

AGENDA ITEM SUMMARY

FORT COLLINS CITY COUNCIL

ITEM NUMBER: 3

DATE: November 12, 2008

STAFF: Mike Freeman

SUBJECT

Resolution 2008-106 Authorizing a Grant Agreement with the U.S. Department of Energy and Project Agreements with Colorado State University, Larimer County, the Governor's Energy Office, and Other Entities, to Receive Grant Funds for Development and Demonstration of a Coordinated and Integrated System of Mixed Distributed Electric Resources.

RECOMMENDATION

Staff recommends adoption of the Resolution.

FINANCIAL IMPACT

The total budget for the project is \$11.2 million. This Resolution authorizes the City Manager to execute the agreement with the Department of Energy and enter into subcontract agreements with the project partners that outline, per the grant submittal, how matching funds are contributed and DOE funds are distributed among the partners (a more detailed summary of the matching funds is included as Exhibit A to the Resolution).

Total project budget:	\$11,188,349
Total matching funds:	\$ 4,864,969
Funds requested from DOE:	\$ 6,323,380

EXECUTIVE SUMMARY

This project will modernize and transform a portion of the electrical distribution system in the City by developing and demonstrating a coordinated and integrated system of mixed distributed electric resources, including renewable generation (solar), rotary- and inverter-based generation, and demand response methods, that will reduce peak loads on multiple distribution feeders in the downtown area by up to 30% and deliver improved efficiency and reliability.

BACKGROUND

The applicant for the overall project is the City of Fort Collins. The project will address the research, development, and demonstration of a coordinated and integrated system of 3.5 MW of mixed distributed resources in Fort Collins to achieve a 20-30% peak load reduction on multiple distribution feeders. Fort Collins is well positioned to execute this contract due to the unique

combination of world-class research facilities at Colorado State University, participation of global industry leaders and local entrepreneurs able to commercialize the technology, the City of Fort Collins focus on and investments in clean energy as a key pillar of future growth, the presence of a city-owned utility and extensive community support.

The methods used in this project involve the monitoring, aggregation, distribution system integration, dispatch, and verification of distributed generation, renewable energy, and demand response resources (Distributed Energy Resources or DER) for reducing peak loading from 20 to 30% on 2 feeders within Fort Collins Utilities' electric distribution network. Over 3.5 megawatts (MW) of DER from approximately 5 participant locations will be aggregated with a mix of distributed generation sources, including renewable generation, rotary- and inverter-based generation. The demand response capabilities will be aggregated from a mix of heating, cooling, and ventilation loads; process loads; and thermal storage. Intentional Islanding will be demonstrated at one or more locations on one of the feeders.

The benefits of this smart-grid technology include enhancing the security and reliability of the energy infrastructure, facilitating recovery from disruptions; saving costs; new distribution system configurations; management-friendly operations; and environmental rewards from using renewable energy with demand response solutions. The Project will be used to develop and demonstrate key technologies expected to have strong commercial application, including three interacting technology platforms to manage the DER mix and demonstrate peak load reduction, advanced mixed-fuel technology, low-cost grid parallel switchgear, and simulation and robust controller design of DER based solutions. The major impact of the project will be modernizing the local electric grid by using the dynamic real-time state of the grid with the explicit benefit of providing a more efficient and updated grid capable of incorporating more renewable sources.

The City of Fort Collins and the City-owned Fort Collins Utility will provide leadership for this project, with a strong focus on growing and retaining clean energy companies, support for a wide variety of clean energy initiatives, including the establishment of a Zero Energy District within the city ("FortZED"), and increasing the penetration of local renewable energy sources. Other project participants include Larimer County, CSU, InteGrid Lab, the Community Foundation of Northern Colorado; and the Governor's Energy Office. Private sector participation spans local companies and worldwide technology leaders. Manufacturers include; Advanced Energy (innovative power and control technologies); Woodward (largest provider of energy control and optimization solutions); Spirae, (renewable energy and distributed power controls and solutions); and Eaton, (global leader in electrical systems and components). These companies are critical to commercialize the technologies developed under this grant. Consultants and end users include The Brendle Group (engineering consulting in energy efficiency) and New Belgium Brewing Company (a leading craft brewery).

Mike Freeman, Fort Collins Chief Financial Officer, is project director and principal investigators include Patty Bigner, Fort Collins Utilities; Dr. Peter Young, Colorado State Univ.; Dr. Sunil Cherian, Spirae; Geoff Hemsley, Woodward; Babette Cornell, Larimer County; Robert Yanniello, Eaton; Eric Seymour, Advanced Energy; Judy Dorsey, The Brendle Group; and Jim Spencer, New Belgium.

RESOLUTION 2008-106
OF THE COUNCIL OF THE CITY OF FORT COLLINS
AUTHORIZING A GRANT AGREEMENT WITH THE U.S. DEPARTMENT OF ENERGY
AND PROJECT AGREEMENTS WITH COLORADO STATE UNIVERSITY, LARIMER
COUNTY, THE GOVERNOR'S ENERGY OFFICE AND OTHER ENTITIES, TO RECEIVE
GRANT FUNDS FOR DEVELOPMENT AND DEMONSTRATION OF A COORDINATED
AND INTEGRATED SYSTEM OF MIXED DISTRIBUTED ELECTRIC RESOURCES

WHEREAS, the City has applied for and been awarded grant funds from the U.S. Department of Energy ("DOE") in order to carry out a project intended to modernize and transform a portion of the electrical distribution system in Fort Collins (the "Project"); and

WHEREAS the Project will include research, development and demonstration of a coordinated and integrated system of 3.5 megawatts of mixed distributed resources in Fort Collins to achieve a twenty to thirty percent reduction in peak loads on multiple distribution feeders and to deliver improved efficiency and reliability; and

WHEREAS, the mixed distributed electric resources to be utilized by the Project include renewable generation (solar) as well as rotary-based and inverter-based generation, and the Project will further emphasize the use of demand response methods; and

WHEREAS, the City has worked with several cooperating government and private entities to create a unique combination of world-class research facilities, global industry leaders and local entrepreneurs to develop and plan the Project; and

WHEREAS, the project partners working with the City to provide matching contributions and to implement the Project include Colorado State University, Larimer County, the Governor's Energy Office, New Belgium Brewing Company, Advanced Energy, Brendle Group, Caterpillar, Eaton, Spirae, and Woodward Governor (collectively referred to as the "Project Partners"); and

WHEREAS, the total cost of the Project is estimated at \$11,188,349; and

WHEREAS, the DOE grant funding for the Project totals \$6,323,380, and the matching funds required for the Project total \$4,864,969, as described in the Summary of Matching Contributions attached hereto as Exhibit A and incorporated herein by this reference; and

WHEREAS, to receive the grant funds, the City must sign a Grant Agreement (the "Grant Agreement") with DOE, a copy of which is on file in the office of the City Clerk and available for public inspection; and

WHEREAS, to implement the Project, the City must also enter into subrecipient agreements (the "Project Agreements") with each of the Project Partners, incorporating the requirements of the Grant Agreement and specifying the agreed upon grant funding and matching contribution shares, as described in Exhibit A; and

WHEREAS, the City is authorized, under Article II, Section 16 of the Charter of the City of Fort Collins and Section 29-1-203, C.R.S., to enter into intergovernmental agreements, such as the Grant Agreement and the Project Agreements, to provide any function, service or facility; and

WHEREAS, City staff recommends that the City Council authorize the Grant Agreement and the Project Agreements as described herein.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF FORT COLLINS as follows:

Section 1. That the City Manager is hereby authorized to enter into a Grant Agreement with DOE for the receipt of grant funds, to be used for research, development and demonstration of a coordinated and integrated system of 3.5 megawatts of mixed distributed resources in Fort Collins to achieve a twenty to thirty percent reduction in peak loads on multiple distribution feeders, on terms and conditions consistent with the terms of this Resolution, along with such additional terms and conditions as the City Manager, in consultation with the City Attorney, deems necessary and appropriate to protect the interests of the City.

Section 2. That the City Manager is hereby further authorized to enter into Project Agreements with each of the Project Partners to describe the grant funding shares and matching contributions for each, and to outline each party's responsibilities for carrying out the Project, as described in the project application submitted to DOE, on terms and conditions consistent with the terms of this Resolution, along with such additional terms and conditions as the City Manager, in consultation with the City Attorney, deems necessary and appropriate to protect the interests of the City.

Passed and adopted at a special meeting of the Council of the City of Fort Collins this 12th day of November A.D. 2008.

Mayor

ATTEST:

City Clerk

EXHIBIT A

Summary of Matching Contributions:

City of Fort Collins	11,145	In-Kind
City of Fort Collins Utilities	80,000	Cash
City of Fort Collins Utilities	109,663	In-Kind
City of Fort Collins Facilities	281,197	In-Kind/Cash
City of Fort Collins Facilities	28,500	Cash
City of Fort Collins Facilities	60,000	Cash
City of Fort Collins Facilities	34,488	In-Kind
City of Fort Collins Facilities (Comm Found)	300,000	Cash
Larimer County	35,000	Cash
Larimer County	1,464	In-Kind
New Belgium Brewing	37,500	In-Kind
New Belgium Brewing	263,100	In-Kind
New Belgium Brewing	1,699,400	Cash
New Belgium Brewing (Comm Found)	100,000	Cash
Advanced Energy	66,000	In-Kind
Advanced Energy	52,000	In-Kind
Brendle Group	20,217	In-Kind
Caterpillar	94,000	In-Kind
Eaton	115,000	In-Kind
InteGrid (Gov Energy Office)	100,000	Cash
InteGrid (Gov Energy Office)	150,000	Cash
InteGrid (Comm Found)	75,000	Cash
Spirae	587,050	In-Kind
Spirae	116,500	In-Kind
Woodward	55,368	In-Kind
Woodward	62,472	In-Kind
Colo State Univ	84,489	In-Kind/Cash
Colo State Univ Facilities	153,876	In-Kind/Cash
Colo State Univ Facilities (Comm Found)	25,000	Cash
Colo State Univ Facilities	66,540	In-Kind
	\$ 4,864,969	Total