

Pollution Prevention/Continuous  
Improvement Project Team  
Education Workshop

February 19-20, 2002

Westridge Lodge, Devon

## Acknowledgements

The Pollution Prevention/Continuous Improvement Project Team acknowledges the following stakeholders whose financial support enabled the team to hold this workshop and invite resource people to attend and be part of the discussions:

- Alberta Environment
- Alberta Industrial Heartland
- Suncor Energy

The team also thanks all those who attended the workshop, particularly those who are not part of the project team. All participants are listed in Appendix A. This workshop was a key meeting to help the team meet its commitments with respect to pollution prevention/continuous improvement education and outreach.

## 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.

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# 1 Executive Summary

This workshop was held to provide advice and information to the CASA Pollution Prevention/Continuous Improvement project team on the use of education and outreach in the pollution prevention framework the team is developing for Alberta. The overall objectives of the Pollution Prevention/Continuous Improvement (P2/CI) project team are to

- Develop/promote emission reduction strategies for major sources
- Recommend P2/CI tools that can be implemented to achieve source reduction
- Identify/recommend cost-effective reduction opportunities
- Provide support/direction to CASA teams

The objective for this workshop was to provide advice and information to the project team on the use of education and outreach in the CASA P2 / CI framework by:

- –Identifying key messages
- –Identifying target audiences
- –Complementing existing environmental education / outreach programs
- –Looking at delivery of P2 messages (what, who, when, resources)

Participants reviewed the inventory of existing programs, noting that gaps appear to exist for small and medium-sized enterprises (SMEs), corporate, consumer, political, and municipal sectors. A number of groups and organizations have developed materials for Alberta students, but pollution prevention is not a key message in these materials. There is good potential for partnerships with organizations now actively delivering school programs in Alberta to reach students with a P2 message. To fill existing gaps, key target audiences were identified as the public, the MUSH sector (Municipalities, Universities, Schools and Hospitals), corporations, and SMEs. The group agreed that an overriding goal of pollution prevention is changing behaviour, so P2 messages must be offered in a way that the audience can understand and relate to. This is likely to mean some tailoring of the message for each target audience, as well as determining who should deliver the message to each sector to enhance its credibility and impact.

In deciding on key messages, the group brainstormed desired outcomes then looked at how messages could be developed for each sector to achieve as many of the desired outcomes as possible. The group agreed that one key desired outcome was to increase the ratio of energy derived from renewable sources. Workshop participants agreed to forward the following list of possible action items to the CASA P2/CI project team for their review and consideration.

## **Target Audience: The Public**

1. Alberta Environment should include P2 messages in its materials when opportunities arise and should facilitate and assist others to incorporate P2 messages into existing printed materials.
2. Seek and implement opportunities to deliver a P2 message using existing and effective vehicles, such as utility bills.
3. Raise the public's awareness about the products they purchase.
4. Undertake outreach and education for building designers and developers to encourage and support green building and renovation practices.
5. Develop a snappy slogan and/or logo.
6. Use existing directories to promote pollution prevention.
7. Sponsor contests and challenges.
8. Air quality alerts and advisories to include information about action to take.
9. Build capacity within the NGO community to deliver the social change P2 message in target areas.

## **Target Audience: The MUSH Sector**

10. Reduce emissions by:
  - a) determining baselines and setting targets to encourage emissions reductions;
  - b) promoting the social, economic and environmental benefits of reducing emissions; and
  - c) sharing success stories.
11. Develop best practices through business associations.
12. Encourage hospitals and universities to consider environmental management P2 programs.
13. Encourage the Alberta Urban Municipalities Association and the Federation of Canadian Municipalities to pass resolutions supporting the:
  - a) development and implementation of progressive municipal environmental procurement policies, and
  - b) development and implementation of municipal ethical investment policies.

## **Target Audience: Corporations and SMEs**

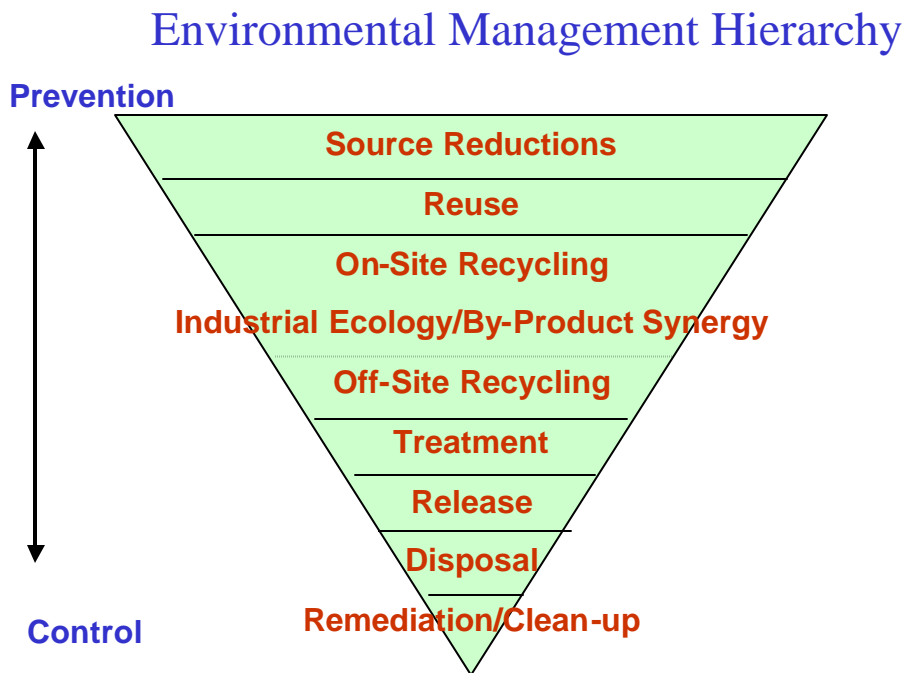
14. Promote the concept and process to develop eco-industrial strategies in Alberta.
15. Educate decision makers and procurement officers about greener supply chain options and bottom line possibilities, and the use of life cycle value assessment to guide and inform these decisions.

## **Increase Ratio of Energy Available from Renewable Sources**

16. Influence government policy to increase ratio of energy available from renewable sources.
17. Encourage expansion of existing green power programs.

## 2 Purpose and Background

George Murphy reviewed the concept of pollution prevention and the objectives of the CASA Pollution Prevention/Continuous Improvement Project Team (P2/CI). The purpose of this workshop was to provide advice and information to the project team on the use of education and outreach in the CASA Pollution Prevention framework the team is developing for Alberta. General areas of focus for the workshop were identifying key messages and target audiences, what is needed to complement existing environmental education and outreach programs, and how to deliver the pollution prevention messages effectively. (See Appendix B for George's presentation.) Pollution prevention activities typically occur in the top four segments of the inverted triangle, shown below. These are the main areas of interest for the P2/CI project team, as other CASA teams are working in the remaining four areas.



Earlier work by the P2/CI project team had identified five main sectors as being the sources of most of the pollutants in Alberta:

- electric power generation
- oilsands
- oil and gas
- residential wood combustion
- transportation

The major pollutants are particulate matter (PM), oxides of nitrogen (NO<sub>x</sub>), sulphur oxides (SO<sub>x</sub>), volatile organic compounds (VOCs), carbon monoxide (CO), and carbon dioxide (CO<sub>2</sub>). Other toxic compounds such as benzene and mercury, although produced in smaller amounts, were also noted as pollutants of concern.

### 3 Key Audiences

The group engaged in a short discussion about approaches for different audiences and things to keep in mind in reaching out to various sectors. The following points were noted:

- Different education and outreach tools and strategies will be needed for different audiences and stakeholders.
- Strategies for outreach to various sectors may depend on where the target audience is in the P2 hierarchy above. Strategies developed by this group could support work already being done by stakeholders to encourage ownership and buy-in, rather than impose something new.
- P2 is really about getting people to change their behaviour; thus information must be presented to an audience in a way that is relevant and understandable so they recognize action is needed and that they can contribute to solutions.
- Because we are dealing with philosophy and culture, it is likely to be harder to implement change than it would be for purely financial or other practical reasons. A range of approaches will be needed, from education and information to regulatory instruments.
- The first step is to identify the key audiences and stakeholder groups and determine what the objective is for each one. This process should include deciding which need work in the short term, which are longer term, etc. When priorities have been established, strategies can be developed for each audience.

The group identified the following as potential audiences for a pollution prevention message:

- media
- the MUSH sector (municipalities, universities, schools, hospitals)
- general public -end users
- industrial associations
- corporate personnel
  - Environment, Health and Safety
  - corporate decision makers
  - corporate process designers
- provincial government departments
- elected officials at all levels of government
- political parties
- small and medium-sized enterprises (SMEs)
- students and teachers
- environmental organizations (as ambassadors and messengers)
- environmental practitioners

## 4 Key Messages

The group discussed the need to distinguish between education and outreach, acknowledging that, apart from the formal education system, there is generally a continuum in getting the message out to people in various audiences about what they can do to prevent pollution. Different audiences have different capacities to effect change and the message to each of them needs to be manageable and presented in a way they can understand and respond to. The normal progression is from awareness to knowledge to action. There is no point in undertaking outreach and education work unless it's going to have an impact, so it is important to first determine what the desired outcomes of the outreach are.

One possible approach is outlined in the matrix below. This chart is based on the eight segments in the management hierarchy and a similar chart would be developed for each of the five sectors identified as the primary sources of pollution in Alberta. The matrix would make it easier to then develop the key messages and strategies to ensure that the message is appropriate for each target audience.

Key Audience	S O U R C E	P U B L I C	M U N I C I P A L	I N D A S S N S	E N G O S	G O V T  D E P T S
Industrial Sector						
ELECTRICAL						
Source reduction	◆	◆	◆	◆	◆	
Re-use		◆		◆		
On-site recycling/ Industrial ecology	◆	◆	◆			
Offsite recycling	◆			◆		
Treatment			◆		◆	◆
Release			◆		◆	◆
Disposal			◆		◆	◆
Remediation						



## 5 Existing Programs

With reference to the inventory prepared and distributed in advance of the workshop,<sup>1</sup> Kim Sanderson provided a synopsis of existing programs and messages (see Appendix C). The term “pollution prevention” is seldom used by most of the groups and organizations in the inventory, although significant portions of their work could be called pollution prevention in a broad sense. The main angles and messages of their programs related to reducing greenhouse gas emissions and waste. The formal education system is presently targeted by a number of information providers and there are likely opportunities to work with these established delivery mechanisms in Alberta to add or expand on the P2 message to this sector. Much of the information that is available to the general public is solid and accessible, but people have to know where to find it, either in print or on the Internet. Some excellent programs are available for municipalities, but are not presented in the context of P2. Industry associations contacted for the inventory did not indicate a lot of specific P2 activity, but do appear to be able to respond to specific issues as their members indicate a need for the information.

In discussion following this presentation, the following points emerged:

- The P2 terminology is a challenge, but perhaps it doesn't matter what terms are used as long as the key part of the message is clear and meaningful to people.
- Language is an important factor in getting people to act. The “Burn It Smart” program, for example, found that using terms like “burn” instead of “combustion” and “wood smoke” rather than “particulate matter” made the messages more understandable.
- Measuring change as the result of a program or communication initiative is important; corporations have ways to measure results and could possibly provide guidance.

### 5.1 Do existing programs reach the desired audiences?

The group reviewed the list of target audiences identified previously to consider how well these audiences are being reached at the present time. The question of how the message is delivered was also explored.

- The ENGO sector tends to actively seek out available information; ENGOs generally are good receivers of information and can act on it, but are not such good disseminators of information.
- Gaps appear to exist in the public, SME, corporate, consumer, political and municipal sectors.
- Students are well served in areas of focus, but P2 has not traditionally been an area of focus. Specific curriculum fits for environmental topics exist from K-12, but curriculum tends to be reactionary rather than forward-looking. Nevertheless, several groups in Alberta have a good record in developing and delivering environmental materials to a student audience, so there are partnership opportunities.
- Reaching the post-secondary audience is more of a challenge.
- Participants held differing views as to how proactive industry is with respect to P2 and how well industry success stories are shared. In general, industry has many mechanisms in place for disseminating a P2 message.
- Credibility of the messenger influences how well the message is received and acted upon. It would be useful to first identify the target audience then determine who has credibility with that audience before crafting the message.

Participants brainstormed desired outcomes then worked in small groups to develop actions.

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<sup>1</sup> The inventory is available as a separate document via the CASA website.

## 6 Desired Outcomes and Actions

The following were suggested as desired outcomes of a pollution prevention education and outreach program:

- reduced energy consumption
- cleaner urban air
- recognition that P2 is good business sense
- reduced material consumption
- less reliance on coal to generate electricity
- increased recycling and composting
- use of life cycle analysis in decision making
- more energy from renewable sources
- P2 used as a yardstick for personal choice and corporate decision making
- elimination of burning barrels in rural areas
- reduced emissions from residential wood burning
- fewer new houses with triple garages
- greater use of public transportation
- higher efficiency in energy use
- more resource conservation
- achievement of greenhouse gas targets
- reduce or eliminate use of toxics

Two breakout groups worked with this list to develop potential P2 actions, collapsing and consolidating the outcomes as appropriate. The reports from each group appear in Appendix D. The whole group then compared the products from the groups and developed a list of recommended actions for the workshop, focusing on three main target audiences and one key desired outcome, which applied to all audiences. The audiences were the public, the MUSH sector, corporations and small and medium-sized enterprises, and the key desired outcome was to increase the ratio of energy derived from renewable sources. The recommended strategies and actions are listed below in these four categories.

## **Target Audience: The Public**

**1. Alberta Environment should include P2 messages in its materials when opportunities arise and should facilitate and assist others to incorporate P2 messages into existing printed materials.**

- Many agencies already have materials that could accommodate a P2 message (e.g., FEESA, Pembina Institute, SEEDS) but this will happen over an extended period of time as materials are revised and updated. Such content can also direct readers to existing resources such as the Canadian Pollution Prevention Information Clearinghouse.
- This is an opportunity to include a substantial P2 message, whether the language uses the term pollution prevention or not.

**2. Seek and implement opportunities to deliver a P2 message using existing and effective vehicles, such as utility bills.**

- Social marketing tools could provide further guidance and assistance in identifying other opportunities to reach the public. For example, Doug McKenzie-Mohr's website on social marketing is accessible at [www.cbsm.com](http://www.cbsm.com).

*Potential action:*

- Discuss with Kathleen Molloy P2/CI project team access to the marketing strategy for the Burn It Smart initiative.
- Consult with utility representatives on the project team about possible options.
- Contact York University Shulich School of Business for details on their corporate social marketing course.

**3. Raise the public's awareness about the products they purchase.**

- Make information about the ecologo and low-tech choices more widely available.
- Recommend that Environment Canada establish programs to encourage manufacturers to do life cycle assessment and take extended responsibility for their products (concept of product stewardship).
- Use existing mechanisms and opportunities to encourage the public to purchase green power; e.g., those involved in Energy Awareness Week could use that opportunity to promote green power.

**4. Undertake outreach and education for building designers and developers to encourage and support green building and renovation practices.**

- Develop mechanisms to encourage and support "green" building and renovation practices; e.g., property tax rebate, building code requirements, GST waiver on the purchase of new energy efficient appliances
- The U.S. Green Building Council has a points system for assessing such construction.
- Could be done in partnership with federal government infrastructure programs.
- Promote NRCan's REDI program for commercial enterprises.

**5. Develop a snappy slogan and/or logo.**

- Will require high level commitment and support, particularly funding to develop an effective marketing campaign.
- A less expensive alternative might be a contest for post secondary students to design a logo or slogan.
- Agencies that might be involved:
  - World Business Council for Sustainable Development, as follow-up activity for Rio +10; or possibly the UN Environment Programme
  - North American Sustainable Consumption Alliance
  - national organizations, possibly Environment Canada

**6. Use existing directories to promote pollution prevention.**

- The inventory prepared for this workshop could be posted on the CASA website and possibly on the Canadian Centre for Pollution Prevention clearinghouse.
- Various organizations produce directories for which a P2 message would be appropriate; the following might be approached:
  - the Recycling Council of Alberta
  - the Canadian Solar Energy Society (renewable energy technology directory)
  - the Canadian Environmental Certification Approvals Board
  - Environmental Services Association of Alberta

**7. Sponsor contests and challenges.**

- ENGOs could set up a pollution prevention contest and challenge other sectors, along the lines of the commuter challenge.

**8. Air quality alerts and advisories to include information about action to take.**

- Environment Canada, Alberta Environment and Regional Health Authorities should be involved in promoting understanding of the air quality index, developing appropriate messages, and advising the public about what actions they may need to take in the event an alert or advisory is issued.

**9. Build capacity within the NGO community to deliver the social change P2 message in target areas.**

- This could be done through the Alberta Environmental Network, with suitable funding and support.

## **Target Audience: The MUSH Sector**

### **10. Reduce emissions by:**

- a) determining baselines and setting targets to encourage emissions reductions;**
- b) promoting the social, economic and environmental benefits of reducing emissions;  
and**
- c) sharing success stories.**

- Those in the MUSH sector who are already taking action should champion their success, provide leadership and share their success; e.g., leaders in the Voluntary Challenge and Registry
- Possibility of tapping the Onsite program to help keep costs down for this sector.
- Communicate success stories, such as Calgary's Ride the Wind.
- Promote opportunities for municipalities to tap into the Federation of Canadian Municipalities' Green Funds for climate change initiatives.
- Other potential leaders, partners and resources:
  - The Alberta Urban Municipalities Association Environment Committee
  - The Federation of Canadian Municipalities Partners for Climate Protection program
  - Environment Canada's Environmental Leaders program
  - CPPIC case studies

### **11. Develop best practices through business associations.**

- Such associations include Canadian Association of Petroleum Producers, Canadian Petroleum Products Institute, Alberta Forest Products Association, Canadian Chemical Producers Association. Alberta Environment could also play a role in guiding this process.
- Promote case studies on various websites, such as Canadian Council of Ministers of the Environment, Pembina Institute, United Nations.
- A distribution plan is needed for the case studies to ensure that people can find them and that they are promoted.

### **12. Encourage hospitals and universities to consider environmental management P2 programs.**

- Hospitals go through the Canadian health care accreditation process every two years, and those who supervise this process should be encouraged to add P2 to their accreditation requirements.

#### *Potential action:*

- Kevin McLeod will pursue this item with Alberta Health and Wellness.

### **13. Encourage the Alberta Urban Municipalities Association and the Federation of Canadian Municipalities to pass resolutions supporting the:**

- a) development and implementation of progressive municipal environmental procurement policies, and**
- b) development and implementation of municipal ethical investment policies.**

## **Target Audience: Corporations and SMEs**

### **14. Promote the concept and process to develop eco-industrial strategies in Alberta.**

- Partner with Sustainable Futures by Design and other groups and organizations such as the International Institute for Sustainable Development, Mt. Royal College and the Canadian Eco-Industrial Network to promote industrial ecology.
- A product of these partnerships might be a training program or module on industrial ecology that could be delivered to SMEs, corporations and others.

### **15. Educate decision makers and procurement officers about greener supply chain options and bottom line possibilities, and the use of life cycle value assessment to guide and inform these decisions.**

## **Increase Ratio of Energy Available from Renewable Sources**

### **16. Influence government policy to increase ratio of energy available from renewable sources.**

- The CASA Board should consider writing a letter to the Alberta government suggesting that Alberta support the direction of the federal budget with respect to tax structure for renewable energy.

*Potential action:*

- Martin Holysh will bring information back to the project team on the Clean Air and Renewable Energy Coalition so the team can consider next steps.

### **17. Encourage expansion of existing green power programs.**

- Encourage well-planned expansion of green power generation facilities to meet consumer demand.

*Potential action:*

- Martin Holysh will contact Enmax to find out if their green power option is in fact oversubscribed.
- Consult with the renewable energy sector on the CASA board about recommendations in this area.

## 7 Slogans

The group brainstormed slogans that could capture attention and successfully market the P2 concept:

- Choose your greens
- Proper planning prevents pollution
- Waste not, want not
- P2 saves money
- Pollution is expensive (Pollution doesn't pay)
- U2 can P2
- Go green, get real
- P2 saves resources for your children
- Heaps of P2 opportunities everywhere
- P2 is an air affair
- Air awareness
- Pollution is money down the drain (up in smoke)
- Practice P2 (or shortened to P3?)

## 8 Next Steps

- A report based on the workshop results will be prepared and circulated to all participants prior to the next project team meeting on March 19, 2002.
- At the March 19 meeting, the project team will discuss this material and begin to prepare a final report and recommendations for presentation to the CASA board at the June 21, 2002 board meeting.
- A copy of the final report and recommendations will be available to participants.

## Appendix A. Participants

Brian Free	Alberta Environment (first day)
Nancy Fullerton	DOW Chemical Canada Inc. (first day)
Martin Holysh*	Suncor Energy Inc.
Gray Jones*	Western Canada Wilderness Committee
Myles Kitagawa*	Toxics Watch Society
Christine Macken*	CASA
Steve McIsaac	FEESA, an Environmental Education Society (first day)
Kevin McLeod*	Alberta Health and Wellness
Kathleen Molloy	Natural Resources Canada
George Murphy*	Alberta Environment
Trudy Pedrosa	S.E.A.L. International
Kim Sanderson	CASA
Christina Seidel	Recycling Council of Alberta
Larry Wall*	Alberta's Industrial Heartland
Chris Wolnick	Canadian Centre for Pollution Prevention
Ruth Yanor	Mewassin Community Action Council
Bev Yee	Alberta Environment (second day)
Doug Younie*	Alberta Environment

\* indicates member of the P2/CI project team



## Appendix B. Purpose and Background, by George Murphy

### Pollution Prevention Public Education and Outreach Workshop

WESTRIDGE LODGE,  
DEVON, ALBERTA  
February 19th and 20th, 2002

### Objectives of P2/CI Project Team

- Develop/promote emission reduction strategies for major sources
- recommend P2/CI tools that can be implemented to achieve source reduction
- identify/recommend cost-effective reduction opportunities
- provide support/direction to CASA teams

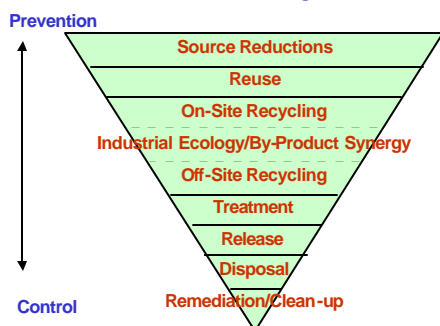
### Pollution Prevention is

- Reducing/avoiding creation of pollutants at the source
- deals with processes and material inputs rather than end of pipe solutions

### Progress

- Identified P2 management frameworks elsewhere.
- Research and shared P2 success stories.
- Identified potential P2/CI tools for Alberta.
- Confirmed major pollutants and major polluting sectors.

### Environmental Management Hierarchy



### Draft Framework

- Roles for CASA, Government, Industry and other Stakeholders
- Incentives
- Eco-Industrial Activities
- Industry Associations and SMEs
- Plans for major source sectors
- Education and Outreach

### Next Steps

- Begun the Education / Outreach element of the framework
  - Identified Education / Outreach as an important element.
  - Recognize that many Environmental Education /Outreach resources exist.
  - Need to better understand how they might contribute to P2 Education / Outreach.
- Report to the CASA Board

### Workshop Objectives

- Provide advice and information to the Project Team on the use of Education / Outreach in the CASA P2 / CI framework
  - Identifying key messages,
  - Identifying target audiences,
  - Complementing existing environmental education / outreach programs and
  - Looking at delivery of P2 messages (what,who, when, resources).

## Appendix C. Inventory of Existing Programs, by Kim Sanderson

### Inventory Compilation

- Done in January 2002 via phone interviews and web research
- Inventory focused on programs that aimed to prevent air pollution
- Primary audience was to be the general public, students or members of industry associations
- Most content was reviewed by agency

2

### Audience – General Public

- 17 agencies and organizations offer materials and/or services for the general public
- Information is widely available, but people need to know where to find it and actively seek it
- The P2 message in much of this information is peripheral to the main message
- Municipalities and elected officials are targeted by some programs and could be a good entry point for future P2 messages

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### Message Delivery

- Few organizations use the term “pollution prevention” to describe the purpose and content of their resources
- Key angles and messages of programs are reducing greenhouse gas emissions and waste; i.e., the P2 message is peripheral to other messages.
- Wide range of available materials, from general to very specific, and from direct to indirect opportunities for action
- Numerous agencies provide materials for more than one audience

3

### Audience - Industry

- 12 agencies and organizations offer P2 materials and/or services for industry
- Wide range in services and products available and delivery mode
- Inventory calls suggested an interest in P2 but that resources and materials are generally developed as needs are identified
- Message also likely to be sector specific

6

### Audience - Education

- 8 agencies and organizations have produced materials for K-12 students
- The P2 message for air in much of this material is delivered in a climate change or energy efficiency context
- Excellent print and online educational resources available in the CC/EE niche in Alberta, with good potential for partnering
- Good online P2 resources for children available

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### Summary

- Messages on preventing air pollution are presently secondary to other messages, which is not necessarily a bad thing
- Good potential opportunities for building a P2 message for schools
- Although not a lot of obvious action to date, industry associations seem able to mobilize as the need arises
- Reaching the general public in a meaningful way is likely to be the biggest challenge

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# Appendix D. Cleaner Production Network in Brazil, by Trudy Pedrosa




**SEAL**  
International


**NCPC – National Cleaner Production Centre Network**




**Safety Environment Assurance Leaders**  
Calgary • Alberta • Canada  
www.seal.ab.ca




**NCPC Programme**




Locations: Slovakia, Hungary, China, Thailand, Czech Republic, Mexico, Brazil, Mozambique, Zimbabwe, Nigeria, Kenya, South Africa, India, Pakistan, Bangladesh, Vietnam, Cambodia, Laos, Myanmar, Philippines, Indonesia, Malaysia, Singapore, Australia, New Zealand, South Korea, Japan, Taiwan, Hong Kong, Macao, China, USA, Canada, Mexico, Colombia, Peru, Ecuador, Venezuela, Guyana, Suriname, French Guiana.




**NCPC-Brazil Location**



**CNTL – Centro Nacional de Tecnologias Limpas**  
Porto Alegre – Rio Grande do Sul




**NCPC-Brazil Products**

- 1) Preparation, publication and dissemination of information;
- 2) Implementation of CP programmes, mainly in the Productive Sector;
- 3) Capacity Building
- 4) Policy advice in cooperation with different agents (units of the industry and other economic sectors, government, environmental regulatory authorities, NGOs, financing institutions of research and development, as e.g. FINEP, WBCSD etc.);
- 5) Building of a National Cleaner Production Network.




**International Cooperation**




**ECUADOR**  
Capeipi  
Budget:  
US\$ 420,000.00

**PARAGUAY**  
Fundación Ko'eti  
Universidad Católica de Asunción  
IDB Budget:  
US\$ 300,000.00

**URUGUAY**  
Basel Convention


**ARGENTINA**  
National Institute for Industrial Technology

**Capacity Building Course in CP**

```

    graph TD
      A["Eligibility Criteria  
- Employed in the Industry  
- Resume  
- Field Experience"] --> B["M.O.U. parts  
- Company  
- Professional  
- NCPC"]
      B --> C["Group Interview"]
      C --> D["Implementation of P2 Program in the company"]
      D --> E["Share results (information)"]
      F["COURSE"] --> D
      G["M.O.U. contents  
- Permission to implement a P2 program  
- Agreement from the company to share the result (published by NCPC)"] --> F
  
```





### Dissemination of Results (P2 initiatives)

- Presentation Seminar (NCPC team)
- Presentation of the Corporate HSE manager to other companies and industries (public presentation)
  - Community; professional groups, universities, industries, press, media...(150 attendees)
- Publication on NCPC local and web of NCPC, UNIDO and UNEP.



### Cleaner Production Network in Brazil

- **Cooperative action between:**
- *National Cleaner Production Centre – Brazil (CNTL/SENAI-RS)*
- *World Business Council for Sustainable Development (CEBDS-Brazil)*



### Implementation and consolidation of the Nuclei

- Presentation seminar
- Capaciting Building Courses for Consultants in CP
- Publication and dissemination of information
- Network local/regional
- Implementation of CP Programs
- Auto-sustain strategies



### Partners

CEBDS	Coordination
CNTL/SENAI-RS	Training and dissemination of information
CNI	Support (host Institution)
SEBRAE	Financing and logistical support
BNDES	Lend (funds) to companies
FINEP	Research and technological innovation



### Nuclei Distribution



A Nuclei in each State



### CP - Network



## Nuclei Framework

Host Institution: Industrial Federation of State

Partners: Local Universities

Training: CNTL/NCPC-Brazil

Coordination: CEBDS/WBCSD

## Partner's Job

Industrial Federation: Logistical support

Universities: Research and information dissemination

CNTL/NCPC: Training and information dissemination

CEBDS/WBCSD: Coordination

## Cleaner Production Network

Núcleo - CE (BN) - Brasília

Núcleo - PE - Recife

Núcleo - BA - Salvador

Núcleo - MG - Belo Horizonte

Núcleo - RJ - Rio de Janeiro

Núcleo - PR - Curitiba

Núcleo - SC - Florianópolis

CNTL - RS

## Canada

**Methodology used in Canada  
(NCPs similarities)**

**Search for a model that could work  
in Canada**

## Systems Approach Tools

- Proven quality management tools:
- process mapping and resource accounting (identify opportunities for prevention)
- rank ordering (address vital areas that require attention by priority)
- cause and effect diagrams (determine the root causes of problems)
- brainwriting (generate a range of alternative solution)
- bubble-up/bubble-down (select alternative solutions to implement)
- action plan (implement the solutions)

## Systems Approach to Prevention

**New EPA guide to be released in March 2002:  
An Organizational Guide to Pollution  
Prevention**



## Systems Approach to Prevention

*Using capacity building training  
using Systems Approach for  
Cleaner Production*

*Trudy Pedrosa/Robert Pojasek*

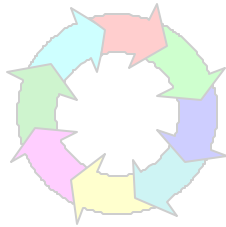


## Systems Approach to Prevention

*Systems Approach for Cleaner  
Production  
(using this approach already in  
Alberta)*



## P2 Outreach in Canada



## Appendix E. Reports from Breakout Groups

**Group One**, report presented by Myles Kitagawa

Group One sorted the list of desired outcomes into four main categories:

1. decrease emissions in targeted areas
2. increase efficiency of energy use
3. reduce resource consumption
4. culture change

The numbers in front of each outcome indicate which group the item was assigned to.

- 3 reduced energy consumption
- 1 cleaner urban air
- 4 recognition that P2 is good business sense
- 3 reduced material consumption
- 1 less reliance on coal to generate electricity
- 1,3 increased recycling and composting
- 4 use of life cycle analysis in decision making
- 1 more energy from renewable sources
- 4 P2 used as a yardstick for personal choice and corporate decision making
- 1 elimination of burning barrels in rural areas
- 1 reduced emissions from residential wood burning
- 4 fewer new houses with triple garages
- 1,2,4 greater use of public transportation
- 2 higher efficiency in energy use
- 3 more resource conservation
- 1 achievement of greenhouse gas targets
- 1 reduce or eliminate use of toxics

The group then identified actions for the various sectors.

### MUSH SECTOR

**Action: Implement a system to measure emissions and set targets for reducing emissions.**

- use and promote VCR as a tool for reducing greenhouse gases
- for municipalities, access FCM tools (these tools are generally applied to greenhouse gases, but could be applied to other emissions too); Banff and Okotoks are good examples of communities that have undertaken such activity
- As an education component, MUSH sector needs to made aware of available tools and how to use them.
  - CASA endorsement of tools could enhance credibility and profile
  - could deliver awareness through associations such as AUMA and AAMD&C; Alberta Environment, Alberta Municipal Affairs and Alberta Infrastructure have a role as well.

**Action: Promote the environmental and socio-economic benefits of P2 to decision makers in the MUSH sector.**

**Action: Identify leaders and supporters and encourage them to champion their work in their sector.**

**Action: Encourage development and implementation of progressive environmental procurement policies.**

**Action: Encourage MUSH sector to preferentially invest in ethical/sustainable funds.**



## PUBLIC AND CONSUMERS

- want people to act responsibly
- message needs to be strong, simple, direct
- do not use the “P2” language

**Action: Find a simple, memorable slogan that aligns with other existing messages – could be concepts of “reduce”, simpler lifestyle, sustainable consumption.**

- federal and provincial governments likely need to have a major role

**Action: Build capacity within the NGO community to deliver the social change P2 message in target areas (e.g., social marketing).**

- Alberta Environmental Network should do this, will need financial support

## CORPORATIONS AND SMEs

- What is the best way to reach this sector? Industry associations have influence, also consultants, educational institutions, professional associations.

**Action: Educate decision makers and procurement officers about “greener” supply chain options and bottom line possibilities (e.g., use of life cycle value assessment).**

**Action: Adopt product stewardship.**

**Action: Promote concept and process for eco-industrial strategies.**

**Action: CASA Working Group or Alberta professional associations to develop and deliver workshops and training on industrial ecology, to be offered widely to conferences in Alberta.**

## ENVIRONMENTAL PRACTITIONERS

**Action: Train in use of tools such as those offered by the FCM, to help municipalities.**

## **Group Two**, report presented by Ruth Yanor

Group Two also consolidated the desired outcomes and assessed their priority for various audiences. The group then identified potential actions.

1. **P2 is a yardstick for personal choice.** This outcome was a high priority for the public audience and could include:
  - greater use of public transportation
  - more compact housing
  - eliminate burning barrels
  - address residential wood burning

### **Actions**

This outcome could be achieved through partnerships and actions such as:

- Incorporate P2 messages into existing publications and brochures.
- Publish a directory with information on P2; Alberta Environment, Environment Canada, Recycling Council
- Sponsor contests, challenges
- Raise awareness of existing clearinghouses
- Include messages and decals in utility bills
- Educate about eco-logo
- Design a decal, logo, snappy slogan
- Incentives for low-tech choices; convey messages in publications
- Demonstration clinics at existing venues (e.g., Odysseum, festivals)
- Air quality alerts and advisories to include choices for actions

2. **Increase the ratio of renewable energy (to reduce greenhouse gases).** This outcome was a high priority for all target audiences.

### **Actions:**

- Influence government policy
- Encourage the public to sign up for green power programs, and expand existing green power programs
- Communicate success stories, such as Ride the Wind, including low-tech successes
- Outreach and education are needed for those who design buildings
- Hold trade fairs for the public, to promote renewable energy
- Provide incentives; promote NRCan's REDI program for commercial enterprises
- Federation of Canadian Municipalities Green Fund is a tool for municipalities.

3. **P2 is used as a yardstick for corporate decision making.** For MUSH and SME sectors, this outcome is a high priority, and for industry it is low. Possible tools include life cycle analysis; one example is Natural Resources Canada's Energy Innovators program.

### **Actions:**

- Get these sectors to establish baselines as a way of understanding they are part of the problem
- Set reduction targets and reduction schedules
- Establish taxes and economic incentives (project team work plan)
- Develop best practices through business associations (e.g., CAPP, AFPA, CPPI, CPPA)

- Provide case studies to prove the business case (e.g., CCME P2 awards, VCR, Pembina Institute website, United Nations)
  - Encourage hospitals, universities to consider ISO 14000 P2 programs
4. **Use energy more efficiently and reduce energy consumption.** This outcome was a medium to low priority and applies to all audiences. Gaps were noted in current programs. The message to achieve this outcome is to reduce consumption and conserve resources.
5. **Increase recycling and composting.** This outcome is a lower priority for the four audiences of industry, MUSH, SMEs, and individuals.