Ensuring Community Involvement and Environmental Protection in Western State Transmission Siting Policy

Photo Credit: Dennis Schroeder / NREL 31198

Addressing climate change and meeting state and federal goals to reduce greenhouse gas (GHG) emissions will require accelerated development of renewable energy resources. This, in turn, will require significant investments in and expansion of electric transmission infrastructure. Transmission authorities should endeavor to ensure that new infrastructure avoids significant impacts to communities and the environment.

This research examined transmission siting authorities in 12 Western states[1] to explore how existing law incorporates community consultation and evaluation of environmental impacts. We found that most state policies require that transmission siting authorities provide public notice, typically through local newspapers, and an opportunity for public comment on new transmission proposals. State policy also typically requires some consideration of the environmental impacts of a facility, often through an environmental assessment or environmental impact statement (EIS) through a process similar to that required by the National Environmental Policy Act (NEPA).

As the team at the Center for the New Energy Economy (CNEE) evaluated state policy, we developed several recommendations that states might consider when amending existing policy to better avoid significant impacts to communities and the environment. We believe that effective policy design might also better avoid siting conflicts (including litigation), which can delay project completion and contribute to cost overrun. Our policy recommendations are grouped into three broad categories:

1. Engage communities;
2. Prioritize avoiding environmental impacts; and
3. Require data sharing and interagency coordination.

In the discussion that follows, we elaborate on our recommendations.

Engage Communities

In general, Western States' policy requires that notice be provided to impacted communities and landowners 15 to 60 days prior to a public hearing regarding the proposed project. Typically, notice to impacted communities is provided through newspapers "in general circulation" in the area. Some states require that notice be first provided to local land use

[1] Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, North Dakota, Oregon, Utah, Washington, and Wyoming.

authorities while other states require notice through certified mail to impacted landowners. In general, the approach to public hearing used by the Western States surveyed by this research can be summarized as "announce and defend."

While public opposition to energy projects is often framed as opposition to the physical nature of the project, studies have found that communities are also concerned about the quality of the decision-making process involved in siting projects (Keir, Watts, and Inwood 2014). By making public engagement a priority early in a project's life cycle, process concerns can be reduced and lead to greater community support, although this is not a guarantee. Effective public engagement means allowing sufficient flexibility in the project itself so that engagement processes can influence the project's outcomes – people can be put off by "check the box" and pro forma processes that do little to actually empower communities (Ciupuliga and Cuppen 2013; Knudsen, et al. 2015; Tobiasson, Beestermöller, and Jamasb 2016).

Require Consultation with Historically Marginalized Communities

Including historically marginalized, impacted, and vulnerable communities in decision making processes is key to empowering citizens. States might consider developing an environmental justice strategy to enhance meaningful engagement of all people and communities with respect to planning and development for transmission and energy siting. Many states have incorporated tenets of social and environmental justice into state law, which includes guidance for state agency decision making. Western States might incorporate this language to inform transmission siting. Using previously approved state or federal definitions could expedite the process of adding environmental and social justice protections to state statute.[2,3] States can also consider requiring that project developers engage in stakeholder processes with these communities. Empowering communities requires that developers work to address or mitigate concerns wherever and whenever possible. Again, community engagement should be conducted early in the project siting and evaluation process, while input can still shape project outcomes (Kier et al. 2014).

Assess and Address Potential Conflict

Social resistance to infrastructure siting is common (You, et al. 2022). A 2020 Pew Study found that 79% of Americans support the build out of alternative energy resources. Typically, however, communities are not equally supportive of transmission projects (Goldfarb, Nasir, and Spinner 2020). Traditionally, transmission projects have followed a "decide-announce-defend" approach where community input and concern has little impact on outcomes (You, Weible, and Heikkila 2021). However, the manner in which state and local agencies and project developers engage communities can greatly impact how a project proceeds, particularly in relation to community support or opposition. Proactively creating a strategy to encourage consensus building early in the process is a critical element of developing effective compromise (Kier and Ali 2014).

Because public controversy over a transmission project can impede siting and development, early and consistent community engagement and education can narrow the focus of stakeholder meetings to specific issues, which can lead to workable compromises (Smith 2021). States might incorporate requirements for early community engagement and/or assessments of potential areas of conflict to state transmission siting statutes. Creating such provisions could minimize "siting difficulty," which refers to the number of obstacles normally faced by transmission developers (Kier and Ali 2014). States could create an early engagement process requirement that includes clear timetables for release of information and public engagement and requires multiple forms of public notice and hearing.

[2] A list of relevant environmental and energy justice legislation is available on the AEL Tracker website here.

[3] Please contact the report's authors for a recent summary of state environmental justice activity.

Include Benefits to Pass-Through Communities in Assessments of CPCNs

Local communities often host transmission infrastructure without reaping any benefits. Transmission lines can be inconvenient for residents, disrupt ecosystems, and impact viewsheds (Goldfarb, Nasir, and Spinner 2020). Such concerns can lead to public pushback against transmission projects. States can include provisions to require that assessments of certificates of public convenience and necessity (CPCNs) include consideration of the benefits to the communities through which a transmission line passes. Such benefits can include monetary payouts or development of a local substation connected to the transmission lines to provide power to the community. Increased awareness of the benefits to a community hosting transmission lines might avoid conflict.

Prioritize Avoiding Environmental Impacts

State policy typically requires some consideration of the environmental impacts of a transmission facility, which includes impacts to habitat, endangered species, and water and air quality. Typically, this assessment is carried out in a manner similar to that required by NEPA. States might consider implementing a mitigation hierarchy in which transmission developers first avoid impacts, then minimize effects, then use restoration practices, and finally employ environmental offsets (The Biodiversity Consultancy 2015; Western Resource Advocates n.d.).

A mitigation hierarchy provides a methodology for best practices particularly for large projects that have environmental risks (The Biodiversity Consultancy 2015). Avoidance practices aim to anticipate and prevent adverse environmental impacts through consultation with stakeholders and experts early in the planning process. Prioritizing avoidance is key to reducing environmental impacts and avoiding costly delays; however, the practice can be overlooked or undervalued if not established as a formal priority. Minimization is the act of reducing the duration, significance, and/or extent of harmful activities. Restoration aims to restore any damaged areas through restructuring, re-planting, and re-population. This must be done carefully, with native species. Finally, a hierarchy can include provisions for offsets in which companies make environmental improvements elsewhere to account for the environmental harms resulting from the project. Offsets can be included as a last resort option in a well-designed hierarchy as they typically have limited environmental benefits.

Site Resilient Transmission Projects

Climate is typically considered in transmission planning by extrapolating from recent weather trends. However, weather in the near term will differ from mid- or long-term climate predictions. The risks associated with climate change to transmission infrastructure include increased risk of flooding, sea level rise, higher impact storms, increased temperatures and fire risk, and increased electricity use due to extreme temperatures (Burillo 2018). Anticipating these effects on transmission infrastructure can mitigate risk, improve response strategies, and reduce costs. A proactive climate strategy for infrastructure could lead to a savings of as much as 50% compared to a no adaptation scenario (Fant, et. al 2020).

Require Full Life-Cycle Benefit-Cost Assessments of Routing Transmission around Sensitive Areas

States might consider requiring that state transmission authorities or developers develop benefit-cost analyses to compare routes that pass through environmentally sensitive areas and / or historically marginalized communities versus those that avoid these areas. Analyses could include such benefits as protecting land and species, ecosystem services, and health benefits to communities. Required analyses should evaluate long-term or life-cycle costs. States might consider requiring that when benefit-cost analyses fall within a certain cost margin, the most protective path be selected.

Co-locate Transmission Facilities

States might consider using existing rights-of-way (ROW) to accelerate transmission build-out. Taking advantage of existing ROWs can minimize siting hurdles including objections from landowners or environmental concerns.

Additionally, ROWs generally extend along long distances, which can aid the development of interstate or regional transmission projects needed to transport energy resources from generation areas (typically rural) to areas of demand (typically urban). States may be able to encourage the use of existing ROWs in transmission planning by offering expedited permitting for projects that take advantage of these areas. States might also consider expedited permitting for undergrounding in or near existing ROWs. This can protect transmission lines from damage associated with such things as inclement weather or fire.

Several states have explored transmission expansion projects within existing ROWs because they evoke less public outcry and less burdensome regulatory pathways that can accelerate construction timelines (Reed et al. 2020). States like Wisconsin, New Hampshire, and Maine allow siting of transmission lines along existing highway and interstate ROWs. The Federal Highway Administration (FHWA) is encouraging state DOTs to allow co-location of fiber optic cables, electric transmission and distribution lines, and renewable energy in highway and interstate ROWs (FHWA 2021; Putman and Rogers 2022; NextGen n.d).

Require Data Sharing and Interagency Coordination

The majority of the states surveyed by this research require some form of interagency coordination for permitting transmission. Most states also require data sharing, at minimum, to avoid duplication of effort during the environmental assessment or EIS process. States can establish requirements for early planning, information sharing, and data gathering, which might reduce siting conflicts and improve outcomes for communities and the environment. Transmission projects are more likely to succeed and be received positively with such efforts. Early data sharing can help avoid unnecessary conflicts and identify locations for transmission build out that are minimally impactful of communities and cultural and environmental resources. For instance, sharing of relevant data layers in Geographic Information Systems (GIS) mapping software can help eliminate unsuitable locations for development because of physical, technical, cultural, and/or environmental constraints (Calvert, Pearce, and Mabee 2013).

Such efforts can be complemented with early consultation of local community members and experts (Calvert, Pearce, and Mabee 2013). For instance, Nevada has a dedicated team of archaeological and cultural experts housed within their Department of Transportation to help inform siting decisions and requires consultation with Tribes on any projects, including transmission, that use federal funding. Virginia's Department of Historic Resources provides extensive guidance on the siting of new transmission lines, including considerations for cultural and environmental resources. Virginia uses GIS to help guide siting decisions. Among other conditions, project developers in Virginia use a radial buffer technique when mapping proposed projects, which helps highlight where transmission may overlap with cultural and environmental resources.

Developing a space for state agencies to share data related to cultural and environmental resources could aid the development of best practices and increase the efficiency of siting processes. State agencies could share information about environmentally and culturally protected areas, compile a list of protected species, and develop common practices for use of technology and data in siting. Such a repository could aid the development of regional transmission, as states could also have access to data on protected areas in surrounding states, which could inform the establishment of transmission corridors. Analysis could be undertaken by third parties to determine areas that hold the potential for low-conflict transmission siting, similar to the work done by The Nature Conservancy through the *Site Renewables Right* tool and other renewable energy mapping tools, including the Brightfields Energy Siting Initiative (BESI) tool, that have examined land availability for renewable energy siting in the U.S. Data on culturally and environmentally sensitive areas should be protected to avoid driving visitors and associated impacts to these areas.

Provide Tools and Convening Authority for Planning

Establishing a central planning authority could bring together state agencies, developers, stakeholders, and data in a way that could expedite planning and permitting, while prioritizing and improving community and environmental protections in transmission siting. Such a group could include representatives of relevant stakeholder groups including Tribes, regional transmission planning authorities, environmental justice communities and advocacy groups, and environmental conservation advocacy groups. Providing a single forum for planning might facilitate community engagement. A centralized convening authority could also encourage the identification of economic and public needs related to electricity transmission. Identifying these needs early will facilitate planning processes. The authority might also be able to determine interregional transmission needs, plan for future generation, load, and demand, and address uncertainties through scenario-based planning (Pfeifenberger et. al. 2021). Using a centralized authority could also avoid duplication of effort.

A central authority might also be able to develop tools to aid in the transmission siting process. Using criteria similar to that used in the *Site Renewables Right* tool from The Nature Conservancy, a tool for environmentally and culturally protective transmission siting could be developed for a state or a region. An authority might also develop a common set of best practices for developers with regards to environmental and cultural resources protections.

Engage in Interstate / Regional Transmission Planning Efforts[4]

As the U.S. endeavors to increase the penetration of renewable energy generation, developing long-distance, high-voltage transmission lines will be essential for delivering energy from generation resources to local distribution networks. Challenges to expanded interstate transmission include deciding who will fund the transmission projects and difficulties navigating state and local planning, permitting, and siting processes (Dennis 2022). By allowing an opportunity for interstate learning, participation in interstate or regional transmission planning efforts might provide solutions to these challenges.

When states have worked together on transmission planning, there has been success. In 2011, Midwestern States worked with the Midcontinent Independent System Operator (MISO) to develop a planning process that led to $5 billion in significant projects and every individual state that participated benefited from the projects in excess of their costs. It is also important that states accurately assess the economic value of new regional and interregional transmission infrastructure. A new study suggests that congestion relief and increased trading potential may be economic benefits that are often not fully considered in transmission planning (Millstein et. al. 2022). States looking to participate in regional and interregional transmission planning might seek to comprehensively assess the economic value of regional transmission under a variety of conditions. States might also want to work together to improve the processes through which regional transmission project opportunities are identified.

Federally Designated Corridors

New long-distance, high-voltage transmission lines will be vital to the deployment of enough renewable energy to decarbonize the power sector and integrate it cost effectively. One well-known impediment to the build out of increased transmission is state authority over and local opposition to siting. Opposition often stymies long-distance transmission projects either through delays or through uncertainty, both of which drive up costs and discourage investment (Zevin, et al. 2020). States or transmission developers might choose to work with the

[4] FERC suggests the voluntary creation of regional transmission organizations (RTOs) in Order 2000 as a way to administer the grid on a regional basis (FERC 2022). Colorado and Nevada both recently passed legislation requiring their utilities to join RTOs (Dennis 2022).

federal government to designate a national interest electric transmission corridor (NIETC) in their state. While most authority over the designation of NIETCs is held by federal agencies, states can take advantage of the corridor process to facilitate the development of interstate transmission.

The designation of an NIETC involves several considerations, including economic growth, costs to consumers, energy and national security, impacts to the electric grid, and whether the new corridor would maximize existing rights-of-way while avoiding or minimizing impacts to sensitive environmental areas and cultural heritage sites. NIETC designations may ease siting and permitting pathways for developers through increased industry and public certainty in the planning process. States might also benefit from using the data and information created during the designation process. Section 368 of the Energy Policy Act of 2005 authorizes the Secretaries of Agriculture, Defense, Energy, and Interior to designate corridors on federal lands in 11 Western States (DOE n.d.).[5]

States, particularly western states, will play a significant role in incentivizing, siting, and developing transmission infrastructure both within their own states and regionally. This provides an opportunity to amend existing transmission siting policy to encourage community engagement, prioritize environmental impact avoidance, and require information exchange and interagency coordination. The recommendations here encourage effective policy design which can lead to reduced siting conflict, avoided cost overruns, increased environmental protection, and informed and engaged communities. Processes for addressing and ultimately avoiding siting conflicts early in the planning process are key. As our research from 12 Western States indicates, including affected communities early-on in decision making, requiring collaboration between agencies, and establishing an environmental mitigation hierarchy, can reduce opposition, delays, and other barriers to successful transmission projects.

Prepared by: Ellen Eisenbeis, Brian Feltus, Katherine Heriot Hoffer, Lisa Dilling, Brendan Davidson, and Alexandra Evans

References

Burillo, D. 2018. "Effects of Climate Change in Electric Power Infrastructures." *Power System Stability*. Available: https://www.intechopen.com/chapters/64723

Calvert, K., J.M. Pearce, and W.E. Mabee. 2013. "Toward Renewable Energy Geo-Information Infrastructures: Applications of GIScience and Remote Sensing That Build Institutional Capacity." *Renewable and Sustainable Energy Reviews*. Vol. 18 (Feb). Available: https://www.sciencedirect.com/science/article/abs/pii/S1364032112005667?via%3Dihub

Ciupuliga, A.R. and E. Cuppen. 2013. "The Role of Dialogue in Fostering Acceptance of Transmission Lines: The Case of a France–Spain Interconnection Project." *Energy Policy*. Vol. 60 (Sep). Available: https://www.sciencedirect.com/science/article/abs/pii/S0301421513003601?via%3Dihub

Dennis, J. 2022. "Transmission Buildout Requires State as Well as Federal Engagement." *Advanced Energy Economy.* 15 March. Available: https://blog.aee.net/transmission-buildout-requires-state-as-well-as-federal-engagement

DOE. n.d. "Energy Corridors on Federal Lands." *United States Department of Energy - Office of Electricity*. Available: https://www.energy.gov/oe/services/electricity-policy-coordination-and-implementation/transmission-planning/energy

Fant, C., B. Boehlert, K. Strzepek, P. Larsen, A. White, S. Gulati, Y. Li, and J. Martinich. 2020. "Climate Change Impacts and Costs to U.S. Electricity Transmission and Distribution Infrastructure." *Energy*. 15 March. Available: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7017388/

[5] Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

FERC. 2022. “Regional Transmission Organizations / Independent System Operators.” *Federal Energy Regulatory Commission*. 3 May. https://www.ferc.gov/power-sales-and-markets/rtos-and-isos

FHWA. 2021. “State DOTs Leveraging Alternative Uses of the Highway Right-of-Way: Guidance” *U.S. Department of Transportation: Federal Highway Administration*. 27 April. Available: https://www.fhwa.dot.gov/real_estate/right-of-way/corridor_management/alternative_uses_guidance.cfm.

Goldfarb, E., I. Nasir, and A. Spinner. 2020. “Electric Transmission Policy in the United States.” *Center for Local, State, and Urban Policy.* 14 December. Available: https://closup.umich.edu/sites/closup/files/uploads/working-papers/closup-wp-53-Goldfarb-Nasir-Spinner-Electric-Transmission-Policy-in-the-United-States.pdf

Kier, L. and S. Ali. 2014. “Conflict Assessment in Energy Infrastructure Siting: Prospects for Consensus Building in the Northern Pass Transmission Line Project.” *Negotiation Journal*. 10 April. Available: https://doi.org/10.1111/nejo.12054

Keir, L., R. Watts, and S. Inwood. 2014. “Environmental Justice and Citizen Perceptions of a Proposed Electric Transmission Line.” *Community Development*. Vol. 45(2). Available: https://doi.org/10.1080/15575330.2014.887130

Knudsen, J.K., L.C. Wold, Ø. Aas, J.J.K. Haug, S. Batel, P. Devine-Wright, M. Qvenild, and G.B. Jacobsen. 2015. “Local Perceptions of Opportunities for Engagement and Procedural Justice in Electricity Transmission Grid Projects in Norway and the UK.” *Land Use Policy*. Vol. 48 (Nov). Available: https://doi.org/10.1016/j.landusepol.2015.04.031

Millstein, D., R. Wiser, W. Gorman, S. Jeong, J. Kim, and A. Ancell. 2022. “Regional and Interregional Transmission Have Significant Economic Value.” *Lawrence Berkeley National Laboratory.* August. Available: https://emp.lbl.gov/news/regional-and-interregional-transmission-have

NextGen. n.d. “NextGen Highways Feasibility Study Overview of Relevant Projects.” Available: https://drive.google.com/file/d/1cP-MzmxT6xRWy-1Ct0I8e3-qBAy9hHcV/view?usp=embed_facebook.

Pfeifenberger, J., K. Spokas, J. Hagerty, and J. Tsoukalis. 2021. “A Roadmap to Improved Interregional Transmission Planning.” *Brattle*. 30 November. Available: https://www.brattle.com/wp-content/uploads/2021/11/A-Roadmap-to-Improved-Interregional-Transmission-Planning_V4.pdf

Putman, M. and L. Rogers. 2022. “NextGen Highways Feasibility Study for the Minnesota Department of Transportation: Buried High-Voltage Direct Current Transmission.” *Next Generation Infrastructure Consulting, The Ray, Great Plains Institute, Satterfield Consulting, Tracy Warren, and 5 Lakes Energy*. Available: https://19fgew3zyb632ma8181lw82b-wpengine.netdna-ssl.com/wp-content/uploads/2022/04/NexGen-Highways-Analysis-Report-4.6.22-v7.pdf

Reed, L., M. Dworkin, P. Vaishnav, and M. Morgan. 2020. “Expanding Transmission Capacity: Examples of Regulatory Paths for Five Alternative Strategies.” The Electricity Journal. Vol. 33(6) Available: https://doi.org/10.1016/j.tej.2020.106770

Smith, W., Jr. 2021. “Mini Guide on Transmission Siting: State Agency Decision Making.” *National Council on Electricity Policy.* December. Available: https://pubs.naruc.org/pub/C1FA4F15-1866-DAAC-99FB-F832DD7ECFF0

The Biodiversity Consultancy. 2015. "A Cross-Sector Guide for Implementing the Mitigation Hierarchy." *IPIECA.* June. Available: https://www.ipieca.org/resources/good-practice/a-cross-sector-guide-for-implementing-the-mitigation-hierarchy/

Tobiasson, W., C. Beestermöller, and T. Jamasb. 2016. "Public Engagement in Electricity Network Development: The Case of the Beauly–Denny Project in Scotland." *Econ Polit Ind*. Available: https://doi.org/10.1007/s40812-016-0030-0

Western Resources Advocates. n.d. "Transmission, Siting Considerations, Best Practices, and Lessons Learned." Available: https://www.nwf.org/~/media/PDFs/Regional/Northern-Rockies/NRPRC-REDW-GrahamPowerpoint.ashx

You, J., T. Heikkila, C. Weible, and S. Kim, K. Park, J. Yordy, and S. Smolinski. 2022. "The Distribution of Conflict and Attention across Energy Infrastructure." *Public Administration.* 24 February. Available: https://doi.org/10.1111/padm.12842

You, J., C. Weible, and T. Heikkila. 2021. "Exploring Instigator and Defender Policy Scenarios in the Siting of Energy Infrastructure." *Politics and Policy.* 4 October. Available: https://onlinelibrary.wiley.com/doi/abs/10.1111/polp.12442

Zevin, A., S. Walsh, J. Gundlach, and I. Carey. 2020. "Building a New Grid without New Legislation: A Path to Revitalizing Federal Transmission Authorities." *Columbia SIPA*. 14 December. Available: https://www.energypolicy.columbia.edu/research/report/building-new-grid-without-new-legislation-path-revitalizing-federal-transmission-authorities