

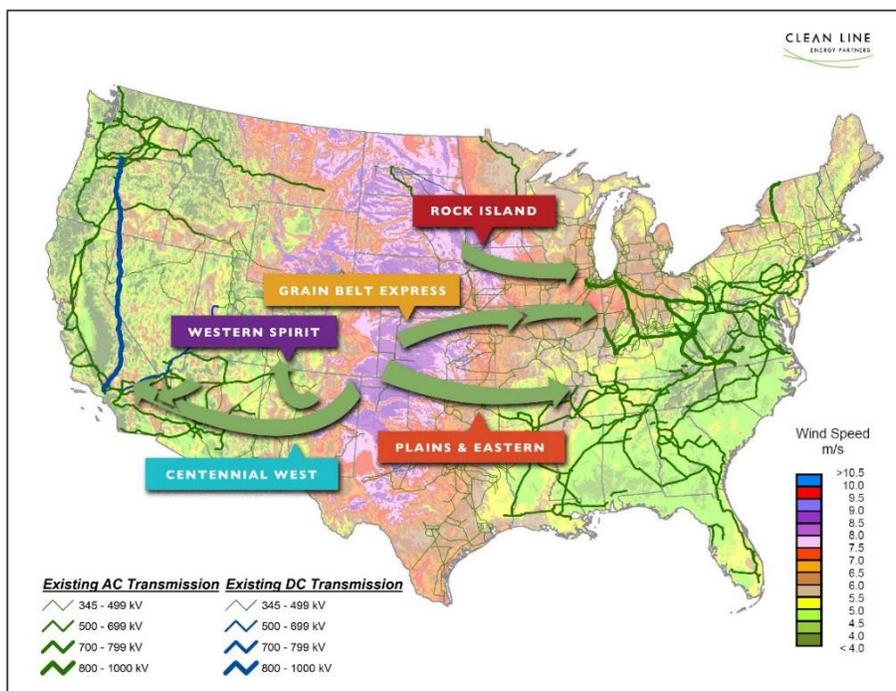
## Addressing the National Transmission Challenge

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Clean Line Energy

The United States possesses some of the best renewable energy resources in the world, but it also faces a serious challenge: there is a lack of transmission capacity to deliver that energy to market. Clean Line Energy Partners LLC (“Clean Line”) is an independent developer of long-haul transmission lines that will deliver thousands of megawatts (MW) of renewable power from the windiest areas of the United States to communities and cities that have a strong demand for clean, reliable energy but that lack access to clean energy resources.

The need for transmission projects will continue to grow as electricity demand increases in the United States and as the demand for clean, cost-effective power sources accelerates. The existing transmission system was created primarily as a result of local utility planning to connect population centers with nearby fossil fuel power plants; it is now insufficient to meet the demands of our new energy economy. We need long-haul transmission lines to move America’s vast renewable energy resources to market. At Clean Line, we are developing several projects to provide these resources to load centers.

Clean Line has five projects under development that span eleven states (Oklahoma, Arkansas, Tennessee, Iowa, Illinois, Kansas, Missouri, Indiana, New Mexico, Arizona, and California) and that have a footprint in six transmission planning regions, resulting in the need for extensive stakeholder outreach, the consideration of regional benefits, and multiple state approvals.



## Preferred Technology

For the projects that require moving the energy over long distances (over 400 miles), Clean Line is utilizing high voltage direct current technology (HVDC). Direct current results in overall higher efficiency and reliability than an equivalently-sized alternating current (AC) system moving the same amount of power. Over long distances, DC transmission can move more power with less electrical losses than an equivalent AC transmission line. Higher efficiency means a lower transmission cost, helping renewable energy compete against other power sources. HVDC transmission can enhance system stability, allow the operator complete control over power flow, and facilitate the integration of wind from different resource areas. In addition, DC transmission lines require narrower right-of-way footprints, using less land, than equivalent AC lines.

The development of direct current transmission dates back to the 1930's and has been a proven technology since the first major installations in 1954. Over the last 40+ years, DC projects have shown to offer significant electrical, economic, and environmental advantages when transporting power across long distances, where there has been a veritable boom in the use of DC to tap energy resources in remote portions of the country and bring the energy to consumers in more heavily populated areas. Among those direct current lines is the Pacific DC Intertie, which has been in operation for over 30 years. Operating at  $\pm 500$  kilovolts, the line is capable of transmitting up to 3,100 MW of power. In terms of operating voltage and capacity, the Pacific Intertie is similar to the Clean Line transmission line projects, which will operate at  $\pm 600$  kilovolts and will each deliver up to 3,500 MW of power.

Currently there are more than 20 DC transmission facilities in the United States and more than 35 across the North American grid as indicated in the map below.

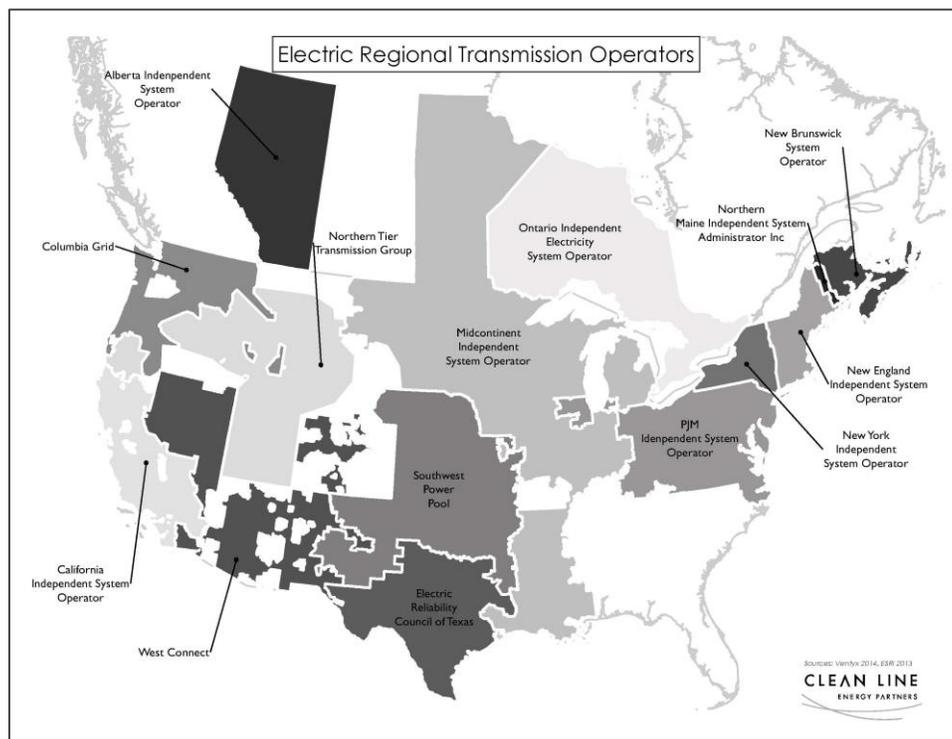


## Navigating the Patchwork Regulatory Requirements

No state transmission line siting process is the same, and Clean Line is navigating varying statutory requirements in all eleven project states. Some states have statutes written a long time ago that didn't contemplate electric transmission lines of the magnitude of Clean Line's projects. Other states have more recent statutes that do contemplate projects like ours – interstate merchant transmission projects – but there have been no other such projects to date and therefore there is no precedent to which we can refer.

Some states have a single process and some have a bifurcated, or two-step, process through which an entity has to go to construct an electric transmission line. Differing eligibility requirements mean that we have to be a public utility in some states but not in others, what is or is not in the “public interest” changes by state, and whether or not our line has to serve customers in the state may or may not be a statutory requirement.

There are also challenges on the federal level. Each of Clean Line's four high voltage direct current transmission lines originates in the footprint of one transmission planning region and connects back into the grid in the footprint of another. There are currently no federal rules that comprehensively govern interregional merchant transmission development. Order 1000 issued by the Federal Energy Regulatory Commission (“FERC”) is a good starting point for addressing some of these issues – it requires transmission providers to identify regional solutions through participation in a regional planning process – but in order to fully solve the lack of long-haul transmission in the United States, FERC needs to go a few steps further in addressing interregional coordination. A requirement for a single study process, encompassing all affected states and regions of a particular project, would go a long way to streamline the development process for interregional transmission projects.



Clean Line is working closely with state and federal agencies to understand and solve the regulatory challenges that we face. Our approach is to identify each issue, based both in statute and in precedent, and to work with local counsel and Commission (or other regulatory body) Staff in each state to ensure that we meet the necessary requirements to develop and to construct our projects. We are now a public utility in three states, and we are working diligently, preparing to apply for utility status in the other states in which it is required to construct and operate electric transmission lines.

### Community Engagement is Essential

Developing projects of this scale is a long-term undertaking, and Clean Line is fully committed to developing the lines in an environmentally responsible and transparent manner, with input from thousands of stakeholders. We host public open houses, provide up to date information on our project websites, and continue to listen to and engage with landowners and local communities on an on-going basis. We wouldn't be where we are today without the participation of thousands of landowners, farmers, community leaders, elected officials, economic development organizations, wind developers, and local business owners in our routing processes. Communication and collaboration are key, and Clean Line has spent a great deal of time and resources to date – and will continue to do so – to build relationships and maintain an open dialogue so that we can advance our projects and help to build the energy infrastructure necessary to support the wind-rich energy mix of the future.