

Inventory of Pollution Prevention and Continuous Improvement Public Education and Outreach Programs Available in Alberta

Prepared for

The Pollution Prevention/Continuous Improvement
Project Team of the Clean Air Strategic Alliance

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About the Clean Air Strategic Alliance

The Clean Air Strategic Alliance is a stakeholder partnership that has been given shared responsibility by its members, including the Government of Alberta, for strategic planning, organizing and coordinating resources, and evaluation of air quality in Alberta through a collaborative process. CASA's vision is that the air will be odourless, tasteless, look clear and have no measurable short- or long-term adverse effects on people, animals or the environment.

Pollution prevention and continuous improvement (P2/CI) were identified as one of CASA's four key focus areas in its Strategic Planning Framework. The P2/CI Project Team was formed to advance the two goals for this key focus area, namely:

- A working environment in which pollution prevention /continuous improvement (P2/CI) is used to protect air quality, and
- The public contributes to pollution prevention by making clean air friendly choices.

This inventory was compiled by Kim Sanderson to assist the Project Team with the education and outreach component of its work.

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Introduction

This inventory was compiled in early 2002 to assist the Pollution Prevention/Continuous Improvement (P2/CI) Project Team of the Clean Air Strategic Alliance in identifying gaps in public education and outreach on the P2/CI topic. The team suggested the following criteria for use in developing the inventory:

- The program or resource should focus on pollution prevention or continuous improvement related to air pollution, which includes reducing greenhouse gas emissions.
- The program or resource should have at least one of the following as the primary audience:
 - the general public,
 - students in the formal education system, or
 - members of industry associations
- The program or resource should be available in Alberta.

If effective programs were found in other jurisdictions and their resources or approach could be used or adapted, they could be included as a possible model.

Most agencies and organizations do not explicitly use the term “pollution prevention” to describe the purpose of their resources and programs, and almost none presented their material in the context of “continuous improvement.” However, after looking at a range of available materials and speaking with representatives of numerous groups, it is clear that many of these resources and programs would be expected to have the effect of directly or indirectly reducing and preventing pollution.

The pollution prevention angle in a number of the programs comes through reducing greenhouse gas emissions; reducing solid waste is another key component for several programs.

Each organization was asked for other sources of materials that they viewed as reputable. Every suggestion was pursued and most, but not all, were included in the inventory. Most of the programs and resources in the inventory were developed in or are available in Alberta, the two exceptions being Pollution Probe and the Toronto Environmental Alliance. Both organizations have effectively undertaken public education and outreach in Ontario and they are included in the inventory as examples.

The matrix on the next page summarizes the target audience for each program and the delivery mode, as well as indicating if the P2/CI focus is direct or indirect.

Agency/Organization	Direct or indirect P2/CI focus	Target Audience			Availability or Delivery Mode			
		Formal Education	General Public	Industry	Print	Web	Phone line	Workshop/ Training/ Event
Alberta Environment, Public Education and Outreach Branch	indirect	X	X		X			X
Canadian Ass'n. of Petroleum Producers	direct, limited			X	X			
Canadian Centre for Pollution Prevention	direct		X	X	X	X	X	X
Canadian Chemical Producers' Assn	direct, limited			X	X	X		
Canadian Eco-Industrial Network	indirect			X	X			X
Destination Conservation	direct	X			X	X		X
Dow Chemical Canada	indirect							
Environment Canada—EcoAction	indirect, \$		X		X	X		
Environment Canada—National Office of Pollution Prevention and CPPIC	direct		X	X	X	X		
Environmental Choice Program	indirect		X		X	X		
EPCOR – Action By Canadians	direct		X		X			X
Federation of Canadian Municipalities	direct		X		X	X		X
FEESA, An Environmental Education Society	indirect	X	X		X			
Green Communities Edmonton	direct		X					X
Health Canada	indirect		X					
Natural Resources Canada, Renewable and Electrical Energy Division	direct		X		X			
Northeast Capital Industrial Ass'n.	indirect			X				
Office of Energy Efficiency	direct		X	X	X	X		X
Pembina Institute	direct & indirect	X	X	X	X	X		X
Petroleum Communication Foundation	indirect	X		X	X			
Petroleum Technology Alliance Canada	indirect			X				X
Pollution Probe	direct		X					X
Recycling Council of Alberta	direct		X	X	X			X
SEEDS Foundation	indirect	X			X			
Toronto Environmental Alliance	direct		X		X			X
U.S. EPA, Office of P2 and Toxics	direct & indirect	X	X	X	X	X		
Utilities	direct	X	X		X	X		X

Alberta Environment, Public Education and Outreach Branch

Alberta Environment's Public Education and Outreach Branch has a long history of producing high quality resources for use in Alberta schools. Although the Alberta curriculum does not contain a specific pollution prevention component, there are many opportunities to inject a pollution prevention message. The Branch has developed a variety of resources, suitable for use by teachers within the existing curriculum, which could be delivered with a pollution prevention theme. These include posters, fact sheets, articles, teacher guides, lessons, and kits; many are designed for general classroom use but some were developed for specific grades. The State of the Environment series is also a valuable tool for raising awareness in schools and among the general public about many environmental issues, including pollution prevention.

Most of the public outreach through Alberta Environment occurs in relation to special weeks: Environment Week, Wildlife Week, Forests Week and Energy Awareness Week. During these times, the department takes a lead role in organizing community events, displays, presentations and, in some cases, special events such as the commuter challenge during Energy Awareness Week. Raising awareness of pollution prevention is an important component of these activities.

The department will soon be developing new targets as part of a solid waste reduction strategy, and one of the key audiences will be small and medium sized businesses. Additionally, the new department business plan will place increased emphasis on education with the goal of reducing reliance on enforcement to protect the environment. Alberta Environment continues to work with agencies such as the Tire Recycling Management Board, the Alberta Used Oil Recycling Management Program, and the Beverage Container Management Board, encouraging them to undertake campaigns to raise public awareness.

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Awards

Awards are a good way to recognize successful pollution prevention/continuous improvement projects.

The Canadian Council of Ministers of the Environment Pollution Prevention Awards

In 1997, the Canadian Council of Ministers of the Environment (CCME) launched a five-year Pollution Prevention Awards and Recognition Program. The awards program recognizes companies and organizations showing leadership in pollution prevention. Each year a panel of industry, non-government and government representatives selects award winners in three main categories: Overall P2 Efforts (in small-, medium- and large-business categories and in the category of institution, organization or group), Pollution Prevention Innovations, and Pollution Prevention – Greenhouse Gases. All nominations are evaluated against the CCME definition of pollution prevention: “The use of processes, practices, materials, products or energy that avoid or minimize the creation of pollutants and waste, at the source.” Previous award winners are noted on the CCME website. The awards are announced in the spring.

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The Alberta Emerald Foundation for Environmental Excellence

The Alberta Emerald Foundation for Environmental Excellence was founded in 1991 to recognize Albertans’ outstanding initiative and leadership. Emerald awards are given annually in a number of different categories, to recognize achievement by community groups, individuals, businesses, researchers, governments and corporations. Applications are judged on the basis of (1) commitment to preservation, protection, enhancement, or sustainability of the environment; and (2) positive, tangible and long-term impact on quality of air, water, or land; preservation of biological diversity; and public or corporate attitudes toward the environment. A climate change award was added in 2002 with its own particular criteria. The annual deadline for receiving nominations is February 28th; winners are announced in June and previous winners are noted on the Foundation’s website.

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GLOBE Awards for Environmental Excellence

The first year for the Globe Awards for Environmental Excellence was 2002. Awards are given for Corporate Competitiveness, Technology Innovation and Application, Environmental Performance, and Export Performance. The awards are announced at the Globe Conference in Vancouver.

website: www.globe2002.com.awards.htm

Canadian Association of Petroleum Producers

Much of the work of the Canadian Association of Petroleum Producers (CAPP) focuses on advocating on behalf of the upstream petroleum industry. CAPP has prepared some documents with a pollution prevention education component, including *Best Management Practices for the Control of Benzene Emissions from Glycol Dehydrators* (published in 1997 and reviewed in 2000), and a manual entitled *Environmental Operating Practices for the Upstream Petroleum Industry – Alberta Operations* (1999). CAPP has also prepared some materials for the public describing emissions reductions undertaken by the industry, but these are generally done for the purposes of communications or advertising.

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Canadian Centre for Pollution Prevention

The Canadian Centre for Pollution Prevention (C2P2) has operated as a pollution prevention information centre since 1992. C2P2 has evolved from a fully-funded organization to an information centre supported with broad-based revenues including sponsorship, membership and fee for service contracts. C2P2's education and outreach services include online resources, newsletters and an information service, delivered through a contract with Environment Canada - Ontario Region, which terminates in 2003.

- **Online resources.** Online links give access to the best pollution prevention and environmental information on the Internet, including sector-specific information and tools.
- **Newsletters.** *At the Source*, an electronic newsletter produced three times a year, goes to some 3,600 people. It highlights pollution prevention efforts and contains up-to-date information on activities across Canada. *What's New in P2* is published monthly and contains national and international pollution prevention news, as well as information on recent publications, new websites, conferences, and other items.
- **Information Enquiry.** C2P2 staff respond to enquiries that come in through the toll-free line and email on a wide range of pollution prevention topics and issues. In the 2000-2001 fiscal year, about seven percent of C2P2's 1,500 inquiries came from the prairie provinces and the northwest territories (Environment Canada's Prairie and Northern Region).

C2P2 offers a range of services to clients, including training and communications support. C2P2 has extensive experience developing training sessions and workshops designed to increase pollution prevention knowledge and develop skills. Each training session demonstrates how to introduce pollution prevention concepts within organizations. The C2P2 training service includes session design, delivery and development of workbooks. Some sessions are more general, while others have been developed for specific sectors. Current training coordination and delivery components include:

- Pollution Prevention Planning
- P2 for Enforcement Staff
- P2 Practitioners Course and Certificate
- P2 Awareness Training
- Certification Training
- Health Care Training
- Materials Accounting Workshop
- Total Cost Assessment
- Dry Cleaning

C2P2 offers support to clients through P2 planning, strategy development and practical support tools that show clients how to link pollution prevention and strategic business objectives. For example, support tools include guidance documents, fact sheets and other materials for businesses and pollution prevention professionals. C2P2 has extensive experience in the promotion of pollution prevention to a broad range of audiences and can assist clients with website development, facilitation and setting up information exchange networks. Various publications are also available, many of which are offered at no cost.

The organization is getting involved with sustainable consumption, which has many links with the way products are manufactured and the choices consumers make.

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Canadian Chemical Producers' Association

The Canadian Chemical Producers' Association (CCPA) represents 73 chemical manufacturing industries with over 200 plants in British Columbia, Alberta, Ontario and Quebec, which collectively produce more than 90 percent of all chemicals in Canada. The CCPA is not directly involved in the delivery of education, outreach or training programs in the area of pollution prevention, although the B.C. region did participate in a government pilot project on pollution prevention a few years ago.

However, CCPA was active in launching the ARET program to accelerate the reduction and elimination of toxic materials and is the driving force behind the Responsible Care® initiative, a global effort aimed at addressing public concerns about the manufacture, distribution, use and disposal of chemicals. Responsible Care® was established in 1985 following the chemical spill in Bhopal, India in December 1984. Since its inception, Responsible Care® has guided the chemical industry in Canada and around the world. A commitment to “continuous improvement” is part of the Responsible Care® ethic. CCPA seeks to engage stakeholders in dialogue through publication of various annual reports that describe the environmental performance of CCPA members.

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Canadian Eco-Industrial Network

The Canadian Eco-Industrial Network (CEIN) increases the profile of the eco-industrial concept and helps identify new opportunities for project partnerships and business development. Eco-industrial networking is part of a broader trend to a systems-based approach to improving environmental management and competitiveness. Specific environmental benefits of the eco-industrial approach include reduced greenhouse gas emissions, reduced air emissions and improved community health, promotion of pollution prevention and the 4 Rs (Reduce, Reuse, Recycle, Recover), improved resource conservation, promotion of green technology development, increased environmental awareness, and regeneration of green space.

Eco-industrial networking opportunities include projects that would reduce pollution, although the focus to date for the CEIN has been more on water than air. Common project opportunities include

- Waste Heat Recovery
- Cogeneration
- By-product Exchange
- Shared Emergency Response Capacity and Training
- Green Building Development
- District Heating and Cooling

The CEIN works cooperatively with the public and private sectors and with its members to help them identify opportunities and manage resources more efficiently. The CEIN does undertake some training as appropriate. Two examples of case studies are the Bruce Energy Centre in Tiverton, Ontario and Burnside Industrial Park in Halifax, Nova Scotia.

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Destination Conservation

Destination Conservation (DC) is a practical, student-driven, activity-based program designed to:

- help school districts reduce energy use, conserve water and minimize waste production through technical and lifestyle practices;
- create opportunities to identify, implement and monitor conservation activities within schools; and
- increase participants' awareness of the environmental impact of their daily activities.

DC works with a team of students, teachers, custodians, principals and parents in each school in a program that lasts for three or more years. DC consultants train teachers and students in the program, using regular in-services and a variety of high quality support materials. The program provides educational resources and ongoing support to schools and, although students are at the centre of the program, DC activities often involve members of the broader community in achieving the goals. Teachers have access to manuals with information on curriculum fits, resources, and activities to complement and enhance the program, as well as information on technical audits and lifestyle campaigns to promote energy efficiency, water conservation and waste reduction. The DC website provides additional support and opportunities for online interactivity. The program is being used in 730 schools across Canada, including 171 in Alberta. The entire DC website is being redesigned to include many new features and sections that will appeal to a wide range of students as well as their teachers and parents.

The Climate Change Challenge (CCC) is an exciting new activity designed to introduce students and teachers to the issue of climate change and to solicit their actions to help reduce greenhouse gas emissions. It includes guides for students and teachers, resources, news and other features. The CCC is available online at www.co2challenge.com.

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Dow Chemical Canada

Dow Chemical in Fort Saskatchewan has maintained a Community Advisory Panel for the last ten years as part of Dow's commitment to Responsible Care®. This 13-member panel meets every other month and has developed a good general understanding of Dow's local operations. It provides feedback to the company on potential messaging and information that is intended to go out to the community, and provides valuable insight to Dow with respect to public opinion.

Dow undertakes and participates in various educational initiatives in the community to foster interest in science among students in the school system. Dow spearheaded development of the successful Partners for Science hands-on science program, which has been active in the Elk Island School District for the past 10 years, targeting students from grades 1-6. Dow recently provided funding to expand this program to include grades 7-9.

Dow is also a member of the Northeast Capital Industrial Association (NCIA) as well as the Fort Air Partnership, providing leadership support at the board level and involvement in local and regional workshops and conferences as appropriate.

Dow does not provide any formal programs or outreach initiatives specifically targeted towards pollution prevention.

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Environment Canada—EcoAction

The EcoAction Community Funding Program is an Environment Canada program that provides financial support to community groups for projects that have measurable, positive impacts on the environment. Non-profit groups and organizations are eligible to apply. This includes, but is not limited to: community groups, environmental groups, aboriginal groups and First Nations councils, service clubs, associations and youth and seniors' organizations. EcoAction encourages projects that protect, rehabilitate or enhance the natural environment, and build the capacity of communities to sustain these activities into the future. Projects require matching funds or in-kind support from other sponsors. Priority for funding is given to projects that will achieve results in the following areas: Clean Air and Climate Change, Clean Water, and Nature. Environment Canada also has a Green Source Guide that lists other funding sources for environmental projects.

Environment Canada partners with Health Canada to jointly manage and fund the Community Animation Program (CAP) in Alberta. Local community groups then implement CAP projects. Many of these projects contain a pollution prevention component and focus on sustainability issues. Health Canada and Environment Canada sponsor a conference every one to two years that brings those working on CAP projects together and builds capacity. The Clean Air Forum held in the fall of 2001 was one example of such a conference.

The EcoAction Program itself does not undertake pollution prevention education and outreach, but it supports projects that do. Two projects in Manitoba exemplify this approach. In June 1996, the Alliance of Manufacturers and Exporters Canada (Manitoba Division) and Manitoba Environment signed a Memorandum of Understanding (MOU) to promote awareness of the benefits of applying pollution prevention and to identify the elements of a model pollution prevention program. In 1997, the Manitoba Heavy Construction Association, working with other partners, initiated a two-part program demonstrating sustainable environmental practices within the heavy construction industry. The Environmental Practices Accreditation Program (EPAP) is aimed at introducing responsible environmental awareness and practices, environmental management systems, appropriate training and ultimately individual/corporate environmental business accreditation. The Environmental Business Opportunities portion complements EPAP by recognizing that new business opportunities arise from greater awareness and respect for the environment and the principles of sustainable development.

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Environment Canada—National Office of Pollution Prevention

The mission of the National Office of Pollution Prevention (NOPP) is to promote, through regulatory and voluntary initiatives, the shift to a preventive approach to environmental protection throughout Canadian society, and to influence this shift internationally; and to contribute science, knowledge, leadership and innovation to the prevention and resolution of pollution problems. The National Office of Pollution Prevention is responsible for the administration of various regulations under the *Canadian Environmental Protection Act (CEPA)* and the *Fisheries Act*.

A great deal of information pertaining to pollution prevention planning can be found on the NOPP website. Education and outreach resources include a range of materials, many of which are specific to the CEPA legislation, including a pollution prevention planning handbook for organizations that are required to prepare a pollution prevention plan under CEPA. Other publications include status reports, guidance documents and environmental codes of practices for specific industries and facilities, which are accessible online at www.ec.gc.ca/nopp/english/products.cfm. Not yet on the main website is an online tutorial, which is an interactive version of the planning handbook. A new series of fact sheets is available in hard copy and will be put online shortly.

The broader public outreach work can be found on the website of the Canadian Pollution Prevention Information Clearinghouse (CPPIC) at www.ec.gc.ca/cppic/. The CPPIC itself is a database providing Canadians with the information they need to practice pollution prevention. More than 1,200 references ranging from fact sheets to case studies can be searched online and the site also provides links to many other references. This website features special sections that focus on youth and community/individual activities and information. The “Youth” pages include tips on what kids can do to prevent pollution, games, an activity book and a P2 Challenge, as well as an opportunity for young people to submit stories and artwork about their projects. These materials can be used to supplement curriculum as appropriate. The “Community” pages provide tips and advice on saving energy, designing eco-efficient homes, buying energy efficient appliances, and buying green products, as well as information on identifying toxic substances and pesticides in the home and finding alternative solutions. The CPPIC site also includes a section on success stories.

As part of the federal government’s effort to complement existing environmental programs with new approaches that encourage leadership and provide opportunities to address environmental issues in ways that foster innovation, the National Office of Pollution Prevention is implementing some voluntary, non-regulatory programs and initiatives. These include the implementation of the Policy Framework for Environmental Performance Agreements and the Accelerated Reduction and Elimination of Toxics (ARET) program. An Environmental Performance Agreement (EPA) is an agreement with core design criteria negotiated among parties to achieve specified environmental results. An EPA can be negotiated with a single company, several companies, regional industry associations, a sector association or a number of sector associations. Other government agencies (federal, provincial, territorial or municipal) and third parties (non-government organizations) may also be parties to such agreements. More details on EPAs can be obtained from the website at <http://www.ec.gc.ca/epa-epe/pol>. The ARET program challenges firms to voluntarily prevent pollution from toxic substances and other pollutants. The program publicly recognizes companies or facilities that participate in this non-prescriptive pollution prevention initiative. The original ARET program ended in 2000 and Environment Canada is now developing a successor program.

The generation of wastes and the management of their disposal continue to be concerns in Canada. One of the key approaches being evaluated, developed and implemented in the interest of supporting sustainable development objectives is that of Extended Producer Responsibility (EPR) and

stewardship. “EPR extends the traditional environmental responsibilities that producers and distributors have previously been assigned (i.e., worker safety, prevention and treatment of environmental releases from production, financial and legal responsibility for the sound management of production wastes) to include management at the post-consumer stage.”¹ An inventory of waste diversion programs currently underway in Canada is located on the Extended Producer Responsibility and Stewardship website at <http://www.ec.gc.ca/epr>. This inventory identifies and describes existing waste diversion post-consumption management programs for post-consumer packaging and products in Canada. The database provides information on the principal characteristics of each stewardship program, including background information on the nature of the product or packaging material, its markets, and the history of each initiative. This design will allow users to compare programs across jurisdictions and sectors.

Requests made for presentations on Environment Canada programs, policies and initiatives will be considered by the appropriate office(s).

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¹ Organisation for Economic and Cooperative Development. Working Party on Pollution Prevention and Control. *Extended Producer Responsibility: A Guidance Manual for Governments*. October 2000.

Environmental Choice Program

The Environmental Choice Program is Canada's only national and comprehensive ecolabelling program. The program is designed to encourage the supply of products and services that are more environmentally responsible, and to help consumers and organizations select "green" options in their purchasing decisions. The program does not itself prevent pollution, but by using the knowledge and information the program makes available, consumers can pressure the marketplace into providing products and services that are more environmentally friendly.

Products and services certified by the Environmental Choice Program are proven to have less of an impact on the environment because of how they are manufactured, consumed or disposed of. Certification of products and services is based on compliance with stringent environmental criteria that are established in consultation with industry, environmental groups, and independent experts and are based on research into the life-cycle impacts of a product or service. The Program's official symbol of certification—the EcoLogo—is a registered mark of Environment Canada. It may only be used in association with products and services that are certified by Environmental Choice.

One component of the program is the Green Leaf™ Eco-Rating Program. This is a graduated rating system designed to identify hotels committed to improving their bottom line fiscal and environmental performance. It was established to recognize environmental achievements through a reward of 1 to 5 Green Leafs—1 for a minimum of committing to a set of environmental principles and 2 through 5 for results in applying those principles.

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EPCOR – Action By Canadians

EPCOR is a sponsor of the Action By Canadians (ABC) program, developed by the Energy Council of Canada. Workshops are a main focus of the program in which participants learn about climate change and the things they can do to protect the climate. EPCOR first delivered the program internally to employees then began taking ABC out to the community, working with various partners such as community leagues, associations, and other groups. The program was launched in 2001.

The 1-1/2 hour workshops are delivered by trained EPCOR staff, and focus on developing an understanding of climate change, the relationship between energy use and greenhouse gas emission, and the actions individuals can take to reduce their own greenhouse gas emissions. The sessions are interactive and one of the key aspects is the opportunity for participants to pledge actions that will reduce emissions. They get a “shopping list” of potential actions, which shows the cost (on a national scale), ease of implementation, and other factors that could influence the things they choose to undertake. Actions can include things like installing compact fluorescent light bulbs or low flow showerheads, turning down the hot water heater, purchasing an energy efficient appliance or switching to public transit. The national ABC program contacts participants two or three times in the first year after the workshop and annually after that to collect data on how they’ve acted on their pledge and to add up the impact of the actions. Community groups or even towns can challenge each other to reduce greenhouse gas emissions.

As an electricity retailer to both residential and business customers, EPCOR also offers a Green Power option, tips for reducing electricity consumption, online energy consumption calculators and information about energy consumption of specific appliances and other equipment. Many of these materials are also available in printed format. In addition, EPCOR provides detailed tools that enable homeowners and businesses to conduct energy and water audits and receive feedback and recommendations to improve efficiency.

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Federation of Canadian Municipalities

The Federation of Canadian Municipalities (FCM) has a Sustainable Communities and Environmental Policy Department. This Department administers the Green Municipal Funds as well as the Partners for Climate Protection Program, which has a pollution prevention outreach and education component. As part of its sustainable communities work, FCM offers, via its website, tools for assessing sustainability, profiles of Canadian community sustainability initiatives (including case studies on air quality, transportation, and energy), funding and knowledge-sharing opportunities, and Canadian awards for community sustainability best practice. FCM has been involved in developing a National Strategy for Responsible Pest Management, and Municipal Options for Sustainability through Waste Minimization.

Partners for Climate Protection (PCP) is a national program that helps Canadian municipalities prepare and implement local climate action plans to reduce greenhouse gas emissions as well as other air pollutants. Ninety-two municipalities presently belong to PCP including nine in Alberta. PCP provides a range of services, tools and resources to its members, including training and workshops, research, networking, software, model documents, case studies, and other information.

Regional workshops bring together PCP representatives, staff from PCP member municipalities and federal and provincial partners; the agenda is tailored to meet participants' needs.

With support from Health Canada, FCM selected and funded nine active transportation projects in seven communities. These projects encourage walking and cycling – alternatives to the car that promote personal health and reduce air pollution.

Detailed, user-friendly inventory and projection software is available free to PCP members to calculate their greenhouse gas emissions and then to plan and monitor reductions. Training and support are also free.

Municipal governments can divert and reduce a significant proportion of their waste by adopting green purchasing policies and practices. By purchasing environmentally sound goods and services, including everything from cleaning products to construction and demolition materials, municipalities are able to minimize waste generation in municipal operations and some of these products will reduce air pollution. FCM assists municipalities to develop and implement a green procurement policy.

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FEESA, An Environmental Education Society

FEESA is a private, non-profit education organization established in 1985 to promote, coordinate and support bias-balanced environmental education across Alberta. Often in collaboration with partners, FEESA has developed a range of classroom resources, with a particularly strong emphasis on forestry. They also have staff who will make classroom presentations on topics such as energy. FEESA offers professional development opportunities for teachers including field trips, eco-tours, and summer institutes.

The Sustainable Communities Initiative is the only FEESA program that broadly relates to public outreach and education to prevent air pollution. The Sustainable Communities Initiative (SCI) is an Alberta-wide program that brings together citizens interested in improving the health of their community. It connects different sectors of the community so that goals of sustainable development, which may include pollution prevention, can be met through projects of interest to that community. Alberta Environment is the major sponsor for the SCI, and local sponsors support the program in each community. FEESA acts as the program manager and facilitator. Five Alberta communities presently belong to the SCI.

FEESA has prepared a range of teacher resources on climate change for elementary, junior and senior high grades. These materials are designed to fit into the curriculum and include poster kits, teachers' guides, student booklets, and various activity books. FEESA also provides climate change professional development for teachers.

FEESA is launching a more extensive climate change program in 2002, targeted at the formal education sector and youth. Pollution prevention is expected to be a key focus area for FEESA in 2002.

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Green Communities Edmonton

The Green Communities Edmonton Association belongs to a network of 35 Green Communities organizations in Canada. The primary focus of Green Communities Edmonton is the Green Home Visit (GHV), which helps homeowners reduce their environmental impact by lowering energy and water consumption and reducing the solid and toxic waste they generate. Each visit takes two hours, during which a qualified advisor assesses a wide range of factors that affect home energy efficiency, including insulation, weather sealing, hot water heating, windows, doors, furnace, lighting, appliances and other components. The advisor also assesses water efficiency and solid and toxic waste reduction opportunities. Transportation is reviewed by discussing private vehicle usage and alternatives. The advisor then provides customized recommendations, reference materials and other sources that the homeowner can use to implement the recommendations. Green Communities have provided nearly 100,000 GHVs across Canada, with a 75-percent uptake of recommendations. GHVs have been offered in Edmonton since 1998.

Green Communities Edmonton also delivers Natural Resources Canada's Energuide for Houses (EGH). EGH involves testing for air leakage and using computer-generated reports to rate houses on their energy efficiency. The EGH program is more exacting than the GHV, using specially designed equipment. Data are collected and broken down in specific categories including energy use (space, hot water, electrical and appliances) and percentage of heat lost through various home components (ceilings, walls above and below ground, windows, doors, floors and air leakage). The report also calculates the actual operating efficiency of space and water heating equipment. The potential for carbon monoxide problems is also assessed. Upgrades are identified and the evaluator explains and prioritizes the upgrades and predictable savings, and provides basic information and references for implementation.

There is a modest charge for both Green Home Visits and EGH. Contact the coordinator for details. More efficient use of energy by homeowners in Green Communities reduced greenhouse gas emissions by 80,000 tonnes of CO₂ by 2000. Homeowners have saved substantial amounts of money by implementing advisors' recommendations and have generated considerable local economic activity at the same time.

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Health Canada

In Alberta, Health Canada's interest in preventing pollution stems largely from the mandate to protect human health, but the department does not undertake substantial outreach or education on the topic of pollution prevention itself. Three branches were identified as having links with pollution prevention, although these programs could only be viewed as outreach or education in a very broad sense.

On behalf of Health Canada, the Population and Public Health Branch manages the Community Animation Program (CAP) in Alberta. The department partners with Environment Canada to fund CAP projects, which are then implemented by local community groups. Many of these projects contain a pollution prevention component and focus on sustainability issues. Health Canada and Environment Canada sponsor a conference every one to two years that brings those working on CAP projects together and builds capacity. The Clean Air Forum held in the fall of 2001 was one example of such a conference.

The Safe Environments Program within the Healthy Environments and Consumer Safety Branch is a new program for Health Canada in Alberta. The Safe Environments Specialist in Alberta is responsible for providing information on environmental impacts on health, including air pollution, to the public and other interested agencies.

In the First Nations and Inuit Health Branch, Environmental Health Officers play a role in two areas of pollution prevention. First, Environmental Health Officers conduct inspections on Reserves to ensure health is protected. Their reports are submitted to the band council for action and, at the request of the band council, officers can provide or broker further assistance and information. Second, a select number of Environmental Health Officers also provide expert advice on the potential health impacts of projects or developments under the *Canadian Environmental Assessment Act*.

Finally, like all federal government departments, Health Canada has a sustainable development strategy that is implemented on a regional basis. In Alberta, this strategy entails recycling, "greening" of the vehicle fleet, and other initiatives. Only limited outreach to staff is presently occurring, but tip sheets, fact sheets, and other mechanisms are planned to raise awareness about what staff can do in their personal lives.

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Natural Resources Canada, Renewable and Electrical Energy Division

This division within Natural Resources Canada (NRCan) is pilot testing a program to raise public awareness and promote safe and efficient burning of wood. In response to letters of interest, the pilot is being offered in eight locations across the country; no letters of interest were received from Alberta. NRCan is offering the education portion of the campaign and the partner organizations have arranged with local suppliers to provide opportunities for people to change out their old wood-burning system. NRCan is testing the campaign messages in the pilot program and expects to launch a national campaign in the fall of 2002 by requesting further letters of interest. The educational messages focus on safety and health as well as reducing air pollution, and fact sheets address topics like storage of wood, how to start a fire and what to burn.

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Northeast Capital Industrial Association

The Northeast Capital Industrial Association (NCIA), formerly the Fort Saskatchewan Regional Industrial Association, was incorporated in September 2001 with about 20 members from the Fort Saskatchewan area and the three surrounding counties of Sturgeon, Strathcona and Lamont. The NCIA is still in the early stages of setting up operations and implementing additional outreach tools and services such as a newsletter and website.

Association members participate in a standing committee on environmental health and safety, which meets nine or ten times a year and focuses on environmental issues and emissions management. Members have an opportunity to identify and discuss specific issues or concerns they are facing and if common themes appear, the association can get involved in helping to address them. The committee is a good forum for dealing with members' emerging issues and for sharing solutions. The NCIA frequently brings in speakers on topics of interest, such as technology advancements and changes in regulations to keep members up to date on various issues including pollution prevention and continuous improvement opportunities.

The NCIA is also working with local stakeholders to develop a "macro" ecosystem approach to dealing with issues in the northeast capital area. One product now being considered for the next year is an environmental performance report for the region's industry.

The NCIA participates in two purely educational projects for schools – Partners for Science, and the Young Scientists Conference. These are aimed at increasing interest in and awareness of the role of science in our lives and encouraging young people to consider careers in science, and would not be considered pollution prevention/continuous improvement initiatives.

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Office of Energy Efficiency, Natural Resources Canada

Established in April 1998 as part of Natural Resources Canada, the mandate of the Office of Energy Efficiency (OEE) is to renew, strengthen and expand Canada's commitment to energy efficiency. The OEE originated out of Canada's commitment to reduce greenhouse gas emissions by six percent below 1990 levels by the period 2008 to 2012, as agreed to in the Kyoto Protocol. The OEE manages 17 energy efficiency and alternative fuels programs aimed at the residential, commercial, industrial and transportation sectors. Although the OEE's focus is encouraging wise and efficient energy use, when energy is used more efficiently, emissions of greenhouse gases and various air pollutants are also reduced.

With the assistance of the National Advisory Council on Energy Efficiency, the OEE is also charged with identifying opportunities for new and heightened energy efficiency measures. As well, it keeps Canadians abreast of developments in technology that can reduce the consumption of fossil fuels or support the transition to less carbon-intensive energy sources, including renewable energy. The OEE communicates information to Canadians and others and offers practical advice to consumers, businesses, governments and institutions.

Descriptions of the programs and initiatives in this inventory have been taken from the OEE website at <http://oee.nrcan.gc.ca/english>. A great deal of information is provided online, but the OEE also has numerous publications on energy efficiency and alternative energy. These publications can be ordered free of charge in Canada. Each program has its own contact person in the OEE office.

PROGRAMS AND INITIATIVES

Labelling

The ENERGY STAR[®] HIGH EFFICIENCY Program aims to help consumers and businesses save money and reduce greenhouse gas emissions and other pollutants by increasing the use of energy-efficient products in Canada. ENERGY STAR[®] is a labelling initiative supported by the Government of Canada, participating manufacturers, retailers, and other organizations that makes it easy for consumers to identify products that are at the top of their class in terms of energy efficiency.

Residential

R-2000 HOME Program explains how to make sure your new home is healthy, comfortable and environmentally friendly, with lower energy costs.

EnerGuide for Houses shows homeowners how to improve the energy efficiency of their houses through retrofits and energy efficient renovations.

HVAC and equipment information and ratings show consumers who are in the market for a furnace, central air conditioner, air-to-air heat pump or new appliances and room air conditioners which types and models are most energy efficient.

Transportation, Vehicles and Alternative Fuels

The Idle-Free Zone is Canada's first website dedicated to helping Canadians in their efforts to stop unnecessary engine idling in their communities.

EnerGuide for Vehicles and Auto\$mart provide tips on buying, driving and maintaining a vehicle to reduce fuel consumption and greenhouse gas emissions.

Alternative Transportation Fuels features information on the benefits of using cleaner alternative fuels.

The FleetSmart Program helps fleet managers reduce fuel costs and vehicle emissions through energy-efficient practices. The program develops energy use data and profiles for fleet segments and provides a range of products (such as an energy management tool kit, success stories and case studies that identify best practices) and a SmartDriver training initiative.

FleetWise is a federal fleet initiative aimed at assisting departments to cut costs by increasing efficiency in their fleets and minimizing the negative environmental impacts from the operation of fleet vehicles.

Workshops

The OEE also offers various training workshops to targeted sectors.

Dollars to \$ense is designed for directors, project managers, building managers, energy consultants, production and plant engineers to help them assemble a money-saving energy management team and identify immediate savings opportunities.

Auto\$mart Driver Training – Personal Vehicles workshop is aimed at driving instructors, to help them teach how fuel-efficient driving is safe driving.

EnerGuide Retailer Information – Major Household Appliances and Room Air Conditioners. This workshop is designed for those who sell major household appliances and room air conditioners to help customers make energy-wise purchase decisions.

Energy Efficiency Employee Awareness for Industry. This workshop is designed to help companies work with employees to develop and implement an awareness program to improve the energy efficiency of the heating, cooling, lighting and mechanical systems in the workplace.

Energy Management in Commercial, Institutional and Industrial Buildings. This Skills Development Program is designed to help building managers, facility operators, technical sales staff representatives, energy auditors and building contractors improve energy efficiency for their organizations.

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To order publications, call the Energy Publications line at 1-800-387-2000

Pembina Institute for Appropriate Development

The Pembina Institute was established in 1985; its mission is to implement holistic and practical solutions for a sustainable world. Much of the Institute's work focuses on energy and environmental impacts, particularly climate change.

- **Climate Change Awareness and Action Education Kit.** This comprehensive multi-media kit is designed for use in senior high science, social studies, geography and environmental science courses. Activities include things students and their families can do to reduce greenhouse gas emissions.
- **Renewable Energy Education Kit (online).** This resource is targeted to middle school students. Hands-on construction projects and investigations let children discover fundamental principles in science as well as the links between science, technology, society, and the environment.
- **Cool Business Guide.** This manual is aimed at small and medium sized enterprises. It takes a step-by-step approach to show how businesses can plan and implement a response to climate change while saving money and reducing emissions. The manual is supplemented by workshops and seminars on request.
- **Climate Change Resource Book for Journalists.** This resource includes 22 fact sheets to help journalists write informatively about climate change.
- **www.climatechangesolutions.com.** This detailed website includes success stories, resources, news and links to help a range of sectors from individuals and families to industries and municipalities identify opportunities to reduce greenhouse gas emissions and other sources of atmospheric pollution. A specific education and outreach feature of this site is the Schools Contest in which students across Canada are encouraged to submit descriptions of projects they or their schools have undertaken to reduce greenhouse gas emissions. Entries are judged by an independent panel and prizes awarded.

The following pollution prevention services are offered by the Pembina Institute.

- **Life Cycle Value Assessment.** Pembina Institute staff work with various sectors to help them develop capacity to choose practices and make business decisions that reduce pollution by looking at environmental impacts across the entire life cycle of a product or process.
- **Energy Sustainability.** Staff work with First Nations and remote communities to help them develop energy supplies that reduce emissions and increase sustainability.
- **Best Practices.** Staff have identified a number of best practices in the energy sector and work with various clients to enhance their awareness of and familiarity with these practices to reduce pollution.

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Petroleum Communication Foundation

The Petroleum Communication Foundation (PCF) is a not-for-profit organization created in 1975 to inform Canadians about the Canadian petroleum industry. The PCF is a non-advocacy organization that collaborates with various sectors of the petroleum industry. Its documents are researched and written in consultation with stakeholder experts (industry, government, community, etc.) and are extensively reviewed prior to publication. The PCF is investigating an expansion to energy education, which would mean publishing and providing services on more than just the petroleum sector. A decision on this possible change has not yet been made.

A key audience for the PCF is the petroleum industry itself. PCF publications are developed for the industry to use in educating new employees and the various publics they need to reach, such as landowners. Since late 1999, the PCF has directed more of its resources to developing classroom materials and activities that link primarily to the Alberta curriculum and incorporate discussion and activities connected to the petroleum industry. For example, a unit on wheels and levers ties into relevant aspects of the grade four science curriculum using examples from the petroleum industry. Many of these resources are activity-based. Materials have now been produced for every grade (1-12) and are promoted through teacher conferences, newsletters and direct mail. Thirty copies of each classroom material are provided at no charge to teachers.

The PCF's flagship publication is *Our Petroleum Challenge*. A number of other booklets, pamphlets, and learning resources are also available.

None of the PCF's materials focuses specifically on pollution prevention or continuous improvement.

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Petroleum Technology Alliance Canada

The Petroleum Technology Alliance Canada (PTAC) is a not-for-profit organization that facilitates collaborative innovation, technology transfer, and research and development in the upstream oil and gas industry, with the objective of improving the environmental, safety, and financial performance of the industry.

Indirectly, PTAC might be considered to do pollution prevention outreach and education in that it facilitates the transfer of information to the petroleum industry that could lead to lower emissions. PTAC offers a variety of services to its members, including workshops, forums, technology information sessions, and newsletters. It helps members keep abreast of new technology developments, find industry partners to complete proposed R&D or technology development, and market new technology or proven technology that is new to the Canadian oil and gas industry.

PTAC forums focus on a specific problem area or technological solution and are open to anyone interested for a fee. Examples of environmental forums sponsored by PTAC (related to air) include the 2002 Environmental Research and Technology Development Forum for the Upstream Oil and Gas Industry, Flaring/Venting/Fugitive Emissions Research Technical Forum in 2001, and the Flare Gas Incineration Technology Forum in 2000.

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Pollution Probe

Pollution Probe's four main program areas are air, water, energy and indoor environments. The air program promotes tougher controls on urban smog, reduced acid gas emissions, improved public transit, and cleaner vehicles and fuels. The Clean Air Campaign and Commute is the public education and awareness component of Pollution Probe's comprehensive Air Program. Each June, since 1993, Pollution Probe has held the campaign to bring the clean air message to hundreds of workplaces across the Greater Toronto Area. The campaign informs the public and policy makers about the human health risks associated with smog and promotes practical air quality solutions. The focus of the campaign is to bring individuals to act against smog by promoting alternatives to the single occupancy vehicle.

The main event of the campaign – the week long Clean Air Commute – is a corporate event that challenges participants to choose a cleaner way to commute to work, such as public transit, cycling, carpooling, telecommuting or tuning their vehicle and inflating the tires. Clean Air Commute 2001 brought together 145 workplaces with a total employee base of more than 100,000 individuals. Participants learned about vehicle emissions, smog and related health issues in the spirit of a fun competition. Personal “diary cards” were distributed to individuals to fill out during the week indicating how they got to work. By filling out the distance in kilometres from their home to workplace on the diary cards, employees were able to calculate the actual weight of the major smog pollutants that they kept out of the air by not driving alone to work each day. The greenhouse gas, carbon dioxide, was also figured into the calculations. Following the event, these diary cards were used to calculate the workplaces' percentage of participation and as entry forms for prize draws to reward the participants.

Pollution Probe has produced a number of resources on air issues, many of which can be downloaded from their website. Recent reports on topics related to pollution prevention include a 2001 inventory of 25 Canadian and U.S. institutions and companies that have implemented trip reduction programs at their workplaces; a manual produced as part of the S.M.A.R.T. Movement (Saving Money and the Air by Reducing Trips) to guide large organizations in reducing employee car trips; reports that look at ways to restore and enhance public transit in Canada; and a primer on vehicle inspection and maintenance.

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Recycling Council of Alberta

The Recycling Council of Alberta (RCA) was formed in 1987; its mission is to promote and facilitate waste reduction, recycling and resource conservation in the Province of Alberta. The RCA acts as an interface for information and dialogue between industries, governments, environmental groups and consumers. Many of the RCA's programs are developed and delivered with partners. New programs are designed and developed as needs and opportunities are identified.

The RCA's education and outreach initiatives include conferences, public education campaigns, and workshops and training seminars for various audiences. These initiatives cover a wide variety of topics related to waste reduction and diversion, such as the following examples:

- **Recycling 101.** This initiative is aimed at elected municipal officials to help them gain a better understanding of waste management issues and options. Raising awareness of waste reduction and recycling programs and opportunities will build capacity in local communities for the development of more progressive waste management programs that integrate waste reduction components such as composting and recycling.
- **GAP (Generally Accepted Principles for calculating municipal solid waste system flow) Workshops.** The GAP process was undertaken because of a need to develop a common reporting framework that municipalities across Canada can use to report waste generation, diversion and disposal. The audience is Alberta municipalities.
- **Seminars and Workshops,** such as Community-based Social Marketing. This workshop included a set of tools that community program designers can use to get people to change their behaviour to include more sustainable activities; e.g., recycle, retrofit their homes to save energy, participate in anti-idling campaigns.
- **Annual Conference.** The RCA's annual conference brings together speakers and stakeholders from across North America to promote and discuss waste reduction, recycling and resource recovery issues. Conference proceedings are available at no cost on the RCA website.
- **Quarterly Newsletter.** Reports on current issues and includes technology updates, recycling news, success stories, products, and more. The target audience is RCA members and interested members of the public.
- **EnviroBusiness Guide.** This guide is produced every other year to help market members' products and services and encourage market development for recycled materials. It is available in print and online.

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SEEDS Foundation

The mandate of the SEEDS (Society, Environment and Energy Development Studies) Foundation is to support Canadian educators in promoting student literacy and active personal and societal responsibility for energy, sustainability and the environment.

Programs relating to education and outreach to prevent air pollution include the following:

- **Creating a Climate of Change.** This comprehensive package includes a video and supporting materials on climate change. The target audience is secondary school students. One component of the package, to be developed in 2002, will encourage students to examine their personal energy use and identify specific actions they can take at home and at school to reduce energy consumption.
- **Green Schools.** The main goal of the Green Schools program is for a school to complete and record 100 environmental projects. Students are required to take action to enhance the environment, to communicate to others about the environment, or to demonstrate the wise and sustainable use of resources.

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Toronto Environmental Alliance

The Toronto Environmental Alliance (TEA) works with concerned individuals, public health agencies, local governments and grassroots organizations to encourage Toronto citizens to get involved in local issues and to provide a forum for citizens to be heard on environmental issues. TEA focuses on six major areas: Smog and Climate Change, Urban Pesticides, Waste Reduction, Sustainable Transportation, Water, and Involving Youth. While its programs and activities do not extend to Alberta, TEA has undertaken some pollution prevention projects that could be applied in this province. These include:

- The *Organic Lawncare Conference*, and *Healthy Home: A Toxics Reduction Program for Social Housing Apartment Buildings*
- A conference for health care workers on *Health Care without Harm: A Pollution-Prevention Program for Hospitals*
- Providing information to Ontario consumers on green power options and choices
- Repair Our Air (ROA), which is a campaign to improve Toronto's air quality and combat climate change by reducing vehicle emissions. As cars and trucks are the largest source of smog and climate change-causing gases in Toronto, ROA has developed two programs to address this problem: the *Team to Work Carpooling Program* and the *Corporate Fleet Challenge Anti-Idling Program*. Information on both of these programs is available on the TEA website.

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U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics

The Office of Pollution Prevention and Toxics (OPPT), formerly the Office of Toxic Substances, was formed in 1977 with the primary responsibility for administering the *Toxic Substances Control Act* (TSCA). The mission of the Office of Pollution Prevention and Toxics focuses on:

- **Promoting pollution prevention** as the guiding principle for controlling industrial pollution;
- **Promoting safer chemicals** through a combination of regulatory and voluntary efforts;
- **Promoting risk reduction** so as to minimize exposure to existing substances such as lead, asbestos, dioxin, and polychlorinated biphenyls; and
- **Promoting public understanding of risks** by providing understandable, accessible and complete information on chemical risks to the broadest audience possible.

With respect to education and outreach, the main OPPT website at www.epa.gov/opptintr/ features a section containing information for concerned citizens, and an education section at www.epa.gov/epahome/educational.htm. The “Concerned Citizens” page has several resources pertaining to lead in the home and asbestos in the workplace as well as linking to the Consumer Labeling Initiative. Educational materials for younger children feature projects, games, art tips and an interactive website to help kids identify household chemicals and learn about their hazards. The U.S. EPA Student Center features environmental concepts, activities and tips for middle and high school students, and the section for teachers includes basic environmental concepts and teaching aids.

The EPA’s Office of Compliance has developed a very useful series of profiles or notebooks containing information on selected major industries (online at <http://es.epa.gov/oeca/sector/index.html>). These notebooks, which focus on key indicators that holistically present air, water, and land pollutant release data, have been thoroughly reviewed by experts from both inside and outside the EPA. Each notebook provides comprehensive, well-researched details gathered for the first time in a single source and includes:

- a comprehensive environmental profile
- industrial process information
- pollution prevention techniques
- pollutant release data
- regulatory requirements
- compliance/enforcement history
- government and industry partnerships
- innovative programs
- contact names
- bibliographic references
- description of research methodology

The main EPA pollution prevention website at www.epa.gov/p2/ has links to all State programs, several of which have good outreach programs to industry.

Note: This material was not included in the matrix at the front of this report.

Utilities – Enmax and TransAlta

The public outreach and education activities of both Enmax and TransAlta were also examined for this inventory, based on materials identified on their respective websites. As an electricity retailer to both residential and business customers, Enmax offers a Green Power option, tips for reducing electricity consumption, online energy consumption calculators and information about energy consumption of specific appliances and other equipment. Many of these materials are also available in printed format.

TransAlta's main education and outreach tool is Project Planet Challenge. This contest is open to Alberta and Ontario students, who are invited to submit an essay of 1000 words or less on what they would do to enhance the environment in their area. Two individual winners and two group winners are selected in Alberta and in Ontario. TransAlta provides support to the winners to implement their projects.

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