www.climateandenergy.org

CEP Conversations:
Kimberly Gencur-Svaty
Representative of International Transmission Company (ITC)

February 2008

Kimberly Gencur-Svaty has worked in the energy and transmission industries for several years, most recently for International Transmission Company (ITC). CEP interviewed her for our Conversations series because she is very familiar with the transmission picture in Kansas. (If her last name sounds familiar, it might be because she is also the wife of Representative Josh Svaty, Ellsworth.)

ITC currently has a proposal before the Southwest Power Pool (SPP) to build two transmission lines originating out of Spearville, Kansas - one leading north toward Nebraska, and the other heading east.

Maril Hazlett, CEP: Nice view! (Kimberly's 5th floor office window in downtown Topeka looks directly at the Capitol.)

Kimberly Gencur-Svaty: Thank you! (There is also a little bit of chat about how MH's father is from Sterling and her grandfather was once the registrar of Sterling College, and discussion of how many of KGS's in-laws attended Sterling College.)

MH: OK. Let's start with the basics. Transmission is a key ingredient in getting electricity to markets and eventually to consumers. Please briefly describe how the system works.

KGS: There are basically three portions to the electricity system. First, you've got your power plant or generating source. That power plant could be a wind farm, it could be coal, nuclear, natural gas - any generation type.

That generated power then feeds through of series of high voltage transmission lines. It goes to a substation where the voltage is stepped down so it can be fed through the distribution system. The distribution system is basically the shorter or smaller poles that you see basically everywhere. (MH: For additional information on how electricity works, see the CEP website.)

MH: The ones your car runs into when you are in a wreck.

KGS: Exactly. Those could be telephone poles too.

MH: The distribution system usually travels along roadways, or existing right of ways, correct?

KGS: Exactly. That is called the last mile into the home. In some older neighborhoods, you will see the wires actually going into the home. In areas built in the last thirty to thirty-five years, you see the boxes in the middle of someone's backyard, and then the line runs underground to the home.

Distribution is much lower voltages. When we are talking transmission, we mean the high voltage lines that usually run cross-country.

MH: What is the average voltage of a transmission line?

KGS: Well, that is completely dependent upon where your region is. Interestingly enough, for example, in Kansas we have a lot of 115 kV transmission and 230 kV transmission.

MH: 115 kV - is that low? Do lower voltages typically date from earlier eras?

KGS: Well, when you are looking at the grid itself, we do have a lot of older infrastructure in Kansas. But we are no different in that respect than any other portion of the country.

MH: The electric grid is patchy all over the country, is my understanding.

KGS: Exactly. And …that is kind of a tough question because you have to be diplomatic about it. Basically you do have some vintage -

MH: Vintage. I like that word.

KGS: - vintage material out there. Utilities are in the process of re-energizing those lines, or upgrading them from maybe 69 kV to 115 kV or from 115kV to 230kV. In Kansas, we have primarily 69 kV, 115kV, 230kV, and some 345 kV. The older portions of the grid are often in the more rural areas of the state where you just don't have the tremendous demand.

But when we start thinking more regionally for building transmission, 34.5 kV doesn't make sense for anyone. 69 kV doesn't even make a lot of sense now. If we are thinking regional transmission we are going to be building in the 345 kV range, maybe even 765 kV.

MH: How does a transmission corporation make its money? Do you charge people money to use your lines?

KGS: It is similar to the Kansas Turnpike Authority. We basically charge a toll.

MH: Do you have the ability to restrict access to your lines?

KGS: No. The federal government has mandated that no longer can a utility that owns transmissions assets - no longer can they deny access to any type of generator. Whether that generator is nuclear, wind, coal, switchgrass, whatever, you have to open up access. Transmission lines can't discriminate.

Frankly that is one of the issues that we do have here in Kansas and Oklahoma and Texas. We have tremendous amounts of wind development in this area, with all these interconnection agreements coming into queue… Well, since you can't deny access for wind developers and you've got thirty different interconnectors, that represents an enormous need for new

transmission. And we are required to upgrade the transmission facility in order to allow them to come on line.

If you look at Kansas, Oklahoma, and Texas there is a disproportionate amount of wind generation in these particular areas. These windy areas also happen to have a disproportionate lack of transmission. Ratepayers in these rural areas are already constrained in their access to lower cost power, so helping pay for new transmission is really beyond them.

MH: New transmission costs are localized, whereas the actual benefit of the lines is much more socialized, much broader to the region.

KGS: ITC and other companies are working within the SPP region to advocate for a postage stamp system of cost recovery. This would spread costs for transmission upgrades through that entire region. (MH: This cost recovery method just – ***just*** - passed the SPP board – KGS got the phone call even as we were in the middle of the interview.)

Before ITC can develop any transmission at all, they must work with SPP. As a Regional Transmission Operator (RTO), SPP is responsible for system planning and saying what lines need to come on and when and at what voltage.

They set the standards, and dictate what voltage of transmission line is appropriate. It is a safety issue, it's a reliability issue, it's making sure that the grid is fully interconnected and that you don't have anyone going off willy-nilly constructing lines… Lines are not constructed without SPP's blessing.

MH: Out of curiosity, why do both of these proposed new transmission lines for Kansas originate in Spearville?

KGS: Again, that is SPP's decision. There is also the Spearville wind farm and they also have a good substation there.

MH: Please explain to us a little bit about line-loss and the advantages of higher voltage transmission lines.

KGS: When electricity travels over longer distances, you need to have the higher voltage level to ensure that electricity levels stay up. So line loss becomes much less of an issue on your higher voltage system.

It is kind of like fuel efficiency for your car. You get much better fuel efficiency when you are driving longer distances. I know my little Honda Accord gets 35-36 miles per gallon when I am on I-70 but I am not getting anywhere near that in the city.

MH: Do high voltage lines have effects on human health?

KGS: No. They do not. There has long been discussion about the health effects related to transmission and the science shows that no, in fact, that is not the case. Your wireless phone, your microwave, all actually have more EMF related emissions than a transmission line does. Especially if you have a transmission line that flows both ways, the fields cancel each other out.

MH: Do state energy policies make a difference in planning transmission lines – which are also regional planning issues. I'm asking this because to some extent Oklahoma and Texas are doing so much better than Kansas in a lot of getting more renewable energy online.

KGS: Texas and Oklahoma are aggressively pursuing the development of wind energy. Here in Kansas we tend to operate more in the mindset that we don't build transmission for wind energy. But as we can see, in Oklahoma and Texas that is definitely not the case.

Now both in Oklahoma and Texas there are policies and proposals put forward to help ensure that wind energy is backed up by fossil fuel, primarily natural gas.

MH: They have chosen to back up wind with natural gas. Is that necessary?

KGS: Right now, we don't yet have distributed generation infrastructure in place. Distributed generation helps firm up your power generation, meaning you can basically turn on a switch at any time, and the power is there. To get to this stage with wind, we would need wind farms dotting the state, dotting the region, solar facilities, etc.

We also don't have the transmission infrastructure in place to sync all that up, to help move the power at appropriate times. Ideally, if the wind was blowing in the panhandle of Oklahoma but not in Concordia, we could ship power from the panhandle to make up for the difference.

If you had a more robust transmission grid then whenever the wind is blowing or the sun is shining, you could adjust accordingly. We are not at that point. Maybe someday we will be.

But I would probably say that yes, state policy does play a role in the development of transmission as a facilitator for renewable energy development. And as a testament to that, in Kansas for example, we have very robust policies on the books to incent transmission to be constructed in the state of Kansas. To that end, it is the reason why ITC opened its doors here.

MH: Is that one of the reasons you all came here?

KGS: It **is** the reason why we came here. In 2005 or so the state passed policies that attracted ITC's interest and attracted the interests of Department of Energy (DOE), of the Federal Energy Regulatory Commission (FERC), of Wall Street and ITC. Those four groups came together and said, well, let's try this independent transmission company model in Kansas. Interestingly enough, Oklahoma and Texas don't have those types of transmission statutes.

MH: What are their incentives, then – what policies have made them so friendly to wind?

KGS: Well, in Texas they have just made the decision to get it done. They know they have a tremendous wind energy resource that they not only can export out of state, but they also have a huge market in-state, with four of the largest ten largest cities in the country, that have insatiable appetites for power.

Rather than construct a multitude of traditional fossil-fired plants, Texas decided to expand wind energy plus encourage energy efficiency and conservation. They studied their maps of wind resources, then created Competitive Renewable Energy Zones (CREZ) to get the

transmission built. That means they designated certain areas to build the necessary transmission structure.

Oklahoma handled it in a similar way. They realized that their best wind resource was in the panhandle, so they built the lines there and wind farms have come.

MH: They solved the chicken or the egg dilemma that occurs when you are developing wind and transmission, by just going ahead and developing the transmission.

KGS: Exactly. The chicken and the egg issue is, well, you have to have the transmission for the wind farms to hook into, but the wind farms aren't going to develop until they know they've got the transmission in place.

So ITC has tried to help solve that chicken and egg debate in Kansas. And in Oklahoma and in Texas you have state policy makers and regulators saying, we're going to solve the problem.

Also in Kansas, we have a pretty rigorous transmission sitting process. Of course, any good wind developer or utility worth their salt is going to do this already – but you have to communicate regularly and effectively with the land owners, you have to hold public meetings to make sure everyone understands where the lines are going.

MH: How much right of way is involved?

KGS: That all depends on the voltage of the line. The big ones need more right of way. (MH: 765 kV lines need 200 ft. right of way.) Say you go through all the public discussions and then you have public hearings with the Kansas Corporation Commission and then you file a sitting application and then the Commission has X number of days to rule on the application. And it is either and up or down ruling.

MH: You go to KCC first and then you go to SPP?

KGS: Well, no, you have to get approval from SPP to construct the line first, then you go to KCC. But in Oklahoma they don't have any transmission siting laws whatsoever.

MH: What about wind farm siting guidelines? I know we don't have any in Kansas yet.

KGS: There's none in Kansas or Oklahoma. Or Texas.

MH: So basically the three of the windiest states in the nation, the ones most attractive to wind developers and speculators, have no wind siting guidelines at all to guide this rapid development?

KGS: That's not exceptional. In Kansas, we don't have siting guidelines for other types of generation either. We don't even have a siting guideline for nuclear power plant. We exempt them. If you build a nuclear power plant within 3 miles of our existing nuclear power plant you do not have to go in for siting.

We do not have siting guidelines in this state for a coal plant, or natural gas plant or ethanol facilities. You build wherever you have access to land and as long as you get the appropriate permits from the state.

MH: If wind sitting guidelines are developed, might that imply that at a some point in the future other forms of energy generation might face siting guidelines as well?

KGS: Typically the way the siting rules have been written in Kansas, they have been specifically for wind energy development. They haven't addressed other forms of generation development.

And I think that has been one of the reasons why we haven't seen as aggressive development of wind energy in the state of Kansas. Not only did we not have the transmission infrastructure in place, at the same time we had various legislative initiatives that would have made it more problematic and difficult to develop wind energy. You did not see that happening in Oklahoma or Texas.

So while a few years ago we were discussing whether or not a wind developer would use imminent domain for any portion of the interconnection, which they never would do -

MH: The issue didn't even really matter. It was a moot point.

KGS: Completely moot. But while we were having that discussion, Oklahoma and Texas were being positive – they were saying, what can we do.

MH: It doesn't look like building new transmission in Kansas is necessarily contingent on building new coal or gas generation facilities. Wind seems to be driving the transmission development proposals right now – at least it is to a large extent in the eyes of the SPP.

KGS: That is a good question. Basically, Kansas needs transmission, period. It was needed before the Holcombe power plants were ever an issue, it is needed now, and it is going to be needed in the future. We have a real problem in this state that we cannot move power east, west, north, south or in or out of the state.

That problem, frankly, only gets worse if you do additional generation sources online, because we do not have the capacity to move the power. We don't have the capacity to move the power generated from Spearville on a firm, regular basis to Kansas City. That power can be interrupted.

Now, when we start upgrading the transmission system, that power becomes firm power.

MH: The SPP regulators mentioned a wind integration study that they were carrying out with the Midwest Independent Transmission System Operator (MISO). The point was to figure out how to best integrate wind energy into the grid. There are existing studies that say the current grid could take up to twenty percent integration by wind.

KGS: Operationally it is acknowledged that that the average grid system can handle roughly twenty percent integration by wind without major issues. When you start getting a little higher that can require some changes to the system.

MH: The SPP had projected Kansas as providing somewhere between 5,000 and 10,000 MW of wind energy by 2030. I'm guessing…

KGS: I think the 10,000 is high. The best case scenario for Kansas would be around the 7,000 category. 7,000 MW of wind.

MH: How much more transmission would we need to handle that?

KGS: A significant amount. We certainly would need additional investment. The two Spearville lines, to say the least.

MH: How much generation can those two lines serve?

KGS: Well, a 345 kV line can handle roughly - depending on existing loading on the line - it could handle roughly 1,000 MW. But you also have to look at, again, what is already on the grid and what is pre-dispatched…. a 550 kV line can handle maybe roughly 2,000 MW so I think 765 may go up to 5,000 MW.

MH: What would you like to see in twenty years - what would your vision be, whether it is about climate, energy, transmission, the whole picture? What would you like to see in Kansas twenty years from now?

KGS: In twenty years from now I would in all honesty like to see the state be at the front of this discussion on energy. I don't want us to be lagging behind.

You know, we have a tremendous opportunity here in Kansas. We have some of the best schools in the country - excellent community colleges and technical schools where we can train people. We have got a fantastic highway system and transportation system.

Let's utilize all that. We've also got some of the best skilled workers, with a solid work ethic. We've got farmers who are state of the art – they are innovators in their own right, and they understand market-driven principles. And I want to couple those folks with different types of entrepreneurs, and bring it all together.

Education, transportation, innovation - it is all there and we have got the land, we've got the resources, and I think that we need to seriously sit down and have conversations and explore policies and really start implementing them.

I don't want to be having these discussions in twenty years. I would like to look back and say we built the necessary transmission infrastructure, we created energy efficiency and conservation programs, we took advantage of our community colleges and our tech programs and we're training people to be workers of tomorrow, to be linemen, to be wind turbine manufacturers.

Let's be a leader on this issue, instead of just a follower. That is what I want.

MH: Sounds good to me. Now, to wind it up - what is your favorite country music song?

KGS: This is a really tough one. My favorite country song. That is really tough. (MH: she agonizes for a while. I take pity on her.)

MH: OK, you can pick two. Pick a classic and then pick a contemporary.

KGS: Well, I do love "You Move Me" by Garth Brooks and I also love - you could never go wrong with anything by Kenny Rogers. I'll go with The Gambler.