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## **Selection of Policy Instruments under the *Canadian Environmental Protection Act, 1999***

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# **Selection of Policy Instruments under the *Canadian Environmental Protection Act, 1999***

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## **I. BACKGROUND**

In March 2000, the Canadian Institute for Environmental Law and Policy (CIELAP) completed for Environment Canada a discussion paper on the choice of policy instrument for the management of "toxic" and other "substances of concern" under the *Canadian Environmental Protection Act, 1999*.

The paper outlined policy options, criteria and a decision-making model for the selection of an optimal mix of policy instruments in relation to CEPA "toxic" substances and other "substances of concern."

## **II. APPLICATION OF THE CEPA INSTRUMENT CHOICE MODEL IN SPECIFIC FACT SITUATIONS**

In July 2000, Environment Canada contracted CIELAP to conduct a follow-up study to further refine the decision-making model for instrument choice in relation to "toxic" substances and other substances of concern, and to apply the model for instrument choice to six specific fact situations. These were:

1. A CEPA "toxic" Commercial Chemical in very widespread use in the economy, high toxicity/environmental impact if it enters the environment, where the goal is elimination of use, generation and release (i.e. CFCs)
2. An Industrial sector (steel), which annually emits 1.3 kilotonnes of benzene (CEPA Toxic) from coking operations, where goal is significant reduction/elimination of generation and release.
3. A by-product, PBT, where goal is VE of substance with focus on a single sector which is a major source.
4. Dichloromethane (DCM) has been declared CEPA "toxic" and will have to be significantly reduced in several sectors (i.e., Commercial and consumer paint strippers) with departmental action varying by sector.
5. VOCs in consumer products, representing a group of non-toxic 'substances.

6. Nonylphenol ( Assuming will be declared CEPA "Toxic")

The six case studies are attached to this report.

In each case, it was assumed that no action had been taken by the department to date with respect to each substance or class of substances.

A generic template was used for each case study as follows:

### III. CASE STUDY TEMPLATE

#### Case No: Title

#### 1. Situational Analysis With Respect to Substance

##### i. Substance Status under CEPA

- a). *Is substance on CEPA Schedule 1 (the List of Toxic Substances or TSL), proposed for addition to the TSL, or a non-TSL "substance of concern"?*
- b). *Does Substance meet criteria for CEPA toxic, predominantly anthropogenic, persistence and bioaccumulation to require that it be proposed for Virtual Elimination?*
- c). *Are any actions or the use of a particular instrument mandatory under the Act in relation to the substance?*

##### ii. International and Domestic Commitments in Relation to the Substance

- d). *What domestic or International commitments or policies exist in relation to the substance?*

*International Commitments:*

*Domestic Commitments/Policies:*

*Intergovernmental Agreements:*

*Federal Policies:*

- \* *Toxic Substances Management Policy:*
- \* *Pollution Prevention Strategic Framework:*
- \* *Recommendations from Strategic Options Process (SOP) issue tables:*

*CCME Canada-Wide Standards Commitments:*

*Other Environmental/Risk Management objectives established for the substance by federal government or through intergovernmental processes:*

*Agreement on Internal Trade:*

*International Trade Agreements:*

*North American Free Trade Agreement:*

*World Trade Organization Agreements:*

**iii. Substance Use, Generation and Fates**

- e). *Are the significant uses and sources of the generation and fates (release/transfer/disposal) of the substance known?*
- f). *What are these uses and fates? Are they generalized throughout the economy, or are they specific to particular sectors or even individual firms or facilities?*
- g). *Are there any significant trends in evidence regarding the use, sources, generation, release, transfer, storage or disposal of the substance?*

#### iv. **Substance Characteristics**

- h). *What is the character of the hazard that they pose to human health, the environment and biodiversity? ('toxic' substances may be assumed to pose an existing or imminent threat). Does this threat arise from specific stages in the substance's life cycle (use, release, processing, storage and/or disposal), or throughout its life cycle? Is the threat acute or chronic?*

#### 2. **Assessment of Instrument Availability**

Is substance CEPA toxic? Refer to tables 1 and 2 in March 2000 study for listing of available instruments for CEPA toxic substances and other substances of concern.

#### 3. **Assessment of Relevant Instruments**

List instruments relevant to substance.

#### 4. **Application of Instrument Choice Matrix.**

Tables are presented for each relevant instrument in each case. These provide assessments against the following criteria.

#### **Instrument Evaluation Criteria.**

The strengths of each instrument were weighted in terms of two sets of criteria: Instrument Criteria, against which the intrinsic characteristics of the instrument were assessed; and Policy/Political Criteria, which assess the acceptability of a particular instrument in the context of current government policy and political circumstances. The policy/political criteria are included to alert risk managers to potential barriers to the use otherwise attractive instruments.

#### **Instrument Criteria**

##### **Efficiency**

Benefits to Society:	Low 0/2; moderate 1/2; high 2/2
Benefits to firm:	Low 0/2; moderate 1/2; high 2/2
Costs to firm:	Low 2/2; moderate 1/2; high 0/2
Costs to Government/Public:	Low 2/2; moderate 1/2; high 0/2

##### **Fairness**

Polluter Pays/Cost Internalization: Low 0/2; moderate 1/2; high 2/2  
 Free Rider potential: Low 2/2; moderate 1/2; high 0/2

Consistency of Protection: Low 0/2; moderate 1/2; high 2/2  
 Disproportionate impacts: Low 0/2; moderate 1/2; high 2/2

### **Effectiveness Criteria**

Certainty of Outcome: Low 1-3/10; moderate: 4-7/10; high: 8-10/10

Speed of Use: Low: 1-2/5; moderate: 3/5; high: 4-5/5

Effectiveness criteria are weighted heavier than other criteria to reflect their importance (i.e. no point in pursuing instruments that can't achieve the required outcome)

### **Policy/Political Criteria**

Consistency with gov't policy: Low 0/2; moderate 1/2; high 2/2

Positive Response from other  
 Government Departments

(OGDs): Low 0/2; moderate 1/2; high 2/2

Positive Provincial Response: Low 0/2; moderate 1/2; high 2/2

Positive Non-Governmental Stakeholder Response

(industry/NGO): Low 0/2; moderate 1/2; high 2/2

Trade issues/concerns: Low 2/2; moderate 1/2; high 0/2

Note that assessments are within context of provisions and requirements of CEPA 1999, not generic assessments of instrument characteristics. The assessments and weightings also reflect judgements re: current government policy regarding regulation, federal-provincial relations, and role of other government departments, as opposed to an "ideal" situation.

The assessment of each instrument is presented in a table as follows:

#### Instrument Criteria

<b>Instrument</b>	<b>Effectiveness</b>	<b>Fairness</b>	<b>Efficiency</b>
Name, CEPA section.	Certainty of outcome: (x/10)  Speed of use: (x/5)	Cost internalization: (x/2)  Free Riders: (x/2)  Consistency of Protection: (x/2)  Disproportionate impacts: (x/2)	Benefits to society: (x/2)  Benefits to facilities: (x/2)  Costs to facilities: (x/2)  Costs to government: (x/2)
Instrument (x/41)	Effectiveness (x/15)	Fairness (x/8)	Efficiency (x/8)

#### Political/Policy Criteria

Policy: (x/2)	(OGDs: (x/2)	Provinces: (x/2)	Non-governmental stakeholders: (x/2)	Trade: (x/2)	Total: x/10
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In general instruments were assessed individually, although in some cases combinations of instruments were assessed (e.g. Challenge programs in combination with mandatory performance reporting systems).

## 5. Summary Assessment

The results for each instrument or instrument combination were then presented in a summary assessment table as follows:

Instrument	Instrument Criteria	Policy/ Political Criteria	Comments
Instrument option 2	X/31	X/10	
Instrument option 2	X/31	X/10	
Instrument option 3	X/31	X/10	
Instrument option 4	X/31	X10	

## 6. Potential Actions

Potential actions are presented for each case study on the basis of the evaluation of each instrument. It is recognized that a degree of judgement is required in making actual final choices re: instruments or combinations of instrument. The purpose of the model is to inform these judgements, not make them for decision-makers.

## IV. CONCLUSIONS

Assessments of potential policy instruments were carried out for six fact situations.

A number of common themes emerge from these assessments. Instruments that score well in terms of the instrument criteria of effectiveness, efficiency and fairness, tend to produce low scores in terms of the policy and political criteria. This is particularly true in the case of regulatory instruments.

Conversely, instruments that score the most strongly on policy and political criteria, such as voluntary challenge programs with no mandatory reporting elements, are the weakest in terms of the Instrument criteria, particularly effectiveness. This implies the possibility of the use of the best instrument options not being a viable option due to policy and political considerations, and options much less likely to produce required outcomes being employed instead.



Planning and informational instruments, such as s.56 pollution prevention plans, the National Pollutant Release Inventory and general information gathering powers under the Act occupy a middle ground, providing moderate scores against both the instrument and political/policy criteria. This suggests that these instruments may constitute a class of policy options that have the potential to achieve progress towards required outcomes, and have a reasonable chance of actually being able to be employed by the department.

**CASE 1: Commercial Chemical, CEPA “Toxic,” in widespread use in the economy, high toxicity/environmental impact if enters the environment, goal is elimination of use, generation and release (e.g. CFCs)**

**1. Situational Analysis With Respect to Substance**

**i. Substance Status under CEPA**

- a). *Is substance on CEPA Schedule 1 (the List of Toxic Substances or TSL), proposed for addition to the TSL, or a non-TSL “substance of concern”?*

Substance is CEPA Toxic.

- b). *Does Substance meet criteria for CEPA Toxicity, predominantly anthropogenic, persistence and bioaccumulation to require that it be proposed for Virtual Elimination?*

Substance is CEPA toxic and persistent, but not bioaccumulative (CFCs), therefore is not required to be proposed for virtual elimination.

- c). *Are any actions or the use of a particular instrument mandatory under the Act in relation to the substance?*

As the substance is CEPA “toxic” a proposal for regulation or instrument respecting preventative or control actions must be published in the *Canada Gazette* within two years of Minister recommending addition to the TSL,<sup>1</sup> and the regulation or instrument finalized 18 months later.<sup>2</sup>

**ii. International and Domestic Commitments in Relation to the Substance**

- d). *What domestic or International commitments or policies exist in relation to the substance?*

*International Commitments:*

Montreal Protocol requires controls on use, production, import and export of ozone depleting substances.

*Domestic Commitments/Policies:*

*Intergovernmental Agreements:*

1990 CCME agreement on federal provincial responsibilities on ODS. Federal regulations to address import, manufacture and export of ODS and products containing ODS. Provincial and territorial regulatory requirements address recovery and recycling requirements as well as venting and releases and uses of ODS and products containing ODS.

*Federal Policies:*

- \* *Toxic Substances Management Policy:* Requires life-cycle management for non-VE toxic substances.
- \* *Pollution Prevention Strategic Framework:* Applies as conveyed through CEPA 1999.
- \* *Recommendations from Strategic Options Process (SOP) issue tables:* None to date.

*CCME Canada-Wide Standards Commitments:* None to date. See 1990 CCME Agreement above.

*Other Environmental/Risk Management objectives established for the substance by federal government or through intergovernmental processes:* None to date.

*Agreement on Internal Trade:* May be relevant if restrictions imposed on interprovincial trade in substance.

*International Trade Agreements*

*North American Free Trade Agreement:* May be relevant if restrictions on international trade in substance imposed (i.e. limits on imports or exports). Note exception in NAFTA for actions taken under the Montreal Protocol.

*World Trade Organization Agreements:* May be relevant if restrictions on international trade in substance imposed (i.e. limits on imports or exports).

**iii. Substance Use, Generation and Fates**

- e). *Are the significant uses and sources of the generation and fates (release/transfer/disposal) of the substance known?*

Known in general, although information about use/presence at specific locations/facilities is limited.

- f). *What are these uses and fates? Are they generalized throughout the economy, or are they specific to particular sectors or even individual firms or facilities?*

Substance is widely used throughout the economy for industrial purposes by a variety of sectors.

- g). *Are there any significant trends in evidence regarding the use, sources, generation, release, transfer, storage or disposal of the substance?*

Use of substance appears to be stable although thought to be growing with the economy. Data on generation, releases and transfers very limited.

**iv. Substance Characteristics**

*h). What is the character of the hazard that they pose to human health, the environment and biodiversity? ('toxic' substances may be assumed to pose an existing or imminent threat). Does this threat arise from specific stages in the substance's life cycle (use, release, processing, storage and/or disposal), or throughout its life cycle? Is the threat acute or chronic?*

Threat can be acute in case of large quantity releases, but general concern in chronic effects on Ozone layer. Concern is over release, although this may occur incidentally or as a result of accidents when substance is used or manufactured, as well as disposed of.

**2. Assessment of Instrument Availability**

Substance is CEPA Toxic. Therefore all instruments in Table 1 are available.

**3. Assessment of Relevant Instruments**

Relevant Instruments include:

**Regulation**

Primary Instrument

s.93 Regulation

Secondary (likely would be subsumed into regulatory package made under s.93)

s.135 Controls on Ocean Disposal

s.191 Controls on transboundary movement as hazardous waste

s.167 & 177 Controls on sources that are sources of international air and water pollution

s.200 Emergency prevention, preparedness response and recovery.

s.209 Controls on government operations and federal and aboriginal lands.

**Economic Instruments**

s.325 Deposit Refund requirements – relevant only if return to vendor relevant

s.326 Tradable units – relevant in context of application of regulatory controls on release, use or manufacturing.

**Planning Instruments**

s.56 Pollution Prevention

s.199 Emergency

s.188 Hazardous Waste Reduction for Export (secondary – only relevant in specific circumstances – potentially subsumed under pollution prevention planning)

**Informational Instruments**

s.48 NPRI

s.46 General Information Gathering

**Voluntary Instruments**

s.54 Guidelines, Codes of Practice

Challenge Program

Memoranda of Agreement (ruled out due to transaction costs associated with diversity and scale of use in economy)

Covenants/Civil Contracts (rule out due to transaction costs associated with diversity and scale of use in economy)

### 3. Application of Instrument Choice Matrix.

Tables are presented for each relevant instrument in each case. These provide assessments against the following criteria.

#### Instrument Evaluation Criteria

The strengths of each instrument were weighted as follows:

##### Instrument Criteria

##### Efficiency

Benefits to Society:	Low 0/2; moderate 1/2; high 2/2
Benefits to firm:	Low 0/2; moderate 1/2; high 2/2
Costs to firm:	Low 2/2; moderate 1/2; high 0/2
Costs to Government/Public:	Low 2/2; moderate 1/2; high 0/2

##### Fairness

Polluter Pays/Cost Internalization:	Low 0/2; moderate 1/2; high 2/2
Free Rider potential:	Low 2/2; moderate 1/2; high 0/2
Consistency of Protection:	Low 0/2; moderate 1/2; high 2/2
Disproportionate impacts:	Low 0/2; moderate 1/2; high 2/2

##### Effectiveness Criteria

Certainty of Outcome: Low 1-3/10; moderate: 4-7/10; high: 8-10/10

Speed of Use: Low: 1-2/5; moderate: 3/5; high: 4-5/5

Effectiveness criteria are weighted heavier than other criteria to reflect their importance (i.e. no point in pursuing instruments that can't achieve the required outcome)

##### Policy/Political Criteria

Consistency with gov't policy:	Low 0/2; moderate 1/2; high 2/2
Positive OGD Response:	Low 0/2; moderate 1/2; high 2/2
Positive Provincial Response:	Low 0/2; moderate 1/2; high 2/2
Positive Non-Governmental Stakeholder Response (industry/NGO):	Low 0/2; moderate 1/2; high 2/2
Trade issues/concerns:	Low 2/2; moderate 1/2; high 0/2

Note that assessments are within context of provisions and requirements of CEPA 1999, not generic assessments of instrument characteristics. The assessments and weightings also reflect judgements re: current government policy regarding regulation, federal-provincial relations, and role of other government departments, as opposed to an "ideal" situation.

## Regulation Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Regulation (s.93)	Certainty of outcome: High (9/10)  Speed of use: low (significant barriers (1/5)	Cost internalization: High (2/2)  Free Riders: low (2/2)  Consistency of Protection: High (2/2)  Disproportionate impacts: moderate (1/2) (may present challenges to SMEs w/o active support).	Benefits to society: high (2/2)  Benefits to facilities: moderate (may prompt innovation) (1/2)  Costs to facilities: moderate (1/2)  Costs to government: high (transaction costs, some inspection/ Enforcement costs. (0.5/2)
<b>Total: 21.5/31 (Passes all criteria)</b>	Effectiveness (10/15 – pass)	Fairness (7/8 – pass)	Efficiency (4.5/8 – marginal) (efficiency/costs to facilities may be improved by addition of tradable units system, but this may entail loss of fairness (esp. consistency of protection) and increased administrative costs to government

## Political Criteria

Policy: Moderate (1/2) (conflicts with regulatory policy vs. international commitment)	OGDs: low/moderate (0.5/2) (potential for conflict vs. international commitment)	Provinces: moderate (1/2) (potential for conflict vs. CCME agreement)	Non-governmental stakeholders: moderate (1/2) (industry opposition/ NGO support)	Trade: moderate (1.5/2) (may raise trade concerns if trade restrictions employed vs. international commitment)	<b>Total: 5/10 Marginal</b>
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## Pollution Prevention Planning

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Pollution Prevention Planning (s.56)	<p>Certainty of outcome: moderate (implementation may fail) (4/10)</p> <p>Speed of use: high (Ministerial approval) (4/5)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires EMS where none in place)</p> <p>Consistency of Protection: Moderate (0.5/2) (plan implementation may vary)</p> <p>Disproportionate impacts: moderate (1/2) (planning may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: moderate (1/2) (effectiveness uncertain)</p> <p>Benefits to facilities: high (2/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)</p>

Instrument (18.5/31) (passes all criteria, but unlikely to achieve phase out of use/generation/ release unless used in combination with other instruments)	Effectiveness (8/15 – pass)	Fairness (5.5/8 – pass)	Efficiency (5/8 - pass)
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### Policy/Political Criteria

Policy: Moderate (1/2) (consistent with PP framework vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	<b>Total: 7/10</b>
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## Emergency Planning

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Emergency Planning (s.199)	<p>Certainty of outcome: moderate (impact limited although accidental releases a concern) (4/10)</p> <p>Speed of use: high (Ministerial approval) (4/5)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires emergency plan where none in place)</p> <p>Consistency of Protection: Moderate (1/2) (plan implementation may vary)</p> <p>Disproportionate impacts: moderate (1/2) (planning may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: moderate/high (1.5/2) (effectiveness uncertain)</p> <p>Benefits to facilities: Moderate/high (1.5/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)</p>
Instrument (19/31) (passes all criteria – although impact limited to specific circumstances – although accidental releases/spills a major concern)	Effectiveness (8/15 – pass)	Fairness (6/8 – pass)	Efficiency (5/8 – pass)

### Policy/Political Criteria

Policy: Moderate (1/2) (emergency responsibilities vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## National Pollutant Release Inventory Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (NPRI) (s.48)	<p>Certainty of outcome: Moderate (3/10) (effective information gathering, but impact on use/generation/ release uncertain)</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: moderate (0.5/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: moderate (1/2) (potential challenge to SMEs, communities were facilities not captured by NPRI.</p>	<p>Benefits to society: high (2/2) (multiple benefits)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (17.5/31) (essential re: information gaps regarding substance generation, release and transfer, but cannot bring about elimination unless used in combination with other instruments)	Effectiveness (7/15 – marginal)	Fairness (5.5/8 - pass)	Efficiency (5/8 - pass)

### Political/Policy Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ High NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7/10
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## Information Gathering – General

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Gathering – General (s.46)	<p>Certainty of outcome: Moderate (3/10) (very effective at gathering information, but impact on use and releases less certain – although request for information may raise awareness re: facility use/generation)</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: moderate (0.5/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: moderate (1/2) (potential challenge to SMEs)</p>	<p>Benefits to society: moderate(1/2) (information and some potential release reductions)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (17.5/31) (may be useful in gathering information re: use and generation not captured through NPRI)	Effectiveness (7/15 – marginal)	Fairness (5.5/8 – pass)	Efficiency (5/8 – pass)

### Political/Policy Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ High NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7/10
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## Challenge Program: Mandatory Reporting

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program With mandatory reporting (e.g. through NPRI)	<p>Certainty of outcome: Low/moderate (3.5/10)</p> <p>Speed of use: moderate/high (3.5/5) (few barriers, but mandatory reporting may increase transaction costs)</p>	<p>Cost internalization: moderate/high (1.5/2)</p> <p>Free Riders: moderate/high(1.5/2)</p> <p>Consistency of Protection: low/moderate (0.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate at best: (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate (1/2) (some transaction costs, some inspection/ Administration costs)</p>
Instrument (15.5/31) (effectiveness marginal, fairness increased over challenge program without mandatory reporting element)	Effectiveness (7/15 – marginal)	Fairness (4.5/8 – pass)	Efficiency (4/8 – marginal)

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: high (2/2) (little potential for conflict)	Provinces: high (1.5/2) (some potential for conflict – mandatory reporting may prompt resistance)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8/10
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## **CASE 2: Industrial Sector, which Annually Emits 1.3 kilotonnes of Benzene from Coking Operations, where Goal is a Significant Reduction/Elimination of Generation/Release.**

### **1. Situational Analysis With Respect to Substance**

#### **i. Substance Status under CEPA**

- a). *Is substance on CEPA Schedule 1 (the List of Toxic Substances or TSL), proposed for addition to the TSL, or a non-TSL "substance of concern"?*

Substance is CEPA Toxic.

- b). *Does Substance meet criteria for CEPA Toxicity, predominantly anthropogenic, persistence and bioaccumulation to require that it be proposed for Virtual Elimination?*

Substance is CEPA toxic but not persistent and bioaccumulative therefore is not required to be proposed for virtual elimination.

- c). *Are any actions or the use of a particular instrument mandatory under the Act in relation to the substance?*

As the substance is CEPA "toxic" a proposal for regulation or instrument respecting preventative or control actions must be published in the *Canada Gazette* within two years of Minister recommending addition to the TSL,<sup>1</sup> and the regulation or instrument finalized 18 months later.<sup>2</sup>

## *International Trade Agreements*

*North American Free Trade Agreement:* Problem is generation and release as by-product. No trade issues.

*World Trade Organization Agreements:* Problem is generation and release as by-product. No trade issues.

### **iii. Substance Use, Generation and Fates**

- e). *Are the significant uses and sources of the generation and fates (release/transfer/disposal) of the substance known?*

Known. Steel industry coking operations, total releases 1.3 kilotonnes per year. 4 facilities (Algoma, Dofasco, Lake Ontario Steel, Stelco) all in Ontario.

- f). *What are these uses and fates? Are they generalized throughout the economy, or are they specific to particular sectors or even individual firms or facilities?*

Air releases from coking operations, single sector, 4 facilities.

- g). *Are there any significant trends in evidence regarding the use, sources, generation, release, transfer, storage or disposal of the substance?*

There is a downwards trend in releases in NPRI data 1994-1998. However, individual facilities (e.g. Stelco) have reported increases year to year.

### **iv. Substance Characteristics**

- h). *What is the character of the hazard that they pose to human health, the environment and biodiversity? ('toxic' substances may be assumed to pose an existing or imminent threat). Does this threat arise from specific stages in the substance's life cycle (use, release, processing, storage and/or disposal), or throughout its life cycle? Is the threat acute or chronic?*

Substance is a known carcinogen and smog precursor. Problem is chronic rather than acute. Three of four facilities are located in urban areas (Sault Ste. Marie, Hamilton).

## **2. Assessment of Instrument Availability**

Substance is CEPA Toxic. Therefore all instruments in Table 1 are available.

## **3. Assessment of Relevant Instruments**

Relevant Instruments include:

### **Regulation**

Primary Instrument

s.93 Regulation

Secondary (likely would be subsumed into regulatory package made under s.93)  
s.167 & 177 Controls on sources that are sources of international air and water pollution

s.200 Emergency prevention, preparedness response and recovery

### **Economic Instruments**

s.326 Tradable units – relevant in context of application of regulatory controls on release, use or manufacturing.

### **Planning Instruments**

s.56 Pollution Prevention

s.199 Emergency

### **Informational Instruments**

s.48 NPRI

s.46 General Information Gathering

### **Voluntary Instruments**

s.54 Guidelines, Codes of Practice

Challenge Program

Memoranda of Agreement

Covenants/Civil Contracts

## **4. Application of Instrument Choice Matrix.**

Tables are presented for each relevant instrument in each case. These provide assessments against the following criteria.

### **Instrument Evaluation Criteria**

The strengths of each instrument were weighted as follows:



## Instrument Criteria

### Efficiency

Benefits to Society:	Low 0/2; moderate 1/2; high 2/2
Benefits to firm:	Low 0/2; moderate 1/2; high 2/2
Costs to firm:	Low 2/2; moderate 1/2; high 0/2
Costs to Government/Public:	Low 2/2; moderate 1/2; high 0/2

### Fairness

Polluter Pays/Cost Internalization:	Low 0/2; moderate 1/2; high 2/2
Free Rider potential:	Low 2/2; moderate 1/2; high 0/2
Consistency of Protection:	Low 0/2; moderate 1/2; high 2/2
Disproportionate impacts:	Low 0/2; moderate 1/2; high 2/2

### Effectiveness Criteria

Certainty of Outcome: Low 1-3/10; moderate: 4-7/10; high: 8-10/10

Speed of Use: Low: 1-2/5; moderate: 3/5; high: 4-5/5

Effectiveness criteria are weighted heavier than other criteria to reflect their importance (i.e. no point in pursuing instruments that can't achieve the required outcome)

### Policy/Political Criteria

Consistency with gov't policy:	Low 0/2; moderate 1/2; high 2/2
Positive OGD Response:	Low 0/2; moderate 1/2; high 2/2
Positive Provincial Response:	Low 0/2; moderate 1/2; high 2/2
Positive Non-Governmental Stakeholder Response (industry/NGO):	Low 0/2; moderate 1/2; high 2/2
Trade issues/concerns:	Low 2/2; moderate 1/2; high 0/2

Note that assessments are within context of provisions and requirements of CEPA 1999, not generic assessments of instrument characteristics. The assessments and weightings also reflect judgements re: current government policy regarding regulation, federal-provincial relations, and role of other government departments, as opposed to an "ideal" situation.

## Section 93 Regulation

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
s.93 Regulation	<p>Certainty of outcome: High (9/10)</p> <p>Speed of use: low (significant barriers) (1.5/5) (sector specific focus may be helpful)</p>	<p>Cost internalization: High (2/2)</p> <p>Free Riders: low (2/2)</p> <p>Consistency of Protection: High (2/2)</p> <p>Disproportionate impacts: none (2/2)</p>	<p>Benefits to society: high (2/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate/high (0.5/2)</p> <p>Costs to government: high (transaction costs, some inspection/ Enforcement costs. (0.5/2)</p>
Instrument (22.5/31) (passes all criteria except political acceptability).	Effectiveness (10.5/15 – pass)	Fairness (8/8 - pass)	<p>Efficiency (4/8 – marginal)</p> <p>(efficiency/costs to facilities may be improved by addition of tradable units system, but this may entail loss of fairness (esp. consistency of protection) and increased administrative costs to government</p>

### Policy/Political Criteria

Policy: low (0/2) (conflicts with regulatory policy)	OGDs: low (0.5/2) (potential for conflict although health may support)	Provinces: low (0.5/2) (potential for conflict – although limited to single province.)	Non-governmental stakeholders: moderate (1/2) (industry opposition/ NGO support)	Trade: low (2/2) (no trade concerns)	Total: 4/10
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## Pollution Prevention Planning

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Pollution Prevention Planning (s.56)	<p>Certainty of outcome: moderate (implementation may fail) (4/10)</p> <p>Speed of use: high (Ministerial approval) (4/5)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires EMS where none in place)</p> <p>Consistency of Protection: low/Moderate (0.5/2) (plan implementation may vary)</p> <p>Disproportionate impacts: low (2/2) (all facilities are large)</p>	<p>Benefits to society: moderate (1/2) (effectiveness uncertain – potential increased competitiveness)</p> <p>Benefits to facilities: moderate/high (1.5/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate/high (0.5/2) (may have to tailor requirements to a small number of facilities. Some inspection/ Enforcement costs)</p>

Instrument (18.5/31) (passes all criteria)	Effectiveness (8/15 = pass)	Fairness (6.5/8 = pass)	Efficiency (4/8 – pass)
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### Policy/Political Criteria

Policy: Moderate (1/2) (consistent with PP framework vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## Emergency Planning

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Emergency Prevention Planning. (s.199)	<p>Certainty of outcome: very limited impact on ongoing generation/releases (2/10)</p> <p>Speed of use: high (Ministerial approval) (4/5)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires emergency plan where none in place)</p> <p>Consistency of Protection: Moderate (0.5/2) (plan implementation may vary)</p> <p>Disproportionate impacts: high (2/2) (all large facilities)</p>	<p>Benefits to society: moderate (1/2) (effectiveness uncertain)</p> <p>Benefits to facilities: Moderate/low (0.5/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)</p>
Instrument (16/31) (Fails effectiveness, as limited impact on ongoing generation/release problem)	Effectiveness (6/15 – fail)	Fairness (6.5/8 – pass)	Efficiency (3.5/8 – marginal)

### Policy/Political Criteria

Policy: Moderate (1/2) (emergency responsibilities vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## National Pollutant Release Inventory

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (NPRI) (s.48)	<p>Certainty of outcome: Moderate (3/10) (highly effective in information gathering, impact on facility behaviour inconsistent)</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: moderate (1/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: low (2/2) (all facilities report)</p>	<p>Benefits to society: high (2/2) (multiple benefits)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (19/31) (Essential re: information gaps regarding substance generation and release but can't guarantee reductions in generation/ release)	Effectiveness (7/15 – marginal)	Fairness (7/8 - pass)	Efficiency (5/8 - pass)

### Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role )	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ high NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7/10
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## Guidelines and Codes of Practice

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Guidelines, Code of Practice (s.54)	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: moderate (few barriers) (2.5/5) (Consultation with provinces required)</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: high (0/2) (major concern)</p> <p>Consistency of Protection: low (0/2) (major concern)</p> <p>Disproportionate impacts: moderate (1/2) No disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: low/moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (0.5/2)</p> <p>Costs to facilities: low (2/2)</p> <p>Costs to government: moderate/low (1.5/2) (some development/ Transaction costs, little inspection/ Enforcement costs)</p>
Instrument (10.5/31) (fails key criteria of effectiveness as well as fairness. Note requirements for fed/prov consultation prior to use)	Effectiveness (4.5/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (4.5/8 – pass)

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: moderate (1.5/2) (limited potential for conflict)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7.5/10
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## Challenge Program: No Mandatory Reporting

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program (ARET) – no mandatory/targeted reporting.	Certainty of outcome: Low (1.5/10)  Speed of use: high (few barriers) (4/5)	Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)  Free Riders: high (0/2) (major concern)  Consistency of Protection: low (0/2) (major concern)  Disproportionate impacts: moderate/high (0.5/2) (none on facilities but potential for disproportionate impacts on communities)	Benefits to society: low/moderate at best: (0.5/2)  Benefits to facilities: moderate (may prompt innovation) (1/2)  Costs to facilities: low (2/2)  Costs to government: low (2/2) (some transaction costs, little inspection/ Enforcement costs)
Instrument (12.5/31) (fails key criteria of effectiveness as well as fairness. Appeal is political – path of least resistance)	Effectiveness (5.5/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (5.5/8 - pass)

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (1.5/2) (targetting of facilities all located in one province may prompt conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8.5/10
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## Challenge Program: Mandatory Reporting

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program With mandatory reporting (likely via NPRI) and targeted public reporting.	<p>Certainty of outcome: Low/moderate (4/10) – may be more effective with focus on specific sector.</p> <p>Speed of use: moderate high (few barriers) (3.5/5) (mandatory reporting may increase transaction costs)</p>	<p>Cost internalization: moderate/high (1.5/2)</p> <p>Free Riders: low/moderate (1.5/2)</p> <p>Consistency of Protection: moderate (0.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate at best: (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate (1/2) (some transaction costs, some inspection/ Administration costs)</p>
Instrument (16/31) (effectiveness and fairness increased over non-mandatory challenge program)	Effectiveness (7.5/15 – marginal)	Fairness (4.5/8 – pass)	Efficiency (4/8 – marginal)

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (1/2) (some potential for conflict – mandatory reporting may prompt resistance from targeted province)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7.5/10
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## Facility Specific MOUs

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Facility Specific MOUs	Certainty of outcome: Low/moderate (3/10) Speed of use: moderate barriers (3/5) (transaction costs of facility specific agreements may be significant.	Cost internalization: low/moderate (0.5/2)  Free Riders: moderate (1/2)  Consistency of Protection: low/moderate (0.5/2) (impacts may vary)  Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)	Benefits to society: moderate at best: (1/2)  Benefits to facilities: moderate (may prompt innovation) (1/2)  Costs to facilities: moderate (1/2)  Costs to government: moderate (1/2) (transaction costs, some inspection/ Administration costs)
Instrument (13/31) (effectiveness weak, fairness and efficiency fail/marginal, high political/policy appeal)	Effectiveness (6/15 – fail)	Fairness (3/8 – fail)	Efficiency (4/8 – marginal)

### Policy/Political Criteria

Policy: moderate high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/low (1.5/2) (some potential for conflict with province)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8.5/10
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## Covenants

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
<p>Covenant with legally enforceable commitments to emission reductions (i.e. some penalty for failure to meet commitments). Facility specific or sectoral.</p>	<p>Certainty of outcome: Unknown, as unclear what bargaining leverage federal government has to obtain enforceable commitments from facility. (4/10)</p> <p>Speed of use: moderate/low (2/5) transaction costs associated with obtaining enforceable commitments may be significant.</p>	<p>Cost internalization: moderate (1/2)</p> <p>Free Riders: moderate/low(1.5/2)</p> <p>Consistency of Protection: moderate (1/2) (function of nature of contract provisions)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high(0.5/2) ( transaction costs, inspection/ Administration costs)</p>
<p>Instrument (13/31) (effectiveness marginal efficiency, fairness marginal.</p> <p>Key issues is what can federal government offer to obtain enforceable commitments. Also potential conflict with provinces re: facility specific intervention/negotiation. Transaction costs may be significant).</p> <p>Note increase in effectiveness vs. increase in costs in relation to MOUs.</p>	<p>Effectiveness (6/15 – fail)</p>	<p>Fairness (4.5/8 – marginal)</p>	<p>Efficiency (3.5/8 – marginal)</p>

**Policy/Political Criteria**

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: moderate/high (1.5/2) (little potential for conflict – although justice may raise questions)	Provinces: moderate (1/2) (may be seen as effort at facility specific regulation).	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7/10
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## 5. Summary Assessment

Instrument	Instrument Criteria	Policy/ Political Criteria	Comments
Regulation (s.93)	22.5/31	4/10	Very high effectiveness and fairness but low political acceptability
Tradable Units			Impact may be to increase efficiency but reduce fairness of regulatory instrument to prevent/control releases
Pollution Prevention Planning (s.56)	18.5/31	7/10	Marginal effectiveness, strong on other criteria, needs to be used in conjunction with other instruments to ensure effectiveness
Emergency Planning (s.199)	16/31	7/10	Fails on effectiveness as problem is chronic not accidental release. (emergency prevention regulation not considered for same reason).
NPRI	19/31	7/10	Essential to all other instrument effectiveness. (general information gathering (s.46) not considered as information needs met by NPRI.)
Guidelines, Codes of Practice	10.5/31	7.5/10	Fails effectiveness and fairness criteria
Challenge Program no mandatory/ Targeted reporting:	12.5/31	8.5/10	Fails effectiveness and fairness criteria. Appeal is political.
Challenge Program with Mandatory/ Targeted Reporting:	16/31	7.5/10	Effectiveness improved to marginal, but increased transaction and oversight costs.
Memoranda of Agreement (facility specific):	13/31	8.5/10	Fails effectiveness, marginal fairness, strong political appeal.
Covenants/Civil Contracts with enforceable conditions	13/31	7/10	Marginal effectiveness (function of conditions of contract), potentially significant transaction costs. Potential conflict with province.

## 6. Potential Actions

- Initiate development of regulation requiring reduction in releases (22.5/31 Instrument (highest score); Political 4/10 (lowest score). Low political score implies potential delays in development/implementation. Interim measures (NPRI listing; Information Gathering; Pollution Prevention Planning; Challenge Program with Mandatory Reporting) may be required.
- Application of NPRI reporting to Benzene (already in place) (19/31 Instrument; Political 7/10).
- Application of Pollution Prevention Planning requirements to sector (18.5/31 Instrument; Political 7/10).
- Challenge sector to reduce emissions immediately, with targeted public reporting of results through NPRI in affected communities (Instrument 16/31; Political 7.5/10).
- Covenants with enforceable conditions may have potential, but federal government's bargaining leverage is unclear, transaction costs may be very significant, and provincial response is uncertain (Instrument 13/31; Political 7/10)
- Guidelines, Codes; Challenge Program without Mandatory/Targeted Reporting; and Sector Specific MOUs ruled out due to weak scores on Instrument criteria (particularly effectiveness).

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1. CEPA 1999, s.91.

2. CEPA 1999, s.92.

**CASE 3: PBT By-Product, where goal is VE of Substance with Focus on a Single Sector which is a major source of releases to Water (e.g. Dioxin from Pulp and Paper Sector)**

**1. Situational Analysis With Respect to Substance**

**i. Substance Status under CEPA**

- a). *Is substance on CEPA Schedule 1 (the List of Toxic Substances or TSL), proposed for addition to the TSL, or a non-TSL "substance of concern"?*

Substance is CEPA Toxic.

- b). *Does Substance meet criteria for inherent toxicity, persistence and bioaccumulation to require that it be proposed for Virtual Elimination?*

Substance is CEPA toxic, predominantly anthropogenic, persistent and bioaccumulative therefore is required to be proposed for virtual elimination.

- c). *Are any actions or the use of a particular instrument mandatory under the Act in relation to the substance?*

As the substance is CEPA "toxic" a proposal for regulation or instrument respecting preventative or control actions must be published in the *Canada Gazette* within two years of Minister recommending addition to the TSL,<sup>1</sup> and the regulation or instrument finalized 18 months later.<sup>2</sup>

As the substance meets the criteria for persistence and bioaccumulation, and is therefore subject to virtual elimination (VE), the proposed regulation or instrument must include a limit on releases of the substance.

ii. **International and Domestic Commitments in Relation to the Substance**

d). *What domestic or International commitments or policies exist in relation to the substance?*

*International Commitments:*

None to date, although substance may be target of international negotiations in the future.

*Domestic Commitments/Policies:*

*Intergovernmental Agreements:*

None to date, although may arise in negotiation of new Canada-Ontario Agreement

*Federal Policies:*

- \* *Toxic Substances Management Policy:* Requires VE of substances.
- \* *Pollution Prevention Strategic Framework:* Applies as conveyed through CEPA 1999.
- \* *Recommendations from Strategic Options Process (SOP) issue tables:* None to date.

*CCME Canada-Wide Standards Commitments:*  
None to date.

*Other Environmental/Risk Management objectives established for the substance by federal government or through intergovernmental processes:* None to date.

*Agreement on Internal Trade:* Problem is generation and release as by-product. No trade issues.

#### *International Trade Agreements*

*North American Free Trade Agreement:* Problem is generation and release as by-product. No trade issues.

*World Trade Organization Agreements:* Problem is generation and release as by-product. No trade issues.

### **iii. Substance Use, Generation and Fates**

- e). *Are the significant uses and sources of the generation and fates (release/transfer/disposal) of the substance known?*

Partially known. Sector identified as leading source of water discharges, although details of contributions from all major sectors and individual facilities not known if substance is not on NPRI with appropriate reporting thresholds.

- f). *What are these uses and fates? Are they generalized throughout the economy, or are they specific to particular sectors or even individual firms or facilities?*

Substance is produced as a by-product by a variety of sectors. Targeted sector is thought to be leading source of discharges to water.

- g). *Are there any significant trends in evidence regarding the use, sources, generation, release, transfer, storage or disposal of the substance?*

No trends evident, although discharges are expected to grow with demands for product without intervention.



#### **iv. Substance Characteristics**

*h). What is the character of the hazard that they pose to human health, the environment and biodiversity? ('toxic' substances may be assumed to pose an existing or imminent threat). Does this threat arise from specific stages in the substance's life cycle (use, release, processing, storage and/or disposal), or throughout its life cycle? Is the threat acute or chronic?*

Substance is produced as an unintentional by-product of production of other products. Substance can have acute toxic effects, although long-term effects through bioaccumulation also a major concern, and substance is implicated as an endocrine disrupting substance.

#### **2. Assessment of Instrument Availability**

Substance is CEPA Toxic. Therefore all instruments in Table 1 are available.

#### **3. Assessment of Relevant Instruments**

Relevant Instruments include:

##### **Regulation**

Primary Instrument  
s.93 Regulation

Secondary (likely would be subsumed into regulatory package made under s.93)  
s.167 & 177 Controls on sources that are sources of international air and water pollution

s.200 Emergency prevention, preparedness response and recovery

##### **Economic Instruments**

s.326 Tradable units – relevant in context of application of regulatory controls on release, use or manufacturing.

##### **Planning Instruments**

s.56 Pollution Prevention  
s.78 VE Planning  
s.199 Emergency Planning

##### **Informational Instruments**

s.48 NPRI  
s.46 General Information Gathering

## **Voluntary Instruments**

s.54 Guidelines, Codes of Practice  
Challenge Program (with or without mandatory reporting)  
Memoranda of Agreement  
Covenants/Civil Contracts

### **4. Application of Instrument Choice Matrix.**

Tables are presented for each relevant instrument in each case. These provide assessments against the following criteria.

#### **Instrument Evaluation Criteria**

The strengths of each instrument were weighted as follows:

##### **Instrument Criteria**

##### **Efficiency**

Benefits to Society:	Low 0/2; moderate 1/2; high 2/2
Benefits to firm:	Low 0/2; moderate 1/2; high 2/2
Costs to firm:	Low 2/2; moderate 1/2; high 0/2
Costs to Government/Public:	Low 2/2; moderate 1/2; high 0/2

##### **Fairness**

Polluter Pays/Cost Internalization:	Low 0/2; moderate 1/2; high 2/2
Free Rider potential:	Low 2/2; moderate 1/2; high 0/2
Consistency of Protection:	Low 0/2; moderate 1/2; high 2/2
Disproportionate impacts:	Low 0/2; moderate 1/2; high 2/2

##### **Effectiveness Criteria**

Certainty of Outcome: Low 1-3/10; moderate: 4-7/10; high: 8-10/10

Speed of Use: Low: 1-2/5; moderate: 3/5; high: 4-5/5

Effectiveness criteria are weighted heavier than other criteria to reflect their importance (i.e. no point in pursuing instruments that can't achieve the required outcome)

##### **Policy/Political Criteria**

Consistency with gov't policy:	Low 0/2; moderate 1/2; high 2/2
Positive OGD Response:	Low 0/2; moderate 1/2; high 2/2
Positive Provincial Response:	Low 0/2; moderate 1/2; high 2/2
Positive Non-Governmental Stakeholder Response (industry/NGO):	Low 0/2; moderate 1/2; high 2/2
Trade issues/concerns:	Low 2/2; moderate 1/2; high 0/2

Note that assessments are within context of provisions and requirements of CEPA 1999, not generic assessments of instrument characteristics. The assessments and weightings also reflect judgements re: current government policy regarding regulation, federal-provincial relations, and role of other government departments, as opposed to an "ideal" situation.

# Regulation

## Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
s.93 Regulation	<p>Certainty of outcome: High (9/10)</p> <p>Speed of use: low (1.5/5) (significant barriers although single sector specific focus may be helpful)</p>	<p>Cost internalization: High (2/2)</p> <p>Free Riders: low (2/2)</p> <p>Consistency of Protection: High (2/2)</p> <p>Disproportionate impacts: low (2/2) (assuming sector consists of similarly sized facilities.</p>	<p>Benefits to society: high (2/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: high (transaction costs, some inspection/ Enforcement costs. (0.5/2)</p>
Instrument (23/31) (passes all criteria except political acceptability).	Effectiveness (10.5/15 – pass)	Fairness (8/8 - pass)	<p>Efficiency (4.5/8 – marginal)</p> <p>(efficiency/costs to facilities may be improved by addition of tradable units system, but this may entail loss of fairness (esp. consistency of protection) and increased administrative costs to government</p>

## Policy/Political Criteria

Policy: moderate (1/2) (regulatory policy vs TSMP)	OGDs: low (0/2) (potential for conflict)	Provinces: low (0/2) (potential for conflict over facility specific regulation)	Non-governmental stakeholders: moderate (1/2) (industry opposition/ NGO support)	Trade: low (2/2) (no trade concerns)	Total: 4/10
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## Pollution Prevention Planning

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Pollution Prevention Planning (s.56)	<p>Certainty of outcome: low/moderate (4/10) (implementation may fail – cannot include release limit).</p> <p>Speed of use: high (Ministerial approval) (4/5)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires EMS where none in place)</p> <p>Consistency of Protection: low/Moderate (0.5/2) (plan implementation may vary)</p> <p>Disproportionate impacts: low (2/2) (all facilities are large)</p>	<p>Benefits to society: moderate (1/2) (effectiveness uncertain – potential increased competitiveness)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (may have to tailor requirements to sector. Some inspection/ Enforcement costs)</p>
Instrument (18.5/31) (Marginal effectiveness and efficiency. Very unlikely to achieve required outcome unless used in combination with other instruments)	Effectiveness (8/15 – marginal)	Fairness (6.5/8 - pass)	Efficiency (4/8 – marginal)

### Policy/Political Criteria

Policy: Moderate (1/2) (consistent with PP framework vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## Virtual Elimination Planning Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
VE Planning (s.78)	<p>Certainty of outcome: low (3/10) (implementation not certain, and specific outcome required)</p> <p>Speed of use: high (Ministerial approval (4/5))</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires EMS where none in place)</p> <p>Consistency of Protection: low/Moderate (0.5/2)</p> <p>Disproportionate impacts: low (2/2) (all facilities are large)</p>	<p>Benefits to society: moderate (1/2) (effectiveness uncertain – potential increased competitiveness)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (may have to tailor requirements to sector. Some inspection/ Enforcement costs)</p>
Instrument 17.5/31 (marginal effectiveness and efficiency. Very unlikely to achieve required outcome except in combination with other instruments)	Effectiveness (7/15 – marginal)	Fairness (6.5/8 - pass)	Efficiency (4/8 - marginal)

## Policy/Political Criteria

Policy: High (2/2) (required by statute)	OGDs: high (2/2) (no direct role)	Provinces: High/Moderate (1.5/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 8.5/10
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## Emergency Planning Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Planning Emergency Prevention (s.199)	Certainty of outcome: very limited impact on ongoing generation/releases (1/10)  Speed of use: high (Ministerial approval) (4/5)	Cost internalization: High (2/2) (plans developed by facilities)  Free Riders: low (2/2) (requires emerg plan where none in place)  Consistency of Protection: Moderate (0.5/2) (plan implementation may vary)  Disproportionate impacts: low (2/2) (all large facilities)	Benefits to society: moderate (1/2) (effectiveness uncertain)  Benefits to facilities: Moderate (1/2)  Costs to facilities: moderate if built on existing EMS (1/2)  Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)
Instrument (15.5/31) Fails effectiveness, as limited impact on ongoing generation/ release problem).	Effectiveness (5/15 – fail)	Fairness (6.5/8 – pass)	Efficiency (4/8 – marginal)

## Policy/Political Criteria

Policy: Moderate (1/2) (emergency responsibilities vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## National Pollutant Release Inventory Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (NPRI) (s.48)	<p>Certainty of outcome: Low (3/10) (highly effective in information gathering, impact on facility behaviour inconsistent)</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: moderate (0.5/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: low (2/2) (all facilities report)</p>	<p>Benefits to society: high (2/2)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (18.5/31) (Marginal effectiveness. Cannot achieve VE on its own but essential re: information gaps regarding substance generation, release and transfer)	Effectiveness (7/15 – marginal)	Fairness (6.5/8 - pass)	Efficiency (5/8 - pass)

### Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ high NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7/10
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## Guidelines, Codes of Practice

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Guidelines, Code of Practice (s.54)	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: moderate (few barriers) (2.5/5) (Consultation with provinces required)</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: high (0/2) (major concern)</p> <p>Consistency of Protection: low (0/2) (major concern)</p> <p>Disproportionate impacts: moderate (1/2) No disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: low/moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (0.5/2)</p> <p>Costs to facilities: low (2/2)</p> <p>Costs to government: moderate/low (1.5/2) (some development/ Transaction costs, little inspection/ Enforcement costs)</p>
Instrument (10.5/31) (fails key criteria of effectiveness as well as fairness. Note requirement for fed/prov consultation prior to use of instrument)	Effectiveness (4.5/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (4.5/8 – pass)

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: moderate (1.5/2) (limited potential for conflict)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7.5/10
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Instrument	Effectiveness	Fairness	Efficiency
Challenge Program (ARET) – no mandatory/targeted reporting.	Certainty of outcome: Low (1/10) (chance of achieving full VE extremely low)  Speed of use: high (few barriers (4/5))	Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)  Free Riders: high (0/2) (major concern)  Consistency of Protection: low (0/2) (major concern)  Disproportionate impacts: moderate (1/2) (none on facilities but potential for disproportionate impacts on communities)	Benefits to society: low/moderate at best: (0.5/2).  Benefits to facilities: moderate (may prompt innovation) (1/2)  Costs to facilities: low (2/2)  Costs to government: low (2/2) (some transaction costs, little inspection/ Enforcement costs)
Instrument (12.5/31) (fails criteria of effectiveness as well as fairness. Appeal is political – path of least resistance)	Effectiveness (5/15 – fail)	Fairness (2/8 - fail)	Efficiency (5.5/8 - pass)

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (2/2)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 9/10
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## Challenge Program: Mandatory Reporting

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program With mandatory reporting (likely via NPRI).	<p>Certainty of outcome: Low/moderate (3.5/10) (Achievement of VE still unlikely).</p> <p>Speed of use: moderate high (few barriers (3.5/5) (mandatory reporting may increase transaction costs)</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: low (2/2)</p> <p>Consistency of Protection: low/moderate (0.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate/high(1.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate (1/2) (some transaction costs, some inspection/ Administration costs)</p>
Instrument (15.5/31) (Effectiveness, fairness, efficiency marginal. Still very unlikely to achieve VE.	Effectiveness (7/15 – marginal)	Fairness (4/8 - marginal)	Efficiency (4.5/8 – marginal)

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate (1/2) (some potential for conflict – mandatory reporting may prompt resistance from targeted provinces)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7.5/10
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## Facility Specific MOUs

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Facility Specific MOUs	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: moderate barriers (2.5/5) (transaction costs of facility specific agreements may be significant).</p>	<p>Cost internalization: low/moderate (0.5/2)</p> <p>Free Riders: moderate(1/2)</p> <p>Consistency of Protection: low/moderate (0.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high (0.5/2) ( transaction costs, some inspection/ Administration costs)</p>
<p>Instrument (11/31)</p> <p>(Effectiveness and fairness weak, efficiency of approach marginal, high political/policy appeal).</p>	<p>Effectiveness (4.5/15 – fail)</p>	<p>Fairness (3/8 – fail)</p>	<p>Efficiency (3.5/8 – marginal)</p>

### Policy/Political Criteria

Policy: moderate high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (1.5/2) (some potential for conflict over facility specific interventions)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8.5/10
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## Covenants

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Covenant with legally enforceable commitments to emission reductions (i.e. some penalty for failure to meet commitments). Facility specific or sectoral.	<p>Certainty of outcome: Unknown, as unclear what bargaining leverage federal government has to obtain enforceable commitments from facility to VE (4/10)</p> <p>Speed of use: moderate/low (1.5/5) transaction costs associated with obtaining enforceable commitments may be significant.</p>	<p>Cost internalization: moderate (1/2)</p> <p>Free Riders: moderate/low(1.5/2)</p> <p>Consistency of Protection: moderate (1/2) (function of nature of contract provisions)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high(0.5/2) ( transaction costs, inspection/ Administration costs)</p>
<p>Instrument (13.5/31) (Effectiveness weak efficiency, fairness marginal. Key issues is what can federal government offer to obtain enforceable commitments. Also potential conflict with provinces re: facility specific intervention/negotiation. Transaction costs may be very significant).</p>	<p>Effectiveness (5.5/15 – fail)</p>	<p>Fairness (4.5/8 – marginal)</p>	<p>Efficiency (3.5/8 – marginal)</p>

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: moderate/high (1.5/2) (little potential for conflict – although justice may raise questions)	Provinces: moderate (1/2) (may be seen as effort at facility specific regulation).	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 6/10
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## 5. Summary Assessment

Instrument	Instrument Criteria	Policy/ Political Criteria	Comments
Regulation (s.93)	23/31	4/10	Very high effectiveness and fairness but low political acceptability
Tradable Units			Impact may be to increase efficiency but reduce fairness of regulatory instrument to prevent/control releases
Pollution Prevention Planning (s.56)	18.5/31	7/10	Weak effectiveness in terms of ability to achieve VE on own. Needs to be used in conjunction with other instruments to ensure effectiveness
VE Planning (s.78)	17.5/31	8.5/10	Weak on effectiveness. VE focus but no implementation requirement. Needs to be used in conjunction with other instruments.
Emergency Planning (s.199)	15.5/31	7/10	Fails on effectiveness as problem is ongoing not accidental release. (Emergency prevention regulation not considered for same reason).
NPRI (s.48)	18.5/31	7/10	Effectiveness alone weak, but essential to all other instrument effectiveness. (General information gathering (s.46) not considered as information needs met by NPRI.)
Guidelines, Codes of Practice	10.5/31	7.5/10	Fails effectiveness and fairness criteria
Challenge Program no mandatory/ Targeted reporting:	12.5/31	9/10	Fails effectiveness and fairness criteria
Challenge Program with Mandatory/ Targeted Reporting.	15.5/31	7.5/10	Effectiveness and fairness improved, but increased transaction and oversight costs potential conflict with provinces and government policy. Very unlikely to achieve VE on own.
Memoranda of Agreement (facility specific):	11/31	8.5/10	Fails effectiveness, fairness and efficiency marginal, strong political appeal.

Covenants/Civil Contracts with enforceable conditions	13.5/31	6/10	Marginal effectiveness (function of conditions of contract) potentially significant transaction costs as requirements become more specific. Potential conflict with province.
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## 6. Potential Actions

- Initiate development of regulation to achieve VE as this will ultimately be required (Instrument 23/31(highest score); Political 4/10 (lowest score). Low political score Implies potential delays in development/implementation. Interim measures (NPRI listing, VE Planning; Pollution Prevention Planning; Challenge Program with Mandatory Reporting) may be required.
- Application of NPRI reporting with thresholds appropriate to capture 90%+ of point source releases and transfers (Instrument 18.5/31; Political 7/10).
- Application of VE planning applied to sector (Instrument 17.5/31 Political 8.5/10) – Application is mandatory.
- Application of Pollution Prevention Planning requirements for the sector (Instrument 18.5/31; Political 7/10).
- Initiate Challenge program with targeted mandatory reporting of outcomes (Instrument 15.5/31; Political 7.5/10).
- Voluntary Instruments (Guidelines, Codes; Challenge Program; MOUs) ruled out due to weak scores on Instrument criteria, particularly effectiveness. Combinations with mandatory reporting strengthen potential effectiveness of some options, although not to a point where they can replace regulations in achievement of VE.
- Covenants with enforceable conditions may have potential, but federal government's bargaining leverage is unclear, transaction costs may prove significant, particularly where such a specific outcome would be required. The provincial response is uncertain (Instrument 13.5/31; Political 6/10).

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1.CEPA 1999, s.91.

2.CEPA 1999, s.92.

## **CASE 4: Dichloromethane (Reductions from Key Sectors including Commercial and Consumer Paint Strippers, Foam Production, Pharmaceutical manufacturing)**

### **1. Situational Analysis With Respect to Substance**

#### **i. Substance Status under CEPA**

- a). *Is substance on CEPA Schedule 1 (the List of Toxic Substances or TSL), proposed for addition to the TSL, or a non-TSL "substance of concern"?*

Substance is CEPA Toxic (PSL Assessment completed 1993, added to TSL March 1999).

- b). *Does Substance meet criteria for CEPA toxicity, predominantly anthropogenic, persistence and bioaccumulation to require that it be proposed for Virtual Elimination?*

Substance is CEPA toxic and moderately persistent, but low potential to bioaccumulate, therefore is not likely to be required to be proposed for virtual elimination.

- c). *Are any actions or the use of a particular instrument mandatory under the Act in relation to the substance?*

As the substance is CEPA "toxic" a proposal for regulation or instrument respecting preventative or control actions must be published in the *Canada Gazette* within two years of Minister recommending addition to the TSL,<sup>1</sup> and the regulation or instrument finalized 18 months later.<sup>2</sup>



ii. **International and Domestic Commitments in Relation to the Substance**

d). *What domestic or International commitments or policies exist in relation to the substance?*

*International Commitments:*

None to date, although future negotiations possible.

*Domestic Commitments/Policies:*

*Intergovernmental Agreements:*

None to date.

*Federal Policies:*

- \* *Toxic Substances Management Policy:* Requires life-cycle management for non-VE toxic substances.
- \* *Pollution Prevention Strategic Framework:* Applies as conveyed through CEPA 199.
- *Recommendations from Strategic Options Process (SOP) issue tables:* SOP Issue Table Report June 1998 recommended actions to reduce emissions of dichloromethane by 50%. Bulk of recommended actions are voluntary in nature. **Note:** Minister's announcement of proposed regulation to reduce air releases by 85% relative to 1995 levels by 2007 for aircraft paint stripping, flexible polyurethane foam, pharmaceuticals, adhesives and cleaning applications. Total release reduction in backgrounder is 50% by 2007.

*CCME Canada-Wide Standards Commitments:* None to date, although provincial requests that substances be dealt with through CWS may be forthcoming.

*Other Environmental/Risk Management objectives established for the substance by federal government or through intergovernmental processes:*

*Agreement on Internal Trade:* May be relevant if restrictions imposed on interprovincial trade in substance.

#### *International Trade Agreements*

*North American Free Trade Agreement:* May be relevant if restrictions on international trade in substance imposed (i.e. limits on imports or exports).

*World Trade Organization Agreements:* May be relevant if restrictions on international trade in substance imposed (i.e. limits on imports or exports).

### **iii. Substance Use, Generation and Fates**

e). *Are the significant uses and sources of the generation and fates (release/transfer/disposal) of the substance known?*

Yes, estimates of use and release available as a result of SOP process.

e). *What are these uses and fates? Are they generalized throughout the economy, or are they specific to particular sectors or even individual firms or facilities?*

Substance is not manufactured in Canada, but is imported. In Canada, primary uses are as a paint remover (aircraft, consumer, and commercial) blowing agent for foam production, pharmaceutical and chemical manufacturing intermediate, adhesive component, cleaning products, and in pesticide aerosols. Significant air releases within urban

areas are reported through NPRI. Use in 1995 was estimated at 7,400 tonnes of which 6,300 tonnes were released to the environment.

- f). *Are there any significant trends in evidence regarding the use, sources, generation, release, transfer, storage or disposal of the substance?*

Increases in air releases of DCM have been reported through NPRI 1995-1997 (+6.8%), slight decrease 1997-98, Major increase in reported transfers to disposal (+215.3%) 1995-97, decrease 1997-98.

**iv. Substance Characteristics**

- g). *What is the character of the hazard that they pose to human health, the environment and biodiversity? ('toxic' substances may be assumed to pose an existing or imminent threat). Does this threat arise from specific stages in the substance's life cycle (use, release, processing, storage and/or disposal), or throughout its life cycle? Is the threat acute or chronic?*

Conclusion of PSL 1 assessment was that since DCM has been classified as being "probably carcinogenic to humans" substance may enter the environment in quantities or under conditions that may constitute a danger in Canada to human life or health.

DCM has been detected in ambient and indoor air, surface water, groundwater, drinking water and food.

**2. Assessment of Instrument Availability**

It is assumed that substance will be found CEPA Toxic. Therefore all instruments in Table 1 will be available.

### **3. Assessment of Relevant Instruments**

Relevant Instruments include:

#### **Regulation**

##### **Primary Instrument**

s.93 Regulation (reductions in air releases require reductions in use. This conclusion reinforced by rise in transfers in waste reported under NPRI). Regulations need to target reductions in use in paint-strippers and use/air releases from manufacturers.

Secondary (likely would be subsumed into regulatory package made under s.93)

s.135 Controls on Ocean Disposal

s.191 Controls on transboundary movement as hazardous waste

s.167 & 177 Controls on sources that are sources of international air and water pollution

s.200 Emergency prevention, preparedness response and recovery.

s.209 Controls on government operations and federal and aboriginal lands.

#### **Economic Instruments**

s.325 Deposit Refund requirements – relevant only if return to vendor relevant

s.326 Tradable units – relevant in context of application of regulatory controls on release, use or manufacturing.

#### **Planning Instruments**

s.56 Pollution Prevention

s.199 Emergency

s.188. Hazardous Waste Reduction for Export (secondary – only relevant in specific circumstances – potentially subsumed under pollution prevention planning)

#### **Informational Instruments**

s.48 NPRI

s.46 General Information Gathering

**Effectiveness Criteria**

Certainty of Outcome: Low 1-3/10; moderate: 4-7/10; high: 8-10/10

Speed of Use: Low: 1-2/5; moderate: 3/5; high: 4-5/5

Effectiveness criteria are weighted heavier than other criteria to reflect their importance (i.e. no point in pursuing instruments that can't achieve the required outcome)

**Policy/Political Criteria**

**Policy/Political**

Consistency with gov't policy: Low 0/2; moderate 1/2; high 2/2

Positive OGD Response: Low 0/2; moderate 1/2; high 2/2

Positive Provincial Response: Low 0/2; moderate 1/2; high 2/2

Positive Non-Governmental Stakeholder Response

(industry/NGO): Low 0/2; moderate 1/2; high 2/2

Trade issues/concerns: Low 2/2; moderate 1/2; high

Note that assessments are within context of provisions and requirements of CEPA 1999, not generic assessments of instrument characteristics. The assessments and weightings also reflect judgements re: current government policy regarding regulation, federal-provincial relations, and role of other government departments, as opposed to an "ideal" situation.

**Policy/Political Criteria**

Policy: low (0/2) (conflicts with regulatory policy)	OGDs: low (0/2) (potential for conflict)	Provinces: low (0.5/2) (potential for conflict although harmonization agreement assigns product/ Substance controls to federal government)	Non-governmental stakeholders: moderate (1/2) (industry opposition/ NGO support)	Trade: moderate (1/2) (may raise trade concerns)	Total: 2.5/10
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## Regulation Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
<p>Regulation (s.93) Restrictions on air releases from manufacturing uses</p>	<p>Certainty of outcome: High (8/10) (End of pipe vs. pollution prevention approach)</p> <p>Speed of use: low (1/5) (full regulation requirements, possibility of strong resistance from industry)</p>	<p>Cost internalization: High (2/2)</p> <p>Free Riders: low (2/2)</p> <p>Consistency of Protection: High (2/2)</p> <p>Disproportionate impacts: moderate (1/2) (may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: high (2/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: high (transaction costs, some inspection/ Enforcement costs. (0.5/2)</p>
<p>Instrument (20.5/31) (passes all criteria except political acceptability – although delays in use may be significant)</p>	<p>Effectiveness (9/15 – pass)</p>	<p>Fairness (7/8 - pass)</p>	<p>Efficiency (4.5/8 – marginal) (efficiency/costs to facilities may be improved by addition of tradable units system, but this may entail loss of fairness (esp. consistency of protection) and increased administrative costs to government</p>

**Policy/Political Criteria**

Policy: low (0/2) (conflicts with regulatory policy)	OGDs: low (0/2) (potential for conflict)	Provinces: low (0.5/2) (potential for conflict although harmonization agreement assigns product/ Substance controls to federal government)	Non-governmental stakeholders: moderate (1/2) (industry opposition/ NGO support)	Trade: moderate (2/2) (does not raise trade concerns)	Total: 3.5/10
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**Pollution Prevention Planning**

**Instrument Criteria**

Instrument	Effectiveness	Fairness	Efficiency
Pollution Prevention Planning(s.56)	<p>Certainty of outcome: moderate (variety of sectors, implementation may fail) (4/10)</p> <p>Speed of use: moderate (3/5) (variety of sectors to which must be applied)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires EMS where none in place)</p> <p>Consistency of Protection: Moderate (0.5/2) (plan implementation may vary)</p> <p>Disproportionate impacts: moderate (1/2) (planning may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: high (1/2) (effectiveness uncertain)</p> <p>Benefits to facilities: moderate/high (1.5/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)</p>



Instrument (17/31) (marginal effectiveness – needs to be used in combination with other instruments to ensure outcome).	Effectiveness (7/15 – marginal)	Fairness (5.5/8 - pass)	Efficiency (4.5/8 – marginal)
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**Policy/Political Criteria**

Policy: Moderate (1/2) (consistent with PP framework vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## Emergency Planning Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Emergency Prevention Planning (s.199)	<p>Certainty of outcome: moderate (impact limited although emergency releases may be a concern given scale of use. Implementation may fail. (4/10)</p> <p>Speed of use: high (3.5/5)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires emergency plan where none in place)</p> <p>Consistency of Protection: low/ Moderate (0.5/2) (plan implementation may vary)</p> <p>Disproportionate impacts: moderate (1/2) (planning may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: moderate(1/2) (effectiveness uncertain)</p> <p>Benefits to facilities: Moderate (1/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)</p>
Instrument (17/31) (effectiveness limited, but accidental releases a concern given level of use).	Effectiveness (7.5/15 – Marginal)	Fairness (5.5/8 – pass)	Efficiency (4/8 – marginal)

## Policy/Political Criteria

Policy: Moderate (1/2) (emergency responsibilities vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## National Pollutant Release Inventory Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (NPRI)	Certainty of outcome: Moderate (3/10) (very effective at gathering information, but impact on use and releases less certain)  Speed of use: high (4/5) (few barriers)	Cost internalization: high (2/2) (reporting by facilities)  Free Riders: low (2/2) (few free rider opportunities)  Consistency of Protection: low/moderate (0.5/2) (impacts on facility behaviour may vary)  Disproportionate impacts: moderate (1/2) (potential challenge to SMEs)	Benefits to society: high (2/2) (information, community right to know and potential release reductions)  Benefits to facilities: moderate (1/2)  Costs to facilities: moderate (1/2) builds on existing EMS  Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)
Instrument (17.5/31) (Marginal effectiveness, achievement of release/use reduction on its own uncertain, but essential to filling information gaps regarding substance generation, release and transfer).	Effectiveness (7/15 - marginal)	Fairness (5.5/8 - pass)	Efficiency (5/8 - pass)

### Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/string political appeal)	OGDs: high (2/2) (no role)	Provinces: low/moderate (1.5/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ High NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7.5/10
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## Information Gathering: General

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (General information powers – gathering of information on substance use)	<p>Certainty of outcome: Moderate (3/10) (very effective at gathering information, but impact on use and releases less certain – although request for information may raise awareness re: facility use/generation)</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: moderate (0.5/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: moderate (1/2) (potential challenge to SMEs)</p>	<p>Benefits to society: moderate(1/2) (information and some potential release reductions)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (17.5/31) (useful in gathering information re: use and generation not captured through NPRI)	Effectiveness (7/15 – marginal)	Fairness (5.5/8 - pass)	Efficiency (5/8 – pass)

### Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role )	Provinces: low/moderate (1.5/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ High NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7.5/10
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## Guidelines, Codes of Practice

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Guidelines, Code of Practice	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: moderate (2.5/5) (Consultation with provinces required, would require variety of guidelines due to multiple uses.</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: high (0/2) (major concern)</p> <p>Consistency of Protection: low (0/2) (major concern)</p> <p>Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: low/moderate at best: (0.5/2)</p> <p>Benefits to facilities: low/moderate (may prompt innovation) (0.5/2)</p> <p>Costs to facilities: low (2/2)</p> <p>Costs to government: moderate (1/2) (Development/ Transaction costs, little inspection/ Enforcement costs)</p>
Instrument (10/31) (Fails key criteria of effectiveness as well as fairness. Note adoption costs due to requirements for fed/prov consultation and multiple sectors involved).	Effectiveness (4.5/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (4/8 – marginal)

**Policy/Political Criteria**

Policy: high (2/2) (consistent regulatory policy)	OGDs: moderate (1.5/2) (limited potential for conflict)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7.5/10
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Instrument	Effectiveness	Fairness	Efficiency
Challenge Program (e.g. ARET type program to reduce air releases/use).	Certainty of outcome: Low (2/10)  Speed of use: moderate (3/5) (ministerial approval but potential complexity due to range of uses and sectors involved).	Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)  Free Riders: high (0/2) (major concern)  Consistency of Protection: low (0/2) (major concern)  Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)	Benefits to society: low/moderate at best: (0.5/2)  Benefits to facilities: moderate (may prompt innovation) (1/2)  Costs to facilities: low (2/2)  Costs to government: moderate/low (1.5/2) (some transaction costs, especially due to range of sectors and uses involved. Little inspection/ Enforcement costs)
Instrument (11.5/31) (Fails key criteria of effectiveness as well as fairness. Appeal is political – path of least resistance)	Effectiveness (5/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (5/8 – pass)

**Policy/Political Criteria**

Policy: high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: high (2/2) (little potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 9/10
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## Challenge Program: Mandatory Reporting

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program With mandatory reporting (e.g. NPRI listing and use reporting) and targeted public reporting of results	<p>Certainty of outcome: Low/moderate (4/10)</p> <p>Speed of use: moderate (2.5/5) (range of sectors and uses involved may make complex. mandatory reporting may increase transaction costs)</p>	<p>Cost internalization: high (2/2)</p> <p>Free Riders: Low (2/2)</p> <p>Consistency of Protection: low/moderate (0.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate (2/2) (multiple benefits)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high (1/2) (some transaction costs, some inspection/ Administration costs)</p>
Instrument (17/31) (Effectiveness and fairness improved with mandatory reporting. Outcome still uncertain. Transaction and monitoring costs increased. High political appeal.	Effectiveness (6.5/15 – fail)	Fairness (5.5/8 - pass)	Efficiency (5/8 – pass)

### Policy/Political Criteria

Policy: moderate (1/2) (consistent regulatory policy but has mandatory element)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (1.5/2) (some potential for conflict –mandatory reporting may prompt resistance)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7.5/10
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## Sector Specific MOUs

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Sector Specific MOUs	<p>Certainty of outcome: Low/moderate (3/10)</p> <p>Speed of use: moderate (2/5) (transaction costs of multiple sector specific agreements may be significant.</p>	<p>Cost internalization: low/moderate (0.5/2)</p> <p>Free Riders: moderate/(1/2)</p> <p>Consistency of Protection: low/moderate (.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate at best: (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high (0.5/2) ( significant transaction costs, some Administration costs)</p>
<p>Instrument (11.5/31)</p> <p>(Effectiveness weak, fairness and efficiency marginal. Potentially significant transaction costs of negotiating MOUs).</p>	<p>Effectiveness (5/15 – fail)</p>	<p>Fairness (3/8 - marginal)</p>	<p>Efficiency (3.5/8 – marginal)</p>

### Policy/Political Criteria

Policy: moderate high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/low (1.5/2) (some potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8.5/10
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## Covenants

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Covenant with legally enforceable commitments to use/ emission reductions (i.e. some penalty for failure to meet commitments). Facility specific or sectoral.	<p>Certainty of outcome: Unknown, as unclear what bargaining leverage federal government has to obtain enforceable commitments from facility. (5/10)</p> <p>Speed of use: low (1.5/5) transaction costs associated with obtaining enforceable commitments may be very significant.</p>	<p>Cost internalization: moderate (1/2)</p> <p>Free Riders: moderate/low(1.5/2)</p> <p>Consistency of Protection: moderate (1/2) (function of nature of contract provisions)</p> <p>Disproportionate impacts: moderate/high (0.5/2) (potential disproportionate facility impacts, and potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: high (0/2) ( transaction costs, inspection/ Administration costs)</p>
Instrument (13.5/31) Transaction costs/time for negotiating enforceable agreements may be very high. Strength of Federal bargaining position not clear).	Effectiveness (6.5/15 – fail)	Fairness (4/8 – marginal)	Efficiency (3/8 – fail)

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: moderate/high (1.5/2) (little potential for conflict – although justice may raise questions)	Provinces: moderate (1/2) (may be seen as effort at facility specific regulation).	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 6/10
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## 5. Summary Assessment

Instrument	Instrument Criteria	Policy/ Political Criteria	Comments
Regulation (s.93) (use restrictions)	21.5/31	2.5/10	Very high effectiveness and fairness, some additional delays/costs due to range of sectors to be covered but low political acceptability. May raise trade issues.
Regulation (s.93) Air releases	20.5/31	3.5/10	Reduced effectiveness, end-of-pipe rather than pollution prevention, but does not raise trade issues.
Tradable Units			Impact may be to increase efficiency but reduce fairness of regulatory instrument to prevent/control releases
Pollution Prevention Planning (s.56)	17/31	7/10	Marginal effectiveness, strong on other criteria, needs to be used in conjunction with other instruments to ensure effectiveness. Good potential to raise awareness and produce early action re: use and generation of DCM
Emergency Planning (s.199)	17/31	7/10	Accidental releases a concern re: level of use. Raises awareness re: use.
NPRI	17.5/31	7.5/10	Effective in terms of information gathering, supports use of other instruments, needs to be used in conjunction with other instruments to ensure reductions in use/release
General Information Gathering (s.46)	17.5/31	7.5/10	Effective in terms of information gathering to fill gaps re: NPRI especially re: use and smaller facilities. Information gathering also has impact in terms of facility awareness of use/generation. Again would have to be used in conjunction with other instruments to ensure reductions in use/release.
Guidelines, Codes of Practice (s.54)	10/31	7.5/10	Fails effectiveness and fairness, potentially significant adoption costs.
Challenge Program no mandatory/ Targeted reporting:	11.5/31	9/10	Fails effectiveness and fairness criteria

Challenge Program with Mandatory/ Targeted Reporting:	17/31	7.5/10	Effectiveness and fairness improved, but increased transaction and oversight costs.
Memoranda of Agreement (Sector specific):	11.5/31	8.5/10	Fails effectiveness, potentially significant negotiation costs. Strong political appeal.
Covenants/Civil Contracts with enforceable conditions	13.5/31	6/10	Effectiveness unknown, potentially very significant negotiation costs due to range of sectors/uses potentially involved.

## 6. Potential Actions

- Initiate work on regulation to reduce use of DCM in paint strippers and industrial uses, reduce air releases from industrial uses (Instrument 21.5/20.5/31 (highest scores); Political 2.5/10 (lowest score)). Low political score implies potential delays in development/implementation. Interim measures (NPRI listing; Information Gathering; Pollution Prevention Planning; Emergency Planning; Challenge Program with Mandatory Reporting) may be required.
- Establishment of Pollution Prevention Planning requirements for producers of products (e.g paint strippers) containing DCM and industrial DCM users (e.g. foam production, pharmaceuticals) (Instrument 17/31; Political 7/10).
- Establishment of Emergency Planning Requirements for industrial users of DCM (Instrument 17/31; Political 7/10).
- Review NPRI reporting thresholds to ensure capture of 90% of point source releases/transfers (Instrument 17.5/31; Political 7.5/10).
- Use of general information gathering powers (s.46) to gather information on use of DCM and presence in consumer/industrial products (Instrument 17.5/31; 7.5/10).
- Challenge Program with mandatory reporting on DCM containing products and industrial DCM users to reduce DCM use might be considered as interim measure, but unlikely to achieve required results (Instrument 17/31; Political 7.5/10).

- Codes, Guidelines; Challenge Program without Mandatory/Targeted Reporting, MOUs ruled out due to weak instrument scores, particularly on effectiveness.
- Covenants with enforceable conditions may have potential, but federal government's bargaining leverage is unclear; transaction costs may prove significant, particularly where such a specific outcome would be required. The provincial response is uncertain (Instrument 13.5/31; Political 6/10).

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□.CEPA 1999, s.91.

□.CEPA 1999, s.92.

## **CASE 5: Non-CEPA Toxic VOCs in Consumer Products**

### **1. Situational Analysis With Respect to Substance**

#### **i. Substance Status under CEPA**

- a). *Is substance on CEPA Schedule 1 (the List of Toxic Substances or TSL), proposed for addition to the TSL, or a non-TSL "substance of concern"?*

Substances are not CEPA Toxic.

- b). *Does Substance meet criteria for CEPA toxic, predominantly anthropogenic, persistence and bioaccumulation to require that it be proposed for Virtual Elimination?*

No or not known.

- c). *Are any actions or the use of a particular instrument mandatory under the Act in relation to the substance?*

As substances are not CEPA toxic, no actions are mandatory, other than publication of conclusions of PSL Assessment if substances placed on PSL.

**ii. International and Domestic Commitments in Relation to the Substance**

d). *What domestic or International commitments or policies exist in relation to the substance?*

*International Commitments:*

None to date, although some substances in class may be target of international negotiations on air quality in the future.

*Domestic Commitments/Policies:*

*Intergovernmental Agreements:*

None to date.

*Federal Policies:*

- \* *Toxic Substances Management Policy:* Not applicable
- \* *Pollution Prevention Strategic Framework:* Applies as conveyed through CEPA 1999.
- *Recommendations from Strategic Options Process (SOP) issue tables:* None to date.

*CCME Canada-Wide Standards Commitments:*

None to date.

*Other Environmental/Risk Management objectives established for the substance by federal government or through intergovernmental processes:* None to date.

*Agreement on Internal Trade:* None apparent, although restriction on import/export/use of consumer products containing VOCs may raise trade issues.

*International Trade Agreements*

*North American Free Trade Agreement:* None apparent, although restrictions on import/export/use of consumer products containing VOCs may raise trade issues.

*World Trade Organization Agreements:* None apparent, although restrictions on import/export/use of consumer products containing VOCs may raise trade issues.

### iii. Substance Use, Generation and Fates

- e). *Are the significant uses and sources of the generation and fates (release/transfer/disposal) of the substance known?*

Partially known from fragmentary data sources. Substances are contained in consumer products, particularly paints, solvents (cleaning agents) and adhesives.

- f). *What are these uses and fates? Are they generalized throughout the economy, or are they specific to particular sectors or even individual firms or facilities?*

Substances are contained in consumer products in widespread commerce, such as paints, cleaning agents and adhesives. Waste products may be stored in households or disposed of in the municipal solid waste stream.

- g). *Are there any significant trends in evidence regarding the use, sources, generation, release, transfer, storage or disposal of the substance?*

No data on trends available, although it is anticipated that use will grow as the economy expands. Efforts have taken place at the municipal level to remove these types of household hazardous wastes from the municipal solid waste stream.

### iv. Substance Characteristics

- h). *What is the character of the hazard that they pose to human health, the environment and biodiversity? ('toxic' substances may be assumed to pose an existing or imminent threat). Does this threat arise from specific stages in the substance's life cycle (use, release, processing, storage and/or disposal), or throughout its life cycle? Is the threat acute or chronic?*

Concern over short-term health impacts of exposure. Primary concern contribution of volatized VOCs to the formation of smog. Area sources, to which VOCs in consumer products contribute are thought to contribute 1/3 of smog precursors in some areas (e.g. Southern Ontario).

## 2. Assessment of Instrument Availability

Substances are not CEPA Toxic. Therefore only instruments in Table 2 are available.



### **3. Assessment of Relevant Instruments**

Relevant Instruments include:

#### **Regulation**

The following instruments may be available under specific circumstances:

- s.118 Controls on Nutrients (not relevant)
- s.135 Controls on Disposal at Sea (very marginal relevance)
- s.140 Control on use as content of fuels (not relevant)
- s.160 Controls on engine emissions (not relevant)
- s.167 & 177 Controls on sources that are sources of international air and water pollution (potential marginal relevance if smog to which VOC releases contribute has transboundary impacts).
- s.191 Controls on Transboundary Movement has hazardous waste (not relevant)
- s.200 Emergency Prevention (marginal relevance)
- s.209 Federal Operations and Lands. (potential relevance)

Only s.200 regulations for emergency prevention and s.209 federal operations regulations could be applied to all substances on a class basis, and therefore are the only regulatory instruments considered for the entire substance group.

#### **Economic Instruments**

s.326 Tradable Units and s.325 Deposits may be applied to substances in use by federal agencies or on federal lands.

#### **Planning Instruments**

s.56 Pollution Prevention Planning may be available in relation to substances involved in international air or water pollution, but could not be applied on a class basis.

#### **Informational Instruments**

s.46 General Information Gathering

#### **Voluntary Instruments**

s.54 Guidelines, Codes of Practice – available but difficult to apply on a class basis given variety of uses and sources.

Challenge Program (with or without mandatory reporting)

Memoranda of Agreement

Covenants/Civil Contracts

#### 4. Application of Instrument Choice Matrix.

Tables are presented for each relevant instrument in each case. These provide assessments against the following criteria.

##### Instrument Evaluation Criteria

The strengths of each instrument were weighted as follows:

##### Instrument Criteria

##### Efficiency

Benefits to Society:	Low 0/2; moderate 1/2; high 2/2
Benefits to firm:	Low 0/2; moderate 1/2; high 2/2
Costs to firm:	Low 2/2; moderate 1/2; high 0/2
Costs to Government/Public:	Low 2/2; moderate 1/2; high 0/2

##### Fairness

Polluter Pays/Cost Internalization:	Low 0/2; moderate 1/2; high 2/2
Free Rider potential:	Low 2/2; moderate 1/2; high 0/2
Consistency of Protection:	Low 0/2; moderate 1/2; high 2/2
Disproportionate impacts:	Low 0/2; moderate 1/2; high 2/2

##### Effectiveness Criteria

Certainty of Outcome: Low 1-3/10; moderate: 4-7/10; high: 8-10/10

Speed of Use: Low: 1-2/5; moderate: 3/5; high: 4-5/5

Effectiveness criteria are weighted heavier than other criteria to reflect their importance (i.e. no point in pursuing instruments that can't achieve the required outcome)

##### Policy/Political Criteria

Consistency with gov't policy:	Low 0/2; moderate 1/2; high 2/2
Positive OGD Response:	Low 0/2; moderate 1/2; high 2/2
Positive Provincial Response:	Low 0/2; moderate 1/2; high 2/2
Positive Non-Governmental Stakeholder Response (industry/NGO):	Low 0/2; moderate 1/2; high 2/2
Trade issues/concerns:	Low 2/2; moderate 1/2; high 0/2

Note that assessments are within context of provisions and requirements of CEPA 1999, not generic assessments of instrument characteristics. The assessments and weightings also reflect judgements re: current government policy regarding regulation, federal-provincial relations, and role of other government departments, as opposed to an "ideal" situation

## Regulation: Emergency Preparedness

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
s.200 emergency preparedness regulation	<p>Certainty of outcome: Low (2/10) (may be means to raise facility awareness of use or generation of substances, but impacts on use of substances as product component very limited)</p> <p>Speed of use: low (1/5) (faces all major regulatory barriers)</p>	<p>Cost internalization: High (2/2)</p> <p>Free Riders: low (2/2)</p> <p>Consistency of Protection: High (2/2)</p> <p>Disproportionate impacts: moderate (1/2) (some potential disproportionate impacts on SMEs)</p>	<p>Benefits to society: low/moderate (0.5/2)</p> <p>Benefits to facilities: low/moderate (may prompt innovation) (0.5/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: high (transaction costs, some inspection/ Enforcement costs. (0.5/2)</p>
Instrument 12.5/31) (Impact limited to raising production facility awareness of use, little impact on consumer use, but transaction/use costs high)	Effectiveness (3/15 – fail)	Fairness (7/8 - pass)	Efficiency (2.5/8 – fail)

### Policy/Political Criteria

Policy: low (0/2) (conflicts with regulatory policy)	OGDs: low (0/2) (potential for conflict)	Provinces: low (0.5/2) (potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry opposition/ NGO support)	Trade: low (2/2) (no trade concerns)	Total: 3.5/10
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## Regulation: Federal Jurisdiction

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
s.209 (regulation of federal operations or activities on federal lands). (e.g. establishment of requirements that federal agencies/ contractors use low VOC content products).	Certainty of outcome: Low (4/10) (Could move federal agencies to use of low VOC content products, but impact limited to federal agencies and activities on federal lands)  Speed of use: low (1/5) (faces all major regulatory barriers)	Cost internalization: High (2/2)  Free Riders: moderate (1/2) (only affects suppliers to federal agencies)  Consistency of Protection: low/moderate (0.5/2) (only affects federal agencies)  Disproportionate impacts: low/moderate (0.5/2) (benefits limited to communities with significant federal presence)	Benefits to society: low/moderate (0.5/2) (limited impacts)  Benefits to facilities: moderate (may prompt innovation) (1/2)  Costs to facilities: moderate (1/2)  Costs to government: high (transaction costs, some inspection/ Enforcement costs. (1/2)
Instrument (12.5/31) (Impact limited to reduction in use by federal facilities. May help create market for low VOC products).	Effectiveness (5/15 – fail)	Fairness (4/8 – marginal)	Efficiency (3.5/8 – marginal)

### Policy/Political Criteria

Policy: low (0/2) (conflicts with regulatory policy)	OGDs: low (0/2) (potential for conflict)	Provinces: High (2/2) (little potential for conflict)	Non-governmental stakeholders: moderate/high (1.5/2) (industry/ NGO support possible)	Trade: low/moderate (1.5/2) (could be seen as raising trade issues)	Total: 5/10
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# National Pollutant Release Inventory

## Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (NPRI) (s.48)	<p>Certainty of outcome: Low (2/10) (highly effective in information gathering, impact on facility behaviour or product formulation inconsistent (e.g. might raise public awareness of pollution impacts of facilities producing products).</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: low/moderate (0.5/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: low (1/2) (all facilities report, potential impacts on SMEs)</p>	<p>Benefits to society: moderate (1/2)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (15.5/31) (Impact limited to potential identification of product manufacturers. May have weak indirect impact on consumer behaviour).	Effectiveness (6/15 – fails)	Fairness (5.5/8 - pass)	Efficiency (4/8 – marginal)

## Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ high NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7/10
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# Information Gathering: General

## Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
<p>Informational Instrument: General information gathering (s.46) and dissemination</p> <p>(e.g. require manufacturers to report on VOC content of products. Make this information available to consumers. Would need to be accompanied by a public information campaign to explain significance of VOC problem and contribution to smog).</p>	<p>Certainty of outcome: Low/moderate (3.5/10) Provide consumers with specific product information to assist in making choices</p> <p>Speed of use: moderate/high (3.5/10) (more targeted nature of program may lead to additional delays).</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: low/moderate (0.5/2) (impacts on manufacturer behaviour may vary.</p> <p>Disproportionate impacts: moderate/low (1.5/2) (all facilities report, potential impacts on SMEs)</p>	<p>Benefits to society: moderate (1/2)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
<p>Instrument (17/31)</p> <p>(More targeted information program informs consumer choice directly, provides incentives to manufacturers to reduce VOC content. Requires public education program on VOC problem to support).</p>	<p>Effectiveness (7/15 – marginal)</p>	<p>Fairness (6/8 - pass)</p>	<p>Efficiency (4/8 – marginal)</p>

## Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role)	Provinces: low/moderate (1.5/2) (some potential for conflict)	Non-governmental stakeholders: moderate/ (1/2) ( industry opposition/ NGO support	Trade: high (2/2) (no trade concerns)	Total: 7.5/10
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## Guidelines, Codes of Practice

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Guidelines, Code of Practice (s.54) for VOC containing consumer products	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: low/moderate (1.5/5) (Consultation with provinces required, multiple sectors, product guidelines required)</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: high (0/2) (major concern)</p> <p>Consistency of Protection: low (0/2) (major concern)</p> <p>Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: low/moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (0.5/2)</p> <p>Costs to facilities: low (2/2)</p> <p>Costs to government: moderate/low (1.5/2) (some development/ Transaction costs, little inspection/ Enforcement costs)</p>
Instrument (9.5/31) (Fails key criteria of effectiveness as well as effectiveness. Note requirements for fed/prov consultation and impact on speed)	Effectiveness (3.5/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (4.5/8 – marginal)

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: moderate (1.5/2) (limited potential for conflict)	Provinces: moderate (1.5/2) (some potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8/10
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## Challenge Program

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
<p>Challenge Program (ARET)</p> <p>(E.g. challenge to industry to reduce VOC content of products, with no mandatory reporting and public reporting of results).</p>	<p>Certainty of outcome: Low (1/10)</p> <p>Speed of use: moderate (few barriers but very diverse uses and sectors) (3/5)</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: high (0/2) (major concern)</p> <p>Consistency of Protection: low (0/2) (major concern)</p> <p>Disproportionate impacts: moderate (1/2) (none on facilities but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: low/moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: low (2/2)</p> <p>Costs to government: low (2/2) (some transaction costs, little inspection/ Enforcement costs)</p>
<p>Instrument (10.5/31) (fails key criteria of effectiveness and criteria of fairness. Little impact without mandatory reporting and public release of data. Appeal is political – path of least resistance)</p>	<p>Effectiveness (3/15 – fail)</p>	<p>Fairness (2/8 - fail)</p>	<p>Efficiency (5.5/8 - pass)</p>

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (2/2)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 9/10
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## Challenge Program: Mandatory Reporting Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program (with mandatory reporting and targeted public reporting – similar to information gathering general proposal with addition of challenge element.).	Certainty of outcome: Low/moderate (4/10)  Speed of use: moderate high (few barriers (3.5/5) (mandatory reporting may increase transaction costs)	Cost internalization: high (2/2)  Free Riders: low(2/2)  Consistency of Protection: low/moderate (0.5/2) (impacts may vary)  Disproportionate impacts: low/moderate (1/2) (All facilities report, impacts may vary among communities, some potential impacts on SMEs)	Benefits to society: moderate/high: (1.5/2)  Benefits to facilities: moderate (may prompt innovation) (1/2)  Costs to facilities: moderate (1/2)  Costs to government: moderate (1/2) (some transaction costs, some inspection/ Administration costs)
Instrument (17.5/31) (Marginal improvement in effectiveness of s.46 proposal with challenge component added). Improved effectiveness and fairness over program without mandatory reporting.	Effectiveness (7.5/15 – marginal)	Fairness (5.5/8 – marginal)	Efficiency (4.5/8 – marginal)

## Policy/Political Criteria

Policy: moderate high (1/2) (consistent regulatory policy but has mandatory element)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate (1/2) (some potential for conflict – mandatory reporting may prompt resistance from targeted provinces)	Non-governmental stakeholders: moderate (1/2) (industry opposition to mandatory element vs.NGO support)	Trade: Low (2/2) (no trade concerns)	Total: 7/10
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## Sectoral MOUs

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Sector MOUs (e.g. commitment to reduce VOC content of products).	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: (2/5) (transaction costs of sector specific agreements may be significant.</p>	<p>Cost internalization: low/moderate (0.5/2)</p> <p>Free Riders: moderate/(1/2)</p> <p>Consistency of Protection: low/moderate (0.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (Impacts/requirements may vary from sector to sector.</p>	<p>Benefits to society: moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high (0.5/2) ( transaction costs, some inspection/ Administration costs)</p>
Instrument (10.5/31) (Effectiveness, fairness weak and efficiency marginal, high political/policy appeal).	Effectiveness (4/15 – fail)	Fairness (3/8 - fail)	Efficiency (3.5/8 – marginal)

### Policy/Political Criteria

Policy: moderate high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (1.5/2) (some potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8.5/10
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## Covenants

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Covenant with legally enforceable commitments to reductions in VOC content of products. (i.e. some penalty for failure to meet commitments). Manufacturer specific or sectoral.	<p>Certainty of outcome: Unknown, but federal bargaining leverage re: non-CEPA toxics is very low. (2/10)</p> <p>Speed of use: moderate/low (1/5) transaction costs associated with obtaining enforceable commitments may be significant. Would require multiple agreements.</p>	<p>Cost internalisation: moderate (1/2)</p> <p>Free Riders: moderate(1/2)</p> <p>Consistency of Protection: moderate (1/2) (function of nature of contract provisions)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high(0/2) ( transaction costs, inspection/ Administration costs)</p>
<p>Instrument (10/31) (Fails effectiveness, efficiency.</p> <p>Fairness marginal.</p> <p>Federal bargaining leverage very weak with CEPA non-toxic. Transaction costs may be very significant given variety of manufactures etc.</p>	<p>Effectiveness (3/15 – fail)</p>	<p>Fairness (4/8 – marginal)</p>	<p>Efficiency (3/8 – fail)</p>

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: moderate/high (1.5/2) (little potential for conflict – although justice may raise questions)	Provinces: moderate (1/2) (may be seen as effort at facility specific regulation).	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 6/10
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## 5. Summary Assessment

Instrument	Instrument Criteria	Policy/ Political Criteria	Comments
Regulation (s.200)	12.5/31	3.5/10	Impact limited and transaction/adoption costs high
Regulation (s.209)	12.5/31	5/10	Impact limited to federal agencies using VOC containing products, potentially high adoption costs. Might help create market for low VOC products
NPRI	15.5/31	7/10	May provide some information on manufacturers. Potential impacts on consumer behaviour weak.
Information Gathering and Dissemination – General (s.46)	17/31	7.5/10	Targeted info gathering on VOC content of products and dissemination of information to public informs consumer choice directly.
Guidelines, Codes of Practice. (s.54)	9.5/31	8/10	Limited impact due to voluntary nature, potentially high adoption costs.
Challenge Program no mandatory/ Targeted reporting:	10.5/31	9/10	Fails effectiveness and fairness criteria
Challenge Program with Mandatory/ Targeted Reporting:	17.5/31	7/10	Similar to s.46 proposal, Challenge element may marginally increase effectiveness. Improved effectiveness and fairness over non-mandatory challenge program.
Memoranda of Agreement (Sector specific):	10.5/31	8.5/10	Fails effectiveness, marginal fairness, potentially significant transaction costs associated with multiple agreements.
Covenants/Civil Contracts with enforceable conditions	10/31	6/10	Fails effectiveness as federal bargaining leverage very weak. Potentially very significant transaction costs as requirements become more specific. May require multiple agreements.

## 6. Potential Actions

- Use of s.46 powers to gather information from product manufacturers re: VOC content of products. Make this information available to consumers, in conjunction with education program on significance of consumer product VOC contributions to smog (Instrument 17/31; 7.5/10). Challenge program may marginally enhance effectiveness of targeted information gathering and dissemination program (Instrument 17.5/31; Political 7/10).
- NPRI reporting of VOCs of concern may assist in identification of manufacturers. May have a weak impact on consumer choice (Instrument 15.5/31; Political 7/10).
- Available regulatory instruments too narrow in reach to have significant impacts and face political barriers (Emergency Regulation: Instrument 12.5/31; Political 3.5/10); Federal Jurisdiction Regulation: Instrument 12.5/31; Political 5/10)
- Guidelines, Codes of Practice, Challenge Program without Mandatory Reporting, MOUs ruled out due to weak scores on Instrument Criteria, particularly effectiveness.
- Covenants ruled out due to weak federal bargaining leverage without significant regulatory potential (Instrument 10/31; Political 6/10).

**CASE 6: Nonylphenol** (Assuming will be declared "toxic)." Substance in widespread use in economy, major discharges from pulp and paper and textile industries, municipal sewage treatment plants)

**1. Situational Analysis With Respect to Substance**

**i. Substance Status under CEPA**

- a). *Is substance on CEPA Schedule 1 (the List of Toxic Substances or TSL), proposed for addition to the TSL, or a non-TSL "substance of concern"?*

Substance is under PSL assessment and is likely to be found CEPA toxic. Instrument choice discussion will follow on basis of assumption of CEPA "toxicity."

- b). *Does Substance meet criteria for CEPA toxicity, predominantly anthropogenic, persistence and bioaccumulation to require that it be proposed for Virtual Elimination?*

Substance is CEPA toxic and moderately persistent, but low to moderate potential to bioaccumulate, therefore is not likely to be required to be proposed for virtual elimination.

- c). *Are any actions or the use of a particular instrument mandatory under the Act in relation to the substance?*

As the substance is CEPA "toxic" a proposal for regulation or instrument respecting preventative or control actions must be published in the *Canada Gazette* within two years of Minister recommending addition to the TSL,<sup>1</sup> and the regulation or instrument finalized 18 months later.<sup>2</sup>

**ii. International and Domestic Commitments in Relation to the Substance**

- d). *What domestic or International commitments or policies exist in relation to the substance?*

*International Commitments:*

None to date, although future negotiations likely, leading to commitments to severe restrictions/elimination of generation, use and release.

*Domestic Commitments/Policies:*

*Intergovernmental Agreements:*

None to date.

*Federal Policies:*

- \* *Toxic Substances Management Policy:* Requires life-cycle management for non-VE toxic substances.
- \* *Pollution Prevention Strategic Framework:* Applies as conveyed through CEPA 199.
- \* *Recommendations from Strategic Options Process (SOP) issue tables:* None to date.

*CCME Canada-Wide Standards Commitments:* None to date, although provincial requests that substances be dealt with through CWS may be forthcoming.

*Other Environmental/Risk Management objectives established for the substance by federal government or through intergovernmental processes:* None to date.

*Agreement on Internal Trade:* May be relevant if restrictions imposed on interprovincial trade in substance.

*International Trade Agreements*

*North American Free Trade Agreement:* May be relevant if restrictions on international trade in substance imposed (i.e. limits on imports or exports).

*World Trade Organization Agreements:* May be relevant if restrictions on international trade in substance imposed (i.e. limits on imports or exports).

**iii. Substance Use, Generation and Fates**

- e). *Are the significant uses and sources of the generation and fates (release/transfer/disposal) of the substance known?*

Yes, although precise levels of use not known.

- e). *What are these uses and fates? Are they generalized throughout the economy, or are they specific to particular sectors or even individual firms or facilities?*

Nonylphenol ethoxylates (NPEs) are a class of the broader group of compounds known as alkylphenol ethoxylates (APEs). NPEs are high-volume chemicals that

have been used for more than 40 years as detergents, emulsifiers, wetting agents and dispersing agents. Nonylphenol polyethoxylate-containing products are used in many sectors, including textile processing, pulp and paper processing, paints, resins and protective coatings, oil and gas recovery, steel manufacturing, pest control products and power generation. A variety of cleaning products, degreasers and detergents are also available for institutional and domestic use. These products have numerous applications, including controlling deposits on machinery, cleaning equipment, scouring fibres, as wetting and de-wetting agents, in dyeing, in machine felt cleaning and conditioning and in product finishing. NPEs are also used in a wide range of consumer products, including cosmetics, cleaners and paints, and in a variety of applications.

NPEs and their degradation products (e.g., nonylphenol [NP]) are not produced naturally. Their presence in the environment is solely a consequence of anthropogenic activity. NP and NPEs enter the environment primarily via industrial and municipal wastewater treatment plant (MWWTP) effluents (liquid and sludge), but also by direct discharge (pulp and paper mill and textile mill effluents), although it is not known how significant the latter pathway is in Canada.

The major route of release is NP and NPEs to the Canadian Environment is through discharge of effluents. Textile mill effluents represent a major source of NPEs to the environment. Municipal effluents are a significant source of NPEs and widespread across Canada.

- f). *Are there any significant trends in evidence regarding the use, sources, generation, release, transfer, storage or disposal of the substance?*

There appears to be a recent decrease in discharge of NPEs from pulp and paper mills, but there are very few data available to validate this conclusion.

#### **iv. Substance Characteristics**

- g). *What is the character of the hazard that they pose to human health, the environment and biodiversity? ('toxic' substances may be assumed to pose an existing or imminent threat). Does this threat arise from specific stages in the substance's life cycle (use, release, processing, storage and/or disposal), or throughout its life cycle? Is the threat acute or chronic?*

Nonylphenol and its ethoxylates are entering the environment in a quantity or concentration or under conditions that have or may have an immediate or long-term harmful effect on the environment or its biological diversity.



Hazardous Waste Reduction for Export (secondary – only relevant in specific circumstances – potentially subsumed under pollution prevention planning)

### **Informational Instruments**

NPRI

General Information Gathering

### **Voluntary Instruments**

Guidelines, Codes of Practice

Challenge Program

Challenge Program with mandatory reporting and targeted public reporting.

Memoranda of Agreement

Covenants/Civil Contracts

## **4. Application of Instrument Choice Matrix.**

Tables are presented for each relevant instrument in each case. These provide assessments against the following criteria.

### **Instrument Evaluation Criteria**

The strengths of each instrument were weighted as follows:

#### **Instrument Criteria**

##### **Efficiency**

Benefits to Society: Low 0/2; moderate 1/2; high 2/2

Benefits to firm: Low 0/2; moderate 1/2; high 2/2

Costs to firm: Low 2/2; moderate 1/2; high 0/2

Costs to Government/Public: Low 2/2; moderate 1/2; high 0/2

##### **Fairness**

Polluter Pays/Cost Internalization: Low 0/2; moderate 1/2; high 2/2

Free Rider potential: Low 2/2; moderate 1/2; high 0/2

Consistency of Protection: Low 0/2; moderate 1/2; high 2/2

Disproportionate impacts: Low 0/2; moderate 1/2; high 2/2

##### **Effectiveness Criteria**

Certainty of Outcome: Low 1-3/10; moderate: 4-7/10; high: 8-10/10

Speed of Use: Low: 1-2/5; moderate: 3/5; high: 4-5/5

Effectiveness criteria are weighted heavier than other criteria to reflect their importance (i.e. no point in pursuing instruments that can't achieve the required outcome)

## **Policy/Political Criteria**

### **Policy/Political**

Consistency with gov't policy:	Low 0/2; moderate 1/2; high 2/2
Positive OGD Response:	Low 0/2; moderate 1/2; high 2/2
Positive Provincial Response:	Low 0/2; moderate 1/2; high 2/2
Positive Non-Governmental Stakeholder Response (industry/NGO):	Low 0/2; moderate 1/2; high 2/2
Trade issues/concerns:	Low 2/2; moderate 1/2; high 0/2

Note that assessments are within context of provisions and requirements of CEPA 1999, not generic assessments of instrument characteristics. The assessments and weightings also reflect judgements re: current government policy regarding regulation, federal-provincial relations, and role of other government departments, as opposed to an "ideal" situation.

## Regulation

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Regulation (s.93)	<p>Certainty of outcome: High (9/10)</p> <p>Speed of use: low (0.5/5) (need to be applied to variety of uses/sectors)</p>	<p>Cost internalization: High (2/2)</p> <p>Free Riders: low (2/2)</p> <p>Consistency of Protection: High (2/2)</p> <p>Disproportionate impacts: moderate (1/2) (may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: high (2/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: high (transaction costs, some inspection/ Enforcement costs. (0.5/2)</p>
Instrument (21/31) (passes all criteria except political acceptability – although delays in use may be significant)	Effectiveness (9.5/15 – pass)	Fairness (7/8 - pass)	<p>Efficiency (4.5/8 – marginal)</p> <p>(efficiency/costs to facilities may be improved by addition of tradeable units system, but this may entail loss of fairness (esp. consistency of protection) and increased administrative costs to government</p>

### Policy/Political Criteria

Policy: low (0/2) (conflicts with regulatory policy)	OGDs: low (0/2) (potential for conflict)	Provinces: low (0/2) (potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry opposition/ NGO support)	Trade: moderate (1/2) (may raise trade concerns)	Total: 2/10
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## Pollution Prevention Planning

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Pollution Prevention Planning	<p>Certainty of outcome: moderate (implementation may fail – variety of sectors) (4/10)</p> <p>Speed of use: moderate (3/5) (variety of sectors to which must be applied)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires EMS where none in place)</p> <p>Consistency of Protection: Moderate (1/2) (plan implementation may vary)</p> <p>Disproportionate impacts: moderate (1/2) (planning may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: high (1/2) (effectiveness uncertain)</p> <p>Benefits to facilities: high (2/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)</p>

Instrument (18/31) (passes all criteria)	Effectiveness (7/15 – pass)	Fairness (6/8 - pass)	Efficiency (5/8 - pass)
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### Policy/Political Criteria

Policy: Moderate (1/2) (consistent with PP framework vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## Emergency Planning

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Emergency Prevention Planning	<p>Certainty of outcome: moderate (impact very limited – emergency releases not a major concern, and use awareness raised by pollution prevention planning. Implementation may fail requirements) (2/10)</p> <p>Speed of use: high (Ministerial approval) (4/5)</p>	<p>Cost internalization: High (2/2) (plans developed by facilities)</p> <p>Free Riders: low (2/2) (requires emerg plan where none in place)</p> <p>Consistency of Protection: Moderate (1/2) (plan implementation may vary)</p> <p>Disproportionate impacts: moderate (1/2) (planning may present challenges to SMEs w/o active support).</p>	<p>Benefits to society: moderate(1/2) (effectiveness uncertain)</p> <p>Benefits to facilities: Moderate (1/2)</p> <p>Costs to facilities: moderate if built on existing EMS (1/2)</p> <p>Costs to government: moderate (1/2) (once methodology defined, some inspection/ Enforcement costs)</p>
Instrument (16/31) (effectiveness limited, as spills etc not a major concern, and use awareness likely raised if pollution prevention planning applied)	Effectiveness (6/15 – fail)	Fairness (6/8 – pass)	Efficiency (4/8 – marginal)

### Policy/Political Criteria

Policy: Moderate (1/2) (emergency responsibilities vs. reluctance to regulate)	OGDs: high (2/2) (no direct role)	Provinces: Moderate (1/2) (no direct role, although possible adverse reaction)	Non-governmental stakeholders: moderate (1/2) some potential for industry opposition/ NGO support	Trade: low. Does not raise trade concerns (2/2)	Total: 7/10
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## National Pollutant Release Inventory

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (NPRI)	<p>Certainty of outcome: Moderate (3/10) (very effective at gathering information, but impact on use and releases less certain)</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: moderate (1/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: moderate (1/2) (potential challenge to SMEs)</p>	<p>Benefits to society: high (2/2) (information, community right to know and potential release reductions)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (18/31) (passes all criteria – probably essential re: information gaps regarding substance generation, release and transfer, but unlikely to reduced release/use on its own	Effectiveness (7/15 - marginal)	Fairness (6/8 - pass)	Efficiency (5/8 – pass)

### Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ high NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7/10
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## Information Gathering: General

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Informational Instrument (General information powers)	<p>Certainty of outcome: Moderate (3/10) (very effective at gathering information, but impact on use and releases less certain – although request for information may raise awareness re: facility use/generation)</p> <p>Speed of use: high (4/5) (few barriers)</p>	<p>Cost internalization: high (2/2) (reporting by facilities)</p> <p>Free Riders: low (2/2) (few free rider opportunities)</p> <p>Consistency of Protection: moderate (1/2) (impacts on facility behaviour may vary)</p> <p>Disproportionate impacts: moderate (1/2) (potential challenge to SMEs)</p>	<p>Benefits to society: moderate(1/2) (information and some potential release reductions)</p> <p>Benefits to facilities: moderate (1/2)</p> <p>Costs to facilities: moderate (1/2) builds on existing EMS</p> <p>Costs to government: moderate (1/2) (some transaction and inspection/ administration costs)</p>
Instrument (18/31) (may be useful in gathering information re: use and generation not captured through NPRI)	Effectiveness (7/15 – marginal)	Fairness (6/8 - pass)	Efficiency (5/8 – pass)

### Policy/Political Criteria

Policy: moderate/high (1/2) (no clear policy/strong political appeal)	OGDs: high (2/2) (no role)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate/high (1/2) (limited industry opposition/ high NGO support)	Trade: high (2/2) (no trade concerns)	Total: 7/10
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## Challenge Program

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program (ARET)	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: moderate (3/5) (ministerial approval but potential complexity due to range of uses and sectors involved.</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: high (0/2) (major concern)</p> <p>Consistency of Protection: low (0/2) (major concern)</p> <p>Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: low/moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: low (2/2)</p> <p>Costs to government: moderate/low (1.5/2) (some transaction costs, especially due to range of sectors and uses involved. Little inspection/ Enforcement costs)</p>
Instrument (11.5/31) (fails key criteria of effectiveness – appeal is political – path of least resistance)	Effectiveness (5/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (5/8 – pass)

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: high (2/2) (little potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 9/10
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## Challenge Program: Mandatory Reporting

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Challenge Program With mandatory reporting (e.g. NPRI listing) and targeted public reporting	<p>Certainty of outcome: Low/moderate (4/10)</p> <p>Speed of use: moderate (2.5/5) (range of sectors and uses involved may make complex. mandatory reporting may increase transaction costs)</p>	<p>Cost internalization: moderate/high (1.5/2)</p> <p>Free Riders: Low (2/2)</p> <p>Consistency of Protection: low/moderate (.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate (2/2) (multiple benefits)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high (1/2) (some transaction costs, some inspection/ Administration costs)</p>
Instrument (16.5/31) (effectiveness better with mandatory reporting, but increased transaction and monitoring costs. Fairness and efficiency marginal, high political appeal)	Effectiveness (6.5/15 – fail)	Fairness (5/8 - pass)	Efficiency (5/8 – pass)

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (1.5/2) (some potential for conflict –mandatory reporting may prompt resistance)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8/10
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## Guidelines, Codes of Practice

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Guidelines, Code of Practice	<p>Certainty of outcome: Low (2/10)</p> <p>Speed of use: moderate (2/5) (Consultation with provinces required, would require variety of guidelines due to multiple uses.</p>	<p>Cost internalization: low (0.5/2) (voluntary cost internalization unlikely)</p> <p>Free Riders: high (0/2) (major concern)</p> <p>Consistency of Protection: low (0/2) (major concern)</p> <p>Disproportionate impacts: moderate (1/2) (less challenge to SMEs but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: low/moderate at best: (0.5/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (0.5/2)</p> <p>Costs to facilities: low (2/2)</p> <p>Costs to government: moderate (1/2) (Development/ Transaction costs, little inspection/ Enforcement costs)</p>
Instrument (9.5/31) (fails key criteria of effectiveness – worse than challenge program due to requirements for fed/prov consultation and impact on speed. As will challenge program appeal is political – path of less resistance	Effectiveness (4/15 – fail)	Fairness (1.5/8 - fail)	Efficiency (4/8 – marginal)

### Policy/Political Criteria

Policy: high (2/2) (consistent regulatory policy)	OGDs: moderate (1.5/2) (limited potential for conflict)	Provinces: moderate (1/2) (some potential for conflict)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 7.5/10
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## Sectoral MOUs

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Sector Specific MOUs	<p>Certainty of outcome: Low/moderate (3/10)</p> <p>Speed of use: moderate barriers (2/5) (transaction costs of multiple sector specific agreements may be significant).</p>	<p>Cost internalization: low/moderate (0.5/2)</p> <p>Free Riders: moderate/(1/2)</p> <p>Consistency of Protection: low/moderate (.5/2) (impacts may vary)</p> <p>Disproportionate impacts: moderate (1/2) (no disproportionate facility impacts, but potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate at best: (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: moderate/high (0.5/2) ( significant transaction costs, some Administration costs)</p>
<p>Instrument (11.5/31)</p> <p>Effectiveness not strong, potentially significant transaction costs of negotiating MOUs.</p>	<p>Effectiveness (5/15 – fail)</p>	<p>Fairness (3/8 - marginal)</p>	<p>Efficiency (3.5/8 – marginal)</p>

### Policy/Political Criteria

Policy: moderate high (2/2) (consistent regulatory policy)	OGDs: high (2/2) (little potential for conflict)	Provinces: moderate/high (1.5/2) (some potential for conflict –mandatory reporting may prompt resistance from targeted province)	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 8.5/10
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## Covenants

### Instrument Criteria

Instrument	Effectiveness	Fairness	Efficiency
Covenant with legally enforceable commitments to use/ emission reductions (i.e. some penalty for failure to meet commitments). Facility specific or sectoral.	<p>Certainty of outcome: Unknown, as unclear what bargaining leverage federal government has to obtain enforceable commitments from facility. (5/10)</p> <p>Speed of use: low (1.5/5) transaction costs associated with obtaining enforceable commitments may be very significant.</p>	<p>Cost internalization: moderate (1/2)</p> <p>Free Riders: moderate/low(1.5/2)</p> <p>Consistency of Protection: moderate (1/2) (function of nature of contract provisions)</p> <p>Disproportionate impacts: moderate/high (0.5/2) (potential disproportionate facility impacts, and potential for disproportionate impacts on communities)</p>	<p>Benefits to society: moderate (1/2)</p> <p>Benefits to facilities: moderate (may prompt innovation) (1/2)</p> <p>Costs to facilities: moderate (1/2)</p> <p>Costs to government: high (0/2) ( transaction costs, inspection/ Administration costs)</p>
Instrument (12.5/31) Transaction costs/time for negotiating enforceable agreements may be very high. Strength of Federal bargaining position not clear.	Effectiveness (5.5/15 – fail)	Fairness (4/8 – marginal)	Efficiency (3/8 – fail)

### Policy/Political Criteria

Policy: moderate high (1.5/2) (consistent regulatory policy but has mandatory element)	OGDs: moderate/high (1.5/2) (little potential for conflict – although justice may raise questions)	Provinces: moderate (1/2) (may be seen as effort at facility specific regulation).	Non-governmental stakeholders: moderate (1/2) (industry support/ NGO opposition)	Trade: Low (2/2) (no trade concerns)	Total: 6/10
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## 5. Summary Assessment

Instrument	Instrument Criteria	Policy/ Political Criteria	Comments
Regulation (s.93)	21/31	2/10	Very high effectiveness and fairness, some additional delay's/costs due to range of sectors to be covered but low political acceptability
Tradable Units			Impact may be to increase efficiency but reduce fairness of regulatory instrument to prevent/control releases
Pollution Prevention Planning (s.56)	18/31	7/10	Marginal effectiveness, strong on other criteria, needs to be used in conjunction with other instruments to ensure effectiveness. Good potential to raise awareness re: use and generation of NP and NPEs
Emergency Planning (s.199)	16/31	7/10	Fails on effectiveness as problem is ongoing not accidental release. Facility awareness of use may be raised through pollution prevention planning. (Emergency prevention regulation not considered for same reason).
NPRI	18/31	7/10	Effective in terms of information gathering, supports use of other instruments, needs to be used in conjunction with other instruments to ensure reductions in use/release
General Information Gathering.	18/31	7/10	Effective in terms of information gathering to fill gaps re: NPRI especially re: use and smaller facilities. Information gathering also has impact in terms of facility awareness of use/generation. Again would have to be used in conjunction with other instruments to ensure reductions in use/release.
Challenge Program no mandatory/ Targeted reporting:	11.5/31	9/10	Fails effectiveness and fairness criteria

Challenge Program with Mandatory/ Targeted Reporting:	16.5/31	8/10	Effectiveness improved to marginal, but increased transaction and oversight costs.
Guidelines; Codes of Practice	9.5/31	7.5/10	Fails criteria of effectiveness, fairness, potentially high development costs due to variety of sectors involved
Memoranda of Agreement (facility specific):	11.5/31	8.5/10	Fails effectiveness, potentially significant negotiation costs. Strong political appeal.
Covenants/Civil Contracts with enforceable conditions	12.5/31	6/10	Effectiveness unknown, potentially very significant negotiation costs due to range of sectors/uses potentially involved.

#### 6. Potential Actions

- Initiate work on regulation to reduce use/discharges from textile and pulp and paper sectors (Instrument 21/31 (highest score); Political (2/10 (lowest score)) Low political score implies potential delays in development/implementation. Interim measures (NPRI listing, Information Gathering, Pollution Prevention Planning, Challenge Program with Mandatory Reporting) may be required.
- Addition of NP/NPE to NPRI with reporting thresholds adequate to capture at least 90% of point source releases (Instrument 18/31; Political 7/10). Necessary to fill information gaps.
- Use of general information gathering powers to gather information on use of NP/NPE and presence in consumer/industrial products that may be contributing to STP loading (Instrument 18/31; Political 7/10). Necessary to fill information gaps.
- Establishment of pollution prevention planning requirements for textile and pulp and paper sectors and sectors whose products may be contributing to loading to municipal STPs (Instrument 18/31; Political 7/10).
- Challenge program with mandatory reporting to textile and pulp and paper sector (Instrument 16.5/31; Political 8/10)

- Once major consumer/industrial products whose use contributes to STP loading identified through use information gathering instruments, initiate challenge program with mandatory reporting, accompanied by development of regulation to reduce use in relevant products (Instrument 16.5/31; Political 8/10).
- Guidelines, Codes, Challenge Program without Mandatory/Targeted Reporting, MOUs ruled out due to weak Instrument scores, especially on effectiveness.
- Covenants ruled out due to weak instrument scores due to potential for very significant negotiations due to range of sectors/uses potentially involved (Instrument 12.5/31; Political 6/10).

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1. CEPA 1999, s.91.

2. CEPA 1999, s.92.