



GHG Emission Reduction and Sustainable Technology Project

A Project to facilitate increased adoption of sustainable, eco-efficient and economical greenhouse gas reducing technologies in the hydrocarbon energy industry

**Semi-Annual Report
July 2003**

Prepared by:
Kerri Markle, Technology Transfer Coordinator

Project managed by:
Denis Gaudet, Director, Technology Transfer

Overview of Project Status

- ➔ Project inception February 2003
- ➔ Program personnel -include the Director, Technology Transfer Technology Transfer Director, Technology Transfer Coordinator and an Information Specialist PTAC has secured additional program funding from Additional project funding secured. Other funders include several Producer Oil Companies, and Provincial government agencies from B.C. Alberta and Saskatchewan.
- ➔

Overview of Activities to Date

Date	Activity
January 2003	Attended and presented at the Micro turbine conference held in Calgary
	Attended CETAC West Entrepreneur to CEO Workshop
February 2003	CO2 Capture, Sequestration and EOR Forum and Workshop Pre-planning meeting
	GHG Emission Reduction planning meeting
March 2003	Memorandum of Understanding (MOU) established with the Pembina Institute for Appropriate Development
	Attended regional workshop on Clean Development Mechanism (CDM) and Joint Implementation
	Attended Round Table on a New Energy-Sustainable Energy Technology (Industry Canada)
	Role clarity and activities defined between PTAC and the Petroleum Services Association of Canada (PSAC)
	MOU established with Saskatchewan Research Institute SRI
April 2003	Attended and made a presentation at the CETAC West Gas Plant Efficiency Workshop
	Green Toolbox Conference Planning
May 2003	Attended the Climate Change Central Environmental Software Demo
	MOU established with PRAC Petroleum Research Atlantic Canada
June 2003	Meeting with David Helliwel, Western Economic Diversification
	Attended workshop – “Learn How to Bring Reservoir Engineers into the Exploration Process with Dynamic Reservoir Characterization
	Late Stage Gas Reservoir Recovery Technology Forum and Workshop Planning Meeting

Technology Transfer and/or Barrier Definition Meetings

Date	Company Name	Contact
March 25, 2003	Intech Ventures	Kevin Macleod
May 13, 2003.	ChevronTexaco	Ken Godard
June 9, 2003	TransCanada Pipelines	Don Wichert

June 18, 2003	Photon Control	Bob Blair
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Knowledge Centre Overview:

- Jan-June 2003 – Researched potential publication to acquire for the Knowledge Centre Publication Research for Knowledge Centre acquisitions
- Jan-July 2003 – Performed technical on-line searches for industry, government and academia
- Locate and provide required documents
- April-July 2003 – PTAC Roadmap –Provide a listing of all non-profit organizations with mandates similar to that of PTAC relating to sustainable, eco-efficient and GHG-reducing technologies
- Identify organizations, their mandate, objectives, goals, role, pertinent services and activities

Events Held During Period

Event Name	Event Type	Date of Event	Location of Event	# of Attendees
Thermal Heavy Oil Efficiency Workshop	Workshop	May 6, 2003	Calgary	32
Oil & Gas Vent Opportunities Workshop	Workshop	May 8, 2003	Calgary	13
Oil & Gas Vent Opportunities Workshop	Workshop	May 14, 2003	Edmonton	11
O&G Methane Vents in Saskatchewan – An Opportunity to Reduce Energy Costs	Workshop	June 18, 2003	Regina	13

Upcoming Events

Event Name	Event Type	Date of Event	Location of Event	Projected # of Attendees
Media Conference – WD funding announcement	Media Conference	Early September 2003	TBA	30
The Green Toolbox: Reducing GHG and Water Emissions and Improving Profitability in the Oil & Gas Industry	Conference	September 29-30, 2003	Fairmont Palliser Hotel	200
CO2 from Industrial Sources to Commercial Enhanced Oil Recovery (EOR)	Forum & Workshop	October 1-2, 2003	Fairmont Palliser Hotel	150
Presentation and ½ day workshop on thermal heavy oil energy reduction and conventional heavy oil vent reduction opportunities	Workshop	September 18-19	Lloydminster	?
Industrial Energy Audit Incentive Launch - an event to coincide with the Alberta Innovative Manufacturing Week	TIS	September 25	Edmonton	

*TIS – Technology Information Session

Promotional Opportunities

- June 10-12 – Booth at the Go-Expo (Oil & Gas show)



PTAC

GHG Emission Reduction and Sustainable Technology Project

A Project to facilitate increased adoption of sustainable, eco-efficient and economical greenhouse gas reducing technologies in the hydrocarbon energy industry

Semi-Annual Report December 2003

Prepared by:
Kerri Markle, Technology Transfer Coordinator

Project managed by:
Denis Gaudet, Director, Technology Transfer

Overview of Project Status

- Project inception February 2003
- Program personnel include the Director, Technology Transfer Technology Transfer Director, Technology Transfer Coordinator and an Information Specialist
- Other funders include producer oil companies, and provincial government agencies from B.C. Alberta and Saskatchewan.
- Steering Committee organized (Technology for Emission Reduction and Eco-efficiency-TEREE) and project scope defined - Terms of Reference attached.
 - The TEREER Steering Committee mandate is to provide strategic direction to PTAC on the purpose, objectives, priorities and overall operation of the project. In addition, Steering Committee members, and other representatives from Industry, government regulators and other organizations will identify areas of need for technologies and best practices in reducing emissions and improving eco-efficiency. Under the guidance of the Steering Committee, and as funding permits, PTAC will facilitate the search for new or improved technologies and best practices, and will foster their development through pilot testing, if required. Under the guidance of the Steering Committee, PTAC will organize demonstration projects, working groups, Requests for Technology (RFT's), technology or innovation case studies, workshops, forums, conferences, and technology information sessions as required to deliver the results of development work to Industry.

Overview of Activities to Date

Date	Activity
August 2003	Finalized the Spudding Innovation Report http://www.ptac.org/techinnp.html . This is a major report on oil & gas industry innovation including recommendations, goals and priorities.
September 2003	Meeting with Joe Lukacs, CETAC West re: Sulphur Plant Project
	Attended THECIS Innovation Club meeting
	Executed the Green Toolbox: Reducing GHG and Water Emissions While Improving Profitability in the Petroleum Industry Conference and disseminated proceedings http://www.ptac.org/eet/dl/Green%20Tool%20Box%20-%20Table%20of%20Contents.pdf
October 2003	Executed the CO2 from Industrial Sources to Commercial Enhanced Oil and Gas Recovery Forum and Workshop and disseminated proceedings http://www.ptac.org/res/dl/CO2%20Conference%20-%20Table%20of%20Contents.pdf
	Launched Steering Committee (Technology for Emission Reduction and Eco-efficiency-TEREE)
	Interviewed by Moya Greene – Consultant to Privy Council of PM Office
	Public release and distribution of the Spudding Innovation Report
	Attended WD Environmental Technologies Conference Planning Meeting
	Developed the TEREER Steering Committee Terms of Reference
November 2003	AsTech Awards (Alberta Science and Technology Leadership Awards (ASTech) Foundation)
	TEREE Steering Committee meeting
	Attended the PTAC Air Issues Research Forum

December 2003	Hosted and organized a Sulphur Plant Technologies meeting (potential project)
	Attended the WD Environmental Technology Forum
	Meeting with Rudy Sundermann, EnCana Corporation re: TEREЕ Steering Committee deliverables
	TEREE Steering Committee meeting

Technology Transfer and/or Barrier Definition Meetings

Date	Company Name	Contact	Regarding
August 15, 2003	Direct Energy	Floyd Krukoff	GHG reducing technologies
September 8, 2003	Canadian Plastics Association	Shawna Feradi	Potential TIS for eco-efficient plastics
September 9, 2003	Sirius	Terry Moffat	Potential emission reduction TIS
September 24, 2003	Infinity Resources	Bill Irwin	TEREE Steering Committee
October 9, 2003	Vecta Energy	Tom Feuchtwanger	Geoseismic GHG reductions
October 29, 2003	Talisman Energy	Helen Chang	TEREE Steering Committee
November 4, 2003	Nexen Inc.	Ron Hoffmeister	TEREE Steering Committee
November 7, 2003	Optimum Energy Technology	Peter Sedorka	Reduce energy usage in motors
November 7, 2003	Schlumberger	Wayne Finger	R&D in project
November 7, 2003	AsTech Awards (Alberta Science and Technology Leadership Foundation)	Paul Hagel	Participated at head table and introduced Peter Louheed.
November 12, 2003	REM Technologies	Cam Dowler	Natural gas engine fuel & emission reduction technology and initiation of a case study
December 18, 2003	Katch Kan	Quinn Holtbys	Zero emission drilling rig technology

Knowledge Centre Overview:

- Coordinated publication of the proceedings from the Green Toolbox and CO2 events
- Coordinated and disseminated report publication "Spudding Innovation-Accelerating Technology Deployment in Natural Gas and Conventional Oil"
- Re-configured the Knowledge Centre by identifying relevant reports to develop technical resources, electronic services, and contacts focusing on sustainable, eco-efficient and GHG reducing technologies
- Supplied local and international clients with reference service, on-line technical searching and access to the Knowledge Centre

Events Held During Period

Event Name	Event Type	Date of Event	Location of Event	# of Attendees
Green Toolbox: Reducing GHG and Water Emissions While Improving Profitability in the Petroleum Industry	Conference	Sept 29-30, 2003	Calgary	75
CO2 from Industrial Sources to Commercial Enhanced Oil and Gas Recovery	Forum & Workshop	September 31 st and October 1, 2003	Calgary	85

Upcoming Events

Event Name	Event Type	Date of Event	Location of Event	Projected # of Attendees
Industrial Energy Audit Incentive - Saskatchewan	TIS	Jan 28, 2004	TBA	30
Schlumberger Technology Session	TIS	Feb 26, 2004	EnCana Amphitheatre	60
Air Emission Reduction Case Studies and Demo Projects	Forum	June 2004	TBA	100

*TIS – Technology Information Session



2004 Jan 13

Terms of Reference –PTAC Technology for Emission Reduction and Eco-efficiency (TEREE) Steering Committee

PTAC Petroleum Technology Alliance Canada is an association that facilitates innovation, technology transfer and collaborative research and technology development in the conventional oil and gas industry. The PTAC's objective is to improve the Upstream Oil and Gas Industry's financial, environmental and safety performance through the application of new technology and research. Approximately 180 members and numerous government funders provide resources to enable PTAC to identify opportunities and provide co-ordination and pooling of resources for new technology and research of benefit to the Canadian upstream oil and gas industry.

The Project

PTAC launched the TERE project in 2003 to facilitate technologies that will reduce the industry's impact on the environment, while improving profitability and eco-efficiency.

Objectives

The objectives for this 3 year project are to facilitate:

- ⊆ recognition and understanding of key emission reduction issues.
- ⊆ identification and evaluation of existing eco-efficient technology and best practice solutions to address these key issues
- ⊆ development of new technologies and best practices that address identified gaps
- ⊆ transfer into practice new and existing technology and best practice based solutions, and
- ⊆ verification of actual emission reductions achieved

A background presentation for this project can be found at <http://www.ptac.org/about/dl/mandate03.pdf>

Definitions

Reduction, as defined for our purposes, includes decrease, recovery and re-use of emissions so that net emissions to the environment are reduced.

Best Practices include making use of the best available design and operating methods that consider health, safety, environment, economics, human behavior, and market, social and regulatory barriers.

Eco-efficiency is a robust concept encompassing two important ideas; to produce ever more useful goods and services (add value) while reducing materials and energy inputs and emissions. Eco-efficiency makes good business sense. It is a simple fact that if you make products with less energy, less materials and less pollution, you save money (source-CETAC West).

The World Business Council for Sustainable Development describes 7 elements of eco-efficiency and they are as follows:

1. Reduce material intensity of goods and services
2. Reduce energy intensity of goods and services
3. Reduce dispersion of any toxic materials
4. Enhance recyclability of materials
5. Maximize sustainable use of renewable resources
6. Extend durability of products
7. Increase service intensity of goods and services

Mandate of the Steering Committee

The TERE Steering Committee mandate is to provide strategic direction to PTAC on the purpose, objectives, priorities and overall operation of the TERE project.

In addition, Steering Committee members, and other representatives from Industry, government regulators and other organizations will identify areas of need for technologies and best practices in reducing emissions and improving eco-efficiency.

Under the guidance of the Steering Committee, and as funding permits, PTAC will facilitate the search for new or improved technologies and best practices, and will foster their development through pilot testing, if required

Under the guidance of the Steering Committee, PTAC will organize demonstration projects, working groups, Requests for Technology (RFT's), technology or innovation case studies, workshops, forums, conferences, and technology information sessions as required to deliver the results of development work to Industry.

Steering Committee Membership

The TERE Steering Committee will be co-chaired by industry and government. Membership is expected to include representatives from key stakeholders.

Sub-Committee Membership

Sub-committees or working groups will report directly to the TERE Steering Committee.*

TERE Steering Committee Participation includes:

Member	Affiliation	Co-ordinates
Richard Nelson	AERI	780-427-0286 Richard.Nelson@gov.ab.ca
Larry Charach	Alberta Energy	780-451-0623 larry.charach@gov.ab.ca
Shannon Flint <i>Gov't Co-Chair</i>	Alberta Environment	780-422-8463 shannon.flint@gov.ab.ca
Bryan Forsyth	BP Canada Energy Corp	403-233-1882 bryan.forsyth@bp.com
Craig Popoff	Burlington Resources	403-260-1139 cpopoff@br-inc.ca
Lynn Sveinson	Climate Change Central	403-517-2721 lsveinson@climatechangecentral.com
Roxanne Pettipas	ConocoPhillips	403-233-4221 roxanne.m.pettipas@conocophillips.com
Erdal Yildirim	CONRAD	403-210-5221 yildirim@telusplanet.net
Rudy Sundermann <i>Industry Co-Chair</i>	EnCana Corp.	403-645-3924 rudy.sundermann@encana.com
Bill Reynen	Environment Canada	819-997-1223 reynenb@ec.gc.ca
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* The PTAC Air Issues (Research) Technical Steering Committee has a research focus and should liaise with the TERE Steering Committee on research initiatives that have evolved to the technology implementation phase.