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Prohibition of Asbestos and Products Containing Asbestos Regulations: SOR/2018-196

Canada Gazette, Part II, Volume 152, Number 21

Registration

October 1, 2018

CANADIAN ENVIRONMENTAL PROTECTION ACT, 1999

P.C. 2018-1210 September 28, 2018

Whereas, pursuant to subsection 332(1) ^a of the *Canadian Environmental Protection Act, 1999* ^b, the Minister of the Environment published in the *Canada Gazette*, Part I, on January 6, 2018, a copy of the proposed *Prohibition of Asbestos and Products Containing Asbestos Regulations*, substantially in the annexed form, and persons were given an opportunity to file comments with respect to the proposed Regulations or to file a notice of objection requesting that a board of review be established and stating the reasons for the objection;

Whereas, pursuant to subsection 93(3) of that Act, the National Advisory Committee has been given an opportunity to provide its advice to the Ministers under section 6 ^c of that Act;

And whereas, in accordance with subsection 93(4) of that Act, the Governor in Council is of the opinion that the proposed Regulations do not regulate an aspect of a substance that is regulated by or under any other Act of Parliament in a manner that provides, in the opinion of the Governor in Council, sufficient protection to the environment and human health;

Therefore, Her Excellency the Governor General in Council, on the recommendation of the Minister of the Environment and the Minister of Health, pursuant to subsection 93(1) and sections 102 and 286.1 ^d of the *Canadian Environmental Protection Act, 1999* ^b, makes the annexed *Prohibition of Asbestos and Products Containing Asbestos Regulations*.

Prohibition of Asbestos and Products Containing Asbestos Regulations

Interpretation

Definitions

1 The following definitions apply in these Regulations.

military equipment means an aircraft, ship, submarine or land vehicle designed to be used in combat or in a combat support role. (*équipement militaire*)

nuclear facility has the same meaning as in section 2 of the *Nuclear Safety and Control Act*. (*installation nucléaire*)

Non-application

In transit

2 (1) These Regulations do not apply to asbestos or a product containing asbestos that is in transit through Canada, from a place outside Canada to another place outside Canada.

Mining residues and pest control products

(2) These Regulations do not apply

- (a)** subject to section 6, to mining residues; or
- (b)** to a *pest control product* as defined in subsection 2(1) of the *Pest Control Products Act*.

Integrated asbestos

3 (1) These Regulations, other than sections 5 and 8, do not apply to asbestos that is integrated into a structure or infrastructure if the integration occurred before the day on which these Regulations come into force.

Asbestos product in use

(2) These Regulations do not apply to a product containing asbestos and used before the day on which these Regulations come into force but section 5 applies to the asbestos contained in that product.

Prohibitions

Import, sale or use

4 Subject to sections 7 to 21, a person must not import, sell or use

- (a)** processed asbestos fibres;
- (b)** a product containing processed asbestos fibres unless those fibres are the result of the degradation of asbestos integrated into a product, a structure or infrastructure; or
- (c)** a consumer product containing asbestos in greater than trace amounts.

Manufacture

5 A person must not manufacture

- (a)** subject to section 8, a product containing processed asbestos fibres unless those fibres are the result of the degradation of asbestos integrated into a product, a structure or infrastructure before the coming into force of these Regulations; or
- (b)** a consumer product containing asbestos in greater than trace amounts.

Mining residues — landscaping or construction

6 (1) A person must not sell, for use in construction or landscaping, asbestos mining residues that are located at an asbestos mining site or accumulation area unless the use is authorized by the province in which the construction or landscaping is to occur.

Mining residues — products containing asbestos

(2) A person must not use asbestos mining residues to manufacture a product containing asbestos.

Exclusions

Disposal

7 The physical possession or control of the following may be transferred to allow its disposal:

- (a)** processed asbestos fibres;
- (b)** a product containing processed asbestos fibres; and
- (c)** a consumer product containing asbestos in greater than trace amounts.

Roads

8 Asbestos may be reused in the restoration of asbestos mining sites or in road infrastructure, including mounds and noise barriers, if that asbestos was integrated into road infrastructure before the day on which these Regulations came into force.

Importing military equipment

9 (1) A person may import, sell or use military equipment that was serviced with a product containing processed asbestos fibres if the product was used to service the military equipment while it was outside Canada for the purposes of a military operation and there was no technically or economically feasible asbestos-free alternative available at that time in that place.

Report

(2) A person who imports military equipment in accordance with subsection (1) must submit to the Minister, before March 31 of the calendar year following the calendar year of the importation, a report that includes the following elements:

- (a)** the importer's name, civic address in Canada and postal address;
- (b)** the name of the individual who is authorized to act for that importer and their title or rank, civic address in Canada, postal address, telephone number and email address;
- (c)** the name and a description of the military equipment that was imported in the calendar year to which the report relates;
- (d)** the name and a description of each type of product containing processed asbestos fibres that was used to service the military equipment that was imported in the calendar year to which the report relates;
- (e)** the estimated concentration and mass of asbestos in each product containing processed asbestos fibres that was used to service the military equipment that was imported in the calendar year to which the report relates and the unit of measurement used to describe that concentration and mass;
- (f)** the number of products containing processed asbestos fibres that were used to service the military equipment that was imported in the calendar year to which the report relates, by type of product;
- (g)** a statement indicating that there was no technically or economically feasible asbestos-free alternative available at the time and place of the servicing.

Definition of *military operation*

(3) For the purpose of subsection (1), *military operation* means any operation taken to protect national security, support humanitarian relief efforts, participate in multilateral military or peacekeeping activities under the auspices of international organizations or defend a member state of the North Atlantic Treaty Organization.

Servicing military equipment

10 (1) A person may import, sell or use products containing processed asbestos fibres to service military equipment before January 1, 2023, if there is no technically or economically feasible asbestos-free alternative available when the product is imported, sold or used, as the case may be.

Use or sale of military equipment

(2) A person may use or sell the military equipment referred to in subsection (1) if it was serviced using a product referred to in that subsection before January 1, 2023.

Report and management plan

(3) A person who uses a product containing processed asbestos fibres to service military equipment in accordance with subsection (1) must

- (a)** prepare and implement an asbestos management plan that meets the requirements set out in Schedule 1; and
- (b)** submit to the Minister, before March 31 of the calendar year following the calendar year in

which the product is used, a report that includes the elements set out in subsection (4).

Contents of report

(4) The report must include the following elements:

- (a)** the name, civic address in Canada and postal address of the person using the product containing processed asbestos fibres;
- (b)** the name of the individual who is authorized to act for that person and their title or rank, civic address in Canada, postal address, telephone number and email address;
- (c)** the name and a description of the military equipment that was serviced with the products containing processed asbestos fibres in the calendar year to which the report relates;
- (d)** the name and a description of each type of product containing processed asbestos fibres that was used to service the military equipment in the calendar year to which the report relates;
- (e)** the estimated concentration and mass of asbestos in each product containing processed asbestos fibres that was used to service the military equipment in the calendar year to which the report relates and the unit of measurement used to describe that concentration and mass;
- (f)** the number of products containing processed asbestos fibres that were used to service the military equipment in the calendar year to which the report relates, by type of product; and
- (g)** a statement indicating that there was no technically or economically feasible asbestos-free alternative available at the time the military equipment was serviced and that an asbestos management plan that meets the requirements set out in Schedule 1 has been implemented.

Servicing equipment of nuclear facilities

11 (1) A person may import, sell or use a product containing processed asbestos fibres to service equipment of a nuclear facility before January 1, 2023, if there is no technically or economically feasible asbestos-free alternative available at the time of the import, sale or use, as the case may be.

Use or sale — nuclear facility equipment

(2) A person may use or sell the equipment referred to in subsection (1) if it was serviced using a product referred to in that subsection before January 1, 2023.

Report and management plan

(3) A person who uses a product containing processed asbestos fibres to service equipment of a nuclear facility in accordance with subsection (1) must

- (a)** prepare and implement an asbestos management plan that meets the requirements set out in Schedule 1; and
- (b)** submit to the Minister, before March 31 of the calendar year following the calendar year in which the product is used, a report that includes the elements set out in subsection (4).

Contents of report

(4) The report must include the following elements:

- (a)** the name of the nuclear facility, its civic address in Canada and postal address;
- (b)** the name of the individual who is authorized to act for that nuclear facility and their title, civic address in Canada, postal address, telephone number and email address;
- (c)** the name and a description of the equipment of the nuclear facility that was serviced with the products containing processed asbestos fibres in the calendar year to which the report relates;
- (d)** the name and a description of each type of product containing processed asbestos fibres that was used to service the equipment of the nuclear facility in the calendar year to which the report relates;
- (e)** the estimated concentration and mass of asbestos in each product containing processed asbestos fibres that was used to service the equipment in the calendar year to which the report relates and the unit of measurement used to describe that concentration and mass;
- (f)** the number of products containing processed asbestos fibres that were used to service the equipment in the calendar year to which the report relates, by type of product; and
- (g)** a statement indicating that there was no technically or economically feasible asbestos-free

alternative available at the time the equipment of the nuclear facility was serviced and that an asbestos management plan that meets the requirements set out in Schedule 1 has been implemented.

Museum display

12 (1) A person may import, sell or use the following if it is intended for display in a museum:

- (a) processed asbestos fibres;
- (b) a product containing processed asbestos fibres; and
- (c) a consumer product containing asbestos in greater than trace amounts.

Report and management plan

(2) A person who displays processed asbestos fibres referred to in paragraph (1)(a) in a museum must

- (a) prepare and implement an asbestos management plan that meets the requirements set out in Schedule 1; and
- (b) submit to the Minister, before March 31 of the calendar year following the calendar year in which the processed asbestos fibres are displayed, a report that includes the elements set out in subsection (3).

Contents of report

(3) The report must include the following elements:

- (a) the museum's name, civic address in Canada and postal address;
- (b) the name of the individual who is authorized to act for the museum and their title, civic address in Canada, postal address, telephone number and email address;
- (c) the period of display;
- (d) the forms and quantities of processed asbestos fibres that were displayed in the museum in the calendar year to which the report relates and the unit of measurement used to describe those quantities; and
- (e) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been implemented.

Laboratory use

13 (1) A person may use the following in a laboratory in scientific research, for sample characterization or as an analytical standard and may import or sell it for such use:

- (a) processed asbestos fibres;
- (b) a product containing processed asbestos fibres; and
- (c) a consumer product containing asbestos in greater than trace amounts.

Asbestos management plan

(2) A person who uses processed asbestos fibres referred to in paragraph (1)(a) in a laboratory in scientific research or as an analytical standard must prepare and implement an asbestos management plan that meets the requirements set out in Schedule 1.

Report

(3) A person must submit a report to the Minister that includes the elements referred to in subsection (5) before March 31 of the calendar year following the calendar year in which they

- (a) imported processed asbestos fibres referred to in paragraph (1)(a) or a product referred to in paragraph (1)(b) or (c) for use in a laboratory in scientific research or as an analytical standard if the import occurred after the coming into force of these Regulations; or
- (b) used processed asbestos fibres referred to in paragraph (1)(a) or a product referred to in paragraph (1)(b) or (c) in a laboratory in scientific research or as an analytical standard if those fibres or that product was imported after the coming into force of these Regulations.

Previously reported asbestos

(4) Subsection (3) does not apply in respect of processed asbestos fibres referred to in paragraph 1(a) or products referred to in paragraph (1)(b) or (c) for which the elements set out in subsection (5) have been submitted to the Minister in a previous report by the same person.

Contents of report

(5) The report must include the following elements:

- (a)** the name, civic address in Canada and postal address of the laboratory or the importer, as the case may be;
- (b)** the name of the individual who is authorized to act for the laboratory or the importer and their title, civic address in Canada, postal address, telephone number and email address;
- (c)** if the person submitting the report is described in paragraph (3)(a)
 - (i)** the forms and quantities of processed asbestos fibres that they imported in the calendar year to which the report relates and the unit of measurement used to describe those quantities, and
 - (ii)** the name, description and number of the products referred to in paragraph (1)(b) or (c) that they imported in the calendar year to which the report relates (by type of product), the estimated concentration and mass of asbestos in each product and the unit of measurement used to describe that concentration and mass; and
- (d)** if the person submitting the report is described in paragraph (3)(b)
 - (i)** the forms and quantities of processed asbestos fibres that they used in the calendar year to which the report relates and the unit of measurement used to describe those quantities,
 - (ii)** the name, description and number of the products referred to in paragraph (1)(b) or (c) that were used in the calendar year to which the report relates (by type of product), the estimated concentration and mass of asbestos in each product and the unit of measurement used to describe that concentration and mass,
 - (iii)** a statement indicating whether the processed asbestos fibres or the products referred to in paragraph (1)(b) or (c) were used in the calendar year to which the report relates in scientific research, as an analytical standard or both, and
 - (iv)** if the person used processed asbestos fibres, a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been implemented.

Chlor-alkali facilities

14 (1) A person may use processed asbestos fibres in diaphragms used in a chlor-alkali facility that is in operation on the day on which these Regulations come into force, and may import them for that use, before January 1, 2030.

Asbestos management plan

(2) A person who uses processed asbestos fibres in diaphragms used in a chlor-alkali facility in accordance with subsection (1) must prepare and implement an asbestos management plan that meets the requirements set out in Schedule 1.

Report

(3) A person who imports or uses processed asbestos fibres for use in diaphragms to be used in a chlor-alkali facility in accordance with subsection (1) must submit to the Minister, before March 31 of the calendar year following the calendar year in which the fibres are imported or used, a report that includes the following elements:

- (a)** the facility's name, civic address in Canada and postal address;
- (b)** the name of the individual who is authorized to act for the facility and their title, civic address in Canada, postal address, telephone number and email address;
- (c)** the forms and quantities of any processed asbestos fibres imported in the calendar year to which the report relates and the unit of measurement used to describe those quantities;
- (d)** the number and the percentage of cells in the facility that have been converted to asbestos-free diaphragms; and

(e) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been implemented.

Labelling

(4) A person who imports or uses processed asbestos fibres for use in diaphragms used in a chlor-alkali facility in accordance with subsection (1) must ensure that each container of the fibres is labelled in accordance with Schedule 2.

Permits

Asbestos management plan

15 (1) A person who applies for a permit referred to in subsection 16(1), 17(1), 18(1), 19(1), 20(1) or 21(1) must prepare an asbestos management plan that meets the requirements set out in Schedule 1 and must implement the plan before they import or use the processed asbestos fibres, the product containing processed asbestos fibres or the consumer product containing asbestos in greater than trace amounts.

Use or sale — imported fibres and products

(2) Any person may use or sell fibres or products referred to in subsection 16(1) that were imported under the authority of a permit issued under subsection 16(3) if the use or sale is consistent with the purpose of the permit, unless that permit has been revoked under subsection 23(1).

Sale — fibres and products

(3) Any person may sell fibres or products referred to in subsection 17(1) whose use is authorized by a permit issued under subsection 17(3) if the sale is consistent with the purpose of the permit, unless that permit has been revoked under subsection 23(1).

Use — sold fibres and products

(4) A person who purchases fibres or products that were sold in accordance with subsection (3) may use them if the use is consistent with the purpose of the permit issued under subsection 17(3), unless that permit has been revoked under subsection 23(1).

Sale to permit holder

(5) A person may sell a product referred to in subsection 18(1), 19(1), 20(1) or 21(1) to the holder of a permit issued under subsection 18(3), 19(3), 20(3) or 21(3), as the case may be, if the sale is consistent with the purpose of the permit.

Use and sale — equipment

(6) Any person may use or sell equipment that was serviced with a product containing processed asbestos fibres under the authority of a permit issued under subsection 18(3), 19(3), 20(3) or 21(3), unless the permit that allowed the product to be imported or used, as the case may be, has been revoked under subsection 23(1).

Protection of environment or human health — import

16 (1) A permit issued under subsection (3) authorizes its holder to import the following to protect the environment or human health if there was no technically or economically feasible asbestos-free alternative available at the time the permit application was submitted:

- (a) processed asbestos fibres;
- (b) a product containing processed asbestos fibres; and
- (c) a consumer product containing asbestos in greater than trace amounts.

Contents of permit application

(2) The permit application must include

- (a) the applicant's name, civic address in Canada and postal address;

- (b) the name of the individual who is authorized to act for the applicant and their title, civic address in Canada, postal address, telephone number and email address;
- (c) in the case of processed asbestos fibres,
 - (i) the forms and estimated quantities to be imported during the term of the permit and the unit of measurement used to describe those quantities, and
 - (ii) the purpose for which the processed asbestos fibres are to be used and evidence demonstrating that their use for that purpose will protect the environment or human health;
- (d) in the case of a product referred to in paragraph (1)(b) or (c),
 - (i) the name and a description of the type of product to be imported,
 - (ii) the estimated concentration and mass of the asbestos in the product and the unit of measurement used to describe that concentration or mass,
 - (iii) the estimated number of products to be imported during the term of the permit, by type of product, and
 - (iv) the purpose for which the product is to be used and evidence demonstrating that its use for that purpose will protect the environment or human health;
- (e) evidence demonstrating that no technically or economically feasible asbestos-free alternative could be used to achieve the purpose for which the permit is sought; and
- (f) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been prepared.

Issuance of permit

- (3) The Minister may issue a permit if
 - (a) the elements set out in subsection (2) were submitted;
 - (b) those elements demonstrate that the fibres or products referred to in subsection (1) will be used to protect the environment or human health; and
 - (c) the information provided demonstrates that, at the time of the permit application, no technically or economically feasible asbestos-free alternative could be used to achieve the purpose for which the permit is sought.

Refusal

- (4) The Minister must refuse to issue a permit if
 - (a) the Minister has reasonable grounds to believe that the applicant has submitted false or misleading information in support of their application; or
 - (b) the elements set out in subsection (2) have not been submitted or are insufficient to enable the Minister to process the application.

Term of permit

- (5) The permit expires on the first anniversary of the day on which it is issued.

Report

- (6) The holder of the permit must submit a report to the Minister within 90 days after the day on which their permit expires.

Environment or human health — product in Canada

17 (1) A permit issued under subsection (3) authorizes its holder to use the following to protect the environment or human health if there was no technically or economically feasible asbestos-free alternative available at the time of the permit application:

- (a) processed asbestos fibres that are in Canada;
- (b) a product containing processed asbestos fibres and that is in Canada; and
- (c) a consumer product containing asbestos in greater than trace amounts and that is in Canada.

Contents of permit application

- (2) The application must include

- (a) the applicant's name, civic address in Canada and postal address;
- (b) the name of the individual who is authorized to act for the applicant and their title, civic address in Canada, postal address, telephone number and email address;
- (c) in the case of processed asbestos fibres,
 - (i) the forms and estimated quantities to be used during the term of the permit and the unit of measurement used to describe those quantities, and
 - (ii) the purpose for which the processed asbestos fibres are to be used and evidence demonstrating that their use for that purpose will protect the environment or human health;
- (d) in the case of a product referred to in paragraph (1)(b) or (c),
 - (i) the name and a description of each type of product,
 - (ii) the estimated concentration and mass of the asbestos in the product and the unit of measurement used to describe that concentration or mass,
 - (iii) the estimated number of products to be used during the term of the permit, by type of product, and
 - (iv) the purpose for which the product is to be used and evidence demonstrating that its use for that purpose will protect the environment or human health;
- (e) evidence demonstrating that no technically or economically feasible asbestos-free alternative could be used to achieve the purpose for which the permit is sought; and
- (f) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been prepared.

Issuance of permit

(3) The Minister may issue a permit if

- (a) the elements set out in subsection (2) were submitted;
- (b) those elements demonstrate that the fibres or products referred to in subsection (1) will be used to protect the environment or human health; and
- (c) the information provided demonstrates that, at the time of the permit application, no technically or economically feasible asbestos-free alternative could be used to achieve the purpose for which the permit is sought.

Refusal

(4) The Minister must refuse to issue a permit if

- (a) the Minister has reasonable grounds to believe that the applicant has submitted false or misleading information in support of their application; or
- (b) the elements set out in subsection (2) have not been submitted or are insufficient to enable the Minister to process the application.

Term of permit

(5) The permit expires on the first anniversary of the day on which it is issued.

Report

(6) The holder of the permit must submit a report to the Minister within 90 days after the day on which their permit expires.

Servicing military equipment — import

18 (1) A permit issued under subsection (3) authorizes its holder, after December 31, 2022, to import and use products containing processed asbestos fibres to service military equipment if there was no technically or economically feasible asbestos-free alternative available at the time of the permit application.

Contents of permit application

(2) The application must include

- (a) the applicant's name, civic address in Canada and postal address;
- (b) the name of the individual who is authorized to act for the person and their title or rank, civic

- address in Canada, postal address, telephone number and email address;
- (c) the name and a description of the military equipment that will be serviced with each product referred to in the application;
- (d) the name and description of each type of product referred to in the application;
- (e) the estimated concentration and mass of the asbestos in each product referred to in the application and the unit of measurement used to describe that concentration or mass;
- (f) the estimated number of products to be imported during the term of the permit, by type of product;
- (g) evidence, with respect to each type of product, demonstrating that there is no technically or economically feasible asbestos-free alternative available at the time of the permit application; and
- (h) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been prepared.

Issuance of permit

- (3) The Minister may issue a permit if
- (a) the elements set out in subsection (2) were submitted; and
 - (b) the information provided demonstrates that, at the time of the permit application, there was no technically or economically feasible asbestos-free alternative available.

Refusal

- (4) The Minister must refuse to issue a permit if
- (a) the Minister has reasonable grounds to believe that the applicant has submitted false or misleading information in support of their application; or
 - (b) the elements set out in subsection (2) have not been submitted or are insufficient to enable the Minister to process the application.

Term of permit

- (5) The permit expires on the third anniversary of the day on which it was issued.

Report

- (6) The holder of the permit must submit a report to the Minister within 90 days after the day on which their permit expires.

Servicing military equipment — product in Canada

19 (1) A permit issued under subsection (3) authorizes its holder to use a product containing processed asbestos fibres that is in Canada to service military equipment after December 31, 2022, if there was no technically or economically feasible asbestos-free alternative available at the time of the permit application.

Contents of permit application

- (2) The application must include
- (a) the applicant's name, civic address in Canada and postal address;
 - (b) the name of the individual who is authorized to act for the person and their title or rank, civic address in Canada, postal address, telephone number and email address;
 - (c) the name and a description of the military equipment that will be serviced with each product referred to in the application;
 - (d) the name and description of each type of product referred to in the application;
 - (e) the estimated concentration and mass of the asbestos in each product referred to in the application and the unit of measurement used to describe that concentration or mass;
 - (f) the estimated number of products to be used during the term of the permit, by type of product;
 - (g) evidence, with respect to each type of product, demonstrating that there is no technically or economically feasible asbestos-free alternative available at the time of the permit application; and
 - (h) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been prepared.

Issuance of permit

(3) The Minister may issue a permit if

- (a) the elements set out in subsection (2) were submitted; and
- (b) the information provided demonstrates that, at the time of the permit application, there is no technically or economically feasible asbestos-free alternative available.

Refusal

(4) The Minister must refuse to issue a permit if

- (a) the Minister has reasonable grounds to believe that the applicant has submitted false or misleading information in support of their application; or
- (b) the elements set out in subsection (2) have not been submitted or are insufficient to enable the Minister to process the application.

Term of permit

(5) The permit expires on the third anniversary of the day on which it is issued.

Report

(6) The holder of the permit must submit a report to the Minister within 90 days after the day on which their permit expires.

Nuclear facilities — import

20 (1) A permit issued under subsection (3) authorizes its holder, after December 31, 2022, to import and use a product containing processed asbestos fibres to service equipment of a nuclear facility, if there was no technically or economically feasible asbestos-free alternative available at the time of the permit application.

Contents of permit application

(2) The application must include

- (a) the nuclear facility's name, civic address in Canada and postal address;
- (b) the name of the individual who is authorized to act for the nuclear facility and their title, civic address in Canada, postal address, telephone number and email address;
- (c) the name and a description of the equipment of the nuclear facility that will be serviced with each product referred to in the application;
- (d) the name and a description of each type of product referred to in the application;
- (e) the estimated concentration and mass of the asbestos in each product referred to in the application and the unit of measurement used to describe that concentration or mass;
- (f) the estimated number of products to be imported during the term of the permit, by type of product;
- (g) evidence, with respect to each type of product, demonstrating that there is no technically or economically feasible asbestos-free alternative available at the time of the permit application; and
- (h) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been prepared.

Issuance of permit

(3) The Minister may issue a permit if

- (a) the elements set out in subsection (2) were submitted; and
- (b) the information provided demonstrates that, at the time of the permit application, there was no technically or economically feasible asbestos-free alternative available.

Refusal

(4) The Minister must refuse to issue a permit if

- (a) the Minister has reasonable grounds to believe that the applicant has submitted false or

- misleading information in support of their application; or
- (b) the elements set out in subsection (2) have not been submitted or are insufficient to enable the Minister to process the application.

Term of permit

- (5) A permit expires on the third anniversary of the day on which it is issued.

Report

- (6) The holder of the permit must submit a report to the Minister within 90 days after the day on which their permit expires.

Servicing nuclear facilities — product in Canada

21 (1) A permit issued under subsection (3) authorizes its holder to use a product containing processed asbestos fibres and that is in Canada to service equipment of a nuclear facility after December 31, 2022, if there was no technically or economically feasible asbestos-free alternative available at the time of the permit application.

Contents of permit application

- (2) The application must include
 - (a) the nuclear facility's name, civic address in Canada and postal address;
 - (b) the name of the individual who is authorized to act for the nuclear facility and their title, civic address in Canada, postal address, telephone number and email address;
 - (c) the name and a description of the equipment of the nuclear facility that will be serviced with each product referred to in the application;
 - (d) the name and a description of each type of product referred to in the application;
 - (e) the estimated concentration and mass of the asbestos in each product referred to in the application and the unit of measurement used to describe that concentration or mass;
 - (f) the estimated number of products to be used during the term of the permit, by type of product;
 - (g) evidence, with respect to each type of product, demonstrating that there is no technically or economically feasible asbestos-free alternative available at the time of the permit application; and
 - (h) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 has been prepared.

Issuance of permit

- (3) The Minister may issue a permit if
 - (a) the elements set out in subsection (2) were submitted; and
 - (b) the information provided demonstrates that, at the time of the permit application, there was no technically or economically feasible asbestos-free alternative available.

Refusal

- (4) The Minister must refuse to issue a permit if
 - (a) the Minister has reasonable grounds to believe that the applicant has submitted false or misleading information in support of their application; or
 - (b) the elements set out in subsection (2) have not been submitted or are insufficient to enable the Minister to process the application.

Term of permit

- (5) A permit expires on the third anniversary of the day on which it is issued.

Report

- (6) The holder of the permit must submit a report to the Minister within 90 days after the day on which their permit expires.

Contents of report

22 A report submitted under subsection 16(6), 17(6), 18(6), 19(6), 20(6) or 21(6) must include

- (a) the permit holder's name, civic address in Canada and postal address;
- (b) the name of the individual who is authorized to act for the permit holder and their title or rank, civic address in Canada, postal address, telephone number and email address;
- (c) in the case of a permit issued under subsection 16(3) or 17(3),
 - (i) if the permit is in respect of processed asbestos fibres, the forms and quantities of those fibres that were imported or used, as the case may be, under the authority of the permit and the unit of measurement used to describe those quantities, and
 - (ii) if the permit is in respect of products referred to in paragraph 16(1)(b) or (c) or paragraph 17(1)(b) or (c), the names and descriptions of those products and the number of products that were imported or used, as the case may be, under the authority of the permit, by type of product;
- (d) in the case of a permit issued under subsection 18(3), 19(3), 20(3) or 21(3),
 - (i) the names and descriptions of each product containing processed asbestos fibres that was imported or used, as the case may be, under the authority of the permit, and
 - (ii) the number of products containing processed asbestos fibres that were imported or used, as the case may be, under the authority of the permit, by type of product; and
- (e) a statement that an asbestos management plan that meets the requirements set out in Schedule 1 was implemented.

Revocation of permit

23 (1) The Minister must revoke a permit issued under subsection 16(3), 17(3), 18(3), 19(3), 20(3) or 21(3) if the Minister has reasonable grounds to believe that the permit holder has submitted false or misleading information to the Minister.

Conditions

- (2)** The Minister must not revoke a permit unless the Minister has provided the permit holder with
- (a) written reasons for the revocation; and
 - (b) an opportunity to be heard, by written representation, in respect of the revocation.

Presentation of Documents

Certification

24 (1) Every report and application for a permit that is submitted to the Minister under these Regulations must bear the signature of the interested person or of the individual who is authorized to act for them and be accompanied by a certification dated and signed by that person or individual stating that the information is accurate and complete.

Writing or electronic format

(2) Any information or document submitted to the Minister under these Regulations may be submitted either in writing or in an electronic format that is compatible with the electronic systems that are used by the Minister.

Record Keeping

Records — reports

25 (1) Any person that is required to submit a report to the Minister under these Regulations must keep a record containing a copy of the information submitted, of any asbestos management plan, if applicable, and of any supporting documents for a period of at least five years beginning on the day on which the report is submitted.

Records — permits

(2) A person that has been issued a permit under subsection 16(3), 17(3), 18(3), 19(3), 20(3) or 21(3)

must keep a record containing a copy of the permit and permit application, of the asbestos management plan and of any supporting documents for a period of at least five years beginning on the day on which the permit is issued.

Location

(3) The records must be kept at the civic address of the person's principal place of business in Canada or, on notification to the Minister, at any other place in Canada where the records can be inspected.

Records moved

(4) If the records are moved, the person must notify the Minister in writing of the civic address in Canada of the new location within 30 days after the day of the move.

Consequential Amendments to the Regulations Designating Regulatory Provisions for Purposes of Enforcement (Canadian Environmental Protection Act, 1999)

26 The schedule to the *Regulations Designating Regulatory Provisions for Purposes of Enforcement (Canadian Environmental Protection Act, 1999)* ¹ is amended by adding the following in numerical order:

Column 1	Column 2
Item Regulations	Provisions
32 <i>Prohibition of Asbestos and Products Containing Asbestos Regulations</i>	(a) paragraphs 4(a), (b) or (c) (b) paragraphs 5(a) or (b) (c) subsections 6(1) or (2)

27 The schedule to the Regulations is amended by adding the following in numerical order:

Column 1	Column 2
Item Regulations	Provisions
35 <i>Export of Substances on the Export Control List Regulations</i>	(a) section 5.1

Related Amendments to the Export of Substances on the Export Control List Regulations

28 Section 1 of the *Export of Substances on the Export Control List Regulations* ² is amended by adding the following in alphabetical order:

asbestos means the forms of asbestos specified in the Export Control List. (*amiante*)

29 Section 2 of the Regulations is replaced by the following:

Purpose

2 The purpose of these Regulations is to prohibit the export of substances specified in the Export Control List, or to establish regulatory conditions applicable to the export of those substances, and to implement the Stockholm Convention, Rotterdam Convention and Minamata Convention in relation to the export of those substances.

30 Section 3 of the Regulations is replaced by the following:

Notice

3 (1) These Regulations set out the content of the notice of proposed export that is required under subsection 101(1) of the Act for substances specified in the Export Control List and the period within which and manner in which the notice must be provided.

Conditions of export

(2) These Regulations also set out

- (a)** for the purposes of subsections 101(2) and (3) of the Act, the conditions applicable to the export of a substance that is specified in the Export Control List to a Rotterdam Party;
- (b)** for the purposes of subsection 101(3) of the Act, the conditions applicable to the export of a substance that is specified in Part 2 or 3 of the Export Control List; and
- (c)** for the purposes of subsection 101(4) of the Act, the relevant prohibitions of the export of a substance that is specified in the Export Control List.

31 Paragraph 5(1)(a) of the Regulations is replaced by the following:

- (a)** if the person holds a permit to export the substance issued under paragraph 185(1)(b) of the Act, seven days before the export; or

32 The Regulations are amended by adding the following after section 5:

Export of Asbestos

Prohibition

5.1 Subject to sections 5.2 and 5.3, a person must not export asbestos, whether or not it is contained in a product.

Exceptions

5.2 A person that has provided a notice of proposed export under subsection 101(1) of the Act may export asbestos in the following circumstances:

- (a)** the asbestos is, or is contained in, hazardous waste or hazardous recyclable material the export of which is regulated by the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*;
- (b)** the asbestos is contained in a product that is a personal or household effect intended for the person's personal use; and
- (c)** the asbestos is contained in *military equipment*, as defined in section 1 of the *Prohibition of Asbestos and Products Containing Asbestos Regulations*.

Regulated export

5.3 (1) Subject to subsection (2), a person that has provided a notice of proposed export under subsection 101(1) of the Act may export asbestos in the following circumstances if the conditions set out in subsection (4) are met:

- (a)** the asbestos is exported for disposal of the asbestos or of the product containing it;
- (b)** the asbestos is contained in a product that was used before the day on which this paragraph comes into force;
- (c)** the asbestos is contained in a product that is exported in order to service *military equipment*, as defined in section 1 of the *Prohibition of Asbestos and Products Containing Asbestos Regulations*, while that equipment is outside Canada for the purposes of a *military operation*, as defined in subsection 9(3) of those Regulations, if there is no technically or economically feasible asbestos-free alternative available;
- (d)** the asbestos is contained in a product in not greater than trace amounts;
- (e)** the asbestos is contained in raw material that is extracted from the ground and that is exported
 - (i)** to manufacture a consumer product that contains asbestos in not greater than trace amounts,
 - (ii)** to manufacture a product that is not a consumer product, or
 - (iii)** for a purpose other than manufacturing a product, if the raw material will not be sold as a

consumer product;

(f) the asbestos, whether or not it is contained in a product, is exported for use in a laboratory for analysis, in scientific research or as an analytical standard; and

(g) the asbestos, whether or not it is contained in a product, is exported for display in a museum.

Exception

(2) Subsection (1) does not apply to asbestos referred to in section 5.2.

Conditions for export

(3) A person exporting asbestos in accordance with subsection (1) must comply with the permit requirements set out in subsection (4), unless

(a) the concentration of asbestos in the exported product, including a raw material referred to in paragraph (1)(e), is less than 0.1% by weight; or

(b) the asbestos exported is referred to in paragraph (1)(f) and the total quantity of asbestos exported for those purposes by the person during the calendar year in question does not exceed 10 kg.

Export with permit

(4) A person who exports asbestos that is not referred to in paragraph (3)(a) or (b) must

(a) if the export is to a country other than a Rotterdam Party, hold an export permit referred to in section 5.4;

(b) if the export is to a Rotterdam Party, hold a permit issued under subsection 12(1) or section 14 and respect the conditions described in subsection 7(3);

(c) be a resident of Canada or, in the case of a corporation, have a place of business in Canada;

(d) meet the requirements of sections 20 to 22; and

(e) include a copy of the permit with each shipment.

Application for permit — non-party country

5.4 (1) An application for an export permit to export to a country that is not a Rotterdam Party must comply with section 11.

Issuance

(2) Subject to subsection (3), the Minister must issue an export permit on receipt of a permit application.

Reasonable grounds

(3) The Minister must refuse to issue an export permit if the Minister believes on reasonable grounds that one or more of the circumstances referred to in paragraphs 16(a) to (c) apply.

Other conditions

(4) Sections 15 and 18 to 22 set out additional conditions applicable to the export under the authority of a permit issued under subsection (2).

33 Paragraph 6(2)(d) of the Regulations is replaced by the following:

(d) the persistent organic pollutant is exported for use in a laboratory for analysis, in scientific research or as a laboratory analytical standard and the total quantity exported for those purposes by the person during the calendar year in question does not exceed 10 kg;

34 (1) Paragraph 7(2)(h) of the English version of the Regulations is replaced by the following:

(h) is exported for the personal use of the individual who imports it, if the total quantity exported for that purpose by the exporter during the calendar year in question does not exceed 10 kg; or

(2) Paragraph 7(2)(i) of the Regulations is replaced by the following:

(i) is exported for use in a laboratory for analysis, in scientific research or as a laboratory

analytical standard, if the total quantity exported for those purposes by the exporter during the calendar year in question does not exceed 10 kg.

(3) Section 7 of the Regulations is amended by adding the following after subsection (2):

Export of asbestos

(3) Despite subsections (1) and (2), in the case of asbestos exported to a Rotterdam Party, other than asbestos referred to in section 5.2 or in paragraph 5.3(3)(a) or (b), sections 11, 12 and 14 to 22 set out additional conditions applicable to the export of the asbestos.

35 Section 3 of Schedule 1 to the Regulations is amended by striking out “and” at the end of paragraph (f), by adding “and” at the end of paragraph (g) and by adding the following after paragraph (g):

- (h)** in the case of asbestos, an indication of
 - (i)** whether the substance is contained in a product that is a personal or household effect intended for the person’s personal use,
 - (ii)** whether the substance is contained in *military equipment*, as defined in section 1 of the *Prohibition of Asbestos and Products Containing Asbestos Regulations*,
 - (iii)** whether the substance is exported for disposal of the substance or of the product that contains it and, if so, the name and civic address of the facility at which the disposal will take place and the disposal method that will be used,
 - (iv)** whether the substance is contained in a product that was used before the day on which paragraph 5.3(1)(b) came into force,
 - (v)** whether the substance is contained in a product that is exported in order to service *military equipment*, as defined in section 1 of the *Prohibition of Asbestos and Products Containing Asbestos Regulations*, while that equipment is outside Canada for the purposes of a *military operation*, as defined in subsection 9(3) of those Regulations, and there is no technically or economically feasible asbestos-free alternative available,
 - (vi)** whether the substance is contained in a product in not greater than trace amounts,
 - (vii)** whether the substance is contained in raw material that is extracted from the ground and that is exported
 - (A)** to manufacture a consumer product that contains asbestos in not greater than trace amounts,
 - (B)** to manufacture a product that is not a consumer product, or
 - (C)** for a purpose other than manufacturing a product, if the material will not be sold as a consumer product,
 - (viii)** whether the substance, whether or not it is contained in a product, is exported for use in a laboratory for analysis, in scientific research or as an analytical standard, and
 - (ix)** whether the substance, whether or not it is contained in a product, is exported for display in a museum.

Coming into Force

90th day after registration

36 These Regulations come into force on the 90th day after the day on which they are registered.

SCHEDULE 1

(Paragraphs 10(3)(b) and (4)(g), 11(3)(b) and (4)(g), 12(2)(b) and (3)(e), subsection 13(2), subparagraph 13(5)(d)(iv), subsection 14(2), paragraph 14(3)(e), subsection 15(1) and paragraphs 16(2)(f), 17(2)(f), 18(2)(h), 19(2)(h), 20(2)(h), 21(2)(h) and 22(e))

Contents of Asbestos Management Plan

1 An asbestos management plan must include

- (a) measures to prevent risk to human health from exposure to processed asbestos fibres, a product containing processed asbestos fibres or a consumer product containing asbestos in greater than trace amounts that is to be displayed in a museum, imported or used;
- (b) procedures for informing all employees or workers who may come in contact with processed asbestos fibres, a product containing processed asbestos fibres or a consumer product containing asbestos in greater than trace amounts of
- (i) the risks of exposure to those fibres or products,
 - (ii) methods for safely handling, storing and disposing of those fibres or products, and
 - (iii) any provincial or federal occupational health and safety requirements relating to asbestos; and
- (c) a procedure for reviewing the asbestos management plan.

SCHEDULE 2

(Subsection 14(4))

Labelling Requirements

1 The following requirements apply to processed asbestos fibres that are imported for use in diaphragms that are used by a chlor-alkali facility:

- (a) the words “CONTAINS ASBESTOS/CONTIENT DE L’AMIANTE” must be printed in capital letters and in bold face on the surface of the asbestos container or on a label attached to the container; and
- (b) the letters must be of the minimum size set out in column 2 of the table to this section that corresponds to the area of the principal display panel or the label set out in column 1.

TABLE

	Column 1	Column 2
Item	Area of Main Display Panel on Container or Attached Label (cm ²)	Minimum Size of Letters (mm)
1	≤ 250	2
2	> 250 but ≤ 1 000	3
3	> 1 000 but ≤ 3 500	12
4	> 3 500	24

REGULATORY IMPACT ANALYSIS STATEMENT

(This statement is not part of the regulations.)

Executive summary

Issues: Breathing in asbestos fibres can cause life-threatening diseases, such as asbestosis, mesothelioma and lung cancer. It has been estimated that asbestos was responsible for approximately 1 900 lung cancer cases and 430 mesothelioma cases in Canada in 2011. These cases are heavily influenced by historical exposure from the 1970s to the 1990s. The use of asbestos has been steadily declining over the last 30 years, which has already led and will continue to lead to a reduction in the number of asbestos-related illnesses in Canada. There are also measures in place to limit Canadian exposure to asbestos in the workplace, but this occupational risk can only be fully eliminated by ensuring that asbestos is replaced by alternatives. To do so, Canada needs to prohibit the import and domestic use of asbestos. Canada also needs to

implement controls on exports of asbestos to meet international obligations.

Description: The *Prohibition of Asbestos and Products Containing Asbestos Regulations* (Regulations) prohibit the import, sale and use of asbestos and the manufacture, import, sale and use of products containing asbestos in Canada, with a limited number of exclusions. In addition, the amendments to the *Export of Substances on the Export Control List Regulations* (ESECLR Amendments) prohibit the export of all forms of asbestos with a limited number of exceptions. Since the Regulations are more comprehensive than the *Asbestos Products Regulations* (APR) under the *Canada Consumer Product Safety Act*, the APR will be repealed.

Cost-benefit statement: The government administrative costs are estimated to be about \$4 million, and the administrative and compliance costs for the construction and automotive sectors are estimated to be about \$30 million. It is also estimated that preventing a single case of lung cancer or mesothelioma provides a social welfare benefit valued at over \$1 million today. Given the latency effects of asbestos exposure, benefits would not be expected to occur until 10 to 40 years after the Regulations are implemented. The present value of future benefits per case would, therefore, be lower than the value of current cases. For example, \$1 million per case in 2050 would be valued at about \$380,000 per case today (discounted at 3% per year). Nonetheless, if the Regulations can prevent at least five cases of lung cancer or mesothelioma each year (five cases on average), for a period of at least 17 years, then the health benefits for these sectors (\$34 million) would be expected to justify the associated administrative and compliance costs (\$34 million).

The Regulations are not expected to significantly reduce adverse asbestos-related health outcomes in the chlor-alkali sector, which has one facility where asbestos is used as part of diaphragm cell technology which acts as a filter in the manufacturing of chlorine and caustic soda, given that workers are subject to safety protocols that are expected to make the current risk of exposure low. To comply with the Regulations, the chlor-alkali sector has three options: temporarily halt production and convert the facility to membrane cell technology (low-cost scenario from a societal viewpoint), shift production to a jurisdiction outside of Canada that does not prohibit asbestos (high-cost scenario from a societal viewpoint), or maintain production and replace existing asbestos diaphragms with proprietary asbestos-free diaphragms (uncertain cost scenario). The stakeholder is expected to choose the most profitable compliance strategy, which the analysis cannot confirm at this time. The cost-benefit analysis presents the high-cost scenario (from society's viewpoint) as the central analysis where Canadian chlor-alkali production currently using asbestos would shift production outside Canada, resulting in Canadian production losses estimated to be about \$8 million per year.

“One-for-One” Rule and small business lens: The Regulations are considered to be an “IN” under the Government of Canada’s “One-for-One” Rule, while the repeal of the APR is considered an “OUT.” It is projected that the regulatory changes would result in a net increase in annualized average administrative burden costs of around \$13,000, or \$47 per affected business.

It is estimated that the Regulations and the ESECLR Amendments would affect 269 businesses, including 178 small businesses. These businesses have generally expressed support for the Regulations.

Domestic and international coordination and cooperation: The Regulations align Canada with over 50 countries that have already taken action to prohibit asbestos and its uses. In establishing the Regulations and the ESECLR Amendments, Canada will also be going beyond its commitment under the Rotterdam Convention by controlling the import and export of all forms of asbestos (including chrysotile), whether or not it is contained in a product, and ensuring that information regarding asbestos is shared with

all importing countries, regardless of whether they are Party to the Convention.

Background

On December 15, 2016, the Government of Canada announced a government-wide strategy to manage asbestos.³ One element of this strategy is the development of new regulations under the *Canadian Environmental Protection Act, 1999* (CEPA) to prohibit the manufacture, use, import and export of asbestos and products containing asbestos by 2018. Other elements include outreach efforts to raise awareness regarding asbestos risks, work to update the national building code to prohibit all uses of asbestos in new construction and renovation projects across Canada, and work to establish new federal workplace health and safety rules to limit the risk associated with people coming into contact with asbestos on the job.

Asbestos is a commercial term given to a group of naturally occurring fibrous forms of minerals that are incombustible and separable into filaments, including chrysotile, amosite, crocidolite, anthophyllite, tremolite and actinolite. The International Agency for Research on Cancer of the World Health Organization has declared asbestos a human carcinogen (for all forms). The health risks of asbestos are well established. Breathing in asbestos fibres can cause life-threatening diseases such as asbestosis, mesothelioma and lung cancer.⁴

Asbestos was mined in Canada until 2011 and was historically used mainly for insulating buildings and homes, as well as for fireproofing. Crocidolite asbestos had been used historically in cement, insulation, textiles and filters, though these uses have been phased out worldwide. While many uses have been phased out, asbestos may still be found in a variety of products, including cement and plaster products (such as cement pipes and cement flat boards); industrial furnaces and heating systems; building insulation; floor and ceiling tiles; house siding; textiles; automotive brake pads; and vehicle transmission components such as clutches.⁵ Asbestos is also used in the chlor-alkali industry as part of cell diaphragms, which act as a filter in the manufacture of chlorine and caustic soda. These final products do not contain asbestos.

Existing federal regulatory measures

Asbestos and products containing asbestos are currently managed under various federal acts and regulations. In 1977, the *Asbestos Mines and Mills Release Regulations* were established as a precautionary measure to limit the concentration of asbestos fibres in gases emitted into the ambient air at asbestos mines or mills from crushing, drying, or milling operations.⁶ In 2000, crocidolite asbestos was listed on the Export Control List (ECL), Schedule 3 to CEPA, making it subject to export controls under the *Export of Substances on the Export Control List Regulations* (ESECLR) that require prior notification and, at times, a permit, before the export of any substance on the ECL takes place.⁷

Prior to 2011, asbestos used in consumer and workplace products was addressed through Part I and Part II of the *Hazardous Products Act* (HPA) as well as the APR under the HPA. Part I of the HPA was repealed in 2011 when the *Canada Consumer Products Safety Act* came into force, and the APR were transferred under the Act at the same time. Under the APR, the manufacture, importation, advertisement and sale of certain consumer products, including certain high-risk consumer products (e.g. insulation material) that are composed of, or contain, asbestos fibres have been prohibited, or strictly regulated. The sale and importation of hazardous products containing asbestos intended for use, handling or storage in a workplace in Canada fall under Part II of the HPA and the *Hazardous Products Regulations* (HPR) made under that Act. Part II of the HPA prohibits the sale and import of these products unless they are labelled and accompanied by a safety data sheet that meets the requirements of the HPR. Furthermore, in 2017, the *Regulations Amending Certain Regulations Made Under the Canada Labour Code* lowered limits of acceptable concentrations of all forms of asbestos fibres allowed in the air in federal workplaces such as the aviation and broadcasting sectors and certain oil and gas sectors.

Waste containing asbestos is managed through both provincial and federal legislation. In general, the

federal role in waste management is restricted to waste management on federal lands and the transboundary movement of hazardous wastes.

Provincial regulatory measures

Asbestos and products containing asbestos are also managed under various provincial and territorial regimes. All provinces and territories have occupational health and safety (OHS) legislation that applies to workplaces as well as a set of acceptable limits for airborne asbestos fibres in workplaces. OHS legislation also sets out requirements to be followed when working with certain substances, including asbestos. ⁸ Examples include Quebec's *Regulation respecting occupational health and safety* and Ontario's *Regulation 833: Control of Exposure to Biological or Chemical Agents*.

For waste management, provincial legislatures have the power to legislate hazardous waste disposal (including waste containing asbestos), with the exception of the interprovincial movement of hazardous waste and waste that is generated as part of federal work or on federal or Aboriginal land. Examples of these regulations include the *Hazardous Waste Regulation* in British Columbia and *R.R.O. 1990, Regulation 347: General - Waste Management* under the *Environmental Protection Act* in Ontario.

Rotterdam Convention

The Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention) facilitates information exchange between Parties. For substances listed under the Rotterdam Convention, provisions ensure that exports of these substances are not sent to Parties who have stated they do not consent to their import. For exports of substances subject to a domestic prohibition or severe restriction that are not listed under the Rotterdam Convention, exporting Parties are obligated to send information and notification to the importing Party.

Issues

Breathing in asbestos fibres can cause life-threatening diseases, such as asbestosis, mesothelioma and lung cancer. It has been estimated that asbestos was responsible for approximately 1 900 lung cancer cases and 430 mesothelioma cases in Canada in 2011. These cases are heavily influenced by historical exposure from the 1970s to the 1990s. The use of asbestos has been steadily declining over the last 30 years, which has already led and will continue to lead to a reduction in the number of asbestos-related illnesses in Canada. There are also measures in place to limit Canadian exposure to asbestos in the workplace, but this occupational risk can only be fully eliminated by ensuring that asbestos is replaced by alternatives. To do so, Canada needs to prohibit the import and use of asbestos and products containing asbestos. By implementing regulations to do this, Canada also needs to implement controls on exports of asbestos to meet international obligations.

Objectives

The objective of the *Prohibition of Asbestos and Products Containing Asbestos Regulations* (Regulations) and the amendments to the *Export of Substances on the Export Control List Regulations* (ESECLR Amendments) is to protect human health by reducing exposure of Canadians to asbestos, and to meet international obligations.

Description

The Regulations will prohibit the import, sale, and use of processed asbestos fibres. The Regulations will also prohibit the manufacture, import, sale, and use of products containing processed asbestos fibres and of consumer products containing naturally occurring asbestos in greater than trace amounts, with a limited number of exclusions. Consistent with Canada's international commitments under the World Trade Organization's Trade Facilitation Agreement, the Regulations will not apply to asbestos and products containing asbestos in transit through Canada.

The Regulations do not prohibit mining activities. In addition, the Regulations do not apply to asbestos integrated into a structure or infrastructure before the day on which the Regulations come into force (such as asbestos integrated into buildings and civil engineering works), or to products containing asbestos used before the day on which the Regulations come into force (such as equipment installed in a facility, vehicles, ships, and airplanes).

As pest control products are regulated under the *Pest Control Products Act* (PCPA), the Regulations do not apply to pest control products (as defined in subsection 2(1) of the PCPA).

In addition, the Regulations do not apply to mining residues except for the following activities, which are prohibited:

- the sale of asbestos mining residues for use in construction and landscaping activities, unless authorized by the province in which the construction or landscaping occurs; and
- the use of asbestos mining residues to manufacture a product that contains asbestos.

The Regulations include the following exclusions:

- an exclusion until December 31, 2029, for the import and use of asbestos in the chlor-alkali industry;
- an exclusion until December 31, 2022, for the import, sale and use of products containing asbestos to service equipment in nuclear facilities if no technically or economically feasible asbestos-free alternative is available;
- an exclusion until December 31, 2022, for the import, sale and use of products containing asbestos to service military equipment if there is no technically or economically feasible asbestos-free alternative available;
- an ongoing exclusion for the import, sale and use of military equipment serviced with a product containing asbestos while it was outside of Canada for the purpose of a military operation if no technically or economically feasible asbestos-free alternative is available;
- an ongoing exclusion for the re-use of asbestos in existing road infrastructure into new road infrastructure or in asbestos mining site restoration;
- an ongoing exclusion for the import, sale and use of asbestos and products containing asbestos for the purpose of display in a museum;
- an ongoing exclusion for the import, sale and use of asbestos and products containing asbestos for scientific research, for sample characterization or as an analytical standard in a laboratory; and
- an ongoing exclusion for the transfer of physical possession or control of asbestos or a product containing asbestos to allow its disposal.

With the exception of the re-use of asbestos present in road infrastructure and the transfer of physical possession of asbestos or a product containing asbestos for disposal, these excluded activities are subject to reporting and record-keeping requirements. In addition, the Regulations include labelling requirements for any asbestos imported or used in diaphragms at chlor-alkali facilities during the phase-out period. A statement indicating that no technically or economically feasible or available asbestos-free alternative is required for the time-limited exclusions for the import, sale, and use of products containing asbestos to service military equipment and equipment in a nuclear facility.

The Regulations include permit provisions for unforeseen circumstances where asbestos, or products containing asbestos, are required to protect the environment or human health where there is no technically or economically feasible alternative available. Any permit issued will be valid for one year and the permit holder will be subject to reporting requirements.

Starting January 1, 2023, the Regulations will also include permit provisions for the import and use of replacement parts containing asbestos to service equipment in a nuclear facility and military equipment when no technically or economically feasible asbestos-free alternative is available. Permits issued will be valid for three years and the permit holder will be subject to reporting requirements.

Furthermore, an asbestos management plan will need to be prepared and implemented by permit holders and by any person carrying out most excluded activities.

The ESECLR Amendments will prohibit exports of all forms of asbestos, whether or not it is contained in a product, with the following exceptions:

- asbestos that is, or is contained in, a hazardous waste or hazardous recyclable material regulated by the *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* (EIHWHRMR);
- asbestos contained in a product that is a personal or household effect intended for personal use;
- asbestos contained in military equipment;
- asbestos, whether or not it is contained in a product, exported for the purpose of disposal;
- asbestos contained in a product that was used prior to the coming into force of the amendments;
- asbestos contained in a product exported to service military equipment during a foreign military operation, when no technically or economically feasible asbestos-free alternative is available;
- asbestos contained in a product in amounts that are not greater than trace amounts;
- asbestos contained in a raw material extracted from the ground and exported to manufacture a consumer product that contains asbestos in amounts that are not greater than trace amounts;
- asbestos contained in a raw material extracted from the ground and exported to manufacture a product that is not a consumer product;
- asbestos contained in a raw material extracted from the ground and exported for a purpose other than manufacturing a product, if the raw material will not be sold as a consumer product;
- asbestos, whether or not it is contained in a product, for use in a laboratory (for analysis, scientific research or as a laboratory analytical standard); and
- asbestos, whether or not it is contained in a product, for display in a museum.

Following concerns raised by the Standing Joint Committee on the Scrutiny of Regulations, ESECLR Amendments will also modify the English version of the ESECLR to align text regarding the conditions relative to the Rotterdam Convention for exports of substances for personal use and laboratory use. In this regard, the English ESECLR will be updated to match the French version, by clarifying that the export of regulated substances for personal use and laboratory use cannot exceed 10 kg per calendar year under each category.

All exports of substances listed in the ECL require a prior notification of export. In certain cases, exports allowed by the above exceptions may require a permit and be subject to requirements respecting labelling, record keeping, and inclusion of safety data sheets with the exports. Concurrently, separate amendments to the ECL are being made as a ministerial order, which will list all forms of asbestos to the ECL.

The Regulations make related amendments to the *Regulations Designating Regulatory Provisions for Purposes of Enforcement (Canadian Environmental Protection Act, 1999)* [Designation Regulations].⁹ The Designation Regulations identify provisions of various regulations made under the CEPA as being subject to an enhanced fine range. These provisions are identified on the basis that violating them involves direct harm or risk of harm to the environment, or obstruction of authority. Designated sections of the Regulations and ESECLR Amendments are added to the Schedule of the Designation Regulations to reflect the specific provisions designated.

In addition, since the Regulations are more stringent than the current APR, the APR will be repealed as these regulations are no longer required.

Regulatory and non-regulatory options considered

Status quo approach

There are a variety of federal, provincial and territorial measures in place to help protect Canadians from asbestos exposure. It is also likely that future use of asbestos will diminish over time. This is due to the international nature of various industries that currently rely on the use of asbestos and the overall global trend towards reducing or eliminating the use of asbestos. While current international trends and national measures aim to limit exposure and reduce impacts, Canadians, especially

workers, may continue to be exposed to asbestos from uses that are currently allowed, and would remain at some risk of asbestos-related diseases. This would not meet the Government of Canada's objective to reduce the risks that asbestos poses to the health and safety of Canadians. Therefore, this option was rejected.

Regulations prohibiting all asbestos including legacy and future uses

To meet the Government's objectives, an approach to completely prohibit asbestos was considered. Historically, asbestos has been used in numerous applications, mainly for insulating buildings and homes, as well as for fireproofing. Asbestos has also been used historically in cement, insulation, textiles and filters. As a result of decades of use, many products and installations, including buildings and homes, still contain asbestos. For the most part, there are no significant health risks if the products containing asbestos, such as insulation, are left undisturbed. Requiring all asbestos to be removed from sources such as buildings and homes would be extremely costly and may actually lead to more harm to human health. Therefore, this option was rejected.

Regulations prohibiting future uses of asbestos with a limit number of exclusions

Another approach to meet the Government's objectives, the approach that has been chosen, is to prohibit the import, sale, and use of asbestos, and the manufacture, import, use and sale of products containing asbestos. This will prevent new asbestos and products containing asbestos from entering the Canadian market. At the same time, it will allow existing products, such as building materials installed in existing buildings, to reach the end of their useful life, reducing the risks over time. Therefore, this option was selected. Provincial health and safety requirements already in place will continue to be used to manage risks. As a result, certain exemptions and exclusions have been considered and are described below.

Chlor-alkali

Asbestos is used in the chlor-alkali industry as part of the diaphragm cell technology, which acts as a filter in the manufacturing of chlorine and caustic soda. The final products do not contain asbestos. The use of asbestos in the chlor-alkali sector in Canada is very limited. The risk of exposure for facility workers who handle the asbestos is expected to also be limited given information provided on the health and safety practices that are in place. While the risk of asbestos exposure is expected to be low at chlor-alkali facilities, a full exclusion would not align with the Government's objectives of a prohibition on asbestos use. Furthermore, alternatives to the asbestos-based process in the chlor-alkali industry exist and have been implemented by other facilities. The European Chemicals Agency (ECHA) has banned the use of asbestos and provided the European chlor-alkali industry with a ten-year time-limited exclusion until 2025 to phase out asbestos use. Therefore, the Regulations will also provide a time-limited exclusion for chlor-alkali facilities that use asbestos. This time-limited exclusion also allows Canada to position itself as a global partner in phasing-out trade of asbestos.

After the publication of the proposed Regulations in the *Canada Gazette*, Part I, consideration was given to extending the exclusion beyond the previously proposed date of 2025 to provide sufficient lead time to safely adopt asbestos-free technology. As a result, the chlor-alkali sector will have until December 31, 2029, to comply with the Regulations.

Asbestos mining residues

Asbestos mining residues are a leftover legacy from decades of asbestos mining. It is estimated that there are 800 million tonnes of mining residues found in the province of Quebec. These mining residues can contain valuable metals such as magnesium. In addition, the redevelopment and rehabilitation of former mine sites, including the management of asbestos mining residue accumulation areas, is ongoing. To allow for their rehabilitation, the use of mining residues for construction and landscaping will need to be allowed by the Regulations. Rehabilitation plans for mine sites and mining residue accumulation areas are authorized by provincial governments.

Following the publication of the proposed Regulations in the *Canada Gazette*, Part I, consideration was given to strengthening the application of the Regulations to asbestos mining residues. However,

risks of exposure from asbestos mining residues are already addressed through provincial and territorial occupational and health legislation. While the potential risk of exposure remains, the redevelopment and rehabilitation of former mine sites would be expected to reduce asbestos mining residues over time. Therefore, it was decided to maintain the general exclusion of mining residues, allowing the continuation of these activities.

Re-use of asbestos in road infrastructure

Asbestos may also be present in asphalt used in road infrastructure across Canada. Consideration was given to excluding the re-use of asbestos already integrated in road infrastructure from the Regulations. Prohibiting this activity could potentially result in a large amount of used asphalt being diverted to landfills, which may not have the capacity to accommodate such an increase in waste. Further, the concentration of asbestos in used asphalt is expected to be low and would be reduced through the re-use which consists of adding used asphalt containing asbestos to asbestos-free asphalt. Federal and provincial occupational health and safety regulations are currently in place to address risks of exposure to asbestos resulting from these activities. Therefore, the Regulations will provide an indefinite exclusion for the re-use of asphalt containing asbestos in road infrastructure and mining site restoration.

Military equipment and nuclear facilities

The Department of National Defence has indicated that during military operations, it may be challenging to obtain asbestos-free replacement parts. Therefore, the Regulations will provide an ongoing exclusion for the import, sale and use of military equipment (such as aircrafts, ships, submarines, or vehicles) serviced with replacement parts containing asbestos during a foreign military operation if no technically or economically feasible asbestos-free alternative was available.

Further, the Department of National Defence as well as nuclear facilities have replacement parts containing asbestos that are no longer being manufactured in their inventories. The equipment is designed to meet highly technical operating conditions. Therefore, the Regulations will include a four-year time-limited exclusion for the import, sale and use of replacement products containing asbestos to service military equipment and nuclear facilities if technically or economically feasible asbestos-free alternatives are not available. After this period, a permit will be required for use, import, or sale of products containing asbestos for these activities. The ESECLR Amendments will also allow the export of replacement parts containing asbestos to service military equipment when no asbestos-free alternative is available.

Coming into force

The Regulations and the ESECLR Amendments will come into force 90 days following the date on which they are registered. This coming into force period was considered in terms of policy objectives that outline the unanimous recognition of the health risks associated with asbestos and the urgent need to curb further asbestos production and dissemination. Consideration was also given to the Government of Canada's obligation to provide a reasonable notice period between the publication of technical regulations and their entry into force. Given these considerations and the fact that no comments or concerns were received regarding the coming into force timeline proposed in the *Canada Gazette*, Part I publication, the Department will proceed with this timeline.

Benefits and costs

Between 2019 and 2035, reductions in asbestos imports attributable to the Regulations are estimated to be about 4 700 tonnes. Approximately 99% of the workers who would potentially benefit from the Regulations are currently employed in the construction and automotive industries. The expected impacts are presented in the logic model (Figure 1) below.

Figure 1: Logic model for the analysis of the Regulations



The analysis of the incremental benefits and costs was conducted by comparing base case and policy scenarios. The base case scenario assumes a status quo in which the Regulations are not in place. This means that asbestos and products containing asbestos are imported, exported, used, manufactured and sold for activities that are not already regulated. While there are measures in place to address occupational exposure to asbestos in the workplace and an ongoing international trend eliminating the use of asbestos, there may still be some risk of exposure to workers. The policy scenario assumes that the Regulations are in place and regulatees are compliant. This means the import, sale and use of asbestos and the manufacture, import, sale and use of products containing asbestos are prohibited in Canada, with a limited number of exclusions. Benefits are expected for workers in sectors covered by the Regulations as exposure and adverse health outcomes are reduced over time. There are expected to be administrative and substitution costs, along with potential production losses associated with compliance.

The cement and automotive sectors import products containing asbestos, and are expected to comply by switching to imports of asbestos-free products. The chlor-alkali sector has the following three compliance options: temporarily halt production and convert the facility to membrane cell technology; maintain production and replace existing asbestos diaphragms with asbestos-free diaphragms; and shift production to a jurisdiction outside of Canada that does not prohibit asbestos. The stakeholder is expected to choose the most profitable compliance strategy, which cannot be confirmed at this time. To be conservative, the central analysis presents the high-cost scenario (from society's viewpoint) which would be to shift production outside Canada. Alternative technology compliance options are also presented.

The health benefits of the Regulations could not be easily quantified since it was not possible to accurately estimate the incremental risk reduction. Although substituting alternatives for asbestos should eliminate the risk of occupational exposure, it is difficult to estimate the risk of exposure in the absence of the Regulations. However, these health benefits have been assessed qualitatively.

The analytical time frame begins in the first year of regulatory implementation, 2019, and runs through to 2035. The Department considers this time frame to be sufficient for analyzing key cost impacts of the Regulations given the time needed to respond and switch to alternatives for different industries. Costs and cost savings are quantified and monetized in 2016 Canadian dollars, discounted at a 3% rate to 2017.

Updates to the analysis following publication of the proposed Regulations and proposed ESECLR Amendments in the *Canada Gazette*, Part I

After the publication of the proposed Regulations in the *Canada Gazette*, Part I, the Department consulted with a range of external experts who are familiar with the risks and burden of illness associated with occupational exposure to asbestos. These experts reviewed the evidence provided in the RIAS to support the claim that these Regulations would be likely to prevent an average of at least five future cases of lung cancer or mesothelioma per year. The consensus among these experts was that the claim is a reasonable lower-bound estimate of the expected health benefits of the

Regulations.

Further, based on feedback and comments received following the publication of the proposed Regulations in the *Canada Gazette*, Part I, modifications have been made to the Regulations as outlined by the Description section above. One of these changes is an extension to the time-limited exclusion provided to the chlor-alkali industry. A new compliance scenario for the chlor-alkali industry has also been identified. Updates have been applied to the reporting and notification requirements as well as industry and government administrative costs. The impacts of these regulatory modifications and recently identified compliance option are described below.

Modification of compliance costs for the chlor-alkali industry

The extension of the exclusion until December 31, 2029, is expected to mitigate the impacts for the chlor-alkali industry. As a result of this extension and maintaining the overall time frame of analysis as 2019–2035, the years used for measuring impacts on the chlor-alkali industry of the Regulations have been reduced to six years (2030–2035). For example, the costs of the chlor-alkali industry's central analysis (high-cost scenario) would be reduced from \$80 million to \$45 million over the time frame of the analysis, as the modified analysis only considers six years of net forgone production.

Identification of a new compliance option for the chlor-alkali industry

Following the publication of the proposed Regulations in the *Canada Gazette*, Part I, a new alternative technology compliance scenario was identified. This scenario would involve the switch from asbestos diaphragms to proprietary asbestos-free diaphragms. There was insufficient information to fully estimate the costs (and potential savings) of this scenario, so it has been described qualitatively.

Changes to the notification and additional requirements

The 60-day notification requirement for excluded activities under the Regulations has been removed as information required for this notification will also be provided by the regulated community under the annual reporting requirement. Therefore, the administrative cost estimates have been updated to account for the removal of this requirement.

Further, the provision of a four-year time-limited exclusion for the import, use, or sale of replacement parts containing asbestos for the Department of National Defence and nuclear facilities was not considered in the analysis of health impacts, as potential worker exposure is expected to be low in these sectors, given their use of highly technical operating procedures. However, as the exclusion is accompanied with annual reporting requirements and a permitting scheme for the nuclear sector, the administrative cost estimates have been updated to include these administrative costs.

Industry and government administrative costs

The Regulations and the ESECLR Amendments require regulatees to submit reports, request permits where necessary, and in most cases, maintain records, and develop an asbestos management plan. These industry administrative costs are estimated to be \$258,900 between 2019 and 2035. ¹⁰

The Department is expected to incur costs to enforce and administer the Regulations and the ESECLR Amendments and to conduct compliance promotion. In 2019, an estimated one-time cost of about \$298,000 is expected to be required for the training of enforcement officers, \$1,500 to meet information management requirements, and \$102,000 for intelligence assessment work. The cost of annual inspections, measures to deal with alleged violations, investigations and prosecutions is estimated to be \$236,000. Overall, enforcement costs are estimated at \$4 million between 2019 and 2035.

Compliance promotion activities are intended to encourage the regulated community to achieve compliance. Compliance promotion costs include costs for distributing the Regulations and ESECLR Amendments, developing and distributing promotional materials (such as a fact sheet and web material), advertising in trade and association magazines, and attending trade association conferences. This cost is estimated to be \$123,000 between 2018 and 2022.

There would also be costs to Government for the review and approval of permits. The total cost of permit reviews is estimated to be \$43,800 between 2019 and 2035. Table 1 below summarizes the administrative cost to ensure compliance for both industry and Government.

Table 1: Administrative costs for industry and Government (dollars)

Sectors	2019 to 2029	2030 to 2035	Total
Industry administrative costs	189,300	69,600	258,900
Government administrative costs	3,099,800	1,070,900	4,170,700
Total administrative costs	3,289,100	1,140,500	4,429,600

Note: Numbers may not add up due to rounding. Monetized values are discounted to present value using a 3% discount rate.

Industry substitution costs

The cement and automotive industries would carry compliance costs as they switch to asbestos alternatives. While the economy is expected to grow, historic trends in asbestos use have been declining. For this analysis, it is assumed that imports of products containing asbestos remain constant over time.

Costs to the cement pipe industry

It is expected that cement stakeholders would comply with the Regulations by switching from imports of cement products containing asbestos to cement products containing synthetic fibres. It is assumed that all cement products containing asbestos are cement pipes, and that there is a 15% volume of asbestos in each cement pipe. ¹¹ Using average import data from 2013 to 2016 for articles of asbestos cement, it is estimated that 146 tonnes of asbestos is used in cement pipes containing asbestos on an annual basis. ¹² It is assumed that the incremental difference in price between asbestos fibres and synthetic fibres is about \$4,300 per tonne. ¹³ Given this, it is expected that the cement industry would carry operating costs of approximately \$8 million over the time frame of analysis from switching to imports of asbestos-free products. Costs associated with the disposal of cement pipes containing asbestos in inventories were not taken into consideration in the cost analysis as these costs are expected to be low in comparison with substitution costs.

Costs to the automotive repair and maintenance industry

It is expected that automotive stakeholders would comply with the Regulations by switching from imports of friction materials containing asbestos to asbestos-free friction materials, such as ceramic brake pads or materials with synthetic fibres. It is assumed that all friction materials containing asbestos are brake pads. Using average import data from 2013 to 2016 for friction materials containing asbestos, it is estimated that 333 000 brake pads containing asbestos are imported on an annual basis. ¹⁴ Assuming that there is a \$5 incremental difference in price between brake pads containing asbestos and asbestos-free brake pads, it is expected that the automotive industry would carry operating costs of approximately \$21 million over the time frame of analysis. ¹⁵

Costs to other industries

Based on available import data, there may be costs to other industries such as the textile industry. These industries would be expected to carry some operating costs from switching to imports of asbestos-free products. However, the import levels are so low that any reasonable price difference between asbestos and asbestos-free products is expected to have a negligible effect on costs relative to other industries.

Using average import data from 2013 to 2016 for products containing asbestos, it is estimated that there could be up to seven tonnes of asbestos used per year in textiles and compressed fibre jointing products. ¹⁶ There are also a number of other product categories that show that imports exist.

However, it is unknown what exactly these products are. This makes it difficult to estimate the volume of asbestos material in products as well as the incremental difference in prices.

Summary of industry substitution costs

It is estimated that there would be industry substitution costs of about \$29 million, most of which are attributed to the automotive repair and maintenance industry.

Table 2: Summary of industry substitution costs (millions of dollars)

Sectors	2019 to 2029	2030 to 2035	Total
Cement pipe industry costs	6	2	8
Automotive repair and maintenance costs	15	6	21
Total substitution costs	21	8	29

Note: Monetary values are discounted to present value using a 3% discount rate. Numbers may not sum to total due to rounding.

Cost impacts in the chlor-alkali industry

The operator of a chlor-alkali facility in Quebec uses asbestos diaphragms in its production. In order to comply with the Regulations, this stakeholder would be required to switch to alternative technology. Otherwise, they could decide to shift production to a jurisdiction outside Canada. The analysis considers the following compliance options: a low-cost scenario (from a societal viewpoint) which involves temporarily halting production and converting to membrane cell technology; a high-cost scenario (from a societal viewpoint) which entails a shift of production to a jurisdiction outside Canada that does not prohibit the use of asbestos; or a third compliance scenario which maintains production and requires switching asbestos diaphragms to proprietary asbestos-free diaphragms. Due to the lack of publicly available cost data and technical information, the costs of the third compliance scenario cannot be verified and the costs are described qualitatively. This is therefore considered to be an uncertain cost scenario.

If the operator chooses the low-cost scenario (from a societal viewpoint) which requires converting to membrane cell technology, it is expected that they would carry capital costs of approximately \$113 million between 2019 and 2029 (before the coming into force by the end of December 2029).¹⁷ Converting to membrane cell technology might also require a temporary shutdown of the facility which could result in disruption of production and loss of profit for at least several months. However, membrane technology uses less energy than asbestos diaphragm technologies and it is estimated that the incremental difference in energy consumption between an asbestos diaphragm and the membrane technology is about 0.5 million MWh per year.^{18, 19} Therefore, the stakeholder could see energy cost savings from converting to asbestos-free technologies of \$29 million per year on average (after 2030).²⁰ Given this, it is expected that the chlor-alkali industry could see operating cost savings of approximately \$171 million between 2030 and 2035, with total net cost savings of about \$58 million over the time frame of analysis. The costs and cost savings associated with converting to membrane cell technology are based on publicly available information. Therefore, these estimates may differ from the actual costs and cost savings incurred by the facility.

If the operator chooses the high-cost scenario (from a societal viewpoint) by electing to shift production outside Canada, there could be a loss in terms of net forgone production, measured as revenue minus production inputs. The difference represents the loss in direct economic activity of the facility. The analysis assumes that the operator would shift production in 2030, which could result in a total net forgone production estimated at \$45 million over the time frame of analysis (about \$8 million per year on average).²¹ This scenario could also result in loss of market share by the operator and a move away from Canadian consumers and the established customer base. Capital costs could be expected to occur at distribution centres that could be tasked with delivering orders to Canadian customers. Operating costs could also be expected to increase due to costs related to the closure of

the facility. For example, the operator could experience an increase in operating costs related to the transportation of products to Canadian customers after the closure of the Canadian facility. There could also be some economic value arising from alternative use of the facility but these benefits have not been included due to lack of information. Thus, the high cost scenario represents an upper bound estimate of societal costs.

If the operator chooses the third compliance scenario, it would involve the replacement of asbestos diaphragms with proprietary asbestos-free diaphragms. Due to the absence of detailed information regarding this proprietary technology, the costs can only be qualitatively presented and described. In this case, capital costs are expected to occur in the form of facility conversion costs and costs related to the creation of asbestos-free diaphragms. However, these capital costs are expected to be lower than capital costs associated with the conversion of the facility to membrane cell technology. Operating costs and savings are not expected. Production losses are not expected as the gradual conversion of technology would allow for the minimization of production disruptions and the minimization of market share loss. Unlike the already proven membrane cell technology, this asbestos-free diaphragm technology has not yet been fully proven. Publicly available information indicates that there is only one other chlor-alkali facility attempting a similar conversion of technology. The Dow Chemical Company currently operates a chlor-alkali facility located in Stade, Germany, that is in the process of replacing asbestos diaphragms by a proprietary chrysotile-free technology in response to the chrysotile prohibition implemented by the ECHA in 2015. ²²

It is uncertain which compliance scenario the stakeholder will adopt as they will consider costs and benefits in terms of firm profitability. From a firm's viewpoint, each scenario could either minimize capital costs, operating costs, or production losses. If the firm decides to shift production outside of Canada, it could minimize capital costs. From the firm's view, the shift in production may not result in overall production losses, but it may impact operating costs and Canadian market share. Alternatively, if the firm decides to temporarily halt production and convert its diaphragm technology to membrane cell technology, it could minimize operating costs by creating energy savings. Or, if the firm decides to maintain production and gradually convert to asbestos-free diaphragms, it could potentially avoid a disruption of production and minimize production losses. The firm is expected to choose the most profitable compliance option. In the absence of detailed information, and to be conservative, the high-cost scenario from a societal viewpoint was presented as the central analysis (see summary in Table 5). The low-cost scenario from a societal viewpoint was also presented (see summary in Table 6).

Health benefits

The Regulations are expected to reduce the amount of future asbestos and products containing asbestos being imported and used in Canada. It is estimated that there would be a reduction of over 4 700 tonnes of asbestos imported between 2019 and 2035. As a result, exposure to asbestos would decline over time and health benefits would be generated from avoided adverse health outcomes. Table 3 shows estimates of the amount of asbestos reduced by industry.

Table 3: Summary of expected asbestos reductions by industry (tonnes)

Asbestos reductions	2019 to 2029	2030 to 2035	Total
Chlor-alkali ²³	165	90	255
Construction	1 604	875	2 478
Automotive	1 280	698	1 978
Total reductions	3 049	1 663	4 712

Note: Numbers may not sum to total due to rounding.

For the automotive industry, it is assumed that each brake pad weighs one kilogram and that there is a 35% volume of asbestos in each brake pad. ²⁴ As shown in Table 3 above, about 94% of the

reductions in asbestos would come from the construction and automotive industries.

The ESECLR Amendments are not expected to result in direct health benefits to Canadians. Though it is possible that benefits could occur outside Canada to countries where products containing asbestos are exported, exports in the base case scenario are minimal given that Canada no longer exports asbestos in its raw form. In addition, the Regulations overlap with, and cover more activities than, the *Asbestos Products Regulations*. Therefore, the repeal of the *Asbestos Products Regulations* is not expected to have an impact.

Figure 2 illustrates the analytical framework to assess the incremental benefits of the policy scenario as compared to the base case scenario from a societal perspective. Due to uncertainties in estimating risk levels in both the base case and policy scenarios, it is not possible to estimate the magnitude of incremental risk reductions. As a result, health benefits have been assessed qualitatively.

Figure 2: Analytical framework for assessing the Regulations



Valuation of avoided health outcomes

Asbestos has been reviewed by the International Agency for Research on Cancer of the WHO and was declared a human carcinogen for all forms of asbestos. The health risks of asbestos are well established. Breathing in asbestos fibres can cause life-threatening diseases, such as asbestosis, mesothelioma and lung cancer. The expected value of avoiding these adverse health outcomes is society's total willingness to pay to reduce the risks and severity of asbestos exposure and thereby reduce the number of adverse health outcomes. This willingness to pay would encompass the value of avoided treatment costs, lost productivity, and decreased quality of life (e.g. avoided pain, suffering, discomfort, and a reduced risk of premature death). ²⁵

One study using this approach estimated that occupational and para-occupational asbestos exposure in Canada costs society about \$1 million per case of mesothelioma and \$1 million per case of lung cancer. ^{26, 27} Paraoccupational asbestos exposure refers to exposure of a worker's family to asbestos carried from the workplace to the home as well as the exposure of visitors to asbestos in the workplace. These estimates considered direct costs (primarily health care products and services), indirect costs (primarily output and productivity in paid work and home production), and quality of life costs.

Additional analysis suggests the social costs per case of mesothelioma and lung cancer could be significantly larger if the full social cost of premature mortality risks is considered. Lung cancer, for instance, proves fatal within one year of diagnosis for 70% of patients, with fewer than 10% of patients surviving for more than five years. ²⁸ If the estimated reductions in the risk of premature death are multiplied by an estimate of the average willingness to pay for small reductions in the risk of premature death, the social costs may be closer to \$8 million per case. ²⁹ However, for the purpose of this analysis, the lower value of \$1 million per case of lung cancer and mesothelioma is used to reflect a lower-end estimate of the potential benefits of the Regulations.

In order to apply these values, it is necessary to estimate the expected incremental reduction in the number of adverse outcomes, which depends on estimating the reductions in health risks attributable to asbestos exposure in the absence of the Regulations.

Reduction in risk of adverse health outcomes

Worker compensation data indicates that there were about 2 500 accepted lost-time claims and 5 600 accepted fatality claims due to asbestos-related injury or disease between 1996 and 2014 in Canada. In 2014, there were about 400 accepted fatalities attributed to asbestos-related injury or disease. ³⁰ One study estimates that about 70% of compensated death claims in Canada from occupational exposure (between 1997 and 2010) were attributed to asbestos exposure, and that most of these claims were for lung cancer and mesothelioma. ³¹ However, the number of asbestos-related

injuries or diseases could be higher, given that the workers' compensation data does not account for individuals who did not make a claim or for those who made a claim but did not receive compensation. Another study found that asbestos was responsible for approximately 1 900 lung cancer cases and 430 mesothelioma cases in Canada in 2011, accounting for 8% of lung cancers and 81% of mesothelioma cases diagnosed. ³², ³³

The latency period between the time of exposure and the time of diagnosis of asbestos-related diseases can vary from 10 to 40 years, depending on the type of diagnosis. For example, the latency period for lung cancer is between 20 and 30 years, while the latency for mesothelioma is usually 30 to 40 years. ³⁴ Thus, if there were 1 900 lung cancer cases and 430 mesothelioma cases attributed to asbestos in 2011, this would not be a reflection of the amount of exposure that actually occurred in 2011. Rather, it would be a reflection of the amount of exposure that occurred between the 1970s and the 1990s.

The situation with asbestos from the 1970s to the early 2000s was very different from what it is today. The use of and exposure to asbestos in Canada has decreased over time since the 1970s. It has been estimated that use in Canada went down from 4.4 kg per capita per year in the 1970s to 0.3 kg per capita per year in the early 2000s. ³⁵ Before 1990, asbestos was mainly used for insulating buildings and homes. Canada was also a major exporter of mined asbestos prior to 2011. ³⁶ There are also a number of federal, provincial and territorial policies (such as occupational health and safety legislation) that have been established from the 1970s to the early 2000s to reduce the risk of asbestos exposure.

In the base case scenario, it is expected that the risks and severity of asbestos exposure would continue to decrease over time due to the previous phase out of many uses of asbestos both nationally and on the international market, as well as more stringent worker occupational health and safety measures that have been put in place in the last few decades. There are also a number of new federal measures that have been announced in addition to the Regulations (see Background section). For example, in 2017, regulatory amendments were established to lower limits on acceptable concentrations of asbestos allowed in the air in federal workplaces. Therefore, it would not be possible to attribute all observed reductions in asbestos exposure to the Regulations.

In the policy scenario, it is expected that the Regulations would reduce asbestos exposure from future imports, and certain uses of asbestos and products containing asbestos. It is expected that reductions in risk would start in 2019, gradually increasing over time as products containing asbestos reach their end of life and are replaced with asbestos-free products. However, legacy asbestos (such as materials containing asbestos found in older homes and buildings) is not covered by the Regulations, so there would be no effects on risk for workers who deal with legacy asbestos. In addition, the risks of alternative substances used to replace asbestos are not known in all cases and could vary depending on the product or use. ³⁷

In order to estimate the reductions in adverse health outcomes due to reducing asbestos exposure, it would be necessary to calculate the dose-response relationships between exposure levels and rates of adverse health outcomes. This information would have to be combined with the number of workers exposed both with and without the Regulations, along with their levels of exposure, in order to determine the reduction in avoided adverse outcomes. However, given uncertainties in estimating risk levels, particularly in the base case scenario, it is not possible to estimate the magnitude of incremental risk reduction and associated health benefits.

Overall, the Regulations are expected to result in incremental reductions in risk of asbestos exposure. Due to latency effects, the health benefits from reductions in risk of exposure are expected to be generated at least 10 to 40 years after the implementation of the Regulations. Although the incremental risk reductions for each industry cannot be fully quantified, they can be described qualitatively.

Exposure and risks of workers covered by the Regulations

Currently, about 140 000 Canadians may be exposed to asbestos in sectors expected to be affected by the Regulations, and over 99% of these workers are in the construction, trades, and automotive

repair and maintenance industries. Table 4 shows the number of workers potentially exposed to asbestos by industry, where incremental reductions in exposure are expected to occur due to the Regulations. ³⁸

Table 4: Number of workers potentially exposed by industry

Industry	Estimated number of workers exposed	Percentage of all exposed workers
Chlor-alkali	5	<1%
Waste disposal	1 700	1%
Automotive	4 300	3%
Construction	134 000	96%
Total	140 000	100%

Note: Numbers may not sum to total due to rounding.

The likelihood of developing asbestos-related diseases can vary depending on the length of the asbestos fibres, the concentration of asbestos, the length of exposure, and the frequency of exposure. ³⁹ Since the Regulations do not cover legacy asbestos, these numbers represent an upper bound estimate for potential reductions in exposure.

Construction and trades workers: Workers in the construction industry may be exposed to asbestos through the handling, installation, demolition or maintenance of materials containing asbestos. For example, cutting into cement pipes containing asbestos could release asbestos fibres into the air, which could then be inhaled by workers. Construction and trades workers may not be aware of the presence of asbestos or products containing asbestos in the workplace. This could put them at risk for exposure if the necessary safety precautions are not taken.

The Regulations would reduce asbestos exposure for these workers from future imports of asbestos and products containing asbestos that are currently used in the construction industry (such as cement pipes containing asbestos). It is estimated that about 134 000 workers (or 14%) in the construction/trades industry in Canada could be exposed to asbestos in the workplace. However, this estimate would include workers who are exposed to legacy asbestos. The number of exposed workers that would be covered by the Regulations would be lower than these estimates since the Regulations do not address legacy asbestos.

Automotive repair and maintenance workers: In the automotive industry, most brakes, clutches, and other friction materials used in new and recent model vehicles do not contain asbestos. However, asbestos present in old or replacement brakes and clutches has not been totally eliminated. Many mechanics and employees in automotive repair shops, as well as home mechanics, are unaware that asbestos may be present in old or replacement parts. Consequently, automotive technicians and mechanics who repair and replace brakes and clutches may not be taking the proper precautions when working with products containing asbestos. Brake and clutch dust is released when a brake disk, drum, clutch cover, or wheel is removed from a car, truck, or other equipment. Therefore, if these products contain asbestos, the dust may contain asbestos fibres that could be released and inhaled. ⁴⁰

It is estimated that about 4 300 workers (or <5%) in the automotive repair and maintenance industry could be exposed to asbestos due to the removal of friction materials containing asbestos (e.g. brake pads and clutches). In the first few years after the Regulations come into force, exposure could still occur due to asbestos friction materials that may have been installed before the coming into force of the Regulations. However, health benefits would be realized relatively quickly, since the useful lifespan of friction materials containing asbestos is fairly short (around five years). The Regulations would reduce exposure from friction materials containing asbestos within the first few years after their

implementation.

Chlor-alkali workers: Workers in the chlor-alkali facility may be exposed to asbestos when transporting or handling asbestos to make diaphragms. It is estimated that there would only be five to six workers per year that would be handling asbestos and workplace health and safety procedures are in place to protect against exposure risks. As a result, potential worker exposure in this industry is expected to be low under current operating procedures. Therefore, the Regulations are not expected to significantly reduce the risk of asbestos exposure to chlor-alkali workers, since the base case scenario level of risk is already low.

Waste disposal workers: Waste disposal workers would continue to be exposed, since the Regulations do not cover legacy asbestos. Exposure may increase in the waste disposal industry in the short term due to the disposal of stockpiles of products containing asbestos that would be prohibited after the coming into force of the Regulations. However, the number of stockpiles containing asbestos that would need to be disposed of as a result of the Regulations is expected to be negligible compared to legacy asbestos in building materials that require disposal. Over time, it is expected that future exposure would eventually decrease. However, given that waste disposal workers are more likely to follow strict occupational health and safety measures, the base case scenario level of risk is assumed to be relatively low and, incrementally, it is expected that there would not be a substantial reduction in risk due to the Regulations. Therefore, benefits for waste disposal workers are expected to be negligible.

Summary of health benefits

It has been estimated that asbestos was responsible for approximately 1 900 lung cancer cases and 430 mesothelioma cases in Canada in 2011. These cases are heavily influenced by historical exposure from the 1970s to the 1990s. The use of asbestos has been steadily declining over the last 30 years, which has already led and will continue to lead to a reduction in the number of asbestos-related illnesses in Canada. There are also measures in place to limit Canadian exposure to asbestos in the workplace, but this occupational risk can only be fully eliminated by ensuring that asbestos is replaced by alternatives.

It may be reasonable to expect that the Regulations would prevent at least five lung cancer or mesothelioma cases per year, given that coverage would extend to more than 140 000 workers primarily in the construction and automotive sectors. There are estimates that the societal costs of mesothelioma or lung cancer attributable to asbestos exposure are approximately \$1 million per case. Given the latency effects of asbestos exposure, benefits would not be expected to occur until 10 to 40 years after the implementation of the Regulations; therefore, the present value of future benefits per case would be lower than the value of current cases. For example, \$1 million per case in 2050 would be valued at about \$380,000 per case today (discounted at 3% per year). Thus, if the Regulations prevented approximately five cases of lung cancer or mesothelioma in 2050, the monetized benefits would be worth about \$2 million today (5 cases in 2050 would be worth \$2,014,000 today).

Summary of benefits and costs

Between 2019 and 2035, the Regulations would result in administrative costs to industry and the Government of \$4 million (about \$294,000 per year), and substitution costs of \$29 million (about \$2 million per year) for the cement and automotive industries. The high-cost scenario presents a shift in production in the chlor-alkali sector, resulting in net production losses of about \$45 million between 2030 and 2035 (about \$8 million per year). In this scenario, the total costs of the Regulations are estimated to be \$79 million (about \$5 million per year). The costs and benefits associated with the Regulations are summarized in Table 5.

Table 5: Summary of costs and benefits

Monetized impacts (millions of dollars)	2019 to 2029	2030 to 2035	Total
Costs (central analysis)			

Administrative costs	3	1	4
Substitution costs	21	8	29
Production losses	0	45	45
Total costs	24	55	79
Quantitative health benefits			
Amount of asbestos reduced (tonnes)	3 049	1 663	4 712
Qualitative health benefits			
<ul style="list-style-type: none"> • The Regulations are expected to generate health benefits from avoided adverse health outcomes estimated at \$1 million per case of mesothelioma or lung cancer today, or about \$380,000 if the outcomes occur in 2050. • Due to latency effects, reductions in adverse health outcomes would not occur until 10 to 40 years after the implementation of the Regulations. • Approximately 99% of the 140 000 workers who would potentially benefit from the Regulations are employed in the construction and automotive industries. 			

Note: Monetary values are discounted to present value using a 3% discount rate. Numbers may not sum to total due to rounding. The amount of asbestos reduced includes asbestos contained in products.

The government administrative costs are estimated to be about \$4 million, and the administrative and compliance costs for the construction and automotive sectors are estimated to be about \$30 million. It is also estimated that preventing a single case of lung cancer or mesothelioma provides a social welfare benefit valued at over \$1 million today. Given the latency effects of asbestos exposure, benefits would not be expected to occur until 10 to 40 years after the implementation of the Regulations; therefore, the present value of future benefits per case would be lower than the value of current cases. For example, \$1 million per case in 2050 would be valued at about \$380,000 per case today (discounted at 3% per year). Therefore, if the Regulations can prevent at least five cases of lung cancer or mesothelioma each year (5 cases on average), for a period of at least 17 years, then the health benefits for these sectors (\$34 million) would be expected to justify the associated administrative and compliance costs (\$34 million).

The Regulations are not expected to significantly reduce adverse asbestos-related health outcomes for chlor-alkali workers, since few of these workers handle asbestos and their current risk of exposure is expected to be low given current safety protocols. The cost-benefit analysis presents a high-cost scenario where Canadian chlor-alkali production currently using asbestos would shift production outside Canada, in 2030, resulting in Canadian production losses estimated at \$8 million per year.

Analysis for the low-cost chlor-alkali compliance scenario

There is uncertainty around the most likely compliance option that would be taken by the chlor-alkali industry. In the analysis of the high-cost scenario (see Table 5), the Regulations would result in costs due to a shift in production outside Canada. Alternatives to the asbestos-based process for chlor-alkali exist, and the exclusion to the end of 2029 would provide 11 years of lead time to comply with the Regulations. In the low-cost scenario, the chlor-alkali facility could choose to switch to membrane technology, which would enable the continued operation of the plant. An analysis in which the necessary investments would be made to adopt membrane cell technologies is also presented. It is estimated that this compliance option would require a capital cost of \$113 million between 2019 and 2029, with average energy savings of \$29 million per year beginning in 2030. In this analysis, the Regulations would result in net compliance cost savings of \$29 million over the time frame of analysis. However, it is important to note that as the net compliance costs and cost savings presented are based on publicly available information, these estimates may differ from the actual costs and

savings incurred by this facility. Table 6 illustrates the estimated cost and cost savings impacts of the low-cost scenario.

Table 6: Summary of the low-cost chlor-alkali compliance scenario (millions of dollars)

Monetized impacts	2019 to 2029	2030 to 2035	Total
Capital costs	113	0	113
Energy costs (savings)	0	(171)	(171)
Total net costs (savings)	113	(171)	(58)

Note: Monetary values are discounted to present value using a 3% discount rate. Numbers may not sum to total due to rounding.

The likelihood of a shift in production (the analysis of the high-cost scenario) could vary depending on the magnitude of the capital costs and energy savings that would result from a switch to membrane cell technology or asbestos-free diaphragms. Table 7 below shows how the net savings vary depending on the magnitude of the capital cost and energy savings in the low-cost analysis.

Table 7: Sensitivity analyses of chlor-alkali impacts (millions of dollars)

Scenarios	Net costs (savings)
Analysis of the high-cost scenario	
Main analysis (from Table 5)	45
Analysis of the low-cost scenario	
Higher cost savings (50%)	(144)
Lower capital costs (50%)	(115)
Main analysis (from Table 8)	(58)
Higher capital costs (50%)	(2)
Lower cost savings (50%)	27

Note: Monetary values are discounted to present value using a 3% discount rate.

The chlor-alkali facility would likely face a trade-off in terms of the value of energy savings versus the associated capital costs. However, this would depend on a variety of factors, such as expected energy prices and the marginal cost of production at plants.

Cost per tonne analysis

In the high-cost scenario there are net costs and in the low-cost scenario there are cost savings. The costs (and cost savings) per tonne have been calculated for both scenarios. It is estimated that about 4 700 tonnes of asbestos use would be reduced between 2019 and 2035. Table 8 below shows the costs (or savings) per tonne for each sector.

Table 8: Costs (or savings) per tonne of asbestos use reductions (2019 to 2035)

Sector	Costs/savings (dollars)	Asbestos reductions (tonnes)	Cost per tonne (dollars)
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Construction (including cement pipe manufacturing)	8,000,000	2 478	3,228
Automotive repair and maintenance	21,300,000	1 978	10,766
Chlor-alkali (high-cost scenario)	45,000,000	255	176,321
Chlor-alkali (low-cost scenario)	(58,000,000)	255	(228,866)

Note: Monetary values are discounted to present value using a 3% discount rate.

These costs (or cost savings) per tonne results reflect expected economic costs, compliance costs and cost savings to reduce imports, and uses of, asbestos and products containing asbestos. These results do not account for when reductions occur, their relative contribution to incremental health risk reductions or for the value society may place on avoided adverse health outcomes.

It has been estimated that about 140 000 workers may be exposed to asbestos. Table 9 below shows the costs (or savings) per potentially exposed worker for each sector.

Table 9: Costs per worker (2019 to 2035)

Sector	Costs/savings (dollars)	Number of workers	Cost per worker (dollars)
Construction (including cement pipe manufacturing)	8,000,000	134 000	60
Automotive repair and maintenance	21,300,000	4 300	4,953
Chlor-alkali (high-cost scenario)	45,000,000	5	9,000,000
In the low-cost chlor-alkali scenario there would be cost savings per worker.			

Note: Monetary values are discounted to present value using a 3% discount rate. The waste disposal industry is not included because it would not bear any costs.

The results of the costs per potentially exposed worker reflect expected compliance costs and production losses to reduce the risk of exposure for workers in each sector. As shown above, 99% of potentially exposed workers would be covered by the Regulations at a cost per worker of about \$5,013. To cover the remaining 1% of potentially exposed workers, a cost per worker of \$9 million would be required. These estimates do not account for when workers might be exposed, or their relative risk of exposure.

The costs per worker in the chlor-alkali sector are much higher than any estimate of potential health benefits per worker. However, under the low-cost scenario, the chlor-alkali cost savings would lead to a more favourable result: net cost savings per potentially exposed worker in this sector.

Distributional analysis of regulatory impacts

The impacts of the Regulations are not uniformly distributed across society, so the analysis has considered a range of distributional impacts. Most of the costs are carried by the chlor-alkali sector, specifically at a facility located in Quebec.

Competitiveness and consumer impacts

For the cement and automotive industries, the Regulations would result in substitution costs of \$29 million that could affect their profitability. It is also expected that some of the costs to industry would be passed on to consumers. A breakdown of these costs by industry is presented below in

Table 10.

Table 10: Monetized impacts by industry per year (millions of dollars)

Industry	Costs per year	Annual sales (2015) ⁴¹
Cement pipe manufacturing	<1	70
Automotive repair and maintenance	1	17,071

Note: Costs per year calculated using a 3% discount rate.

These costs constitute less than 1% of annual industry sales for the cement pipe manufacturing sector and the automotive repair and maintenance sector. Impacts on the international competitiveness of the Canadian industry are anticipated to be negligible.

Consumers purchasing products (such as consumers that purchase aftermarket parts that are sold to them upon vehicle repairs and maintenance) would be directly affected by the Regulations, and are likely to see some costs passed on to the prices of final goods. The extent to which businesses are able to pass on the incremental costs to consumers through higher prices would determine the ultimate distribution of costs between businesses and consumers.

For the chlor-alkali industry, manufacturing sales in Canada were about \$350 million in 2016. In the high-cost scenario, it is assumed that one chlor-alkali facility may choose to shift production outside Canada. In this scenario, there may be \$8 million in net forgone production per year as of 2030 (after the expiration of the time-limited exclusion on December 31, 2029). This represents about 2% of annual industry sales in Canada.

Alternatively, this facility may comply with the Regulations by maintaining production in Canada and investing in alternative technology. In this analysis, there are expected to be minimal production impacts for the chlor-alkali sector should the facility need to partially reduce production to make the necessary capital upgrades.

Regional impacts

There is one chlor-alkali facility in the Trois-Rivières region of Quebec that currently uses asbestos in its processes. In the high-cost scenario, the facility is assumed to shift production outside Canada. As a result, there would be adverse regional impacts in terms of net forgone economic production. The facility's projected reduction in production is about \$8 million per year on average. The Trois-Rivières region of Quebec had an estimated GDP of \$5.5 billion in 2013. This suggests that net forgone production could be 0.1% of regional GDP.

In this analysis, changes in chlor-alkali production would also result in labour market impacts for the region. In 2016, approximately 10 000 people were directly employed in manufacturing in the Trois-Rivières region, representing approximately 14% of the region's total employment. Between 2013 and 2016, employment in the Trois-Rivières region grew by about 3% per year. ⁴² If the stakeholder shifts production, it is possible that jobs could be lost as a result of the Regulations. If 100 jobs were lost, this would represent approximately 1% of manufacturing jobs in the region.

Alternatively, this facility may choose to comply with the Regulations by maintaining production in Canada and investing in alternative technology. In this analysis, there would be no expected regional impacts for the chlor-alkali sector.

Gender-based analysis impacts

Canadian worker compensation data indicates that, on average, about 96% of asbestos-related injury and fatality claims are made by men. ⁴³ Asbestos exposure primarily occurs in the construction, trades and automotive sectors. These fields are male dominated, and as a result young men working in these industries are most likely to be exposed and become sick when they get older due to the latency effects of asbestos-related diseases. ⁴⁴ In 2011, about 90% of lung cancer/mesothelioma

cases occurred in individuals aged 60 years or older. ⁴⁵ Individuals working in these industries are expected to benefit the most from the Regulations. However, there are still significant numbers of women working in the construction, trades and automotive industries. Women are susceptible to asbestos-related diseases just as men are, though there are some cancers specific to women that may be caused by asbestos exposure, such as ovarian cancer. ⁴⁶ Given that the Regulations would reduce adverse health outcomes attributed to asbestos exposure, there would be no adverse impacts from a gender perspective.

In the high-cost scenario, it is assumed that the one chlor-alkali facility located in Quebec would shift production outside Canada, leading to possible job losses. Given that more men work in manufacturing jobs than women, it is expected that more men would lose their jobs than women. ⁴⁷ However, average data for the industry may not necessarily be representative of the employees at this facility and no related facility-level data was available. Therefore, it is unknown who would actually be affected from a gender-based perspective.

Alternatively, this facility may choose to comply with the Regulations by maintaining production in Canada and investing in alternative technology. In this analysis, there would be no expected job losses or gender-based impacts for this sector.

“One-for-One” Rule

The Regulations are considered to be an “IN” under the Government of Canada’s “One-for-One” Rule, while the repeal of the *Asbestos Products Regulations* is considered an “OUT.” It is expected that the regulatory changes will result in an increase in annualized average administrative burden costs of around \$13,000, or \$47 per business. ⁴⁸ This represents a decrease from the annualized average administrative burden costs presented in the analysis of the proposed Regulations published in the *Canada Gazette*, Part I, due to the removal of the 60-day notification requirement for excluded substances under the Regulations.

The Regulations will increase administrative burden. It is expected that 83 stakeholders will need 3 hours to familiarize themselves with the administrative requirements of the Regulations. These stakeholders include laboratories, chlor-alkali facilities, and nuclear facilities. If these stakeholders wish to import and/or use asbestos or products containing asbestos under one of the Regulations’ limited exclusions, they will be required to submit a report on their import or use to the Minister by March 31 of the following calendar year. For the chlor-alkali sector, the time-limited exclusion for this specific use will expire at the end of 2029 and reporting will continue until the following year. It is estimated that reporting will take 3.5 hours per year. For the nuclear sector, the time-limited exclusion for the import, use, or sale of replacement parts containing asbestos will expire at the end of 2022 and reporting will continue until the following year. Subsequently, it is assumed that there will be 15 permit applications for the import or use of products containing asbestos every 3 years with a similar reporting requirement at the end of each 3-year permit. It is estimated that reporting and permit applications will each take 3.5 hours to complete.

It is estimated that there will be one permit application for the import or use of asbestos or products containing asbestos for unforeseen circumstances where asbestos or products containing asbestos will be required to protect the environment or human health and where there will be no technically or economically feasible alternative. This stakeholder will be subject to the same reporting requirements and it is estimated to take 3.5 hours to complete a permit application.

The ESECLR Amendments will require 58 potential asbestos exporters to familiarize themselves with the administrative requirements (one hour), and provide a prior notification of export for each export (half an hour). It is also estimated that these potential exporters will apply for permits for the authorization to export (one hour).

Small business lens

It is estimated that the Regulations and ESECLR Amendments will affect 269 businesses, of which 178 are estimated to be small. Therefore, the Regulations trigger the small business lens.

The Regulations and ESECLR Amendments do not provide specific flexibilities for small businesses. Small businesses have generally expressed support of the Regulations. Most small businesses are laboratories or are in the automotive industry. Use of asbestos in laboratories is allowed under the Regulations. As well, the auto industry has indicated that automotive mechanics and their employers may not be aware that asbestos could be contained in brake pads and may not be taking the necessary precautions needed when working with products containing asbestos. Thus, the auto industry is supportive of the Regulations.

The cement industry, where there are also a number of small businesses, has raised concerns about the coming-into-force date of the Regulations. Some representatives from the industry have raised concerns about the lack of adequate phase out time to move to asbestos-free products, and the time it will require to obtain certification for new products coming to market. In consideration of these concerns, the Regulations could delay the coming-into-force date for the cement industry by a year (flexible option) to allow sufficient time to transition to asbestos-free products. The comparison of the Regulations (initial option) and the flexible option is presented in the Regulatory Flexibility Analysis Statement below.

Table 11: Regulatory Flexibility Analysis Statement

	Initial option (Regulations and ESECLR Amendments)		Flexible option (coming into force for the cement industry is 2020)	
<i>Number of small businesses impacted</i>	178		178	
	Annualized value	Present value	Annualized value	Present value
Compliance costs	\$517,000	\$7,017,000	\$514,000	\$6,976,000
Administrative costs	\$13,000	\$183,000	\$13,000	\$183,000
<i>Total costs</i>	\$530,000	\$7,195,000	\$528,000	\$7,158,000
<i>Total cost per small business</i>	\$2,780	\$37,696	\$2,764	\$37,480

Note: Monetary values are discounted to 2017, using a 3% discount rate. Numbers may not sum to total due to rounding.

Overall, the flexible option would result in an estimated reduction of total costs to small business of about \$41,000 between 2019 and 2035 relative to the initial option under consideration, or an annual cost of about \$16 per small business. In addition, the flexible option would provide small businesses in the cement sector additional time to sell off inventory and to confirm alternatives.

However, this would also delay the reduction of risk for workers in the construction sector, which would not meet the objective of the Regulations. Furthermore, asbestos-free certified products exist on the market and the Regulations will not require reformulation of mixtures or redesigning of products. For these reasons, the flexible option was rejected.

Consultation

Consultation prior to the publication of the proposed Regulations and proposed ESECLR Amendments in the *Canada Gazette*, Part I

Consultations prior to the publication of the proposed Regulations began on December 17, 2016, and concluded on June 4, 2017. The consultations were conducted in two stages. In December 2016, a Notice of Intent was issued indicating the initiation of the development of the proposed Regulations

under CEPA. This was followed by a 30-day consultation period. In April 2017, a consultation document on the regulatory approach to prohibit asbestos was published with the objective to inform stakeholders of the proposed regulatory approach and request additional comments. Throughout the preliminary consultation period, Environment and Climate Change Canada organized public consultations on the proposed regulatory approach. This included 2 webinars held in French and English and attended by a total of 79 participants. The CEPA National Advisory Committee was also informed of the proposed regulatory approach. Efforts were made to ensure all stakeholders potentially impacted were informed and given the opportunity to participate in the consultation process.

The preliminary consultation period concluded in June 2017. In total, 70 written submissions were received from 58 stakeholders including municipal and regional (Quebec) representatives; industry and industry associations (chlor-alkali, automotive, cement, construction/trades, and others); non-governmental and labour organizations; provincial ministries; crown corporations; and individuals. Stakeholders were largely supportive of the proposed Regulations and the proposed ESECLR Amendments. The comments received helped identify areas that required clarification as well as areas of concern. After analyzing these comments, the Department modified the proposed Regulations and proposed ESECLR Amendments. A summary of the key comments were included in the RIAS that was published with the proposed Regulations in the *Canada Gazette*, Part I.

Consultation following the publication of the proposed Regulations and proposed ESECLR Amendments in the *Canada Gazette*, Part I

The proposed Regulations and proposed ESECLR Amendments were published in the *Canada Gazette*, Part I, on January 6, 2018, which initiated a 75-day public comment period where interested parties were invited to submit their written comments. The proposed Regulations were posted on the Department's CEPA Environmental Registry website to make them broadly available to interested parties. The Department emailed interested parties to inform them of the public comment period. The Department also sent a letter to the CEPA National Advisory Committee members to inform them of the publication of the proposed Regulations and of the opportunity to advise and submit written comments.

During the comment period, the Department received 56 written submissions from a range of stakeholders including municipal and regional (Quebec) representatives; industry and industry associations (chlor-alkali, cement, construction/trades, and others); non-governmental and labour organizations; health and safety institutes; provincial ministries and agencies; crown corporations; one international agency; and individuals. Interested parties generally supported the proposed Regulations and proposed ESECLR Amendments.

Various stakeholders requested modifications to the regulatory text to improve clarity. As well, some stakeholders requested clarifications regarding the regulatory text and its applicability. The Department has considered and addressed these concerns by providing explanations or by making modifications to the regulatory text. The following paragraphs summarize the main issues raised by interested parties with respect to the proposed Regulations and proposed ESECLR Amendments published in the *Canada Gazette*, Part I, and the Department's consideration of these issues leading to the finalization of the Regulations and ESECLR Amendments.

Non-application of the Regulations to asbestos mining residues

Comment: Non-governmental and labour organizations requested removing the exemption of asbestos mining residues from the Regulations. In addition, the Regional Directors of the 18 public health regions of Quebec submitted a notice of objection to the non-application of the Regulations to asbestos mining residues. They expressed concerns regarding insufficient control of exposure to asbestos fibres from asbestos mining residues in the air for both workers and the public. They requested the establishment of a board of review and suggested that the proposed Regulations establish criteria to manage the risks associated with their use. Along with their notice of objection, the Regional Directors of Public Health provided a number of recommendations regarding risk management of asbestos mining residues.

Response: The Department did not establish a board of review and maintained the non-application of the Regulations to asbestos mining residues. It was determined that the Quebec provincial government has regulatory controls in place to sufficiently manage the risks associated with the use of asbestos mining residues in Quebec. Numerous instruments are in place across Canada that govern the health and safety of workers and help ensure their protection from asbestos mining residues. This decision is also in line with the Government of Canada's public commitment to exclude asbestos mining residues from the regulatory approach, made during its public announcement of asbestos prohibition on December 15, 2016.

Comment: Municipal and regional stakeholders in Quebec and some industry associations requested the removal of the prohibition on the use of asbestos mining residues for construction and landscaping activities. They suggested that any risks associated with the use of asbestos mining residues can be mitigated through safe use and handling, as well as provincial health and safety requirements already in place. Regional stakeholders expressed further concerns that the proposed Regulations would discourage interest in the use of asbestos mining residues, which could impede the economic development of their regions.

Response: The use of asbestos mining residues in construction or landscaping activities poses a risk to the health of workers and the health of the general public. Therefore, the Regulations' prohibition of the sale of asbestos mining residues for use in these activities is maintained. It will also continue to allow the sale for uses that are authorized by the province for the rehabilitation and restoration of asbestos mine sites or mining accumulation areas. The Regulations will also continue to prohibit the use of asbestos mining residues to manufacture a product that contains asbestos. However, the Regulations will maintain that the use of asbestos mining residues to manufacture asbestos-free products, such as magnesium, is permitted.

Inventories of products containing asbestos

Comment: Industry stakeholders requested clarity regarding the application of the Regulations to products in inventory that contain asbestos and the requirements to dispose of products containing asbestos in inventory once the Regulations come into force. Comments were received from multiple non-governmental and labour organizations requesting that the Regulations impose a disposal deadline.

One stakeholder from the cement pipe industry noted that there are no asbestos-free equivalents to the cement pipes they currently sell. They requested additional time to sell and use asbestos-cement pipes already in inventory to allow them to continue their operation while finalizing the development of an asbestos-free cement pipe.

Response: The Regulations do not apply to products containing asbestos used before the day that the Regulations come into force. The sale or use of products containing asbestos in inventory is prohibited under the Regulations. The export of these products is also prohibited, with a limited number of exceptions, under the ESECLR Amendments. While the Department acknowledges concerns regarding stockpiles of products containing asbestos that could enter the Canadian market, information collected through mandatory surveys indicates that, with the exception of the cement pipe industry and replacement parts for equipment in nuclear facilities and for military equipment, there are no other known stockpiles of products containing asbestos in Canada. Therefore, the Department will maintain that the Regulations will not require the disposal of asbestos or products containing asbestos and would allow their use in military and nuclear equipment only when there is no technically or economically feasible asbestos-free alternatives available through specific exclusion or under the issuance of a permit.

Further, the Department will maintain the prohibition on the sale and use of asbestos-cement pipes in inventory. Allowing the sale and use of asbestos-cement pipes would introduce additional products containing asbestos to the Canadian market, which is contrary to the objective of the Regulations.

Recycling and re-use of asphalt containing asbestos

Comment: Numerous stakeholders from provincial governments, as well as an industry association

recommended that the recycling or re-use of asphalt containing asbestos for road construction or mine restoration, which would have been prohibited under the proposed Regulations, continue to be allowed. Concerns were expressed regarding the economic impacts resulting from prohibiting this activity and the associated increase of waste diverted to landfills. These stakeholders requested that the Department engage in further consultations to evaluate the health, economic, and environmental impacts of this activity.

Response: In response to stakeholders' concerns regarding prohibiting the recycling and re-use of asphalt containing asbestos, the Department has modified the Regulations to provide an ongoing exclusion for the re-use of asphalt containing asbestos in road infrastructure or asbestos mining sites restoration, if such asphalt was used in road infrastructure before the Regulations come into force. When making this decision, the Department took into account federal and provincial occupational health and safety regulations in place to protect workers from exposure to asbestos present in asphalt.

Time-limited exclusion for the chlor-alkali industry

Comment: Industry associations raised concerns regarding the detrimental effects of a halt in Canadian chlorine production should a chlor-alkali facility close and shift production as a result of the Regulations. Comments from industry and industry associations also noted that the time-limited exclusion for the chlor-alkali industry specified in the proposed Regulations would not provide enough time for a facility to safely convert to asbestos-free technology. The only facility using asbestos in their chlor-alkali manufacturing process requested a longer time-limited exclusion than provided by the proposed Regulations. In addition, an international agency suggested that the Canadian government consider outlining use conditions as opposed to a prohibition.

While some non-governmental and labour organizations opposed the time-limited-exclusion for the chlor-alkali sector, other stakeholders suggested that the exclusion be accompanied by a requirement for the development and implementation of rigorous asbestos management plans and regular reporting. They also suggested that the Government of Canada assist the transition of this industry to non-asbestos technology to support affected workers and communities.

Response: The risk of exposure for workers who handle asbestos in the chlor-alkali facility is expected to be limited given information provided on the health and safety practices currently in place at the facility. In addition, the products manufactured in a chlor-alkali facility do not contain asbestos, resulting in no risk of exposure for the general population of Canada. As a result of information obtained during the consultation period after the publication of the proposed Regulations in the *Canada Gazette*, Part I, and in consideration of socio-economic factors, the Department has modified the Regulations. The time-limited exclusion for the import and use of asbestos in existing chlor-alkali production facilities has been extended from the initially proposed date of December 31, 2025, to December 31, 2029.

The extension of the time-limited exclusion will provide the chlor-alkali industry with 11 years to comply with the Regulations, which is similar to the time-limited exemption provided by the ECHA to the European chlor-alkali industry after it implemented a similar prohibition on asbestos. This extension is expected to provide the facility with sufficient time to develop and test new technology and implement necessary adjustments to comply with the Regulations. This exclusion includes labelling, reporting and record-keeping requirements, as well as the need to prepare an asbestos management plan. Occupational health and safety regulations will continue to apply to help protect workers.

Replacement parts for nuclear facilities

Comment: Nuclear facilities have highlighted that they have in their inventories replacement parts containing asbestos that are no longer manufactured. These parts were often manufactured or purchased at the same time as the equipment (i.e. nuclear reactors) and are designed to meet highly technical operating conditions. Nuclear sector stakeholders, and a nuclear sector regulatory agency requested additional time to identify and obtain asbestos-free replacement parts, as well as an exclusion to use or import specific replacement parts containing asbestos, when technically or

economically asbestos-free alternatives are not available.

Response: The Department has modified the Regulations to include a four-year time-limited exclusion for the import, use or sale of replacement parts containing asbestos for nuclear facilities. This exclusion requires annual reporting and a statement that no technically or economically feasible asbestos-free alternative was available. After the four-year exclusion, the Regulations include a permitting scheme for the import, use or sale of replacement parts containing asbestos for nuclear facilities. The permitting scheme requires annual reporting and a statement that no technically or economically feasible asbestos-free alternatives are available. The health and safety of workers are protected by provincial and territorial occupational health and safety regulations.

Risk-based health effects

Comment: Three individuals along with some industry associations, and municipal and regional stakeholders, recommended that the Canadian government evaluate current scientific evidence on asbestos, take a risk-based approach to addressing exposures of concern, and consider that chrysotile asbestos does not pose the same health risks as other forms of asbestos when handled in a safe and controlled manner.

Response: After reviewing stakeholders' feedback, the Department has decided to maintain its approach towards the prohibition of all forms of asbestos, including chrysotile asbestos. All forms of asbestos have been reviewed by the WHO International Agency for Research on Cancer and have been declared carcinogenic to humans. The most effective way to eliminate future exposure to asbestos is by prohibiting new asbestos from entering the Canadian market. Further, publicly available information indicates that technically and economically feasible asbestos-free alternatives exist for most known uses across industries.

Thresholds for establishing incidental presence

Comment: Stakeholders requested that a threshold be established for determining incidental presence of asbestos in a product or mixture. Stakeholders recommended that the proposed Regulations establish a threshold of 0.1% of asbestos by weight, under which the Regulations would not apply. One non-governmental organization suggested that no concentration threshold be applied to consumer products in Canada. Further, some industry stakeholders and an association requested clarification regarding the application of the Regulations to products incorporating or made from mined materials that may contain trace amounts of naturally occurring asbestos, as there could be significant economic impacts (including impacts on product availability and on suppliers) if they are prohibited.

Response: The objective of the Regulations is to prevent asbestos from entering the Canadian market. The Regulations do not establish a threshold for the presence of processed asbestos fibres in products. The Department has also assessed stakeholders' feedback regarding products that may contain trace amounts of naturally occurring asbestos. The term "incidentally present" was proposed with the intent to exclude trace amounts of naturally occurring asbestos in products that present a low risk to human health. However, the use of the term "incidentally present" led to confusion among stakeholders regarding whether or not naturally occurring asbestos in these products would be prohibited. For purposes of clarification, the final Regulations now specifically prohibit consumer products containing naturally occurring asbestos "above trace amounts." Guidance material has been prepared and will be made available to stakeholders to provide information on the prohibition of naturally occurring asbestos above trace amounts in consumer products.

Notification, reporting, and record-keeping requirements

Comment: Stakeholders from industry and a health and safety research institute have indicated that the 60-day notification period, as described in the proposed Regulations for excluded activities, is not practical in all situations and could interfere with the ability of these organizations to carry out activities in which time is a limiting factor. Further, some non-governmental and labour organizations commented that all documentation and reports related to exclusions should be made publicly available, and suggested that an annual report on asbestos should be prepared for public release and

review.

Response: In consideration of these comments, the Department has updated the Regulations to no longer require a 60-day notification period. The information that was included in the notification will continue to be provided by the regulated community in the annual report. Further, the Department will publish information related to the implementation of the Regulations summarizing information submitted in reports and permits under the Regulations.

Export controls

Comment: One facility requested that the export of equipment containing asbestos be allowed for the purpose of removing the asbestos, and subsequently allow its import back into Canada.

Response: After consideration of this comment, the ESECLR Amendments have been modified to include an allowance to export asbestos, whether or not it is contained in a product for the purpose of disposal. Once the asbestos is removed from the product, the Regulations and their prohibition on import would no longer apply.

Comment: Some non-governmental and labour organizations recommended that the export of asbestos and products containing asbestos be prohibited, the movement of stockpiles of asbestos be prevented and that Canada go beyond its commitment under the Rotterdam Convention.

Response: The Department has modified the ESECLR Amendments to clearly prohibit the export of asbestos, whether or not it is contained in a product, with only certain specific exceptions, in line with those in place under the Regulations. Exports allowed under these exceptions require a prior notification of export and that information, such as labels and safety data sheets accompany exported chemicals in certain cases. Canada will be going beyond its commitment under the Rotterdam Convention by ensuring that information regarding asbestos is shared with all importing countries, regardless of whether they are Party to the Convention. Further, as previously mentioned, while the Department acknowledges the concerns regarding stockpiles, information collected through mandatory surveys indicates that, with the exception of the cement pipe industry, there are minimal stockpiles of products containing asbestos.

Compliance costs and regulatory impacts

Comment: Some industry stakeholders and industry associations have indicated that the Department underestimated compliance costs attributable to the Regulations. Some stakeholders indicated that the costs of adopting alternative technology in the chlor-alkali industry would be higher than the Department's estimates. They indicated that the analysis does not fully account for the highly involved and costly process of converting to membrane cell technology. Stakeholders also indicated that the analysis does not take into account that operations may be greatly impacted due to the changing, testing, and recalibrating of components of the manufacturing process when converting to membrane cell technology. Outside the chlor-alkali industry, stakeholders indicated that the cost analysis does not take into account costs associated with the disposal of inventories of products containing asbestos to comply with the proposed Regulations.

Response: When conducting the cost analysis for the chlor-alkali industry under the proposed Regulations, the Department referred to publicly available information on alternative asbestos-free technologies. In this regard, the Department used publicly available average capital costs of chlor-alkali facilities that have converted their diaphragm technology to membrane cell technology. The cost analysis of the compliance scenarios for the chlor-alkali industry has been updated to qualitatively state that operations and productions of the chlor-alkali facility might be impacted throughout the process of converting to membrane cell technology. As for costs associated with the disposal of inventories of products containing asbestos, the analysis did not attempt to estimate them as disposal costs are expected to be low in comparison with substitution costs.

Comment: Non-governmental and labour organizations indicated that the analysis does not provide sufficient consideration for past exposure to asbestos in the chlor-alkali industry, nor does it define the required workplace health and safety procedures necessary to eliminate all asbestos exposure.

Response: When conducting the impact analysis of the Regulations, the Department places a high value on protecting health and human life and assesses the benefit of proposed measures in terms of the likelihood that they will reduce risks to health and human life. In this case, risks were assessed in terms of likelihood of future exposure using the number of potential workers affected in the chlor-alkali sector. Both the estimate of risk and the estimate of the number of workers were considered to be low, given the level of provincial regulations and the overall number of affected workers. The Regulations are also aligned with the risk management strategy adopted by the European Union and the ECHA, which has phased out asbestos usage in the chlor-alkali industry over a ten-year period.

Comment: Non-governmental and labour organizations also indicated that the RIAS does not acknowledge that the facility also produces waste containing asbestos. The impacts of the waste stream and life cycle of asbestos should be considered in the decision to provide a time-limited exclusion to the chlor-alkali industry.

Response: While conducting the impact analysis of the Regulations, the Department considered procedures in place at the chlor-alkali facility in terms of waste disposal and handling. These procedures have been considered to be sufficient in addressing aspects related to waste management.

Regulatory cooperation

International cooperation

On December 15, 2016, the Government of Canada announced a set of measures to implement a comprehensive ban on asbestos by 2018. These measures include the Regulations, updates to the national building code (to prohibit the use of asbestos in new construction and renovation projects across Canada), as well as new federal workplace health and safety rules (to limit the risk of people coming into contact with asbestos on the job).

The Regulations will align Canada with over 50 countries that have already taken action to prohibit asbestos and its uses (including the member states of the European Union, Australia and New Zealand). ⁴⁹ In establishing the Regulations and the ESECLR Amendments, Canada will also be going beyond its commitment under the Rotterdam Convention by controlling the import and export of all forms of asbestos (including chrysotile), whether or not it is contained in a product, and ensuring that information regarding asbestos is shared with all importing countries, regardless of whether they are Party to the Convention.

The European Union currently prohibits the manufacture, placement on the market, and use of asbestos, as well as articles and mixtures containing intentionally added asbestos fibres. However, member states could exempt the placement on the market and use of asbestos diaphragms containing chrysotile fibres for existing (as of July 13, 2016) electrolysis installations (provided that such use is carried out in compliance with the conditions of a permit). ⁵⁰ This exemption is time-limited and will be ending on July 1, 2025. The Regulations will include a time-limited exclusion until 2029 for the chlor-alkali industry in Canada. This time-limited exclusion will also be aligned with the European Union's approach for its chlor-alkali facilities.

The United States and Canada currently have similar regulatory measures on asbestos and, therefore, similar ongoing uses of asbestos (e.g. imports of asbestos-containing brake pads, use of asbestos diaphragms in chlor-alkali production). On June 1, 2018, the United States Environmental Protection Agency (U.S. EPA) published an analytical document outlining the risk evaluation for asbestos, as well as a significant new use rule proposal under the *Toxic Substance Control Act* (TSCA) reform. ⁵¹ The importance of regulatory alignment between Canada and the United States and of ensuring a level playing field for Canadian and U.S. companies and enterprises is recognized. The U.S. risk evaluation is expected to be complete by 2019. If it is determined that asbestos poses an unreasonable risk, the U.S. EPA must mitigate the risk within two years following the risk evaluation.

Domestic cooperation

The Regulations will not apply to mining activities, since they are covered under existing regimes. The mining of asbestos in Canada ceased in 2011. Mining activities are currently subject to federal, provincial, and territorial laws, regulations, and requirements. Since the Regulations will prohibit the import, use, sale and export of asbestos, there will be no expected market for asbestos in the future and no incentive to mine asbestos.

For waste management, the responsibility is shared by federal and provincial governments. Provincial legislatures have the power to legislate in certain areas, including activities on provincial public lands, which include waste disposal. Consequently, waste management is primarily a provincial concern. Waste containing asbestos is already managed through both provincial and federal legislation. In general, the federal role in waste management is restricted to waste management on federal lands and the transboundary movement of hazardous wastes. Therefore, the Regulations do not apply to waste management activities.

Regarding pest control products, Health Canada is responsible for pesticide management in Canada, under the authority of the PCPA. Pesticides are only registered after a stringent, science-based evaluation, and Health Canada re-evaluates pesticides on the market on a regular basis to ensure that products meet current, scientific standards (i.e. that there are no unacceptable risks to human health or the environment and that the product has value). Currently, there are no pesticide products containing asbestos registered in Canada.

Rationale

Breathing in asbestos fibres can cause life-threatening diseases, such as asbestosis, mesothelioma and lung cancer. It has been estimated that asbestos was responsible for approximately 1 900 lung cancer cases and 430 mesothelioma cases in Canada in 2011. These cases are heavily influenced by historical exposure from the 1970s to the 1990s. The use of asbestos has been steadily declining over the last 30 years, which has already led and will continue to lead to a reduction in the number of asbestos-related illnesses in Canada. There are also measures in place to limit Canadian exposure to asbestos in the workplace, but this occupational risk can only be fully eliminated by ensuring that asbestos is replaced by alternatives. To do so, Canada needs to prohibit the import and use of asbestos. If Canada implements regulations to do this, then it must also implement controls on exports of asbestos to meet international obligations.

On December 15, 2016, the Government of Canada announced a government-wide strategy to manage asbestos, including the development of new regulations to prohibit asbestos and products containing asbestos by 2018. The Regulations will prohibit future import, sale and use of asbestos and the future manufacture, import, sale and use of products containing asbestos, with a limited number of exclusions. In addition, the ESECLR Amendments, together with the ECL Order, limit the export of asbestos, whether or not it is contained in a product. They also ensure Canada's continued compliance with the Rotterdam Convention, since substances subject to prohibitions or severe restrictions must be controlled so that an exporting Party notifies the importing Party (Article 12 of the Rotterdam Convention). ⁵²

Following the December 2016 announcement, a total of 70 submissions were received between December 2016 and June 2017. Stakeholders are generally supportive but certain stakeholders have requested exemptions for specific uses of asbestos. The Department has taken these comments into consideration when developing the Regulations. For example, the Regulations do not apply to mining residues to allow for redevelopment and rehabilitation of former mine sites. The Regulations also include a time-limited exclusion for the import and use of asbestos in chlor-alkali facilities until 2029 (adjusted from 2025).

The government administrative costs are estimated to be about \$4 million, and the administrative and compliance costs for the construction and automotive sectors are estimated to be about \$30 million. It is also estimated that preventing a single case of lung cancer or mesothelioma provides a social welfare benefit valued at over \$1 million today. Given the latency effects of asbestos exposure, benefits would not be expected to occur until 10 to 40 years after the implementation of the Regulations; therefore, the present value of future benefits per case would be lower than the value of

current cases. For example, \$1 million per case in 2050 would be valued at about \$380,000 per case today (discounted at 3% per year). Therefore, if the Regulations can prevent at least five cases of lung cancer or mesothelioma each year (5 cases on average), for a period of at least 17 years, then the health benefits for these sectors (\$34 million) would be expected to justify the associated administrative and compliance costs (\$34 million).

The Regulations are not expected to significantly reduce adverse asbestos-related health outcomes for chlor-alkali workers, since few of these workers handle asbestos, and their current risk of exposure is expected to be low given current safety protocols. The cost-benefit analysis presents a high-cost scenario where Canadian chlor-alkali production currently using asbestos would shift production outside Canada, resulting in Canadian production losses estimated at \$8 million per year. The analysis also presents a low-cost scenario in which investments would be made to adopt asbestos-free technologies. It is estimated that this scenario would require a capital cost of \$113 million, with average energy savings of \$29 million per year after the conversion. In this scenario, there would be net savings over time. Another alternative technology compliance option involves adopting proprietary asbestos-free diaphragms. In this scenario, it is expected that the chlor-alkali facility would incur capital costs related to facility conversion and diaphragm development. Due to the absence of publicly available data, specific costs and savings were not identified. It is uncertain which compliance scenario the stakeholder will adopt as it will consider costs and benefits in terms of firm profitability. From a firm's viewpoint, each scenario could either minimize capital costs, operating costs, or production losses. The firm is expected to choose the most profitable compliance option, which the analysis cannot confirm. Similar to the ten-year time-limited exclusion given to the European chlor-alkali industry by the ECHA, the stakeholder will have until the end of 2029 to comply with the Regulations.

Strategic environmental assessment

The Regulations have been developed under Canada's Chemical Management Plan (CMP). A strategic environmental assessment (SEA) of the CMP was completed.⁵³ This SEA concluded that activities under the CMP support the Federal Sustainable Development Strategy (FSDS) goal of safe and healthy communities. The 2017 FSDS further indicates that a comprehensive ban on asbestos is a key priority towards meeting this goal.

Implementation, enforcement and service standards

The Regulations and the ESECLR Amendments will come into force 90 days following the date on which they are registered. The Regulations and the ESECLR Amendments are made under CEPA, so enforcement officers will, when verifying compliance, apply the Compliance and Enforcement Policy for CEPA.⁵⁴ The APR will be repealed on the same day the Regulations come into force.

The Department will undertake outreach activities to raise potential stakeholder awareness of the Regulations, the ESECLR Amendments and the associated requirements. The compliance promotion approach for the Regulations will include maintaining a stakeholder database, preparing and delivering compliance promotion materials, and events, such as information sessions, as well as responding to specific inquiries from stakeholders, and reviewing reports and permit applications for completeness and accuracy.

The Department has an existing compliance promotion program associated with the current ESECLR to control exports, which helps exporters determine whether their export activity is subject to the current Regulations and what their obligations would be. The approach for the ESECLR Amendments will include updating the existing guidance document, updating forms for export notifications and permit applications, updating the existing stakeholder database, responding to and tracking inquiries from stakeholders, and reviewing notifications and permit applications for completeness, accuracy and compliance with the regulations and international conventions.

These outreach activities will be complemented by a campaign blitz to verify the degree of awareness/understanding of the regulations, and a performance measurement, to advertise in trade and association magazines, and to hold information sessions. Promotional materials such as fact

sheets and Web materials may be developed, posted, and distributed (email/mail-out to stakeholders).

The Regulations include reporting requirements. The receipt of reports will be acknowledged within 10 working days. The Regulations also include provisions for regulatees to apply for permits issued by the Minister of the Environment. The applications for permits will be reviewed by the Department. The administrative procedure may take up to 60 working days from the receipt of the completed permit application.

When the necessary conditions are met, an exporter should expect approval and issuance of an export permit under the ESECLR Amendments within 10 working days of the receipt of the completed permit application. An exporter should expect acknowledgment of a prior notification of export within 10 working days of the receipt of the completed prior notification of export. The Department will track its performance against the aforementioned service standards.

Performance measurement and evaluation

The expected outcomes of the Regulations are directly related to the commitment made in December 2016 by the Government of Canada to prohibit asbestos and products containing asbestos by 2018. The performance of the Regulations and the ESECLR Amendments in achieving the outcomes described below will be measured and evaluated.

Specific outcomes (immediate, intermediate, and final) have been developed as part of the implementation strategy for the Regulations and the ESECLR. For the Regulations, the expected immediate outcomes are awareness and understanding of the Regulations and their requirements by the regulatees. Expected intermediate outcomes of the Regulations and the ESECLR include regulatees complying with the regulatory requirements. Another immediate outcome for the Regulations is that regulatees do not import, sell or use asbestos nor manufacture, import, sell or use products containing asbestos (excluding non-applications, exclusions, and permit holders), and that non-compliant regulatees become compliant with the regulatory requirements. The expected final outcomes of the ESECLR are that Canada continues to comply with the Rotterdam, Stockholm, and Minamata conventions and that the export of substances on the ECL is controlled. The expected final outcome of the Regulations is that the import, sale, and use of asbestos and products containing asbestos no longer occurs in Canada, with a limited number of exclusions. Therefore, Canadians' potential exposure to asbestos will be reduced as the asbestos and products containing asbestos used before the coming into force date of the Regulations reach their end of life.

For both the Regulations and the ESECLR, quantitative performance indicators have been defined for each outcome and will be tracked through reporting requirements and enforcement activities. These indicators include evaluating the percentage of regulatees who are aware of, and understand, the Regulations and the ESECLR. Another indicator for the Regulations is measuring the decrease in the quantity of asbestos or products containing asbestos that are imported, used and sold. These outcomes will also be evaluated by the number of inspections uncovering non-compliance where an enforcement action was taken, and the percentage of follow-up inspections verifying a return to compliance.

The performance of the Regulations and ESECLR will be assessed annually according to the program evaluation plan. Regular review and evaluation of these performance indicators will allow the Department to evaluate the performance of the Regulations and ESECLR in reaching the intended targets.

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Footnotes

- ^a S.C. 2004, c. 15, s. 31
- ^b S.C. 1999, c. 33
- ^c S.C. 2015, c. 3, par. 172(d)
- ^d S.C. 2009, c. 14, s. 80
- ¹ SOR/2012-134
- ² SOR/2013-88
- ³ Canada, 2016. *Government of Canada to ban asbestos* (<https://www.canada.ca/en/innovation-science-economic-development/news/2016/12/government-canada-asbestos.html?undefined&wbdisable=true>). News release.
- ⁴ WHO, 2012. *Asbestos (Chrysotile, Amosite, Crocidolite, Tremolite, Actinolite and Anthophyllite) Monograph* (<http://monographs.iarc.fr/ENG/Monographs/vol100C/mono100C-11.pdf>). World Health Organization.
- ⁵ A current use profile has been established using data from a number of sources, including Industry, Science and Economic Development Canada's Trade Data Online website (<http://www.ic.gc.ca/eic/site/tdo-dcd.nsf/eng/Home>); responses to a mandatory survey on asbestos (<http://www.gazette.gc.ca/rp-pr/p1/2016/2016-12-17/html/notice-avis-eng.html#nl2>) issued under section 71 of CEPA; comments submitted in response to the notice of intent (<http://canadagazette.gc.ca/rp-pr/p1/2016/2016-12-17/html/notice-avis-eng.php#nl3>) and consultation document for asbestos (<http://www.ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=A5520893-1>); and Environment and Climate Change Canada's National Pollutant Release Inventory.
- ⁶ Canada, 1990. *Canadian Environmental Protection Act, 1999: Asbestos Mines and Mills Release Regulations* (<http://laws-lois.justice.gc.ca/PDF/SOR-90-341.pdf>). P.C. 1990-1111, June 14, 1990, SOR/90-341.
- ⁷ Canada, 2017. *Canadian Environmental Protection Act, 1999: Export of Substances on the Export Control List Regulations* (<http://laws-lois.justice.gc.ca/PDF/SOR-2013-88.pdf>). P.C. 2013-523, May 2, 2013, SOR/2013-88.

- 8 CCOHS 2017. Canadian Centre for Occupational Health and Safety (<http://www.ccohs.ca/oshanswers/>).
- 9 Regulations Designating Regulatory Provisions for Purposes of Enforcement (Canadian Environmental Protection Act, 1999) (<https://www.ec.gc.ca/lcpe-cepa/eng/regulations/detailReg.cfm?intReg=206>), Canada Gazette, Part I.
- 10 In the “One-for-One” Rule section of the Regulatory Impact Analysis Statement (RIAS), these costs are also annualized at \$19,527 in 2012 dollars over a 10-year period (2018 to 2027) using a 7% discount rate as per the Red Tape Reduction Regulations (<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2015-202/page-1.html>).
- 11 Kumagai, S., Nakachi, S., Kurumatani, N., Nakagiri, S., & Kataoka, A. (1993). Estimation of asbestos exposure among workers repairing asbestos cement pipes used for conduits. *Sangyo Igaku*, 35(3), 178-187. doi: 10.1539/joh1959.35.178.
- 12 Tonnes of asbestos reduced estimated using data from the Canadian International Merchandise Trade Database (CIMTD) from 2013 to 2016.
- 13 Assumptions and estimates were based on information provided in the section 71 survey and stakeholder consultations.
- 14 Estimated using Canadian Border Services Agency (CBSA) and CIMTD import data from 2013 to 2016.
- 15 Assumptions were based on stakeholder consultations, and online sources. These were also verified by industry stakeholders.
- 16 Estimated using the CIMTD.
- 17 Estimated using the European Union’s Best Available Techniques (BAT) Reference Document for the Production of Chlor-alkali (<http://www.eurochlor.org/chlorine-industry-issues/chlor-alkali-bref.aspx>).
- 18 Estimated using the European Union’s BAT Reference Document, the 2014 IHS Chemical Economics Handbook for chlorine and sodium hydroxide, and publicly available stakeholder information.
- 19 This includes steam and electricity consumption, assuming energy of 2.5 gigajoules/tonne of steam (at 10 bar and with condensate return at 90°C), a power generation efficiency of 40%, a steam generation efficiency of 90%, and a production ratio of 1.128 tonnes of sodium hydroxide per tonne of chlorine.
- 20 Energy cost savings calculated using departmental electricity price forecasts ranging from 6¢/kWh to 10¢/kWh.
- 21 Estimated using Bloomberg financial data and stakeholder reported information.
- 22 ECHA. 2014. Annex XV Restriction Report-Amendment to a Restriction (https://echa.europa.eu/documents/10162/13641/annex_xvi_chrysotile_en.pdf).

- 23 Estimated using CBSA data. It is assumed that imports of asbestos in the chlor-alkali sector will remain constant over time.
- 24 Assumptions were based on and verified through stakeholder consultations and online sources.
- 25 McGartland, A., Revesz, R., Axelrad, D.A., Dockins, C., Sutton, P., & Woodruff, T.J. (2017). Estimating the health benefits of environmental regulations. *Science*, 357(6350), 457-458. doi: 10.1126/science.aam8204.
- 26 Para-occupational means cases in which the afflicted individual was not exposed through work but rather through a family member who brought asbestos fibres into the home from work.
- 27 Tompa, E., Kalcevich, C., McLeod, C., Lebeau, M., Song, C., McLeod, K., & Demers, P. A. (2017). The economic burden of lung cancer and mesothelioma due to occupational and para-occupational asbestos exposure. *Occupational and Environmental Medicine*. doi:10.1136/oemed-2016-104173.
- 28 Cancer Research UK. [Lung cancer survival statistics \(http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/lung-cancer/survival#heading-Zero\)](http://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/lung-cancer/survival#heading-Zero).
- 29 More information on the value of the statistical life is available in the [Canadian Cost-Benefit Analysis Guide: Regulatory Proposals \(https://www.canada.ca/en/treasury-board-secretariat/services/reporting-government-spending/what-we-are-doing/canadian-cost-benefit-analysis-guide-regulatory-proposals.html\)](https://www.canada.ca/en/treasury-board-secretariat/services/reporting-government-spending/what-we-are-doing/canadian-cost-benefit-analysis-guide-regulatory-proposals.html).
- 30 Based on worker compensation data from the Association of Workers' Compensation Boards of Canada (AWCBC).
- 31 Bianco, A. D. & Demers, P. A. (2013). Trends in compensation for deaths from occupational cancer in Canada: a descriptive study. *CMAJ Open*, 1(3). doi:10.9778/cmajo.20130015.
- 32 Tompa, et al. (2017).
- 33 CAREX Canada, 2016. [Asbestos: Burden of Occupational Cancer Fact Sheet \(http://www.cancer.ca/~media/cancer.ca/CW/for%20media/Media%20releases/2016/Asbestos-fact-sheet-burden-project.pdf?la=en\)](http://www.cancer.ca/~media/cancer.ca/CW/for%20media/Media%20releases/2016/Asbestos-fact-sheet-burden-project.pdf?la=en).
- 34 Government of Canada, CCOHS. [Asbestos – What is: OSH Answers \(http://www.ccohs.ca/oshanswers/chemicals/asbestos/whatis.html\)](http://www.ccohs.ca/oshanswers/chemicals/asbestos/whatis.html). Retrieved October 16, 2017.
- 35 WHO, 2012. [Asbestos \(Chrysotile, Amosite, Crocidolite, Tremolite, Actinolite and Anthophyllite\) Monograph \(http://monographs.iarc.fr/ENG/Monographs/vol100C/mono100C-11.pdf\)](http://monographs.iarc.fr/ENG/Monographs/vol100C/mono100C-11.pdf). World Health Organization.
- 36 More information is available on the [Canadian Centre for Occupational Health and Safety \(http://www.ccohs.ca/oshanswers/chemicals/asbestos/whatis.html\)](http://www.ccohs.ca/oshanswers/chemicals/asbestos/whatis.html) website.

- 37 The WHO has published evaluations of substitute materials to asbestos in the following documents: National Programmes for Elimination of Asbestos-Related Diseases: Review and Assessment (http://www.euro.who.int/_data/assets/pdf_file/0005/176261/National-Programmes-For-Elimination-Of-Asbestos-related-Diseases-Review-And-Assessment.pdf?ua=1) and Chrysotile Asbestos (http://apps.who.int/iris/bitstream/10665/143649/1/9789241564816_eng.pdf?ua=1).
- 38 Exposure estimates were obtained from CAREX Canada. 2017. Asbestos – Occupational Estimate (https://www.carexcanada.ca/en/asbestos/occupational_estimate/).
- 39 More information is available on the Canadian Centre for Occupational Health and Safety website (<http://www.ccohs.ca/oshanswers/chemicals/asbestos/whatis.html>).
- 40 United States Environmental Protection Agency. 2016. Current Best Practices for Preventing Asbestos Exposure Among Brake and Clutch Repair Workers (<https://www.epa.gov/asbestos/current-best-practices-preventing-asbestos-exposure-among-brake-and-clutch-repair-workers-1>).
- 41 Statistics Canada. *Table 304-0014 — Manufacturers’ sales, inventories, orders and inventory to sales ratios, by North American Industry Classification System (NAICS), Canada, annual (dollars unless otherwise noted)* and *Table 361-0039 — Repair and maintenance services, summary statistics, annual (dollars unless otherwise noted)*, CANSIM (database).
- 42 Based on data from Statistics Canada. *Table 282-0130 — Labour Force Survey estimates (LFS), employment by census metropolitan area based on 2011 Census boundaries and North American Industry Classification System (NAICS), three-month moving average, unadjusted for seasonality, annual (persons)*.
- 43 Based on data from the Association of Workers’ Compensation Boards of Canada between 1996 and 2014.
- 44 Based on data from Statistics Canada. *Table 282-0141 — Labour Force Survey estimates (LFS), by National Occupational Classification (NOC) and sex, unadjusted for seasonality, annual (persons unless otherwise noted)* and *Table 282-0007 — Labour Force Survey estimates (LFS), by North American Industry Classification System (NAICS), sex and age group, unadjusted for seasonality, annual (persons unless otherwise noted)*.
- 45 Tompa, et al. (2017).
- 46 WHO, 2012. Asbestos (Chrysotile, Amosite, Crocidolite, Tremolite, Actinolite and Anthophyllite) Monograph (<http://monographs.iarc.fr/ENG/Monographs/vol100C/mono100C-11.pdf>). World Health Organization.
- 47 Assumption based on Statistics Canada’s Census Metropolitan data and *Table 282-0162 — Labour Force Survey estimates (LFS), hourly wage distribution of employees by type of work, National Occupational Classification (NOC) and sex, unadjusted for seasonality, annual (persons)*, CANSIM (database).

- 48 As per the *Red Tape Reduction Regulations* (<http://laws-lois.justice.gc.ca/eng/regulations/SOR-2015-202/index.html>), these values are calculated using a 10-year time frame, discounted at 7% in 2012 dollars. The non-rounded increase in administrative costs was estimated at \$12,624, or \$47 per business. The wage rate was assumed to be around \$45 per hour in all cost calculations.
- 49 WHO, 2014. World Health Organization. *Chrysotile Asbestos* (http://apps.who.int/iris/bitstream/10665/143649/1/9789241564816_eng.pdf?ua=1).
- 50 *Directive 2010/75/EU* (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:334:0017:0119:en:PDF>) of the European Parliament.
- 51 OCSPP, 2017. News Releases from Headquarters, Chemical Safety and Pollution Prevention, 2016. *EPA Names First Chemicals for Review Under New TSCA Legislation* (https://19january2017snapshot.epa.gov/newsreleases/epa-names-first-chemicals-review-under-new-tsca-legislation_.html). United States Environmental Protection Agency. November 11, 2016.
- 52 The Rotterdam Convention defines a “severely restricted chemical” as a case chemical where virtually all uses are prohibited, but where certain exempted uses remain allowed.
- 53 More information is available in the SEA for CMP (<https://www.canada.ca/en/health-canada/services/chemical-substances/chemicals-management-plan/strategic-environmental-assessment.html>).
- 54 More information is available in the Department’s *Compliance and Enforcement Policy for the Canadian Environmental Protection Act* (<http://www.ec.gc.ca/alef-ewe/default.asp?lang=en&n=AF0C5063-1>).
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Government of Canada activities and initiatives

#YourBudget2018 – Advancement



(https://www.budget.gc.ca/2018/docs/themes/advancement-advancement-en.html?utm_source=CanCa&utm_medium=Activities_e&utm_content=Advancement&utm_campaign=CABdgt18)

Advancing our shared values

#YourBudget2018 – Reconciliation



(<https://www.budget.gc.ca/2018/docs/themes/reconciliation-reconciliation->

[en.html?utm_source=CanCa&utm_medium=%20Activities_e&utm_content=Reconciliation&utm_campaign=CAbdgt18\)](https://www.budget.gc.ca/2018/docs/themes/reconciliation-progress-progres-en.html?utm_source=CanCa&utm_medium=%20Activities_e&utm_content=Reconciliation&utm_campaign=CAbdgt18)

Advancing reconciliation with Indigenous Peoples

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[https://www.budget.gc.ca/2018/docs/themes/progress-progres-en.html?utm_source=CanCa&utm_medium=Activities_e&utm_content=Progress&utm_campaign=CAbdgt18\)](https://www.budget.gc.ca/2018/docs/themes/progress-progres-en.html?utm_source=CanCa&utm_medium=Activities_e&utm_content=Progress&utm_campaign=CAbdgt18)

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