



Railroads Can Help Unlock the Energy Future

Americans are builders and fixers, and nothing creates jobs and prepares the U.S. to compete in the 21st Century like attending to the fundamentals. Red state or blue, factory worker or corn farmer, professor or small business owner, everyone is entitled to reliable and affordable -- we would add cleaner -- electricity 24/7. The transmission and distribution infrastructure that delivers vital electricity service is a public good.

Of the great infrastructure networks that drive modern society -- transportation (rail and highways), the Internet, and energy delivery "pipes and wires" -- only the electric grid impacts virtually every aspect of modern life. It yet operates as a patchwork of uncoordinated markets subject to relatively uncoordinated state regulation. The current grid's weaknesses create irrational pricing disparities, inefficiency, a sclerotic process of planning and constructing infrastructure in response to energy policies, and a potential misallocation of public benefits.

A grid built solely to serve local needs worked well in a less complicated, less technology-driven world. Today's digital, the connected world requires new solutions and investments. However, America's existing electrical grid recently received a C-rating for reliability from the American Society of Civil Engineers. That is alarming because of a potential explosion of new electricity demand, a switch to low-cost renewable resources, more distributed energy resources and technologies. The extraordinary threats to our electrified society from extreme weather and climate change, such as the winter freeze-off that created havoc in Texas last month, Economists at The Brattle Group have predicted that the U.S. may need to build up to \$40 Billion of transmission infrastructure annually if, after 2030, there is a massive shift to electric highway vehicles and renewable energy. So, the imperative to integrate and modernize our national electricity grid to accommodate competitive wind and solar plants, battery storage, microgrids and resilience measures, millions of new customers, and resurgent electric manufacturing is becoming clear.

Will we do it? Experts are skeptical. Building an electric transmission line is a 10-15-year journey, hampered by uncoordinated state and local permitting and siting (i.e., land use and resource) regulations as well as varying notions about what constitutes the public interest. And the President has already targeted net-zero emissions by 2035! Any transmission line that will span more than one state -- especially the "macro-grid" HVDC lines popularized by the national laboratories and renewable interests as a way of meeting the challenge of climate change and accessing low-cost but remote resources -- must run that gauntlet.

The specter of job losses, lower productivity, service interruptions, congestion costs, declining competitiveness, and a lack of access to the cheapest electricity will be the legacies of under-investment in a stronger national grid.

Two solutions could advance grid development more than any other. First, a change in the law can militate against federalism's worst consequences by providing transmission planning and authorization at a national level for those multi-state "macro-grid" projects that would tie all consumers into a national power market. Collaborative planning that maximizes economic benefits is preferable to allowing an individual state to veto multi-state projects. Recognizing that Congressional action takes time, there's another option: siting transmission lines along with longitudinal private property – i.e., historical railroad rights-of-way – or even along with the highway system. Potentially, transmission lines co-located alongside these transportation network "landlords" could reach even the remotest electric generation resources. This could be a WIN-WIN-WIN for consumers, railroads, and energy providers – not to mention a WIN for the environment as the grid enables major growth in clean, renewable electricity.