

WIND ENERGY TO MARKET



FREQUENTLY ASKED QUESTIONS

In recent meetings with stakeholders and landowners throughout our region, related to proposed transmission lines, Xcel Energy has been asked many questions related to wind energy and how it gets to market. This is a list of frequently asked questions with very general responses. Because each landowner situation is different, any party wishing to pursue a wind generation project should seek information from an independent consultant to address issues specific to them.

Section I – General wind generating facility development

1. How does a landowner go about developing a wind energy installation?

Several steps must be taken to determine whether land is suitable for wind energy. Wind speed and other data must be measured at the proposed site. Developers must analyze the various wind speeds over time (maximum, minimum, average, density and so on.) The sampling period to acquire adequate data may take several months. Once data is obtained, a wind developer can determine the commercial viability of the site, the number of wind turbines the location will support, and possible site layouts – where the turbines will go.

2. Who can assess wind measurements?

Check with local universities and local economic development agencies. The Internet can also be a source for consultants who can assess the quality of wind.

3. Where can I find wind developers?

Xcel Energy doesn't recommend individual wind developers, but searching the Internet for "wind developer" is good a starting place. The American Wind Energy Association Web site is a possible source of information: www.awea.org. Also, contact local economic development agencies for developers' names. The Texas Wind Coalition, www.windcoalition.com, is another possible source of information.

4. Where can I go for information about contracting with a wind developer?

Xcel Energy recommends that you seek legal guidance. Today, many local attorneys are familiar with this business area and applicable laws.

5. Is Xcel Energy interested in installing wind turbines on my land?

Not at this time. Xcel Energy currently purchases wind energy from several large and smaller developments but does not currently own or develop wind-generating facilities in the Texas and New Mexico region.



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Frequently Asked Questions



Section II – Southwest Power Pool transmission interconnection procedures

1. I have been working with a wind developer. The developer tells me that Southwest Power Pool must conduct studies on the feasibility of getting wind generation to market. Why?

Southwest Power Pool (SPP) is a Federal Energy Regulatory Commission (FERC) approved Regional Transmission Organization (RTO). Xcel Energy's Southwestern Public Service Co. region is required by FERC to be a member of an RTO, and is a member of SPP, which is the RTO providing service to Xcel Energy's SPS service area. SPP, under requirements from FERC, performs various studies on interconnections of generating facilities (such as wind farms) throughout the entire SPP transmission system. SPP also studies any requests to transmit wind energy from a generating facility to a final buyer. SPP spans eight states: Arkansas, Kansas, Louisiana, Mississippi, Missouri, New Mexico, Oklahoma, and Texas. SPP manages transmission in seven of the above states and its members serve over 4.5 million customers. The SPP footprint includes 40,364 miles of transmission lines, and 255,000 square miles. SPP is based in Little Rock, Ark., and has more than 300 employees.

2. What SPP and Xcel Energy studies must be done?

Three studies are required by SPP for interconnecting a wind generation facility to the transmission grid — a feasibility study, a system impact study, and a facilities study:

- **Feasibility** — a quick look at whether the Xcel Energy transmission system can accept a connection at the developer's chosen point of interconnection, conducted by SPP staff and consultants.
- **System Impact Study** — a detailed transmission planning study, conducted by SPP, to see if a facility can be added and operated correctly with no harmful impacts to the rest of the Xcel Energy transmission system and its customers.
- **Facilities Study** — a detailed engineering study to connect the generating facility at the customer-specified location. Xcel Energy planning and engineering personnel conduct this study for SPP. The results are a design for the interconnection substation, cost and an estimated time to construct the substation.

3. Are fees involved for these studies?

Yes, the party requesting the study pays up-front fees to SPP. The Feasibility Study is initiated with a \$10,000 deposit, the System Impact Study requires a \$50,000 prepayment, and the Facilities Study requires a \$100,000 prepayment. Costs for the studies vary and differences are refunded or charged by SPP.

4. Are there restrictions to getting a study?

Yes. Developers and landowners must be able to prove "site control." This is proof the land is leased, optioned or owned by the developer or landowner requesting the studies. For more information about studies, check the SPP Web site's Generation and Interconnection Studies section can be found at <http://sppoasis.spp.org/documents/swpp/transmission/studies.cfm>.

5. I don't want to pay fees to find out how to connect wind turbines on my land. What can I do?

SPP fees to complete required interconnection studies are unavoidable. However, you can hire a transmission-planning consultant to conduct studies similar to the SPP Feasibility study, assessing connection potential to nearby transmission lines. However, all requests must ultimately complete the SPP process of studies. Consultants' fees may vary and the up-front assessment by an outside consultant may or may not be valuable to you.

6. How long does the SPP study process take?

Currently SPP is taking nine to 12 months to complete studies. SPP is experiencing a high number of requests, especially in the Xcel Energy Texas and New Mexico areas where optimal wind can be found. A new request can't be studied without considering other nearby requests, due to the complexity of getting wind power onto the system. At the time this document was created, SPP had approximately 17,000 MW of wind generation interconnection requests under study in the Xcel Energy Texas and New Mexico region.

7. How can I tell who is getting a study done and how many requests are ahead of mine?

The public can review and download existing studies and examine the "Generation Interconnection" queue. When a generation interconnection request is made with SPP, that request is placed on a list to ensure studies are conducted on a first come, first served basis. Neither the name of the requestor nor the precise location of the interconnection request is shown. FERC has certain confidentiality requirements. Go to: <http://sppoasis.spp.org/documents/swpp/transmission/studies.cfm> — scroll down to "Generation Interconnections Studies" and click "Interconnection Queue (Active Requests).

8. When studies are completed by SPP, can I build my wind generation facility?

No, not yet. On completion of the required studies, SPS, SPP and the customer requesting a transmission interconnection, will sign an interconnection agreement. You may build a wind generation facility at any time, but you would have no assurance that you would be able to interconnect the wind generation facility to the transmission system until the Interconnection agreement is signed. *Note: This interconnection agreement does not provide for sale of the energy or transmission of the energy to a buyer.*

9. Will Xcel Energy conduct a study to determine what level of wind generation I can connect to its transmission system?

No. A connection request to the Xcel Energy transmission system is studied by SPP.

10. The best location for wind turbines on my land is 10 miles away from the nearest Xcel Energy transmission line. Will Xcel Energy build a transmission line to my wind turbines?

No. The entity requesting the interconnection is expected to build any connecting lines to the existing Xcel Energy transmission system.

11. If I go through these steps, will I be able to sell energy from my wind turbines?

Not necessarily. The SPP Generation Interconnection process only provides the right to connect — it provides no rights to transmit the power over the Xcel Energy transmission lines to specific customers. Even when an interconnection agreement is in place, further steps are needed to find a buyer and see if transmission capability is present to allow the power to flow to your purchaser.

12. How do I acquire the right to ship power to the ultimate purchaser?

Another study, the Transmission Service study, must be requested through SPP to determine impacts to the Xcel Energy system, and any other involved systems. Transmission upgrades, such as replacing line conductors with larger conductor, new transmission lines, transformers and more may be needed to move power to its ultimate destination. These determinations are usually made through the SPP Aggregate Transmission Service study. SPP conducts this study three times per year.

13. What if I want the output of the wind energy farm sold directly into the SPP Energy Imbalance Market?

The SPP Energy Imbalance Market (EIS) is a short-term energy market. The facility that sells into this market must be registered with SPP as a participant in the market. Transmission is hourly non-firm, which means that transmission may not be available and the possibility exists that the output from the wind farm could be curtailed or shut down if Xcel Energy lines are at capacity. Additionally, selling to the SPP energy imbalance market involves certain risks, including market price risk.

14. If I have taken measurements, contracted with a developer, have an interconnection agreement with SPP, executed a purchased power agreement, and have completed the SPP transmission service study, will Xcel Energy transmit the wind power?

Yes, if these steps are successfully completed, Xcel Energy is required to construct the necessary infrastructure to transmit your power to your buyer.

15. If I want Xcel Energy to buy my wind power do I still have to go through the SPP Generation Interconnection process?

Yes. You must complete the SPP Generation Interconnection process, regardless of who the buyer is for your wind power. Under some circumstances, the Public Utility Regulatory Act (PURPA), requires Xcel Energy to purchase energy from qualifying facilities. Please contact **John Ault** at Xcel Energy for further information regarding these types of transactions: **303-571-2746**.

Section III – Xcel Energy and the Public Utility Commission of Texas (PUCT) distribution interconnection procedures

1. What is the difference between transmission and distribution?

Transmission lines are the larger lines (“the highway”) that carry higher voltage electricity to a distribution point where that quantity is stepped down until it reaches the final customer at a level that can be utilized. Distribution lines (“the driveway”) typically are the smaller voltage lines that deliver electricity to the customer’s residence or business after it is “stepped down” from the higher voltage transmission line.

2. If I want to connect a wind generation facility to an Xcel Energy distribution point, does that request need to go through SPP?

No. Xcel Energy engineers study distribution interconnection requests. SPP is not involved. The connection procedures are governed by Public Utility Commission of Texas’ rules and procedures. Typically, up to 10 MW can be connected at an appropriate distribution point. Xcel Energy currently has several smaller wind farms (10 MW or less) throughout its Texas and New Mexico territory connected to its distribution system.

3. Can I put as much wind generation into the Xcel Energy distribution system as my particular transmission lines will allow?

This is a complex issue. Many landowners see a distribution line on their property and assume using this line to connect a wind facility to the Xcel Energy transmission system is easy. However, distribution systems can handle only limited amounts of wind generation. Limitations on the distribution system are based on conductor size, substation capacity, and the line-voltage available. You are, basically, attempting to feed power “backwards” onto a system that has been designed to step-down to lower voltages typically used by customers. Not all distribution facilities will be capable of handling the higher power output possible of wind generation facilities, connected at transmission levels. Studies must be done on the distribution system in each case.

4. Are fees involved in studying a distribution interconnection request?

Yes, a typical study fee charged by Xcel Energy is set by the PUCT at \$500 to \$3,500 per request. The pre-interconnection study fee is based on the generation size of your project, as shown in Xcel Energy’s Southwestern Public Service Co. Tariff 7013. The developer is responsible for costs to upgrade the system for serving the facility, including interconnection costs. The study fee does not include the cost of interconnection facilities or equipment.



Section IV – Connection to other transmission systems not owned by Xcel Energy

1. I want to connect a wind generation facility but no Xcel Energy lines are near. A local cooperative has a line close to my property. How can I connect to it?

Contact the electric cooperative about their policies and procedures for interconnection.

2. Will SPP studies generate interconnection requests for interconnection to an electric system that is not a member of SPP?

Currently, electric cooperative and municipal electric systems inside the Xcel Energy transmission system may not be subject to the SPP interconnection process. Each electric cooperative or municipality is responsible for its own interconnection procedures and any studies deemed appropriate to determine feasibility.

3. Will Xcel Energy study generation interconnections on electric cooperative or municipals systems within those boundaries?

No.

4. Will I be able to connect a wind installation on my property to transmission lines designated as competitive renewable energy zone (CREZ) transmission lines?

If your property is within a CREZ, there will likely be development of wind installations that can interconnect with a CREZ transmission line. You or the developer will likely have to pay for the connecting line. CREZ lines will carry wind power to the region of the state that is in the Electric Reliability Council of Texas electric grid — it will not be a part of Xcel Energy's SPS electrical system.

Section V – Texas North transmission projects and wind

1. A number of transmission lines are being proposed by Xcel Energy as part of the Texas North transmission project. Can I connect my wind generation to those?

Any request to connect to new transmission lines would be studied by SPP under its policies and procedures discussed previously in Section 1.

2. How much generation can be added to these newly proposed lines?

The transmission lines Xcel Energy's SPS operating company is currently seeking to build are designed to maintain the reliability of load service throughout a 10-year planning horizon. Previous studies to meet load requirements did not speculate on the possibility that SPP might receive requests for interconnection of wind generation. SPP would need to study current and new requests to determine if remaining capacity exists on the proposed Texas North lines for wind resources.

About 17,000 MW of new wind requests on the Xcel Energy transmission system are under study by SPP. Additional requests being considered by landowners near proposed transmission lines may or may not be on SPP's current generation interconnection queue. New requests would need to be studied by SPP before the proposed projects could be considered for interconnection.

3. Would Xcel Energy consider building higher capacity lines to accommodate more wind generation?

Xcel Energy has and is still considering adding larger conductor and higher voltage lines in Texas. If it is determined that higher capacity lines are needed, Xcel Energy will state this in its CCN applications with the PUCT and indicate what the initial operating voltage is, and what the ultimate operating voltage will be.

Increased ability to accept interconnections and transmit power could be accomplished with new lines at much higher voltages, say 345 kV, instead of 115 or 230 kV. The primary drawback is the regional Xcel Energy network and the network of our neighbors — Sunflower Electric Power Corp., American Electric Power, Western Farmers Electric Cooperative, and OG&E Electric Services — would need to be upgraded to get power out of the region.

If Xcel Energy installed larger, higher voltage wire above what is needed to serve projected loads, it adds an incremental cost that customers in this region of Xcel Energy would have to bear.

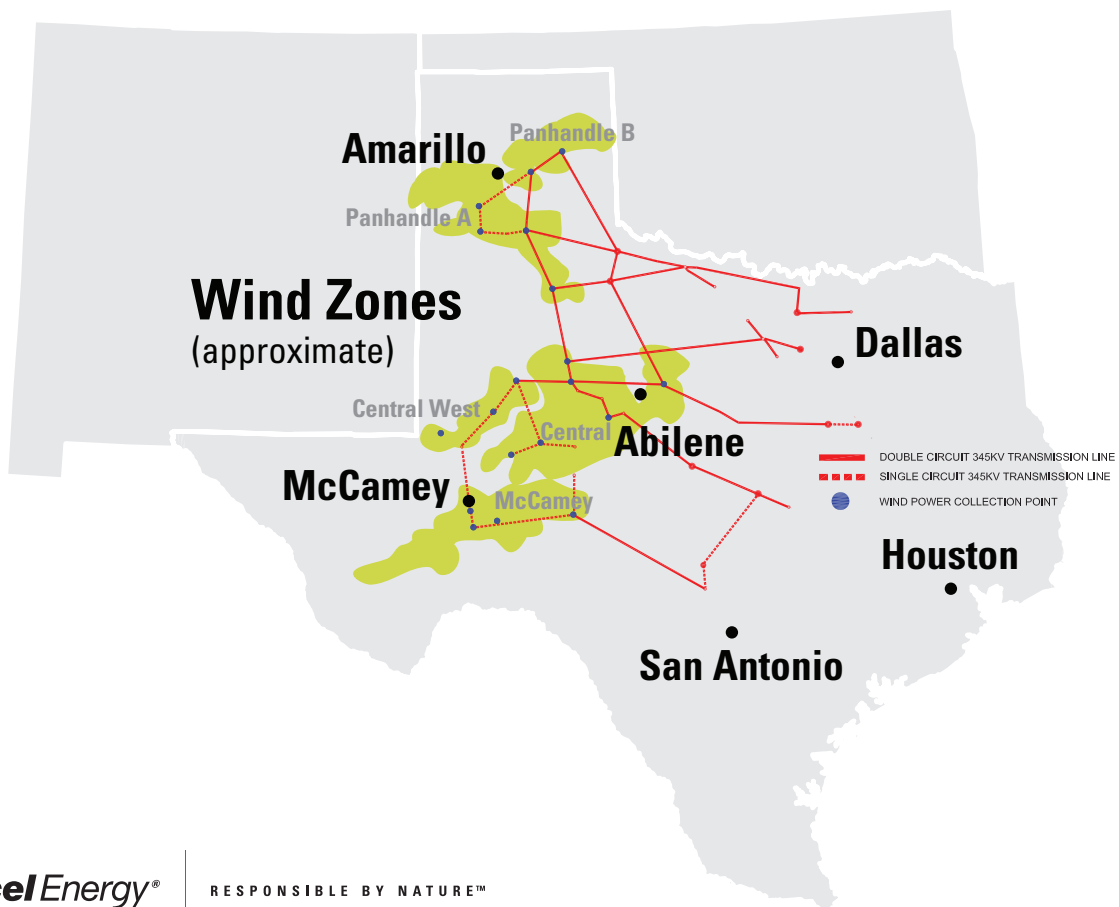
4. If the new lines that are part of the Texas North transmission project are built, will other lines be needed for wind interconnection and transmission?

Yes, it is likely that additional transmission lines could be required. Our region's huge wind potential mixed with the unknown ultimate purchaser, or energy disposition, makes it very difficult to determine how large the lines should be at any given point in time. Also, building a transmission system on speculation a very risky proposition for the company and its ratepayers.

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Interested persons should not rely on the information contained in this document for making investment decisions. Although Xcel Energy has attempted to assure the general information contained in this document is correct, the legislation and other facts relevant to wind generation are dynamic and change daily. Interested persons should consult with independent experts in the electric and wind generation fields to advise them about their specific situations and the current status of issues affecting the industry before making any investment decisions.



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 08-11-212 | 11/2008