

**DISCUSSION PAPER FOR THE MARCH 20, 2002 WORKSHOP ON  
THE PRECAUTIONARY PRINCIPLE**

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## BACKGROUND/CONTEXT

The Privy Council Office (PCO) released the Government of Canada Discussion Document, *A Canadian Perspective on the Precautionary Approach/Principle*, on November 23, 2001 (see [http://www.ec.gc.ca/econom/pp\\_e.htm](http://www.ec.gc.ca/econom/pp_e.htm)). The Discussion Document “outlines broad guiding principles to support consistent, credible and predictable policy and regulatory decision-making when applying the precautionary approach/principle.” It focuses on those sectors with the greatest need for guidance and clarity – science-based areas of public health and safety, the environment and natural resources management. The PCO requires that all departments, including Environment Canada, consult with their stakeholders on the Discussion Document.

On March 20, 2002 Environment Canada is sponsoring a workshop with the following objectives:

- To capture the views of participants on the Government of Canada Discussion Document;
- To discuss the extent to which the proposed guiding principles in the Government of Canada Discussion Document can be operationalized effectively in CEPA, 99; and
- To discuss other options for operationalizing the precautionary principle in CEPA, 99.

This paper is intended to provide some background information and preliminary thinking related to the second and third objectives. This paper does not reflect official policy of Environment Canada or Health Canada. It provides a preliminary analysis of how the precautionary principle might be applied to CEPA, 99, and is intended to stimulate and support discussion rather than reflect pre-determined positions.

It is anticipated that Environment Canada and Health Canada will consolidate the inputs from the March 20 workshop and prepare a draft discussion paper outlining opportunities for operationalizing the precautionary principle in CEPA, 99. The departments will then use that document as the basis for more focused stakeholder discussions on this issue.

## THE PRECAUTIONARY PRINCIPLE

The precautionary principle is an important concept that applies to all provisions in CEPA, 99. Subsection 2(1)(a) – part of the duties section – requires the Government to administer the Act in a manner that “*applies the precautionary principle that, where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.*”

Two other provisions of CEPA, 99 specifically refer to the precautionary principle:

- Subsection 6(1.1) obliges the CEPA National Advisory Committee to apply the principle.

- Section 76.1 requires the Ministers to apply the principle (and a “weight of evidence” approach) when “conducting and interpreting the results” of a screening assessment under s.74, a review of a decision of another jurisdiction under ss.75(3) and an assessment of whether a substance is “toxic or capable of becoming toxic”.

The Government of Canada Discussion Document proposes “guiding principles for the application of the precautionary approach/principle” throughout Federal Government decision-making.

**Table 1: Guiding Principles Proposed in A Canadian Perspective on the Precautionary Approach/Principle (Government of Canada, 2001)**

***General principles of application***

1. The precautionary principle is a legitimate and distinctive decision-making tool within risk management.
2. It is legitimate for decisions to be guided by society’s chosen level of protection against risk.
3. Sound scientific information and its evaluation must be the basis for applying the precautionary approach, particularly with regard to (i) the decision to act or not to act (i.e., to implement precautionary measures or not), and (ii) the measures taken once a decision is made.
4. The scientific evidence required should be established relative to the chosen level of protection. Further, the responsibility for producing the information base (burden of proof) may be assigned. It is recognized that the scientific information base and responsibility for producing it may shift as the knowledge evolves.
5. Mechanisms should exist for re-evaluating the basis for the decisions and for providing a transparent process for further consultation.
6. A greater degree of transparency, accountability and public involvement are appropriate.

***Principles for precautionary measures***

7. Precautionary measures should be subject to reconsideration, on the basis of the evolution of science, technology and society’s chosen level of protection.
8. Precautionary measures should be proportional to the potential severity of the risk being addressed and to society’s chosen level of protection.
9. Precautionary measures should be non-discriminatory and consistent with measures taken in similar circumstances.
10. Precautionary measures should be cost effective, with the goal of generating (i) an overall net benefit for society at least cost, and (ii) efficiency in the choice of measures.
11. Where more than one option reasonably meets the above characteristics, the least trade-restrictive measure should be applied.

In the context of CEPA, 99, the application of these proposed guiding principles raises four main issues for discussion:

- 1) The use by Environment Canada and Health Canada of the precautionary principle as a “legitimate” and “distinctive” decision-making tool under the Act;
- 2) The circumstances in which the Departments apply the precautionary principle for each of the main provisions of CEPA, 99;
- 3) The effect of the precautionary principle and the Government of Canada’s proposed principles on the selection, design and implementation of risk assessment and management measures under CEPA, 99; and
- 4) The role public involvement, accountability and transparency play in the application of the precautionary principle under CEPA, 99 in terms of ensuring that the evidence required and measures taken reflect society’s chosen level of protection.

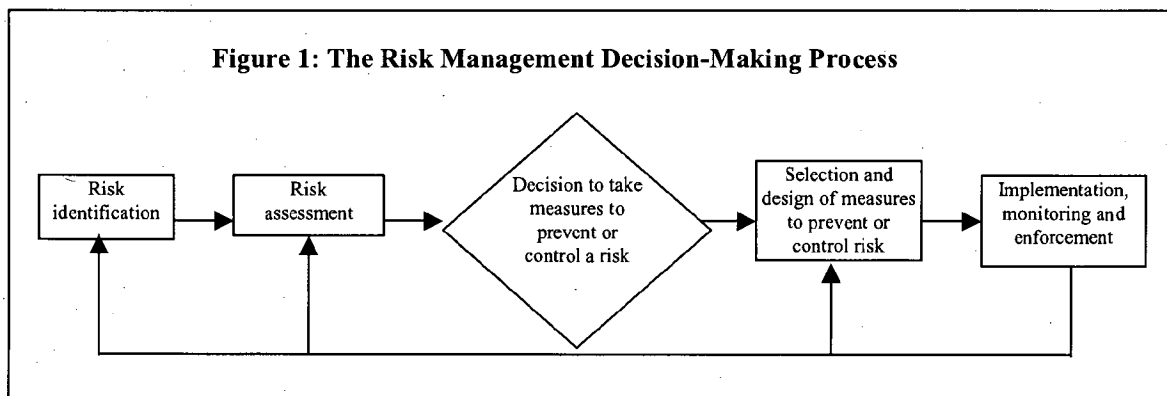
## **THEME 1: USE OF THE PRECAUTIONARY PRINCIPLE AS A LEGITIMATE AND DISTINCTIVE DECISION-MAKING TOOL**

### **BACKGROUND**

The first principle proposed in the Government of Canada Document is that “the precautionary principle is a legitimate and distinctive decision-making tool within risk management.”

### **DISCUSSION**

Figure 1 illustrates a generic decision-making process applicable to most environmental issues, including those addressed under CEPA, 99.



It can be argued that Environment Canada and Health Canada could apply precautionary practices throughout this decision-making process. Precaution could inform priority setting at each of the steps illustrated in Figure 1 – by giving emphasis to doing scientific research, risk assessment or risk management to address threats of serious or irreversible damage, over other,

better understood but potentially less serious risks. For example, some of the rationale provided by the Ministers' Expert Panel when they recommended substances for the second Priority Substances List included elements of "caution" or "precaution". Similarly, precaution could influence the design of safety factors and use of "weight of evidence" judgments that are part of risk assessment procedures under CEPA, 99. And precautionary considerations could play a role in selecting, designing and implementing and enforcing risk management measures.

In addition, the precautionary principle, as defined in Section 2 of CEPA, 99 could apply, in particular, to the point in the process where a decision is made to take measures to prevent or control the risk being addressed – during the interpretation of scientific information to decide whether to implement "measures to prevent environmental degradation" (e.g., to issue a permit for ocean dumping or for imports or exports of hazardous waste; to develop a fuel mark; to regulate vehicle engines; to declare a substance "toxic"; to address a source of international air or water pollution; etc.).

#### **QUESTIONS FOR CONSIDERATION**

- When implementing CEPA, 99, to which aspects of the risk management decision-making process in Figure 1 should Environment Canada and Health Canada apply precautionary practices?
- When implementing CEPA, 99, to which aspects of the risk management decision-making process in Figure 1 should Environment Canada and Health Canada apply the precautionary principle?

#### **THEME 2: CIRCUMSTANCES WHERE THE PRECAUTIONARY PRINCIPLE CAN APPLY**

##### **BACKGROUND**

According to the definition in Section 2 of CEPA, 99 and the Government of Canada Discussion Document, the precautionary principle applies when there is:

- a recognition of a "lack of full scientific certainty"; and
- a suspicion of "threats of serious or irreversible harm".

##### **DISCUSSION**

The Government of Canada Discussion Document observes that "the scientific process is almost always characterized by uncertainty and debate. Hence the decision-making process for managing risks always requires sound and rigorous judgment." Consistent with this observation, it can be argued that few environmental decisions (under CEPA, 99 or otherwise) related to each aspect of the decision-making process in Figure 1 are based on "full scientific certainty."

The Discussion Document emphasizes, however, that the precautionary principle changes the nature of the judgment concerning the amount of scientific evidence required to justify acting:

In traditional situations of managing risks, 'sound scientific evidence' is generally interpreted as either definitive and compelling evidence that supports a scientific theory or significant empirical information that establishes the seriousness of a risk beyond a reasonable doubt. *Within the context of the precautionary approach ... the emphasis is on providing a sound and credible case that a risk of serious or irreversible harm exists. 'Sufficiently sound scientific information' is interpreted as a base of scientific data – whether empirical, theoretical or from 'traditional knowledge' – that can establish reasonable evidence of a theory's validity, including its uncertainties, and that indicates the potential for such risk.* [emphasis added]

Consistent with this statement, it can be argued that, in general, the amount of scientific certainty required to justify taking action to prevent environmental degradation depends on the severity of the threat. Figure 2 illustrates this relationship between the seriousness of the threat being considered and the level of scientific certainty required to justify taking action to address the threat: the more serious the threat, the less "certain" the scientific evidence required.

**Figure 2: The Precautionary Principle Enables Early Action to Prevent Environmental Degradation in the Absence of Full Scientific Certainty**

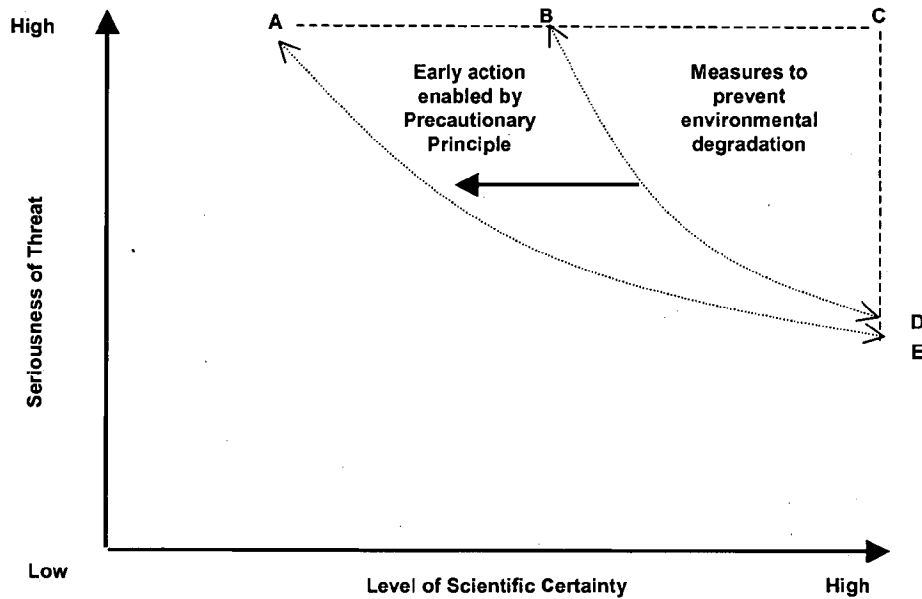


Figure 2 also illustrates the impact the precautionary principle has on decision-making: it enables action to address threats of serious or irreversible damage sooner than would otherwise be the case (i.e., based on lower levels of scientific certainty). Thus, if the area BCD represents the

range of issues that might be addressed in the absence of the precautionary principle, area ACE represents the full range of issues that can be addressed under the principle, including the additional area ABDE.

Defining the threshold of scientific evidence of a threat of serious or irreversible damage required to invoke the precautionary principle under CEPA, 99 raises various challenges. On the one hand, none of the provisions in the Act explicitly stipulate such a threshold. And the development of a highly prescriptive definition of this threshold could be difficult because "serious or irreversible damage" is not just a scientific concept, but relates to society's chosen level of protection, which, in turn, may vary from issue to issue. In most cases, decisions as to whether there is sufficient scientific evidence of a threat to warrant further action are made based on a combination of factors, including international trends, the accumulation of a scientific weight of evidence, professional judgement and public concerns.

On the other hand, a well understood set of procedures and considerations to guide decisions about when to apply the precautionary principle under various provisions of CEPA, 99 could assist government decision makers and could enhance the transparency with which often difficult, precautionary decisions are made.

#### **QUESTIONS FOR CONSIDERATION**

- On what basis should Environment Canada and Health Canada decide that there is sufficient threat of serious or irreversible damage, notwithstanding lack of full scientific certainty, for the precautionary principle to apply?

### **THEME 3: DESIGNING PRECAUTIONARY MEASURES**

#### **BACKGROUND**

Section 2(1)(a) of CEPA, 1999 defines the precautionary principle to provide that "where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." As such, the precautionary principle *enables* action in certain circumstances.

The Government of Canada Discussion Document elaborates on the nature of precautionary measures by suggesting they should be "cost effective" (principle 10) and based on "sound science", "proportional to the potential severity of the risk being addressed" and "subject to reconsideration on the basis of the evolution of science, technology and society's chosen level of protection" (principles 3, 7 and 8). This section discusses these concepts.



## DISCUSSION

### ***Interpreting “measures to prevent environmental degradation”***

As Figure 1 (above) illustrates, Environment Canada and Health Canada manage issues under CEPA, 99 across a spectrum – from identification of possible issues through risk assessment, the decision to manage the issue, the selection and implementation of measures to prevent or reduce the risk and the ongoing monitoring and upgrading of information about and responses to the issue. As such, the appropriate precautionary action may depend on the point in the process where the decision maker finds him or herself. Thus, if one is establishing research priorities, precaution may support adding an issue to the list of priorities to be researched or adjusting the sequence in which issues will be addressed. If one is doing risk assessment, precaution may justify accounting for traditional or community environmental knowledge or the use of more conservative test methods and interpretation protocols. If one is deciding what risk management measures to implement and how rigorously to enforce them, precautionary considerations may justify being more, rather than less, protective. And throughout the decision-making spectrum, the precautionary principle may influence priority setting, and may justify moving rapidly to the decision to take some measures to prevent environmental degradation without the need to wait for additional scientific information.

### ***Interpreting “cost-effective”***

The Government of Canada Discussion Document explains that there are two issues to consider with respect to the “cost” of precautionary decisions: first, “identifying and weighing the real and potential impacts of making a decision”; second, selecting the least-cost measure to achieve the desired level of risk prevention or reduction. While both these considerations apply to all risk management decisions, the precautionary principle has particular implications for the type of analysis that should be applied to the first one. When asking whether the benefits of acting outweigh the costs, as the Discussion Document emphasizes, “scientific uncertainty and complex interrelationships (i.e., limited information) may not allow for an extensive cost-benefit analysis.” In practice, what may be required is that “decision-making should identify potential costs and benefits as explicitly and as soon as possible, and distinguish what risk the public is prepared to accept on the basis of sound and reasonable, albeit incomplete, scientific evidence.” The Discussion Document also observes that “for some issues, a net benefit may not be realized for a long period of time ... [and] the emphasis should always be on ensuring that ongoing costs are assessed and minimized, while maintaining the reduction of risks and, where appropriate, maximizing the benefits (e.g., from innovation”).

### ***Ensuring Precautionary Measures Are Subject To Reconsideration***

As a general rule of practice, all policy decisions should be subject to reconsideration based on the evolution of science, technology and society's chosen level of protection. Because precautionary decisions are based on less scientific certainty than other decisions, the importance of this type of follow-up is heightened. As the Government of Canada Discussion Document emphasizes, "given the significant scientific uncertainty, follow-up activities such as research and scientific monitoring are usually a key part of the application of precautionary approaches." The Discussion Document also observes that "such efforts can help reduce the scientific uncertainty associated with certain risks and allow improved follow-up decisions to be made." Finally, it recognizes that, for some issues, "scientific certainty may take a long time to resolve or may never, for practical purposes, be resolved to any significant degree."

#### **QUESTIONS FOR CONSIDERATION**

- What type of "measures to prevent environmental degradation" should be considered precautionary?
- Should "cost-effectiveness" considerations play the same role in designing precautionary measures as for other issues?
- How should Environment Canada and Health Canada ensure that precautionary measures are "subject to reconsideration on the basis of the evolution of science, technology and society's chosen level of protection"?

### **THEME 4: PUBLIC INVOLVEMENT AND PRECAUTIONARY DECISION-MAKING**

#### **BACKGROUND**

Transparency and public involvement are critical to the effective application of the precautionary principle. The Government of Canada Discussion Document states that "precautionary decision-making is often associated with disputes and, eventually, balancing of values, high economic stakes and urgency." It also observes that experience shows that, "where the public has low tolerance for serious or irreversible harm characterized by scientific uncertainty, a different approach to public engagement involving a greater degree of transparency, clearer accountability and increased public involvement in decision-making can help minimize controversy and confusion and help maintain public trust." Specifically:

- "To promote understanding of and trust in the precautionary approach and the scientific basis for its application, *stakeholders should be provided with clear, open and transparent information sources about the uncertainties surrounding risk.*"

- *Public involvement* can provide a platform to resolve conflict or engage in joint problem solving ... can bring about the recognition of ambiguities and uncertainties, and promote acceptance that ... both expert and lay knowledge are relevant.”
- “As regards *accountability*, the public can gain confidence in both the decision-making process and a resulting decision through ongoing, open and transparent monitoring of the decision’s effectiveness, and by receiving regular feedback and being informed of performance measurement results.”

Reflecting these considerations, principle 6 of the Government of Canada Discussion Document proposes “a greater degree of transparency, accountability and public involvement” for decisions involving the precautionary principle. And principle 8 proposes that precautionary measures should be “proportional to the potential severity of the risk being addressed and to society’s chosen level of protection.”

## DISCUSSION

Although Environment Canada and Health Canada have little experience in communicating uncertainty to the public with respect to issues under CEPA, 88 and CEPA, 99, this could be a very important feature of their operationalization of the precautionary principle under the Act. Good communication about the nature of the uncertainty associated with a risk being addressed under CEPA, 99 could enable the public to provide input in terms of developing what the Government of Canada Document describes as “workable and socially acceptable solutions.” Good communication about uncertainties also could provide the public with a greater sense of control, which, in turn, could affect social tolerance for the risk.

As the Government of Canada Discussion Document emphasizes, public involvement is important in informing precautionary decisions about what issues to address, which aspects of the risk are significant, and what management measures are important. A precautionary approach under CEPA, 99 might ensure that the extent of public involvement at any given point in the process illustrated in Figure 1 reflects the seriousness of the risk being addressed, the scientific uncertainty, the public tolerance for the risk and the economic stakes. At present, the nature of public involvement in decisions under CEPA, 99 tends to vary both from issue to issue and depending on the nature of the decision. Generally, in order to inform *risk management* decisions under CEPA, 99, the Departments engage a wide range of stakeholders in some form of consultation. Most science and technology development *priority setting* decisions reflect outreach within the international science communities or with academic and government bodies, but not extensive input from the lay public. Similarly, *risk assessment* processes tend to include expert industry and academic input, but limited lay input, other than through after-the-fact notice and comment processes.

Finally, a transparent approach to the application of the precautionary principle could justify Environment Canada and Health Canada taking steps to describe their overall precautionary

approach and their intended means of applying the “precautionary principle” as defined in section 2 of CEPA, 99. In addition to these forward-looking descriptions, it may also be important for the Departments to explain how they will document and communicate, after-the-fact, their reliance on the precautionary principle in specific decisions. It is anticipated that such descriptions would not place exclusive focus on the precautionary principle, as it is likely that precautionary decisions will also account for other considerations (CEPA, 99’s strong emphasis on pollution prevention, etc.).

#### **QUESTIONS FOR CONSIDERATION**

- How should Environment Canada and Health Canada ensure that risk assessment and management actions for issues to which the precautionary principle applies “are proportional to the potential severity of the risk being addressed and to society’s chosen level of protection”?
- When Environment Canada and Health Canada are addressing threats of serious or irreversible damage and less than full scientific certainty, should they apply a “greater degree of transparency and public involvement”?
- Should the Departments document and communicate their application of the precautionary principle to specific decisions made under CEPA, 99?

## **APPENDIX: PROVISIONS OF CEPA, 99 TO WHICH THE PRECAUTIONARY PRINCIPLE MAY APPLY**

*Note: this appendix represents a preliminary review of CEPA. The conclusions presented here are very tentative and intended to support discussion, rather than as definitive findings.*

### **CEPA NAC**

CEPA NAC is established "for the purpose of enabling national action to be carried out and taking cooperative action in matters affecting the environment and for the purpose of avoiding duplication in regulatory action among governments." Its duties are to advise the Minister on:

- (a) regulations proposed to be made under ss.93(1) (regarding toxic substances);
- (b) a cooperative, coordinated intergovernmental approach for the management of toxic substances; and
- (c) other environmental matters that are of mutual interest to the Government of Canada and other government and to which this Act applies.

Subsection 6(1.1) obliges the CEPA NAC to apply the precautionary principle.

### ***Possible Application***

The precautionary principle could be relevant to the CEPA NAC in various ways, including:

- EC could provide guidance to the NAC on its obligation to apply the precautionary principle.
- EC could account for the principle when deciding what issues to ask NAC to consider.
- EC could ask NAC for advice on "society's chosen level of protection".
- EC could ask NAC for advice on supplementary sources of scientific information.

### **ENVIRONMENTAL DATA AND RESEARCH**

#### ***Relevant Provisions***

Subsection 44(1) requires the Minister to:

- monitor environmental quality;
- research the effects of pollution on environmental quality;
- publish the results of its research; and
- publish state of the environment reports.

Similarly, under s.45, the Minister of Health must:

- research the role of substances in illnesses or in health problems;

- collect, process, correlate and publish data from that research; and
- inform the public about the effects of substances on human health.

### ***Possible Application***

The Departments could account for the precautionary principle when:

- Setting priorities for research;
- Setting priorities and establishing parameters for monitoring; and
- Determining when, what and how to publish information about emerging risks.

## **NPRI**

### ***Relevant Provisions***

Section 48 obliges the Minister to establish an “inventory of releases of pollutants....”

### ***Possible Application***

Because section 48 provides the Minister with considerable discretion as to which substances to include on the NPRI, the precautionary principle could be an important consideration in determining both what to list/de-list and what threshold to set to trigger a reporting requirement.

## **OBJECTIVES, GUIDELINES AND CODES OF PRACTICE**

### ***Relevant Provisions***

Section 54 requires the Minister of Environment to issue environmental quality objectives, environmental quality guidelines, release guidelines and codes of practice. Section 55 authorizes the Minister of Health to publish similar objectives, guidelines and codes of practice.

These provisions are implemented in part through the CCME processes for developing soil and water environmental quality objectives and guidelines and in part through the development of CEPA-specific objectives, guidelines and codes of practice

### ***Possible Application***

The precautionary principle could be relevant to:

- the selection of issues to address, and
- the setting of numerical thresholds.

## **POLLUTION PREVENTION PLANNING**

### ***Relevant Provisions***

Section 56 authorizes the Minister to require any person to prepare a pollution prevention plan for a CEPA-toxic substance. Among other things, the order may stipulate the “factors to consider” in preparing the plan.

### ***Possible Application***

The precautionary principle could apply to Section 56 in two circumstances:

- 1) *Where the Governor-in-Council has declared a substance to be CEPA-toxic on the basis of precautionary considerations.*

In these cases, the fact that the precautionary principle has been triggered may affect decisions about:

- Whether to use Section 56 for that substance?
- For whom?
- What “factors” should the Minister require be considered?

- 2) *Where the Governor-in-Council has declared a substance to be CEPA-toxic on the basis of non-precautionary considerations, but there is some scientific uncertainty about possible serious or irreversible risks posed by some users or producers of the substance.*

In these cases, the precautionary principle could be used to justify requiring the latter users and producers to prepare and implement P2 plans.

## **PARTS 5 AND 6: TOXICS ASSESSMENT AND MANAGEMENT**

### ***Relevant Provisions***

Parts 5 and 6 relate to both the identification of substances that have the potential to cause serious or irreversible damage (through science-based assessments) and the development of measures to manage the risks associated with those substances. This includes existing substances and those chemicals, polymers and products of biotechnology that are proposed for use or manufacture in Canada under the *New Substances Notification Regulations*.

The provisions of Parts 5 and 6 are subject to both the pervasive application of the precautionary principle, as required in the Preamble and Administrative Duties sections of the Act, and the specific direction given in Section 76.1. That section specifically requires the application of the precautionary principle and a “weight-of-evidence approach” in conducting and interpreting the

results of CEPA assessments (including those used for screening substances, reviewing decisions by other jurisdictions and for priority substances).

Section 71(1)(c) provides a tool for responding to uncertainty about a substance and its effects by increasing the basis of knowledge upon which risk management decisions can be made. The ability to request and require toxicological data on a substance may be viewed as one response or action in light of uncertainty (see below).

### ***Possible Application***

By specifically requiring consideration of the precautionary principle in conducting toxics assessments, Parliament highlighted the importance of determining, but not perfecting, the level of certainty/uncertainty associated with a particular substance or group of substances and their effects. While weight of evidence and caution have been fundamental to conducting toxics assessments under CEPA, 88, sections 2(1) and 76.1 in CEPA, 99 could be interpreted to now caution against risk assessment processes and procedures that require seeking full scientific certainty before allowing conclusions to be drawn about the potential need for developing measures that will reduce the possible serious or irreversible impacts of a substance.

Section 76.1 also relates to the interpretation of the results of CEPA assessments. A possible application for the precautionary principle in this context is the decision to recommend to the Ministers that a substance be added to the List of Toxic Substances. In other cases, a "suspicion" that a substance may be CEPA-toxic may generate a request for additional data from the proponent of the substance.

Not all decisions to declare a substance "toxic" will be based on the precautionary principle. However, when the Government relies on the principle to determine that there is a sufficient level of suspicion (based on emerging literature, ecological monitoring, modelling, international actions, etc.) to declare a substance toxic, then the precautionary basis upon which that decision is taken could also guide the development of risk management measures.

## **OCEAN DUMPING PERMITS**

### ***Relevant Provisions***

Subsection 135(3) authorizes the Minister to prescribe the information applicants must provide when applying for a permit. Before issuing an ocean dumping permit, ss.127(3) requires the Minister to take into account the information on Schedule 6, which requires applicants to provide information about, among other things, "(12) [an] assessment of potential effects." The *Regulations Regarding Applications for A Permit for Disposal At Sea* prescribe the information that permit applicants must submit. The *Ocean Disposal Regulations* prescribe testing and



sampling requirements. Neither of these regulations explicitly addresses requirements with respect to threats of serious or irreversible harm where there is scientific uncertainty.

### ***Possible Application***

Schedule 6 is based on the London Dumping Convention, which was designed to reflect the precautionary principle. It restricts ocean dumping to a very limited set of materials, thereby taking a very precautionary approach to avoiding possible risks. It also prescribes testing to be done, including enhanced testing that is triggered by test results that pass very conservative thresholds. As such, the precautionary principle informs both:

- Decisions by EC to require permit applicants to provide information about “potential effects” that may include serious or irreversible harm where there is scientific uncertainty; and
- Decisions about the level of scientific certainty required by EC regarding a threat of serious or irreversible harm in order to refuse to issue a permit or to impose a condition on a permit under s.129.

## **FUELS**

### ***Relevant Provisions***

Subsections 140(1) and (2) authorize the Governor-in-Council to regulate fuel characteristics in order to make a “significant contribution to the reduction or prevention of air pollution.” Section 2 defines “air pollution” as “a condition of the air, arising wholly or partly from the presence in the air of any substance, that directly or indirectly

- (a) endangers the health, safety or welfare of humans;
- (b) interferes with the normal enjoyment of life or property;
- (c) endangers the health of animal life;
- (d) causes damage to plant life or to property; or
- (e) degrades or alters, or forms part of a process of degradation or alteration of, an ecosystem to an extent that is detrimental to its use by humans, animals or plants.”

### ***Possible Application***

The precautionary principle could be relevant to a decision to regulate a fuel characteristic to prevent a threat of serious or irreversible harm, notwithstanding a lack of full scientific certainty. However, the requirement that s.140 can only be applied to make a “significant” contribution to the reduction or prevention of air pollution, may limit the potential relevance of the principle.

## **NATIONAL FUEL MARKS**

### ***Provisions***

Section 145 authorizes the Governor-in-Council to issue regulations stipulating the requirements that must be met for a national fuels mark to be used.

### ***Possible Application***

EC could recommend regulations for fuel marks to address a threat of serious or irreversible harm, notwithstanding lack of full scientific certainty.

## **INTERNATIONAL AIR AND INTERNATIONAL WATER POLLUTION**

### ***Relevant Provisions***

Section 166 authorizes the Minister to act if she/he has "reason to believe" that a Canadian source is contributing or may reasonably be anticipated to contribute to air pollution (a) in another country or (b) that violates an international air pollution agreement that is binding on Canada. Section 176 provides the identical authority regarding international water pollution.

### ***Possible Application***

The precautionary principle could inform a decision to act under these provisions to address a source of international air or water pollution suspected to pose a threat of serious or irreversible harm, notwithstanding a lack of full scientific certainty. However, these provisions have not been invoked, and it is unlikely that they will be, given the many institutional options available to resolve these issues and the option to regulate many air issues as CEPA toxics that will arise upon the declaration of particulate matter and other ozone precursors as CEPA toxic. Moreover, in many cases, the air or water pollution of concern will probably not raise precautionary considerations, as it will be relatively well-understood pollution.

## **TRANSBOUNDARY MOVEMENTS OF WASTE: ESM STANDARDS**

### ***Relevant Provisions***

Subsection 185(1) requires persons wishing to transport hazardous waste, hazardous recyclable materials and prescribed non-hazardous waste to obtain a permit, the conditions for which may be prescribed by regulation. Subsection 185(2) authorizes the Minister to refuse to issue a permit if she/he believes the shipment will not be managed in an environmental sound manner (ESM).

### ***Possible Application***

The Transboundary Movement Division is in the process of developing regulations for the permit process under the section 185 permit process. The Division is also developing ESM considerations to guide the application of subsection 185(2). At present, it plans to have an overarching set of ESM principles, buttressed by detailed standards for specific waste streams and disposal facility-types (land-fill, deep-well injection, etc.). It may therefore be appropriate to address the following issues with respect to both the overarching ESM principles and the detailed ESM standards:

- What level of scientific certainty will the regulations require regarding a threat of serious or irreversible harm in order to refuse to issue a permit based on ESM concerns?
- How will EC ensure that the scientific evidence required for these decisions reflects society's chosen level of protection, and what role does public input play in these decisions?
- Who will have the burden of proof to determine whether or not to invoke the precautionary principle?

### **ENVIRONMENTAL EMERGENCIES**

#### ***Relevant Provisions***

Section 199 authorizes the Minister to require a person to prepare an environmental emergency (E2) plan in respect of a CEPA-toxic substance.

Section 200 authorizes the Minister to prescribe a list of substances and locations, and to issue regulations concerning environmental emergency planning and notification concerning those substances.

Section 194 restricts these powers by stipulating that "any power, duty or function conferred or imposed under this Part may only be exercised or performed in relation to those aspects of an environmental emergency that:

- (a) have or may have an immediate or long-term harmful effect on the environment;
- (b) constitute or may constitute a danger to the environment on which human life depends; or
- (c) constitute or may constitute a danger in Canada to human life or health."

#### ***Possible Application***

The precautionary principle could apply to Section 199 in two circumstances:

- 1) *Where the Governor-in-Council has declared a substance to be CEPA-toxic on the basis of precautionary considerations.* In these cases, the fact that the precautionary principle has been triggered may affect decisions about:
  - Whether to use Section 199 for that substance?
  - For whom?
  - What “factors” should the Minister require be considered?
  
- 2) *Where the Governor-in-Council has declared a substance to be CEPA-toxic on the basis of non-precautionary considerations, but there is some scientific uncertainty about possible serious or irreversible risks posed by some users or producers of the substance.* In these cases, the precautionary principle could be used to justify requiring the latter users and producers to prepare and implement E2 plans.

In addition, the Principle may be relevant to the application of s.200 in determining whether to list a substance under s.200 on the basis of serious or irreversible harm, notwithstanding lack of full scientific certainty. The current plans are to include the full list of substances identified by the “Conseil pour la reduction des accidents industriels majeurs” (CRAIM). This list was developed by a multi-stakeholder process that drew on various lists of substances of concern, some of which were developed based on consideration of the precautionary principle.

## **GOVERNMENT OPERATIONS AND ABORIGINAL LAND**

### ***Relevant Provisions***

Sections 208 and 209 authorize the Minister to issue objectives, guidelines, codes of practice and regulations to address the environmental impacts of federal operations and activities on federal and aboriginal land.

### ***Possible Application***

EC could decide to address a threat of serious or irreversible harm notwithstanding lack of full scientific certainty by promulgating an objective, guideline or code of practice under s.208 or a regulation under s.209.

## **ENFORCEMENT RESPONSES**

### ***Relevant Provisions***

CEPA provides for various possible responses to violations, including:

- EPCOs: section 235 authorizes enforcement officers to issue environmental protection compliance orders directing persons whom they suspect to be in non-compliance to take measures “consistent with the protection of the environment and public safety.”
- EPAMs: sections 295 to 309 authorize the use of Environmental Protection Alternative Measures subject to various considerations, including “the protection of the environment and of human life and health ...” (ss.296(1)(d)(i)).
- Prosecutions: under sections 272 and 273, most offences under CEPA may be prosecuted as either summary or indictable offences.
- Judicially-imposed penalties: sections 272 to 293 provide for various penalties. In addition, most regulations contain their own penalty provisions.

### ***Possible Application***

For the purposes of this issue, it is useful to consider four aspects of enforcement activities:

- i) determining what to inspect;
- ii) proving that an offence has been committed;
- iii) if satisfied that an offence has been committed, deciding whether to prosecute or pursue an alternative measure (ticketing, an EPCO or an EPAM); and
- iv) if a prosecution has been successful, deciding what penalty to recommend to a court.

The precautionary principle does not apply to ii). As criminal law, CEPA offences require proof beyond a reasonable doubt. The precautionary principle does not change that requirement.

In theory, the principle could apply to activities i), iii) and iv). As stipulated in the recently updated *CEPA Enforcement and Compliance Policy*, one of the factors they apply when deciding what action to take is the “nature of the alleged violation,” including “consideration of the seriousness of the harm or potential harm.” The precautionary principle could help inform this consideration in various ways. For example:

- Enforcement officials could account for scientifically uncertain evidence of serious or irreversible harm when deciding what to inspect.
- If satisfied that an offence has been committed, enforcement officials could account for scientifically uncertain evidence of serious or irreversible harm when deciding whether to impose an EPCO, an EPAM or to prosecute.
- Enforcement officials and prosecutors could account for scientifically uncertain evidence of serious or irreversible harm when deciding whether to prosecute as a summary or as an indictable offence.
- Enforcement officials and prosecutors could account for scientifically uncertain evidence of serious or irreversible harm when deciding what penalties to recommend to a court.