



Environment and  
Climate Change Canada

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***Renewable Fuels Regulations Report:***  
**December 15, 2010 to December 31, 2012**

June 2016

Canada 

## Notice

The information contained in this report is compiled from data received by Environment and Climate Change Canada as of March 17<sup>th</sup>, 2014, submitted by the regulated parties pursuant to the requirements of the *Renewable Fuels Regulations* under the *Canadian Environmental Protection Act, 1999*. Information submitted to Environment and Climate Change Canada has not been validated in its entirety, may be subject to reporting errors and is subject to ongoing verifications.

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## **List of Terms**

### **Batch**

An identifiable quantity of liquid fuel, with a single set of physical and chemical characteristics.

### **Distillate Pool**

A primary's supplier's distillate pool is the total volume of the batches of diesel fuel and heating distillate oil that they import and produce at a production facility during a distillate compliance period. It includes fuel both dispatched from the production facility and dispensed into the fuel tank of a vehicle or other mobile equipment within the production facility.

### **Elective Participant**

Anyone other than a primary supplier who does one or more of the following in Canada: blends renewable fuel with liquid petroleum fuel; produces a liquid petroleum fuel other than gasoline, diesel fuel and heating distillate oil by using biocrude as a feedstock; imports a liquid petroleum fuel other than gasoline, diesel fuel and heating distillate oil that has renewable fuel content; sells neat renewable fuel to a neat renewable fuel consumer for use as a fuel in a combustion device; and uses neat renewable fuel that they produced or imported as a fuel in a combustion device. An elective participant becomes a part of the trading system when they register, by sending to the Minister the report that contains the information set out in Schedule 2, at least one day before they first create a compliance unit.

### **Gasoline Pool**

A primary supplier's gasoline pool is the total volume of the batches of gasoline that they import and produce at a production facility during the gasoline compliance period. It includes gasoline that is dispatched from the production facility and dispensed into the fuel tank of a vehicle or other mobile equipment within the production facility.

### **Primary Supplier**

A primary supplier is a person who produces or imports gasoline, diesel fuel or heating distillate oil. In respect of gasoline, diesel fuel or heating distillate oil that is produced at a production facility, it is a person who owns, leases, operates, controls, supervises or manages the production facility. In respect of gasoline, diesel fuel or heating distillate oil that is imported, it is the importer.

### **Producers or Importers of Renewable Fuel**

A person who produces or imports renewable fuel in Canada is a regulated party. Those who produce, or import or who produce without any import or import without any production, or their production and importation combined reaches, 400 m<sup>3</sup> of renewable fuel during any period of 12 consecutive months in a gasoline compliance period.

**Seller of Fuel for Export**

A person other than a participant, or a producer or importer of renewable fuel, who, during any year sells for export a batch of renewable fuel, or of liquid petroleum fuel that has renewable fuel content.

**Western Canada**

A term used throughout the report representing British Columbia, Alberta, Saskatchewan and Manitoba.

**Eastern Canada**

A term used throughout the report representing Quebec, Nova Scotia, New Brunswick and Newfoundland and Labrador.



## 1.0 Summary

The information contained in this report is compiled from the data received by Environment and Climate Change Canada pursuant to the requirements of the *Renewable Fuels Regulations* (the “Regulations”) as of March 17<sup>th</sup>, 2014.

This report summarizes the data gathered from the first compliance periods of the Regulations, from December 15, 2010 to December 31, 2012 (gasoline compliance period) and July 1, 2011 to December 31, 2012 (distillate, diesel and heating distillate oil, compliance period). All volumes reported are for 24.5 months and 18 months for the gasoline and distillate compliance periods respectively. The following are some of the key findings that will be discussed in this report.

Performance of the Regulations (greenhouse gas emissions reductions):

- Greenhouse gas emissions reductions of approximately 7.0 megatonnes (Mt) of CO<sub>2</sub> equivalent or an annual average reduction of approximately 3.7 Mt/year were estimated to have accrued in the first compliance periods<sup>1</sup>.

Highlights from the first gasoline compliance period:

- A total of 71.1 million m<sup>3</sup> and 12.5 million m<sup>3</sup> of gasoline was reported to be produced in and imported into Canada respectively during the period. These volumes do not include volumes subtracted under subsection 6(4) of the Regulations<sup>2</sup>.
- A total of 5.3 million m<sup>3</sup> of ethanol was reported to have been produced and imported into Canada during the period.
- Approximately 5.38 billion gasoline compliance units, representing litres of renewable fuel in gasoline, were reported to have been created in the period.

Highlights from the first distillate compliance period:

- A total of 58.5 million m<sup>3</sup> and 4.0 million m<sup>3</sup> of distillate was reported to be produced in and imported into Canada respectively during the period. These volumes do not include volumes subtracted under subsection 6(4) of the Regulations<sup>2</sup>.
- A total of 0.87 million m<sup>3</sup> of biomass-based diesel (biodiesel and hydrogenation-derived renewable diesel) was reported to be produced or imported into Canada during the period.
- Approximately 1.04 billion distillate compliance units, representing renewable fuel in diesel fuel and heating distillate oil, were reported to have been created in the period.

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<sup>1</sup> The greenhouse gas emissions reductions were estimated using the renewable fuels volumes used to create compliance units as reported in Schedule 5 of the Regulations. The emission factors were obtained from GHGenius (version 3.21).

<sup>2</sup> Values are as reported from Schedule 4 of the Regulations. These volumes should not include volumes subtracted under subsection 6(4) of the Regulations, although it is suspected that some companies misreported and included their subtracted volumes.

Compliance with the Regulations:

- The reported average renewable fuel content in the gasoline and distillate pools was approximately 6.2% and 2.2% respectively<sup>3</sup>.
- For the first gasoline compliance period, the percentage of primary suppliers who reported compliance with the 5% renewable fuel content requirement in the gasoline pool was 92%<sup>4</sup>.
- For the first distillate compliance period, the percentage of primary suppliers who reported compliance with the 2% renewable fuel content requirement in the distillate pool was 72%<sup>4</sup>.
- It is suspected that some reports submitted by regulated parties contain errors or deviations from the regulatory requirements and compliance verification is ongoing. Suspected violations were referred to Environment and Climate Change Canada's Enforcement Branch.

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<sup>3</sup> The average renewable fuel content in the gasoline and distillate pools were calculated from the volume of renewable fuel (RF<sub>G</sub> and RF<sub>D</sub>) and the volume of gasoline and distillate pools reported in Schedule 4 of the Regulations.

<sup>4</sup> Based on information reported by primary suppliers in Schedule 4 and 5 reports, and in verifications by independent auditors.

## 2.0 Overview of the Renewable Fuels Regulations

The *Renewable Fuels Regulations* were first published in the *Canada Gazette*, Part II on September 1, 2010 putting in place a requirement for fuel producers and importers to have an average renewable content of at least 5% based on the volume of gasoline that they produce and/or import, starting December 15, 2010. An amendment was published in the *Canada Gazette*, Part II on July 20, 2011, which put in place a start date of July 1, 2011 for the requirement for 2% renewable content based on the volume of diesel fuel and heating distillate oil produced and/or imported. Another amendment was published on November 6, 2013, where a national exemption for heating distillate oil sold or delivered for use for space heating purposes was introduced. In addition to the federal requirements, some provinces also have renewable fuels mandates. For a complete list of current provincial mandates, see Appendix A: Provincial Renewable Fuel Requirements. The *Renewable Fuels Regulations* are a part of the Government's approach to reducing greenhouse gas emissions by reducing emissions from the transportation sector.

A primary supplier's renewable fuel requirement is based on their gasoline and distillate pools for a compliance period<sup>5</sup>; that is the total volume of the batches of gasoline and distillate fuel they produce and import during that compliance period (some exclusions may apply). Primary suppliers who produce and/or import less than 400 m<sup>3</sup> (400 000 litres) of fuel in a year and do not opt-into the Regulations are exempted from most of the requirements, however, they are still subject to some specific record-keeping requirements<sup>6</sup>. The 400 m<sup>3</sup> threshold for gasoline and distillate is a combined threshold for production plus importation. The Regulations also allow certain special-use fuels, such as fuels for use in aircraft, competition vehicles and scientific research (see section 4.2 for a complete listing of subtracted fuels) to be excluded from a primary supplier's pool (subsection 6(4) of the Regulations).

The Regulations apply on a company basis and include a system of tradable units called compliance units that primary suppliers use to demonstrate their compliance with the two renewable fuel requirements. In general, one gasoline compliance unit represents one litre of renewable fuel blended into gasoline (or in some circumstances another liquid petroleum fuel other than diesel fuel or heating distillate oil) and one distillate compliance unit represents one litre of renewable fuel blended into diesel fuel or heating distillate oil. Compliance units may be traded from one party to another (with some restrictions) and at the end of a given compliance period, a primary supplier must own sufficient gasoline compliance units to demonstrate they have a minimum 5% renewable fuel content in their gasoline pool and sufficient distillate compliance units to demonstrate they have a minimum 2% renewable fuel content in their distillate pool.

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<sup>5</sup> The first compliance period for the 5% renewable fuel content requirement in gasoline (gasoline compliance period) was 24.5 months, from December 15, 2010 to December 31, 2012. The first compliance period for the 2% renewable fuel content requirement in diesel fuel and heating distillate oil (distillate compliance period) was 18 months, from July 1, 2011 to December 31, 2012.

<sup>6</sup> If either gasoline or diesel and heating oil exceed the 400 m<sup>3</sup> threshold, with imports and production combined, then no primary-supplier small-volume exemption applies.

Four types of regulated parties are subject to the regulations and have reporting requirements: primary suppliers, elective participants, producers or importers of renewable fuel, and sellers of fuel for export<sup>7</sup>. Appendix B lists the eight reporting schedules and the annual report for sellers of fuel for export and summarizes who must submit each schedule and by when. More detailed information on the [Regulations](#) is available from Environment and Climate Change Canada's Website.

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<sup>7</sup> See the List of Terms at the beginning of the report for a description of these regulated parties.

### **3.0 Performance of the Regulations**

The objective of the Regulations is to reduce greenhouse gas (GHG) emissions by mandating renewable fuel content in gasoline, diesel fuel and heating distillate oil produced and imported in Canada, thereby contributing to the protection of Canadians and the environment from the impacts of climate change.

#### **3.1 Greenhouse Gas Emission Reductions**

GHG emission reductions of approximately 7.0 megatonnes of CO<sub>2</sub> equivalent (Mt) were estimated to have accrued in the first compliance periods as a result of the renewable fuel volumes used to create compliance units. This represents an annual average reduction of approximately 3.7 Mt/yr. Ethanol was estimated to have contributed the most to the GHG emission reductions, accounting for approximately 75% of the total GHG emission reductions while biomass-based diesel was estimated to contribute 25% of the total GHG emission reductions. This is largely due to the fact that the gasoline requirement is 2.5 times that of the distillate requirements and that the volume of gasoline affected by the requirements is larger than the volume of distillate affected by the requirements.

This GHG emission reductions estimate was calculated using the volumes of renewable fuels blended, the renewable fuel content in imported fuel and the volume of neat renewable fuel used or sold, as reported in Schedule 5 of the Regulations. The emission factors were obtained from GHGenius<sup>8</sup>. The estimates carry limitations and uncertainties associated with life-cycle assessment modelling. The GHG emission factors used were the following (the units are in megatonnes reduced (negative number) per billion litres of renewable fuel used):

- Corn based ethanol: -1.023 Mt/BL
- Wheat based ethanol: -1.177 Mt/BL
- Canola B100: -2.911 Mt/BL
- Soy B100 (Canadian and US): -2.631 Mt/BL
- Tallow B100: -3.163 Mt/BL
- HDRD<sup>9</sup> Palm: -1.431 Mt/BL

The GHG emission reduction estimates relied on the feedstocks reported for the renewable fuels used to create compliance units, as reported under items 2 to 6 of Schedule 5 of the Regulations. When a feedstock type was not reported, the feedstock distribution obtained from the reported feedstocks was used to determine the emission factor.

#### **3.2 Renewable Fuels Regulations Performance Report**

A detailed Performance Measurement and Evaluation Plan (PMEP) was developed for the Regulations to enable Environment and Climate Change Canada to measure the performance of the Regulations against their objective.

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<sup>8</sup> GHGenius version 3.21

<sup>9</sup> Hydrogenation-derived renewable diesel (HDRD), also referred to as hydrogenated vegetable oil (HVO).

A report titled [Renewable Fuels Regulations Performance Report: December 2010 to December 2012](#) based on the PMEP was published on Environment and Climate Change Canada's website in February 2016. Many of the results discussed in the Performance Report are also discussed in this report. For more information on the performance of the Regulations, please refer to Section 5.0: Compliance with the Regulations of this report or to the *Renewable Fuels Regulations Performance Report: December 2010 to December 2012*, in which Tables 1 to 6 summarize the performance measurement indicators in the report for the first gasoline and distillate compliance periods.

#### 4.0 Data Submitted in the First Compliance Periods

This section summarizes the data submitted to Environment and Climate Change Canada in respect of the first gasoline and distillate compliance periods. The data was submitted under Schedule 4, Information Required from a Primary Supplier; Schedule 5, Information Required from a Participant; and Schedule 7, Information Required from a Producer or Importer of Renewable Fuel and reflects any subsequent corrections or revisions received as of March 17<sup>th</sup>, 2014. Any information submitted after this date is not included in this report. The data is submitted to Environment and Climate Change Canada using the Renewable Fuels Regulations Electronic Reporting System (RFRERS) which is a mandatory online reporting system.

Twenty five primary suppliers, six elective participants, forty two renewable fuel producers and/or importers, and no sellers of fuel for export submitted annual reports to Environment and Climate Change Canada for the first compliance periods. A list of registered parties and their activities in the first compliance periods is provided in Appendix C: List of Registered Parties and their Activities.

#### 4.1 Liquid Petroleum Fuel Produced and Imported

Four types of liquid petroleum fuel produced and imported: finished gasoline, unfinished gasoline, diesel fuel, and heating distillate oil, compose a primary supplier's gasoline and distillate pools and are reported in Schedule 4 of the Regulations. Table 4.1a and Figure 4.1a show these reported volumes for the first compliance periods as reported in Schedule 4, item 5 of the Regulations.

These reported volumes must not include volumes for certain uses subtracted from the pools under subsection 6(4) of the Regulations although it is suspected that some companies misreported and included these subtracted volumes. These exclusions are further explained in section 4.2. Table 4.1b and Figure 4.1b show these excluded volumes by the following regions: Ontario; Western Canada including British Columbia, Alberta, Saskatchewan and Manitoba; Eastern Canada including Quebec, Nova Scotia, New Brunswick and Newfoundland and Labrador<sup>10</sup>. Please note a compliance period was 24.5 months and 18 months for gasoline and distillate (diesel fuel and heating oil) respectively.

**Table 4.1a: Liquid Petroleum Fuel Production and Imports in Canada during the First Compliance Periods Excluding Subtracted Fuels**

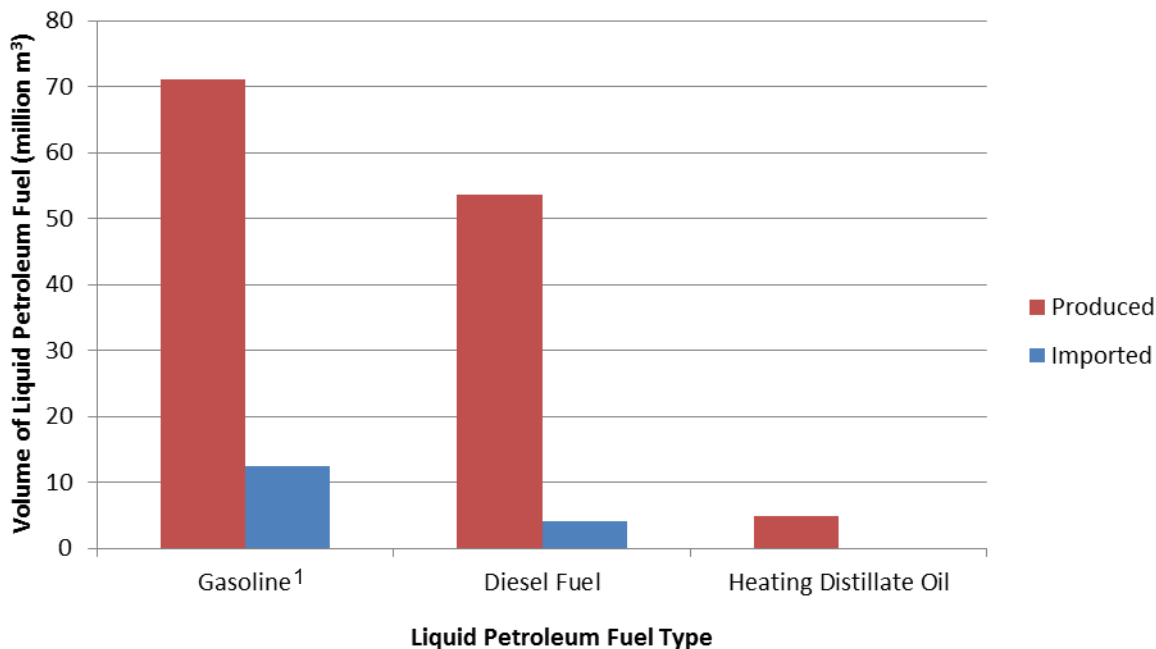
	Gasoline <sup>1</sup> (m <sup>3</sup> )	Diesel Fuel (m <sup>3</sup> )	Heating Distillate Oil (m <sup>3</sup> )
<b>Production</b>	71 133 139	53 603 730	4 860 093
<b>Imports</b>	12 497 346	4 012 386	0
<b>Production and Imports</b>	83 630 485	57 616 115	4 860 093

Notes: These volumes do not include reported volumes subtracted under subsection 6(4) of the Regulations

<sup>1</sup> Volumes of finished and unfinished gasoline have been combined to protect confidential information.

<sup>10</sup> PEI had no reported activity.

**Figure 4.1a: Liquid Petroleum Fuel Production and Imports in Canada during the First Compliance Periods Excluding Subtracted Fuels**



Notes: These volumes do not include reported volumes subtracted under subsection 6(4) of the Regulations.  
<sup>1</sup> Volumes of finished and unfinished gasoline have been combined to protect confidential information.

**Table 4.1b: Liquid Petroleum Fuel Production and Imports in Canada, by Region during the First Compliance Periods Excluding Subtracted Fuels**

	Gasoline <sup>1</sup> Production (m <sup>3</sup> )	Distillate <sup>2</sup> Production (m <sup>3</sup> )	Gasoline <sup>1</sup> Imports (m <sup>3</sup> )	Distillate <sup>2</sup> Imports (m <sup>3</sup> )
<b>Western Canada</b>	26 265 492	24 401 851	1 982 398	1 220 910
<b>Ontario</b>	20 680 694	10 339 916	243 289	82 646
<b>Eastern Canada</b>	24 186 954	23 722 056	10 271 659	2 708 830
<b>Canada</b>	71 133 139	58 463 822	12 497 346	4 012 386

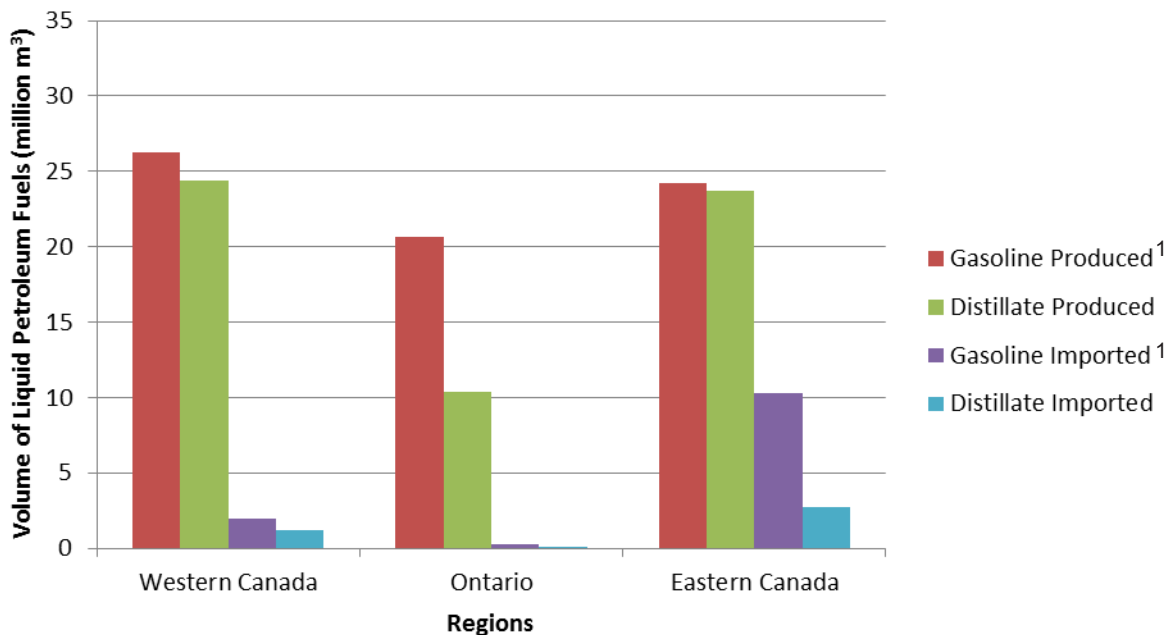
Notes: These volumes do not include reported volumes subtracted under subsection 6(4) of the Regulations.

<sup>1</sup> Volumes of finished and unfinished gasoline have been combined to protect confidential information.

<sup>2</sup> Volumes of diesel fuel and heating distillate oil have been combined to protect confidential information.



**Figure 4.1b: Liquid Petroleum Fuel Production and Imports in Canada, by Region during the First Compliance Periods Excluding Subtracted Fuels**



Notes: These volumes do not include reported volumes subtracted under subsection 6(4) of the Regulations.

<sup>1</sup> Volumes of finished and unfinished gasoline have been combined to protect confidential information.

## 4.2 Volumes Subtracted from Pools

Subsection 6(4) of the Regulations allows certain fuels to be subtracted from a primary supplier's gasoline or distillate pool. Primary suppliers must have a record that establishes that these volumes were sold or delivered for the specified use. These are fuels for use:

- in aircraft
- in competition vehicles
- in scientific research
- as feedstock in the production of chemicals (other than fuels) in a chemical manufacturing facility
- in the North (Yukon, the Northwest Territories, Nunavut and Quebec on or north of 60°N)
- in Newfoundland and Labrador
- for export, or in transit through Canada from a place outside Canada to another place outside Canada
- in the case of diesel fuel and heating distillate oil:
  - in military combat equipment
  - represented as kerosene and sold for or delivered for use in unvented space heaters, wick-fed illuminating lamps, or flue-connected stoves and heaters
  - until December 31, 2012, used in Nova Scotia, New Brunswick, Prince Edward Island and Quebec on or south of 60°N

These fuels may be subtracted from a primary supplier's gasoline or distillate pool for various reasons. It may not be suitable for some fuels to have renewable content because of the nature of their use, such as aircraft or competition vehicles or military combat vehicles and engines. Fuel used for scientific research must be custom-made for the individual needs of the researchers, depending on the nature of the scientific inquiry and could have a considerable variation in its parameters.

Regional exemptions for the Yukon, the Northwest Territories and Nunavut, plus the northernmost parts of Quebec (above 60°N), and in Newfoundland and Labrador are due to various factors, including climatic, logistics, fueling infrastructure limited supply options, and factors related to security of supply and availability of renewable fuel in these regions.

In addition, as a temporary transitional flexibility, diesel fuel and heating distillate oil for use in Nova Scotia, New Brunswick, Prince Edward Island and Quebec on or south of 60°N may, until December 31, 2012, be subtracted from a primary supplier's distillate pool.

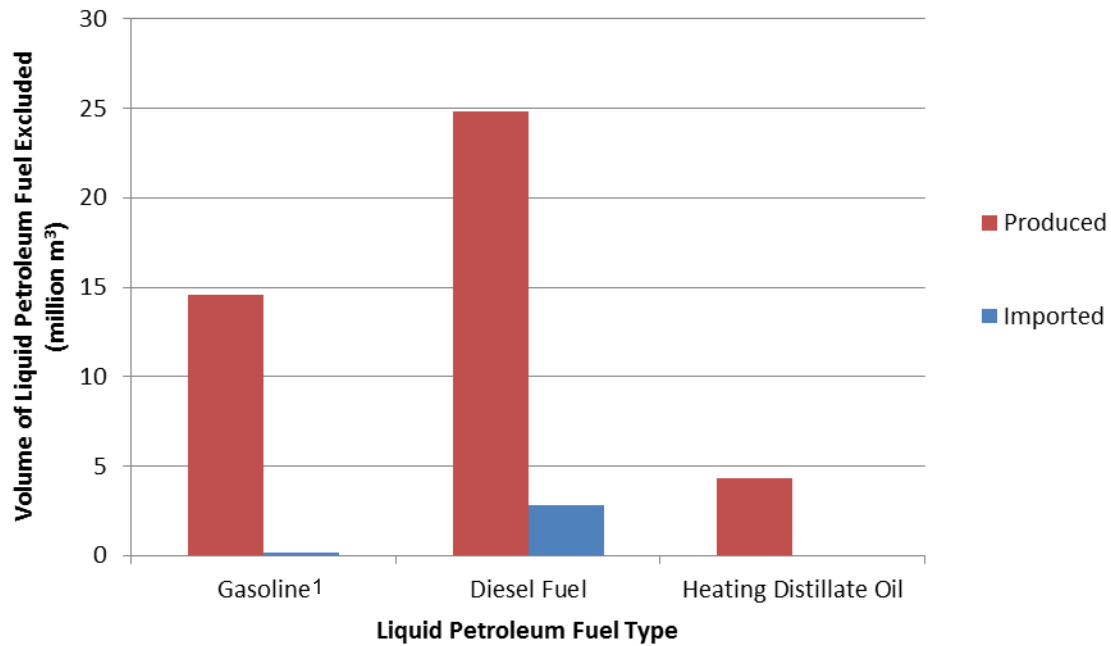
Primary suppliers are required to report these subtracted volumes according to liquid petroleum fuel type (finished gasoline, unfinished gasoline, diesel fuel, and heating distillate oil) as reported in Schedule 4, item 6 of the Regulations. This subsection summarizes these volumes and compares them to the volumes produced in and imported into Canada for the first compliance periods (as discussed in subsection 4.1). Table 4.2a and Figures 4.2a and 4.2b show the volumes subtracted from the pools nationally by liquid petroleum fuel type well as the percentage this number represents of all gasoline and distillate produced and imported into Canada. Table 4.2b and Figures 4.2c, 4.2d, and 4.2e show these volumes by region. Figures 4.2f, 4.2g and 4.2h show the relative volumes of each type of subtracted volumes from gasoline, diesel and heating distillate oil produced in and imported into Canada.

**Table 4.2a: Volumes of Liquid Petroleum Fuel Subtracted from the Pools, Nationally**

	<b>Gasoline Volumes Subtracted<sup>1</sup> (m<sup>3</sup>)</b>	<b>Diesel Fuel Volumes Subtracted (m<sup>3</sup>)</b>	<b>Heating Distillate Oil Volumes Subtracted (m<sup>3</sup>)</b>
<b>Production</b>	14 574 803	24 799 498	4 331 011
<b>Imports</b>	122 882	2 800 931	0
<b>Production and Imports</b>	14 697 684	27 600 428	4 331 011

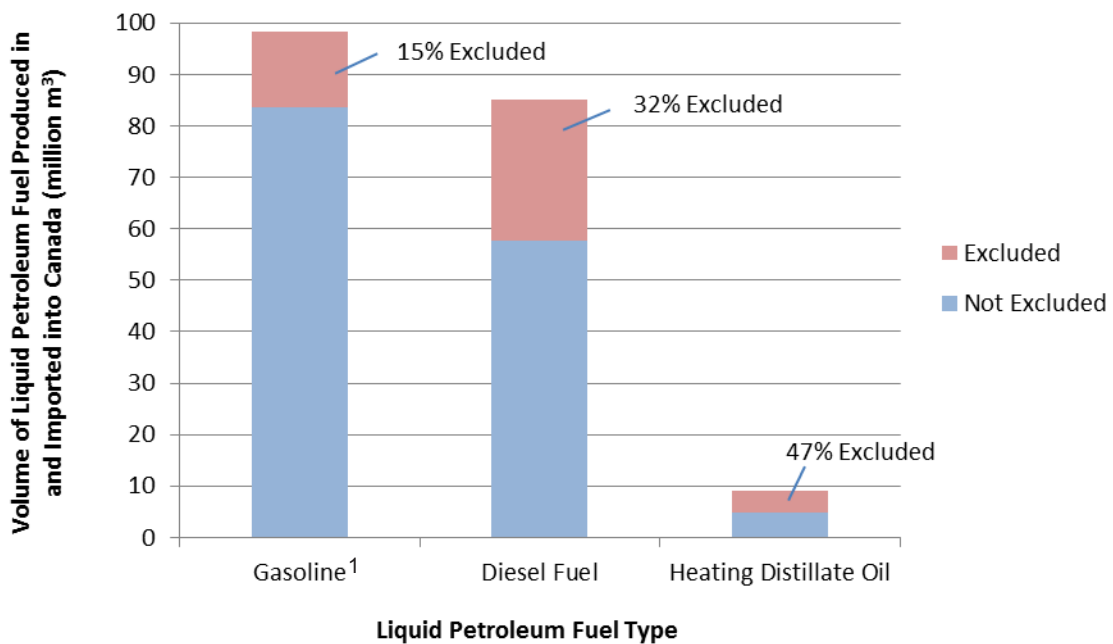
<sup>1</sup>Volumes of finished and unfinished gasoline have been combined to protect confidential information.

**Figure 4.2a: Volumes of Liquid Petroleum Fuel Subtracted from the Pools, Nationally**



<sup>1</sup>Volumes of finished and unfinished gasoline have been combined to protect confidential information.

**Figure 4.2b: Volume Subtracted from Pools by Liquid Petroleum Fuel Type as a Percentage of Production and Imports, Nationally**



Notes: Volumes subtracted from the pool under 6(4).

<sup>1</sup>Volumes of finished and unfinished gasoline have been combined to protect confidential information.

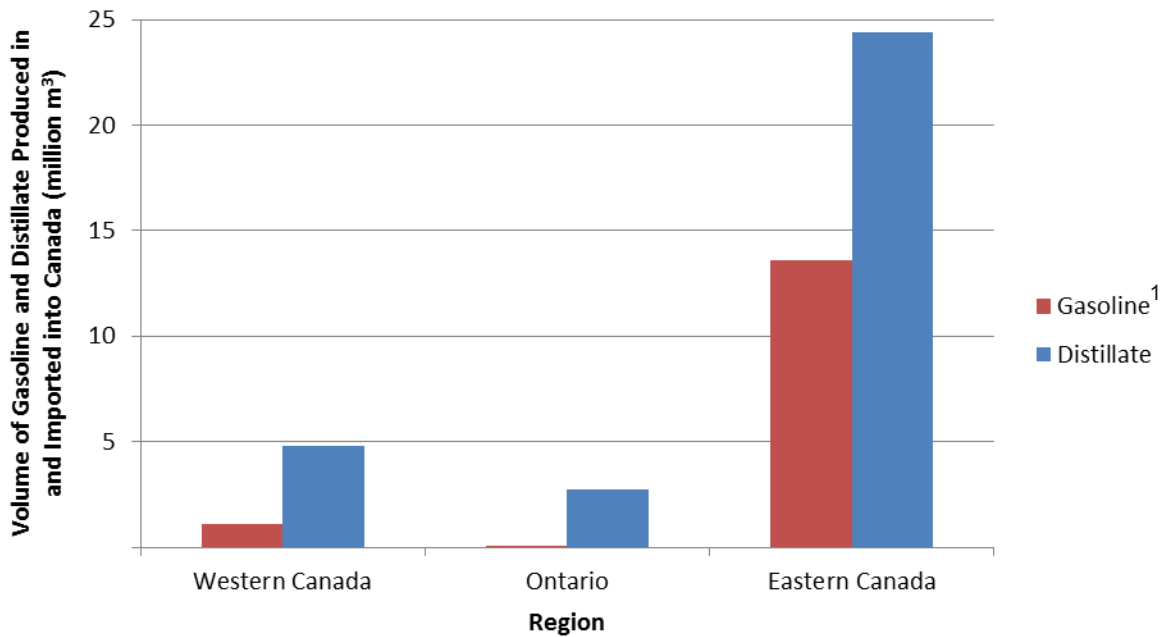
**Table 4.2b: Volumes of Liquid Petroleum Fuel Subtracted from the Pools, Regionally**

	<b>Gasoline<sup>1</sup> Volumes Subtracted (m<sup>3</sup>)</b>	<b>Distillate<sup>2</sup> Volumes Subtracted (m<sup>3</sup>)</b>
<b>Western Canada</b>	1 086 937	4 789 667
<b>Ontario</b>	26 251	2 737 492
<b>Eastern Canada</b>	13 584 497	24 404 281
<b>Canada</b>	14 697 684	31 931 439

<sup>1</sup>Volumes of finished and unfinished gasoline have been combined to protect confidential information.

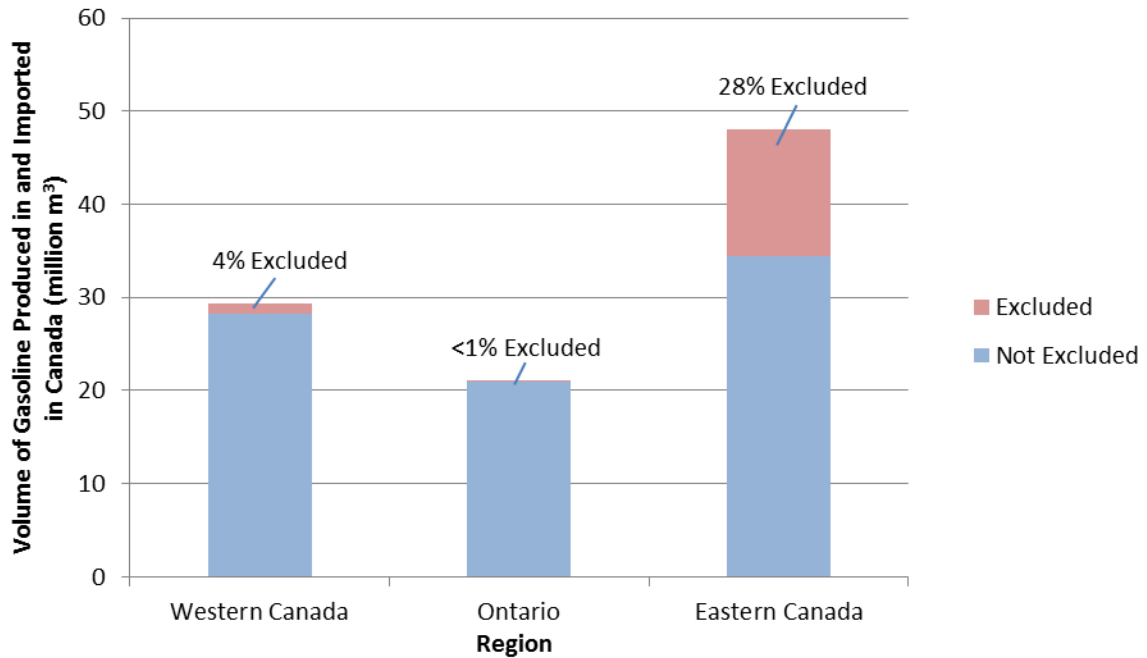
<sup>2</sup>Volumes of diesel fuel and heating distillate oil have been combined to protect confidential information.

**Figure 4.2c: Volumes of Liquid Petroleum Fuel Subtracted from the Pools, Regionally**



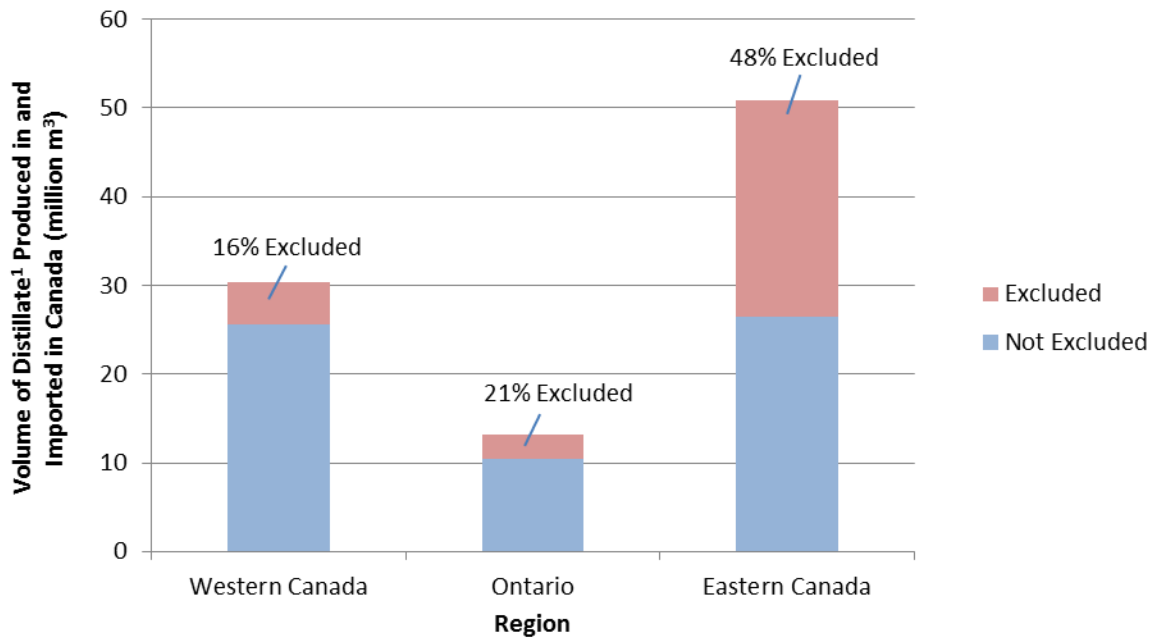
<sup>1</sup>Volumes of diesel fuel and heating distillate oil have been combined to protect confidential information.

**Figure 4.2d: Volume Subtracted from the Gasoline Pool as a Percentage of Production and Imports, Regionally**



Notes: Volumes subtracted from the pool under 6(4).

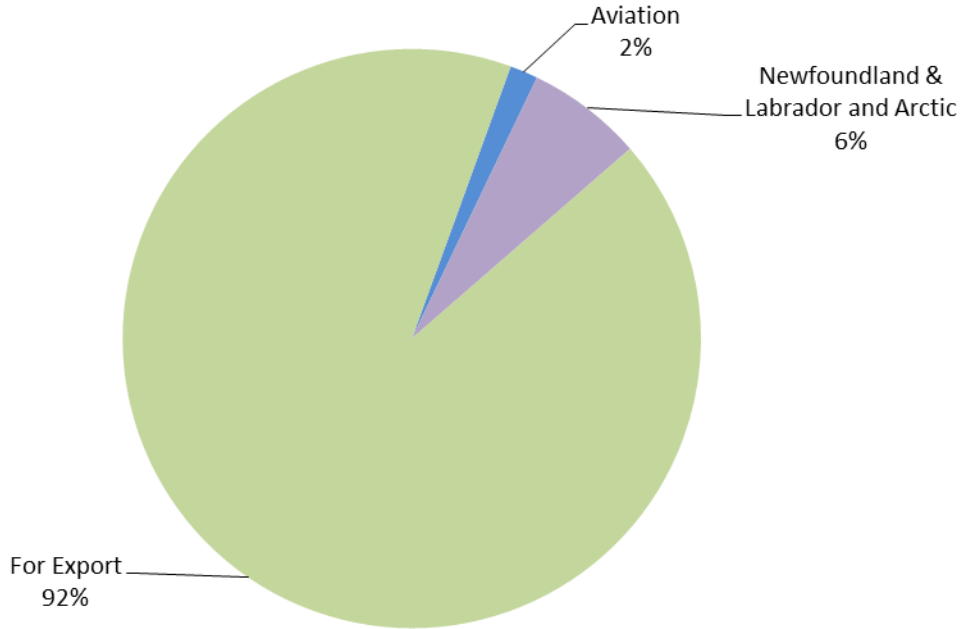
**Figure 4.2e: Volume Subtracted from the Distillate Pool as a Percentage of Production and Imports, Regionally**



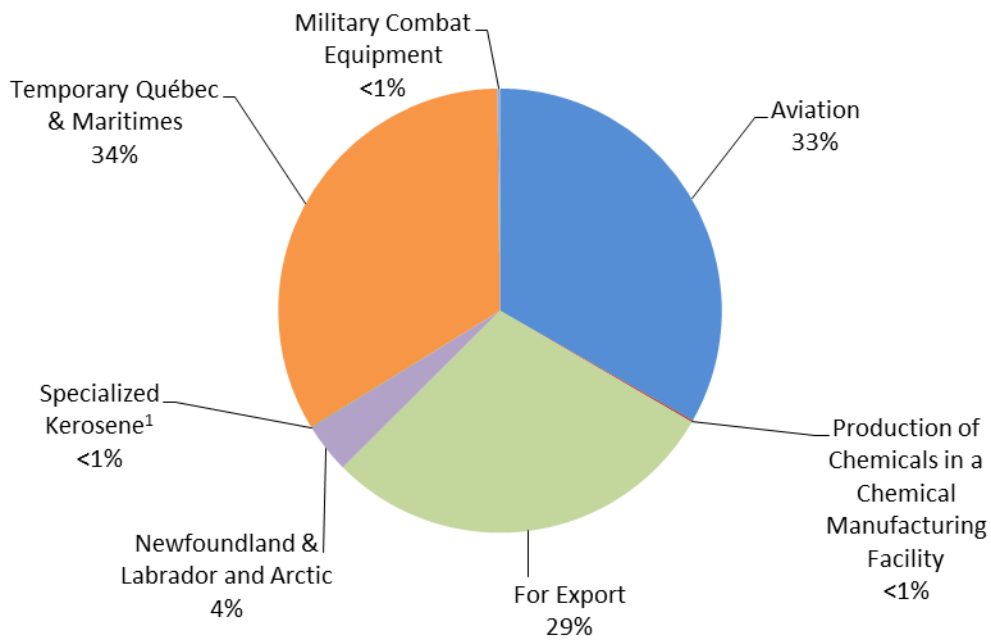
Notes: Volumes subtracted from the pool under 6(4).

<sup>1</sup> Volumes of diesel fuel and heating distillate oil have been combined to protect confidential information.

**Figure 4.2f: Canadian Gasoline Pool Subtractions by Use**

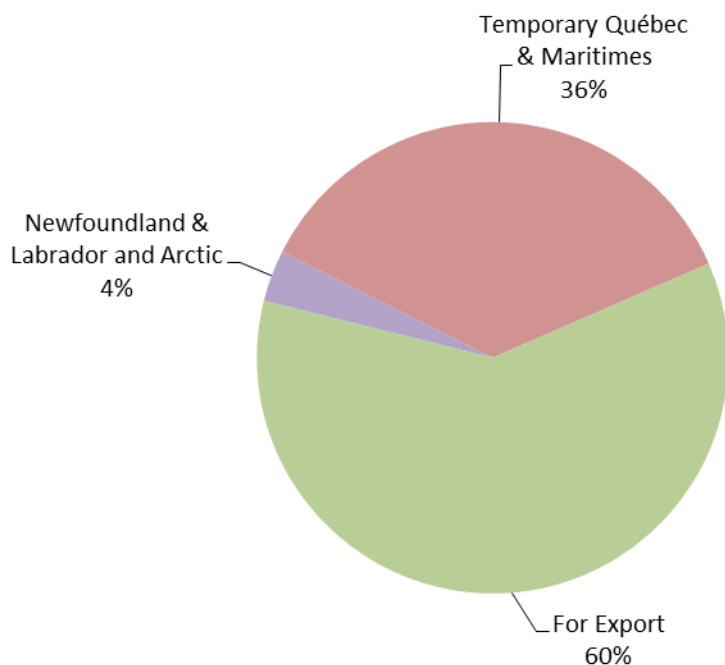


**Figure 4.2g: Canadian Distillate Pool Subtractions for Diesel Fuel by Use**



<sup>1</sup> Diesel fuel represented as kerosene and sold for or delivered for use in unvented space heaters, wick-fed illuminating lamps, or flue-connected stoves and heaters.

**Figure 4.2h: Canadian Distillate Pool Subtractions for Heating Distillate Oil by Use**



### 4.3 Renewable Fuels Produced, Imported and Sold

Renewable Fuel Producers and Importers must keep records and report on their renewable fuel volumes produced, imported and sold, including sold for export out of Canada. These volumes are reported in Schedule 7 of the Regulations.

There are provisions in the Regulations that allow Renewable Fuel Producers and Importers that produce and/or import less than 400 m<sup>3</sup> of renewable fuel in a year <https://www.ec.gc.ca/energie-energy/default.asp?lang=En&n=A5AE273E-1 - fnb1> to be exempt from the Regulations, specifically the requirements of sections 34 and 28 for that year. However, they must keep records demonstrating their annual volumes are less than the threshold (see sections 37 and 38 of the Regulations), measured in accordance with section 4.

Table 4.3a and Figures 4.3a and 4.3b show the volumes of ethanol and biomass-based diesel produced in Canada, imported into Canada and sold for export as reported in Schedule 7, item 2 of the Regulations. Table 4.3b and Figure 4.3c show the volumes of ethanol and biomass-based diesel produced in Canada and imported into Canada by region.

Renewable fuel producers and importers reported producing a total of 3.35 million m<sup>3</sup> of renewable fuel in Canada during the first compliance period and importing a total of 2.84 million m<sup>3</sup> of renewable fuel from Singapore, the Netherlands and the majority of which originated from the United States.

Table 4.3c and Figure 4.3d show the sales of renewable fuel by region as reported in Schedule 7, item 3 of the Regulations. Table 4.3d and Figure 4.3e show the sales of renewable fuel for export by region as reported in Schedule 7, item 3 of the Regulations.

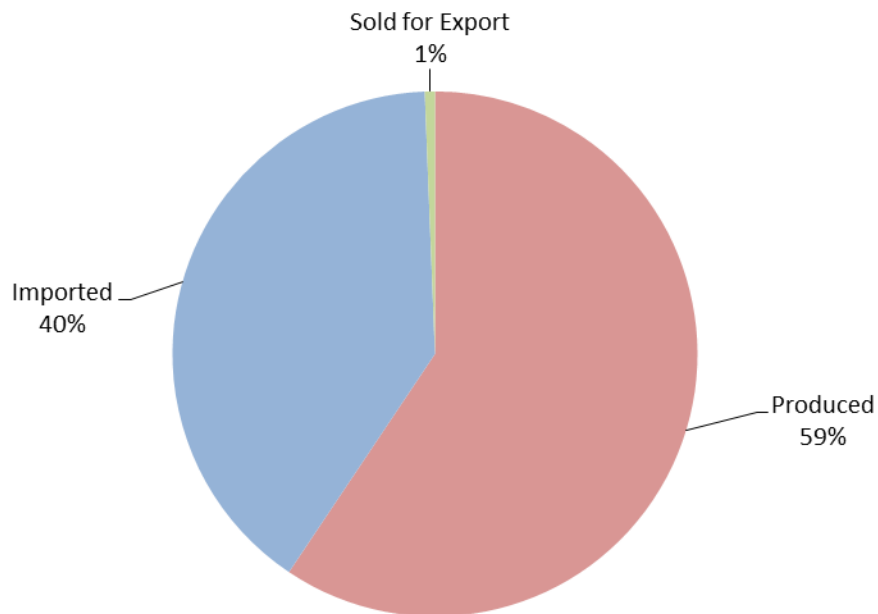
**Table 4.3a: Renewable Fuels Volumes Produced, Imported and Sold for Export**

	Volume of Ethanol (m <sup>3</sup> )	Volume of Biomass-based Diesel <sup>1</sup> (m <sup>3</sup> )
<b>Production</b>	3 176 711	171 538
<b>Imports</b>	2 139 023	699 860
<b>Total Production Imports</b>	5 315 734	871 398
<b>Sold for Export<sup>2</sup></b>	33 121	157 431

<sup>1</sup> Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

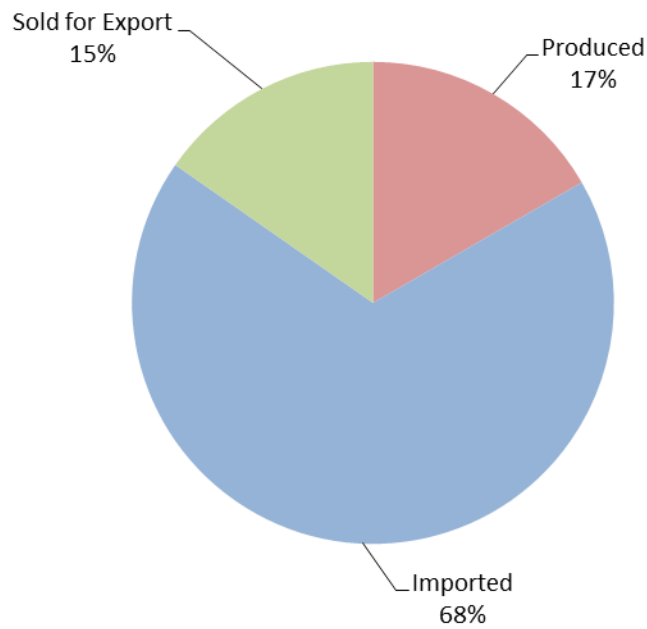
<sup>2</sup> These volumes are as reported on Schedule 7, items 2 and 3.

**Figure 4.3a: Ethanol Produced, Imported and Sold for Export of total reported volumes**





**Figure 4.3b: Biomass-based Diesel Produced, Imported and Sold for Export of total reported volumes**



Notes: Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

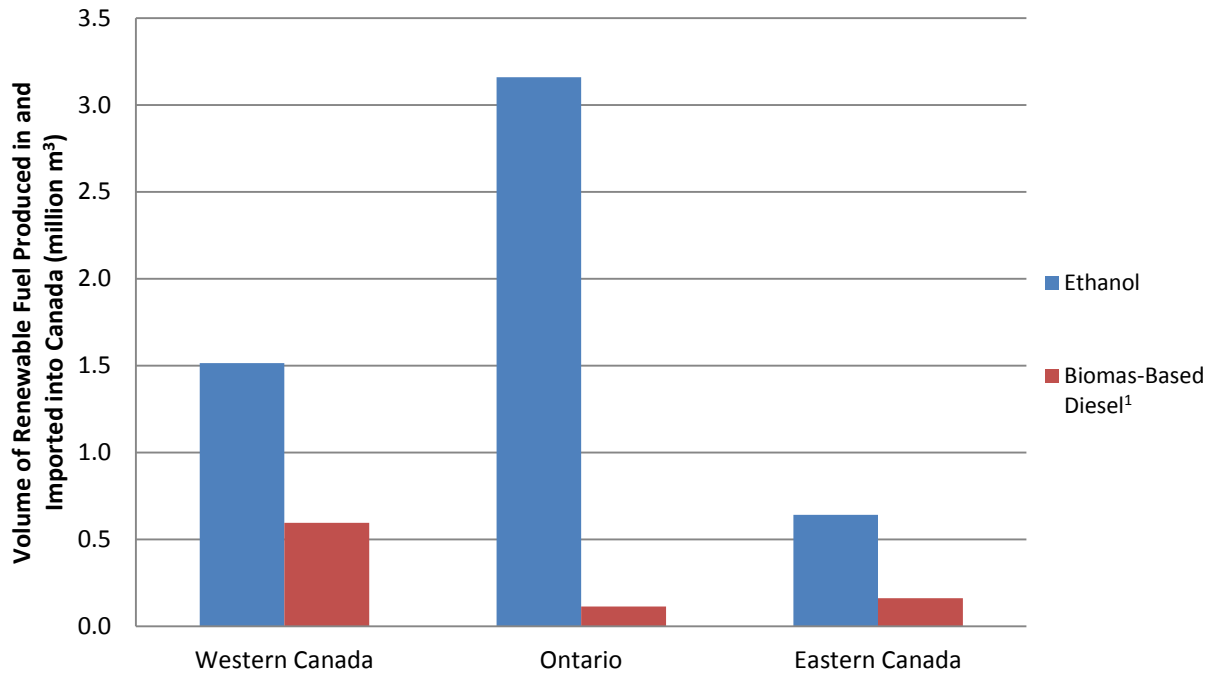
**Table 4.3b: Renewable Fuels Produced in and Imported into Canada, by Region**

	<b>Ethanol Production and Imports (m<sup>3</sup>)</b>	<b>Biomass-Based Diesel<sup>1</sup> Production and Imports (m<sup>3</sup>)</b>
<b>Western Canada</b>	1 515 066	591 908
<b>Ontario</b>	3 159 643	114 030
<b>Eastern Canada</b>	641 025	161 546
<b>Canada</b>	5 315 734	871 398

Notes: Production and import volumes have been combined to protect confidential information.

<sup>1</sup>Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

**Figure 4.3c: Renewable Fuels Produced in and Imported into Canada, by Region**



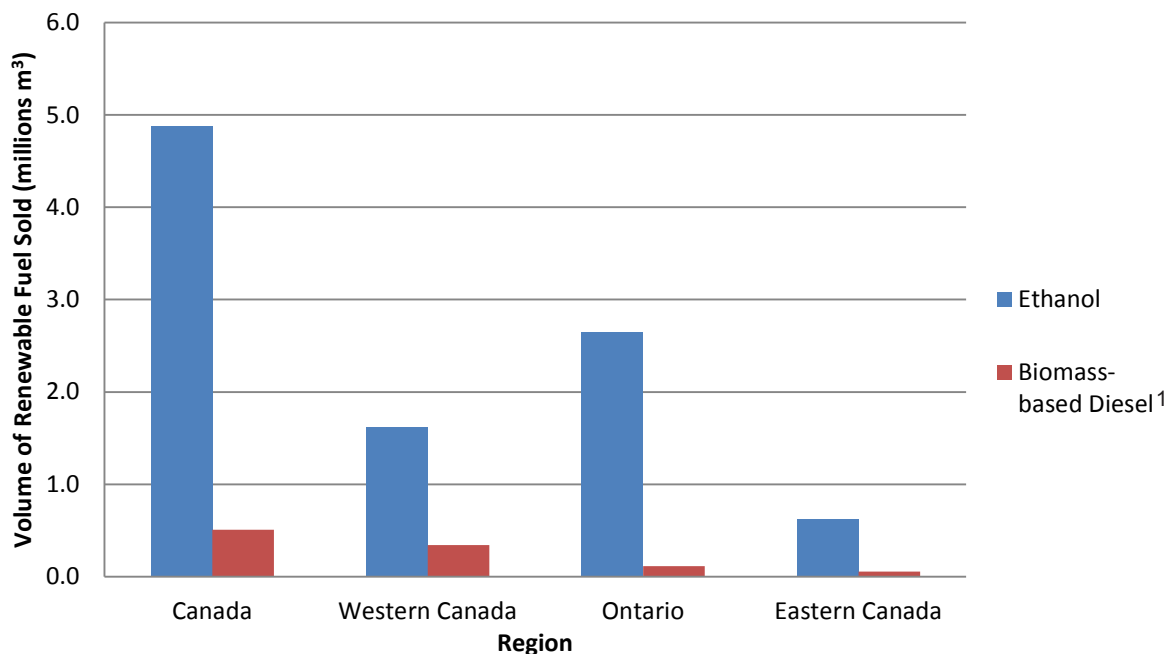
<sup>1</sup> Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

**Table 4.3c: Volumes of Renewable Fuels Sold, by Region**

Region	Volume of Ethanol Sold (m <sup>3</sup> )	Volume of Biomass-based Diesel <sup>1</sup> Sold (m <sup>3</sup> )
<b>Western Canada</b>	1 613 402	353 210
<b>Ontario</b>	2 643 306	112 653
<b>Eastern Canada</b>	617 940	52 872
<b>Canada</b>	4 874 648	518 735

<sup>1</sup> Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

**Figure 4.3d: Volumes of Renewable Fuels Sold, by Region**



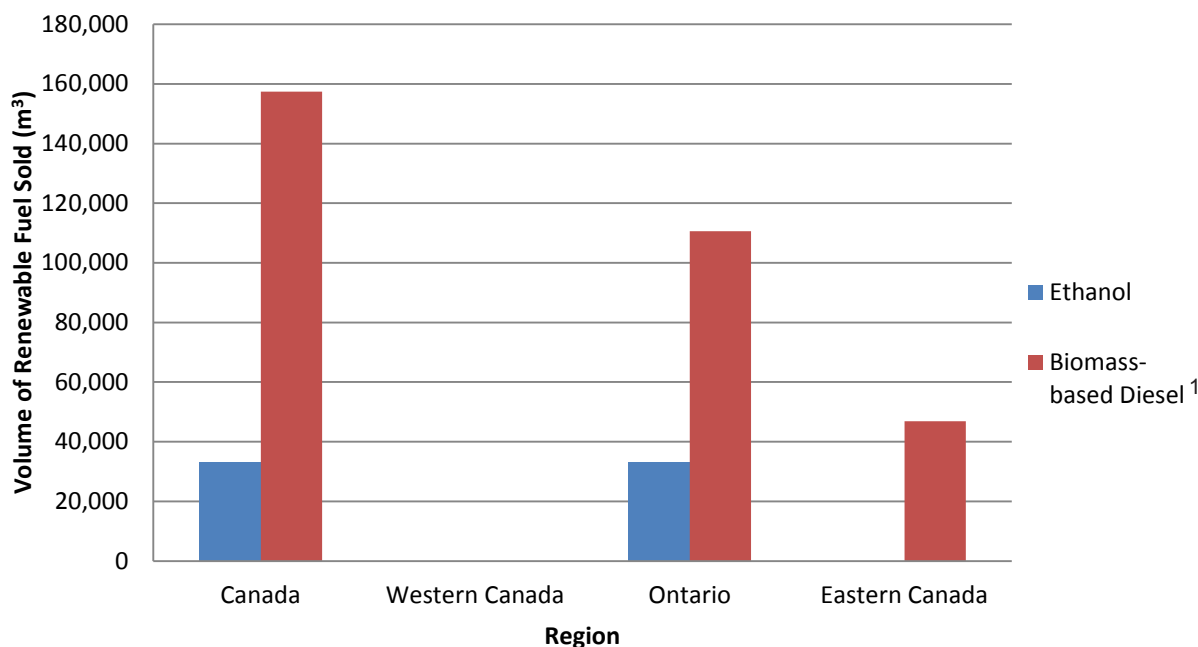
<sup>1</sup> Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

**Table 4.3d: Volumes of Renewable Fuels Sold for Export, by Region**

Region	Volume of Ethanol Sold for Export (m <sup>3</sup> )	Volume of Biomass-based Diesel <sup>1</sup> Sold for Export (m <sup>3</sup> )
Western Canada	0	0
Ontario	33 121	110 601
Eastern Canada	0	46 830
<b>Canada</b>	<b>33 121</b>	<b>157 431</b>

<sup>1</sup> Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

**Figure 4.3e: Volumes of Renewable Fuels Sold for Export, by Region**



<sup>1</sup> Biomass-based diesel is a combination of biodiesel and hydrogenation-derived renewable diesel (HDRD). Their volumes have been combined to protect confidential information.

#### 4.4 Renewable Fuels Feedstocks

Renewable Fuel Producers and Importers must report on the type of feedstock that was used to produce each renewable fuel in most cases.

The feedstock data is limited by how it was reported. For example, “Other Grains” in this context refers to any grains, excluding corn or wheat, although regulated parties may have used this category to report corn, which should have been reported under the “Starch” category. Also, “Unknown” is a category that was added during the data aggregation process to reflect that some reports specified renewable fuel volumes without specifying a feedstock type.

The largest percentage of reported feedstock type for the production in Canada and importation into Canada of ethanol was “Other Grains” and “Starch” respectively. The largest percentage of reported feedstock type for the production in Canada and importation into Canada of biomass-based diesel was “Animal Material” and “Other Grains” respectively.

Table 4.4a and Figures 4.4a and 4.4b show the volumes of ethanol produced in Canada and imported into Canada, by feedstock type, in the first compliance periods as reported in Schedule 7, item 2 of the Regulations. Table 4.4b and Figures 4.4c and 4.4d show similar information for biomass-based diesel.

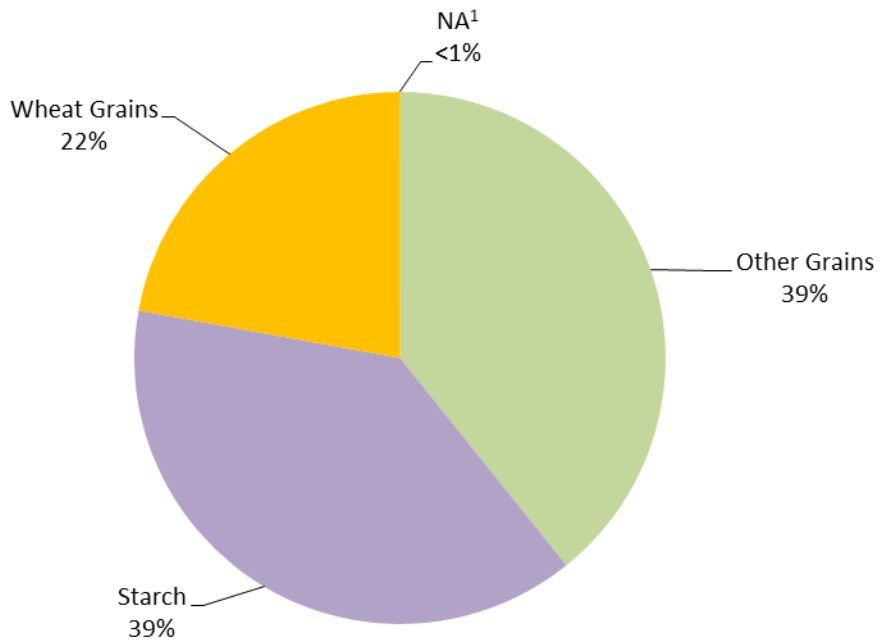
**Table 4.4a: Volume of Ethanol Produced in and Imported into Canada, by Feedstock Type**

Feedstock	Ethanol Production (m <sup>3</sup> )	Ethanol Imports (m <sup>3</sup> )
Animal Material	0	0
Cellulosic Material	NA <sup>1</sup>	0
Oilseeds	0	0
Other Grains	1 245 521	256 678
Palm Oil	0	0
Soy Grains	0	0
Starch	1 227 267	1 619 887
Unknown	NA <sup>1</sup>	177 664
Vegetable Oils	0	64 008
Wheat Grains	703 357	20 786
<b>Total<sup>2</sup></b>	<b>3 176 711</b>	<b>2 139 023</b>

<sup>1</sup> The volume is not included to protect confidential information.

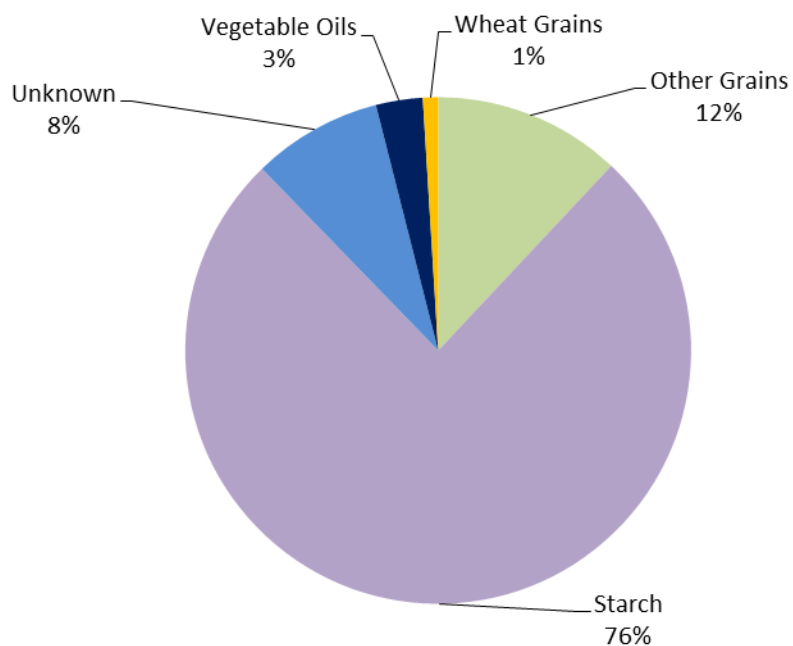
<sup>2</sup> The total is a sum of the volumes of all feedstocks of ethanol either produced in or imported into Canada, including NAs.

**Figure 4.4a: Ethanol Production in Canada, by Feedstock Type**



<sup>1</sup> The feedstock is not included to protect confidential information.

**Figure 4.4b: Ethanol Imports into Canada, by Feedstock Type**



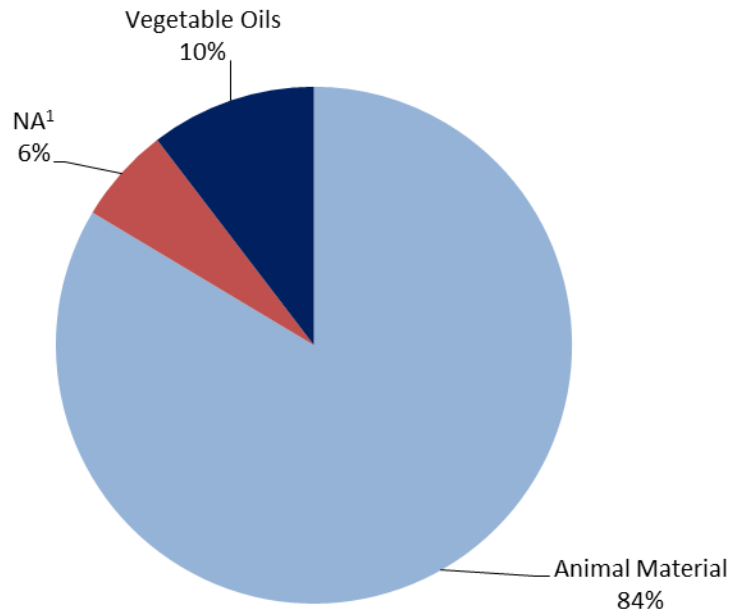
**Table 4.4b: Volume of Biomass-based Diesel Produced in and Imported into Canada, by Feedstock Type**

Feedstock	Biomass-based Diesel Production (m <sup>3</sup> )	Biomass-based Diesel Imports (m <sup>3</sup> )
Animal Material	143 360	27 041
Cellulosic Material	0	0
Oilseeds	NA <sup>1</sup>	128 506
Other Grains	0	184 219
Palm Oil	0	NA <sup>1</sup>
Soy Grains	0	47 325
Starch	0	0
Unknown	NA <sup>1</sup>	NA <sup>1</sup>
Vegetable Oils	17 838	37 013
Wheat Grains	0	0
<b>Total<sup>2</sup></b>	<b>171 538</b>	<b>699 860</b>

<sup>1</sup> The volume is not included to protect confidential information.

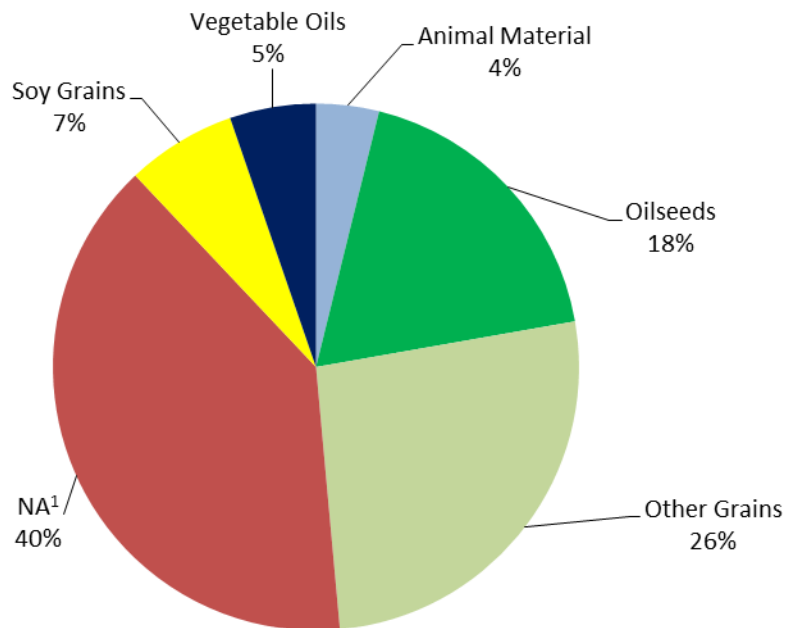
<sup>2</sup> The total is a sum of the volumes of all feedstocks of biomass-based diesel either produced in or imported into Canada, including NAs.

**Figure 4.4c: Biomass-based Diesel Production in Canada, by Feedstock Type**



<sup>1</sup> The feedstock is not included to protect confidential information.

**Figure 4.4d: Biomass-based Diesel Imports into Canada, by Feedstock Type**



<sup>1</sup> The feedstock is not included to protect confidential information.

## 5.0 Compliance with the Regulations

Compliance with the *Canadian Environmental Protection Act, 1999* (CEPA 1999) and its regulations is mandatory. Environment and Climate Change Canada promotes compliance through providing information and guidance in order to increase compliance with the *Renewable Fuels Regulations*. As part of their enforcement activities, enforcement officers conduct inspections and investigations into alleged violations of the Regulations, in accordance with the Compliance and Enforcement Policy for the *Canadian Environmental Protection Act, 1999*.<sup>11</sup>

Section 5.1 summarizes how primary suppliers complied with the Regulations by using the compliance unit trading system. Section 5.2 provides primary suppliers' compliance rates with the two renewable fuel content requirements and the reported average renewable fuel content in the national pools for the first compliance periods. Section 5.3 discusses the quality of the reports.

### 5.1 Compliance Unit Trading System

The Regulations contain a compliance unit trading system which affords regulated parties flexible compliance options. Compliance units represent litres of renewable fuel – generally, one compliance unit equates to one litre of renewable fuel that is blended into liquid petroleum fuels for use in Canada. Gasoline compliance units and distillate compliance units are both required to demonstrate compliance with the 5% and 2% renewable fuel content requirements, respectively. Distillate compliance units may be used to meet the 2% and the 5% renewable fuel requirements while gasoline compliance units may only be used to meet the 5% requirement.

Parties who create compliance units are primary suppliers and elective participants and are referred to as participants. A participant may create compliance units by blending renewable fuel with liquid petroleum fuel, importing liquid petroleum fuel with renewable fuel content, using biocrude to produce liquid petroleum fuel, or selling neat renewable fuel<sup>12</sup> to a neat renewable fuel consumer (for use in its neat, or unblended form) or using neat renewable fuel that they produced or imported themselves. Once created, a compliance unit is owned by its creator and may only be transferred to a primary supplier. A compliance unit may only be used once for compliance and only to demonstrate compliance with respect to the compliance period in which it was created, or carried forward or carried back into. Various limitations on the creation, transfer, ownership and use of compliance units exist. For a complete list of restrictions and requirements, consult the Regulations. Compliance units are tracked by trading system participants in a compliance unit account book as required by section 31 and are reported annually under Schedule 5.

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<sup>11</sup> [Compliance and Enforcement Policies](#)

<sup>12</sup> A “neat renewable fuel” means biodiesel or another renewable fuel if that other renewable fuel is: (a) produced at a facility that uses only renewable fuel feedstock for the production of fuel; (b) suitable for use in a combustion device; and (c) chemically indistinguishable from gasoline, diesel fuel, heating distillate oil, or any other liquid petroleum fuel that is suitable for use in a combustion device.



Approximately 5.38 billion gasoline compliance units and 1.04 billion distillate compliance units were reported to have been created in the first compliance periods. Approximately 5.13 billion litres and 0.70 billion litres of renewable fuel were reported to have been used to create gasoline and distillate compliance units, respectively. These volumes should be the same. It is suspected that this inequality is due to reporting errors. A total of 42.6 million m<sup>3</sup> of liquid petroleum fuel was reported to have been blended with 5.82 billion m<sup>3</sup> of renewable fuel during the compliance periods.

The number of compliance units created in Canada by method of creation are summarized in Table 5.1a. Table 5.1b and Figures 5.1a and 5.1b show the compliance units created by region. It is suspected some companies misreported the number of compliance units. The values are as reported from Schedule 5 of the Regulations and cover a compliance period of 24.5 months for gasoline and 18 months for distillate (diesel fuel and heating oil).

**Table 5.1a: Compliance Units Created in Canada, by Method of Creation**

<b>Method of Creation</b>	<b>Gasoline Compliance Units Created<sup>1</sup></b>	<b>Distillate Compliance Units Created<sup>1</sup></b>
<b>Blending in Canada</b>	5 375 315 634	1 041 831 957
<b>Importing Blended Fuel</b>	4 295 618	1 155 586
<b>Using Biocrude</b>	0	0
<b>Using Neat Renewable Fuel</b>	0	38 259
<b>Selling of Neat Renewable Fuel</b>	0	0
<b>Total</b>	<b>5 379 611 252</b>	<b>1 043 025 802</b>

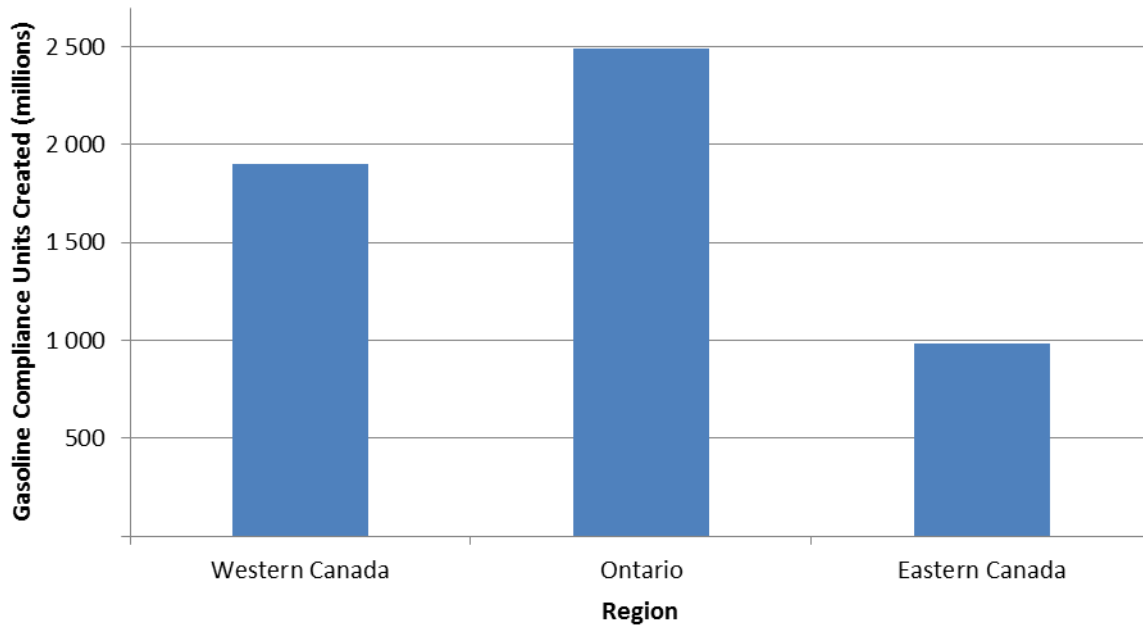
<sup>1</sup> One Compliance Unit (CU) is created for each litre of renewable fuel blended into liquid petroleum fuel.

**Table 5.1b: Compliance Units Created, by Region**

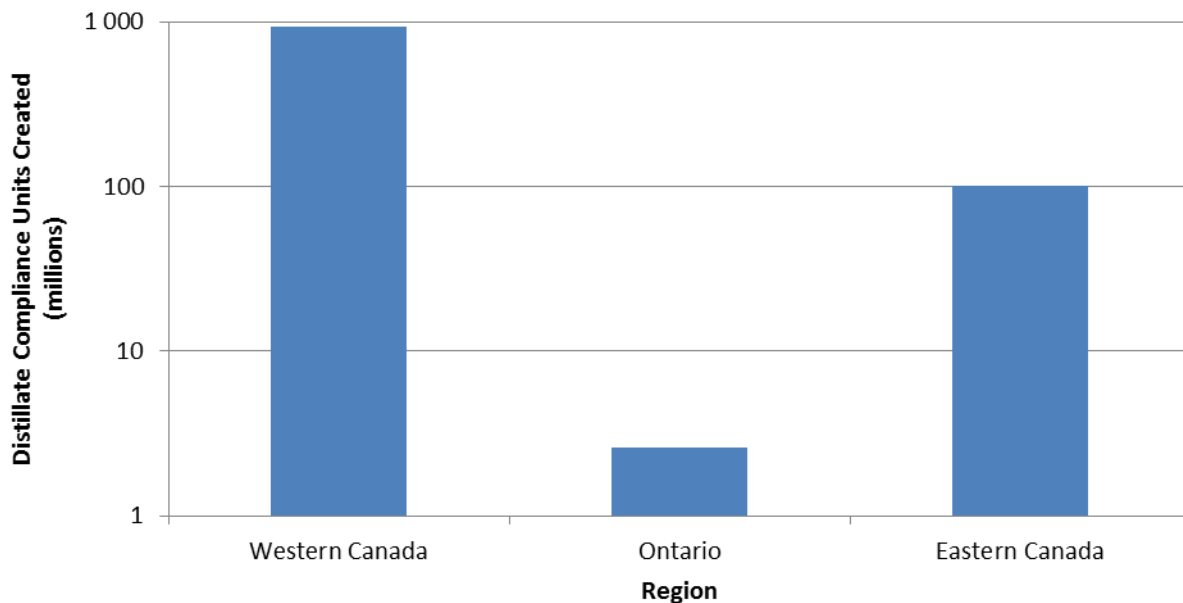
	<b>Gasoline Compliance Units Created<sup>1</sup></b>	<b>Distillate Compliance Units Created<sup>1</sup></b>
<b>Western Canada</b>	1 903 843 070	939 258 150
<b>Ontario</b>	2 488 989 417	2 581 752
<b>Eastern Canada</b>	986 778 765	101 185 900
<b>Canada</b>	<b>5 379 611 252</b>	<b>1 043 025 802</b>

<sup>1</sup> One Compliance Unit (CU) is created for each litre of renewable fuel blended into liquid petroleum fuel.

**Figure 5.1a: Gasoline Compliance Units Created, by Region**



**Figure 5.1b: Distillate Compliance Units Created, by Region**



The Regulations have provisions for carrying compliance units forward or back between compliance periods as well as cancelling compliance units. The equations for calculating how many surplus compliance units primary suppliers have at the end of a trading period (i.e., between January 1 and March 31) are prescribed in subsections 21(2) and 22(2) of the Regulations. The formulae are basically the number of compliance units a primary supplier owns at the end of the trading period minus their

required renewable fuel volumes for gasoline and distillate separately. These sections also prescribe the maximum limits on the number of surplus compliance units that can be carried forward by a primary supplier, which is 20% of their requirement for gasoline and distillate (or 0.01 times their gasoline pool and 0.004 times their distillate pool). The reason for setting a carry forward limit is to help ensure a smooth and predictable demand for renewable fuel from year to year. Elective participants may also carry forward compliance units up to a maximum of the number of compliance units that they created during that compliance period.

In addition to carry forwards, compliance units that have been created in the next compliance period between January 1 and March 31<sup>st</sup> are eligible for carry back by a primary supplier. This concept was introduced to mitigate possible minor unforeseen circumstances and small accounting errors by primary suppliers. The equations are set out in subsection 24(2) of the Regulations for calculating the number of compliance units that can be carried back. Primary suppliers must cancel two compliance units of the applicable type (gasoline or distillate) for each compliance unit that they carry back. Elective participants cannot carry back compliance units, because they do not have any requirements for renewable content.

There are several provisions set out in section 25 of the Regulations that require primary suppliers to cancel compliance units. For instance, they are required to cancel compliance units if they are carrying back compliance units and must cancel compliance units for the renewable content in exported fuel. Compliance units must also be cancelled if a primary supplier owns more than the monthly maximum, or if they are unused at the end of the trading period and not carried forward. Also, if a participant withdraws from the trading system they must cancel all outstanding compliance units as of the date of their withdrawal.

In the first compliance periods, there was significant use of the trading system. There were over 1.65 billion gasoline compliance units and 300 million distillate compliance units reported as transferred in trade. No regulated parties reported carrying back compliance units into the first compliance periods. Table 5.1c summarizes the total number of gasoline compliance unit transactions during the first compliance periods and Table 5.1d lists similar information for distillate compliance units. It is suspected that the compliance units received and transferred in trade are not equal due to reporting errors. The values are as reported from Schedule 4 and 5 of the Regulations.

**Table 5.1c: Gasoline Compliance Unit Transactions**

<b>Transaction</b>	<b>Primary Suppliers</b>	<b>Elective Participants</b>	<b>Total</b>
Created	5,206,276,931	173,334,321	5,379,611,252
Received in Trade	1,646,445,993	0	1,646,445,993
Transferred in Trade	1,622,650,645	26,283,687	1,648,934,332
Cancelled <sup>1</sup>	101,596,748	1,915,350	103,512,098
Carried Forward <sup>2</sup>	13,900,728	0	13,900,728
Carried Back	0	0	0
<b>Distillate compliance units reported transferred to gasoline</b>	30,684,898	0	30,684,898
<b>Results of equation 8(1)</b>	5,173,061,157	NA <sup>3</sup>	NA <sup>3</sup>

<sup>1</sup> Does not include unused compliance units.

<sup>2</sup> Carry forward means those compliance units carried forward into this compliance period.

<sup>3</sup> Not applicable.

**Table 5.1d: Distillate Compliance Unit Transactions**

<b>Distillate Compliance Units</b>	<b>Primary Suppliers</b>	<b>Elective Participants</b>	<b>Total</b>
Created	1,030,445,186	12,580,616	1,043,025,802
Received in Trade	299,427,612	0	299,427,612
Transferred in Trade	300,174,350	6,030,153	306,204,503
Cancelled <sup>1</sup>	25,795	458,591	484,386
Carried Forward <sup>2</sup>	48,887,822	0	48,887,822
Carried Back	0	0	0
<b>Distillate compliance units reported transferred to gasoline</b>	0	0	0
<b>Results of equation 8(2)</b>	1,078,560,475	NA <sup>3</sup>	NA <sup>3</sup>

<sup>1</sup> Does not include unused compliance units.

<sup>2</sup> Carry forward means those compliance units carried forward into this compliance period.

<sup>3</sup> Not applicable.

## **5.2 Compliance with the 5% and 2% Requirements**

This section provides primary suppliers' compliance rates with the two renewable fuel content requirements and the reported average renewable fuel content in the national pools for the first compliance periods.

Primary supplier's compliance with the renewable fuel volume / compliance units requirements of the Regulations

The Regulations require primary suppliers to have an average of at least 5% renewable fuel content in their gasoline pool and 2% renewable fuel content in their distillate pool for a compliance period. Renewable fuel content is calculated in accordance with subsections 8(1) and 8(2) of the Regulations, which account for creations, trading, carry forwards and carry backs of compliance units.

The following is an excerpt from the Regulations describing how equations 8(1), for gasoline and 8(2) for distillate are used to calculate a primary supplier's renewable fuel content in their pool.

8. (1) *The volume of renewable fuel in a primary supplier's gasoline pool for a gasoline compliance period is to be determined in accordance with the equation*

$$RF_G = Cre_G + Rec_G - Tr_G - Can_G + CF_G + CB_G + DtG_{DG}$$

Where

$RF_G$

*is the volume, expressed in litres, of renewable fuel in their gasoline pool;*

$Cre_G$

*is the volume, expressed in litres, that is equal to the number of gasoline compliance units that they created during the gasoline compliance period;*

$Rec_G$

*is the volume, expressed in litres, that is equal to the number of gasoline compliance units, in respect of the gasoline compliance period, that they received in trade;*

$Tr_G$

*is the volume, expressed in litres, that is equal to the number of gasoline compliance units, in respect of the gasoline compliance period, that they transferred in trade to another primary supplier;*

$Can_G$

*is the volume, expressed in litres, that is equal to the number of gasoline compliance units, in respect of the gasoline compliance period, that they are required to cancel;*

$CF_G$

*is the volume, expressed in litres, that is equal to the number of gasoline compliance units that they carried forward into the gasoline compliance period;*

$CB_G$

*is the volume, expressed in litres, that is equal to the number of gasoline compliance units that they carried back into the gasoline compliance period, minus the volume, expressed in litres, that is equal to the number of gasoline compliance units that they carried back from the gasoline compliance period into the preceding gasoline compliance period; and*

$DtG_{DG}$

is the volume, expressed in litres, that is equal to the number, if any, of distillate compliance units that they assign as the value for  $DtG_{DG}$  for the gasoline compliance period.

(2) The volume of renewable fuel in a primary supplier's distillate pool for a distillate compliance period is to be determined in accordance with the equation

$$RF_D = Cre_D + Rec_D - Tr_D - Can_D + CF_D + CB_D - DtG_{DD}$$

Where

$RF_D$

is the volume, expressed in litres, of renewable fuel in their distillate pool;

$Cre_D$

is the volume, expressed in litres, that is equal to the number of distillate compliance units that they created during the distillate compliance period;

$Rec_D$

is the volume, expressed in litres, that is equal to the number of distillate compliance units, in respect of the distillate compliance period, that they received in trade;

$Tr_D$

is the volume, expressed in litres, that is equal to the number of distillate compliance units, in respect of the distillate compliance period, that they transferred in trade to another primary supplier;

$Can_D$

is the volume, expressed in litres, that is equal to the number of distillate compliance units, in respect of the distillate compliance period, that they are required to cancel;

$CF_D$

is the volume, expressed in litres, that is equal to the number of distillate compliance units that they carried forward into the distillate compliance period;

$CB_D$

is the volume, expressed in litres, that is equal to the number of distillate compliance units that they carried back into the distillate compliance period, minus the volume, expressed in litres, that is equal to the number of distillate compliance units that they carried back from the distillate compliance period into the preceding distillate compliance period; and

$DtG_{DD}$

is the volume, expressed in litres, that is equal to

- a) for distillate compliance periods other than the first and second ones, the value that they assigned for  $DtG_{DG}$  in subsection (1) for the gasoline compliance period that is the same period as the distillate compliance period,
- b) for the first distillate compliance period, the total of the values that they assigned for  $DtG_{DG}$  in subsection (1) for gasoline compliance periods that overlapped with the first distillate compliance period, and

- c) *for the second distillate compliance period, the total of the values that they assigned for  $DtG_{DG}$  in subsection (1) for gasoline compliance periods that overlapped with the second distillate compliance period.*

A primary supplier's gasoline and distillate pools for a compliance period are the total volume of the batches of gasoline and distillate fuel they produce and import during that compliance period minus any volumes subtracted from the pool, discussed in section 4.2 (paragraphs 6(3) to 6(7) of the Regulations).

The average renewable fuel content in the gasoline or distillate pool for a compliance period is calculated by

$$\%RF_G = RF_G / \text{Gasoline Pool}$$

$$\%RF_D = RF_D / \text{Distillate Pool}$$

*Where*

*$RF_G$  and  $RF_D$  are the volumes, expressed in litres, of renewable fuel in their gasoline and distillate pools respectively.*

During the first compliance periods, 25 primary suppliers had either a gasoline or distillate pool or both. For a complete list of companies and their activities, see Appendix C: List of Registered Parties and their Activities.

For the first gasoline compliance period, the percentage of primary suppliers who reported compliance with the 5% renewable fuel content requirement in the gasoline pool was 92% (12 primary suppliers were in compliance out of the 13 who had a gasoline pool)<sup>13</sup>, based on information reported in their Schedule 4, and verifications by independent auditors.

For the first distillate compliance period, the percentage of primary suppliers who reported compliance with the 2% renewable fuel content requirement in the distillate pool was 72% (13 primary suppliers were in compliance out of the 18 who had a distillate pool)<sup>13</sup>, based on information reported in their Schedule 4, and the verifications by independent auditors. It was noted that petroleum fuel importers had the lowest compliance rates.

Compliance with the *Renewable Fuels Regulations*, including the minimum renewable fuel content requirements is mandatory and necessary in order for the Regulations to meet their environmental objective of reducing GHG emissions. Compliance has been initially assessed based on data submitted in the annual reports submitted by regulated parties. Reporting errors and a lack of understanding of the regulatory requirements have been noted. Suspected violations were referred to Enforcement Branch and compliance promotion efforts targeting enhanced understanding and reporting errors were undertaken in information sessions that were provided by Environment and Climate Change Canada in 2013 and 2014.

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<sup>13</sup> Some gasoline and distillate pools are still being verified therefore the number of suspected violations and the number of companies with a pool may change.

Estimated average renewable fuel content in the gasoline and distillate pools for the first compliance periods

The average national renewable fuel content in the gasoline and distillate pools was reported to be approximately 6.2% and 2.2% respectively. Table 5.2a lists the volume of renewable fuel in the gasoline and distillate pools, the national gasoline and distillate pools and the reported average renewable fuel content in the national pools.

Table 5.2b lists all primary suppliers and their reported percentage of renewable fuel in their pools. An NA identifies those Primary Suppliers with no pool and requirement for renewable fuel. The % RF<sub>G</sub> and % RF<sub>D</sub> values include compliance units received in trade (as well as carry forwards, carry backs, and those assigned from distillate to gasoline). These reported values represent a company's compliance assessed against the minimum 2% and 5% requirements, and are not reflective of a company's actual volumes of renewable fuel that they themselves blended. The values are as reported from Schedule 4 of the Regulations.

Although five regulated parties did not meet the 5% and 2% requirements for renewable fuel content, over compliance nationally meant that both renewable fuel requirements were met on a national pool basis.

**Table 5.2a: Average Renewable Fuel Content in the National Pools**

	<b>Gasoline</b>	<b>Distillate</b>
<b>Renewable Fuel in National Pool<sup>1</sup> (m<sup>3</sup>)</b>	4 840 737	756 134
<b>National Pool<sup>1</sup> (m<sup>3</sup>)</b>	78 679 072	35 104 970
<b>Average Renewable Fuel Content in Pools (%)</b>	6.2	2.2

<sup>1</sup>As reported in Schedule 4, items 2 to 4 of the Regulations. The national pool volumes in this table include the volumes subtracted from the pools as allowed under subsections 6(3) to 6(7) of the Regulations.



**Table 5.2b: Primary Suppliers and their Reported Renewable Fuel Content in their Gasoline and Distillate Pools**

<b>Primary Supplier</b>	<b>Renewable Fuel Content in Gasoline Pool (%)</b>	<b>Renewable Fuel Content in Distillate Pool (%)</b>
Canadian National Railway Co.	NA	0.36
Canadian Pacific Railway Company	NA	2.08
Chevron Canada Limited	5.23	2.25
CityService Valcon, LLC	NA	1.99
Federated Co-operatives Ltd.	8.66	2.13
Husky Oil Limited	31.96	2.47
Idemitsu Apollo Corporation	NA	0.00
IMPERIAL OIL	5.90	2.28
Irving Oil Operations GP	6.93	NA
Larry Penner Enterprises Inc.	NA	2.00
Morgan Stanley Capital Group Inc	5.00	*
NOVA Chemicals (Canada) Ltd.	NA	*
Petro-Canada Lubricants Inc.	NA	2.00
Produits Pétroliers Norcan SENC	6.00	0.12
Shell Canada Products	6.13	2.48
Shell Trading Canada, a division of Pennzoil-Quaker State Canada Incorporated	*	*
Suncor Energy Inc.	5.00	NA
Suncor Energy Oil Sands Limited Partnership	NA	2.03
Suncor Energy Products Inc.	5.00	NA
Suncor Energy Products Partnership	6.00	2.27
Syncrude Canada Ltd	NA	2.00
Trafigura AG	*	NA
Trafigura Canada General Partnership	*	NA
Ultramar limitée	5.21	2.30
Western Petroleum Company	4.44	1.64

Notes: “ NA ” means the regulated party did not have an obligation (a gasoline or distillate pool). “ \* ” means the gasoline and distillate pool are still being verified, therefore the number of suspected violations and the number of companies with a pool may change. It is believed that one of the companies being verified (“ \* ”) has a pool and is in compliance but the % renewable fuel content has not been listed since it is not confirmed.

### **5.3 Report Quality**

Overall, the reports received by Environment and Climate Change Canada for the first compliance periods were subject to a significant number of errors and required extensive work by Environment and Climate Change Canada staff to verify the data. These are new, complex regulations and compliance verification of this data is ongoing. Environment and Climate Change Canada continues to provide information to regulated parties to ensure the timeliness and completeness of reports for the coming compliance periods. Please refer to the [Renewable Fuels Regulations Performance Report: December 2010 to December 2012](#) online for a more detailed discussion of compliance promotion and enforcement activities Environment and Climate Change Canada has undertaken to improve compliance with the Regulations.

## 6.0 Conclusion

The data received from regulated parties for the first compliance periods indicate that the Regulations are on track to meeting their objective of reducing GHG emissions. Lifecycle greenhouse gas emissions reductions of approximately 7.0 megatonnes (Mt) or an annual average reduction of approximately 3.7 Mt/yr. were estimated to have accrued in the first compliance periods.

Both renewable fuel requirements were met on a national pool basis in the first compliance periods. The reported average renewable fuel content in the gasoline and distillate pools was 6.2% and 2.2% respectively. The types of renewable fuels used to comply with the Regulations were ethanol, of which 60% was produced domestically and 40% was imported into Canada, biomass-based diesel, of which 20% was produced domestically and 80% was imported into Canada and hydrogenation-derived renewable diesel (HDRD), of which 100% was imported into Canada. The predominant feedstocks were “other grains” for the production of ethanol and “starch” for imported ethanol. Biomass-based diesel production feedstocks were predominantly “animal material” and “palm oil” for imported biomass-based diesel.

There were five companies that reported renewable fuel contents below the minimum 2% renewable fuel content in distillate requirement and one company that reported renewable fuel content below the minimum 5% renewable fuel content in gasoline requirement. In order to improve overall compliance with the Regulations, Environment and Climate Change Canada continues to provide information to regulated parties to increase their understanding of the Regulations.

## APPENDIX A: Provincial Renewable Fuel Requirements

Table A.1: Provincial Renewable Fuels Requirements

Province	Requirements Under the Provincial Regulation	Regulation Effective Date
<b>Alberta</b>	Gasoline: 5%	2011
<b>Alberta</b>	Diesel fuel: 2%	2011
<b>British Columbia</b>	Gasoline: 5%	2010
<b>British Columbia</b>	Distillate fuels: 4%	2011
<b>Manitoba</b>	Gasoline: 8.5%	2008
<b>Manitoba</b>	Diesel fuel: 2%	2009
<b>Newfoundland</b>	No regulation	No regulation

<b>Province</b>	<b>Requirements Under the Provincial Regulation</b>	<b>Regulation Effective Date</b>
<b>New Brunswick</b>	No regulation	No regulation
<b>Nova Scotia</b>	No regulation	No regulation
<b>Ontario</b>	Gasoline: 5%	2007
<b>Ontario</b>	Diesel fuel: about 2% (about 3% in 2016 and about 4% in 2017)	2014
<b>Prince Edward Island</b>	No regulation	No regulation
<b>Quebec</b>	No regulation	No regulation
<b>Saskatchewan</b>	Gasoline: 7.5%	2007
<b>Saskatchewan</b>	Diesel fuel: 2%	2012

<sup>1</sup> Current to February 11, 2016.

## APPENDIX B: Renewable Fuels Regulations Schedules and Deadlines

**Table B.1: Renewable Fuels Regulations Schedules and Deadlines**

Schedule	Regulatory Provision	Type	Person that must report	Reporting Deadlines
Schedule 1: Information required from a Primary Supplier	Subsection 3(2) and section 9	Registration (one-time)	Primary supplier	One day before 400 <sup>th</sup> m <sup>3</sup> is produced or imported, or produced and imported combined <sup>1</sup> .
Schedule 2: Information required from a Participant	Paragraph 11(1)(b), subsection 11(2) and item 5 of Schedule 1	Registration (one-time)	Primary supplier <sup>2</sup> and elective participant	One day before creation of first compliance unit.
Schedule 3: Information required	Subsections 28(1.1) and (2)	Annual audit	Primary supplier, elective participant, and producer or importer of renewable fuel	June 30 (starting 2013)
Schedule 4: Information required from a Primary Supplier	Section 30	Annual Report	Primary supplier	April 30 (starting 2013) <sup>3</sup>
Schedule 5: Information required from a Participant	Section 33	Annual Report	Primary supplier and elective participant	April 30 (starting 2013) <sup>3</sup>
Schedule 6: Information required from a Producer or Importer of Renewable Fuel	Subsection 3(2) and 34(1) and (2)	Registration (one-time)	Producer or importer of renewable fuel	One day before 400 <sup>th</sup> m <sup>3</sup> is produced or imported, or produced and imported combined.
Schedule 7: Information required from a Producer or Importer of Renewable Fuel	Subsection 34(4)	Annual Report	Producer or importer of renewable fuel	February 15 (starting 2013)
Schedule 8: Information required	Subsections 35(1) and (2)	Measurement Method (one-time)	Primary supplier, elective participant, and producer or importer of renewable fuel	The later of: <ul style="list-style-type: none"> <li>• The day of, or prior to, registration by the person, and</li> <li>• 180 days after the formal registration of the Regulations (i.e., by February 19, 2011).</li> </ul>
Sellers of Fuel for Export <sup>4</sup>	Subsection 36(2)	Annual Report	A person (other than a participant, or a producer or	February 15 (starting 15)

Schedule	Regulatory Provision	Type	Person that must report	Reporting Deadlines
			importer of renewable fuel) who sold for export renewable fuel, or liquid petroleum fuel with renewable fuel content	

<sup>1</sup> Was required by December 14, 2010 for existing operations as of the coming into force of the Regulations.

<sup>2</sup> Primary suppliers are expected to submit all the information required in Schedule 2 as required by item 5 in Schedule 1.

<sup>3</sup> Previously April 15<sup>th</sup> and changed to April 30<sup>th</sup> in an amendment published November 6, 2013 in the *Canada Gazette*, Part II.

<sup>4</sup> Sellers for Fuel for Export are expected to submit all information required in Section 36 Subsection 2.

**APPENDIX C: List of Registered Parties and their Activities**

**Table C.1a: List of Registered Parties with Activity in First Compliance Periods**

<b>Regulated Parties</b>	<b>Primary Supplier: Gasoline Pool</b>	<b>Primary Supplier: Distillate Pool</b>	<b>Elective Participant</b>	<b>Producer and/or Importer of Ethanol</b>	<b>Producer and/or Importer of Biodiesel</b>	<b>Producer and/or Importer of HDRD/HVO<sup>1</sup></b>
1796640 Ontario Limited			X		X	
Amaizingly Green Products LP				X		
Archer Daniels Midland Company				X	X	
Astra Energy Canada Inc.			X	X	X	
BioUrja Trading LLC				X		
BIOX Canada Ltd.					X	
C&N ETHANOL MARKETING CORPORATION				X		
Canada Clean Fuels Inc			X			
Canadian National Railway Co.		X				
Canadian Pacific Railway Company		X				
Chevron Canada Limited	X	X				
CHS Inc.				X		
CITY-FARM BIOFUEL LTD					X	
CityServiceValcon, LLC		X				
Consolidated Biofuels Ltd.					X	
Eco-Energy Inc				X		
Elbow River Marketing Limited Partnership				X		
Federated Co-operatives Ltd.	X	X				
G&B Fuels Inc			X			
GreenField Ethanol Inc.				X		
GreenField Ethanol of Quebec Inc.				X		
GreenField Johnstown Limited Partnership				X		
Hartland Fuel Products LLC					X	
Husky Oil Limited	X	X		X		
Idemitsu Apollo Corporation		X				
IMPERIAL OIL	X	X				



Regulated Parties	Primary Supplier: Gasoline Pool	Primary Supplier: Distillate Pool	Elective Participant	Producer and/or Importer of Ethanol	Producer and/or Importer of Biodiesel	Producer and/or Importer of HDRD/HVO <sup>1</sup>
Integrated Grain Processors Co-operative Incorporated				X		
logen Corp.				X		
Irving Oil Operations GP	X			X		
Kawartha Ethanol Inc.				X		
Larry Penner Enterprises Inc.		X				
Mansfield Oil Company of Gainesville				X	X	
Methes Energies Canada Inc.					X	
Milligan Biofuels Inc.					X	
Morgan Stanley Capital Group Inc	X	*				
Murex LLC				X		
NorAmera BioEnergy Corp.				X		
Noroxel Energy Ltd.					X	
North West Bio-Energy Ltd.				X		
NOVA Chemicals (Canada) Ltd.		*				
Permolex Ltd.				X		
Petro-Canada Lubricants Inc.		X				
Pound-Maker Agventures Ltd				X		
Produits Pétroliers Norcan SENC	X	X				
QFIBIODIESEL					X	
Rothsay, a Division of Maple Leaf Foods			X		X	
Shell Canada Products	X	X			X	X
Shell Trading Canada, a division of Pennzoil-Quaker State Canada Incorporated	*	*		X		X
Suncor Energy Inc.	X					
Suncor Energy Oil Sands Limited Partnership		X				
Suncor Energy Products Inc.	X			X	X	
Suncor Energy	X	X			X	X

Regulated Parties	Primary Supplier: Gasoline Pool	Primary Supplier: Distillate Pool	Elective Participant	Producer and/or Importer of Ethanol	Producer and/or Importer of Biodiesel	Producer and/or Importer of HDRD/HVO <sup>1</sup>
<b>Products Partnership</b>						
<b>Syncrude Canada Ltd.</b>		X				
<b>Terra Grain Fuels Inc.</b>				X		
<b>Tombstone Energy Solutions Ltd</b>					X	
<b>Trafigura AG</b>	*				X	
<b>Trafigura Canada General Partnership</b>	*				X	
<b>TransMontaigne Marketing Canada Inc.</b>			X			
<b>Ultramar limitée</b>	X	X		X		X
<b>Western Petroleum Company</b>	X	X		X		
<b>Total</b>	16	20	6	27	19	4

<sup>1</sup> HDRD is hydrogenation-derived renewable diesel and HVO is hydrotreated vegetable oil.

Notes: “ \* ” means the gasoline and distillate pool are still being verified, therefore the number of suspected violations and the number of companies with a pool may change. It is believed that one of the companies being verified (“ \* ”) has a pool and is in compliance but the % renewable fuel content has not been listed since it is not confirmed.

**Table C.1b: List of Registered Parties with No Activity in First Compliance Period**

Regulated Parties	Primary Supplier	Elective Participant	Renewable Fuel Producer and/or Importer
<b>2ReFuels Distribution Inc.</b>		X	
<b>Dynergen Biodiesel Inc.</b>		X	X
<b>FS Partners, a division of Growmark</b>	X		X
<b>Petrogas Marketing Limited</b>			X
<b>Wilson Fuel Co. Limited</b>		X	