



## **ENERGY EFFICIENCY PROJECTS – FEBRUARY, 2011**

The Climate Change and Emissions Management (CCEMC) Corporation announced February 8, 2011 that it is funding seven Energy Efficiency projects, totaling more than \$28 million. The following summary of Energy Efficiency projects includes descriptive information provided by project proponents.

Organization: Quantum Technologies Inc.

CCEMC Funding: \$2,225,000.00

Project: Catalyzed-assisted manufacture of Olefins (CAMOL) Generation-(2) for Energy and GHG Reductions in High-severity Ethane Crackers,

Description: The production of ethylene is classified as one of the most energy intensive processes in the chemical industry primarily because of the high operating temperatures required to split or “crack” the feedstock into the lower olefin product. Hydrocarbon feedstock is passed through furnace coils ranging in diameter from 5 to 30cm with overall lengths in one furnace of 300-2000+m, gas fired on their external wall to temperatures exceeding 1100°C. The CAMOL coating technology developed by Quantiam targets the inner wall surfaces of furnace coils and targets significant improvements to these, effectively providing 8-10% lower energy consumption and potential emissions reductions of 390kTonnes CO<sub>2</sub>/year in Alberta (18000 KTonnes CO<sub>2</sub>/year globally).

Organization: Agrium Corporation

CCEMC Funding: \$1,200,000.00

Project: Urea Plant Turbo Generator

Description: In Agrium's Redwater Urea plant, 600 psig steam is let down to 325 psig across a control valve. It is proposed to install a turbo generator to recover energy from the let down process by generating electrical power. The amount of electrical power purchased from the Alberta Power Pool will be reduced by the amount generated by the new installation.

Organization: Weyerhaeuser Company Limited  
CCEMC Funding: \$5,000,000  
Project: Weyerhaeuser Grande Prairie Evaporator Project

Description: Weyerhaeuser Company Limited, at its Grande Prairie Alberta pulp mill, plans to replace its 5 effect evaporator plant with a new state of the art, high efficiency 7 effect evaporator plant. This new evaporator plant will significantly reduce green house gas emissions, while also generating 23 MW's of additional green power for export to the Alberta power grid. There are many other environmental and operational benefits to the project, such as a decrease in water usage. The project is "shovel ready" and could be completed and demonstrating green house gas reductions as early as 2012. This project is the next phase in green energy development at the site, complimenting the new recovery boiler (2007) and new turbine (under construction).

Organization: EnCana Corporation  
CCEMC Funding: \$2,400,000  
Project: Vent Gas Capture for Engine Fuel Use

Description: In oil and gas operations, natural gas is frequently vented from engineered and non-engineered sources. Vented gas sources include pneumatic instruments and pumps running, compressor rod packing, and vapors from storage tanks, among others. Vented gas contributes to global warming because it contains significant amounts of methane, a potent GHG with a global warming potential of 21. Potentially, vented gas can be captured using a proprietary technology and can be used as a supplementary fuel source for compressor engines. This allows for a reduction in vented methane and contributes significantly to mitigating global warming and climate change. The proposed project will therefore use this approach in an effort to reduce vented methane.

Organization: ConocoPhillips Canada  
CCEMC Funding: \$7,000,000  
Project: Company-Wide Rollout of a Systematic Energy Efficiency Program Leading to Significant GHG Reductions in Alberta's Oil and Gas Industry

Description: The objective of this ConocoPhillips/CETAC-WEST project is to demonstrate, verify and widely communicate the impacts of proven and new energy efficiency technologies to reduce fuel gas use (now 12% of annual gas sales) and associated GHG emissions in gas processing units. The project is a large-scale demonstration of an earlier \$10 million pilot program on energy efficiency technologies pioneered by CETAC-WEST that identified potential GHG reductions in the UOG industry of up to 10 megatonnes annually. GHG reductions from the efficiency improvements for this project in 5% of Conoco facilities are expected to be 80,000 tonnes annually with a projected cumulative total of 2.2 megatonnes when rolled out company- wide over the next ten years.

Organization: Alliance Pipeline Ltd.  
CCEMC Funding: \$7,000,000  
Project: Whitecourt Energy Efficiency Project

Description: Alliance Pipeline (specified emitter principle applicant), with NRGreen Power will improve site energy efficiency by recovering industrial heat released to the atmosphere, produce electricity with no new emissions and generate ~ 97,000 tonnes of verifiable CO<sub>2</sub>e offsets per year by January 2013.

Organization: Cenovus Energy Inc.  
CCEMC Funding: \$3,600,000  
Project: REMVue/Slipstream air/fuel ratio control and vent capture project.

Description: Cenovus Energy Inc. is a leading Canadian integrated oil company and has operations such as enhanced oil projects, established natural gas and crude oil production in Canada. Cenovus is dedicated to advancing technologies to advance recovery of our oil and gas reserves while improving energy efficiency, reducing emissions and protecting the environment.

The project includes the installation of REMVue air/fuel ratio computerized controllers on specific stationary engines, plus a Slipstream (vent-gas injection controller) on one of the engines at a site that has a REMVue controller installed, and vent gas capture piping. These changes reduce fuel usage, vented compressor gases, and GHG emissions.