Time To Rethink The Rural Infrastructure

A New "Grand Plan" To Development And Coordination Is Needed

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Our farm in North Dakota would be an ideal location for several new high-tech windmills. With gusty winds blowing on a regular basis, we could earn some extra money and help other Americans energize their homes from a renewable resource. Problem is, we are not near any transmission lines that would connect us to places where it's needed.

Such is the dilemma confronting many farmers and ranchers who produce food, feed, fiber, renewable fuels and electricity. We can produce many things that the rest of the world wants – if only we could get it there.

Case in point: The U.S. Department of Energy (DOE) recently produced a major report that looked at the tremendous potential for wind power generation in this country. The report, "20 percent Wind Energy by 2030: Increasing Wind Energy's Contribution to U.S. Electricity Supply, looks closely at one scenario for reaching 20 percent wind energy by 2030.

"DOE's wind report is a thorough look at America's wind resource, its industrial capabilities, and future energy prices, and confirms the viability and commercial maturity of wind as a major contributor to America's energy needs, now and in the future," emphasized Andy Karsner, DOE Assistant Secretary of Energy Efficiency and Renewable Energy.

The report finds that achieving a 20 percent wind contribution to U.S. electricity supply would:

• Reduce carbon dioxide emissions from electricity generation by 25 percent in 2030.

• Reduce natural gas use by 11 percent;

• Reduce water consumption associated with electricity generation by 4 trillion gallons by 2030;

• Increase annual revenues to local communities to more than $1.5 billion by 2030; and

• Support roughly 500,000 jobs in the U.S., with an average of more than 150,000 workers directly employed by the wind industry.

Transmission is key

Despite these benefits, none of it can happen without developing the equivalent of a new electrical transmission highway – over 19,000 miles of new high-tech transmission lines, according to one analysis. Most of those would be located in rural areas.

"The report correctly highlights that greater penetration of renewable sources of energy – such as wind – into our electric grid will have to be paired with not only advanced integration technologies but also new transmission," DOE's Assistant Secretary for Electricity Delivery and Energy Reliability Kevin Kolevar said. "In many cases, the most robust sources of renewable resources are located in remote areas, and if we want to be able to deliver these new clean and abundant sources of energy to population centers, we will need additional transmission."

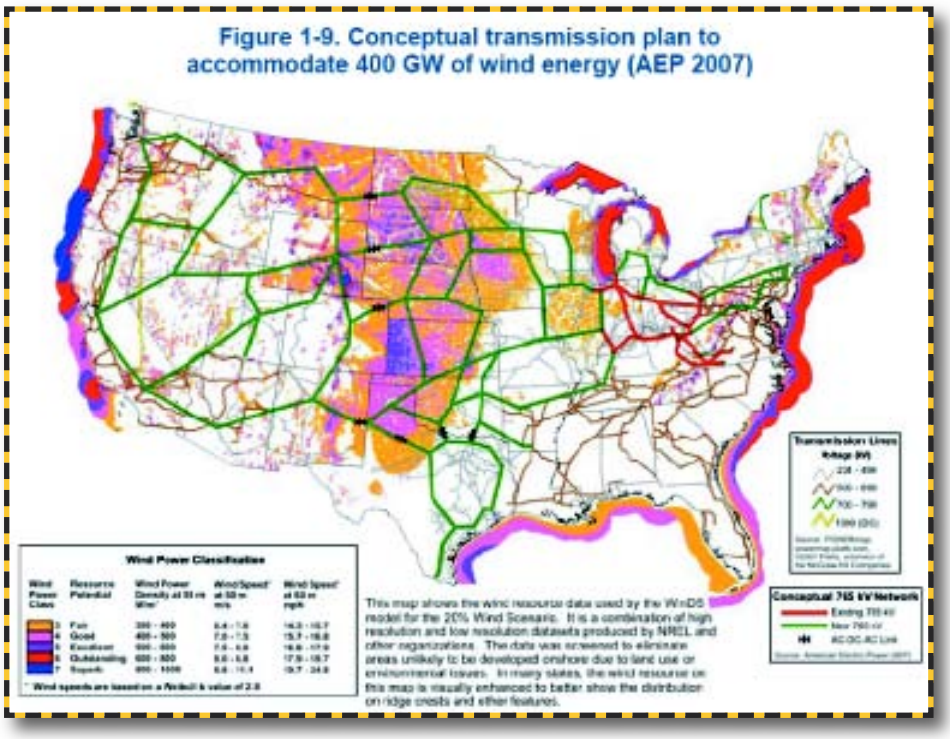
American El-ectric Power (AEP), working in partnership with the American Wind Energy Association (AWEA), developed a high-level, conceptual interstate transmission plan that could provide a basis for discussion to expand industry infrastructure needs. (See map.)

The rough cost of this plan is estimated to be $60 billion in 2007 dollars. While it is by no means the total solution, AEP says this initiative illustrates the opportunities that exist, and what might be possible with adequate cooperation, collaboration, and coordination – "3Cs."

Better coordination needed

Some folks wonder if the wind industry and DOE officials should be talking more broadly about the 3 "Cs" with other sectors. After all, we have the potential to produce renewable electricity and renewable fuels in rural regions of every state. Moving all of it will require some new, as well as updated infrastructure. Why not coordinate planning and implementation? For example, could new ethanol pipelines be built in conjunction with new transmission lines? Should new roads and rail lines be developed as part of America's overall plan to produce and move more renewable energy from rural to urban areas?

Figure 1-9. Conceptual transmission plan to accommodate 400 GW of wind energy (AEP 2007)



Some of this type of planning will require vision and determination over the next few decades. President Dwight D. Eisenhower, who is widely credited with championing development of the Interstate Highway System, understood the value of roads as a necessary component of our national defense system and emergency preparedness.

In 1919, he was aboard the U.S. Army's first transcontinental convoy – what was then a 2-month journey from Washington, DC, to San Francisco, CA – to assess the readiness of military vehicles to make such a long trip, according to a report by the Federal Highway Administration. During and after World War II, he traveled on Germany's autobahn network of rural superhighways, and noted, "The old convoy had started me thinking about good, two-lane highways, but Germany had made me see the wisdom of broader ribbons across the land."

However, it took decades to turn ideas about those "broader ribbons" into actions. Initial federal planning for a nationwide highway system began in 1921 but the first contracts weren't awarded until 1956 in Kansas and Missouri.

Our current crop of presidential candidates pledges to support development of renewable energy in this country. Perhaps one of them will appoint a Rural Infrastructure Commission and start looking at how to coordinate and integrate the delivery of all types of renewable energy. Δ

Editor Sara Wyant publishes a weekly e-newsletter covering farm and rural policy called Agri-Pulse. For a four-week free trial, go to www.Agri-Pulse.com