Power Administration, for both its salmon recovery efforts as well as ensuring an adequate and reliable supply of electricity.

The Northwest Power Act, the law that created the NPCC, isn't perfect: its critics point out it lacks regulatory teeth; that is, the recommendations made by the council amount to little more than that.

Ed Chaney, who in the 1980s was Idaho Governor Cecil Andrus' right-hand man on salmon recovery issues, and who has sued the Council several times over its failure to institute effective salmon recovery policy, is skeptical of NPCC's continued existence.

"The council has accomplished the incredible feat of overseeing the expenditure of billions of public dol-

lars and produced the oppo-

site of what the Power Act

"Snake River salmon and

Bonneville are now both

threatened with extinction."

Chaney has tracked how

the council's work on salmon

recovery was ceded back to

the BPA and NOAA over

the years as litigation over

endangered salmon stocks

plans.

began to dominate recovery

Despite abdicating the

salmon recovery portion of

its mission, every five years

the council still produces

a report on the energy pic-

ture in the region, and makes

forecasts based on a survey

of factors that affect power

As work began on the

supply and demand.

current draft plan, Ben

required," says Chaney.

Kujala, the NPCC's power division director, was initially taken aback by the results of the model they deploy to help craft the council's energy report. It was forecasting the need for a massive build-out of gasfired power plants, a move at odds with what was happening on the ground.

"The forecast still had elements of how we'd forecast prices in our previous power plans," says Kujala. "But we had hit a place where standard industry planning practices had diverged sharply from the policy landscape in the West."

The model's inputs were updated to reflect that current reality. A final draft of the ninth power plan will be ready sometime this summer, but initial findings of the plan have been previewed on several occasions in council proceedings.

The draft report confirms the tumultuous market conditions of the last decade aren't an anomaly — the way we produce and distribute electricity is undergoing a profound change.

#### Hydro's reliable appeal

Kujala, who moved over to the NPCC from a job with the Bonneville Power Administration as an energy analyst, cautions that the decision for utility managers isn't as simple as signing an energy contract with a solar provider. He points out that utility managers and their commissioners might be inclined to stick with the BPA, paying more for power that comes with perks.

"Convenience has value," says Kujala. "You sign up with a [BPA preference customer contract] and you get reliable power that is shaped to meet your customers' demand. It's a nice tidy package delivered to your doorstep."

On the flip side, the vulnerability of that same contract is the vagaries of its price: BPA doesn't set a fixed rate for its preference customers' power purchases. When rates soar, as they have over the past decade, those same customers at least cast a furtive glance at what might be a better deal elsewhere.

So is solar a better deal? It's a decision, says Kujala, that utility managers

**BUSINESS & AG LIFE** 

Tony Jones is an Idaho energy economist. He's studied the federal hydropower system on the Columbia for three decades, and has a piece of advice for utility managers.

"You don't want to be the first to sign one of those 20-year contracts," he says. "There's a scenario here where a few key customers head for the exits. That leaves the remaining customers with rate increases to make up the cost of those departing customers.

"In any business, a shrinking customer base is a death spiral. And you don't want to be the PUD in the region stuck with the prospect of trying to prop up the BPA."

The best way for Bonneville to survive, says Jones, is to get rid of its vulnerable assets. The worst of the lot, he figures, are the four lower Snake River dams.

#### Reassessing Snake River dams

Kujala has been asked often since Idaho Rep. Mike Simpson proposed a concept for removing the four lower Snake River dams about whether the NPCC's draft power plan will provide any insight into the feasibility of that prospect.

He says the updated model they're using is capable of providing a picture of what the federal hydropower system would look like without the Snake River dams. But in part because of the hotly contested politics of dam removal, he'd want the input of council representatives.

'What the council does well is we pull everyone into a room, we make them all sit there and we go through everything in exhaustive detail," he says. "We say 'these are the inputs you wanted, these are the conclusions that came out,' and we go through those slowly and methodically. We absolutely have the capability of doing it, and I think we could do it in maybe a more nuanced way than what's been done so far. But it would be a big process."

The public will have a chance to weigh in on the draft plan at an as-yet undetermined time this summer, an opportunity Kujala

encourages citizens to take.

## **SHOPPING**

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County better, one moment at a time. Try it. I'm not asking you to never leave the valley or forgo a thing you may pine for. All I'm encouraging you to do is practice a little extra mindfulness when you're shopping. If you can't get something here, that's OK — I get it. If you just want to go for a drive and check out new places, I'm right there with you. But next time, before you click, see what you can find right now, rather than two days from now. Consider this random

fact I learned since researching the benefits of supporting local — if everyone shifted and spent just \$10 per month locally (that normally would have been spent online), \$9.3 billion would be returned back into local economies. Wherever you are, isn't \$10 worth where you live?

Suzannah Moore-Hemann is the executive director of the Union County Chamber of Commerce & Visitors Information Center.



U.S. Army Corps of Engineers/Contributed Photo

Washington's Lower Monumental Dam is one of four dams along the Snake River that environmentalists call "salmon-killing machines."

# DAMS

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The dams are critical for the West Coast's export and import markets, said Jeff Van Pevenage, president and CEO of Columbia Grain International in Portland.

Some 60-65% of the wheat exported using the Columbia-Snake River system originates in the Lower Snake River region, consisting of 13 barge facilities with more than 10 owners, Van Pevenage said.

"Without the current volume, you will endanger the economic viability of at least two of the export facilities that exist in Portland," Van Pevenage said. Those facilities rely heavily on barges and don't have the ability to expand rail capacity, he said.

Barging provides transportation competition and alternatives to keep freight rates in check, Van Pevenage said. Without it, rail costs for grain shipments to Portland could potentially more than double, particularly during the fall, when corn and soybean shipments from the Midwest are also heavy.

Without barging, many regional farmers could find themselves in a "captive shipping" scenario, similar to one experienced today by Montana farmers, Van Pevenage said.

"As an example, at times today, you can ship wheat from eastern North Dakota through Montana to the West Coast for cheaper rates than you can ship from Montana to the PNW," he said. "It's very possible those types of scenarios will exist here without the competition."

If the dams are breached, "what will happen in the end is farmers will be paying more and making less at the end of the day," Van Pevenage said.

Van Pevenage recommended the industry organize similar tours for other members of the House Appropriations Committee.

"...(T)hey could come out for themselves and see that we don't need to spend \$34 billion that we don't have to eradicate these dams, we need to continue the work that's happening," he said.

watts of power production annually. But that energy costs significantly more than what 8Minute will deliver to Los Angeles. BPA customers on firm power contracts are paying \$37 a megawatt hour.

Since 2009, BPA's rates have risen 30%. Aging dams, deferred maintenance and upgrades, and funding federal pensions for the BPA's 2,100 employees virtually guarantee the agency's rates are going up.

Meanwhile, the price of solar is predicted to fall further, at least through 2030.

Steve Kern, the former head of Cowlitz PUD in southwest Washington, summed up the tenuous nature of the BPA's future in 2018, not long before he retired.

"A financial cliff is coming," said Kern, noting that BPA's rates were already higher than the going market rate, and its power prices are forecast to be 55% above those market rates by 2028. Who's going to sign up for BPA power at those prices?"

#### New world confirmed

Gone, too, is the ready availability of profitable midday electricity sales. Energy wonk blogs buzz with allusions to "the duck curve" — a glib turn of phrase that describes how electricity prices are now lowest in the middle of the day when they used to be



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ace with some trepidation but not, if he can help it, without good information to aid in deliberations. Where the future lies will very much depend on the size, location and specific needs of individual utilities.

"A solar project has a fixed price," he says. "You know what you're getting. Sure, you might have a few cloudy days, but if you do a \$25-a-megawatt solar project, you're pretty sure you know what's coming out."

By contrast, a drawback of a long-term contract with the BPA, says Kujala, is price uncertainty, particularly in an era of profound change in the energy business. A 20-year term is standard for preference customers. "Part of what we're here for is to be helping people understand what's going on in the power system," he says. "We want to be one of the places people can turn to."



