



**SPP**

*Southwest  
Power Pool*

***Facility Study  
For  
Generation Interconnection  
Request  
GEN-2008-017***

***SPP Tariff Studies***

***(#GEN-2008-017)***

**January 2010**

## **Summary**

Sunflower Electric Power Corporation (SUNC) performed the following Study at the request of the Southwest Power Pool (SPP) for Generation Interconnection request Gen-2008-017. The request for interconnection was placed with SPP in accordance SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system.

Pursuant to the tariff, Sunflower Electric Power Corporation was asked to perform a detailed Facility Study of the generation interconnection request to satisfy the Facility Study Agreement executed by the requesting customer and SPP.

### **Interconnection Customer Interconnection Facilities**

The Interconnection Customer will be responsible for the 345kV transmission line from the point of interconnection to its 345/34.5kV substation that will contain its 345/34.5kV transformer(s) and wind turbine collector feeders. In addition, the Customer will be required to maintain a +/- 95% power factor at the point of interconnection (SUNC Setab 345kV substation).

### **Transmission Owner Interconnection Facilities and Non Shared Network Upgrades**

Per the following Facility Study, the Interconnection Customer is responsible for \$1,900,000 for both Transmission Owner Interconnection Facilities and non shared Network Upgrades.

### **Shared Network Upgrades**

The GEN-2008-017 Interconnection Customer is included in the 1<sup>st</sup> Cluster Study approved in FERC Docket #ER09-262. The Interconnection Customer's shared upgrade costs are \$22,179,209. This cost is subject to change depending upon the Facility Study for the shared network upgrades. This cost is also subject to change for restudies conducted by the Transmission Provider in response to the higher queued customers or other customers in the 1<sup>st</sup> Cluster that withdraw their interconnection request or suspend, terminate, or request unexecuted filings of their LGIAs.

## **Executive Summary**

<OMITTED TEXT> (Customer) has requested a Facility Study under the Southwest Power Pool Open Access Transmission Tariff (OATT) for interconnecting a 300 MW wind powered generation facility in Scott County, Kansas to the transmission system of Sunflower Electric Power Corporation (SUNC). The wind powered generation facility studied was proposed to comprise of two hundred (200) General Electric 1.5 MW wind turbines. The wind powered generation facility will interconnect into the 345kV bus at Setab substation.

The generation facility was studied to interconnect into the Sunflower Setab 345kV substation. Sunflower has proposed to build a new 345kV line terminal into the existing 345kV substation at Setab. The Interconnection Customer's non shared network upgrades and interconnection facilities are estimated at \$ 1,900,000. The Interconnection Customer's shared network upgrades are estimated at \$22,179,209.

The Customer will have certain facility requirements in their substation to interconnect the generation facility. The Customer will be required to maintain a +/-95% power factor at the point of interconnection.

**1. Introduction**

<OMITTED TEXT> (Customer) has requested a Facility Study under the Southwest Power Pool Open Access Transmission Tariff (OATT) for interconnecting a 300 MW wind powered generation facility in Scott County, Kansas to the transmission system of Sunflower Electric Power Corporation (SUNC). The wind powered generation facility studied was proposed to comprise of two hundred (200) General Electric 1.5 MW wind turbines. The wind powered generation facility will interconnect into the 345kV bus at Setab substation.

**2. Interconnection Facilities and Non Shared Network Upgrades**

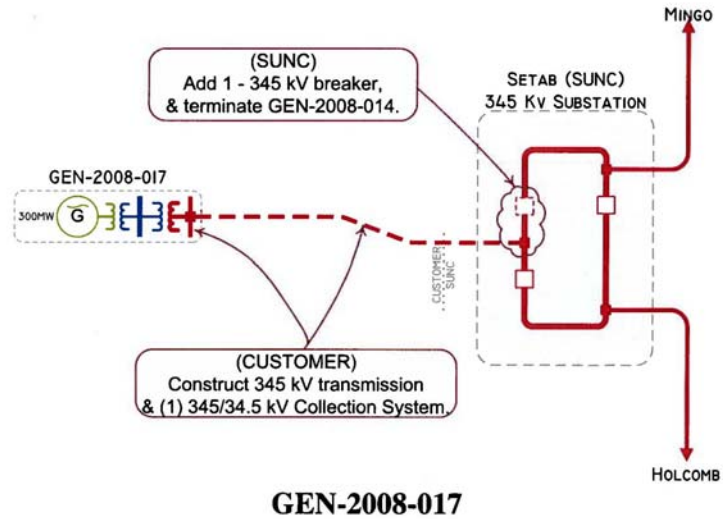
All required interconnection facilities are tabulated in Table 2 and are shown in Figure 1.

- 2.1. **Setab 345kV Substation** - The Customer will be interconnecting into the existing 345kV bus at Setab substation. A new 345kV circuit breaker and line terminal to the wind farm will be added to the proposed ring bus.

The costs for the Interconnection Facilities and non shared Network Upgrades is listed below in Table 1. The one-line diagram is shown in Figure 1.

**Table 1: Required Interconnection Facilities and Non Shared Network Upgrades**

<b>Project</b>	<b>Description</b>	<b>Estimated Cost</b>
1	Add 345kV circuit breaker and line terminal at Setab 345kV substation to interconnect GEN-2008-017 wind farm.	\$1,900,000
	<b>Total:</b>	\$1,900,000



**Figure 1. Interconnection Configuration for GEN-2008-017**

**2.2. Customer Facilities** – The Customer will be responsible for its Generating Facility and its 345/34.5kV substation that will contain its 345/34.5kV transformer(s) and wind turbine collector feeders. In addition, the Customer will be required to install the following equipment in its facilities.

**2.2.1. Reactive Power Equipment** – The Interconnection Customer may be required to install capacitor banks in addition to the studied General Electric wind turbines to maintain the power factor requirement.

### **3. Conclusion**

The Interconnection Customer's non shared network upgrades and interconnection facilities are estimated at \$1,900. The Interconnection Customer's shared network upgrades are estimated at \$22,179,209.