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Climate Change Canada

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Renewable Fuels Regulations

Performance Report: December 2010 - December 2012

February 2016

Notice

The information contained in this report is compiled from data received by Environment and Climate Change Canada as of March 17th, 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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1.0 Background and Context

The *Renewable Fuels Regulations* require petroleum producers and importers (primary suppliers) to have an average of at least 5% renewable fuel content in their gasoline pool as of December 15, 2010 and 2% renewable fuel content in their distillate pool as of July 1, 2011¹. The Regulations apply on a company basis and include a system of tradeable 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 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 period², 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. More detailed information on the Regulations is available on the [Renewable Fuels Regulations](#) webpage.

The *Renewable Fuels Regulations* are a part of the Government's approach to reducing greenhouse gas (GHG) emissions by reducing emissions from the transportation sector. The Regulations were originally estimated to lead to cumulative GHG emissions reductions of approximately four megatonnes per year once fully implemented.

This report is an analysis of the performance of the Regulations for the first two compliance periods (gasoline and distillate), according to the performance indicators developed for the *Renewable Fuels Regulations* Performance Measurement and Evaluation Plan. The information contained in this report is compiled from the data received by Environment and Climate Change Canada in 2013 for the first two compliance periods and includes any subsequent updates to that data, received up to March 17th, 2014. This data is required to be submitted by regulated parties pursuant to Schedules 4, 5 and 7 of the Regulations, is subject to reporting errors and is undergoing compliance promotion and enforcement verification activities.

2.0 Performance Measurement and Indicators

A detailed Performance Measurement and Evaluation Plan (PMEP) was developed for the *Renewable Fuels Regulations* to enable Environment and Climate Change Canada

¹ The *Regulations Amending the Renewable Fuels Regulations (2013)* introduced a national exemption for heating distillate oil sold or delivered for use in space heating purposes.

² The first compliance period for 5% renewable fuel content in gasoline (gasoline compliance period) was 24 and a half months, from December 15, 2010 to December 31, 2012. The first compliance period for 2% renewable fuel content in diesel fuel and heating distillate oil (distillate compliance period) was 18 months, from July 1, 2011 to December 31, 2012.

to measure the performance of the Regulations against their objective. The objective of the Regulations is to reduce GHG emissions by mandating renewable fuel content (with some exceptions) 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.

The performance of the Regulations is assessed against anticipated results, or outcomes, that are immediate, intermediate and long term (final). These outcomes are the results of the development and implementation of the Regulations. Progress towards achieving the outcomes is evaluated against a set of developed key indicators (performance indicators) that reflect the activities that are being undertaken by both the government and regulated parties.

The immediate outcomes of the Regulations are:

- Immediate Outcome 1: Awareness among the regulated community about the regulatory requirements including the compliance unit trading system.
- Immediate Outcome 2: Reporting of data on time and accurately by the regulated community.
- Immediate Outcome 3: Regulated community is in compliance with the renewable fuel volume and compliance unit requirements of the Regulations, for gasoline, diesel and heating distillate oil.
- Immediate Outcome 4: The compliance unit trading system of the Regulations is being used by regulatees for the purpose of flexibility in complying with the regulatory requirements for renewable fuel content.

The intermediate outcome of the Regulations is:

- Intermediate Outcome 1: Increased volume of renewable fuel content in Canadian fuel on a national basis.

The final, ultimate outcome of the Regulations is GHG emissions reductions from the displacement of fossil fuels.

3.0 Assessment of Performance Indicators

The results of the assessment of the key performance indicators for the first two compliance periods indicate that the Regulations are on track to meeting their objective of reducing GHG emissions. Continued compliance promotion and enforcement activities are required to improve overall compliance with the Regulations. A summary of the findings follows:

Immediate Outcome 1: Awareness among the regulated community of the regulatory requirements including the compliance unit trading system.

- For the first two compliance periods, it was determined that 86% of the regulatees of whom Environment and Climate Change Canada was aware submitted registration information, as required by the Regulations.

Immediate Outcome 2: Reporting of data on time and accurately by the regulated community.

- Submissions of four annual reports (Schedules 3, 4, 5 and 7) were received from regulatees for the first two compliance periods. These reports ranged from being 70% to 92% on time, depending on the schedule submitted.
- A compliance verification exercise of all submitted data required for all the first two compliance period reports is still in progress. Therefore at this time, the percentage of primary suppliers and elective participants who report their associated volumes of renewable fuels with accuracy and without deviation from the requirements of the Regulations cannot currently be provided.

Immediate Outcome 3: Regulated community is in compliance with the renewable fuel volume / compliance units requirements of the Regulations.

- 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%, based on information reported in their Schedule 4 and 5 reports, and in 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%, based on information reported in their Schedule 4 and 5 reports, and in verifications by independent auditors.
- The five percent and two percent renewable fuel content requirements were met on a national pool basis.
- Representative information cannot be provided regarding deviations from the reporting requirements and the number of Enforcement inspections that yielded suspected non-compliances due to ongoing compliance verification.

Immediate Outcome 4: The compliance unit trading system of the Regulations is being used by regulatees for the purpose of flexibility in complying with the regulatory requirements for renewable fuel content.

- Approximately 5.38 billion gasoline compliance units and 1.04 billion distillate compliance units were reported to have been created in the first two compliance periods. There were over 1.6 billion gasoline compliance units and 300 million distillate compliance units reported as transferred in trade during this period. No

regulatees reported carrying back compliance units into the first two compliance periods.

Intermediate Outcome 1: Increased volume of renewable content in Canadian fuel on a national basis.

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.

Ultimate outcome: GHG emissions reductions from the displacement of fossil fuels

- GHG reductions of approximately 7.0 Mt were estimated to have accrued in the first two 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.

Tables 1 to 6 on pages 8-11 summarize the findings for each performance indicator.

4.0 Limitations on the analysis and assumptions made

The data used for the analysis in this report reflect the data submitted in the various annual reports for the first two compliance periods, as received by Environment and Climate Change Canada up to March 17, 2014. Some of the reports submitted by regulatees contain errors or deviations from the regulatory requirements and compliance verification is ongoing.

The total GHG emission reductions from the displacement of petroleum fuel estimated for the first two compliance periods were calculated based on the volumes of renewable fuels used to create compliance units, as reported under items 2 to 6 of Schedule 5, and emission factors obtained from GHGenius³. 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 liters 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
- HDRD⁴ Palm: -1.431 Mt/BL

³ GHGenius version 3.21

⁴ Hydrogenation-derived renewable diesel (HDRD), also referred to as hydrogenated vegetable oil (HVO).

5.0 Compliance and Enforcement

Compliance with the *Canadian Environmental Protection Act, 1999* (CEPA 1999) and its regulations is mandatory. Compliance, which means the state of conformity with the law, is secured through two types of activity: promotion and enforcement.

5.1 Compliance Promotion

Environment and Climate Change Canada promotes compliance through information, education and guidance in order to increase compliance with the regulations.

For the *Renewable Fuels Regulations*, Environment and Climate Change Canada has undertaken a significant effort in developing tools for regulatees to use and delivering compliance promotion activities to the regulated communities. Environment and Climate Change Canada's website⁵ contains links to regulatory text, factsheets, a comprehensive question and answer document and other pertinent information to help support industry's understanding of their requirements. A template for a key record for compliance units, the Compliance Unit Account Book, has been developed in addition to an online reporting tool for submitting annual reports. These tools further assist regulatees in understanding and complying with their record making and reporting obligations.

Environment and Climate Change Canada held many information sessions and webinars during the development of the regulations and during the first two compliance periods following their implementation. During the first two compliance periods, 18 information sessions were provided on the finalized regulatory requirements in various cities across Canada, including 3 webinars. In addition, 1 conference exhibition booth was held at a renewable fuels industry conference. Environment and Climate Change Canada also actively responds to stakeholder questions and has met with several regulatees on a one-on-one basis to review the requirements of the Regulations and answer questions they may have.

5.2 Enforcement

Enforcement is a key contributor to the overarching goal of achieving the highest level of environmental quality for all Canadians. Enforcement activities include inspections to verify compliance; investigations of violations; measures to compel compliance without resorting to formal court action; and measures to compel compliance through court action. If enforcement officers can substantiate that a violation took place and there is sufficient evidence to proceed, they will take action using one or more of the

⁵ [Renewable Fuels Regulations](#)

enforcement tools available under CEPA 1999 such as written warnings, directions, environmental protection compliance orders, injunction or prosecution. Environment and Climate Change Canada's Compliance and Enforcement Policy for the *Canadian Environmental Protection Act, 1999* establishes the principles for enforcing CEPA 1999 and its regulations. It may be accessed in [Environment and Climate Change Canada's Publications Catalogue](#)

The *Canadian Environmental Protection Act, 1999 Annual Report*⁶ provides an overview of the activities conducted and results achieved under CEPA 1999. From April, 2010 to the end of March, 2013, enforcement activities undertaken for the *Renewable Fuels Regulations* included inspections and written warnings, as follows:

- from April 1, 2010, to March 31, 2011: 1 on-site and 26 off-site inspections and 1 written warning
- from April 1, 2011, to March 31, 2012: 2 on-site and 23 off-site inspections and 1 written warning
- from April 1, 2012, to March 31, 2013: 4 on-site and 3 off-site inspections

5.3 Overview of compliance with the Regulations for the first two compliance periods

An assessment of the compliance indicators for the PMEP has led to several observations regarding compliance with the Regulations. These observations and Environment and Climate Change Canada's recommended actions are discussed below.

Observation 1: The percentage of regulatees who are in compliance with the 2% renewable fuel content requirement in the distillate pool was lower than expected, at 72%. This represents 13 companies out of a total of 18. There was a high compliance rate of 92% for the 5% requirement, which represents 12 companies out of 13. Trends in compliance were observed and can be generalized across the different regulated communities. It was noted that petroleum fuel importers had the lowest compliance rates.

Environment and Climate Change Canada Recommended Action: Compliance with the renewable fuel content requirements is mandatory and necessary in order for the Regulations to meet their environmental objective of reducing GHG emissions. Compliance with this requirement has been initially assessed based on data submitted in the annual reports. Reporting errors and a lack of understanding of the regulatory requirements have been noted that may have contributed to the initial assessment of non-compliance. Suspected non-compliances have been referred to Enforcement Branch for further action and compliance promotion efforts targeting reporting errors have been integrated into information sessions that were provided by Environment and Climate Change Canada in 2013 and 2014. Environment and

⁶ [Current 2012/2013 report](#)
[Past reports](#)

Climate Change Canada will reassess its compliance promotion plans after the compliance rates for the second compliance period have been determined to see if further targeted compliance promotion is required.

Observation 2: Verification of the data submitted by regulatees indicates there are inconsistencies and potential errors in reporting.

Environment and Climate Change Canada Recommended Action: Verification activities are ongoing to follow up with regulatees regarding suspected errors in reporting to obtain further clarification or corrections of the data. To increase compliance and accuracy of data, compliance promotion material targeting reporting errors has been integrated into information sessions that Environment and Climate Change Canada provided in 2013 and 2014. It is expected that this will lead to an improvement in the accuracy of the data submitted by regulatees for the next compliance period, as regulatees further refine their reporting practices and procedures and gain a better understanding of the reporting requirements in the Regulations.

Observation 3: There was a high non-compliance rate (30%) for submitting Schedule 3, the Auditor's Report, by the required due date of June 30, 2013.

Environment and Climate Change Canada Recommended Action: These Regulations include many flexibilities for regulatees, including annual averaging provisions and a trading system, and rely on records to support the creation of compliance units and their trade. Independent audits by qualified and accredited third-parties are vital to help to ensure the integrity of the trading system, validate compliance units created, validate trades and verify compliance. All instances of audit reports not being submitted were referred to Enforcement Branch for further action.

Observation 4: There was a high non-compliance rate (22%) for submitting Schedule 7, the annual report for producers or importers of renewable fuel, by the required due date of February 15, 2013. The compliance rate for submitting Schedule 4 and 5 for primary suppliers and elective participants was higher, with 92% of primary suppliers submitting Schedule 4 on time and 90% of participants (primary suppliers and elective participants) submitting Schedule 5 on time.

Environment and Climate Change Canada Recommended Action: Schedule 7, annual reports for producers and importers of renewable fuel, serve as an important source of data for Environment and Climate Change Canada's review of the records and reports of primary suppliers and elective participants and in validating the integrity of the compliance unit trading system. All instances of Schedule 7 annual reports not being submitted were referred to Enforcement Branch for further action. All outstanding reports, except for one, were subsequently received by March 17th, 2014.

Schedules 4 and 5 provide key information to verify primary suppliers' compliance with the minimum renewable fuel requirements and for verifying the compliance unit trading system. All instances of Schedules 4 and 5 not being submitted were referred to Enforcement Branch for further action. All outstanding reports were subsequently received by June 30th, 2014.

Tables 1 to 6: Performance Measurement Indicators for the *Renewable Fuels Regulations* (December 15th, 2010 to December 31st, 2012 for gasoline and July 1, 2011 to December 31st, 2012 for distillate)

Table 1: *Immediate Outcome 1: Awareness among the regulated community of the regulatory requirements including the compliance unit trading system.*

Indicator	Performance Indicator	Description	Evaluation for the First Two Compliance Periods
1a)	Percentage of regulatees (primary suppliers, elective participants and producers or importers of renewable fuel) who registered under the Regulations.	This indicator shows the number of regulatees (primary suppliers, elective participants and producers or importers of renewable fuel) who are aware of the Regulations and have registered, pursuant to the Regulations.	<p>Registration reports were received from 55 regulatees in the first two compliance periods.</p> <p>Environment and Climate Change Canada was aware of an additional 9 companies who should have registered in the first two compliance periods, but did not.</p> <p>86% of the regulatees of whom ECCC was aware, registered in the first two compliance periods.</p>
1b)	Percentage of known sellers of fuel for export who submitted annual reports.	This indicator shows the number of sellers of fuel for export who are aware of the Regulations and have submitted an annual report. These are the only regulatees not required to provide a registration report.	Environment and Climate Change Canada was not aware of any sellers of exports in the first two compliance periods. No reports were received from this type of regulatee.

Table 2: *Immediate Outcome 2: Reporting of data on time and accurately by the regulated community.*

Indicator	Performance Indicator	Description	Evaluation for the First Two Compliance Periods
2a)	Percentage of regulatees that report on time information regarding compliance units and the associated volumes of renewable fuel content in gasoline and distillate.	This indicator is a measure that considers the timeliness with which the information is reported under the Regulations. The Regulations have annual reporting requirements for primary suppliers, trading system participants, renewable fuel producers and importers and fuel exporters. The information, collected through the submission of reports, will provide details on several parameters, including the creation of compliance units and the volumes of renewable fuel associated with these units. With respect to timeliness, the Regulations define reporting deadlines. Reports submitted on or before the prescribed deadline will provide an indication of whether or not these deadlines have been met.	<p>For the first compliance period the following percentage of annual reports were submitted on or before the reporting deadlines:</p> <ul style="list-style-type: none"> • Schedule 3: 70% • Schedule 4: 92% • Schedule 5: 90% • Schedule 7: 78%

2b)	Percentage of primary suppliers and elective participants who report the associated volumes of renewable fuels with accuracy and without deviation from the requirements of the Regulations.	This indicator is a measure that considers the accuracy of the information reported under the Regulations. This information will be used to assess compliance with the volume measurement requirements under the Regulations.	Compliance verification work on the data reported for the first compliance period is ongoing. At this time, it is not possible to provide representative measurement of this indicator based on reported data.
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Table 3: Immediate Outcome 3: Regulated community is in compliance with the renewable fuel volume / compliance units requirements of the Regulations.

Indicator	Performance Indicator	Description	Evaluation for the First Two Compliance Periods
3a)	Percentage of regulatees who are in compliance with the 5% renewable fuel content requirement for gasoline, and 2% requirement for distillate.	This indicator is based on the reported volumes of renewable fuels used to create compliance units under the Regulations. In order to ensure compliance with the 5% and 2% renewable fuel content requirements in a primary supplier's gasoline and distillate pools, primary suppliers can either create compliance units or obtain them through trading with other trading system participants.	<p>92% of the regulatees (primary suppliers) who reported to ECCC in the first gasoline compliance period reported that they were compliant with the 5% renewable content requirement in the gasoline pool for the first gasoline compliance period.</p> <p>72% of the regulatees (primary suppliers) who reported to ECCC in the first distillate compliance period reported that they were compliant with the 2% renewable content requirement in the distillate pool for the first distillate compliance period.</p>
3b)	Based on auditor reports, the percentage of primary suppliers that are in compliance with the volume requirements under the Regulations.	This indicator is based on the information contained in the auditor reports and will provide further details on the extent to which the regulatee has complied with the Regulation.	<p>This assessment was based on the primary supplier's audit reports that were received for the first compliance period.</p> <p>92% of primary suppliers were compliant with the 5% renewable content requirement in the gasoline pool for the first gasoline compliance period.</p> <p>72% of primary suppliers were compliant with the 2% renewable requirement content in the distillate pool for the first distillate compliance period.</p>

3c)	Percentage of regulatees subject to inspections by Enforcement Officers, and who are in compliance with the volume requirements under the Regulations.	This indicator demonstrates the rates of compliance determined through Enforcement inspections. If a report received from a regulatee suggests suspected non-compliance, an enforcement officer will conduct an inspection and take Enforcement measures, if required. The subsequent failure by a regulated party to take necessary correctives actions could result in an investigation and prosecution. The range of enforcement activities undertaken for the <i>Renewable Fuels Regulations</i> will be tracked and reported on.	Compliance verification work on the data reported for the first two compliance periods is ongoing. At this time, it is not possible to provide representative measurement of this indicator based on reported data.
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Table 4: Immediate Outcome 4: The compliance unit trading system of the Regulations is being used by regulatees for the purpose of flexibility in complying with the regulatory requirements for renewable fuel content.

Indicator	Performance Indicator	Description	Evaluation for the First Two Compliance Periods
4)	Number of compliance units created, transferred in trade, and carried back using the compliance units trading system.	This indicator provides an assessment of the usefulness of a flexibility mechanism, through the examination of compliance information submitted under the Regulations. Information provided in the annual reports by primary suppliers and elective trading system participants will indicate whether compliance units are being traded in order to meet the renewable fuel requirements. This will inform on the usefulness of the mechanism in providing flexibility to achieve compliance.	<p>During the first compliance period, primary suppliers and elective participants created and transferred in trade compliance units. There were no compliance units carried back into the first two compliance periods.</p> <p>Gasoline compliance units:</p> <ul style="list-style-type: none"> • 5 379 611 252 created • 1 648 934 332 transferred in trade <p>Distillate compliance units:</p> <ul style="list-style-type: none"> • 1 043 025 802 created • 306 204 503 transferred in trade

Table 5: Intermediate Outcome 1 Increased volume of renewable content in Canadian fuel on a national basis.

Indicator	Performance Indicator	Description	Evaluation for the First Two Compliance Periods
5)	Total volume (litres) of renewable fuels resulting from activities that create compliance units and that were reported under the Regulations.	This indicator measures the total volume of renewable fuel content in Canadian fuels. It is a summation of the data reported by all primary suppliers and elective participants. Combined, the volume should be at least equal to 5% of the national gasoline pool and 2% of the national distillate pool. This indicator will be used to demonstrate the increase in volume of renewable content in Canadian fuels on a national basis over time.	<p>Renewable fuel volumes reported used to create gasoline compliance units: 5 129 570 652 liters</p> <p>Renewable fuel volumes reported used to create distillate compliance units: 697 724 488 liters</p>

Table 6: *Ultimate Outcome: GHG emissions reductions from the displacement of fossil fuels*

Indicator	Performance Indicator	Description	Evaluation for the First Two Compliance Periods
6)	Lifecycle GHGs emission reductions (Mt).	<p>This indicator measures the total reductions in GHG emissions attributed to the Regulations from displacing fossil fuels.</p> <p>The total GHG emissions reductions are calculated using the volumes of renewable fuels blended, renewable fuel content in imported fuel and the volume of neat renewable fuel used or sold, as reported in Schedule 5 of the Regulations.</p>	<p>The total GHG emissions reductions accrued during the first two compliance periods were estimated to be: 7.0 Mt. This represents an annual average reduction of approximately 3.7 Mt/yr.</p> <p>This estimate was based on the volumes of renewable fuels used to create compliance units, as reported under items 2 to 6 of Schedule 5 and using the GHG emissions factors from GHGenius version 3.21 for 2011.</p>