



City of Grand Island

Tuesday, November 23, 2004

Council Session

Item G10

#2004-299 - Approving Participation in NPPD's Ainsworth Wind Energy Facility

Staff Contact: Gary R. Mader

Council Agenda Memo

From: Gary R. Mader, Utilities Director

Meeting: November 23, 2004

Subject: Participation in NPPD's Ainsworth Wind Energy Facility

Item #'s: G-10

Presenter(s): Gary R. Mader, Utilities Director

Background

The developed world places heavy reliance on fossil fuels. This reliance extends to the nation's electric utilities, where low cost coal is used for base generation, supplemented by natural gas fired peaking units. This combination results in a proven, reliable, and economical electric supply, capable of responding to the constantly varying demand for electricity.

For several decades, atmospheric emissions produced by fossil fuels have come under increasing criticism, scrutiny, and regulation. Emission removal devices such as electrostatic precipitators and exhaust gas filters are used to reduce particulate emissions from coal fired equipment. Acidic combustion gasses are reduced with low sulfur coal, scrubbers, and burner controls. Since best available technology is required, each plant addition results in a cleaner use of fossil fuels.

In the long run, stricter emission control improves the environment, but each restriction increases the cost passed to the consumer. The government, industry, and the Electric Department are searching for alternatives to excessive reliance on fossil fueled electrical generation. Wind energy is the most promising and proven of the renewable options.

In 1997 the City Council authorized a 1.95% participation in the Nebraska Distributed Wind Generation Project, also known as Department of Energy/Electric Power Research Institute (DOE/EPRI) Wind Turbine Verification Program. This project was subsidized with DOE/EPRI providing 50% of the funding for installation of two wind turbines with a combined rating of 1.5 MW. This investment furnishes Grand Island with approximately 90 MWh per year. The resulting bus bar cost at the Springview site, is about \$20/MWh. Unsubsidized, the bus bar cost would be over \$40/MWh.

With the success of the Nebraska Distributed Wind Generation Project, NPPD is constructing a 59.4 MW Wind Energy Facility near Ainsworth. The Grand Island Utilities Department has participated in the preliminary development of this project at a 1 MW level, which equates to

1.68% participation. NPPD's estimate of total project cost is \$81.3 million. NPPD would issue bonds and charge Grand Island annually for Grand Island's share of the project and Grand Island would receive wind produced electric energy at its proportioned share. The first full year of operation is scheduled for 2006. Grand Island's share of debt and operating cost for 2006 is projected to be \$126,000; resulting in a bus bar cost of about \$36/MWh. NPPD estimates the unsubsidized 2009 bus bar cost at \$40.44/MWh.

Discussion

Capital cost of the Ainsworth Wind Energy Facility is estimated at \$1,369/kW. The construction contract has been awarded. There should be only minor excursions from the estimated project cost. Energy production is entirely dependent upon wind conditions; the anticipated capacity factor is 40%.

Grand Island is participating at the 5% level in Omaha Public Power District (OPPD) Nebraska City #2 Plant; a 30 MW allotment. Anticipated capital costs for Nebraska City #2 are \$1,414/kW. Being coal fired, Nebraska City #2 will operate at an 85% capacity factor, taking maximum advantage of the capital investment. After adding fuel costs and O & M costs, the resulting 2009 bus bar cost is projected to be \$29.50/MWh.

The unsubsidized cost of wind energy still exceeds the cost of coal fired generation, but the Federal Government provides financial incentives for the development of renewable resources. With Renewable Energy Production Incentives and Renewable Energy Certificates, NPPD estimates the Ainsworth bus bar cost for 2006 would be \$21.12/MWh and \$26.67 in 2009.

By using wind energy to displace fossil fired generation, atmospheric emissions are reduced. With subsidies, the cost of wind energy is comparable to the cost of coal generation.

With wind turbines presenting a cost effective means to displace emissions from fossil fired generation, a number of utilities are participating in NPPD's Ainsworth Wind Energy Facility. Participants include NPPD, OPPD, and the Municipal Energy Agency of Nebraska. Total annual all-in participation costs, with O & M costs, capital costs, and transmission service to Grand Island, are projected at approximately \$150,000 per year. With approval of the City Council, Grand Island would continue project participation for the life of the project.

Alternatives

It appears that the Council has the following alternatives concerning the issue at hand. The Council may:

1. Approve the Agreement for participation in the Ainsworth Wind Energy Facility
2. Refer the issue to a Committee
3. Postpone the issue to future date
4. Take no action on the issue

Recommendation

City Administration recommends that the Council approve the 1 MW level of participation in NPPD's Wind Energy Facility.

Sample Motion

Move to approve participation in the NPPD Wind Power Project at Ainsworth.

R E S O L U T I O N 2004-299

WHEREAS, on March 24, 1997, by Resolution 97-80, the City of Grand Island authorized the City's participation in the Nebraska Wind Turbine Demonstration project also known as the Department of Energy/Electric Power Research Institute (DOE/EPRI) Wind Turbine Verification Program; and

WHEREAS, with the success of this project, NPPD is constructing a 59.4 MW Wind Energy Facility near Ainsworth; and

WHEREAS, the City's Utilities Department has participated in the preliminary development of this project at a 1 MW level; and

WHEREAS, it is anticipated that NPPD will issue bonds and charge the City annually for its share of the project, and the City would receive wind produced electric energy at its proportioned share; and

WHEREAS, the first full year of operation is scheduled for 2006, with the City's share of debt and operating cost for 2006 expected to be \$126,000; and

WHEREAS, by using wind energy to displace fossil fired generation, atmospheric emissions are reduced, and with subsidies, the cost of wind energy is comparable to the cost of coal generation; and

WHEREAS, total annual all-in participation costs, with O & M costs, capital costs, and transmission service to Grand Island, are projected at approximately \$150,000 per year; and

WHEREAS, it is recommended that the City be authorized to continue participation for the life of this project; and

WHEREAS, the City Attorney has reviewed and approved the proposed agreement for such project.

NOW, THEREFORE, BE IT RESOLVED BY THE MAYOR AND COUNCIL OF THE CITY OF GRAND ISLAND, NEBRASKA, that the City of Grand Island is hereby authorized to participate in NPPD's Wind Power Project in Ainsworth at a level of 1MW.

BE IT FURTHER RESOLVED, that the Mayor is hereby authorized and directed to execute the agreement on behalf of the City of Grand Island for such project.

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Adopted by the City Council of the City of Grand Island, Nebraska, November 23, 2004.

RaNae Edwards, City Clerk

Approved as to Form	☐ _____
November 18, 2004	☐ City Attorney