

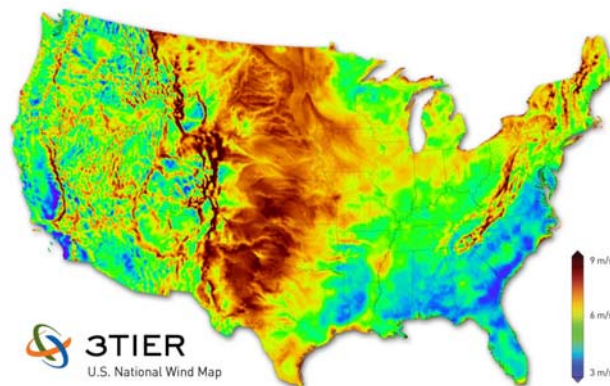
A 21st Century “Interstate Electric Highway System” – Connecting Consumers and Domestic Clean Power Supplies

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EXECUTIVE SUMMARY

- Electricity is fundamental to our quality of life. Most Americans don't think twice about their electricity supply and how it gets to them. We expect it to be in the socket whenever we need it, no matter how many appliances we plug in, and at a reasonable cost.
- And yet, we still have our fathers' power system. The nation's electric system needs to keep pace with our modern requirements. We face new challenges in this century compared to the last: growing demand for advanced technology better suited to a digital economy; adequate supplies to keep pace with the economy; and global climate change, which will require significant reductions in greenhouse gas emissions from the power sector.
- These pressures are motivating substantial interest in producing more of our power supply from renewable energy. Renewables are a critical link in our ability to meet the nation's 21st Century energy needs.
- For example, wind on our prairies, mountains and off-shore waters provide us with a generous indigenous and renewable resource capable of providing significant electric energy with no carbon emissions and fuel costs delinked from global energy markets. We have seen significant increases in wind projects – in Texas, the Plains, the West, the upper Midwest, and the Northeast/MidAtlantic regions.

U.S. Wind Resources
(Meters per Second)

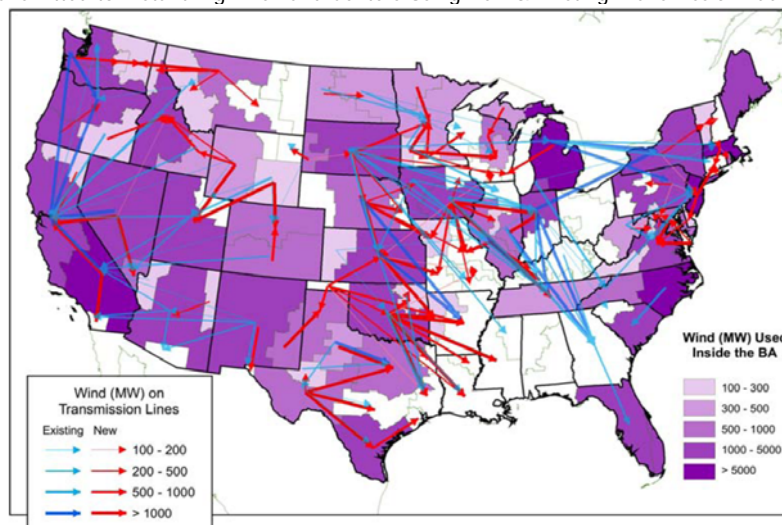


Source: http://www.gaccsouth.com/fileadmin/user_upload/Dokumente/Events_Houston/Sustainable_Energy_Strategies__Inc.__Richard_Walker.pdf

- But we cannot realistically expect to exploit fully our rich domestic renewable resources in the near term without strategic improvements to the electric transmission system. Wind projects must be located where the wind actually blows; once generated, their power can travel over power lines to customer locations. This means that wind power development is inextricably tied to electric transmission. The same is true for large scale solar projects, biomass-to-electricity, geothermal plants as well. They must be located near the resource, with power moved to consumers, most of whom live far away. Many recent studies have concluded that ensuring adequate transmission is built to deliver power from remote renewable projects to consumers in distant markets is just as important as developing the renewable resources themselves. Many groups from around the country, across the political spectrum and from a wide variety of constituencies agree.

- And yet transmission investment for wind often suffers from classic "chicken-and-egg" problems. It's hard to build renewable power plants in remote areas where there is inadequate transmission and few customers reside; and it's hard to build transmission in areas where there are no power plants or few customers to serve. Ironically, as the electric transmission system rises in importance in helping the nation develop its renewable resources, our transmission system has suffered from years of underinvestment. Continued inadequate attention to enhancing the nation's electric transmission system will undermine – if not prevent – our ability to satisfy our national goals for addressing climate change and our needs for energy independence.
- Strategic improvements to our nation's high-voltage transmission infrastructure are needed to meet our needs for clean, reliable and affordable power supplies in a carbon-constrained world. Transmission investments can help to modernize the system, facilitate clean power development, and improve power efficiency, while enhancing energy security and reliability.

Conceptual Illustration of Optimized Use of Wind Resources Locally and Transmitted to Distant High-Demand Centers Using New & Existing Transmission Facilities



Source: U.S. DOE, "20% Wind Energy by 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply", 5-2008.

- We need a new vision for a 21st Century "Interstate Electric Highway System." Just as we adopted the National Interstate Highway System 50 years ago to usher in a new era of mobility, interstate commerce and economic development, it is time for a new era of electric transmission. This vision builds on current regional initiatives to plan transmission for renewables, takes into consideration the strategic benefits of private transmission investment, and relies on our traditional model of private funding for investment in transmission. Like the national highway system designed to connect parts of the country together, a national high-voltage transmission should be build off of current regional planning efforts, with costs recovered from consumers in large electrical regions, through the portions of consumers' electricity bills that reflect interstate charges rather than local rates. A cost-support mechanism could take the form of a consolidated national "postage-stamp" rate available for strategic transmission projects and collected through the federal transmission tariff. Legislation may be required, and would benefit from further discussions on the design of technical issues – while still keeping with the goal of building national support for a national "interstate electric highway system."
- The complete Tierney White Paper ("21st Century 'Interstate Electric Highway System' ") is at <http://www.analysisgroup.com/analysisgroup/energy.aspx>