



City of Grand Island

Tuesday, March 15, 2016

Study Session

Item -2

Grand Island Electric Generation Update

Staff Contact: Tim Luchsinger, Utilities Director

Council Agenda Memo

From: Timothy Luchsinger, Utilities Director
Meeting: March 15, 2016
Subject: Grand Island Electric Generation Update
Presenter(s): Timothy Luchsinger, Utilities Director

Background

The EPA Clean Power Plan is one of the primary drivers of electric generation strategy in the United States. The purpose of this regulation is to reduce carbon dioxide emissions by about 30 percent by 2030.

Discussion

This presentation will provide background on the Utilities Department's current and planned electric generation plans.

Conclusion

This item is presented to the City Council in a Study Session to allow for any questions to be answered and to create a greater understanding of the issue at hand.

Grand Island Electric Generation Past, Present, & Future

Grand Island City Council Study Session
March 15, 2016



Clean Air Act Section 111(d) Clean Power Plan

- Rule to be published August, 2015
- Establishes greenhouse gas emission goals by state, 40% reduction proposed for Nebraska
- State plans to be submitted to EPA by September, 2016 for achieving emission targets for 2020-2029 and 2030+
- Rule currently stayed by Supreme Court

Clean Power Plan

- Reduce greenhouse gas emissions through the following “building blocks”
 - Improve existing coal power plant efficiencies
 - Increase natural gas combined cycle generation
 - Increase use of renewable energy sources (Renewable Energy Credits)
 - Implementation of demand-side energy reduction programs originally proposed but not in final rule

Grand Island Wind Participation - Current

- NPPD Power Purchase Agreements with GIUD participation agreements
 - Ainsworth – 1 megawatt (MW)
 - Elkhorn Ridge – 1 MW
 - Laredo Ridge – 1 MW
 - Broken Bow – 1 MW
 - Springview 2 – minimal output – access to data

Grand Island Wind Participation-Planned

- Prairie Breeze III – 35.8 MW (Commercial March 2016)
- Antelope County – 40 MW (Proposed for end of 2016)

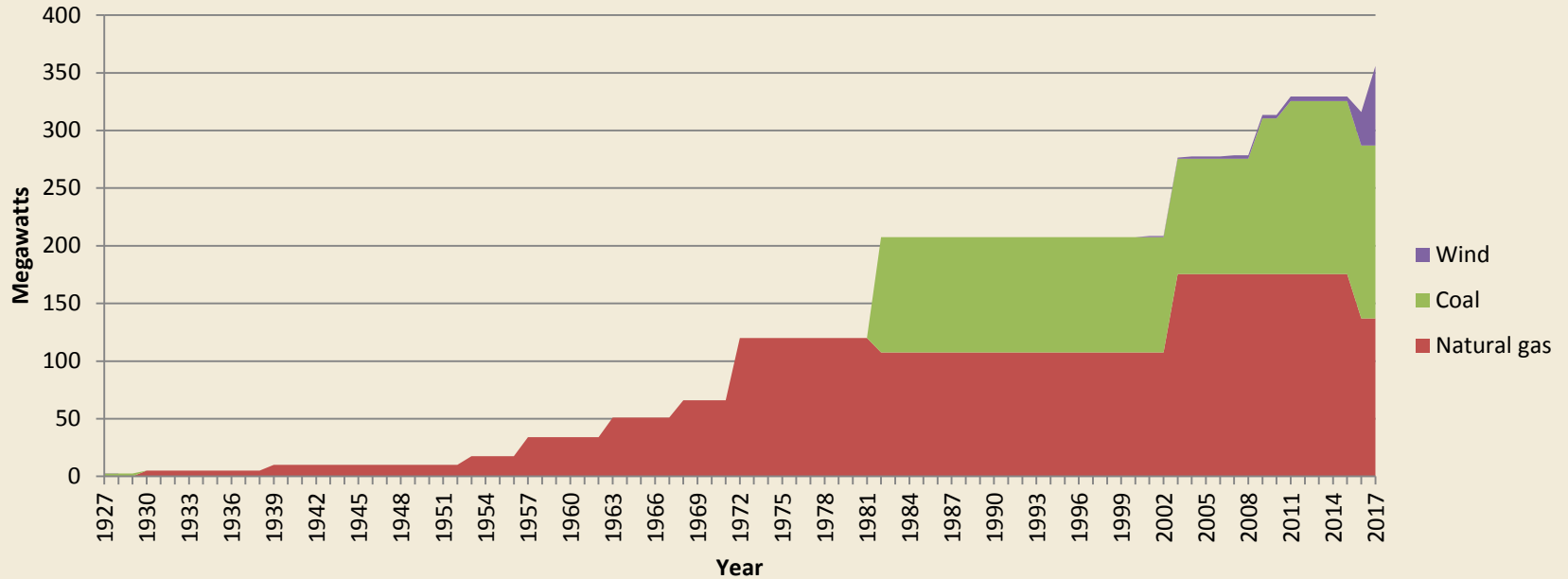
Power Purchase Agreement

- Agreement term is 25 years
- Commercial operation by 4th quarter 2016
- Firm energy cost with annual escalation
- Cost paid on energy produced, no upfront cost
- Power Purchase Agreement executed by GIUD and Invenergy

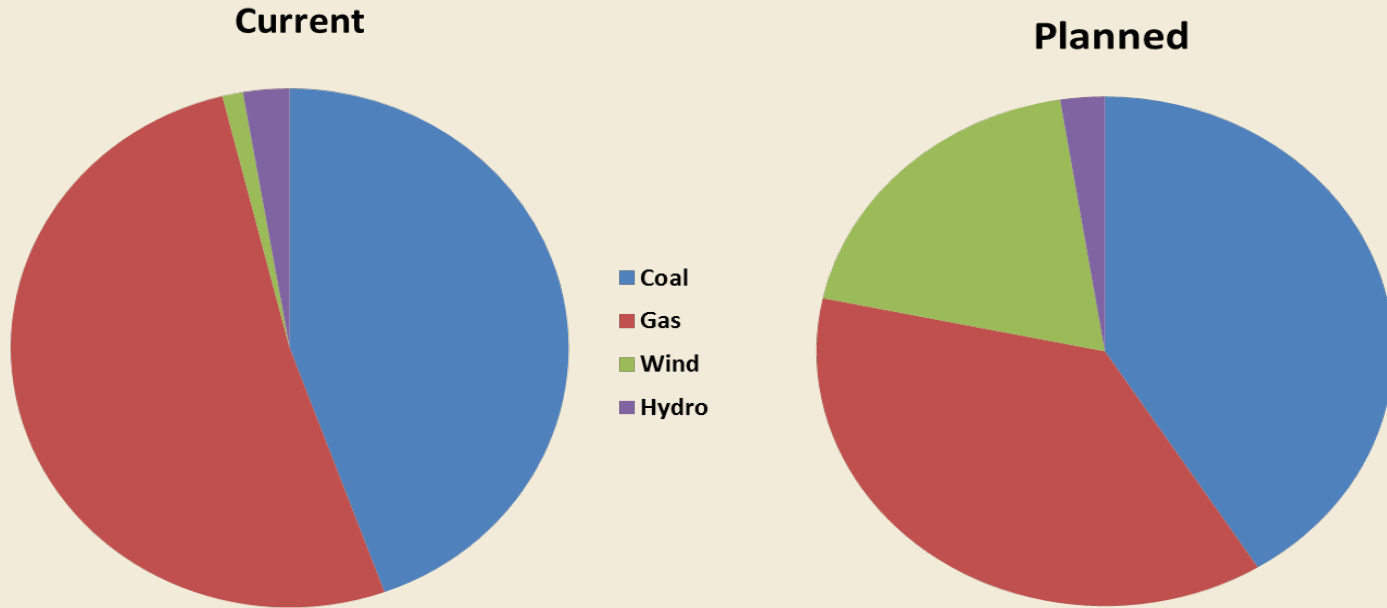
Capacity Additions

	Year	Capacity	Cost
Platte Generating Station	1982	100 MW	\$80M
Burdick Gas Turbines 2 & 3	2003	68 MW	\$50M
Nebraska City Unit 2	2009	35 MW	\$40M
Whelan Energy Center Unit 2	2011	15 MW	\$40M

Grand Island Utilities Historical Generating Capacity



Generation Source Ratio

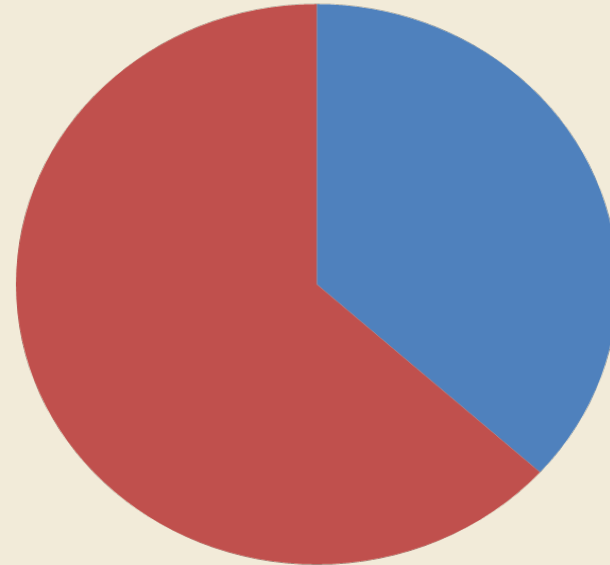


Energy Ratio

Current



Proposed



■ Renewables
■ Fossil Fuels













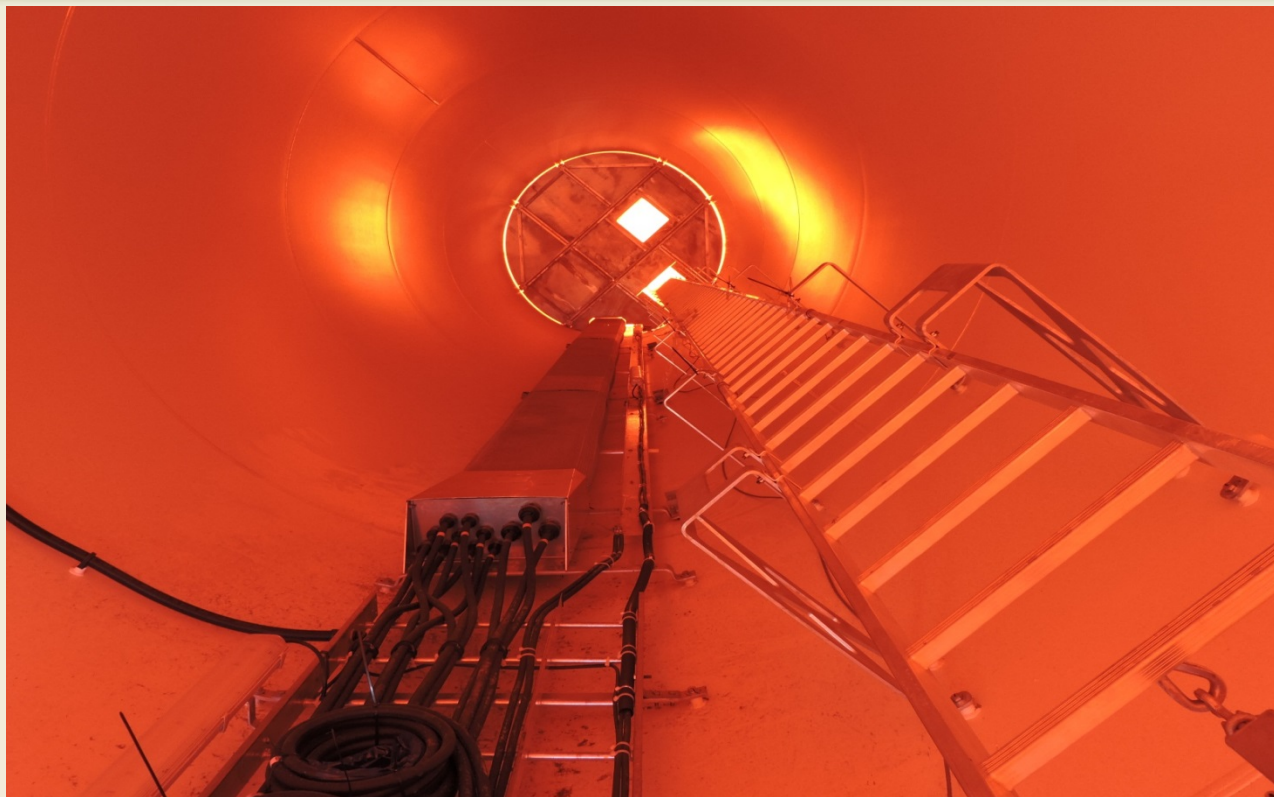




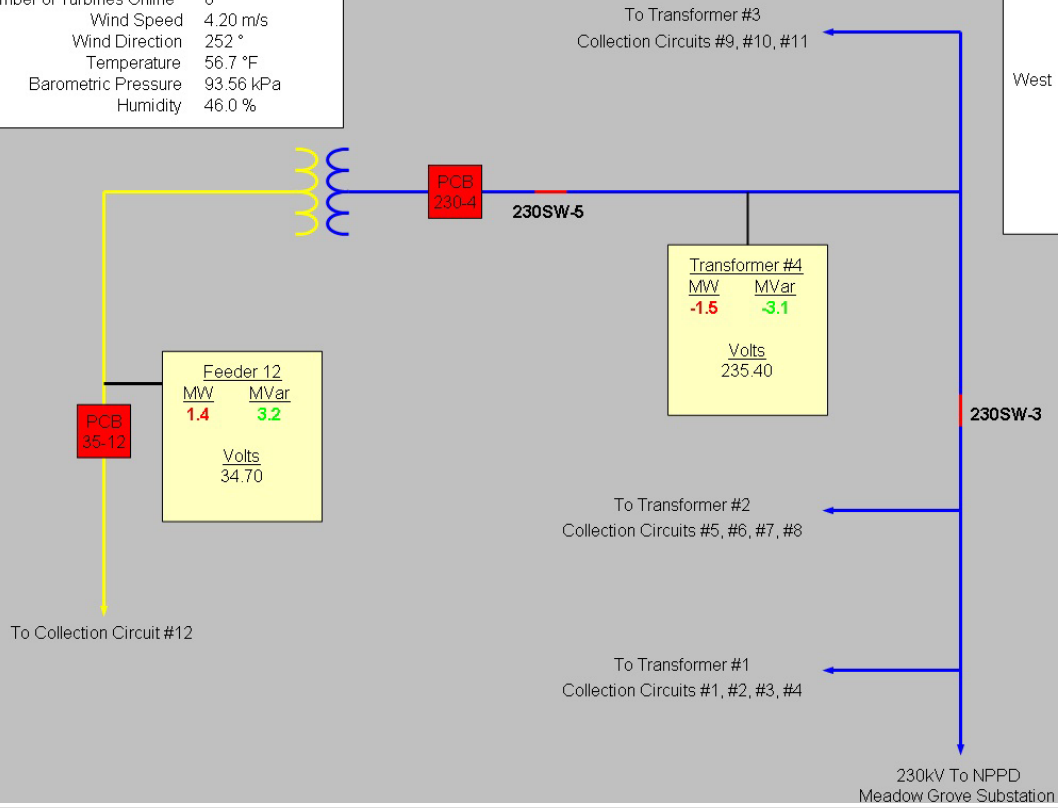
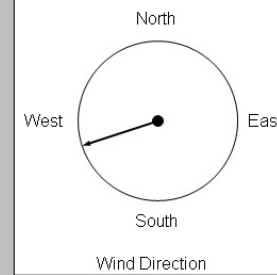








Number of Turbines Available	0
Number of Turbines Online	0
Wind Speed	4.20 m/s
Wind Direction	252°
Temperature	56.7 °F
Barometric Pressure	93.56 kPa
Humidity	46.0 %



Discussion / Questions

