NORTHWEST CLEAN ENERGY AT A CROSSROADS

The actions we take now will determine whether we can power the region's future with affordable, reliable, ecologically sustainable clean energy.

The Pacific Northwest has long enjoyed some of the cheapest and most reliable electricity in the United States, and our sources and uses of electricity have not changed much over many decades.

Today, we're entering a different era of rapid change.

As we look to the future, our electricity system is poised to change dramatically. The Pacific Northwest has long been powered largely by electricity from federal hydroelectric dams on the Columbia and Snake Rivers built 50 to 80 years ago. That reliance is expected to diminish as advancing climate change significantly affects the reliability and capacity of hydroelectric generation. At the same time, the heavy toll that dams have taken on our iconic salmon and steelhead runs has become increasingly unsustainable.

Over the past decade, the ways we produce and use electricity have already begun to change as more wind and solar power has replaced retiring coal plants; this shift is poised to accelerate dramatically as these new, clean resources expand and rapidly become cheaper. At the same time, demand for electricity is surging from new data centers and other growth. This surging demand creates a need for new resources at a scale the region has not confronted in decades.

The choices we make today about how to generate and use electricity will either set us on the path to a reliable clean energy future or lock us into a system with unsustainable climate risks and ecological costs that will not be able to keep pace with our advancing energy needs.

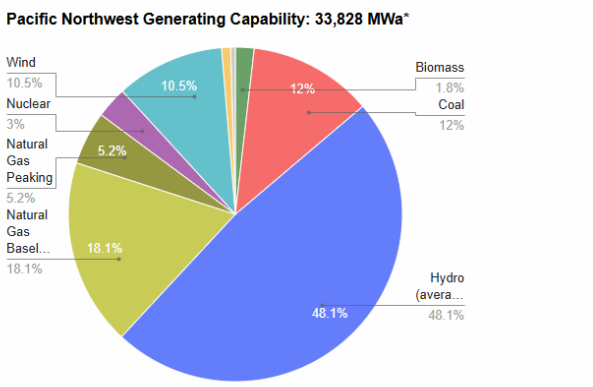
Making smart choices starts with a clear assessment of the real challenges and opportunities we face–and avoiding false solutions and scapegoats. Standing still is not an option. We must move forward into this new era quickly, thoughtfully, and effectively.

Where are we now? Current energy supply and demand in the Northwest

Across the Pacific Northwest today, our electricity comes from many sources. Overall, the region (Washington, Oregon, Idaho and Western Montana) uses about 22,000 average megawatts of energy throughout the year – an amount that has been relatively stable for several decades. We have the capability to produce over 30,000 megawatts hours of electricity over the course of a year. The difference between what we use and what we produce is typically sold to out of region utilities.

Here's where the energy generated in the Northwest comes from today:

> ***About this infographic: This pie chart shows the maximum amount of power generated during a year. This amount is more than the amount used throughout the year because the Northwest sells its excess power out of the region to support other utilities across the West.***



Capability is the maximum amount of energy the plants are capable of producing over the course of an average year. Download chart as PNG

* Other (yellow segment) includes geothermal, petroleum, and solar

Source: *Northwest Power and Conservation Council, Generating Resources Database, 2024.*

For more information visit www.earthjustice.org.

Where are we going? Addressing the Northwest's growing energy needs

Although demand for electricity in the Northwest has been stable for years, it is projected to grow dramatically in the next two decades. There are a few big changes driving this increase.



First, cars and other vehicles are increasingly powered by electricity. The same shift is happening with homes and businesses as more buildings are powered by electric heating and cooling rather than fossil fuels. Some of these changes are driven by decarbonization laws in Washington and Oregon, but market forces play a key role as well – electric cars and heat pumps make good financial sense in any state, especially with the rising cost of oil and gas.

Second, as our regional population continues to grow, general economic activity associated with that growth uses more electricity.

Third, by far the largest driver of electricity growth is data centers that have enormous energy needs. These facilities are projected to significantly change the overall demand for energy in the

Pacific Northwest and across the country. While it's too soon to know exactly what changes data centers will bring, and what policies will accompany this change, they will certainly require new infrastructure.

As our region facing unprecedented growth, there is tremendous uncertainty surrounding the magnitude of the growth – especially from data centers. Regional experts predict our energy demand could double over the next twenty years, a level of growth far beyond what the region has confronted in recent decades. Smart policies for these new data centers will be necessary to ensure that the huge demand from these new sources does not undermine our regional energy reliability, affordability, and decarbonization.

How will we get there? Our power supply is changing

Our region needs to meet this major increase in demand at the same time as we transition to a cleaner, more reliable, and ecologically responsible energy system. This poses both challenges

and opportunities to invest in a more resilient, reliable, and sustainable energy system. While the role of some resources will decline, others are poised to increase and improve our overall system.

- **Hydropower:** Hydroelectric generation is becoming more variable with climate change and is predicted to decline overall in the years ahead. It also faces more limits to meet our commitment to protect our natural resources like salmon and steelhead.
- **Fossil fuels:** Fossil fuel electric generating units – like polluting coal plants – are retiring across the Pacific Northwest, both in response to state climate laws and to the cost of maintaining aging infrastructure.
- **Renewables:** Renewable resources like solar and wind, especially when paired with storage batteries, are already the cheapest new sources of generation to build and are growing in reliability.
- **Energy efficiency:** Cost-effective energy efficiency in appliances, buildings, vehicles and elsewhere can limit the overall increase in demand.
- **Demand response:** Finally, a critical resource for the region is expanding management of when we use electricity. This reflects the fact that it matters to the power grid how and when buildings, industries, and vehicles use power. Shifting and managing the time of electricity use to reduce the biggest peaks in demand, called "demand response," is a significant untapped resource for the Northwest.

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What is demand response?

Demand response is a largely untapped resource with the potential to significantly help meet our energy needs going forward. It provides economic incentives to shift energy use to periods of lower demand in order to reduce the overall amount of energy generation that's needed to meet hours of peak demand. For example utilities can offer incentives to program the heating and cooling system in a large building by 1 or 2 degrees when energy demand is highest, often during evening hours when building use is lower. These modest changes, when programmed to be available on demand, can significantly reduce the region's need for new generating resources that might otherwise be needed to meet short periods of exceptionally high energy demand.

Regional planning experts have predicted that we'll need a portfolio of new resources over the next five years that includes new renewables as well as significant energy efficiency and demand response. By increasing our demand response investments even more, we can limit the role that fossil fuels play in meeting our growing energy need.

By 2046, this resource need could be almost an order of magnitude higher: the Northwest Power and Conservation Council is forecasting in some scenarios that we could need as much as 70,000 MW of new resources to meet growing need.

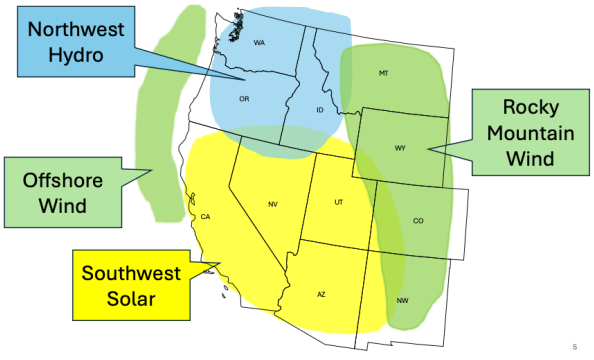
It's no accident that regional planning experts are predicting we'll rely mainly on clean resources to meet our growing energy needs. The cost of renewable resources has declined dramatically over time, and this gives our region the opportunity to meet growing demand while replacing aging and harmful resources with new, clean, resilient sources.

Connecting new resources with demand: transmission and interconnection

There is great potential for new clean energy sources to meet increases in demand and replace more harmful sources of power generation like fossil fuels and some hydroelectric dams–but we have to connect those new clean resources to the grid so we can get that energy to the places it is needed. We need to move much more quickly on both transmission expansion and connecting new generation to the grid to meet the challenges and opportunities ahead.

Transmission lines carry electric power from the generator (wind, solar, fossil fuels, nuclear) to the communities, businesses, industries and farms that use electricity. The Northwest has not added significant new transmission lines in over 25 years, but power system studies show that new transmission lines will be needed soon to help move renewable energy to the communities that need it. New transmission can help us take advantage of potential new resources across a broader geographic area. Good examples are the growing solar resource in the Southwest, wind in the intermountain states, and offshore wind.

About this Infographic: This image shows where the renewable energy resources are dominant and where we might need transmission to move that power around the West to take advantage of the renewables when they are producing.



Western transmission planners have come together to lay out a basic framework for upgrading the capacity of existing transmission with more efficient materials and for developing potential new transmission corridors. This will require deep engagement on the ground with Tribal nations and communities to determine the best path for building a new power line. In early 2026, the Western Transmission Expansion Coalition (WestTEC) released a 10-year plan that identifies the pathways for potential new transmission in order to meet electricity demand. None of these lines are certain, but they overlay well with where the wind and solar are being developed and can help guide communities reduce cultural and environmental impacts from siting.

We know where the resource potential is to meet our growing need, and we know that building and responsibly siting transmission lines takes time–and that means we must start now. We especially need the Bonneville Power Administration, which owns 75% of the regional transmission in the Pacific Northwest, to start moving more quickly to build the regionally interconnected energy system we know we need to meet the challenges to come. That means upgrading existing infrastructure where we can and responsibly building new infrastructure where it's needed.

At the same time, we need Bonneville to move more quickly to connect new resources to the transmission system we already have. The existing "interconnection queue" – which is essentially the wait list for new clean energy to connect to the grid and start supplying customers – imposes wait times of up to a decade or more. That's too long to put clean energy on hold. Bonneville has been too slow to implement common sense reforms to this process that would get clean energy online more quickly.

Energy markets are part of the solution

The organized integration of electricity markets is yet another very important and rapidly advancing development in the way we generate, buy and sell, and use electricity. Called "day ahead markets," these trading systems allow the most efficient use of electricity across very broad geographic regions. For example, a Western day-ahead market would allow utilities in our region to reliably purchase surplus solar power from the Southwest during a cold snap in order to meet peak demand here when winter river flows are low and our hydroelectric dams and other resources are limited in what they can provide. In fact, this is exactly what happened on a short-term basis in January 2024, when a cold snap in the Pacific Northwest spiked demand: regional utilities purchased thousands of megawatts of California solar power through a real-time energy trading market called the Western Energy Imbalance Market (WEIM), and these market purchases helped prevent potential blackouts.



While fully organized day-ahead markets have the potential to help the Northwest address challenges from surging demand to climate change, the Bonneville Power Administration decided in 2025 to begin making preparations to leave the WEIM and join a smaller, geographically fragmented day-ahead market. Analyses, including those by Bonneville, show that over the next 10 years, joining that smaller market will cost Northwest electricity customers some $4.4 billion more than joining a much larger day-ahead market that includes California and other western utilities, and will reduce reliability and make our decarbonization goals more difficult and expensive. At this energy crossroads, we can't afford to turn

our back on the most efficient day-ahead market opportunities that will help us address the challenges ahead.

Our power plan must also protect salmon

While electricity from the federal hydropower dams on the Columbia and Snake Rivers has been the workhorse of our power system for decades, these dams have also pushed iconic species of salmon and steelhead to the brink of extinction–especially those native to the Snake River basin.

Combined with the advancing impacts of climate change on both these species and the ability of the hydroelectric dams to consistently produce power, the National Marine Fisheries Service – the federal agency charged with protecting threatened and endangered salmon species – concluded in 2023 that it is essential that we breach four dams on the lower Snake River if we are going to meet our responsibility to avoid the extinction of these species and have a chance of restoring them to a healthy abundance. Even with the removal of these dams, we will need to modify operations at other dams to reduce the harm to imperiled salmon they cause.

While these changes are critical for the survival of our iconic salmon species, they will reduce the power generated by these dams. Even so, recent analyses by the Northwest Power and Conservation Council and others confirm that these changes in power generation from the dams would have a relatively minor impact on our overall regional power supply– the amount of energy produced by the Lower Snake River dams, for example, is both relatively small and declining. Increased demand, from electrification and data center growth dwarf the impacts of Snake River dam removal and changed hydrosystem operations.

We can have clean energy and healthy wild salmon if we commit to plan for both. Industry lobbyists are fighting to hold on to the past and reduce salmon protections while ignoring the real challenges and opportunities we face in the future. We can't get to the energy future we need by scapegoating salmon.

The path to affordability must include conservation and better management of our energy use

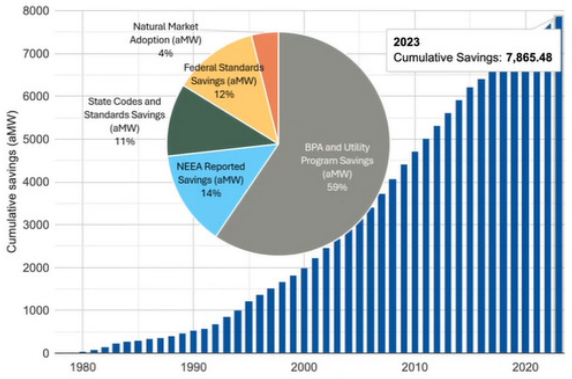
Utility rate increases and energy affordability are top-of-mind concerns across the Northwest. Understanding what is driving these cost increases is important for crafting policies to help reduce energy bills.

The top factors causing electricity rate increases over the past five years include distribution system investment and supply-chain constraints; extreme weather and wildfire mitigation; natural gas price volatility; growth in electricity demand; and new utility-scale wind & solar generation. The pace of development of data centers and large industrial facilities is accelerating stress on the power grid and could drive up power costs for residential and small businesses. Salmon recovery investments are not a significant factor in affordability challenges, nor are renewable energy policies.

The number one solution to lowering electricity bill increases is to reduce usage through energy efficiency, conservation and demand response, or managing when power is used. As the region looks ahead at new load growth, we will certainly need new power generation and grid infrastructure, and critical to keeping power rates affordable is being more efficient in our energy use and getting the most out of our existing infrastructure. Energy efficiency programs help reduce bills and increase comfort and service within a home or business. Managing when power is used will help reduce peak energy use and avoid the need for new power generation facilities.

About this Infographic: Energy efficiency is an important resource for the region. This chart shows that the Northwest would have needed almost 8,000 average Megawatts more of power generation were it not for investments in energy conservation and efficiency that have already occurred. This energy savings has resulted in $7.3 billion in lower energy bills for consumers in the Northwest.

Since 1978, the region has developed 8,000 average megawatts in energy efficiency. In terms of annual generation, this is the second largest resource in the region behind hydropower. Without conservation, the region's annual energy needs would be at least 30% higher than they are today. In 2024, that saved consumers $7.3 billion in energy bills.



Source: *Northwest Power and Conservation Council, Energy Efficiency; from the Regional Technical Forum, a technical advisory committee to the Council that develops standards to verify and evaluate energy efficiency savings. See the annual Regional Conservation Progress Report and the measures that create the savings.*

So, where does all this leave us?

The **good news** is that with smart planning and choices in the coming years we can:

- Take advantage of the rapidly expanding clean, renewable sources of generation
- Expand energy efficiency and demand management
- Enact smart policies that regulate data centers
- Join larger, more effective, organized energy trading markets
- Build the transmission system we need to get power from these new and existing sources of generation to demand centers like our large cities
- Make the changes to our legacy of hydroelectric dams that are necessary to protect natural resources like salmon and meet our legal and moral responsibilities to tribal communities

Our energy future is at a crossroads, but with the rapid change that will be needed also comes opportunity. The Pacific Northwest can–and must–deliver affordable, clean power that supports salmon, our environment, healthy communities, and our Northwest way of life.