

# BACKGROUND



## Climate Change Action Fund Technology Early Action Measures (TEAM)

<b>Total Climate Change Action Fund Contribution</b>	\$3,700,136
<b>Total Value of new TEAM Projects</b>	\$19,665,637

The Government of Canada established the \$150-million Climate Change Action Fund (CCAF) in the 1998-1999 federal budget. The Fund is designed to encourage projects that build public awareness and understanding of the climate change issue, conduct research on climate change and promote early actions by Canadians to reduce greenhouse gas emissions.

TEAM, a \$56-million component within the CCAF, offers support to programs that fund technology projects to reduce greenhouse gas emissions nationally and internationally, while sustaining economic and social development. By supporting cost-effective technology projects, TEAM projects are expected to lead to significant reductions in greenhouse gas emissions.

### PROJECTS ANNOUNCED NOVEMBER 16, 1999

#### *Sustainable Development of Coal Bed Methane: A Life-Cycle Approach to the Production of Fossil Energy*

**Project objective:** This project involves the full scale demonstration of injecting carbon dioxide into deep coalbeds in Alberta. There are two principle environmental benefits associated with this technology. First, the injected CO<sub>2</sub> will be geologically sequestered or stored, thereby eliminating the release of this greenhouse gas to the atmosphere. Second, the injected CO<sub>2</sub> will force out methane from the coalbed seams which can then be used as an alternate source of energy.

**Project proponents:** Alberta Research Council

**Total budget:** \$15.3 million

**CCAF contribution:** \$2.25 million

**Key partners:** Environment Canada; Natural Resources Canada's Program on Energy Research and Development; Government of Alberta; governments of the U.S., Netherlands and the U.K.; more than 15 private sector firms including Gulf Canada, Suncor, Mobil Oil, British Petroleum and Transalta Utilities

### ***Development and Commercialization of Char into Activated Carbon***

**Project objective:** To apply Ensyn Technologies Inc.'s patented process to develop and commercialize a process to convert char (a co-product in the fast pyrolysis of biomass materials) into a high-value activated carbon that can be used as a charcoal filter in applications such as water treatment. This could replace coal currently used as a feedstock for activated carbon, thus reducing greenhouse gases. Initial CO<sub>2</sub> savings are estimated at 31,000 tonnes per year.

**Project proponents:** Ensyn Technologies Inc., an Ottawa-based biomass thermochemical conversion technology company

**Total budget:** \$1,156,544

**CCAF contribution:** \$433,704

**Key partners:** Natural Resources Canada and the University of Saskatchewan

### ***“Green Diesel” from Biomass Pyrolysis Oil***

**Project objective:** To use Ensyn Technologies Inc.'s patented process to optimize and deploy a microemulsion technology that will allow bio-oils produced from the fast pyrolysis of cellulosic materials to be mixed with diesel. This bio-oil can be used for the production of heat and power and also as a 10 percent blend in diesel fuel which would result in reduced greenhouse gas emissions. Initial CO<sub>2</sub> savings are estimated at 170,000 tonnes per year.

**Project proponents:** Ensyn Technologies Inc., an Ottawa-based biomass thermochemical conversion technology company

**Total budget:** \$410,300

**CCAF contribution:** \$156,250

**Key partners:** Natural Resources Canada and Canadian and European industry

### ***Micro-Turbine/Cogeneration Heating and Power System***

**Project objective:** To develop guidelines that optimize the performance of distributed cogeneration systems. Monitoring and analysis will be carried out on a micro-turbine system that will provide both electricity and heat for the Walker Court condominium project in Calgary. This is a combined residential and commercial building of 12 units. Through this research, the company aims to expand the application of cogeneration systems through efficient networks run under a central dispatch and control facility. Greenhouse gas reductions will follow from the higher efficiency gained by the effective use of natural gas to provide both the electricity and heat locally.

**Project proponents:** Suncurrent Industries a Calgary, Alberta-based construction contractor and developer of commercial real estate projects

**Total budget:** \$301,300

**CCAF contribution:** \$112,988

**Key partner:** National Research Council/Industrial Research Assistance Program

## **Solid Oxide Fuel Cell Development**

**Project objective:** To develop new levels of performance, cost effectiveness and durability for solid oxide fuel cells. This will be done by achieving higher power density levels at lower temperatures (700°C) than was previously possible. The technology will be applied in the oil, gas, telecommunications, residential and automotive markets. The efficiency of the new technology relative to other options in these markets will mean reduced greenhouse gas emissions.

**Project proponents:** **Global Thermoelectric Inc.**, a Calgary company that manufactures and sells thermoelectric generators for remote power generation in the oil, gas and communications industries

**Total budget:** \$550,000

**CCAF contribution:** \$162,515

**Key partner:** National Research Council/ Industrial Research Assistance Program

## ***Greenhouse Gas Emissions Reduction Through Energy Management in Brazil***

**Project Objective:** To establish the foundation for replicable, cost-effective energy management and GHG emissions reduction in mid-sized industry in Brazil. The main thrust of the project is to develop and implement six energy management demonstration projects in Brazilian industry. The seven target sectors for the project - food processing, automotive parts, pig iron, textiles, plastics, secondary wood processing and ceramics - represent about 50 percent of total manufacturing establishments in Brazil. The GHG emissions reduction potential in the target sectors amounts to more than 10,000 tonnes of CO<sub>2</sub> per year.

The project will address fundamental technical and non-technical barriers to energy management in mid-sized industry. The demonstration projects are aimed at integrating state-of-the-art Canadian energy management products and services and providing an opportunity for the Canadian environment industry to access this large international market. Canadian expertise is also being used to help build capacity among Brazil's industries to develop and implement energy management.

**Project proponents:** **Canadian Environmental Industry Association (CEIA)**, a not-for-profit national business organization representing Canadian companies that develop and supply environmental products, technologies and services and the **Confederaco Nacional da Industria (CNI)**, the national voice of Brazilian industry specializing in the development of industry policies, labour relations, environmental management and training.

**Total budget:** \$1,947,493

**CCAF contribution:** \$584,679

**Key partners:** private sector firms in Canada and Brazil and Industry Canada