

Editor's Choice

FEATURE: Transmission lines needed first to vault the border - Mexico

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As Mexico and the US set their sights on upping renewable energy trade, the first and most daunting hurdle seems to be development of transmission capacity especially designed for clean power sources to span the border.

Mexico's President Felipe Calderon and his US counterpart Barack Obama in May agreed to create a "cross-border electricity task force" to promote the development of renewable energy markets between the two countries. The force will, among other actions, advance transmission and grid connection options.

"The ability to reach the [US] market is severely limited by the existing transmission infrastructure. How to build out increased bi-national infrastructure is proving a challenging hurdle for bureaucratic, financial and sovereignty reasons," Jeremy Martin, director of the Institute of the Americas' energy program, told BNAmericas.

"Dealing with the transmission infrastructure hurdle needs immediate and concentrated attention. For example, devising creative financing structures for new infrastructure should - and will be - a part of the deepening bilateral discussion," said Martin.

Duncan Wood, a professor of international relations at the Instituto Tecnológico Autónomo de México (ITAM), likewise told BNAmericas that without establishment of a group to finance and build the transmission line, investors in the development of cross-border energy trade will hold back.

"You really have a collective action problem here, because you listen to firms like [Sempra](#) and [Mexico's state power company] [CFE](#), and no one is willing to actually come up with the money themselves. Everyone is sort of looking to the governments to come up with some sort of subsidy, grant, whatever," according to Wood.

Private aversion to transmission investment may be read as a reaction to the experience of the open season process to transmit energy from the Tehuantepec isthmus in Oaxaca state.

The isthmus has a world-class wind resource, with estimated potential of some 10GW, but is far from Mexico's power demand centers. The lack of both private and public appetite to pay for required transmission infrastructure delayed its development.

Ultimately, CFE - which operates the entire grid under Mexican law - determined how much wind capacity companies were willing to commit to developing to justify new transmission infrastructure, which included a 400kV double circuit transmission line stretching 135km, as well as a second 400kV circuit on an existing transmission line running another 154km.

Private generators reserved 1.49GW of capacity under the open season model and footed some 80% of the US\$209mn cost. CFE reserved 406MW for its Oaxaca I, II, III and IV projects, BNAmericas reported previously.

Private generators were reportedly less than thrilled with this arrangement, but it provided them a foothold in the country's nascent wind generation sector.

A January meeting at the Woodrow Wilson International Center for Scholars - where Wood also is a senior advisor for its renewable energy initiative - featured the US ambassador to Mexico, as well as people from the power sector, think tanks and universities to discuss opportunities and obstacles for cross-border renewable energy trade.

In terms of obstacles, the focus was almost entirely on transmission, Wood said. He added there seems to be agreement that another open season would be the best model to develop transmission infrastructure.

"It's not even a huge amount of money we're talking about. I think we're looking at tens of millions, not hundreds of millions of dollars. It's a relatively short span across the border," highlighted Wood.

There are, however, other possibilities for transmission development, such as a joint project between CFE and a power firm in California, where most energy is likely to be exported initially given the state's renewable portfolio standard goals and the vast wind generation potential just south of the border in Baja California state.

Until the transmission obstacle is solved, though, the discussion of future cross-border energy trade will remain merely on the drawing board.

"Perhaps the best news of all is that two critical elements are lined up and should keep everyone's eyes on the prize: a huge natural resource base for renewable generation and a large market demand center fairly proximate to the resource. The icing on that cake has become the aggressive Renewable Portfolio Standards being adopted, such as in California. A large number of the pieces are in place, but we must be patient," Martin said.

Overcoming the hurdles to large-scale, cross-border energy trade could take years, and there is no guarantee the government that succeeds Calderon's administration in 2012 will show the same interest in the renewable energy cause. For the time being the ball continues to roll in the direction of increased renewable trade, only now it is moving with a presidential push.

This is the second installment of a series looking at the prospect of cross-border energy trade. The third and final installment will look at a few reasons why committing to such development may be worth questioning.

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