



Exploring the Viability of Cogeneration *Presentation at the CHP Webinar*

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John O'Connor

Brian Wilcox



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Presentation Overview

- Who is Nebraska Public Power District?
- NPPD's Interest in Cogeneration
- “How about we consider a Cogeneration Pilot Project?”
- Bringing the Cogeneration Pilot Project to Fruition



Who is Nebraska Public Power District?

- Largest utility in Nebraska
- Chartered to serve power to all or part of 91 out of 93 Nebraska counties
- Publicly elected Board of Directors
- Non-profit motive
- Some of the lowest power rates in the nation
- Generation capacity of 3,200 MW
- Generation mix = 57% coal, 24% nuclear, 11% purchases, 4% hydro & renewable, 4% Gas & Oil, BUT NO COGEN! (2007 #'s)



NPPD's Interest in Cogeneration

The Drivers

- Climate change is a driver for Nebraskans (our owners) so it is important to us
- Strong movement toward energy efficiency
- Growth spurt in number of potential hosts – (especially, the ethanol industry!)
- Upward pressure on cost of producing power helps to justify cogeneration investment



“How about we consider a Cogeneration Pilot Project?”

- Cogeneration slow to develop on it's own
- NPPD opportunity to pick up the pace of development!
- Test the waters through a pilot project where:
 - NPPD finances, builds, owns, operates/maintains
 - 1 MW steam turbine located at an ethanol plant (boiler fuel used by the ethanol plant is natural gas)
 - Cost to NPPD: ~ \$2M-\$3M upfront, ~\$100K-\$200K/yr for O&M



“How about we consider a Cogeneration Pilot Project?” (Cont’d)

- Benefit: ~ same cost of power being produced at NPPD’s peaking units, less emissions, and increased customer value
- Pilot project goal: To get into cogeneration for the right reasons, learn from it, and build on it if it is deemed successful
- Measure: How well actual costs and operational costs match up, how well did it operate, and did the steam host (customer) find value?



Bringing the Cogeneration Pilot Project to fruition?

- Complete the business case
 - Cost of production to be less than alternatives?
 - TBD: Return &, Payback period
 - Improve customer service?
 - Improve ability to deliver energy?
 - Reduction of overall state emissions?
 - Additional risk?
 - Opportunity cost of NOT participating in cogeneration?
- Timeline: Operational by 2010



Contact Information

John O'Connor

Business Development Manager

Nebraska Public Power District

1327 H Street, Suite 1

Lincoln, NE 68508-3751

Office : 402-465-3512

Cell: 402-480-2358

Email: jwoconn@nppd.com

Brian Wilcox

Senior Engineer – Biofuels

Nebraska Public Power District

1414 15th Street

PO Box 499

Columbus, NE 68602-0499

Office: 402-563-5347

Cell: 402-910-6931

Email: bkwilco@nppd.com
