... expanding the mission
... facilitating the future
Mission
PTAC facilitates innovation, collaborative research and technology development, demonstration and deployment for a responsible Canadian hydrocarbon energy industry.

Technical Areas
Enhanced Environmental Management
- Emission Reduction / Eco-Efficiency
- Energy Efficiency
- Resource Access
- Air
- Ecological
- Soil and Groundwater
- Water

Improved Oil and Gas Recovery
- Conventional Oil and Gas Recovery
- CO₂ Enhanced Hydrocarbon Recovery
- Coalbed Methane/Unconventional Gas
- Oil Sands
- Heavy Oil
- Reservoir Engineering
- Geosciences

Cost Reductions/Operations
- Alternative Energy
- Production Engineering
- Facility Design
- Drilling and Well Completion
- Inactive Wells
- Instrumentation / Measurement
- E-Business
- Fundamental Research
- Health and Safety
- Innovation
- R&D Funding
- Security
- Telecommunications

Upgrading, Refining, Petrochemical Technologies, and Transportation
- Hydrocarbon Upgrading
- Refining
- Petrochemicals
- Hydrogen
- Gasification
- Pipelines
- Integration
- Transportation
**2007 Key Accomplishments**

Established a new vision: to help Canada become a global hydrocarbon energy technology leader. This vision is supported by a broadened mandate which now focuses not only on oil and gas in Western Canada, but the hydrocarbon industry throughout the nation.

- Enhanced member services by focusing on the four core technology areas:
  - Enhanced Environmental Management
  - Cost Reduction / Operations
  - Improved Oil and Gas Recovery (conventional and unconventional oil and natural gas, and bitumen)
  - Upgrading, Refining, Petrochemical Technologies, and Transportation

- Continued tradition of excellence in project management with the launch of twenty-two new projects or project phases

- Facilitated industry collaboration through eighteen technology information sessions (TIS), four forums, and seven workshops

**Message from the Board of Directors**

The hydrocarbon energy sector in Canada has experienced significant changes since PTAC was first established, and in 2007 our commitment to our members led us to examine our organization and the role we play in the industry. This exploration resulted in an updated vision for PTAC to help Canada become a global hydrocarbon energy technology leader. A broadened mandate, a refined technology focus, and a shift towards project management support this vision while building upon our strength in facilitating research and development (R&D) through industry collaboration.

The long-term health of the hydrocarbon energy sector in Canada depends upon the collective advancement of strategic research and innovation. Although Canada’s conventional reserves are declining, we have tremendous opportunities to arrest the decline and even increase our resources through exploitation of our unconventional resources. As we deplete our conventional deposits and run out of such low-hanging fruit, we shift to unconventional resources such as accessible and currently inaccessible oil sands, coalbed methane, tight gas, and shale gas. Accessing these unconventional resources requires the development of new technologies or the adaptation of current technologies from other jurisdictions or industries around the world. Canada has world class hydrocarbon resources four to seven times larger than the resources of Saudi Arabia, a country that has been used globally as a benchmark for hydrocarbon resources. Canada has 40% of global heavy oil and bitumen resources, 1500 trillion cubic feet (TCF) of tight gas, 500 TCF of shale gas, 500 TCF of coalbed methane and significant gas hydrates resources. However, where Saudi Arabia’s oil deposits can easily be exploited and developed, the development of most of Canada’s hydrocarbon deposits is extremely challenging and many of these deposits may not be exploited economically using the technologies currently available.

In the past, Canada has been a relatively small but significant player in conventional hydrocarbon R&D, although Canadian innovations have been applied around the world. Canada is a world leader in areas such as solution gas conservation, sour gas processing, new forms of artificial lift, conventional heavy oil, arctic exploration, and reducing flaring and venting.

In the future, increased funding of R&D will be required to develop technologies for Canada’s vast oil sands, heavy oil resources and unconventional gas. Without new technologies, the development of Canada’s challenging unconventional resources will require significantly more energy input and water consumption, and will result in increased land disturbances and greenhouse gas (GHG) emissions. The concern held by all stakeholders is that without new technologies we cannot develop Canada’s vast resources economically in a sustainable manner.

PTAC’s new expanded mandate is to facilitate innovation, collaborative research, and technology development, demonstration, and deployment for a responsible Canadian hydrocarbon energy industry. This broadened mission upholds our new vision, targeting the sustainable development of Canada’s world-class conventional and unconventional resources. Our new vision speaks clearly for our beliefs that both environmental footprint and costs can be minimized, recovery from our resources can be maximized, and value added opportunities can be created through innovation and implementation of existing and emerging technologies. PTAC believes that collaboration among industry, governments, research providers and Small/Medium Enterprises (SMEs) on the following core technology areas will help us achieve our vision:

- Enhanced Environmental Management
- Cost Reductions / Operations

---

**Gross Revenue from Projects and Services**

<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
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**Net Revenue Summary**

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- Improved Oil and Gas Recovery (conventional and unconventional oil and natural gas, and bitumen)
- Upgrading, Refining, Petrochemical Technologies, and Transportation

To enable us to provide the best services to our members, we have implemented a new approach to our daily operations: conducting more collaborative projects in the core technology areas, improving our methods of disseminating and transferring existing and emerging technologies, and reorganizing our forums, workshops, and conferences to ensure better alignment with industry needs. The success of this shift is illustrated by the fact that PTAC’s revenue from projects in 2007 increased by over two times compared to the 2006 project revenue. At the same time, TEREE (Technology for Emission Reduction and Eco-Efficiency) revenue increased by 86%.

PTAC launched four special projects during 2007, bringing together stakeholders from throughout industry to collaborate on addressing such diverse projects as Carbon Capture and Storage, Alternative Energy Solutions to Replace Natural Gas for Oil Sands Development, Helping SMEs to Transform Ideas into Technologies, and Novel Conventional Heavy Oil EOR and Direct Contact Steam Generation. In total, PTAC successfully facilitated nineteen new projects and three new project phases. Eleven of these projects were facilitated through the Environmental Research Advisory Council (ERAC), and five were facilitated under TEREE.

During the past year, PTAC facilitated the communication of new research and development activities and the sharing of ideas through eighteen focused Technology Information Sessions (TIS), four forums, and seven workshops drawing together government representatives, research providers, and industry leaders.

Keeping pace with shifts in industry and embracing the challenge of our new vision, PTAC has set a new course for the future. 2007 has proved to be a year of great change, while our respect for and appreciation of the many volunteers who so generously share their time and expertise remains a constant. We believe the future holds many exciting opportunities, and we look forward to meeting them together.

Soheil Asgarpour, Ph.D., P.Eng., President
Fred Hutchings, Chairperson
PTAC Projects Explore Solutions to Limit Emissions

At times it may seem an impossible match – how can an industry based upon the exploitation of fossil fuels find common ground with environmental protection? In 2007, PTAC initiated two projects to explore technology solutions to reduce greenhouse gas emissions while economically benefiting the Canadian hydrocarbon industry: a study of carbon capture and storage, and a study of alternative solutions to replace natural gas in oil sands development.

PTAC initiated collaboration among seventeen funding producers, transportation companies, and provincial governments to launch the PTAC Carbon Capture and Storage (CCS) project. The process of capturing CO$_2$, especially from industrial sources, and storing it for potential use in enhanced oil and gas recovery could substantially reduce Canada’s greenhouse gas emissions, but there remains much debate over economic feasibility. The PTAC CCS project provided a design and cost estimate for a common collection system gathering CO$_2$ from multiple sources in the Fort Saskatchewan area of Alberta, and transportation of that CO$_2$ through a common pipeline system. The project scope included the required pipeline infrastructure to aggregate CO$_2$ to a common location. Conducted by SNC-LAVALIN, the study evaluated at least three representative CO$_2$ sources in order to understand what is required to aggregate CO$_2$ of differing quality. Several companies provided CO$_2$ quantity and quality information in support of this study. The process design included CO$_2$ purification, dehydration and compression requirements. The project reviewed the merits of a common compression site to achieve the system pressure required for pipeline transport to major oil pools.

At the same time, a need was identified to explore options in replacing natural gas for oil sands development. To achieve this goal, PTAC facilitated a study aptly named “Alternative Solutions to Replace Natural Gas for Oil Sands Development” to evaluate the economics of using nuclear technology to produce CHP (Combined Heat and Power) and hydrogen as an alternative to natural gas. Conducted by SNC-Lavalin, the study included the evaluation of current nuclear power plants that could be available within a five to seven year period, as well as identifying “next generation” nuclear power plant designs that could be available by 2020. In addition, PTAC held a workshop in October to bring together industry stakeholders and experts to assess and review issues such as safety, security, licensing, existing regulatory framework, and construction challenges.

These two projects highlight how PTAC is successfully leveraging collaboration to examine and evaluate new technology solutions, helping the hydrocarbon industry discover new pathways to long-term sustainability.
New Initiative to Help SMEs Bring New Technology to Industry

It is an industry reality that size matters and small and medium companies sometimes struggle to successfully bring their ideas to market. In cooperation with National Research Council Canada Industrial Research Assistance Program (NRC-IRAP), PTAC has enhanced services to assist Canadian Small and Medium Enterprises (SMEs) entering the upstream, midstream, and downstream service and supply sectors.

The focus of the initiative, which began in October 2007, is on providing increased support to SMEs in transforming ideas, technologies and “know-how” into a product or service to benefit the industry. This is achieved by connecting SMEs with industry members, thus enabling industry to more easily learn about, access, and implement new technology.

PTAC offers assistance by providing SMEs with information on the technology needs of the oil and gas industry in Canada, developing roadmaps, hosting workshops on emerging and chronic industry problems, and helping to define what a “successful innovation” would look like for a given problem. By accessing these resources, SMEs gain candid insights into specific industry needs and can better gauge technology gaps and potential fit for existing technology.

PTAC-facilitated technology information sessions, forums, conferences, and Knowledge Centre services help to achieve technology transfer. The opening of these avenues for SMEs to reach industry members significantly reduces the time and financial burden associated with developing interest in a given technology. In addition, PTAC helps SMEs to formulate plans for engaging industry support and finding third-party funding for technology demonstration projects. Furthermore, PTAC offers third-party verification support through technical steering committees, helping SMEs to contract unbiased third parties to independently assess field demonstration projects.

To inform industry members and SMEs of this new initiative, PTAC held an information session in December 2007, where SMEs learned about the enhanced services PTAC is now offering. Web-pages specific to SMEs have been developed on the PTAC website at www.ptac.org/links/sme.html.

This initiative has enabled PTAC to provide significantly increased support to SMEs, helping them to meet the technology needs of industry.
Putting the New Plan Into Action

2008 is expected to be a year when PTAC members see the complete impact of the new mandate, vision, and operational approach.

In June 2008, PTAC will host *The Global Petroleum Conference: Today’s Conventional Opportunities, Tomorrow’s Unconventional Innovations*, ushering PTAC onto the multi-national stage as the Global Petroleum Show integrates a technical conference for the first time. This three-day conference will feature over 100 speakers comprised of top executives from producing and service companies, government ministers, international experts, and technology vendors. Presentations will focus on reducing overall costs and minimizing the environmental footprint using innovative technology solutions. A highlight of the event will be the plenary session panel discussion moderated by CBC Television News Chief Correspondent Peter Mansbridge, and featuring high-profile invited speakers including the Premier of Alberta.

Building upon the success of 2007 events, PTAC is planning to hold several additional conferences and workshops throughout the year. The *3rd Annual PTAC Spring Water Forum* will be held in May, and the *Towards Clean Energy Conference* is slated for the autumn agenda. These events are complemented by several environmental portfolio events held annually to communicate research progress and results.

Under the environmental portfolio, PTAC will expand facilitation of the CAPP/SEPAC Environmental Research Advisory Council (ERAC) with the addition of the caribou research program. This new research represents a significant funding increase to the existing program, and reinforces PTAC’s reputation as the vehicle of choice for industry research and development. Through this program, PTAC will facilitate eighteen environmental research projects valued at $1.5M.

While global warming and emission reduction strategies are expected to remain issues of significant public concern, PTAC is expected to witness a significant acceleration of the TEREE projects. These projects will include: the REMVue Slipstream Industry Impact study, the Waste Heat Recovery System from Compression Engines project, phase two of the Improving Immersion Heaters and Boilers study, phase one of the Flexxair Variable Pitch Fan Installation project, and phase two of the Hydrogen Fuel Injection in Diesel Engines project.

PTAC will assist with project management for the Alberta Saline Aquifer Project (ASAP), including preparation of funding development plans and funding applications, dissemination of information, and administrative services to launch the initiative. ASAP will identify and prioritize three or more suitable deep saline aquifer locations for a pilot program to demonstrate the feasibility of CO₂ sequestration. The project will involve industry participants, government agencies, academic organizations and consultants in an effort to design and demonstrate safe and reliable long-term sequestration utilizing 1,000 to 3,000 tonnes of CO₂ per day. The project will serve to clarify and establish a template for pore volume ownership and regulatory requirements of injecting CO₂ into a saline aquifer. A successful demonstration will enable saline aquifer sequestration to play a pivotal role in reducing CO₂ emissions in Alberta.

In addition, the CO₂ Enhanced Hydrocarbon Recovery Committee is evaluating the option of launching the second phase of the Carbon Capture Storage project and the Alternative Energy Solutions Committee is considering launching phase two of the Alternative Solutions to Replace Natural Gas for Oil Sands Development project.

An exciting opportunity is on the horizon for PTAC to work closely with the Alberta Department of Energy. PTAC and the Department are in discussions with regard to a substantial grant from the government’s Energy Innovation Fund. PTAC has proposed an impressive list of technology projects (for implementation in 2008 and beyond) that would be a significant contribution to the ongoing development of Alberta’s energy resources in an environmentally sustainable way.

As the many opportunities, projects, and events of 2008 come to fruition, the full impact of the new mandate, vision, and operational approach will be realized. PTAC anticipates a year marked by enhanced services for members and significant benefits for industry.
2007 Board of Directors

Fred Hutchings, Chair, PTAC  
Vice President and General Manager, Acquisitions  
ShawCor Ltd.

Lorraine Whale, Past Chair, PTAC  
Manager, In Situ Oil Sands Research, Shell Canada Energy, Calgary Research Centre

Sohel Asgarpour, President, PTAC  
Petroleum Technology Alliance Canada

Grant Arnold  
Suncor Energy Inc.

Graham Campbell (non-voting representative)  
Director, Office of Energy R&D, Natural Resources Canada

Doug Caul  
Assistant Deputy Minister, Oil and Gas Division, BC Ministry of Energy, Mines and Petroleum Resources

Dale Dusterhoft  
Vice President, Canadian HSE Registry  
Chief Executive Officer, National Research Council's Industrial Technology Advisor, Alberta/NWT, National Research Council's Industrial Research Assistance Program

Mike Ekelund  
Assistant Deputy Minister, Alberta Department of Energy

Cal Fairbanks  
Chief Executive Officer, Unconventional Gas Resources Canada

Thomas G. Harding  
Professor and Head of the Department of Chemical and Petroleum Engineering, University of Calgary

Eddy Isaacs  
Managing Director, AERI Alberta Energy Research Institute

Rich Kerr  
Chief Engineer, Nexen Inc.

Derek Normore  
Canada Geomarket Manager, Schlumberger Canada

Ernie Pappas  
Vice President, Energy, Saskatchewan Research Council

Susan Payne  
Manager, Technical Services, Engineering and Project Management, Husky Energy Inc.

Ian Potter  
Vice President Energy, Sustainable Energy, Alberta Research Council

Ken Putt  
Independent Director

Randy Rudolph  
Manager, Air Quality Services, Millennium EMS Solutions Ltd.

Dave Rushford  
Vice President, Calgary BU Upstream Operations Onshore, EnCana Corporation

Earle Shirley  
Executive Manager, Applications Branch, Energy Resources Conservation Board

Rolf Stokhuyzen  
Industrial Technology Advisor, Alberta/NWT, National Research Council's Industrial Research Assistance Program

Chuck Szmarla  
Vice-President, Enbridge Pipelines Inc.

Murray Todd  
President, Todd Resources

Randy Whitt  
Manager, Technology and Optimization, Oil Sands, ConocoPhillips Canada Limited

Committee Volunteers

As of March 31, 2008

Air Research Planning Committee
Michael D. Brown, Energy Resources Conservation Board  
Glynis Curting, Imperial Oil Resources Ltd.

Claude Chamberland, Shell Canada Limited  
Randy Dobko, Alberta Environment

Julia Fletcher, BP Canada Energy Company  
Wayne Hillier, Husky Energy Inc.

Rick Hendman, CAPP  
Michael Loye, Natural Resources Canada (NRCan)

Rowanne M. Pettipas, ConocoPhillips Canada Limited

Sustainable Energy Committee
Sean T. Reilly, Tallisman Energy Inc.

Petroleum Technology Alliance Canada

Ecological Research Planning Committee
Richard Dixon, Alberta Environment

Susan Eaton, SR ECO Consultants Inc.

Terry Forkenheim, Tallisman Energy Inc.

Nicole Hoakensen, Nexen Inc.

Scott Johnston, Husky Energy Inc.

Adam Judd, Nexen Inc.

Sandra Markkan, ConocoPhillips Canada Limited

Ted Nason, Sustainable Resources Development

Terry Oxlø, Alberta-Pacific Forest Industries, Inc. - Woodlands Division

Gary Sargent, CAPP

Anil Saxena, Devon Canada Corporation

Soil and Groundwater Research Committee
Paul Bocoum, Environment Canada

Shouanna Carthew, Energy Resources Conservation Board

Gordon Dinwoodie, Alberta Environment

Susan Halla, Energy Resources Conservation Board

Ted Johnson, Tallisman Energy Inc.

Steve Kullman, Husky Energy Inc.

Chris Meloche, Husky Energy Inc.

Mike Morden, Petro-Canada

Richard Scroggins, Environment Canada

Natalie Shea, Imperial Oil Resources Ltd (NRCan)

Shawn Willetts, ConocoPhillips Canada Limited

Michelle Young, Imperial Oil Resources Ltd.

Salinity Working Group
Baris J. Barksic, The City of Calgary

Lawrence R. Bentley, University of Calgary

Shouanna Carthew, Energy Resources Conservation Board

Gordon Dinwoodie, Alberta Environment

Mahsan Ghairi, University of Calgary

Susan Halla, Energy Resources Conservation Board

Ted Johnson, Tallisman Energy Inc.

Kathy Kox, Enerplus Resources Fund

Steve Kullman, Husky Energy Inc.

Stuart Lunn, Imperial Oil Resources Ltd.

David McCoy, Husky Energy Inc.

Chris Meloche, Husky Energy Inc.

Mike Morden, Petro-Canada

Michelle Young, Imperial Oil Resources Ltd.

Resource Access Technology Committee
John Begg, Sustainable Resources Development

Darrell Bohner, Little Guy Oilfield Rentals Inc.

Walter J. Caracci, Alberta Environment

Tyrone Colberg, Imperial Oil Resources Ltd.

Brian Coupl, Caribou Range Restoration

David DelGagne, Alberta Energy and Utilities Board

Bob Demulder, ConocoPhillips Canada Limited

Joe Dusseauh, EnCana Corporation

Brandy Foris, Petro-Canada

Andrew Hamilton, Nexen Inc.

Eddy Isaacs, AERI Alberta Energy Research Institute

James Kim, Duke Energy Gas Transmission

Cynthia Pye, BP Canada Energy Company

Doreen Rempel, Quicksilver Resources Canada Inc.
PTAC facilitates innovation, collaborative research and technology development, demonstration and deployment for a responsible Canadian hydrocarbon energy industry.

PTAC offers a variety of services to its members, and provides opportunities to benefit the Canadian hydrocarbon energy industry. For more information on the many benefits of PTAC membership please visit www.ptac.org.

... networking

Technology Information Sessions

In 2007, PTAC facilitated eighteen Technology Information Sessions (TIS) attended by over 700 participants. TISs are one of the most popular services PTAC offers to member companies, especially small and medium enterprises. Through the PTAC TIS, the member company is provided a forum to solicit interest, feedback, participation or potential funding for new research and development projects, to report on field test or pilot results, or to provide information on technology-related services. A networking lunch or breakfast enhances opportunities to connect with industry partners to conduct proposed research or technology development, such as field tests or projects, or to market new technology to the Canadian oil and gas industry. Those in attendance have the opportunity to learn about and connect with new projects and ideas through a targeted, facilitated presentation.

... facilitating

Projects

PTAC facilitated nineteen research and development projects and three new project phases during the course of 2007. PTAC provides industry with a neutral forum to work in collaboration, leveraging collective experience and expertise to identify opportunities, challenges, and potential solutions that require research or technology development. These discussions can lead to joint-industry projects where PTAC, as a neutral facilitator, assists with soliciting proposals and launching projects through a fair and balanced process. PTAC also identifies existing research and development to raise industry awareness and minimize duplication.

... work in collaboration, leveraging collective experience and expertise to identify opportunities, challenges, and potential solutions.

... connect with industry partners to conduct proposed research or technology development.

... gather with peers to share ideas, opinions, and learnings.

... engaging

Forums and Workshops

PTAC events provide industry members with an opportunity to gather with peers to share ideas, opinions, and learnings on a specific technical subject.

Over 340 participants attended the four PTAC forums held in 2007. PTAC forums are comprised of presentations detailing new technologies, case studies, and the objectives and results of current research, as well as providing opportunities for questions and answers. The goal of PTAC forums is to bring together the most up-to-date information from across the industry into an enriching learning experience.

The seven PTAC workshops held in 2007 attracting 395 participants. Workshops provide opportunities for participants to work collaboratively in focused groups to clearly define research and development issues, identify potential solutions, and select the best approach to move forward. Industry members are provided an opportunity to share their needs, and R&D providers are given an opportunity to hear about issues firsthand. Solutions are formed by leveraging the collective expertise and ideas of all participants. PTAC hosts the workshops and is pleased to provide the necessary facilitation, administrative support, and coordination to launch projects once identified.
**Annual Report 2007**

**Program Facilitation**

PTAC continues to facilitate the Environmental Research Advisory Council (ERAC) funding program on behalf of CAPP/SEPAC. ERAC projects are collaboratively funded and managed by PTAC with support and direction from technical steering committees. Eleven ERAC projects were approved for 2007 with a total value of $842,556. These projects provide science-based solutions to current and emerging environmental issues that are critical to the industry.

**Technical Steering Committees**

The membership of PTAC Technical Steering Committees (TSC) is comprised of volunteer PTAC members representing various industry sectors, governments, and non-governmental associations. These technical steering committees help to identify opportunities for collaborative research and technology development, raise awareness of existing research and technology through planning events, find solutions to challenges through the process of soliciting proposals and launching new projects, and promote involvement by informing appropriate colleagues of TSC activities.

**E-talk**

E-talk, the bi-weekly electronic newsletter, delivers all the latest information on upcoming events and opportunities.
Financials

Auditor’s Report
To the Members of PTAC Petroleum Technology Alliance Canada,

We have audited the statement of financial position of PTAC Petroleum Technology Alliance Canada as at December 31, 2007 and the statements of operations and changes in net assets, and cash flows for the year then ended. These financial statements are the responsibility of the organization’s management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In common with many not-for-profit organizations, the organization derives revenue from events and other sources, the completeness of which is not susceptible to satisfactory audit verification. Accordingly, our verification of these revenues was limited to the amounts recorded in the records of the organization and we were not able to determine whether any adjustments might be necessary to revenue, excess of revenue over expenditures, assets and surplus.

In our opinion, except for the effects of adjustments, if any, which might have been determined to be necessary had we been able to satisfy ourselves concerning the completeness of the revenue referred to in the preceding paragraph, these financial statements present fairly, in all material respects, the financial position of the organization as at December 31, 2007 and the results of its operations and its cash flow for the year then ended in accordance with Canadian generally accepted accounting principles.

Lo Porter Hetu
Certified General Accountants
Calgary, Alberta, Canada,
February 15, 2008
Statement of Financial Position  
As at December 31, 2007, with comparative figures for 2006.

**ASSETS 2007 2006**

**Current**
- Cash $4,952 $79,239
- Marketable securities 707,260 406,482
- Accounts receivable 896,968 470,212
- Prepaid expenses 74,830 68,738
- Inventory 6,324 –

Total Current $1,690,334 1,024,671

**Property and Equipment**
- Property and Equipment 74,341 93,921

Total Assets $1,764,675 $1,118,592

**LIABILITIES**

**Current**
- Accounts payable, accrued liabilities $615,092 $219,746
- Deferred revenue 434,938 405,648

Total Current $1,050,030 $625,394

**Net Assets**
- Invested in property and equipment $74,341 $93,921
- Unrestricted 640,304 399,277

Total Net Assets $714,645 $493,198

**Statement of Operations**  
Expenses and Surplus for the year ended December 31, 2007, with comparative figures for 2006.

**Revenues**
- Project and service revenue $1,680,498 $860,934
- Membership revenues 638,906 578,090
- Event revenues 300,699 245,373
- Canadian Association of Petroleum Producers (CAPP) 200,000 200,000
- Interest income 20,886 7,139

Total Revenues $2,840,989 $1,891,536

**Expenses**
- Salaries and benefits $1,128,563 $929,997
- Direct project and service costs 959,309 416,864
- Rent 206,115 130,627
- Direct event costs 155,145 128,847
- Marketing 34,549 46,459
- Professional fees and bookkeeping services 26,253 7,511
- Office and equipment leases 25,240 54,031
- Amortization 22,224 17,987
- Training 17,000 8,161
- Printing and publications 15,024 8,758
- Bad debts 10,177 8,453
- Computer and website 9,952 19,699
- Insurance 5,261 5,129
- Bank charges and credit card discounts 4,730 3,557

Total Expenses $2,619,542 $1,786,080

Excess of revenues over expenses related to operations $221,447 $105,456

**Project Values**

Since inception in 1996, PTAC has facilitated the launch of 232 projects or new project phases valued at $132.7 million. Of those, PTAC facilitated the launch of twenty-two new projects or project phases valued at over $4.9 million in 2007.

**Project Expenditure by Technical Area**
- Environment $91,630,619
- Heavy Oil $14,615,378
- Technology for Emission Reduction and Eco-efficiency $7,215,984
- Reservoir Recovery / Gas recovery $5,937,341
- Oil Sands $4,465,694
- Natural Gas Production, Processing and Transportation, Drilling $1,922,000
- Oil Production and Transportation $1,338,800
- Well Completion, Stimulation, and Workover $1,062,886
- e-Business $245,000
- Alternative Energy $844,000
- Coalbed Methane / Unconventional Gas $214,000
- Innovation $162,000
- Driving Safety $83,468

The complete audited financial statements of PTAC for the year ended December 31, 2007 are available from PTAC offices upon request.
Technical Steering Committees

In 2007, PTAC facilitated fifteen active Technical Steering Committees, and three Sub-committees:

- Enhanced Environmental Management
  - Air Issues Research Planning Committee
  - Ecological Research Planning Committee
  - Soil and Groundwater Research Committee
  - Salinity Working Group
  - Resource Access Technology Committee
  - Technology for Emission Reduction and Eco-efficiency (TEREE) Steering Committee
  - TEREE Project Evaluation Sub-committee
  - TEREE Marketing Sub-committee
  - Water Innovation Planning Committee

- Improved Oil and Gas Recovery
  - CO2 Enhanced Hydrocarbon Recovery Steering Committee
  - Increased Recovery Steering Committee
  - Unconventional Gas Technology Roadmap Technical Steering Committee
  - Viscous Oil Recovery Steering Committee

- Cost Reductions
  - Alternative Energy
  - Drilling Innovators Advisory Group
  - Driving Safety Working Group

- Upgrading, Refining, Petrochemical Technologies, and Transportation
  - Upgrading, Refining, Petro-Chemicals and Hydrogen Steering Committee
  - Heavy Oil Transportation Committee

- Projects or New Project Phases Launched in 2007

  PTAC facilitated nineteen research and development projects and three new project phases during the course of 2007.

- Alternative Energy
  - Alternative Solutions to Replace Natural Gas for Oil Sands Development

- Environment
  - Assessment of “Species at Risk” Setback Distances Relative to Oil and Gas Activity (New Phase)
  - Catalytic Combustion for the Elimination of Methane, BTEX and Other VOC
  - Chemical and Isotopic Characterization of Water and Dissolved Gases in Shallow Aquifers in the Vicinity of Coalbed Methane Operations in Alberta
  - Distinguishing Natural vs. Petroleum F3 Hydrocarbons in Oil Spill Impacted Muskeg Material
  - Feasibility Study of SAGD Produced Water Treatment Test Facilities
  - Guideline Derivation for Soil Salinity Below the Root Zone (Final Phase)
  - Gaseous Fuel Mixture Effects on Total Soot Yield from Flares
  - GHG Emissions and Reductions from Solution Gas Flares in Alberta
  - Identifying Key Native Species and Efficient Strategies for Revegetating Sensitive Landscapes: Oil Sand Areas, Saline Areas, Boreal Forest and Foothills Regions
  - Produced Water Management / Handling Scoping Document
  - Putting Grizzly Bear Research Results into Today’s Land Management and Planning in Northwestern Alberta: Developing Food Based Maps and Models for Land Use Planners in Alberta
  - Removing the Wellsite Footprint (New Phase)
  - Validation of Subsoil Hydrocarbon Criteria for Stratified Remediation at Upstream Oil and Gas Facilities in Alberta: Field Study

- Heavy Oil
  - Novel Conventional Heavy Oil EOR and Direct Contact Steam Generation Innovation

- Innovation
  - Technical Contact Support, Oil and Gas Needs Information, and Communications Support to Canadian SMEs (Small and Medium Enterprises)

- Reservoir Recovery
  - PTAC Carbon Capture and Storage Study

- Technology for Emission Reduction and Eco-Efficiency (TEREE)
  - Development of an Interactive Web-Based Nodal Analysis of the Upstream Oil and Gas Industry for the Purpose of Identifying and Tracking Verifiable Methane Emission Reduction Opportunities and Projects
  - Generation of Electric Power from Waste Heat in the Western Canadian Oil and Gas Industry
  - Hydrogen Fuel Injection Unit (HFI) and Fuel Efficiency Data Collection and Measurement
  - Ongoing Development of Internationally Transferable Facility Evaluation Protocols and Best Practices for Managing GHG and CAC Emissions at Oil and Gas Facilities
  - Preliminary Scope of Work for a Third Party Test of Venturi Orifice Technology vs. Conventional Steam Traps

- . . . collaborating to achieve innovative results . . .
Producers – 26
ARC Resources Ltd.
BP Canada Energy Company
Chevron Canada
ConocoPhillips Canada
Devon Canada Corporation
EnCana Corporation
EniNer Inc.
Husky Energy Inc.
IFP Technologies (Canada) Inc.
Imperial Oil Limited
Keroc Energy Ltd.
Laricina Energy Ltd.
QuickSilver Resources Canada Inc
Neen Inc.
Nord Hydro Canada Oil & Gas
Petrowest Management Limited
Penn West Petroleum Ltd.
Petro-Canada Resources
Pioneer Natural Resources Canada Inc.
Privest Energy Inc.
Shell Canada Resources Ltd.
Suncor Inc. – Resources Group
Talisman Energy Inc.
Total Exploration and Production Ltd.
Trident Exploration Corporation
Unconventional Gas Resources Canada
Transports / Midsream Processors – 6
ATCO Pipelines
Enbridge Inc.
Inter Pipeline Funds
Keyera Energy Ltd.
Pembina Pipelines
TransCanada Pipelines Ltd.
Venture Capital – 2
Octane Venture Partners
Purple Mountain Ventures
Research Providers – 8
Alberta Research Council
Alberta Sulphur Research Ltd.
Natural Resources Canada (CANKET)
NOVA Chemicals
Petroleum Technology Research Centre
Saskatchewan Research Council
Enbridge Inc.
University of Ottawa – Department of Chemical Engineering
Learning Institutions – 7
Mount Royal College,
Institute of Applied Research and Innovation
Southern Alberta Institute of Technology
University of Alberta
University of Calgary
University of Northern British Columbia
University of Regina, Faculty of Engineering
University of Saskatchewan
Government – 6
AERI Alberta Energy Research Institute (formerly Alberta Department of Energy)
Oil and Gas Research Agency – Calgary
CTSO/SRED Section
Government of Yukon –
Oil & Gas Management Branch
Investment and Industry Development Branch – Alberta Employment, Immigration Industry
Province of British Columbia
Saskatchewan Industry and Resources
Individuals – 9
Flink, Len
Hoofer, Dwayne
Kenny, James
Korchinski, Merl
Lloyd, Eric
Price, Greg
Putt, Ken
Todd, Murray
Weir, Robert

Service and Supply Companies – 155
3ESI
3M Canada – Oil and Gas Division
Abondonite Environ Services Corp.
Achternum Corporation
Advanced Geotechnologies Inc.
Advanced Measurement Inc. – Oil and Gas Division
AGAT Laboratories Ltd. – Hydrocarbon Division
Air Liquide Canada Inc.
Ajinomoto Petroleum Consultants
Alberta-Pacific Forest Industries Inc. – Woodlands Division
Alfa Laval
ALSER Environmental
AMEC Earth & Environmental Ltd.
Amtec Aeronautical Limited
APA Petroleum Engineering Inc.
Aqua Screen Corporation
Aqua-Pure Ventures
ARCADIS Canada
ARXA NetMedia Corporation
Bekaert CEB Technologies Canada Ltd.
BJ Services Company Canada
Blotron Media
Boneal Laser Inc.
Brine-Add Fluids Ltd.
C5 Oilfield Services
Camaror Canada Capital Inc.
Canada Tech Corp.
Canadian Fertilizers Limited
Canadian HSE Registry
Candiocal Water Systems
Century Oilfield Services
Clearstone Engineering Ltd.
Containman EnviroSystems Inc.
Cybera
D.E. Towner and Associates Inc.
Daily Oil Bulletin
DALRA Canada
DataDrif Communications
Decision Dynamics Technology, Ltd.
Delotte – Research and Development, Tax
EBA Engineering Consultants Ltd. – Research Department
EcoMax Energy Services
EcoRoads Ltd.
Emerson Process Management – Copeland Scroll
ENEFEN Energy Efficiency Engineering Inc.
Energy Navigator Inc.
Engineering Seismology Group Canada Inc.
Envisarsoft Products Inc.
Environox Inc.
Envirowtech Engineering
Epicer Alberta
Eric Consulting Services Ltd.
Ernst & Young Chartered Accountants LLP
Eptra Group Canada (formerly DNV Canada)
Extente Telematics Corp.
Falke Associates Inc.
Febus Gas Industries
Fiber Optic Systems Technology Inc.
First HHO Release Ltd. (Aquax-Synergy LLC)
Fleet Safety International Corp.
Flarex
Flir Systems, Inc.
Flowstar Technologies – a Division of Wescorp Energy
GosdenLee Ltd.
Gas Liquids Engineering Ltd.
G-Chem Environmental Ltd.
geoCOCIC Systems Ltd.
Global Syn Frac
GLR Solutions Ltd.
Golden Ecotech Solutions Ltd.
Growing Laffleur Henderson LLP
(Intellectual Property Development
Ground Effects Environmental
GulfCorp, Inc.
Hatch Energy
Hyperion Technologies Inc.
IHS
Innner Completion Systems – a Division of Innner Subsurface Technologies
Innovative Chemical Technologies Canada Ltd.
Intellitec Systems Technology Inc.
Intermet Technologies Canada – Western Division
Kaiser Environmental Services Inc.
Katch Kon Limited
KPMG High Technology Practice Group
Little Guy Oilfield Rantas Inc.
LoudFunk
Lorkar Services Ltd. – Technology Department
LiSi Photonics Inc.
Macleod Dixon (Technology Enterprise Group)
MacNorton Ltd. – Enerflex
Maple Leaf Environmental Equipment Ltd.
Matrix Solutions Inc.
MIR Resources Inc.
Meridian Environmental Inc.
Millennium EMS Solutions Ltd.
MRCan Services Ltd.
Mystic Wellcare
National Silicates – Drilling Fluids Group
Neill and Gunter
New Paradigm Engineering Ltd.
Newalta – Environmental and Technology Group
Noetic Engineering Inc.
Norwest Corporation (Canada)
Oasis Emission Consultants Inc.
Oilflow Solutions Inc.
ORMAT Technologies – North America Waste Heat Recovery Group
Outland Technologies Inc.
PK. Services International
Panasonic Toughbook
Pandell Technology Corporation
Pason Systems Inc.
Petro-Canada Resources
PetroJet
Physics Control Inc.
Plains Midstream Canada
Portlle Associates Inc.
Praxair Canada Inc.
PressSol Ltd.
PricewaterhouseCoopers LLP Technology (TICE) Practice
Primrose Drilling Ventures Ltd.
Process Ecology Inc.
ProTechs
Q’Max Solutions Inc.
Quadrise Canada Fuel System Inc.
Reaper Pump Inc.
REM Institute Inc.
Remediation Consulting Group Inc.
Rigstor Communications Inc.
RWDI Air Inc.
Schlumberger of Canada
Scientific Drilling International (Canada) Inc.
ShowCer Ltd.
Sky Hunter Exploration Ltd
SNC Lavalin Mountain Environmental
Spruce Associates Ltd.
Stanec Consulting Ltd.
T.L. Watson & Associates Inc.
Tansley Associates Environmental Sciences
TELLUS Business Solutions, Energy Vertical
The Moorhead Group LLC
Total Combustion Inc.
Trican Well Service Ltd.
Triple D Technologies Inc.
Tundra Controls Ltd.
UNICO Inc.
UTI Limited Partnership
VECCO Canada Ltd. – Alliance Group
Wellburn Consulting
Western Corrosion Technologies Inc.
WorleyParsons Kromex

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