

Response to *Canada Gazette*, Part I: Notices and Proposed Regulations, Vol. 144, No. 42 (October 16, 2010) - Proposed notice requiring the preparation and implementation of pollution prevention plans with respect to bisphenol A in industrial effluents

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Introduction

The Canadian Environmental Law Association (CELA) and Chemical Sensitivities Manitoba (CSM) are submitting the following comments in response to *Canada Gazette*, Part I: Notices and Proposed Regulations, Vol. 144, No. 42 (October 16, 2010) on the “Proposed notice requiring the preparation and implementation of pollution prevention plans with respect to bisphenol A in industrial effluents.” These comments are intended to follow up from previous submissions our organizations submitted to the government on the overall risk management strategy to be developed on bisphenol A (BPA), a chemical that is found to be toxic under the *Canadian Environmental Protection Act, 1999* (CEPA 1999). Specifically we will address the adequacy of the government proposed efforts to address BPA effluents from industrial sources.

Before providing our comments on the proposed measures to require pollution prevention plans for industrial facilities releasing BPA, our organizations would like to express our on-going support of the government’s efforts to develop measures that seek to reduce BPA levels in Canada. We applaud the government’s listing of BPA to the Toxic Substances List (Schedule 1) of CEPA 1999 on October 13, 2010, which is seen as an essential step in support of developing management measures on toxic substances under the federal statute.

Furthermore, in light of the recent international technical meeting to discuss the toxicity of BPA coordinated by the World Health Organization (WHO) and Food and Agriculture Organization (FAO) held in Ottawa, Canada, meeting participants recognized that some linkages between low dose exposure to BPA and endocrine disruption impacts exist. However, no strong recommendations were made at the conclusion of the meeting by the WHO/FAO that would promote the development of management measures to address BPA releases from all sources.

Our organizations want to encourage the Canadian government’s continuing efforts to seek improved management measures on BPA in the face of some current scientific uncertainties regarding BPA impacts to human health. However, it is our position that the current scientific evidence on the potential impacts of BPA is sufficiently adequate to validate some of the precautionary measures under consideration by the Canadian government.

Despite these perceived gaps in scientific evidence demonstrating that BPA impacts on the adult human population and the continuing efforts by many experts to seek proof of harm by BPA exposure, we are encouraged and seek further affirmation of Canada’s commitments to manage BPA. Canada’s contribution to international BPA regulatory efforts will serve as an important milestone in the international arena as discussions, research, and the identification of safe alternatives for BPA continue. Additional measures on BPA, beyond the prohibition of BPA in polycarbonate baby bottles warranted.

In a recent US study, twenty one out of twenty two \$1 US bills had detectable BPA.¹ In three other studies, BPA has also been detected in heat-activated cash register receipts and \$1US bills.²

Relevant comments on Pollution Prevention Plans under CEPA 1999

As of January 2010, the federal government's approach was to develop specific regulations for industrial effluents by establishing acceptable levels of BPA effluents and environmental management framework. A stakeholder workshop was organized in November 2009 to discuss the scope of this proposed regulation.³ Substantial comments by our organizations were submitted on this proposed regulation.⁴ There has been no direct feedback by the government on the NGO recommendations or the progress for developing the regulations on BPA. Therefore, the recent shift by government and its proposals released for public comment in the *Canada Gazette*, Part 1 Notice to use P2 plans for BPA was unexpected by the environmental community.⁵ Organizations from the public interest community seek additional explanations and communication by government in this regard.

CEPA 1999 identifies pollution prevention as a key component in addressing toxic substances. We have long stated our support for pollution prevention strategies for toxic substances that seek to achieve the phase out of toxic substances with an ultimate goal of elimination. CEPA 1999 provides a foundation to seek a phase out of these toxic substances through pollution prevention. However, the P2 plans implemented to date under CEPA 1999 have not been designed to achieve the phase out or elimination of any toxic substances. Rather, the focus has been on controlling releases to the environment of the targeted toxic substances. P2 plans may provide some level of reduction of toxic substances for the facilities that will be required to develop and implement P2 plans. However, with the implementation of P2 plans for a few toxic substances in Canada, it is often unclear as to the level of reduction of releases that have been achieved for these substances.

¹ See: *San Francisco Chronicle*; Wednesday December 8, 2010. Accessed at: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/12/08/MN8H1GN4FQ.DTL>

² Ibid.

³ Environment Canada – November 2009: Consultation Document Phenol, 4,4'-(1-Methylethylidene)bis-(Bisphenol A). Assessed at: <http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=79A93C66-1&offset=4&toc=show>

⁴ See: Canadian Environmental Law Association and Chemical Sensitivities Manitoba. ENGO Comments in Response to Consultation Document on Bisphenol A (BPA) Proposed Regulations for Industrial Effluents. January 14, 2010. Accessed at: <http://www.cela.ca/sites/cela.ca/files/698-CSM%20and%20CELA%20resp%20to%20BPA%20consultation%28Jan%2014%2010%29Final.pdf>.

⁵ Government of Canada. *Canada Gazette*, Part I: Notices and Proposed Regulations, Vol. 144, No. 42 (October 16, 2010) on the “Proposed notice requiring the preparation and implementation of pollution prevention plans with respect to bisphenol A in industrial effluents.”

There are substantial gaps that have been identified with the use of P2 plans in Canada to date. Our organizations have submitted comments on the adequacy of P2 plans to achieve necessary protection for human health and the environment from toxic substances and also submitted comments on the proposal for facilities using and releasing isoprene. CELA has commented on the proposed pollution plans for toluene diisocyanates.

These reports have been attached (see Appendices) to this submission for your consideration since many of the points outlined in these submissions are relevant for the proposed P2 plans to address the reduction of BPA effluent. We focused on the following general comments:

- 1) The absence of proposed targets for reduction or elimination of the toxic substance and timelines for achieving targets does not ensure overall reduction or elimination of the targeted toxic chemical;
- 2) The perpetuation of control measures will not achieve pollution prevention in the long term;
- 3) Proposed threshold (100 kg) for requiring P2 plans has been set too high; this threshold does not require all facilities to develop pollution prevention plans;
- 4) Opportunities to promote alternatives in a pollution prevention approach is too limited;
- 5) Consideration of full life cycle is absent in P2 plans; and
- 6) The requirement for public reporting on implementation progress.

As a regulatory tool under CEPA 1999 substantial commitments should be made to strengthen pollution prevention plan requirements for toxic substances before the P2 plans are considered effective tools for achieving eventual phase out of toxic substances.

Recommendation: Referring to NGO submissions on proposed P2 plans for TDI and isoprene, the government should seek to strengthen the scope and obligations of the facilities covered under P2 plan provisions to achieve the phase out of targeted CEPA toxic substances such as TDIs, isoprene and now BPA.

Specific Comments to Proposed Pollution Prevention Plans for BPA

In addition to the comments included in our previous submissions on P2 plans, we offer the following comments that are specific to BPA.

Consideration of all environmental media

The proposed P2 plans for BPA mainly focus on releases to the aquatic environment. Despite the findings under section 64 of CEPA 1999, where the government concluded that BPA is toxic to the aquatic environment, it is necessary to address releases of BPA to all environmental media in consideration of an ecosystem approach. Currently, there

are only P2 plans for eight CEPA toxic substance focus. All P2 plans target releases to specific environmental media. Five of the P2 plans are focused on air emissions and three are focused on effluent discharges.⁶ However to support an ecosystem approach for managing CEPA toxic substances, P2 plans should be expanded to account for all environmental media. Therefore, the P2 plans for BPA should require consideration of releases to water, air and land.

Recommendation: The scope of the P2 plans should address all environmental media beyond the aquatic environment.

Exclusion of pulp and paper deinking activities

According to subsection 2(3) of the *Canada Gazette*, Part I, “this Notice does not apply to any person or class of persons who releases an effluent containing bisphenol A resulting exclusively from pulp and paper deinking activities, scientific research or laboratory testing.”⁷

The exclusion of the pulp and paper facilities with deinking facilities is again noted in section 3(2) of the *Canada Gazette* Part I Notice.⁸ In the Notice, no explanation has been provided for the exclusion of pulp and paper facilities which operate deinking activities from requirements for P2 plans. As a result, we do not support the development and implementation of P2 plans for BPA that do not include all facilities that use or release BPA in their processes. Furthermore, we cannot support the proposals that do not provide adequate explanation for the exclusion of deinking activities from pulp and paper facilities. These facilities may constitute a significant source of BPA releases.

Furthermore, the proposed measures for P2 plans also excluded the consideration of facilities that produce heat activated paper that often incorporate the use of BPA (e.g. sale receipts). There were no other proposals made at this time to indicate if the government is considering the reduction and eventual replacement of BPA in thermal paper and the possible releases of BPA in the deinking processing in the pulp and paper sector.

Relevant data has not been provided in the screening assessment reports or risk management document to specifically indicate the quantity of BPA that the facilities mentioned above, may be using, importing or releasing to the various environmental media (waste streams, wastewater treatment plants, sent off for incineration, etc.) in Canada. It is also not known if these facilities are located in close proximity to each

⁶ Environment Canada. CEPA Registry. Pollution Prevention Plans. See Accessed at: <http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=BC71EA4E-1>.

⁷ Government of Canada. *Canada Gazette*, Part I: Notices and Proposed Regulations, Vol. 144, No. 42 (October 16, 2010) on the “Proposed notice requiring the preparation and implementation of pollution prevention plans with respect to bisphenol A in industrial effluents.” Accessed at: <http://www.gazette.gc.ca/rp-pr/p1/2010/2010-10-16/html/sup-eng.html>.

⁸ Ibid.

other. The absence of this information creates a significant challenge to assess the effectiveness of this proposal.

Recommendation: Pulp and paper deinking activities should be included in the scope of the P2 plans. Furthermore, substantial data as to the contributions of BPA use, import, release and disposal from these activities should be made available.

Recommendation: Facilities that are required to complete P2 plans should be made to submit to the government, the current and expected levels of BPA for use, manufacture, import, release, and disposal (e.g., landfill, incineration, treatment).

Recommendation: All facilities that manufacture, use, import, sell, release or dispose of BPA should be required to complete P2 plans.

Ecological Risk Management Objective

In order to prevent or minimize releases of BPA to the environment, the ecological risk management objective is to achieve the lowest level of release of BPA to the environment that is technically and economically feasible. Therefore, continual improvement towards achieving this objective is encouraged. Our organizations have made comments on the emphasis given to the technically and economically feasible elements of this objective in our January 14, 2010 submission responding to the proposed regulations for BPA effluents.⁹ For BPA, the case for achieving the lowest level of release should not be based on technical and economical feasibility alone. The potential impacts posed by BPA exposure in all environmental media, should be the main driving force. The reference to technical and economic feasibility creates a significant barrier to finding safe substitutes and achieving meaningful P2 strategies of BPA, to all environmental media.

Recommendation: The ecological risk management objective for BPA management should be strengthened by deleting the reference to words “technical and economic feasibility.”

Regulatory language for pollution prevention activities is weak

Under the *Canada Gazette* Notice, the regulatory text as outlined in section 4(4) does not explicitly require the implementation of pollution prevention plans. Rather, the language only indicates that:

⁹ Canadian Environmental Law Association and Chemical Sensitivities Manitoba. ENGO Comments in Response to Consultation Document on Bisphenol A (BPA) Proposed Regulations for Industrial Effluents. January 14, 2010. Accessed at: <http://www.cela.ca/sites/cela.ca/files/698-CSM%20and%20CELA%20resp%20to%20BPA%20consultation%28Jan%2014%2010%29Final.pdf>

*The use of pollution prevention planning should be prioritized as a means of addressing the release to the environment of toxic substances or other pollutants. In preparing a plan, a person subject to the Notice should give priority to pollution prevention activities rather than control activities.*¹⁰

In order to strengthen the proposed notice, pollution prevention measures should be applied in a mandatory manner rather than just be given priority consideration as currently indicated. Amendments to the regulatory language are required to strengthen this provision.

In addition, the requirements for pollution prevention do not place any emphasis on promoting the phase out or elimination of BPA at the source of the industrial process. The elements of the proposed P2 plans give priority to these types of activities but do not provide additional requirements that their support.. For example, explicit requirements to develop substitution planning and the relevance of substitutes could be further emphasized in the efforts to promote the elimination of BPA.

Recommendation: The government should amend the regulatory text with regards to adoption of pollution prevention in section 4(4). Suggested text: *“The use of pollution prevention planning should be applied as a means of addressing the release to the environment of toxic substances or other pollutants. In preparing a plan, a person subject to the Notice should adopt pollution prevention activities rather than control activities.”*

Recommendation: Require that pollution prevention activities focus on the use of BPA to achieve elimination of BPA releases rather than on measures that control BPA releases to the environment.

Recommendation: We urge the government to strengthen the P2 plans by requiring substitution planning to identify safe substitutes for BPA.

Estimate of reduction of BPA levels absent

As noted in the previous section outlining a few common issues identified with other P2 plans, the absence of the overall reduction or elimination targets in these plans have been identified as a significant weakness in the Notice for BPA as well as the other toxic substances. The public and industry do not have a sense of the overall reduction of BPA that would be achieved, if at all, with the use of the proposed P2 plans. The absence of this type of information makes it difficult to assess the effectiveness of the Notice for the P2 plans since only a small number of facilities (e.g., investment casting wax) have been identified as releasing BPA to the aquatic environment. It would be

¹⁰ *Canada Gazette*, Part I: Notices and Proposed Regulations, Vol. 144, No. 42 (October 16, 2010) on the “Proposed notice requiring the preparation and implementation of pollution prevention plans with respect to bisphenol A in industrial effluents.” Accessed at: <http://www.gazette.gc.ca/rp-pr/p1/2010/2010-10-16/html/sup-eng.html>.

difficult on this basis for public interest organizations to fully support the P2 plans without some estimation of reduction targets.

However, studies have suggested that approximately 45-80 industrial facilities in Canada use BPA at quantities greater than 100 kg/yr and apart from releasing to the aquatic environment, release BPA to other environmental media. While the government will continue to monitor levels of BPA in various environmental media, no connection has been established to determine how these ongoing monitoring efforts on BPA relate to the development and implementation of P2 plans. It is expected that these results will be used to inform on ambient levels of BPA in the environment and will help assess the efficacy of proposed risk management instruments.¹¹ However, it is not clearly understood how this will be achieved.

While we appreciate that BPA reduction in the aquatic environment is crucial, we also see the importance of considering and requiring reduction and ultimate elimination of BPA releases to all environmental media. If focus is directed only to the releases to water with no attention given to releases to other environmental media, the government approach would not be taking into consideration the ecosystem approach. Similarly, there are other major sources for BPA releases such as consumer goods, namely food and beverage linings, for which the government has yet to develop management measures. Cans and other food packages can be a source of BPA releases to human health as well as to the environment as they are recycled or sent for disposal.

Recommendation: Given that BPA is considered CEPA toxic, the government should establish a goal of reduction by industry of BPA releases by 75% within 2 years of completing the P2 plans with a target date of 3 years to phase out the use and release of BPA.

Recommendation: The government is urged to articulate how its monitoring efforts on BPA would relate to the BPA P2 Plans under consideration.

Recommendation: The current approach for BPA reduction to environmental media, mainly the aquatic environment, should be broadened to include other environmental media. This should allow for a more comprehensive package that aims to achieve an eventual phase out of BPA.

Estimated number of reporting facilities

Based on the proposed notice for P2 plans for BPA, it is unclear the number of facilities that will be required to prepare P2 plans. However, the number of facilities is expected to be small.¹² The number of facilities to be covered by the notice is an important

¹¹ Based on personal communication with Environment Canada (EC), December 2010. Information from EC based on: Final Screening Assessment Report available at <http://www.ec.gc.ca/ese-es/default.asp?lang=En&n=3C756383-1>.

¹² Ibid.

element if the government and the public are to fully understand the level of reduction that will result from the preparing P2 plans.

Although there has been a decline in the level of use of BPA in Canada, the lack of tested substitutes could possibly result in an increase of use and release of BPA in some sectors in the future. Some of these facilities may qualify for the implementation of P2 plans. An increase in the number of these facilities could represent a significant impact from BPA releases to the local environment, particularly to the aquatic environment where the impacts have been identified. This type of scenario is very feasible and has not been accounted for in the details of the proposed P2 plans for BPA. In the scenario where there is an increase in BPA discharges to the aquatic environment, is it likely that the government will reassess the release data. However, it is unclear how the government would review and amend, if necessary, the concentration level of BPA released to the aquatic environment. Additional consideration of reviewing and updating the requirements for P2 plans should be required to ensure the full effectiveness of the measures, particularly if increased releases of BPA are in close proximity to each other.

It is important to present some likely scenarios that demonstrate the expected level of releases from a different number of facilities that will be required to prepare and implement P2 plans.

Recommendation: The government should provide an estimate of the number of affected facilities that will be required to prepare and implement P2 plans. This should be included in the current proposed P2 plans for BPA releases to the environmental media.

Recommendation: The government should present information as to how increases in the number of facilities required to prepare and implement P2 plans will impact the level of BPA released from these facilities to the environment, with particular focus on the aquatic environment and the geographic location of the facilities in relation to each other.

Reporting threshold for P2 Plans

As with the P2 plans relevant for TDIs and isoprene, facilities are required to meet a use threshold of 100 kg before they are required to prepare P2 plans. We have provided substantial comments opposing the use of thresholds for preparing P2 plans. There is a need to identify the number of facilities that may fall below this use threshold or whether these facilities are located in proximity to each other or to vulnerable communities.

This is applicable to all toxic substances that require a P2 plan. All facilities that use, manufacture, import, release and dispose of BPA should be required to meet the requirements of P2 plans. Although there is an approximation as to the number of facilities, this information should be more explicit in the P2 plan details for BPA.

The National Pollutant Release Inventory (NPRI), as Canada's only national inventory for pollutant release and transfer, does not provide a good basis of information to determine the number of facilities that should be covered under P2 plans as its reporting threshold is established at 1000 kg/year. As such, very few facilities report BPA releases under the NPRI. According to 2006 NPRI data, no facilities reported releases of BPA to water. However, monitoring data demonstrated that BPA was actually detected in the waters of the Great Lakes.

In addition, the November 2009 consultation document released by the government on BPA industrial effluent indicates that "Quantities in the Canadian market in 2006 may be lower than those for the U.S., as no bisphenol A was manufactured in Canada at quantities equal to or greater than a reporting threshold of 100 kg."¹³ This information was gathered through the section 71 surveys conducted by the government. From the Chemicals Management Plan under section 71 of CEPA 1999 conducted for 2006, 25 companies imported a total of approximately 500,000 kg of BPA into Canada and 5 companies reported using 100,000 to 1,000,000 kg of BPA in a mixture or in a product. With the high reporting threshold for reporting uses in Canada, it is likely that many uses are not being reported (1,000 kg at a concentration of 50% or higher, or 10,000 kg at any concentration). However, Environment Canada has reported that recent use of BPA has declined.¹⁴ Again, the information for uses and releases needs to be clearly defined in the P2 plans for BPA releases to the environment, with particular emphasis on the aquatic environment.

In our January 14, 2010 response to the government consultation document of November 2009, we noted that in order to improve our knowledge on levels of BPA releases in Canada, the National Pollutant Release Inventory (NPRI) program should be amended to remove the reporting thresholds for BPA and other CEPA toxic substances so that all releases of BPA and other CEPA toxic substances can be captured for reporting. All facilities using or manufacturing BPA should be targeted for P2 plans, regardless of the quantity of use, import or release.

Recommendation: The notice should include the estimated number of facilities that will be required to meet the requirements of P2 plans.

Substitutes

Section 4(5) of the Notice highlights the role of alternatives. Subsection 4(5) states that:

"The use of alternatives to bisphenol A should be considered to reduce or minimize environmental risks. The chosen alternatives should not have,

¹³Environment Canada. Consultation Document Phenol, 4,4'-(1-Methylethylidene)bis-(Bisphenol A), Chemical Abstracts Service Registry Number 80-05-7. November 2009. Accessed at <http://www.ec.gc.ca/ceparegistry/documents/participation/pba/tdm-toc.cfm>.

¹⁴Based on personal communication with Environment Canada, December 2010. Information from Environment Canada based on: Final Screening Assessment Report. Accessed at: <http://www.ec.gc.ca/ese-es/default.asp?lang=En&n=3C756383-1>.

*through their degradation, the potential to produce bisphenol A, nor should such alternatives cause similar environmental effects.*¹⁵

We are pleased to see a focus on substitutes for BPA in the notice to promote pollution prevention and that would result in the reduction of BPA exposure. The government should enhance its efforts to raise awareness of alternatives to BPA as this should be considered an integral component in implementing pollution prevention strategies (see commentary in section “Regulatory language for pollution prevention is weak”). In support of this measure, additional provisions are required in the process of implementing pollution prevention to conduct alternative assessments. The U.S. Environmental Protection Agency, through its Design a Safe Environment Programme, has created a framework for an alternative assessment process that merits review and discussion in this context.¹⁶ In our submissions responding to proposals to manage BPA, we have indicated the need for assessing substitutes for their safety. The assessments to be conducted should be a hazard based assessment rather than a risk based assessment. A hazard assessment on alternatives is also promoted in the alternatives assessment framework proposed by EPA.

The other elements relating to the role of substitutes in the P2 plans is limited to the degradation process of BPA rather than other degradation products that may result from its use, manufacture, release or disposal. For example, the disposal of BPA stockpiles and waste may include incineration, a process known to produce other toxic substances such as dioxins and furans, heavy metals and smog causing substances. These processes should have explicit inclusion in the P2 plan to these degradation processes.

Recommendation: We support the inclusion of reference and role given to substitutes in the Notice. To improve its effectiveness, the identification and reporting of substitutes should be made a mandatory requirement in the P2 plans and part of the substitution planning process noted previously.

Recommendation: We urge the government to include a provision in the P2 plan provision to require an assessment of all substitutes using a hazard based approach.

Recommendation: The consideration of degradation processes for substitutes should be expanded from only a focus on BPA degradation to include consideration of other toxic substances that may be produced as a result of the degradation processes.

¹⁵ *Canada Gazette*, Part I: Notices and Proposed Regulations, Vol. 144, No. 42 (October 16, 2010) on the “Proposed notice requiring the preparation and implementation of pollution prevention plans with respect to bisphenol A in industrial effluents.” Accessed at: <http://www.gazette.gc.ca/rp-pr/p1/2010/2010-10-16/html/sup-eng.html>.

¹⁶ See: US Environmental Protection Agency. Design for the Environment. Alternatives Assessments. Accessed at: http://www.epa.gov/dfе/alternative_assessments.html.

Sampling

Under Section 4(6), the notice outlines the process for BPA sampling, including a requirement that “Samples should be collected and analysed at a minimum of four times per year using a composite sampling method.”¹⁷ This sampling process is not prescriptive enough. It lacks the following:

- a requirement to state the dates for which samples should be taken, beginning with the start of the process;
- the requirement for third party verification of samples;
- an obligation for additional sampling if required by the government or triggered by complaints by the public; and
- an explicit indication of the requirements and responsibilities for facilities that when tested, are in exceedance of the BPA concentration levels of 1.75 ug/L.

Recommendation: The sampling process should be further enhanced to ensure that facilities are able to achieve the management objective for BPA.

Improvements in the sampling protocol should include:

- **a requirement for sampling at the beginning of the process to establish baseline for facility;**
- **the sampling frequency should be increase from 4 to 12 (monthly sampling) per year to account for seasonal fluctuations,**
- **several samplings when the production levels of a facility is greater than normal practices;**
- **other crucial times of the year for sampling;**
- **require third party verification for validation of results;**
- **require provisions to allow for additional sampling as need is identified by government or triggered by complaints by the public;**
- **the requirements and responsibility of facilities in situations where sampling data are in exceedance of the BPA concentration levels of 1.75 ug/L; and**
- **details on industrial process that contribute to situations where the effluent is in exceedance of the BPA concentration limits.**

Consideration of Cumulative Impacts

We have noted our concerns that the provisions for P2 plans lack several important elements which include the current number of facilities required to prepare and implement P2 plans. This element is of significant importance since there may be communities in which several facilities using or releasing BPA may be located in the same vicinity. The cumulative impact of these facilities is critical when considering releases of CEPA toxic chemicals such as BPA, to all environmental media. Specific

¹⁷ Ibid.

consideration should be given to locations where facilities using or releasing BPA that require P2 plans are in close proximity to each other.

In addition to the potential releases of BPA to the environmental media, the presence of BPA in a wide range of consumer products and personal care products should be taken into consideration in the process of the development of the management measures. Consumer and personal care products are expected to be disposed. The method of disposal may result in impacts to the environment through leachates in landfills or emissions of BPA or other toxic chemicals to air, water or land from incineration processes. As it relates to the development of P2 plans, it is important to acknowledge that communities in which these industrial plants are located have other potential sources of BPA that are likely not managed through regulatory measures. Furthermore, it is unclear whether the wastewater treatment systems in these communities are equipped to treat wastewater that may contain BPA and effectively remove it.

Recommendation: In consideration of cumulative impacts of BPA, provide further consideration and review of the adequacy of P2 plans for communities across Canada that may have multiple sources of BPA exposures that include releases from industrial facilities, consumer products, and the adequacy of wastewater treatment systems to treat and remove BPA.

Implementation Framework

Under Section 6 of the Notice, the timeframe for completing the implementation of the P2 plans is set for December 31, 2016. This timeframe provides over 4 years for industry facilities to complete implementation efforts based on an expected date for completion of P2 plans for December 31, 2012. This timeframe appears to be too flexible and generous to industry. This is unacceptable. Under CEPA 1999, management options for toxic substances should be developed within 24 months of proposing a listing of the substance to Schedule 1 of CEPA and another 18 months for implementing the measure. This timeframe for completing implementation should be shortened from 4 to 2 years.

Some clarity is needed about the deadline set out in Section 4(1) of the Notice which indicates that “The risk management objective for this Notice is to achieve and maintain a total BPA concentration that is less than or equal to 1.75 µg/L in effluent released at the final discharge point of the facility, through methods other than dilution, by December 31, 2015.” The date of December 31, 2015 is different that the implementation date of December 16, 2016. This would mean that industry is given two years to achieve 1.75 ug/L BPA concentration limit. Indeed, there should be additional requirements in the notice under reporting to demonstrate the progress made to achieve the reduction of BPA levels and efforts that achieve the environmental objective of the notice.

Recommendation: The timeframe for completing implementation of P2 plans should be reduced to 2 years from 4 years (completion date for December 31, 2016).

Public accountability

In 2008, the Commissioner of the Environment and Sustainable Development released a report which included a review of the P2 plans for acrylonitrile. The P2 plans on acrylonitrile focused on the emissions from the manufacturing of synthetic rubber. In its report, the Commission noted that:

Efforts by Environment Canada over the past few years to work with sources of increased air emissions have reversed the upward trend by almost 50 percent in 2006-07 [for acrylonitrile]. Nonetheless, the total acrylonitrile emissions in 2007 were still about three times higher than they were when the substance was first declared toxic under CEPA 1999 and 8.5 tonnes higher than when the Notice was published in 2003..¹⁸

These findings were relevant. The changes observed in the releases of acrylonitrile highlight the importance of requiring management measures to address all sources of releases as well as the need to review and update management strategies to ensure the effective protection of the environment or human health. For BPA, the scope and details of the P2 plans should be comprehensive in scope and specific with its intended reduction targets.

Recommendation: The government should evaluate and revise P2 plans within 5 years to ensure that plans effectively protect the environment and human health.

Conclusions

The proposal to require P2 plans to address BPA releases from industrial sources to the aquatic environment demonstrates a shift in approach by the government from its original intentions to develop regulations that aim to address industrial effluents. Our organizations indicated that the government's continued efforts to develop management measures on BPA is considered important and has been encouraged. However, we have outlined several issues and recommendations in our submission for your consideration that will need to be addressed if the proposals for P2 Plans under CEPA 1999 are to result in substantial improvement and protection to the environment and human health.

¹⁸ Office of the Auditor General of Canada: Report of the Commission of the Environment and Sustainable Development to the House of Commons. Chapter 1: Managing Air Emissions. December 2008. Accessed at: http://www.oag-bvg.gc.ca/internet/English/parl_cesd_200812_01_e_31818.html.

We note the important role that pollution prevention measures can take in achieving the protection required from CEPA toxic substances such as BPA. However, the proposals for P2 plans include a number of gaps that have been identified in previous proposals for P2 plans for other CEPA toxic substances: TDIs and isoprene. In addition, we identified a number of issues in the proposed P2 Plan for BPA that require immediate attention but reiterate the following:

- the need for commitment for the eventual phase out of BPA;
- the scope of the P2 plans should address all environmental media beyond the aquatic environment;
- the absence of targets for reduction and eventual elimination of BPA. We proposed a reduction target of 75% of BPA releases by 2015 and eventual phase out within two years;
- the exclusion of P2 plans for pulp and paper deinking activities. All facilities that use, manufacture, import, sell, release, or dispose of BPA should be included;
- the need to require substitution planning as an integral part of achieving pollution prevention which will include identification of substitutes;
- the need to consider the cumulative impacts of BPA releases in P2 plans;
- improvements to the sampling protocol for BPA releases; and
- the need to review and update P2 plans.

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APPENDICES – NGO submissions on:

- 1) Proposed Pollution Prevention Plans for the Resin and Synthetic Rubber Manufacturing Sector for isoprene (dated September 20, 2010) and,**
- 2) Polyurethane and Other Foam Sector (Except Polystyrene) for Toluene Diisocyanates (TDIs) (dated August 27, 2010)**

September 20, 2010

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RE: Preliminary NGO response to Working Document for Discussion on the Content of the Proposed Pollution Prevention Planning Notice for the Resin and Synthetic Rubber Manufacturing Sector (“Notice”)

On behalf of our organizations, the Canadian Environmental Law Association (CELA) and Chemical Sensitivities Manitoba, thank you for the opportunity to provide preliminary comments to the **Working Document for Discussion on the Content of the Proposed Pollution Prevention Planning Notice for the Resin and Synthetic Rubber Manufacturing Sector (“Notice”)** provided to us on August 25, 2010. The working document focuses on the requirements for pollution prevention plans (P2 plan) for the facilities in the resin and synthetic rubber manufacturing sector and plans to focus on Isoprene (1,3 - Butadiene, 2-Methyl-) (CAS RN: 78-79-5), which was found to be toxic based on the criteria of section 64 of the *Canadian Environmental Protection Act* on January 31, 2009, with the release of the final screening level risk assessment.

The comments below reiterate and expand on issues and comments previously submitted to Environment Canada on August 27, 2010 by the Canadian Environmental Law Association in response to *Supplement Canada Gazette*, Part I, Vol. No. (July 3, 2010) on another CEPA toxic substance, toluene diisocyanates (TDIs) - (CAS RNs: 91-08-7; 584-84-9; and 26471-62-5), which was targeted for P2 plans. The CELA letter is attached to this submission.

Scope of management for isoprene

Isoprene was identified as a non-threshold carcinogen by the government of Canada. The government’s Proposed Risk Management Approach document identified two key recommendations to be considered on isoprene, they include: 1) “control and/or reduce isoprene air stack releases by the application of the best available technology economically achievable (BATEA)”; and 2) addition to the Cosmetic Ingredient Hotlist.¹⁹

Isoprene was added to the Cosmetic Ingredient Hotlist in 2010 as a prohibited substance. The addition of to the Cosmetic Ingredient Hotlist will not prevent the use of

¹⁹ Environment Canada and Health Canada. *Proposed Risk Management Approach for 1,3-Butadiene, 2-Methyl (Isoprene) Chemical Abstracts Service Registry Number (CAS RN): 78-79-5*. January 2009. Accessed at http://www.ec.gc.ca/substances/ese/eng/challenge/batch2/batch2_78-79-5_rm.cfm#9.1.1

isoprene in household and consumer products such as cleaning products, toys and food containers.²⁰ Based on the carcinogenicity of isoprene and the fact that many products containing isoprene may result in direct exposure to human health, a substantial management response to prohibit the use of isoprene in other products is warranted.

The proposed notice to require P2 plans for the Resin and Synthetic Rubber Manufacturing aims to achieve the application of BATEA for releases of isoprene. While we are supportive that government is considering CEPA tools to address this CEPA toxic chemical, there are many on-going gaps in the application of P2 plans and as a result, the level of protection required to protect human health from exposure to isoprene, may be inadequate.

Given the final assessment on isoprene suggests that this chemical is a non-threshold carcinogenic, it is our view that the aim for management for isoprene should be a regulatory process that aims to phase out this substance from all anthropogenic sources, particularly its use in the resin and synthetic rubber manufacturing sector and establish a process that promotes the identification and application of safe substitutes for this substance.

Pollution Prevention Plan (P2 plans) elements

The Notice for pollution prevention plans offers opportunities to move in the direction of a phase out of isoprene in Canada. However, the elements of the Notice as currently proposed in the working document may not effectively achieve phase out of the anthropogenic uses of isoprene. There are no mandatory requirements for facilities to commit to a phase out or a reduction of use of isoprene over a specified time nor a commitment to identify, research or apply alternatives in order to achieve a phase out. Under the Chemicals Management Plan (CMP), there have been insufficient efforts directed to finding and assessing safe substitutes. In the application of P2 plans, further consideration in requiring safe substitutes would contribute further to prevention efforts.

Below are several critical elements that should be incorporated in the proposed notice for P2 plans. As noted earlier, similar comments have been submitted on toluene diisocyanate (TDIs);

- 1) *Outline explicit reduction and elimination targets expected from requiring pollution prevention plans.*

Currently, no estimated reduction targets are proposed or outlined for the preparation and implementation of P2 plans to promote the reduction in releases of isoprene to the environment. The absence of reduction targets for isoprene leaves a great deal of uncertainty about the expected outcome for the resin and synthetic rubber sector and essentially, provides the discretion to the targeted industry to determine what levels of

²⁰ Government of Canada. Chemicals Management Plan Web site. Chemical profile for 1,3-Butadiene, 2-methyl- (Isoprene) CAS Registry Number 78-79-5. Accessed September 16, 2010 at <http://www.chemicalsubstanceschimiques.gc.ca/challenge-defi/summary-sommaire/batch-lot-2/78-79-5-eng.php>.

reduction can be achieved. This approach could result in varying reduction levels or none at all for this sector. Also, the lack of reduction targets could result in affected industries not using the appropriate technology that supports prevention by effectively reducing emissions nor considering measures that would move towards the elimination of isoprene as a feedstock. The working document outlines a menu of options available to the facilities that may contribute to the release of isoprene to the environment without providing preference for a specific approach or technology. The emphasis on process modifications and upgrades may result in some reduction but will not prevent the use of isoprene, particularly when it is used as a feedstock.

2) Number of facilities required to prepare P2 plans

It is unclear how many facilities in the resin and synthetic rubber manufacturing sector will be required to comply with P2 plans. According to pollution data from the National Pollutant Release Inventory, 14,500 kg of isoprene were released to air in 2006.²¹ In 2008, the release of isoprene to air according to NPRI was approximately 17,000 kg.²² In 2009, a total of 4 facilities (representing two companies) reported releases and transfer of isoprene according to preliminary data posted on the National Pollutant Release Inventory. The total amount of release was 38,000 kg for 2009.²³ While two of four facilities reporting to NPRI noted that they report under the following North American Industry Classification System (NAICS): NAICS 2 Code: 31-33 – Manufacturing; NAICS 4 Code: 3252 - Resin, Synthetic. Rubber, & Fibre & Filament Mfg.; NAICS 6 Code: 325210 - Resin & Synthetic Rubber Mfg. rubber. The remaining two facilities by Nova Chemicals did not report under these NAICS codes.

The uncertainty in the number of facilities requiring P2 plans is a gap in the approach. It is understood that any new facilities in the resin and synthetic rubber manufacturing sector that meets the threshold for use/purchase will be required to comply with the criteria for the P2 plans. If the Notice of P2 plans results in a very small number of participating facilities, further consideration for the developing regulations to seek the prevention of isoprene is much preferred. Facilities not required to create P2 Plans

²¹ Environment Canada and Health Canada. Screening Assessment for the Challenge 1,3-Butadiene, 2-methyl- (Isoprene) Chemical Abstracts Service Registry Number 78-79-5. November 2008. Accessed at <http://www.ec.gc.ca/ese-ees/default.asp?lang=En&xml=AF3514D4-0915-C097-DA63-3E37E9836182>

²² Environment Canada. National Pollutant Release Inventory. Accessed at http://www.ec.gc.ca/pdb/websol/querysite/results_e.cfm?opt_report_year=2008&opt_facility=ALL&opt_facility_name=&opt_npri_id=&opt_chemical_type=CHEM_NAME&opt_cas_name=78-79-5&opt_cas_num=78-79-5&opt_location_type=ALL&opt_province=&opt_postal_code=&opt_urban_center=&community1=&opt_naics6=&opt_naics3=&opt_industry=NAICS4_Code&opt_naics4=&opt_nai6code=&opt_csic=&opt_media=all (search for isoprene and reporting facilities in 2008. Accessed on September 14, 2010).

²³ Environment Canada. National Pollutant Release Inventory website. Accessed at http://www.ec.gc.ca/pdb/websol/querysite/results_e.cfm?opt_report_year=2009&opt_facility=ALL&opt_facility_name=&opt_npri_id=&opt_cas_name=78-79-5&opt_chemical_type=CAS&opt_cas_num=78-79-5&opt_location_type=ALL&opt_province=&opt_postal_code=&opt_urban_center=&community1=&opt_province_comm=&opt_industry=IS_Code&opt_naics6=&opt_naics3=&opt_naics4=&opt_nai6code=&opt_csic=&opt_media=all (search for isoprene and reporting facilities in 2009. Accessed on September 14, 2010).

should still be regulated in their use of this chemical. A regulation may be a more effective way to prevent future releases of isoprene. Such a regulation could effectively discourage the future use of isoprene by facilities in resin and synthetic rubber manufacturing and directly require the consideration of possible safe alternatives.

3) *Remove use/purchase threshold required for preparing P2 plans*

Currently, the threshold proposed for preparing a P2 plan is 100 kg/year for substance use or purchase. It is our view that this threshold is too high and should be removed. All facilities using, purchasing or releasing isoprene should be captured by the provisions of the Notice. While the provisions aim to target facilities where there is potential for greatest reduction, there is a need to acknowledge that pollution prevention should be included for all facilities regardless of their manufacturing capacities.

Furthermore, in the assessment of isoprene, it was noted that it is a structural analogue to 1,3-butadiene, which has been associated with lymphohaematopoietic cancer in exposed workers.²⁴ 1,3-butadiene is listed under the Toxic Substances List of CEPA. The evidence that isoprene may be linked to occupational illness suggest that improved provisions for worker protection from isoprene are necessary.

While CEPA does not address occupational settings, it is of particular importance to ensure the protection of workers from exposure to toxic chemicals. The Notice for P2 plans does not account for provisions intended to protect worker exposure from isoprene.

4) *Public reporting requirements*

The working document outlines a number of reporting requirements for facilities including interim progress reports. These reports are submitted to the government and it remains unclear how progress will be reported to the public during the implementation phase, with the exception of the requirements through CEPA for declarations made by the facilities for the completion and implementation of their P2 plans. Additional consideration and discussion are needed to demonstrate the progress to the public throughout the implementation phase. This would demonstrate the effectiveness or lack of effectiveness of the plans to reduce and eliminate isoprene as well as the possible implementation of safe substitutes.

However, no provisions have been made to require expanded reporting for isoprene or the mandatory reporting of pollution prevention activities through the National Pollutant Release Inventory. As noted in # 2 of our comments, four facilities (2 companies) report to the NPRI for releases and transfer of isoprene. These facilities have not provided

²⁴ Environment Canada and Health Canada. *Screening Assessment for the Challenge 1,3-Butadiene, 2-methyl-(Isoprene) Chemical Abstracts Service Registry Number 78-79-5*. November 2008. Accessed at <http://www.ec.gc.ca/ese-ees/default.asp?lang=En&xml=AF3514D4-0915-C097-DA63-3E37E9836182>.

comments on pollution prevention activities.²⁵ Given its designation as a CEPA toxic substance, consideration should be given to expand the reporting threshold required under NPRI that will require all facilities to report all their releases or transfers of isoprene.

Strengthening the overall requirements of reporting to the NPRI should provide a better picture of the releases and transfers of isoprene. It will also provide decision makers, interested stakeholders and the public, opportunities to assess the type of pollution prevention measures being taken by facilities. In the absence of regulatory action on isoprene and the limited public reporting for P2 plans, the additional information presented in NPRI reports outlining pollution prevention activities may provide meaningful information for facilities required to comply with the Notice.

Furthermore, reporting under NPRI offers an opportunity to expand on the pollution prevention activities undertaken by facilities. When used as a tool, P2 activities reported under NPRI have been underutilized by facilities to highlight substantial changes made by facilities. The NPRI program should be strengthened to make linkages between the P2 activities required under the proposed notice for the P2 plan and the reporting elements of the NPRI. These linkages should include improved reporting to the public through the NPRI website as well as explicitly outlined requirements in the P2 plans for annual reporting to the NPRI.

5) End of life and waste management and disposal issues

The P2 plans propose to focus on the release of isoprene to the environment. There is a lack of focus on prevention of isoprene at the end of life. In fact, the elements considered for P2 plans do not add any particular emphasis on the waste stream. The P2 plans should require enhanced facility responsibility in waste management and disposal of isoprene.

6) Consideration of other pollutants from the resin and synthesized rubber sector

The production and products resulting from use of isoprene in the resin and synthesized rubber undoubtedly will result in the release of other pollutants. Based on the NPRI data, these facilities release and transfer various pollutants such as the criteria air contaminants (VOCs, particulate matter) as well as other pollutants (e.g. n-hexane, ethylene, hydrochloric acid)²⁶, while the working document mentions other pollutants, section 4 mentions: "Other factors to consider in preparing the plan." It is unclear how

²⁵ Environment Canada. National Pollutant Release Inventory. Accessed September 15, 2010 at http://www.ec.gc.ca/pdb/websol/querysite/facility_information_e.cfm?opt_npri_id=0000001944&opt_report_year=2008.

²⁶ National Pollutant Release Inventory Website. Search for releases of facility releasing isoprene. For example, see 2009 Facility and Substance Information for Lanxess Inc – Lanxess East at http://www.ec.gc.ca/pdb/websol/querysite/facility_substance_summary_e.cfm?opt_npri_id=0000011130&opt_report_year=2009.

effective the pollution prevention plans will impact the release of pollutants from these facilities, if at all. VOCs and particulate matter may contribute to the formation of smog and their control would benefit from the implementation of prevention measures. Additional commentary and quantified data should be included in the Notice as to the impacts of the proposed pollution prevention measures to reduce the level of production, release or disposal of the other pollutants. This information will improve the quality and the transparency of the P2 plan requirements.

7) Best Available Technology Economically Achievable (BATEA)

The definition presented in the working document should be expanded to include explicit changes to substance feedstock. The definition is primarily weakened with the qualifier “economically achievable.” While it is important to recognize the cost associated with effectively managing chemicals that are considered non-threshold carcinogens, some additional emphasis should be placed on the potential benefits of seeking to prevent future contributions of the release of isoprene to the environment. The potential cost to the health system by not taking the necessary steps to prevent the use of isoprene is not considered in the process for assessing the measures needed to reduce exposure from isoprene. The prevention of exposure to this chemical could provide substantial savings to the health care system as well as the inherent value of protecting the Canadian population from illnesses related to this chemical. The consideration of protection of human health should be the priority over cost savings for specific processes or technology.

8) Sampling and testing requirements inadequate

In the P2 plan requirements, facilities will be required to determine the average concentration of isoprene at or beyond the facility boundaries. The methods for estimation rely on the use of an air dispersion modelling system, AERMOD. However, the process to support the estimation of maximum 24-hr average concentration requires sampling or analysis of isoprene from stack releases only once a year according to section 3(1)3a.²⁷ The sampling frequency is considered inadequate. The process does not require any sampling during abnormal conditions that may occur within the facility nor does it specify the need to report these occurrences.

Furthermore, under section 3(1)3 of the working document, it was noted that the focus of sampling and testing will be “at or beyond the facility boundaries.” It is unclear what distance “beyond the facility boundaries” would entail. This detail is critical and should be specified.

The sampling for isoprene should be conducted in several locations and at different times in the year. Testing should include on-site locations where workers may be exposed, as well as in various locations in neighbouring communities to the facilities so

²⁷ Environment Canada. *Working Document for Discussion on the Content of the Proposed Pollution Prevention Planning Notice for the Resin and Synthetic Rubber Manufacturing Sector* (“Notice”) released in August 2010.

that isoprene concentrations and possible impacts to fenceline communities could be evaluated.

There may be specific communities (e.g., low income) that are more susceptible to the impacts of isoprene or those that may be uniquely exposed to several sources of toxic chemicals. This justifies the need to assess the cumulative and even synergistic impacts of these toxic chemicals.

The Notice should be revised to require substantial sampling for isoprene to assess how vulnerable populations and communities may be impacted from the use and release of isoprene.

9) *Maximum concentration level of 10 ug/m³*

The working document outlines a number of factors that need to be considered in the preparation of the P2 plans and in establishing a threshold maximum 24-hour average concentration level of 10 ug/m³. It remains unclear how the factors outlined in section 3.(1)3 and 3(1)4 will achieve prevention of isoprene as they do not include prescriptive requirements for implementation. Furthermore, the emphasis for improving the process is focused on controlling the release of isoprene to the environment rather than the prevention of its use. This is evident in the following examples: section (3(1)4 b focused on “establishing and implementing a leak detection and repair program...” and section 3(1)4c considered “standards and operating practices for controlling air emissions...”

The plans do not discuss the options available for phasing out the use of isoprene nor do they present any details on safe substitutes for isoprene. It would be beneficial to establish a process that would investigate safe substitutes to isoprene and integrate it into the P2 plans.

Finally, the rationale in establishing a 24-hour average maximum concentration for isoprene was not outlined in the working document, with the exception of including a footnote. We seek some clarification as to the adequacy of this concentration level and what overall estimated levels of reduction of isoprene are expected using this concentration level. It is also not clear why a threshold value that is based on the highest identified ambient air concentration of isoprene in urban areas in Canada [National Air Pollution Surveillance (NAPS) Network, 2006], was chosen as a maximum threshold concentration. The maximum concentration levels should be determined for protection of human health and should aim to promote the prevention of exposure. With the uncertainties as described in the final risk assessment with regards to exposure and human health, it is felt that the proposed maximum concentration level of 10 ug/m³ should be reviewed with an aim to significantly reduce to levels that promote prevention.

Conclusions

We hope these comments are carefully considered in the process to improve the overall management for isoprene from the industrial application.

We strongly urge the government to apply a regulatory measure that aims for a phase out of the anthropogenic use of isoprene rather than applying measures that control rather than prevent the release of isoprene to the environment. While the intent of the prohibition of isoprene as a cosmetic ingredient is supported, we are concerned that the reliance of a non-regulatory tool to achieve this purpose may not achieve the intended prohibition. The Cosmetic Ingredient Hotlist should be made a regulatory tool with adequate public reporting requirements on compliance.

Similarly, while the intentions set out for P2 plans are to prevent or control the release of isoprene and to reduce the exposure to isoprene, the elements of P2 plans have many gaps that may not effectively be protective to human health. While the government expects the P2 plans to result in reductions of exposure to isoprene, there is very little confidence that such efforts will result in a meaningful reduction and even a phase out of the anthropogenic use of isoprene. We urge the government to seek more realistic opportunities to apply prevention measures that focus on use reduction and the application of safe substitutes. Therefore, the proposed Notice for P2 plans will require significant revisions to address the gaps identified above and for them to be more in line with a preventative approach for isoprene use.

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Dear Mr. Madé:

RE: Response to Supplement Canada Gazette, Part I, Vol. No. (July 3, 2010) – Proposed Notice Requiring the Preparation and Implementation of Pollution Prevention Plans for Toluene Diisocyanates (TDIs)

The Canadian Environmental Law Association (CELA) (www.cela.ca) is submitting the following comments in response to the publication of ***Supplement Canada Gazette, Part I, Vol. No. (July 3, 2010) – Proposed Notice Requiring the Preparation and Implementation of Pollution Prevention Plans in Respect of Specified Substances on Schedule 1 of the Canadian Environmental Protection Act, 1999, Implicated in the Polyurethane and Other Foam Sector (Except Polystyrene)***. These comments follow up on CELA's participation at the consultation meeting coordinated by Environment Canada on March 22, 2010 in Ottawa to discuss pollution prevention plans (P2) for three toluene diisocyanates (TDIs) with the following CAS numbers: 91-08-7; 584-84-9; and 26471-62-5. Furthermore, these comments urge the Government of Canada to effectively manage, that is, focus on phase out and elimination of TDIs, which have been found to be toxic under the *Canadian Environmental Protection Act, 1999 (CEPA, 1999)* and addressed under the Chemicals Management Plan.

Overall, the adequacy of the Government's proposal to apply a regulatory instrument to manage TDIs has been discussed over the past year. The non-governmental organizations which submitted comments in response to the scope of the risk management regime considered for TDIs, and again through the consultation process to discuss pollution prevention plans for TDIs, articulated that the preferred management approach for TDIs should focus on a phase out and elimination of use of TDIs. It is our view that the notice for P2 plans which focuses on TDIs demonstrates a partial measure towards the preferred approach for a phase out of TDIs. This proposal should be further strengthened using other regulatory instruments to ensure that the government seeks to reduce, with an eventual phase out of use, of TDIs. This could include but should not be limited to adding the TDIs on the *Prohibition of Specific Toxic Substances Regulations* under *CEPA*, applying specific regulations on TDIs that require the development of action plans for reductions from all sources of TDIs beyond the scope of the proposed P2 plans, initiate a policy dialogue focused on the identification of safe alternatives to TDIs and conducting alternative assessments on safety of these alternatives.

CELA noted the following gaps in the Notice for Pollution Prevention Plans for TDIs. Also during the plenary of the public consultation on TDIs held on March 22, 2010 CELA articulated these comments. The comments and recommendations outlined below continue to be relevant as the government takes steps to manage TDIs under *CEPA*. We hope that measures to address TDIs aim to fulfill the objectives of pollution prevention under *CEPA*, particularly as it further develops P2 plans for the polyurethane and other foam sector. However, to make significant strides towards this, these comments deserve careful consideration by the government.

1) The absence of proposed targets for reduction or elimination of TDIs and timelines for achieving targets does not ensure overall reduction or elimination of use of TDIs

The P2 plans should seek to promote overall reductions and eventual elimination of TDIs. However, it is uncertain if the proposed notice for P2 plans will indeed contribute to an overall reduction of use of TDIs over time. There are several limitations that will hinder the progress towards the overall reduction or elimination of TDIs, including:

- Focus on managing releases of TDIs to the environment, particularly to air, rather than on sources of TDI
- Absence of process to identify and implement alternatives and substitutes;
- Require P2 plans limited to specific sector(s), the polyurethane and other foam sector industry, rather than all sources of TDIs.

One critical element necessary to make significant progress in avoiding the creation of TDIs and promoting the reduction of levels of TDIs over time is establishing specific targets for reduction and elimination. In addition, a specific timeframe in which these targets should be achieved is also an essential element for the risk management of TDIs. The overall risk management approach for TDIs has not included such targets. Indeed, the main tool for managing TDIs is the proposed P2 plan. The absence of reduction or elimination targets and timelines in the notice significantly weakens its effectiveness.

While the proposal includes specific schedules for preparing P2 plans, completion of implementation of the P2 plans, and the submission of interim reports, the proposal fails to provide an overall timeframe which will determine the overall effects of P2 plans from the polyurethane and other foam sectors to an overall reduction or elimination of TDI. This target should be established to demonstrate how the results of P2 plans is intended to contribute to the overall reduction or elimination of TDIs.

We urge the government to apply a reduction of 75% of TDIs from all sectors, including facilities in the polyurethane and other foam sector within 2 years of implementation of pollution prevention plans. The ultimate goal of these P2 plans should be the eventual phase out of TDIs from these facilities within 3 years. Levels for reduction and eventual elimination along with timelines should be included in the notice for P2 plans.

2) The perpetuation of control measures will not achieve pollution prevention.

While the government website²⁸ states that Notices do not prescribe the form of P2 plans, the proposed P2 plans for TDIs do very little to support the intent of pollution prevention. Pollution prevention is defined in *CEPA 1999* as "the use of processes, practices, materials, products, substances or energy that avoid or minimize the creation of pollutants and waste and reduce the overall risk to the environment or human health."²⁹ Various elements of the proposed P2 plans appear to focus on minimization rather than avoidance in the creation of TDIs. The notice does very little to promote the phase out and elimination of TDIs in the polyurethane and other foam sector. There are a number of details in the Notice that tend to shift the focus from real pollution prevention efforts towards only improving control measures that are currently in place. For example, the development of P2 plans focuses on the application of "best environmental techniques" (referred to in section 3 of the notice), defined in the notice but severely limited by the accompanying terms such as "economically achievable." Furthermore, the term "techniques" focuses on plant equipment used in the process as well as the design, lay-out and maintenance of the plant. Since it is expected that the cost associated with potential updates or improvements to available technology will be a significant factor for affected facilities, it is expected that facilities will focus their investment in improving current technology rather than replace technology that may seek to replace the use of TDIs. In other words, the proposal lacks any specificity on changes that may be required in the process to accommodate a switch in feedstock from TDIs to alternatives to TDIs.

In addition, section 3(1)4a of the notice also notes a detection limit of 0.2 ug/m³ for the purpose of sampling and measuring TDIs in ambient air. The establishment of the detection limit further perpetuates the emphasis of simply seeking controlling releases of TDIs to the environment, instead of phase out and elimination. These detection limits can change over time due to several factors including the sensitivity of available detection technology. The presence of these detection limits would guide facilities to avoid exceedances of the detection limit rather than invest time and resources towards those processes that prevent and avoid the releases, including a shift away from the use of TDIs in the first place.

If the pollution prevention objectives under CEPA are to be fully achieved, we would support a greater focus in the notices on real prevention methods rather than controlling releases.

3) Proposed threshold for requiring P2 plans set too low to require all facilities to consider pollution prevention measures

We noted in the March 2010 consultation and again here that the 100 kg/year use threshold of TDIs is far too high. There is no basis for establishing the threshold at 100 kg/year but it is a use level that has been applied for other activities undertaken by the government to collect data under the CMP. For example, this threshold has been used for surveys conducted under CEPA section 71, the update of selected substances on the Domestic Substances List, and now it is also under discussion for applying regulations to address industrial releases of siloxane (D4).³⁰ By

²⁸ Environment Canada. 2010. "Pollution Prevention (P2) Plans." Accessed 25 August 2010: <http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=BC71EA4E-1>

²⁹ Government of Canada. 1999. *Canadian Environmental Protection Act*. Section 3 - Definitions

³⁰ See Environment Canada. July 2010. Consultation Document: Octamethylcyclotetrasiloxane (D4) Chemical Abstracts Service Registry Number 556-67-2. pg. 14, section 5.2.1 (Application and exclusion)

establishing the use/reporting threshold for developing pollution prevention at 100 kg/year, there will be a very limited number of facilities required to meet the proposed notice. Only the bigger facilities producing foams will be captured under this scenario leaving many small to medium size businesses unaccounted for in pollution prevention plans or any management regime for TDIs. During the plenary of the March 2010 consultation, the proposed threshold was estimated to capture ***only*** 2 facilities. No substantial scenario has been presented by government to demonstrate the number and type of facilities that would be required to prepare P2 plans for different threshold levels. It is unclear how many facilities in the polyurethane and other foam sector will not be required to comply with the Notice, and how much these facilities contribute to the overall use, release and disposal of TDI. This information is needed. The current proposed use levels is a significant flaw in the approach as there are many more small to medium sized facilities whose combined usage is considerable and should be required to manage TDIs.

We are deeply concerned that the scope of the plans will not adequately result in the levels of reduction of TDIs needed to protect the environment and human health because the approach will only apply to a few facilities. While 85% of the TDIs are used in the manufacture of flexible polyurethane foam, we do not know how much of the TDIs used by the sector will be reduced by the facilities required to prepare pollution prevention plans. ***We strongly oppose the use of 100 kg/year as the threshold for P2 plans. The use threshold level should be lowered to 20 kg/year to capture more facilities. We also urge the government to require pollution prevention plans for all facilities, without exceptions.*** Such an approach will ensure that all facilities are required to undertake a process that will evaluate plant operations and consider where preventative measures can be undertaken.

4) Opportunities to promote alternatives in a pollution prevention approach too limited

Throughout the CMP implementation process, non-governmental organizations have expressed the need to consider alternatives to replace CEPA toxic substances as an important element in efforts to promote the phase out or prohibition of toxic chemicals. The discussions on alternatives have been limited to date within the scope of the CMP overall as well as in the risk management discussions on TDIs. However, with the proposed notice for P2 plans for TDIs in polyurethane and other foams sector, the opportunities to expand on these efforts are appropriate and timely.

However, we are extremely discouraged that the notice, which is aimed specifically to promote pollution prevention to address TDIs fails to make progress on alternatives; there is currently no explicit focus on the need to identify and consider the adoption of non toxic alternatives to TDIs in the polyurethane and other foam sectors. This is not only a flaw in the notice released for public comments but a limitation within the framework of *CEPA 1999*, which does not include legal obligations to identify and assess safe alternatives for toxic chemicals.

The government should take these opportunities to explore options that would further the goals of pollution prevention and greater commitment to identify alternatives, particularly in P2 plans as would be appropriate. ***Therefore, facilities in the polyurethane and other foam sectors should be required to identify alternatives - chemicals and processes that do not exhibit the toxic properties of TDIs and can be considered safe replacements for TDIs over time. It***

should be noted further that it would be necessary to conduct an alternative assessment for all potential alternatives. The assessment of alternatives would aim to evaluate the inherent hazards of each alternative rather than conduct the usual risk based approach that relies on assessing the exposure and hazard potential of chemicals.

The government should seize opportunities that promote the identification, evaluation and implementation of alternatives to toxic chemicals. Although information on alternatives may not yet be known, a more fulsome focus on alternatives should be considered as they provide opportunities for growth and innovation in the industry that do not rely on TDI for producing foam, particularly polyurethane foam.

5) Consideration of full life cycle absent in P2

The focus of the P2 requirements will be releases to air of TDIs, with specific attention to point and stack releases. In our view, the focus of pollution prevention strategies and the development of P2 plans should consider the full life cycle of the TDIs in polyurethane foams and other foam facilities. Although the assessment results indicated that releases of TDIs to air is the major source of release to the environment, the attempts to promote prevention should not diminish the focus of releases to all environmental media. *The scope of the notice should be expanded to ensure that all sources of releases of TDIs be evaluated and the best available techniques be applied to avoid the opportunity for facilities to reduce or eliminate releases to air by shifting releases of TDIs to other environmental media, such as water or land.*

Furthermore, consideration of the life cycle approach in the notice has not been fully accounted. As with the assessment approach, there has been little to no consideration of break down products, by-products and metabolites from TDIs that may be the result of the use, release and disposal of TDIs. For TDIs, the range of by-products, breakdown products and metabolites resulting from the use of TDIs are unknown. Some effort should be taken to identify these products because there may be cases where they may be more toxic than TDIs themselves. The Notice does provide the opportunity to add other substances in the scope of the Notice. *Therefore, we urge the government to consider the expansion of the list of substances to include all breakdown products, by-products and metabolites of TDI that are toxic.*

Finally, the waste stream and disposal methods as a source of reducing TDIs are not a focus of the Notice. However, the TDIs used in the polyurethane and other foam sector end up in the production of various household furniture, automotive upholstery, mattresses, pillows, packaging and carpet underlay. The eventual disposal of products containing TDIs is not addressed under the Notice. *The government should give further consideration in the Notice to potential TDIs releases in the disposal of household and automotive products containing TDIs.*

6) Public reporting on implementation progress required

Details of P2 plans are not required to be disclosed to the public but declarations on the preparation and implementation of the plans are required under *CEPA*. The lack of access to the P2 plans continues to limit transparency to the public, which has been consistently noted by NGOs. However, the public knowledge on the impacts of P2 plans in achieving the objectives of

CEPA on pollution prevention or the risk management objectives for toxic chemicals like TDIs remains limited. For plants required to comply with the Notice for P2 plans, their public accountability on their progress to meet their obligations should be acknowledged and supported. This is especially so for those plants located in close proximity to neighbourhoods. There is particular concern that the Notice does not provide any provisions for communicating with the public, with particular emphasis on the neighbouring community, during situations where there the releases of TDIs has exceeded the proposed 0.2 ug/m^3 in a 24hr time period or the implications from a regulatory perspective for non-compliance.

Public knowledge on progress relies on adequate reporting to the public on progress of implementation efforts. However, the Notice requires interim reports to be submitted to the Minister on three occasions but there is a lack of detail on the type of report available to the public. This gap should be addressed. ***Public reporting should be made more explicit in the Notice. Furthermore, the details of reporting to the public on achieving pollution prevention should include the levels of reductions achieved by facilities, the methods applied to achieve reductions, comparison of results from previous years; and for facilities that do not achieve reductions of TDIs provide rationale and action plan for making reductions. These results should be released on an annual basis for public comments.***

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