

# “CEO’S OF NEBRASKA ELECTRIC UTILITIES PERSPECTIVE ON WIND / RENEWABLE ENERGY”



**Nebraska Public Power District**

*“Always there when you need us”*

**5<sup>TH</sup> ANNUAL NEBRASKA WIND CONFERENCE**

**LINCOLN, NE**

**OCTOBER 22, 2012**

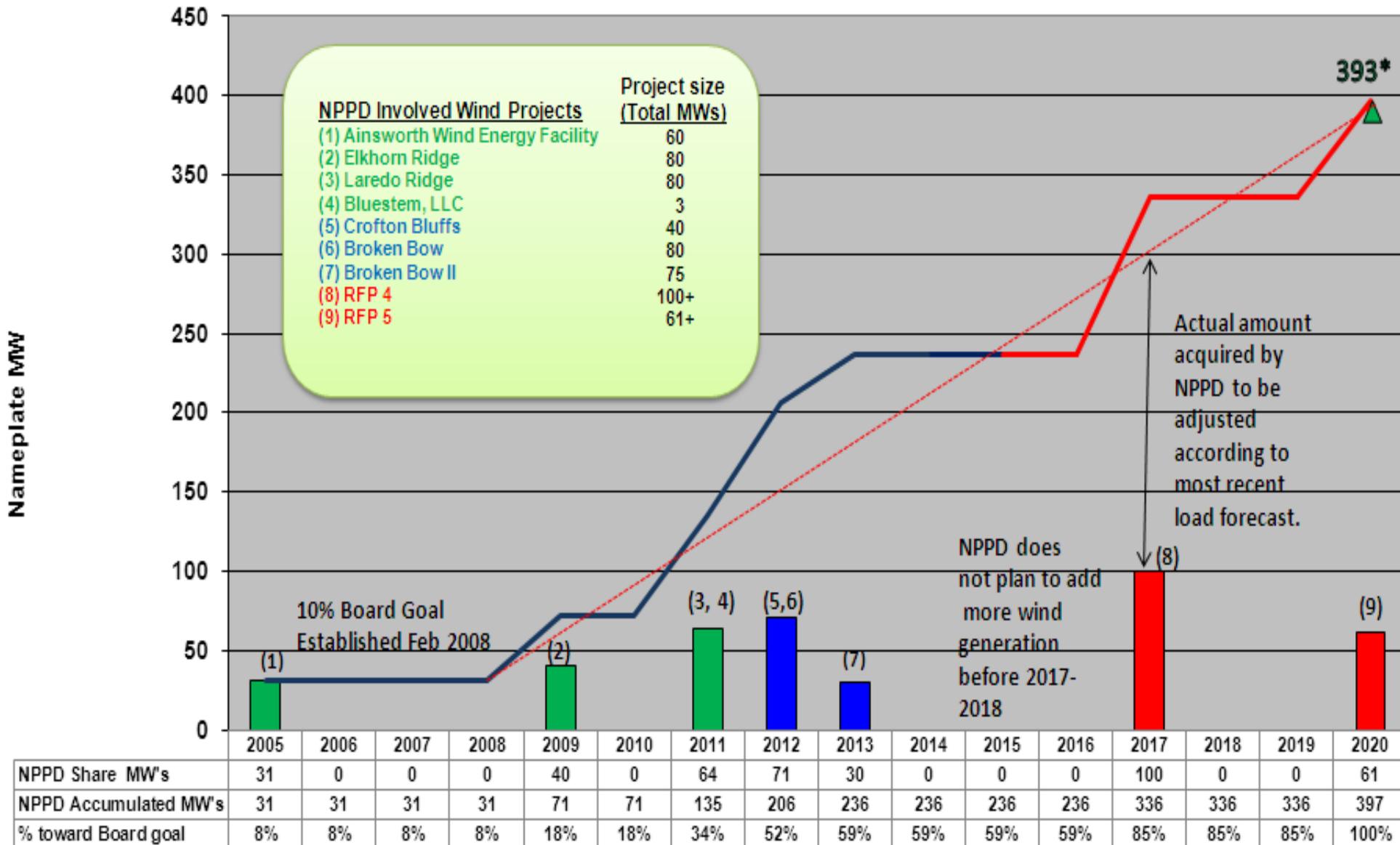
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# NEBRASKA PUBLIC POWER DISTRICT

## Wind Generation Addition Plan to Meet 10% New Renewable Goal by 2020



# WIND POWER PURCHASE AGREEMENTS

Facility	Operational	Farm MW	Participants / MWs				
			NPPD	OPPD	LES	MEAN	City of GI
Crofton Bluffs	October 2012	40	20	13	3	4	
Broken Bow	November 2012	80	51	19	10		1
Broken Bow II	2013-2015	75	30	45			



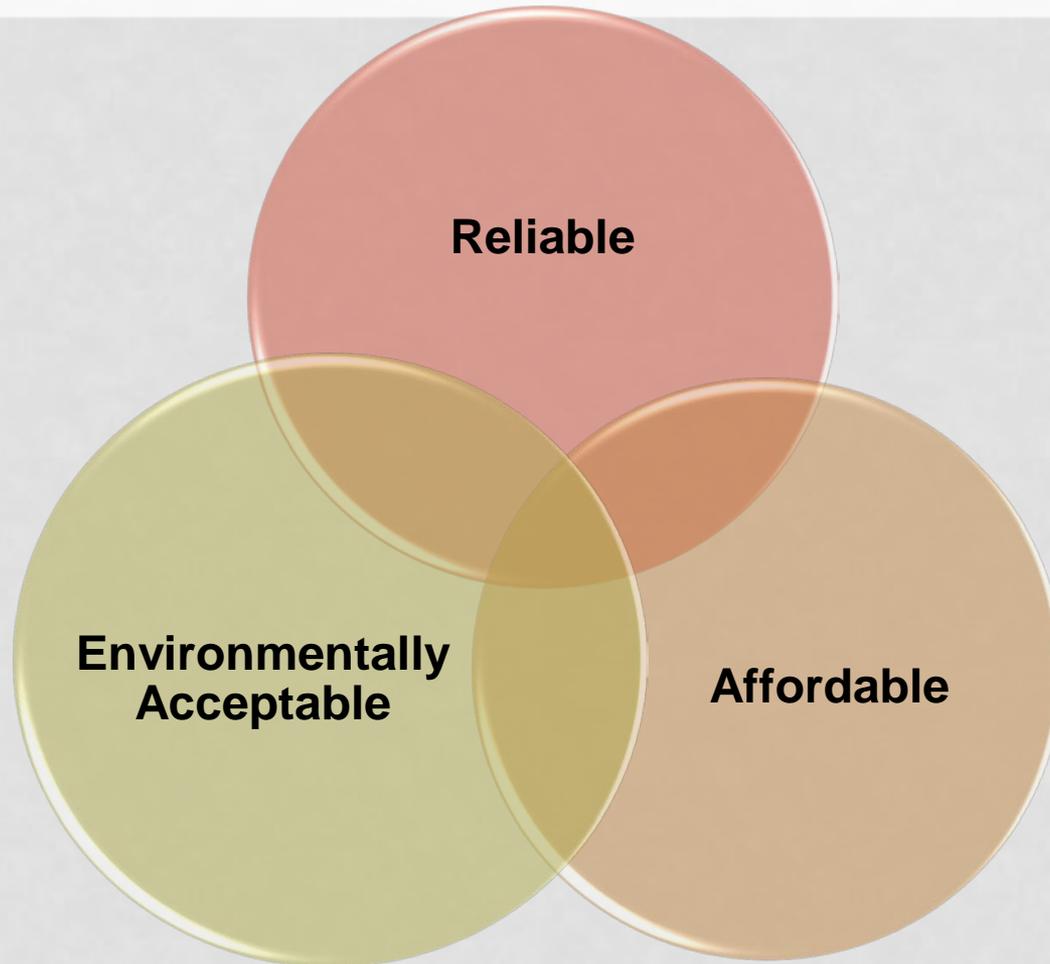
# INDUSTRIAL CUSTOMERS LOOKING FOR A RENEWABLE GREEN RATE

- **Nebraska industrial customers have asked for a renewable, green rate.**
- **NPPD is developing a green rate in response to this request.**
- **NPPD/OPPD sent a Request for Information to Nebraska wind developers to establish pricing.**
- **Preliminary schedule is to get a green rate proposal to the NPPD Board for its consideration early next year.**



# THREE SIMPLE QUESTIONS

- How can we provide electricity that is....



- **The Answers are Complex**

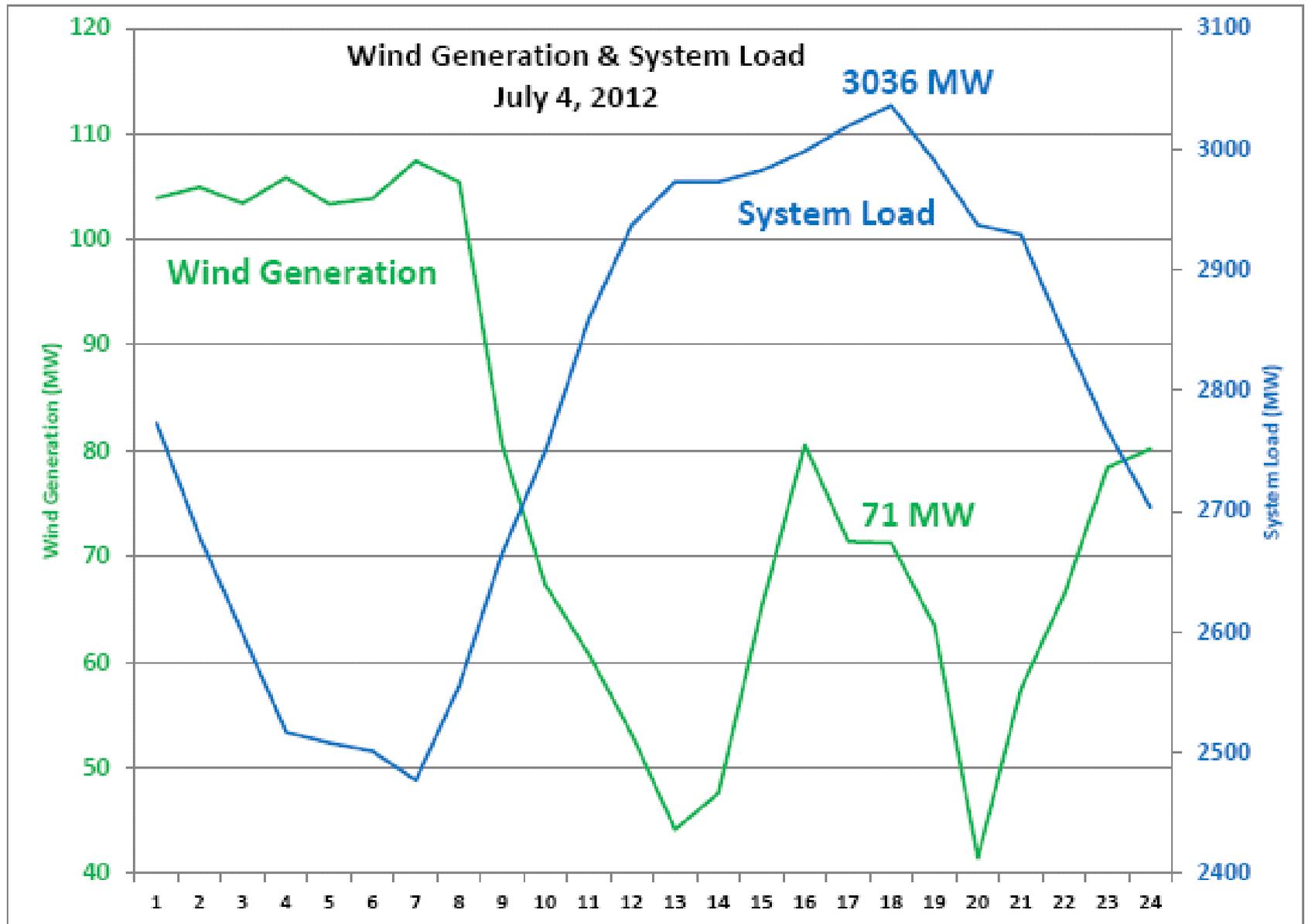


# POWER SUPPLY ISSUES

- **NPPD supports diverse fuel mix.**
- **Coal has a locational advantage for Nebraska – even cheap natural gas doesn't beat current and projected coal costs.**
- **Renewables will increase, but create integration challenges.**
- **Wind generation in Nebraska and the region (SPP, MISO and the Dakotas) is often at its highest during lower demand periods creating transmission congestion and adversely impacting utility off-system sales.**
- **NPPD is exploring Compressed Air Energy Storage (CAES) which may help integrate renewables.**



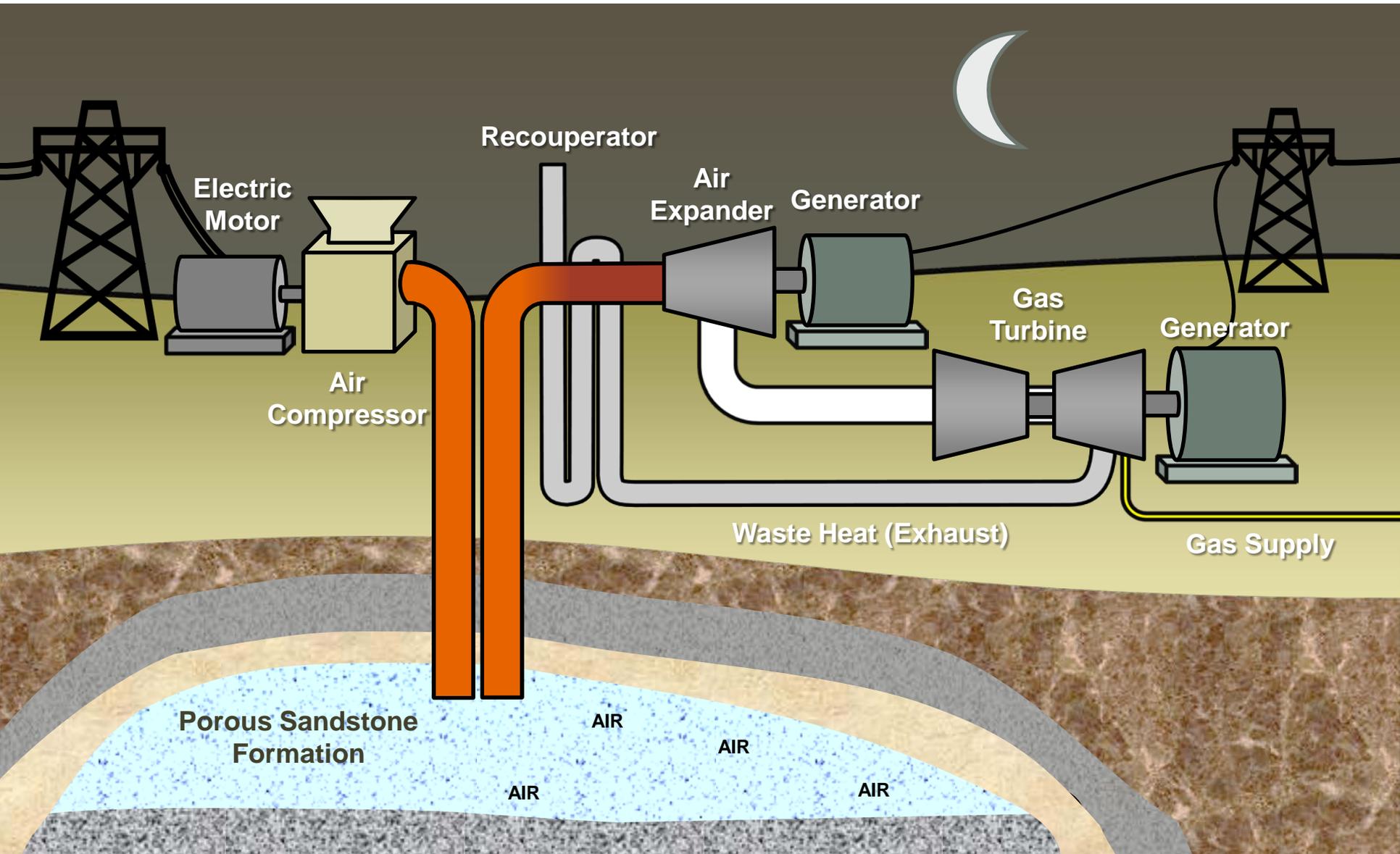
# NPPD



# Compressed Air Energy Storage



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# CONCLUSIONS

- **Coal will continue to be the dominant fuel source for Nebraska utilities and the region.**
- **Other fuel sources will become increasingly important as part of a more diverse mix of fuels.**
- **Renewables will play a growing role, but are still subject to practical limitations due to variable nature.**
- **Energy efficiency investments will become more valuable as energy costs increase over time.**



# CONCLUSIONS

- **Cost effective energy storage technologies could provide a breakthrough in better integrating renewable energy sources.**
- **While particular uses of electricity (*lighting, HVAC, industrial equipment, appliances, etc.*) will all continue to become more energy efficient, the overall demand for electricity will continue to grow since it is the universal energy source.**
- **Regional markets will result in comparable energy pricing for all customers over a larger area.**

