



The following seventeen projects have been invited to go to the CCEMC's full project proposal stage.

Genalta Power Inc.

Genalta Power Inc. and Dow Chemicals are proposing a joint venture energy efficiency project within the ethane production process at the [Dow Site Dow Site Dow Site Dow Site]. The project proposes to capture existing waste heat currently being dissipated to provide the pre heat while capturing the wasted pressure from a pressure reduction within a ethane production process for power production. The Project proposes to capture the mechanical energy for power production from the throttling / expansion process and use existing waste heat as the preheater before the expansion to ensure that no liquid or solid phase condenses at the output temperature. No additional energy is required and the power produced has zero GHG emissions.

Quantiam Technologies Inc.

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 innerwall surfaces of furnace coils and targets significant improvements to these, effectively providing 8-10% lower energy consumption and potential emissions reductions of 390kTonnes CO2/year in Alberta (18000 KTonnes CO2/year globally).

CCI Thermal Technologies Inc.

CCI Thermal Technologies Inc. is an industry leader in advanced heating solutions. We are a private North American company that is recognized for our innovative advancements in heating technology, our commitment to customer service and our award winning management team.

Explosion proof, gas fired, infra-red heaters are widely used in the oil & gas industry. We propose to improve their combustion efficiency (CE) by introducing new catalyst, improvement to their internal gas distribution system, and introduction of a new explosion proof blower that should improve combustion efficiency of not only for new units but also those operating in the field for years. This equipment has to be able to be used in hazardous locations.

Alberta Newsprint Company

The manufacturing of newsprint is very energy intensive requiring 3,300 kWh of electrical energy per tonne. Energy consumption at Alberta Newsprint Company (ANC) is 825,000 MWh per year while producing 250,000 tonne of newsprint. There have been some technological improvements in energy efficiency in producing newsprint since ANC was built in 1989. Perifeeder, a recently commercialized technology in European mills, will help reduce ANC power usage by 0.43 MW resulting in an annual energy saving of 3704 MWh. The GHG emission reduction will be 2408 tonnes per year. This technology will also help reduce the operating and maintenance cost by removing 12 electrical drives/motors (1480 hp) with 3 new efficient drives (450 hp).

NOVA Chemicals Corporation

NOVA Chemicals' Joffre Ethylene 2 unit uses a single Cracked Gas Compressor, driven by a steam turbine, to flow the mixed product stream from the furnace section to the separation train. The 1980's steam turbine is less efficient than present day designs. This project will upgrade the existing steam turbine to the best available commercial technology resulting in improved energy efficiency and reducing power consumption.

Weyerhaeuser Company Limited

Weyerhaeuser Company Limited, at its Grande Prairie Alberta pulpmill, 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).

Agrium

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.

Geotrend Power Inc

Paper manufacturing is associated with vast consumption of electricity and natural gas. There is wasted steam that cannot be used in direct steam to power conversion in existing turbines. The applicant proposes to produce electric power based on proprietary steam turbine which is able to operate on one or near two-phase flow. Such power production will increase efficiency of energy usage and reduce the need to purchase power from the power grid which in turn reduces GHG emissions produced by the power system. 200 kW pilot mono-block power plant operating on waste steam will be installed to demonstrate validity of the proposed technology and will be available for mass production at bigger power output.

EnCana Corporation

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.

ConocoPhillips Canada

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.

West Fraser Mills Ltd.

Slave Lake Pulp (SLP) is a hardwood Bleached Chemithermomechanical Pulp Mill (BCTMP) that uses 2 stages of High Consistency Refining (HCR). The Low Consistency Refining (LCR) & Heat Recovery Project involves the replacement of the 2nd stage HCR with LCR's. This will reduce electricity use. Note: LCR's are not presently used in hardwood mechanical pulping. The Project will also involve the implementation of 2 Heat Recovery Projects (HRP's). This is necessary since steam generation will be reduced with the use of LCR's (i.e. HCR's make steam and LCR's do not). The benefit of the HRP's will be reduced natural gas use. This Project will reduce GHG emissions by MT 47,000 CO₂e per year. Project benefits are significant, immediate and sustainable.

Alliance Pipeline Ltd.

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 CO2e offsets per year by January 2013.

Dow Chemical Canada Inc.

Dow Chemical Canada ULC operates cogeneration units at its Fort Saskatchewan site. The installation of a condensing steam turbine at the site has the potential to generate 20MW of power from the excess steam available.

The implementation of the project will introduce new power generation into the Alberta Market with no additional fuel or CO2, by offsetting power currently produced by more energy intensive conventional coal fired plants or peaking Gas Turbine plants by recovering the waste steam.

Alliance Pipeline Ltd.

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 ~ 48,500 tonnes of verifiable CO2e offsets per year and inservice by January 2013.

Cenovus Energy Inc.

Cenovus Energy Inc. is a Canada's leading integrated oil company and has operations such as the 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.

Project 1 Steam production is a crucial component of a steam assisted gravity drainage oil sands projects. Increasing the efficiency of steam generators will lead to reductions in the amount of fuel used to produce the required amount of steam. By reducing the amount of fuel used, greenhouse gas emissions are also reduced.

Project 2 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.

TransAlta Generation Partnership

TransAlta will utilize CCEMC funding to improve the energy efficiency of our coal facilities west of Edmonton by replacing old, inefficient feedwater heating and air preheating equipment, with new, state-of-the-art equipment. The project will result in a physical reduction in CO2 emissions by 1.6 million tonnes over 18 years; this is equivalent to taking 256,000 cars off the road.

As Canada's largest publicly traded generator and marketer of electricity and renewable power we are investing in new ways to further cut emissions. We follow an emissions management strategy that includes implementing internal emission reduction projects and investing in transformative technologies.