



# WIND POWER PURCHASE AGREEMENT

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# OSU Overview



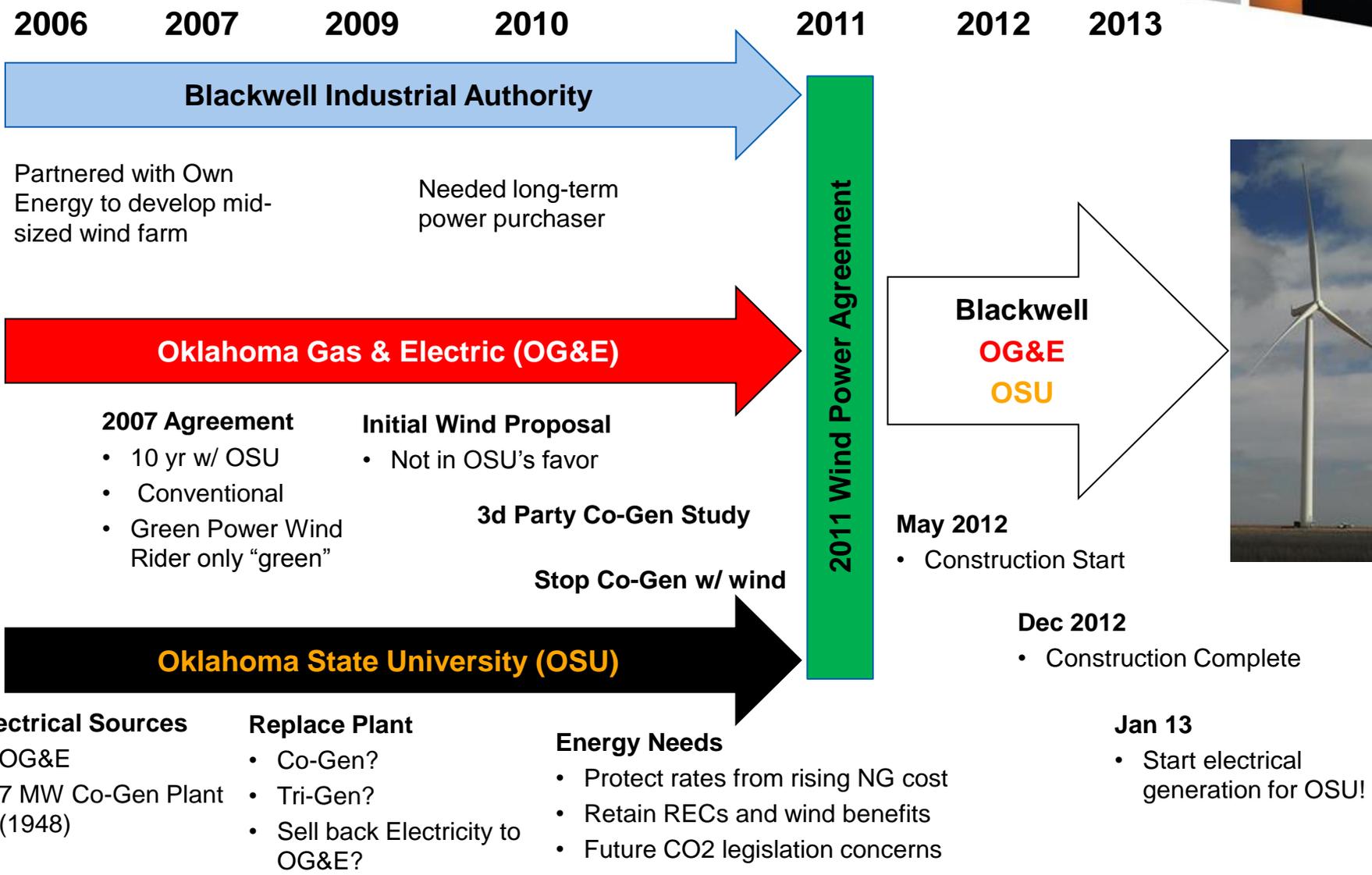
- OSU is a land-grant, public research university located in Stillwater, Oklahoma and founded in 1890 under the Morrill Act.
- Official enrollment for fall 2012 was 22,369 students (OSU-Stillwater only; undergrad and graduate).
- Power Plant History – OSU had generated its own power for more than 100 years.
- Energy Conservation Program – Saved over \$22M system-wide since the program's inception in 2007.

# Wind Energy



Cowboy Wind Farm  
BLACKWELL, OK

# Combined Efforts



# Cowboy Wind Farm



- 20 year arrangement with OG&E
- 26-turbines producing 60 megawatts
- OSU Purchasing 110,000,000 kW-hr a year
- 67% of power for Stillwater campus



# Cowboy Wind Farm



- **OSU qualified for EPA's Green Power Leadership Club**
- **CO2 emission reduction equivalent to**
  - 9,000 homes annually
  - 15,000 passenger vehicles annually
- **OSU now ranked:**
  - #5 in Top 20 College/Universities
  - #43 overall national ranking
  - Lifted Big XII from #5 to #3



# Cowboy Wind Farm



<b>Manufacturer</b>	Siemens
<b>Model</b>	SWT-2.3-108
<b>Nominal Power</b>	2,300 kW
<b>Voltage</b>	690 V
<b>Hub Height</b>	80 m (262 ft)
<b>Diameter</b>	108 m (354 ft)
<b>Blade Length</b>	53 m (174 ft)
<b>Swept area</b>	9,144 m <sup>2</sup>
<b>Speed Range</b>	6-16 rpm
<b>Cut-in Wind Speed</b>	3-4 m/s (6-9 mph)
<b>Rated power at</b>	11-12 m/s (24-27 mph)
<b>Cut out wind speed</b>	25 m/s (56 mph)
<b>Rotor Weight</b>	60,000 kg (66 tons)
<b>Nacelle Weight</b>	82,000 kg (90 tons)

# Cowboy Wind Farm



# Economic Benefits

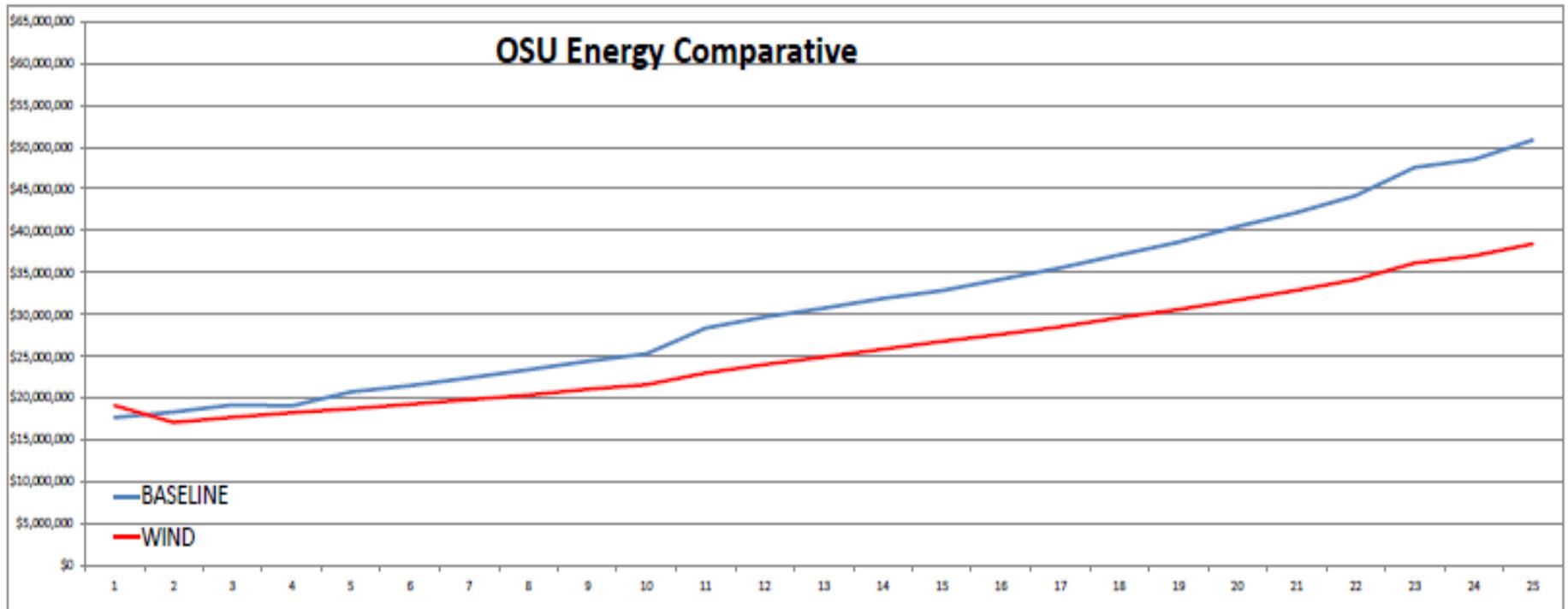


- **Electrical Rate Predictability**
  - Commodity price contractually smoothed and regulated
  - Natural gas is market driven
  - Less volatility to our customer's rates and their budgets
- **Retirement of electrical turbines**
  - We did not have to replace aging equipment
  - Elimination of seven FTE positions
- **Positive economic impact to local communities**
- **Projected to save in excess of \$10,000,000 over the life of the 20-year contract.**

# Cost of Energy



- Projected to save in excess of \$10,000,000 over the life of the 20-year contract.



# Intrinsic Benefits



- Become better stewards of our environment
- Reduction of carbon emissions
- Use of local and renewable resource
- Positive economic impact to local communities
- Complements our land-grant mission
- Excellent public relations
- Education benefits for wind technology courses

# Questions?

