

Best Practice: City Target to Use 100% Green Electricity

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CITY: CALGARY

POLICY AREAS: ENERGY; CLIMATE CHANGE

BEST PRACTICE

The City of Calgary currently uses 75% green electricity for municipal operations and has set a goal to use 100% green electricity by January 2012. ENMAX Energy Corporation, Calgary's wholly-owned electricity utility, generates green electricity from newly constructed wind power facilities.

ISSUE

In order to secure its electricity supply and reduce its exposure to the price volatility of the electricity markets and future green house gas (GHG) emission regulations, the city entered into a long-term agreement with ENMAX to purchase green electricity. The decision to purchase 100% renewable electricity by 2012 also supports the city's environmental goal to reduce GHG emissions.

GOALS AND OBJECTIVES

In 2009, the City signed the Calgary Climate Change Accord of the World Energy Cities Partnership (WECP), a collaboration of 15 cities. WECP working meetings are scheduled to coincide with major oil and gas trade shows around the world. The targets set forth in the Accord are to reduce corporate emissions by 20% by 2020, and 80% by 2050, using 2005 as the baseline year.

IMPLEMENTATION

Calgary's corporate climate change action plan has focused on reducing GHG emissions from municipal sources through a suite of initiatives. These have included improving energy efficiency of municipal operations through upgrades to major electricity-using facilities such as water treatment plants; introducing energy efficient standards (LEED) for new buildings; retrofitting existing buildings with energy efficient components; comprehensive replacement of outdated streetlights with more energy efficient bulbs; greening the city's fleet of vehicles; and capturing methane gas emissions from landfills.

These measures, while important, were not enough to achieve the GHG reductions necessary to reach the ambitious targets of the plan. The City Council agreed in 2004 to enter into discussions with ENMAX to secure a long-term contract for wind energy that would meet 75% of the corporation's electricity demand. An agreement was reached and a new wind farm was constructed by ENMAX in southern Alberta to meet the demand in the contract.



Photo of ENMAX wind farm near Calgary.

The City and ENMAX signed a 20-year electricity supply agreement and by the summer of 2005 construction began on the 37-turbine, 80-megawatt wind farm. In 2009, the City recognized the need to amend the electricity agreement with ENMAX to account for increasing electricity needs. The City Council also decided to increase its renewable electricity purchases to 100% by 2012.

COST

The agreement between The City of Calgary and ENMAX set forth a fixed annual price for green electricity. This allows for more certainty in operating budgets and reduces risk from future GHG legislation such as a potential carbon tax.



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RESULTS AND EVALUATION

Between 1990 and 2004, the City of Calgary's corporate GHG emissions were reduced by 4%.

Over the 20-year life of the agreement, Calgary will avoid producing approximately seven million tons of GHG emissions associated with the power predominantly generated in coal-fired plants. The City of Calgary has already reduced GHG emissions in city operations by 30%, compared to levels in 1990 and are on track to accomplishing our sustainability target reduction of 20% below 2005 emissions by 2020.

TIMELINE

The City Council approved entering discussions regarding a green energy contract in 2004. In 2005, the City Council set an ambitious target of a 50% GHG reduction by 2012. To meet this target, the city made a commitment to use green electricity for all municipal operations. The Council approved the principles of the green electricity agreement with ENMAX in 2005. Construction of the wind farm commenced in 2006. In 2009 the agreement was amended to increase the supply of green electricity to meet 100% of city operations by 2012.

The long-term purchase contract has a time frame of 20 years, meaning that the supply of 100% green electricity is assured until 2026.

LEGISLATION

No legislative changes were required to enter into the contract.

LESSONS LEARNED

Structuring the long-term contract required an analysis and forecast of the future conditions of the energy market. Both parties had to balance the potential risks as well as the rewards of entering into a locked-in pricing agreement.

TRANSFERABILITY

Other communities considering a similar project should consider longer-term agreements with energy providers in order to reduce risk for the wind farm developer. A long-term contract provides certainty for the supplier which, in turn, can reduce the price to the long-term purchaser. Both parties benefit. The supplier gets a secure rate of return on their project while the purchaser reduces their exposure to market price volatility while gaining access to green energy and confirmed environmental benefits.

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Facts and figures in this report were provided by the highlighted city agency to New York City Global Partners.