



The use of renewable fuel in 2010 resulted in the avoidance of 418,919 Tonnes of greenhouse gas emissions into the environment, the equivalent of about 82,000 cars being removed from the road.

This summary highlights benefits achieved in the first compliance period under the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* (the Act) and the Renewable and Low Carbon Fuel Requirements Regulation (the Regulation). In 2010, suppliers were required to include five percent renewable content in the gasoline pool, and three percent renewable content in the diesel pool.

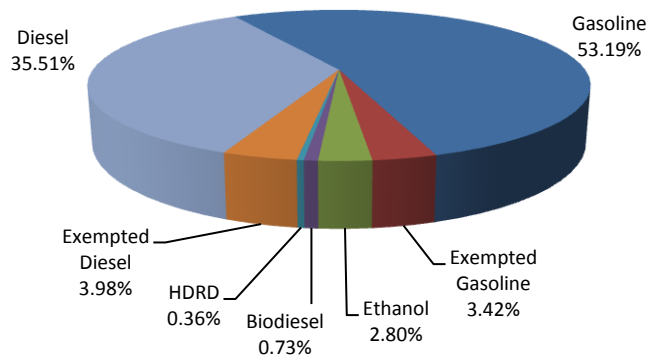
The Act has two parts that reduce the greenhouse gas emissions from fuel: Part 2 sets requirements for renewable content, and Part 3 requires greenhouse gas emissions reductions. All companies were in compliance with the Regulation in 2010.

### Part 2: Renewable Fuel

Part 2 requires suppliers to include renewable content in the gasoline and diesel pools. For 2010, the levels of renewable content were five percent in gasoline and three percent in diesel. The renewable fuel requirements apply to gasoline and diesel fuel when used for transportation or heating. The renewable fuel requirements ensure that a minimum volume of renewable content is supplied in both gasoline and diesel.

This pie chart shows the amount of each fuel supplied as a percentage of the total volume of liquid fuels supplied in 2010.

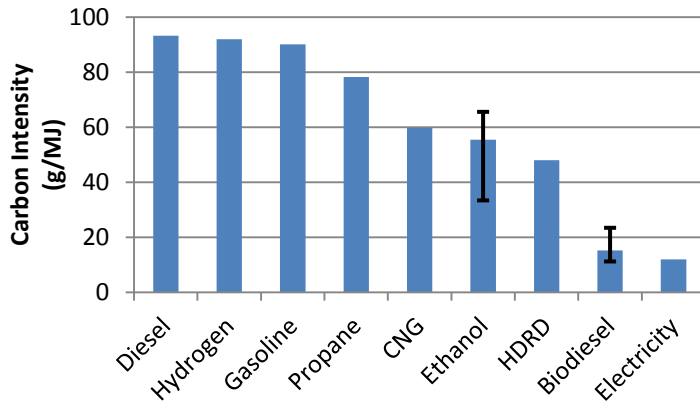
Companies who supplied less than a total of 200 million litres of gasoline and diesel class fuels in 2010 were exempt from the Regulation, and accounted for less than eight percent of all of the fuel supplied.



British Columbia's renewable fuel is imported from other provinces in Canada, as well as from international suppliers. It is anticipated that increasing demand will encourage the development of new suppliers in Canada.



### Reported Carbon Intensity for Supplied Fuels



Hydrogen was supplied from Quebec to power twenty fuel cell buses operating in Whistler.

By September 2012, it is expected that waste hydrogen from the pulp industry will be captured and processed in Vancouver, resulting in near-zero carbon intensity.

The primary consumer of electricity for transportation was TransLink, for use in trolley buses and SkyTrain. It is anticipated that as electric cars enter the market, metered sales will increase this total.

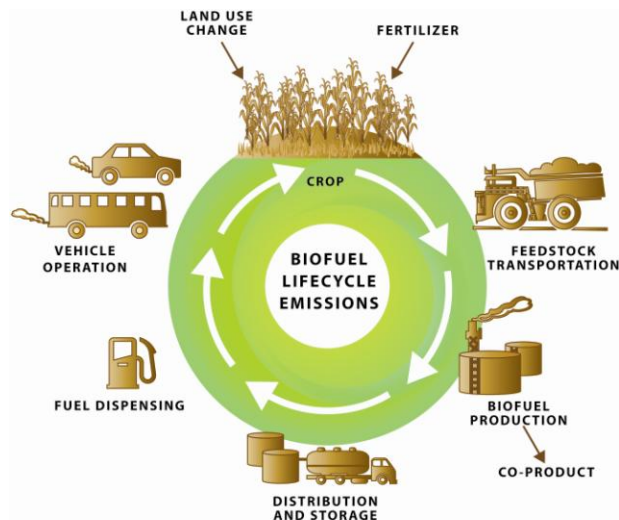
Renewable fuels have a range of carbon intensities. The chart above illustrates the average reported carbon intensity for all fuels supplied in British Columbia in 2010. The range on the ethanol and diesel bars show the range of carbon intensities reported for those two fuels. HDRD came from a single source and therefore does not have a range of carbon intensities.

### Part 3: Carbon Intensity

Part 3 of the Act requires suppliers to reduce the greenhouse gases by reducing the carbon intensity of the fuel mix that they supply. This provides a strong incentive to supply fuels with low carbon intensity.

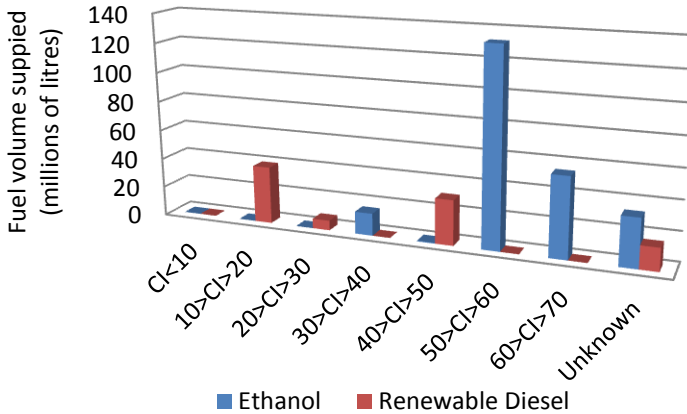
For 2010 there was no requirement to achieve any specific carbon intensity, but fuel suppliers were required to report the quantities and carbon intensities of the fuels they supplied.

Carbon intensity is the amount of carbon dioxide equivalent emitted per unit of energy consumed. It includes all of the greenhouse gases emitted in the full life cycle of a fuel.





### Carbon Intensity of Renewable Fuel



Ethanol and renewable diesel fuels have a range of carbon intensities. The carbon intensity requirements will result in suppliers choosing more of the lower carbon fuels, which will in turn drive fuel manufacturers to reduce the carbon intensity of their products.

### Tonnes of CO<sub>2</sub>e Emissions Avoided

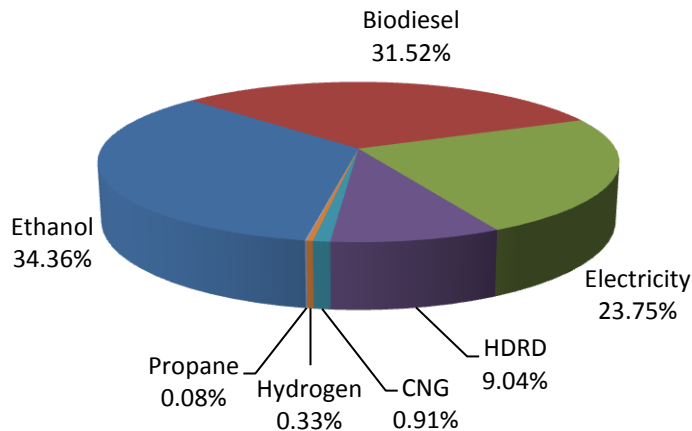
By using renewable fuel, electricity and other low carbon alternatives to gasoline and diesel, greenhouse gas emissions are avoided. The avoided emissions are the difference between the total lifecycle emissions of the low carbon fuel and the energy-equivalent amount of gasoline or diesel that it replaces.

Fuel	Quantity	Average Reported CI	Greenhouse Gases Avoided
Gasoline	4,459,225,061 litres	90.21 g/MJ	
Ethanol	234,717,405 litres	55.50 g/MJ	192,107 Tonnes
CNG	4,347,199 m <sup>3</sup>	59.74 g/MJ	5,068 Tonnes
Propane	1,493,771 litres	78.29 g/MJ	456 Tonnes
Diesel	2,977,175,231 litres	93.33 g/MJ	
Biodiesel	61,091,068 litres	15.23 g/MJ	176,249 Tonnes
HDRD	30,579,021 litres	48.04 g/MJ	50,564 Tonnes
Hydrogen	177,974 Kg	92.06 g/MJ	1,861 Tonnes
Electricity	166,640,597 KWh	11.94 g/MJ	132,810 Tonnes

As can be seen in the table above, the use of renewable fuel resulted in the avoidance of 418,919 Tonnes of greenhouse gases. The use of all fuels that are alternatives to gasoline and diesel resulted in the avoidance of 559,115 Tonnes of greenhouse gases.



## Emissions Avoided



This chart illustrates the share of emissions that were avoided by the use of each form of alternate fuel.

## Updates for 2011

As a result of the 2010 reports, a clearer picture of transportation fuels emerged. A number of issues with the structure of the Regulation were identified and Parliamentary Secretary John Yap was appointed to make recommendations that address these issues. One recommendation is to separate the gasoline and diesel pools for carbon intensity calculations, in order to provide a more competitive environment for all suppliers. In anticipation of this change, this report puts the carbon intensity reductions achieved in 2010 into the context of two fuel pools.

In 2010, companies who supplied 200 million litres or less of gasoline and diesel were exempted from the requirements. In 2012, the exemption from the requirements will apply to companies who supply 75 million litres or less, so that roughly 95 percent of the fuel is subject to the Regulation.

If you have any questions about this summary, please contact us at [lcfr@gov.bc.ca](mailto:lcfr@gov.bc.ca).

For more information, check the Renewable and Low Carbon Fuel website at <http://www.empr.gov.bc.ca/RET/RLCFRR/Pages/default.aspx>.

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>.