



GRIDWORKS

BARRIERS TO BACKBONE TRANSMISSION DEVELOPMENT IN THE WEST

A PRIMER

NOVEMBER 2023

“In short, absent reforms,
we are concerned customers
may be paying more for less.”

- Federal Energy Regulatory Commission, 2022



INTRODUCTION

In the summer of 2023, the Western United States witnessed a first in nearly two decades — groundbreaking ceremonies for significant transmission projects that span multiple states. [TransWest Express](#), a 732-mile line connecting Wyoming wind to the desert Southwest, and the [SunZia project](#), a 550-mile direct current line delivering New Mexico wind to Arizona, represent significant milestones for transmission development in the Western Interconnect.

Financed and built by merchant generators seeking to deliver their renewable energy to population centers, these momentous projects also suggest a troubling trend in the West — exclusive transmission that does not support the larger grid. While significant for delivering renewable energy to large areas of demand, TransWest Express and SunZia are point-to-

point delivery lines, contributing little to the network of thousands of miles of high voltage transmission lines interlacing the Western Interconnect. In fact, except for in California, no backbone transmission project¹ has developed out of Western regional planning efforts since the Federal Energy Regulatory Commission (FERC) mandated regional transmission planning in 2011.² As FERC has recognized, “...absent reforms, we are concerned customers may be paying more for less.”³ In short, if the West continues with this status quo, customers could pay more for an inefficiently built transmission grid.

Why is backbone transmission so difficult to build in the West? What are the barriers to development? The following is a primer aimed to deconstruct the many impediments, provided in brief summaries for easy accessibility.⁴

1 Defined as high voltage transmission lines of 345 kV AC or 100 kV DC and greater, serving regional or inter-regional needs.

2 Federal Energy Regulatory Commission, [Notice of Proposed Rulemaking, Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection](#), April 21, 2022., p. 35. (FERC Planning NOPR)

3 FERC Planning NOPR, p. 28.

4 There are many comprehensive studies that analyze the barriers to backbone transmission development, including [Americans for a Clean Energy Grid’s Transmission Planning & Development Regional Report Card](#), the [Brattle Group’s A Roadmap to Improved Interregional Transmission Planning](#), [FERC Staff’s Report on Barriers and Opportunities for High Voltage Transmission](#), and the [Department of Energy’s National Transmission Needs Study](#). This reference guide draws heavily from the findings in these and other in-depth studies. For background on transmission planning and cost allocation in the West, see Gridworks’ [Western States Transmission Initiative Primer](#).



THE BARRIERS TO BACKBONE TRANSMISSION DEVELOPMENT IN THE WEST INCLUDE...

[CLICK ON A BLUE HEADING TO READ MORE ABOUT THAT TOPIC](#)

[FRAGMENTED INTERESTS →](#)

State and stakeholder interests in backbone transmission serving the Western region are fragmented.

- A. Western states have a wide range of clean energy goals;
- B. Individual state interests are inherently inward-looking;
- C. Vertically integrated utilities are motivated by protectionist financial interests; and
- D. Local communities do not see their interests served by backbone transmission projects.

[FRAGMENTED AUTHORITY →](#)

Just as interests are fragmented, so too is regulatory oversight of transmission costs and construction.

[SHOWING BENEFITS AND ALLOCATING COSTS →](#)

Regulations for approving backbone transmission investments require demonstrating that benefits outweigh costs. While most costs are easily quantified, benefits are difficult to assess, especially long-term, regional benefits. Western states and stakeholders lack a common methodology for assessing benefits nor do they have a well-defined methodology for allocating costs.

[FEDERAL POWER AGENCIES' OPTIONAL PARTICIPATION →](#)

A large portion of the Western transmission grid is owned and operated by federal power marketing administrations. These agencies are largely outside the jurisdiction of FERC. While the agencies have voluntarily participated in regional planning forums over the past decade, they have no obligation to share cost responsibility for backbone transmission projects. This question of cost allocation creates uncertainty for other utilities that are fully regulated by FERC and undermines robust regional planning.

AN INEFFECTIVE FERC ORDER 1000 →

FERC Order 1000 governs the transmission planning and cost sharing practices of most transmission owners in the West. These practices:

- A. ascribe benefits to a transmission line for reliability, economic, or policy reasons, but struggle to show the benefits of projects that provide more than one of these benefits (**Focus on Single, Not Multi-benefits Projects**);
- B. are bottoms up, assessing whether power system needs can be met with local solutions without comparison to backbone alternatives (**Bottoms-up Planning Approach**);
- C. do not fully consider merchant transmission projects, inhibiting comparison of utility proposed and competing merchant transmission (**Limited Utility/Merchant Competition**);
- D. with few exceptions, have a ten-year or shorter planning horizon (**Short-Term View**);
- E. are not supported by the best available data, including gaps in planning data sets and no transmission congestion data (**Data Limitations**);
- F. struggle to anticipate dynamic and evolving circumstances, including extreme weather events (**Static Planning Window**); and
- G. struggle to consider emerging technologies such as advanced conductors or Grid Enhancing Technologies (**Inconsistent Consideration of Emerging Technologies**)

NUMEROUS SITING AND PERMITTING HURDLES →

Backbone transmission projects also face many venues for siting and permitting, *after* initial construction authorization. These hurdles are time and resource intensive and can add costs and create sequencing problems.

UNDER-RESOURCED, LEFT-OUT, AND DIVIDED PROJECT PROPONENTS →

States and stakeholders who seek to overcome all these barriers:

- A. Are under resourced;
- B. Often left out of the decision-making; and
- C. Are more easily divided by their differences than united by their shared interests.

AN EVOLVING DIALOGUE →

The barriers to transmission development in the West are numerous, multifaceted, and evolving. Join us in the conversation to build a shared understanding and a willingness to work together toward solutions.



FRAGMENTED INTERESTS

State clean energy goals vary widely among the 11 states in the Western Interconnection. Many, like California and New Mexico, have deadlines for zero carbon emissions written into state law. Others, like Wyoming and Idaho, have no renewable energy commitments at the state level and are wary of undermining fossil fuel industries with deep roots in local economies.⁵ The result is no shared vision in the West on the need for backbone transmission. In fact, states without clean energy goals are concerned that they could be forced to pay for backbone transmission to support a neighboring state's clean energy policy. This is particularly the case for California, whose neighboring states do not want to shoulder transmission costs to support California's renewable energy goals. This fragmentation of energy policy has contributed to the West's failure to support any backbone transmission in the past two decades.

In addition to Western states lacking a shared vision on energy policy, state energy planning processes also fray interests. State planning processes typically focus on individual utility needs and resources identified in integrated resource plans. These plans have historically prioritized generation resource additions, with transmission development a secondary consideration to interconnect new generation. Integrated resource plans give little consideration to how the transmission network could be optimized or to exploring solutions beyond the single generation addition. Indeed, few states explicitly require consideration of regional or national interests when evaluating a backbone transmission project.⁶ FERC has deemed this

approach “piecemeal,” resulting in incremental solutions that fail to capture greater economies of scale.⁷

The dominant utility business model in the West also serves to fragment interests and prevent backbone transmission development. Most Western utilities are vertically integrated energy companies, whereby cost of service regulation and return on rate base set a utility's profit motive. This business model undermines backbone transmission development as vertically integrated utilities have a financial incentive to build within their footprint. They are financially motivated to seek local solutions that protect their generation assets. FERC has long recognized this economic self-interest as a barrier to grid expansion.⁸

Finally, fragmented local community needs also impede transmission development. Few host communities will accept large energy infrastructure projects without demonstrable, tangible local benefits. Wildlife protection, impact on property values, and preservation of productive farmland tend to dominate local interests.⁹ A long history of environmental injustices in disadvantaged communities also sows mistrust. Backbone transmission, with diffuse, regional benefits, often fails to demonstrate the tangible benefit needed to win acceptance in a local community. In this way, too, local interests can fragment support for backbone transmission.

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5 Western Electricity Coordinating Council, [State of the Interconnection 2023](#), Mar. 24, 2023, slide 20. (WECC State of the Interconnection)

6 Holland & Hart, [Transmission Siting in the Western United States](#), August 2009, p. 9. Colorado is a notable exception, having [recently passed legislation](#) that allows for consideration of wholesale market access in evaluating new transmission.

7 FERC Planning NOPR, p. 31.

8 Federal Energy Regulatory Commission, [Order No. 1000 Transmission Planning and Cost Allocation](#), July 21, 2011, p. 200. (FERC Order 1000)

9 Susskind, Lawrence et al. [Sources of Opposition to Renewable Energy Projects in the United States](#), Energy Policy, Vol. 165, June 2022, p. 2.



FRAGMENTED AUTHORITY

While FERC oversees backbone transmission rates, terms, and conditions, the primary authority for transmission construction resides with the states. This bifurcated approach means backbone transmission must seek construction approval from each state through which a project passes, with varying standards for approval. Such fragmented authority presents another barrier to transmission development in the West.

Under the Federal Power Act, FERC is responsible for ensuring that the rates, terms, and conditions that apply to the transmission of electricity in interstate commerce are just, reasonable, and not unduly discriminatory or preferential.¹⁰ With this authority, FERC has established broad federal principles for backbone transmission planning and cost sharing. Beginning with Order 888 in 1996 and culminating in Order 1000 in 2011, FERC has articulated requirements for transmission open access, regional planning, and categories of transmission need to spur development. However, FERC has limited authority to approve transmission construction, and utilities are under no obligation to build any backbone project identified in regional planning forums. Nor is there any federal mandate to enhance interconnection ties between regions.

Instead, construction authority resides with the states. Typically, it is the state public utility commission that must consider the public interest and rule on a certificate of need authorizing transmission construction.¹¹ These certificates of need derive from state law, require a finding that a project is in the public interest, and often have varying standards. Thus, a project that spans several states will face multiple construction approval tests with criteria varying by venue. Further, in some cases, state commissions can disallow project costs

even after the project is built, creating an additional layer of uncertainty for project sponsors.

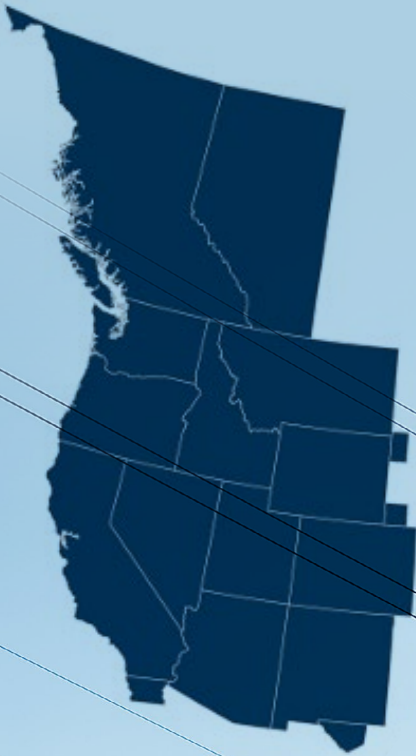
This bifurcation of regulatory oversight also plays a role in the recovery of costs. While FERC sets the rates for transmission use, it is typically the state commissions in the West (outside of California) that authorize the recovery of transmission construction costs through rate base treatment for investor-owned utilities. This complicates matters as these utilities must not only demonstrate to state commissions the reasonableness of the transmission investment but also the reasonableness of the apportionment of project costs. This can lead to one state commission being pitted against another in approving cost responsibility.

While the rates and terms for transmission service are set by FERC, authority to rule on the need for a backbone transmission project primarily rests with state public utility commissions. This fragmented review results in differing standards, multiple construction approval tests, and uncertainty about project cost responsibility — all impeding backbone transmission development.

¹⁰ 16 U.S.C. Sect. 824(a).

¹¹ State public utility commission is used throughout this reference guide as a general term for the state agency or energy board that regulates the provision of retail electricity within a state.

The Western Interconnection by the Numbers¹²



4	Reliability Coordinators
34	Balancing Authorities
47	Transmission Operators
298	Generator Owners
407	Registered Entities
87%	Public or protected land
22,581	Wildfires in 2022
156,000	Miles of Transmission
167,530	MW Peak Demand
1,800,000	Square Miles
87,000,000+	People

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¹² WECC State of the Interconnection, slide 4.



SHOWING BENEFITS AND ALLOCATING COSTS

In making the public interest determination required for a certificate of need, a state public utility commission must weigh a project's benefits to its costs. These cost-benefit tests typically involve quantifying the energy cost savings of a new line and perhaps an evaluation of the line's reliability value or emissions benefit to the state. Costs are typically allocated to customers within the utility footprint based on this benefit test through the traditional rate-making process.

For a shared transmission project that crosses state lines, the typical model in the West is co-ownership. The owners of the shared infrastructure negotiate a cost sharing agreement that they then seek recovery for their share from state commissions, again relying on the traditional rate-making process.

For backbone transmission projects that span multiple states and involve several utilities, this showing of benefits and allocation of costs becomes more difficult. Few utilities in the West are large enough to finance an expensive backbone transmission project on their own. The regional benefits of backbone transmission, such as cost efficiencies due to system optimization, resource diversity, or resilience to extreme weather events, are harder to quantify and often not captured in a state's assessment of benefits.¹³ Studies have laid out methodologies to do so,¹⁴ but quantifying a broader list of benefits is not yet recognized as standard practice. States lack a common methodology to recognize the regional benefits of backbone transmission.

Given that regional benefits are often unrealized at the state level, allocating costs becomes even more difficult. FERC has laid out broad cost allocation principles for backbone transmission and requires regional planning forums to submit cost allocation methodologies for FERC approval.¹⁵ However, since no backbone project has developed out of these regional processes in the West (outside of California), cost allocation methodologies have not been tested. Thus, cost responsibility is unclear, and backbone projects languish in favor of localized transmission solutions where utilities have greater control and cost certainty. In this way, the diffuse benefits of backbone transmission and uncertainty about project cost allocation serve as significant impediments to development in the West.

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¹³ The Brattle Group, [Transmission – The Great Enabler: Recognizing Multiple Benefits in Transmission Planning](#), Oct. 2021, slides 7-8.

¹⁴ The Brattle Group, [A Roadmap to Improved Interregional Transmission Planning](#), Nov. 2021, p. 30.

¹⁵ [FERC Order No. 1000](#), pp. 420-495.



FEDERAL POWER AGENCIES' OPTIONAL PARTICIPATION

The unique regulation of hydroelectricity serves to further complicate backbone transmission development in the West. Bonneville Power Administration (BPA) and Western Area Power Administration (WAPA), both federal power marketers of electricity generated at federal dams, have large presences in the Western Interconnection yet, for the most part, are not regulated by FERC.

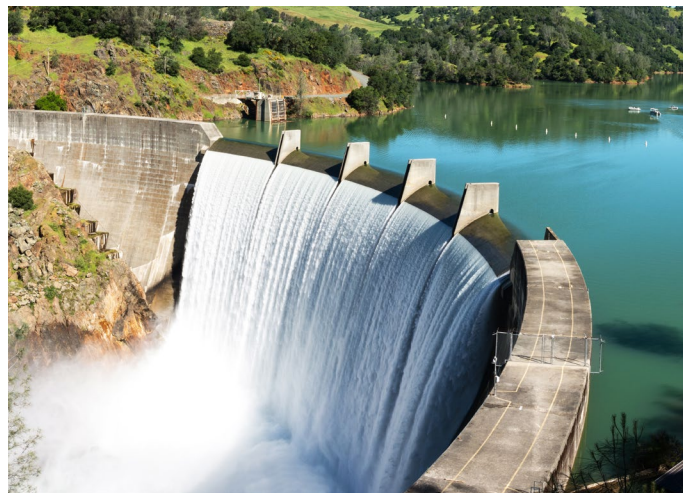
BPA owns an estimated 75% of the high voltage transmission lines in the northwest, and WAPA owns approximately 10% of the transmission grid across the entire Western Interconnection.¹⁶ However, FERC has limited authority over BPA and WAPA as “non-jurisdictional utilities.” While BPA and WAPA have regularly participated in regional transmission forums; their participation is voluntary. Critically, this option also extends to sharing the costs of transmission projects.¹⁷ BPA and WAPA may participate in regional planning forums created by FERC but, as non-jurisdictional utilities, are under no obligation to contribute to a project’s cost. This acts as a disincentive to regional planning because the federal agencies can opt out of a backbone project, leaving the remaining FERC-regulated utilities to share the costs among a smaller pool of participants despite benefits also accruing to BPA and WAPA.

Further complicating matters, this non-jurisdictional status also extends to municipal-owned utilities, public utility districts, and rural electric cooperatives that dot the West. These public power utilities have unique resource needs and varying levels of state or federal regulation. Like BPA and WAPA, they typically can opt into backbone projects and are enticed only when a project meets their unique

circumstance. This patchwork of public power further complicates coordination and regional development.

The optional participation of federal power agencies and other public power districts has created uncertainty about project cost responsibility in the West, causing a disincentive to robust regional planning. FERC-regulated utilities are hesitant to develop a backbone project when non-jurisdictional utilities may opt out of a project as it moves toward construction.¹⁸ Thus, the large presence of non-jurisdictional utilities in the Western Interconnection and the voluntary nature of their participation in transmission planning and cost sharing serves as another impediment to transmission development in the West.

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¹⁶ Gridworks, Western States Transmission Initiative Primer: Transmission Planning and Cost Allocation in the West, 2023, slide 11.

¹⁷ *Id.*

¹⁸ For example, see El Paso Electric Company v. Federal Energy Regulatory Commission, 163 FERC 61 (5th Cir Aug. 2, 2023).



AN INEFFECTIVE FERC ORDER 1000

Order 1000, issued in 2011, lays out FERC’s current rules for backbone transmission planning and cost allocation. The culmination of two decades of work by FERC to regionalize and spur competition in the nation’s transmission system, Order 1000 requires FERC regulated utilities to participate in regular regional planning, identifies areas of need to induce backbone transmission development, and articulates cost allocation principles. The goal was to enhance competition, create a more cost-effective planning process, and remove barriers to transmission development. Although revisions to these rules are under consideration, Order 1000 remains the federal framework to guide planning and cost allocation for the nation’s transmission system.¹⁹

Created to comply with Order 1000 and previous FERC directives, the West has three regional planning forums: the California Independent System Operator (CAISO), NorthernGrid, and WestConnect. These planning forums meet regularly and produce regional plans, typically on two-year cycles.²⁰ While CAISO supports a robust planning process, NorthernGrid and WestConnect efforts are widely recognized as “check the box” exercises that are ineffective at carrying out the goals of Order 1000. As no backbone transmission project has resulted from a regional planning forum, FERC recently recognized regional planning as a failure that produces unjust, unreasonable, unduly discriminatory, and preferential rates.²¹

Several factors contribute to the ineffectiveness of Order 1000, including a focus on single, not multi-

benefit, projects; a bottoms-up planning approach; limited utility/merchant competition; a short-term view; data limitations; a static planning window; and inconsistent consideration of emerging technologies. Each of these factors is discussed in more detail below.

Focus on Single, not Multi-benefit, Projects

In an effort to spur backbone transmission development, Order 1000 defined three drivers for transmission development: reliability, economic, and public policy. In transmission planning studies, these three drivers are often analyzed separately. This results in a siloed approach to transmission development where benefits are isolated by Order 1000 category²² and the “value stack” of multi-benefit projects goes unrealized.²³ This undervaluation is particularly acute for backbone transmission projects that serve multiple needs. Thus, the value of multi-benefit projects are understated in the compartmentalized approach stemming from Order 1000.

Bottoms-up Planning Approach

While CAISO has made good strides toward portfolio planning, NorthernGrid and WestConnect employ a bottoms-up planning approach that fails to capture system-wide needs. Both NorthernGrid and WestConnect build their regional plans from individual utility inputs, typically the results of integrated resource plans at the state level. NorthernGrid recognizes this as a “compilation” of member loads, resources, local area plans, and

¹⁹ See generally [FERC Planning NOPR](#).

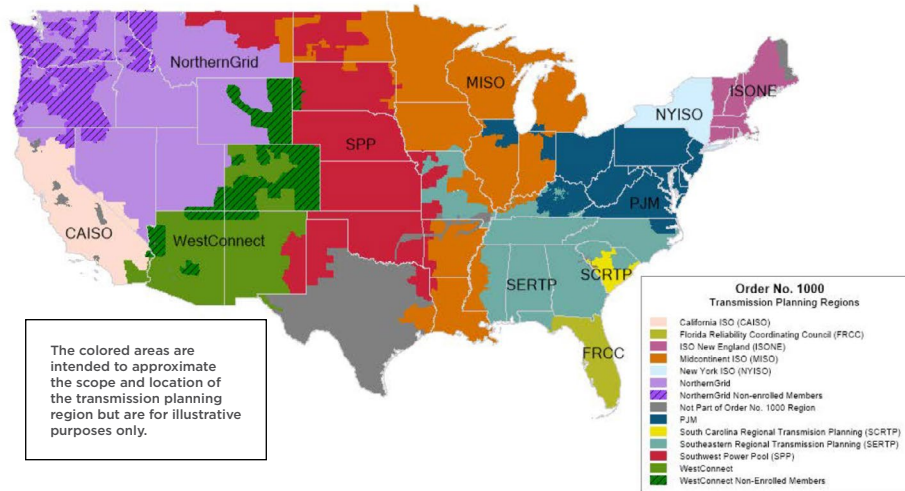
²⁰ For the most recent plans, see: [CA ISO 2022-23 Regional Transmission Plan](#), [NorthernGrid's 2022-23 draft regional plan](#), and [WestConnect's 2022-23 Final Regional Study Plan](#).

²¹ [FERC Planning NOPR](#), p. 29.

²² For example, see WestConnect's discussion of its three types of assessment in [2022-2023 Final Regional Study Plan](#), p. 7.

²³ The Brattle Group and Grid Strategies, [Transmission Planning for the 21st Century: Proven Practices that Increase Value and Reduce Costs](#), Oct. 2021, p. 30.

FERC Order 1000 Transmission Planning Regions²⁴



regional transmission projects,²⁵ and WestConnect bases its work on “planned” facilities included in local transmission plans.²⁶ The resulting regional plans, then, are a roll up of local transmission projects, meaning that a portfolio assessment, whereby solutions are evaluated jointly for wider optimization, does not occur. This bottoms-up planning approach fails to produce robust portfolio solutions that respond to more than a single, local need.

Limited Utility/Merchant Competition

Order 1000 extended the long established practice of allowing utilities the right of first refusal to build a local transmission project.²⁷ In the interest of competition, however, Order 1000 removed this right for backbone transmission projects that are developed through regional planning.²⁸ Order 1000 requires that regional projects be transparently and fairly evaluated. In practice, this has been interpreted as a requirement to competitively bid backbone transmission. This gives utilities further incentive to revert to localized transmission solutions so that they don’t lose an investment opportunity to a

competitor. Thus, competitive opportunities do not materialize for backbone projects and merchant developers are shut out of the process.²⁹ The right of first refusal exclusively for local projects, then, preferences local solutions at the expense of competitively bid backbone projects.

Short-term View

Another deficiency in planning efforts stemming from Order 1000 is the short-term view of forecast timelines. NorthernGrid and WestConnect’s plans cover 10-year horizons; CAISO recently moved to a 20-year window. Given that transmission assets last 40-60 years, this short planning window fails to capture the longer-term value of a transmission asset. The result is a focus on short-term transmission solutions that meet immediate needs and a failure to recognize longer trends that might suggest a different solution.

Data Limitations

A lack of best available data also stymies planning efforts in the Order 1000 regional forums. Both

24 FERC, [Regions Map Printable Version Order No. 1000](#), last updated Nov. 9, 2021.

25 NorthernGrid, [Draft Regional Transmission Plan for the 2022-23 NorthernGrid Planning Cycle](#), Aug. 23, 2023, p. 11.

26 WestConnect [Regional Transmission Planning, 2022-2023 Final Regional Study Plan](#), March 16, 2022, p. 11.

27 [FERC Order 1000](#), p. 204.

28 *Id.* at 199.

29 In NorthernGrid’s last planning cycle, four merchant developers submitted transmission projects, none were selected to advance in the regional plan. [NorthernGrid 2022-23 Regional Transmission Plan](#), pp. 4-5. WestConnect’s description also suggests a hesitancy toward merchant projects: merchant projects “...may be considered...to the extent there is sufficient certainty associated with these projects to warrant their inclusion in the base transmission plan.” [WestConnect Regional Business Practice Manual](#), p. 13.

NorthernGrid and WestConnect rely on an anchor data set from the regional reliability coordinator. This data set is a compilation of inputs from individual utilities, each developed with their own set of assumptions and forecasts. The result is interpretation gaps and inconsistent reporting.³⁰ Thus, the base data on which the regional planning forums are conducting their work has an inconsistent foundation.

Secondly, with the exception of CAISO, the West does not have a widespread wholesale electricity market. While efforts are underway to establish day ahead markets, the absence of liquid trading among utilities means there is no price transparency to energy buying and selling in the West. In Eastern markets with organized trading, markets have transparent pricing signals pegged to substations. This “nodal pricing” serves to highlight areas of persistent transmission congestion in the Eastern system and suggest the need for transmission expansion.³¹ This lack of wholesale electricity price data is another data limitation in the West that impedes backbone transmission development.

A Static Planning Window

Given electrification, a rapidly changing generation fleet, and unpredictable load growth, forecasting future electricity needs is a tricky undertaking. In their own planning, utilities address this uncertainty by modeling a range of scenarios such as extreme weather, natural gas pricing volatility, or high electrification. Such scenario analyses do not occur at the regional level.³² Regional plans provide a static picture based on one forecast provided by the utilities. This static picture does not anticipate a range of possibilities and fails to respond to potential trends. Relying on a static, rather than scenario-based, model presents another barrier to backbone transmission development in the West.

Inconsistent Consideration of Emerging Technologies

Emerging transmission technologies, such as dynamic line ratings, power flow control devices, topology optimization software, and advanced conductor core materials, all have the potential to enhance transmission capacity and operability. These technologies could increase transmission capacity, minimize additional rights-of-way requirements, and reduce costs.³³ However, there is not consensus within the industry to employ these new technologies, causing inconsistent consideration. With such ambiguity comes delay and the potential for legal challenge. Indeed, DOE has recognized that emerging technologies “may not be adequately considered in existing planning processes.”³⁴ Thus, the inconsistent consideration of emerging transmission technology is another factor impeding backbone transmission development.³⁵

New Planning Rules Ahead?

Recognizing the ineffectiveness of Order 1000, FERC issued draft rules to improve the transmission planning and cost allocation process in April 2022.³⁶ These rules have the potential to address many of the deficiencies outlined above, including requiring a 20-year planning horizon; mandatory scenarios that incorporate public policy mandates, technology, and fuel trends; and a broader definition of benefits on which to assess needs and cost allocation. However, these rules have been pending for over a year, and their status remains unclear.

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30 Americans for a Clean Energy Grid, [Transmission Planning & Development Regional Report Card](#), June 2023, p. 109. (ACEG Report Card)

31 For instance, DOE’s [Needs Study](#) is entirely predicated on market price differentials to suggest congestion and the need for transmission expansion. The West has no such pricing data publicly available.

32 [ACEG Report Card](#), p. 39.

33 National Renewable Energy Lab, [Examining Supply-Side Options to Achieve 100% Clean Electricity by 2035](#), 2022, p. 49.

34 Department of Energy, [National Transmission Needs Study: Draft for Public Comment](#), Feb. 2023, p. 3.

35 In FERC’s recently issued [Interconnection Order 2023](#), new interconnection rules now require the consideration of advanced transmission technology. This may help to standardize the consideration of emerging technologies in transmission construction applications.

36 See generally [FERC Planning NOPR](#).



NUMEROUS SITING AND PERMITTING HURDLES

While a [certificate of need](#) provides the initial state authorization for a transmission project, all projects still face numerous federal, state, local, and Tribal permitting hurdles before proceeding to construction. This siting and permitting gauntlet serves as another barrier to transmission development in the West.

Backbone transmission projects must seek land use and environmental permits from each jurisdiction through which they pass. This can amount to dozens of siting and permitting venues, each with their own requirements and timelines. This makes for a time and resource intensive process that requires extensive coordination among agencies and offices.³⁷ A delay, setback, or project alteration in one venue can ripple through other permitting efforts, causing sequencing issues, heightening

opposition, and adding costs. This uncoordinated, labyrinthine process is both resource intensive and prone to litigation.

The experience of the [SunZia line](#) is instructive. This large “generator tie-line” will span 550 miles across New Mexico and Arizona to bring wind-powered energy to the Western U.S. The project faced a gauntlet of 10 federal agencies, five state agencies, and nine local authorities for siting and permitting approvals and was nearly scuttled due to permitting setbacks. If completed as expected in 2025, the line will have taken 17 years to develop.³⁸

Several federal initiatives currently underway may help to address some of these siting and permitting hurdles.



³⁷ For example see the National Renewable Energy Lab’s [RAPID toolkit](#) to facilitate utility-scale renewable energy and transmission project permitting. See also Holland & Hart’s [Transmission Siting in the Western United States](#) for a comprehensive discussion of permitting requirements by each Western state.

³⁸ PowerGrid International, [SunZia transmission line is a win, but also a lesson in what not to do](#), Jan. 1, 2023.

First, FERC has primary siting authority for interstate natural gas pipelines, meaning that pipeline developers seek construction approval from a single entity — FERC.³⁹ There are several pending proposals in Congress to give FERC similar authority over certain types of electric transmission projects.⁴⁰ This would significantly streamline the siting and permitting process for qualifying backbone projects but also comes at the consideration of limiting local control.

Second, the Department of Energy (DOE) has proposed an expedited review process for backbone transmission projects on federal land.⁴¹ DOE proposes to act as the lead agency for federal environmental reviews, coordinating among federal agencies and setting a two-year timeline for completion of all federal reviews. DOE is currently reviewing public comments on this proposal.

Third, Congress has directed FERC to strengthen federal backstop siting authority. Although the Energy Policy Act of 2005 granted FERC this backstop authority, legal challenges have narrowed the scope and reach of this power.⁴² Recent legislation in Congress addressed the legal setback and, in response, FERC has issued proposed rules to adapt its use.⁴³ These rules, too, are in public comment review.

Thus, siting and permitting requirements at the federal, state, local, and Tribal level create a gauntlet of requirements and regulations for backbone transmission that can stymie development. While national initiatives may consolidate, streamline, or strengthen federal authority, the complexity of siting and permitting backbone transmission in the West remains an impediment to its development.

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39 States may have additional permitting requirements, but it is FERC that approves construction and grants eminent domain rights.

40 E&E News, With Manchin Bill Stalled, Will FERC Ever Site Power Lines? Sept. 29, 2022.

41 Department of Energy, Notice of Proposed Rulemaking, Coordination of Federal Authorizations for Electric Transmission Facilities, Aug. 2023.

42 Federal Energy Regulatory Commission, Notice of Proposed Rulemaking, Applications for Permits to Site Interstate Electric Transmission Facilities, Jan. 2023, pp. 2771-2772.

43 *Id.*



→ UNDER-RESOURCED, LEFT-OUT, AND DIVIDED PROJECT PROPONENTS

The proponents of backbone transmission development — including state and public interest organizations — are under-resourced, left-out, and divided, blunting their effectiveness. There are few roles for non-utility stakeholders in regional planning forums. In fact, in NorthernGrid there is no decision-making role for non-utility stakeholders,⁴⁴ and in WestConnect the limited seats for state commissions and key interest groups are vacant.⁴⁵ Further, these regional planning forums can often be used as technical gatekeeping with little

meaningful public engagement. States and public interest organizations wanting to fill vacancies and push for an increased role also often lack the staff needed to effectively participate in these highly technical processes. Lacking the resources and expertise needed to understand and pursue their shared interest, transmission proponents often divide over their differences.

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⁴⁴ ACEG Report Card, p. 39.

⁴⁵ *Id.* at 46.



AN EVOLVING DIALOGUE

The barriers to transmission development in the West are numerous, multifaceted and evolving. This primer is a snapshot that encompasses our experience over the past five years. Whether these barriers remain depends on FERC reform, the development of shared cost allocation solutions, the streamlining of siting and permitting hurdles, among many issues. But first, we must recognize the problems and begin to talk about solutions. This requires honest dialogue, open communication, a shared understanding of the problems, and a willingness to work together toward solutions. This primer is Gridworks' effort to begin that dialogue; we invite you to join us in this evolving conversation.

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Barriers to Backbone Transmission Development in the West *A Conversation with Rich Glick and Rebecca Wagner*

February 8, 2024 | 10:00 a.m. to 11:00 a.m. Pacific

Hear Rich Glick and Rebecca Wagner discuss backbone transmission, FERC Order 1000, and the barriers to transmission development in the West.

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Gridworks' mission is to convene, educate, and empower stakeholders working to decarbonize electricity grids. We provide expert facilitation, objective expertise and insight, and policy and program implementation services to clients working on difficult energy transition issues in the West.