	<b>Ministry of Energy, Mines and Petroleum Resources</b>  <i>Issued: March 2018</i>	Renewable and Low Carbon Fuel Requirements Regulation  <b>Treatment of Ethanol made from municipal solid waste</b>  <b>Information Bulletin RLCF-018</b>
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## Background

Under the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* (Act) ethanol produced from biomass is a renewable fuel, and thus both a Part 2 fuel and a Part 3 fuel. Neither the Act nor regulations explicitly contemplate the possibility of ethanol being produced from non-biomass sources. Where ethanol is produced from municipal solid waste and the municipal solid waste contains a substantial component of materials that are not biomass, questions thus arise as to how such ethanol should be treated for the purposes of the Act and the Renewable and Low Carbon Fuel Requirements Regulation (Regulation).

## Definitions

In this Information Bulletin, the following terms, where capitalized, have the following meanings:

“Biomass” includes paper, garden waste, textiles, wood and food scraps;

“Blended” in relation to ethanol means ethanol that has either been

- (a) blended with BOB or
- (b) blended with gasoline in order to achieve an octane rating that is consistent with the recommendations of vehicle manufacturers for certain spark ignition engines or otherwise produce a product that is suitable for use in some or all spark ignition engines,

“Blend” means ethanol that has been Blended, and “Blends” means the act of creating a Blend;

“BOB” or “blendstock for oxygenate blending” means petroleum based substances that are not suitable for use in spark ignition engines unless blended with oxygenates;

“Carbon Intensity Record” has the meaning set out in the Regulation;


“Director’s Order” means the order of the Director under the Act, requiring information in support of Carbon Intensity Records for Unblended Renewable MMSW derived Ethanol, a copy of which is attached to this Bulletin;

“Exclusion Agreements” has the meaning set out in the Regulation;

“Mixed Municipal Solid Waste” or “MMSW” means municipal solid waste that contains less than 90% Biomass (determined by radiocarbon dating of the liquid ethanol) and 10% or more of municipal solid waste that is not Biomass;

“MMSW derived Ethanol” means ethanol derived from Mixed Municipal Solid Waste;

“Non-Renewable MMSW derived Ethanol” means the fraction of MMSW derived Ethanol that is not Renewable MMSW derived Ethanol;

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“Regulation” means the Renewable and Low Carbon Fuel Requirements Regulation, B.C.Reg. 394/2008, as amended from time to time;

“Renewable MMSW derived Ethanol” means the fraction of MMSW derived Ethanol derived from Biomass in MMSW;

“Unblended” in relation to ethanol, means ethanol that has not been Blended.

### **Can ethanol from municipal solid waste be treated as a single, renewable fuel?**

If 90% or more of the municipal solid waste feedstock used to produce ethanol at a facility is Biomass sources, the entirety of the output can be treated as ethanol produced from biomass and is thus a Part 2 fuel and a Part 3 fuel.

If less than 90% of the municipal solid waste feedstock is Biomass, the resulting MMSW derived Ethanol will be considered two separate fuels. The ethanol produced from the Biomass portion of the MMSW (the Renewable MMSW derived Ethanol) is, under the Act, both a Part 2 fuel and a Part 3 fuel. The Non-Renewable MMSW derived Ethanol will be a Part 2 and a Part 3 fuel if it is Blended, but not if it is Unblended.

### **What portion of MMSW derived Ethanol can be treated as renewable?**

The portion of MMSW derived Ethanol which is Renewable MMSW derived Ethanol or Non-Renewable MMSW derived Ethanol is determined by the producer of the ethanol, using radiocarbon dating test methods on the liquid ethanol that adhere to the standard test methods outlined in ASTM D6866 – Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples using Radiocarbon Analysis. Alternatively, a producer of MMSW derived Ethanol may apply to the Director for approval of an alternative test method.

### **When can Renewable MMSW derived Ethanol be treated as a Part 2 fuel? Part 3 fuel?**

Renewable MMSW derived Ethanol is a Part 2 fuel and a Part 3 fuel as soon as it is produced.


### **Who Supplies Renewable MMSW derived Ethanol?**

The rules for determining who is the Part 2 supplier in relation to Renewable MMSW derived Ethanol are the same as for other Part 2 fuels. Generally\*, the first person to sell Renewable MMSW derived Ethanol after it is manufactured in B.C. or brought into B.C. will be considered to have supplied the fuel, except where there is an agreement under section 4(4) of the Act or section 6 of the Regulation transferring regulatory responsibility to a purchasing Part 2 Fuel Supplier. Where the fuel is not sold after being manufactured or imported, section 4 of the Regulation determines who the Part 2 Fuel Supplier is.

Similarly, the rules for determining who is the Part 3 supplier in relation to Renewable MMSW derived Ethanol are the same as for other Part 3 fuels that are also Part 2 fuels. Generally\*, the first person to sell

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\* Certain exceptions may apply, e.g. fuel that is reasonably expected to be used in aircraft.

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Renewable MMSW derived Ethanol after it is manufactured in B.C. or brought into B.C. will be considered to have supplied the fuel, except where there is an Exclusion Agreement transferring regulatory responsibility to a purchasing Part 3 Fuel Supplier. Where the fuel is not sold after being manufactured or imported, section 4.1 of the Regulation determines who the Part 3 Fuel Supplier is.

### **When can Non-Renewable MMSW derived Ethanol be treated as a Part 2 fuel? Part 3 fuel?**

Non-Renewable MMSW derived Ethanol will only become a Part 2 fuel when it is Blended.

Non-Renewable MMSW derived Ethanol will become a Part 3 fuel at the same time it becomes a Part 2 fuel.

### **Who Supplies Non-Renewable MMSW derived Ethanol for the Purposes of Part 2 and 3?**

For the purposes of Part 2, generally\* the first person to sell Non-Renewable MMSW derived Ethanol after it is Blended in B.C. or brought into B.C. as a Blend will be considered to have supplied the Non-Renewable MMSW derived Ethanol, except where there is an agreement under section 4(4) of the Act or section 6 of the Regulation transferring regulatory responsibility. Where the fuel is not sold after being manufactured or imported, section 4 of the Regulation determines who has supplied the fuel for the purposes of Part 2.

For the purposes of Part 3, generally\* the first person to sell Non-Renewable MMSW derived Ethanol after it is Blended in B.C. or brought into B.C. as a Blend will be considered to have supplied the Non-Renewable MMSW derived Ethanol, except where there is an Exclusion Agreement transferring regulatory responsibility. Where the fuel is not sold after being manufactured or imported, section 4.1 of the Regulation determines who has supplied the fuel for the purposes of Part 3.

#### **Where a person:**


- **brings Blended MMSW derived Ethanol into B.C., or**
- **brings Unblended MMSW derived Ethanol into B.C. and subsequently Blends it, what are the reporting requirements for the purposes of Part 2?**

In these situations, generally\* all of the Blended MMSW derived Ethanol will be a Part 2 fuel at the time the fuel is first sold in B.C., or if not sold, used. The person selling it will be required to report Non-Renewable MMSW derived Ethanol and Renewable MMSW derived Ethanol in their compliance reports unless there is an agreement under section 4 of Act or section 6 of the Regulation, transferring regulatory responsibility to a purchaser of the Blend.

Notional transfers of either the Renewable or Non-Renewable fraction of the MMSW derived Ethanol are permitted and may be made independently of each other; however, where MMSW derived Ethanol is transferred under an agreement under section 4 of Act or section 6 of the Regulation, the ratio of Renewable to Non-Renewable MMSW derived Ethanol must be equal to the ratio of Renewable to Non-Renewable MMSW derived Ethanol produced by the producer of the ethanol.

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\* Certain exceptions may apply, e.g. fuel that is reasonably expected to be used in aircraft.

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**Where a person:**

- **brings Blended MMSW derived Ethanol into B.C., or**
- **brings Unblended MMSW derived Ethanol into B.C. and subsequently Blends it, what are the reporting requirements for the purposes of Part 3?**

In these situations, generally\* all of the Blended MMSW derived Ethanol will be a Part 3 fuel at the time the fuel is first sold in B.C., or if not sold, used. The person selling it will be required to report Non-Renewable MMSW derived Ethanol and Renewable MMSW derived Ethanol in their compliance reports unless there is an Exclusion Agreement transferring regulatory responsibility to a purchaser of the Blend.

Where there is an Exclusion Agreement in relation to the Blended MMSW derived Ethanol, the person bringing the fuel into B.C. will be required to provide the purchaser with Carbon Intensity Records in relation to the Non-Renewable MMSW derived Ethanol and the Renewable MMSW derived Ethanol.

Where a facility manufactures Non-Renewable MMSW derived Ethanol and Renewable MMSW derived Ethanol, the ratio of those two fuels reported in compliance reports and Carbon Intensity Records must be consistent with the ratio produced by the manufacturer. For example, if 75% of ethanol from plant X is Renewable MMSW derived Ethanol and 25% is Non-Renewable MMSW derived Ethanol, all compliance reports for Part 3 Fuel Suppliers supplying MMSW derived Ethanol should report the same ratio of Renewable to Non-Renewable. If responsibility for MMSW derived Ethanol is transferred under Exclusion Agreements, the ratio of Renewable to Non-Renewable should remain constant.

**Where a fuel supplier brings Unblended MMSW derived Ethanol into B.C., and sells it without Blending, what reporting requirements apply for the purposes of Part 2?**

Where Unblended MMSW derived Ethanol is brought into B.C. and it is not Blended prior to being sold for the first time, only the renewable fraction will be a Part 2 fuel at the time it is first sold, and this amount must be included in compliance reports of the person bringing the fuel into B.C. unless responsibility for reporting the fuel is transferred under agreement described in section 4 of Act or section 6 of the Regulation.


The Non-Renewable fraction will be reported by the person who Blends that fuel and sells or uses it after Blending, unless responsibility for reporting the fuel is transferred under agreement described in section 4 of Act or section 6 of the Regulation.

Notional transfers of either the Renewable or Non-Renewable fraction of the MMSW derived Ethanol are permitted and may be made independently of each other.

On the other hand, where MMSW derived Ethanol is transferred under an agreement under section 4 of the Act or section 6 of the Regulation, the ratio of Renewable to Non-Renewable MMSW derived Ethanol must be equal to the ratio of Renewable to Non-Renewable MMSW derived Ethanol produced by the producer of the ethanol. However, until such time as the Non-Renewable fraction is Blended, it will not be a Part 2 fuel and does not need to be included in compliance reports.

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\* Certain exceptions may apply, e.g. fuel that is reasonably expected to be used in aircraft.

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**Where a fuel supplier brings Unblended MMSW derived Ethanol into B.C., and sells it without Blending, what reporting requirements apply for the purposes of Part 3?**

Where Unblended MMSW derived Ethanol is brought into B.C. and it is not Blended prior to being sold for the first time, only the renewable fraction will be a Part 3 fuel at the time it is first sold, and this amount must be included in compliance reports of the person bringing the fuel into B.C. unless excluded under Exclusion Agreements. Where there is an Exclusion Agreement in relation to the Renewable MMSW derived Ethanol, the person bringing that ethanol into B.C., will be required under section 11.031 of the Regulation, to provide the purchaser with a Carbon Intensity Record in relation to the Renewable MMSW derived Ethanol.

While the Non-Renewable fraction is not a Part 3 fuel until Blended, the person bringing it into the Province is required to provide the equivalent of a Carbon Intensity Record for the Unblended Non-Renewable MMSW derived Ethanol to Part 3 Fuel Suppliers purchasing Unblended MMSW derived Ethanol under an Exclusion Agreement. This is required by the Director's Order.


The ratio of Non-Renewable MMSW derived Ethanol to Renewable MMSW derived Ethanol reported in compliance reports and Carbon Intensity Records must be consistent with the ratio of the two fuels produced by the manufacturer. For example, if 75% of ethanol from plant X is Renewable MMSW derived Ethanol and 25% is Non-Renewable MMSW derived Ethanol, all compliance reports for Part 3 Fuel Suppliers supplying MMSW derived Ethanol should report the same ratio of Renewable to Non-Renewable. If responsibility for the MMSW derived Ethanol is transferred under Exclusion Agreements, the ratio of Renewable to Non-Renewable should remain constant.

**For the Purposes of Part 3, what is the Energy Effectiveness Ratio of Non-Renewable MMSW derived Ethanol?**

While an energy effectiveness ratio for Non-Renewable MMSW derived Ethanol is not prescribed by the Regulation, the energy effectiveness of all ethanol is equal. Non-Renewable MMSW derived Ethanol has an energy effectiveness ratio of 1.0.

**For the Purposes of Part 3, what is the Default Carbon Intensity of Non-Renewable MMSW derived Ethanol?**


Currently the only manufacturer of MMSW derived Ethanol has an approved carbon intensity under section 6(6) of the Act and a default carbon intensity is not required.

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### Need more information?

Please see the Renewable and Low Carbon Fuel website at <http://gov.bc.ca/lowcarbonfuels> or email us at [lcfr@gov.bc.ca](mailto:lcfr@gov.bc.ca)

This information is for your convenience and guidance only, and does not replace or constitute legal advice. Exceptions to the above may apply in certain circumstances. It is recommended that parties who may be a Part 3 Fuel Supplier review the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* and the Renewable and Low Carbon Fuel Requirements Regulation seek independent legal advice to confirm their status, legal obligations and opportunities. The *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* and the Renewable and Low Carbon Fuel Requirements Regulation can be found on the internet at: <http://www.bclaws.ca>.

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## DIRECTOR'S ORDER

All Part 3 Fuel Suppliers

### **Re: Order to Provide Additional Information in Support of Carbon Intensity Records**

1. In this Order:

“Biomass” includes paper, garden waste, wood and food scraps;

“Blended” in relation to ethanol means ethanol that has either been

- (a) blended with BOB or
- (b) blended with gasoline in order to create a higher octane product or otherwise produce a product that is suitable for use in some or all spark ignition engines;

“BOB” or “blendstock for oxygenated blending” means petroleum based substances that are not suitable for use in spark ignition engines unless blended with oxygenates;

“Mixed Municipal Solid Waste” or “MMSW” means municipal solid waste that contains less than 90% Biomass and 10% or more of municipal solid waste that is not Biomass;

“MMSW derived Ethanol” means ethanol derived from Mixed Municipal Solid Waste;


“Non-Renewable MMSW derived Ethanol” means the fraction of MMSW derived Ethanol that is not Renewable MMSW derived Ethanol;

“Regulation” means the Renewable and Low Carbon Fuel Requirements Regulation, B.C.Reg. 394/2008, as amended from time to time;

“Renewable MMSW derived Ethanol” means the fraction of MMSW derived Ethanol derived from Biomass in MMSW;

“Unblended” in relation to ethanol means ethanol that has not been Blended.

- 2. This order applies to any person that is required under section 11.031 of the Regulation to provide a Carbon Intensity Record for Unblended Renewable MMSW derived Ethanol to a purchasing Part 3 Fuel Supplier under an Exclusion Agreement.
- 3. A person described in section 2 must provide information described in section 4 to the person to whom they are required to provide a Carbon Intensity Record referred to in section 2 at the same time as they provide the Carbon Intensity Record referred to in section 2.

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4. The following information must be provided:

- (a) the identity and amount of Unblended Non-Renewable MMSW derived Ethanol that is supplied with the Unblended Renewable MMSW derived Ethanol;
- (b) the information that, if the Unblended Renewable MMSW derived Ethanol was a Part 3 fuel, would be required to be included in a Carbon Intensity Record for the Unblended Renewable MMSW derived Ethanol listed in section 11.071 (1) of the Regulation;

The record providing this information must be clearly identified on its face as Carbon Intensity Record for Unblended MMSW derived Ethanol.

This order is made under section 6.4(2) of the Renewable and Low Carbon Fuel Requirements Regulation.

**Signed:**

\_\_\_\_\_  
**Signature of Director**

\_\_\_\_\_  
**Name of Director**

\_\_\_\_\_  
**Date**