

Staff Report

ENERGY RESOURCE OPTIONS STUDY

May 15, 2012

A NEW REGULATORY ENVIRONMENT IS UPON US

A number of pending, anticipated, and recently enacted environmental rules will impact our electric utility in the future. They include:

- Cross-State Air Pollution Rules (CSAPR)
- Mercury and Air Toxics Standards (MATS) rules
- Updated National Ambient Air Quality Standards (NAAQS)
- Coal Combustion Residues (CCR) rules
- Regulations related to firing of Refuse-Derived Fuel (RDF)
- National Pollutant Discharge Elimination System (NPDES)

The rules will impact the electric customers of the City via its generation capabilities, as well as the power markets in which Electric Services participates. Electric Services' main goal is to provide affordable, reliable service to its customers while meeting the current and future regulatory environmental compliance demands. To make strategic decisions today that will satisfy our goal now and for the next 25 years requires consideration of potential major changes in regional generation, current low electric and natural gas prices, capital investments to maintain existing generation or build new plants, and regional capacity and energy market availability and cost projections.

Because of the ever-changing regulatory environment that confronts the Ames Municipal Electric System, a comprehensive study to assess viable electric-generating and power supply options is now needed to satisfy the City's future electric power requirements.

REQUEST FOR PROPOSALS

During the City budget hearings in February, the Electric Services staff emphasized to the City Council the need for this type of study. **The study will provide the staff with "developed" solutions for serving the City's electrical load and meeting the pending regulatory rules. The analysis will include the initial capital costs, as well as ongoing maintenance and operational expenses.**

From information this study will provide, the Council will decide the direction of power supply for the City's customers for the next 25 years, which could result in large capital

expenditures. **Furthermore, selection of a direction must be made yet this year due to the fact that we are on a critical path to meet some of the regulatory requirements by 2016.** Permitting, equipment engineering, fabrication and construction lead times necessitate beginning in early 2013.

A team of City staff, led by Brian Trower, and including Electric, Resource Recovery, and the City Manager's Office representatives, created a list of probable solutions that included: retrofitting one or both units with pollution control equipment; repowering one or both units on natural gas; or, retiring one or both units and replacing the capacity and energy with new plants or purchases from the market.

It is important that the pending solutions are evaluated from several perspectives which will necessitate several analytical steps. The team outlined a scope of work and developed a Request for Proposals (RFP) to include the following:

Environmental - The consultant will have to evaluate the current and proposed environmental rules. Emission limits and operating limits must be derived for the existing units as mandated by the new regulations.

Projections – A number of long-term projections will need to be performed, which include electric load growth, natural gas price, coal price, oil price, and energy market price.

Engineering Studies – A number of engineering studies will need to be undertaken to provide information for the various solutions including:

- Air Quality Control Systems (AQCS) to meet regulatory compliance for units #7 and #8
- Simple and Combined Cycle Combustion Turbines to replace units #7 and #8
- Conversion of units #7 and #8 to natural gas firing

Other Questions/Considerations – Other items to cost, in conjunction with the engineering studies and cost estimates for the various solutions, include:

- Ash disposal and related wastes from continual coal combustion
- Methods to handle municipal solid waste; syngas, co-firing RDF with natural gas, landfill, mass burn
- Natural gas supply pipeline
- Transmission availability for new generating facilities
- Impacts on net generation from units due to modifications proposed

RESPONSES

The City's Purchasing Division received responses to the RFP from six consulting firms on April 27, 2012. An evaluation team comprised of the Assistant City Manager, Resource Recovery Superintendent, and staff from Electric Services worked with Purchasing to evaluate the responses. Using criteria that included the firm's capability and experience, resumes of consultant team members, and understanding of our proposal, staff was able to rank the firms based on a point system.

Firm	Total Points	Not to Exceed Price	Rank
Black & Veatch Corp.	7028	\$375,000	1
Stanley Consultants, Inc.	7006	\$338,000	2
Kiewit Power Engineers Co.	6714	\$478,799	3
SAIC Energy, Environment & Infrastructure, LLC	6265	\$159,981	4
Zachry Engineering	6251	\$420,000	5
Sega, Inc.	5985	\$269,900	6

Prior to ranking the firms, the evaluation team agreed that it would not limit the number of firms it would invite to the next second step in the evaluation process. Rather, it wanted to hear the presentation from all firms it thought capable of providing a quality report to the city. **The evaluation team concluded that Black & Veatch, Stanley, and Kiewit should be brought in for interviews as part of the second step of the evaluation process.**

Presently, the Evaluation Team is meeting with each of the three firms, during which time the firms make a presentation and staff, in turn, asks questions to assess their strengths, weaknesses, and ability to complete our study. It is staff's plan to select a consultant to perform this study by early next week and prepare a CAF for the May 22, 2012 Council meeting.

The final task for the firm that is hired is to provide detailed documentation in the form of a report that will include the following results:

- Documentation of projections and assumptions, including fuel costs, inflation, energy market costs
- Solutions considered
- Capital costs estimates for each solution
- Operating and maintenance cost changes from the current plant operation

- A schedule for completion of each option considering engineering, equipment fabrication, and construction
- Discussion of the advantages and disadvantages of each option

NO ACTION IS REQUIRED AT THIS TIME

Staff will be bringing this issue before the Council at the May 22, 2012, meeting to approve the selection of an engineering firm to perform the desired analysis. Therefore, no action is required by the Council on May 15.

However, because of criticality of this assignment, the time pressures for making a decision, and the significant costs associated with this consulting contract, staff wanted to brief the Council on this project in advance of the time you are asked to make a final selection decision, which is currently scheduled for May 22, 2012.