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An Electric Grid That Matches Cascadia's Climate Ambitions

Policy analysis and recommendations for Northwest climate leaders

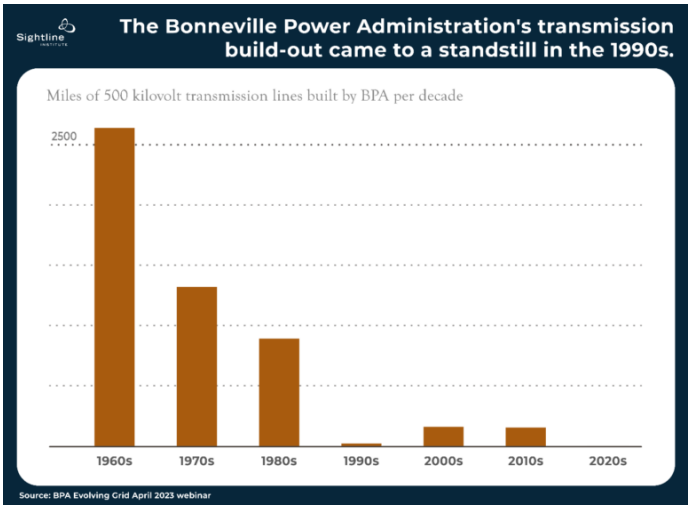
Compiled by Emily Moore, Director, Climate and Energy program, Sightline Institute | November 2023

This policy brief summarizes Sightline Institute's research and analysis on the need for and barriers to new electric transmission capacity in the Northwest. Learn more at sightline.org/CleanGrid.

The Northwest's climate success hinges on more electric transmission capacity

Slowing the worsening effects of climate change—from relentless wildfires to melting glaciers—depends on Cascadia making two mammoth changes to our energy system. First, we need to stop burning coal and gas to generate electricity and replace it with power from the wind and sun. At the same time, we must electrify everything we can, from the cars we drive to how we heat our homes.

Achieving these goals rests on having enough transmission wires—those long-distance, high-voltage power lines—to bring clean electricity from where it is generated to the millions of homes and businesses that need it. **Transmission lines allow the Northwest to harness the strongest and cheapest wind and solar power**, the generators for which, unlike the region's aging coal and gas plants, are typically located far from where most of the region's population lives and works. Distributed generating resources, like rooftop solar, cannot fully erase the need for new wires, though they can offer other benefits like grid resilience. Other grid upgrades and modernization can also add some transmission capacity.



The region's grid is nearly full, with few new lines under construction

The Bonneville Power Administration (BPA), a US federal agency, constructed most of the Northwest's transmission lines between the 1960s and 1980s.[1] It now owns and operates 75 percent of the region's high-voltage grid capacity. It is the Northwest power system's 500-pound gorilla. **But BPA's development of new lines screeched to a halt in the 1990s.** Investor-owned utilities (IOUs), which operate most of the rest of the region's grid, also shy away from erecting new transmission wires.[2] Since 2016, Northwest IOUs have

[1] This brief focuses on transmission capacity just in the US portion of Cascadia, given the fundamental differences between American and Canadian electricity systems and grids.
[2] Investor-owned utilities are private, for-profit utilities owned by shareholders, including Puget Sound Energy, Portland General Electric, and PacifiCorp.

deployed nearly $10 billion in ratepayer money to new generation and distribution projects compared to $2 billion to transmission ones.[3] Today, just one regional transmission line, the Boardman to Hemingway (B2H) project, is close to breaking ground in the Northwest.

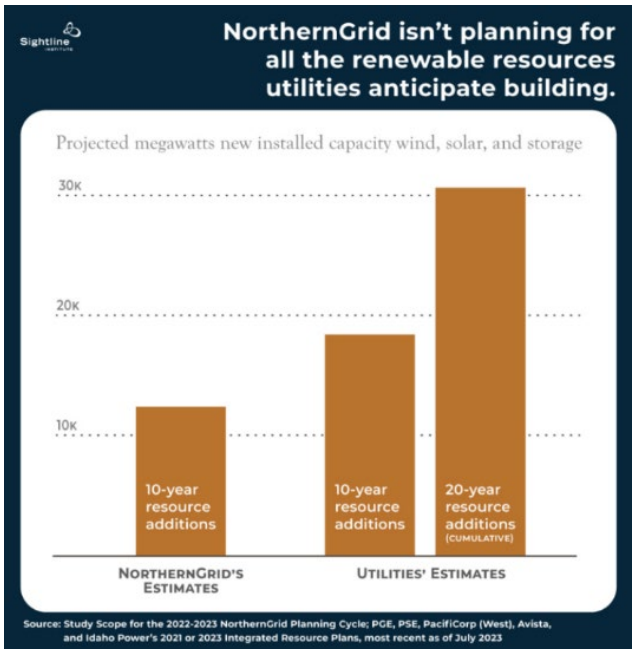
Meanwhile, proposals for new wind and solar projects are exploding. Every year BPA receives more requests from utilities and renewable developers seeking to use its transmission lines to transfer clean power across the region, especially east to west across the Cascade mountains. BPA sorted through more than 17 gigawatts (GW) of requests in 2023, up from 11 GW in 2022 and 6 GW in 2021. (For comparison, the capacity of the Grand Coulee Dam, the largest hydropower producer in the United States, is about 7 GW.) The agency is struggling to keep pace with all the new requests; it canceled its 2024 transmission study because it is so backlogged. And every year, BPA relegates more projects to an ever-lengthening waitlist. As of October 2023, nearly 600 unique requests for transmission service sat in BPA's queue, representing almost 40 GW of power generating capacity. Not all of these projects will or should be built—some are likely duplicative or speculative. Still, at its current capacity, BPA's grid can handle almost none of them.

Insufficient regional planning, disincentives to pay for new wires, and permitting inefficiencies stand in the way of building the grid the Northwest needs

Improving how the Northwest plans, pays for, and permits transmission lines can clear the way for critical new decarbonization projects.

1. Planning: The Northwest's transmission roadmap is short-sighted and behind the times

If transmission lines aren't planned, they aren't built. But the Northwest's only regional transmission plan to date hardly deserves the name. Completed by NorthernGrid, a membership organization of utilities and BPA, to comply with US federal regulation, the plan suffers from several deficiencies.



NorthernGrid's plan charts only ten years into the future, a blink of an eye when transmission lines can take more than a decade to build. Idaho Power and PacifiCorp first proposed B2H almost 20 years ago, and, as of October 2023, still had't broken ground on the project. If the Northwest needs another regional line by, say, 2035, we're already behind.

NorthernGrid does not work backwards from climate policies or climate science. Instead, its plan cobbles together whatever BPA and utilities have already decided they will do and focuses narrowly on ensuring grid reliability. Sightline estimates that, to develop its forthcoming 2022–2023 plan, NorthernGrid is lowballing the renewable resources coming to the Northwest in the next decade by more than six GW. That's in part because it does not fully model the impact of game-changing climate laws like Washington's 100 percent clean electricity mandate.

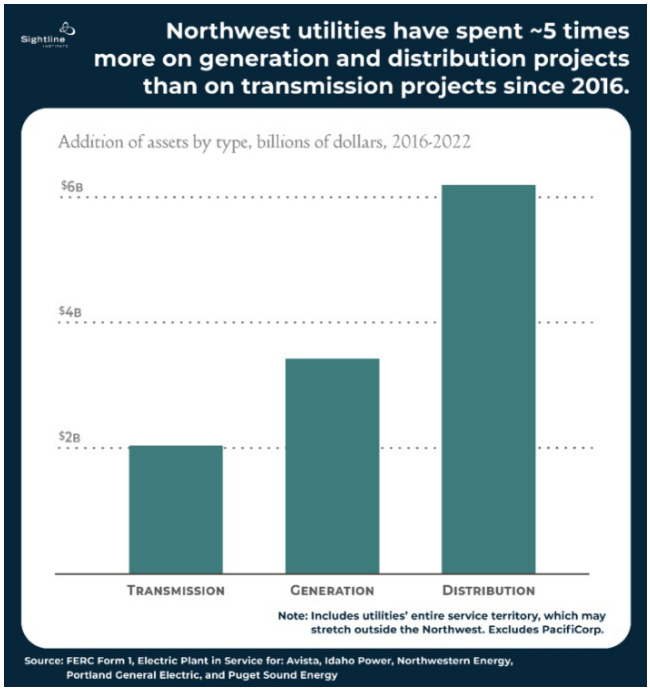
[3] Distribution lines are low-voltage power lines in neighborhoods that carry electricity to homes and businesses. Transmission lines are long-distance, high-voltage power lines that carry electricity from their source to substations.

NorthernGrid's plan is a check-the-box exercise for utilities and BPA. The plan defers to the lines utilities and BPA propose building, offering no new or different projects that might be imperative to meeting climate goals efficiently and cost-effectively. And it includes no interregional lines, something numerous studies show will be critical to meeting decarbonization targets. With no full-time staff, independent leadership, or accountability to state regulators, policymakers, tribes, or environmental groups, NorthernGrid's planning process is a poor tool for ushering the Northwest's grid into an entirely new era dominated by climate change.

2. Paying: BPA and utilities are unwilling to cough up for new regional lines

Regional transmission lines can cost upwards of $1 billion, and most IOUs and BPA balk at building projects sporting these price tags.

BPA prioritizes low debt and low rates for its preference customers over investing in wires. Congress has authorized the agency to borrow $17.7 billion in low-cost debt from the US Department of Treasury, including to pay for new transmission lines.[4] But BPA had only tapped $5.7 billion of that total as of September 2022. Its reticence to borrow more is largely driven by a desire to avoid power and transmission service rate hikes on its preference customers, which include municipal utilities, public utility districts, consumer-owned cooperatives, and tribal utilities. If BPA were to reach further into its deep pockets to build a few multibillion-dollar transmission lines, US federal statute would require it to pay back these loans by raising rates; the agency does not receive annual Congressional appropriations. But BPA's 2022 financial plan emphasizes maintaining low rates, reducing interest expenses, and lowering its debt-to-asset ratio. As a result, it places much of the financial risk for new transmission projects onto renewable developers looking to hook up to BPA's grid. BPA's requirements, including that developers post a security deposit or letter of credit to cover the cost of a transmission upgrade or new line until it is up and running, can be too high a hurdle for some developers to clear.



Investor-owned utilities make an easier buck on small, local projects than on regional transmission lines. The sheer cost of regional transmission lines is just one reason most IOUs share BPA's reluctance to invest in new wires. Additionally, IOUs cannot recoup their investment in transmission projects through state-approved electricity rate increases until—and if—state public utility commissions determine the facility is "used and useful" to ratepayers. Lengthy permitting processes could mean waiting more than a decade. Plus, if the utility ends up canceling a project before completing it, the company must eat any costs it already spent. When Portland General Electric scrapped its Cascade Crossing transmission project in 2013, it lost the $50 million it had already shelled out; the utility has not proposed a major transmission line in the decade since. Finally, federal regulation requires utilities to compete to build regional lines, while they enjoy monopoly status over projects in their own service territories. As such, most utilities tend to avoid investing in the bigger-wires projects necessary for the Northwest's transition off fossil fuels, favoring smaller upgrades to their local lines.

[4] The 2021 Infrastructure Investment and Jobs Act increased BPA's federal borrowing authority from $7.7 billion to $17.7 billion. Of the $10 billion increase, $4 billion will not be available until 2028. BPA has tapped $5.7 billion as of September 2022.

3. Permitting: More capacity, coordination, and proactive analysis can help speed approvals

Permitting reform is the topic du jour in US climate circles, including those in the Northwest. Advocates of "streamlining" permitting processes often hold up as evidence the B2H project, which crawled through federal and state approval processes for 14 years.

Recent policy and regulatory changes may shorten permitting processes for new transmission lines. The 2023 Fiscal Responsibility Act imposed a new, albeit controversial, two-year deadline on federal National Environmental Policy Act (NEPA) reviews, which any regional transmission line in the Northwest would need to go through. And in August 2023, the US Department of Energy proposed a new rule that would set two-year deadlines for federal environmental review and permitting of transmission facilities specifically and would improve coordination between federal agencies.

Still, insufficient staffing at Northwest state siting agencies and tribes could stand in the way of timely review of new lines. Oregon and Washington's state siting and permitting agencies each only count about 10 full-time employees dedicated to reviewing the influx of all new energy projects (not just transmission lines). Similarly, many tribes lack the staff capacity to screen new energy projects for cultural or environmental impacts, let alone to evaluate them more quickly.

Further, some state and federal review processes are out of sync, extending overall approval timelines. This is especially the case in Oregon, which, unlike Montana, Washington, and 18 other states, does not model its state-level environmental review after the federal NEPA process.[5] Both the B2H project backers and Oregon's siting and permitting agency told Sightline that it was impossible to complete the federal and state review processes for that transmission line in parallel. Oregon's review process, which took four years, couldn't begin until the federal government completed its own seven-year assessment. That's despite considerable overlap in the types of environmental and cultural impacts the two processes evaluated.

Finally, no Northwest states have yet identified priority transmission routes. Without proactive mapping of where in the Northwest transmission lines could go to avoid sensitive habitats and protect tribal rights, new projects risk getting unnecessarily mired in lengthy permitting disagreements. Washington is beginning to rectify this. In 2023 the state directed its siting and permitting agency to conduct and use "nonproject" environmental assessments for electric transmission lines in geographic areas suitable for those types of facilities. However, it has not yet started this work; the agency is still trying to hire someone with the necessary expertise. Oregon also considered but did not pass a bill in 2023 that would have required state agencies to identify ideal locations to site transmission lines.

Northwest leaders can act now to speed up the development of new lines, while protecting the environment and upholding tribal rights

All Northwest leaders have a role in ushering in the region's grid of the future, and none can do it alone.

Northwest **governors** enjoy unique convening power and experience with regional energy planning through their engagement with the Northwest Power and Conservation Council. They can:

- **Convene or support a new regional transmission planning body** with representation from state leaders, tribes, BPA, utilities, renewable developers, conservationists, and others. This could happen in parallel to longer-term efforts to create a regional transmission organization in the Northwest.
- **Initiate development of a multistate cost allocation framework**. This type of agreement on how to share the costs and benefits of new regional lines could increase IOUs' confidence that state regulatory commissions will allow them to recoup investments in these types of projects.

[5] Idaho has no state-level environmental review process.

The Northwest **congressional delegation** acts as the de facto board of BPA. It can:

- **Encourage BPA to assume more federal debt to pay for new wires.** The least expensive way to pay for new transmission capacity in the Northwest is for BPA to leverage more of its $17.7 billion in federal borrowing authority, some of the lowest-cost financing available. Plus, unlike an IOU, BPA has no profit motive. And, as the largest supplier of electricity in the Northwest, BPA can soften rate impacts by spreading the costs of large transmission projects over a wide swath of customers.
- **Urge BPA's participation in regional planning and cost allocation processes.** Any regional planning process will fall short without BPA's buy-in. But neither the Federal Energy Regulatory Commission, which dictates regional transmission planning rules, nor state legislators, which can impose planning requirements on utilities, have jurisdiction over BPA. Only the Northwest's congressional delegation can pressure the agency to engage in these processes.

State **legislatures** hold jurisdiction over utilities, state siting and permitting agencies, and state environmental review processes. They can:

- **Create state entities to partner with non-utility transmission developers**. So-called merchant transmission developers are less risk-averse than are BPA or IOUs, but that can drive up their project costs. States can mitigate steeper price tags—and their impact on ratepayers—if they partner with merchant developers and open the door to low-cost public financing. Colorado and New Mexico's state transmission entities, each of which can issue government-backed revenue bonds, can serve as models.
- **Fully staff siting and permitting agencies and tribes.** Washington directed $2 million of its 2023–2025 operating budget to the state's permitting and siting agency and more than $16 million to tribal capacity grants to support tribal "consultation on clean energy siting projects." Other states can follow suit—and Washington can keep the funds flowing—to equip these groups with resources to assess the influx of new energy projects, including transmission lines.
- **Map and assess priority transmission routes**. States can map potential transmission corridors, assess their likely environmental and cultural impacts, and identify the highest-priority and lowest-conflict routes *before* developers propose specific projects. This could be part of the mandate of a new regional transmission planning body, or each state could pursue it individually. If advanced assessments end up failing to shorten the timelines for project-specific state environmental reviews, legislators could waive some or all components of state-level reviews for projects sited within priority corridors. However, states would need to solicit genuine tribal agreement to do this, given the Northwest's history of running roughshod over tribal rights to build new energy projects.
- **Require formal coordination between federal and state environmental reviews**. In Oregon, where the state review process is not modeled after NEPA, legislators can initiate a proceeding to determine how to avoid redundancy and enable parallel state and federal processes. Washington, whose State Environmental Policy Act (SEPA) does emulate NEPA, can formalize ways to sync state and federal approvals. If these efforts fail, state leaders could again consider exempting certain new wires projects from the additional layer of state-level review.

Cascadia can't afford to wait more than a decade to build the next new regional transmission line

Policymakers can facilitate more transmission lines without jettisoning the region's commitment to environmental protection or repeating the historic injustices of the last century's energy build-out against tribal nations, when utilities and public agencies dammed salmon runs and homelands with little regard for the rights of Indigenous groups. Proactive improvements to permitting processes, alongside a plan and way to pay for new wires, can help us get to yes at the clip the climate crisis demands.