

## **THE ROLE OF WIND ENERGY IN AGRICULTURE A COOPERATIVE'S POINT OF VIEW**

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### **UNDERSTANDING ELECTRIC COOPERATIVES**

- We are not-for-profit entities
- Electric rates are based on cost of service, not on a return on investment
- Member consumers are the cooperative's owners
- Consumers elect a governing board of directors from their members
- The mission is long-term low-cost reliable service

### **SUNFLOWER (AND MID-KANSAS ELECTRIC COMPANY, LLC) MEMBERS SERVE RURAL WESTERN KANSAS**

- Generation and Transmission:
  - Sunflower Electric Power Corporation
  - Mid-Kansas Electric Company, LLC
- Distribution (G&T owners):
  - Lane-Scott Electric Cooperative, Inc., Dighton
  - Pioneer Electric Cooperative, Inc., Ulysses
  - Prairie Land Electric Cooperative, Inc., Norton
  - Western Cooperative Electric Association, Inc., WaKeeney
  - Wheatland Electric Cooperative, Inc., Scott City
  - Victory Electric Cooperative Association, Inc., Dodge City

### **ELECTRIC DEMAND IS STEADILY RISING**

- 2% TO 3% per year for the past 15 to 20 years
- Recently load growth for irrigation has far exceeded the average
- Growth from other agriculture based industries such as ethanol plants

## **SERVING LOAD REQUIRES DIVERSE CAPACITY RESOURCES**

- Seasonal variations in load change the energy supply and cost
- Base-load, coal and hydro
- Intermediate-load, natural gas
- Peaking-load, natural gas and diesel

## **SUNFLOWER GENERATION PORTFOLIO**

- Holcomb Station, 360 MW, Coal
- Garden City Station, 225 MW, Natural Gas
- Smoky Hills 1 Wind Farm, 50 MW, Wind

## **MID-KANSAS GENERATION PORTFOLIO**

- Great Bend Station, 98 MW, Natural Gas
- Fort Dodge Station, 145 MW, Natural Gas
- Jeffrey Energy Center, 177 MW PPA, Natural Gas
- Clifton Station, 73 MW, Natural Gas
- Cimarron River Station, 76 MW, Natural Gas
- Smoky Hills 2 Wind Farm, 24 MW, Wind
- Gray County Wind Farm, 50 MW, Wind

## **WIND ENERGY IS NEGATIVE LOAD TO A UTILITY**

- Intermittent capability to generate energy
- Does not provide Capacity or base load energy
- Compares favorably with intermediate and peaking variable costs
- Increases system volatility and costs

## **CUSTOMER-OWNED GRID-CONNECTED RENEWABLE GENERATION**

- Current:
  - Parallel Generation, a buy/sell arrangement
- Proposed:
  - Net Metering

## **FOUR COMPONENTS TO A TYPICAL RETAIL ENERGY CHARGE**

- Distribution Costs: 2 to 6 cents/kWh
- Transmission Costs: .5 to 1.5 cents/kWh
- Generation Fixed Costs: 2.5 to 3.5 cents/kWh
- Generation Variable Costs: 1.5 to 8 cents per kWh (avoided cost)

## **KANSAS' EXISTING PARALLEL GENERATION STATUTE**

- A buy/sell arrangement that allows for “behind the meter” connection of renewable generation by a customer-generator
- No changes to existing retail rate schedule are required
- Compensation for energy sold back to utility is 150% of avoided cost
- Avoided cost is energy component of generation only
- 25 kW limit for residential
- 200 kW limit for commercial
- Must be appropriately sized for customers load
- Not more than 10 irrigation pumps per customer under this statute
- Must meet all utility safety and reliability standards
- Retail wheeling is not allowed
- Most value is to offset existing load
- Standard procedures in place to accommodate the PGS statute
- Provisions for some latitude in generator sizing
- Renewable generators can be very expensive and payback can be long or non-existent

## **PROPOSED NET METERING**

- Net metering is a concept where a customer can use the utility system as a “bank” or “battery” to store and withdraw energy (at no cost to the customer)
- Often described as a system where the meter can run backwards when customer generates more energy than needed
- The problem is that the product taken out costs the utility much more than the benefit of the product put in
- Net metering is not currently available in Kansas but is currently being discussed
- Coops opposition to net metering is an issue of fairness
  - Why should the utility be forced to pay retail cost (transmission, generation capacity and energy) to receive only wholesale energy?
  - Why should some customers be advantaged at the cost of other customers on the system?
- Would probably not advantage a commercial customer with a demand/energy rate structure
- Could benefit cost recovery for residential customer-generators

## **FINAL COMMENTS**

- Sunflower and Mid-Kansas:
  - Actively support customer-owned renewable generation
  - Are pursuing a 25x25 renewable energy goal
- However, intermittent renewable energy does not, and cannot, cure the shortage of economical base-load generation