



## **Renewable and Low Carbon Fuel Requirements Summary: 2010-2023**

British Columbia’s Renewable and Low Carbon Fuel Requirements Regulation (Regulation) resulted in the avoidance of over 3.7 million tonnes of greenhouse gas emissions globally in 2023, and a total of over 22.6 million tonnes between 2010 and 2023.

This Bulletin presents summary compliance data for the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act (Act)* and the Regulation. The Act is designed to reduce greenhouse gas emissions associated with the use of transportation fuels in British Columbia: establishing requirements for renewable content and greenhouse gas emission intensity reductions.

On January 1, 2024, the Act and Regulation were repealed and replaced with the *Low Carbon Fuels Act*, the Low Carbon Fuels (General) Regulation, and the Low Carbon Fuels (Technical) Regulation. Reporting under the new legislation and regulations will commence for the first time in 2025 when suppliers report their 2024 fuel supply.

This report compiles supply data submitted to the Ministry of Energy, Mines and Low Carbon Innovation (Ministry) by fuel suppliers as part of their compliance reporting obligations. The report includes the most recent 10 years of data for 2014 to 2023, which was subject to the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* and the Renewable and Low Carbon Fuel Requirements Regulation. The data is current as of the date of issue but may be subject to change due to enhanced reporting, and compliance and/or verification activities.



### Renewable Fuel Requirements

Fuel suppliers must include renewable content in the gasoline and diesel fuels supplied in B.C. Since 2010, fuel suppliers have been required to include five percent renewable content in the gasoline pool. In the diesel pool, the renewable requirement was three percent in 2010 and four percent thereafter. Between 2015 and 2020, companies that supplied less than a total of 75 million litres of gasoline and diesel class fuels in a year were eligible to apply to be exempted from the renewable and low carbon requirements. The exemption threshold was reduced to 25 million litres for the 2021 compliance period and further reduced to 200,000 litres in 2022 and subsequent compliance periods.

**Table 1 - Annual fuel volumes (million litres) and percentages subject to the renewable fuel requirement**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 (Baseline)
<b>Total Gasoline</b>	4,522.5	4,629.2	4,871.3	4,865.8	4,747.2	4,831.5	4,193.8	4,399.8	4,253.6	4,273.2	<b>4,741.1</b>
<b>Non-exempt Gasoline</b>	4,320.4	4,500.5	4,717.6	4,777.5	4,638.5	4,601.1	3,890.5	4,140.2	4,252.8	4,272.3	<b>4,459.2</b>
<b>Exempt Gasoline</b>	202.1	128.7	153.7	88.3	108.7	230.5	303.3	259.6	0.7	0.9	<b>281.9</b>
<b>Renewable Gasoline<sup>A</sup></b>	299.0	342.9	375.1	376.0	370.4	346.0	334.0	409.7	504.5	538.4	<b>234.7</b>
<b>% Renewable Content</b>	6.5%	7.1%	7.4%	7.3%	7.4%	7.0%	7.9%	9.0%	10.6%	11.2%	<b>5.0%</b>
<b>Total Diesel</b>	3,704.7	3,443.5	3,392.7	3,692.1	3,811.8	3,721.6	3,258.0	3,422.8	3,434.9	3,069.0	<b>3,305.1</b>
<b>Non-exempt Diesel</b>	3,511.7	3,310.0	3,239.8	3,544.2	3,665.6	3,404.8	2,920.4	3,196.0	3,418.4	3,050.4	<b>2,977.2</b>
<b>Exempt Diesel</b>	193.0	133.5	152.9	147.9	146.2	294.9	316.3	206.3	0.5	0.1	<b>327.9</b>
<b>Renewable Diesel<sup>B</sup></b>	226.6	222.7	177.3	213.0	230.2	331.7	460.3	490.4	525.5	844.1	<b>91.7</b>
<b>% Renewable Content</b>	6.1%	6.3%	5.2%	5.7%	5.9%	8.9%	13.6%	13.3%	13.3%	21.7%	<b>3.0%</b>

A - Includes ethanol, co-processed renewable gasoline, and renewable naphtha

B - Includes biodiesel, Hydrogenation-Derived Renewable Diesel, and co-processed renewable diesel



### Low Carbon Fuel Requirements

Fuel suppliers must reduce the lifecycle greenhouse gas emission intensity, also known as carbon intensity, of the transportation fuel mix that they supply. Compliance is measured in terms of credits and debits, which represent the difference between the carbon intensity of the fuel and the current low carbon requirements for the relevant fuel class. A schedule of reductions has been established to reduce the carbon intensity of the transportation fuel mix in B.C. On January 1, 2023, the reduction schedule was amended to increase the carbon intensity reduction requirement from 20 percent to 30 percent by 2030 for gasoline and diesel class fuels.

**Table 2 – Annual fuel volumes (million units) and percentages subject to the low carbon fuel requirement**

	Fuel Class	Units	2014 <sup>A</sup>	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 (Baseline)
<b>Diesel</b>	Diesel	L	3,704.7	3,443.5	3,392.7	3,692.1	3,811.8	3,699.7	3,236.7	3,402.3	3,418.9	3,050.45	<b>3,305.1</b>
<b>Gasoline</b>	Gasoline	L	4,522.5	4,629.2	4,871.3	4,865.8	4,747.2	4,831.5	4,193.8	4,399.8	4,253.6	4,273.2	<b>4,741.1</b>
<b>Biodiesel</b>	Diesel	L	101.1	102.2	104.0	107.3	115.6	113.8	106.9	124.8	134.6	132.2	<b>61.1</b>
<b>CNG</b>	Diesel	m <sup>3</sup>	7.9	13.7	15.9	20.9	24.8	30.3	33.7	37.3	39.6	41.1	-
	Gasoline	m <sup>3</sup>	1.3	1.5	1.2	0.9	0.8	0.8	1.0	0.7	0.8	0.8	<b>0.3</b>
<b>Electricity</b>	Diesel	kWh	180.2	182.2	180.5	204.2	205.3	204.1	197.9	201.3	213.0	216.1	<b>184.3</b>
	Gasoline	kWh	0.3	0.9	9.4	15.4	31.8	57.9	88.0	130.5	146.8	221.7	-
<b>Ethanol</b>	Gasoline	L	299.0	342.9	375.1	376.0	370.4	334.6	307.4	359.8	430.3	468.6	<b>234.7</b>
<b>HDRD</b>	Diesel	L	125.5	120.5	73.3	105.8	114.6	214.8	344.4	343.9	368.9	694.9	<b>30.6</b>
<b>Hydrogen</b>	Diesel	kg	0.1	-	-	-	9.0E-04	8.5E-04	1.8E-04	4.0E-04	1.8E-04	-	<b>0.2</b>
	Gasoline	kg	1.7E-05	1.2E-03	1.3E-03	1.2E-03	5.3E-04	1.7E-03	2.9E-03	1.1E-02	2.7E-02	2.59E-02	-
<b>LNG</b>	Diesel	kg	6.2	8.6	9.0	12.1	19.6	24.6	26.2	25.5	29.7	29.2	-
<b>Propane</b>	Diesel	L	-	-	-	-	-	-	-	-	-	0.3	-
<b>Propane</b>	Gasoline	L	63.0	70.2	70.3	68.3	66.3	65.5	57.5	56.2	52.3	46.3	<b>1.6</b>
<b>Renewable Diesel<sup>B</sup></b>	Diesel	L	-	-	-	-	-	3.1	9.0	21.7	22.0	17.0	-
<b>Renewable Gasoline<sup>B</sup></b>	Gasoline	L	-	-	-	-	-	11.4	26.6	49.9	71.8	59.1	-
<b>Renewable Naphtha<sup>B</sup></b>	Gasoline	L	-	-	-	-	-	-	-	-	2.4	10.7	-

A – Quantities represent 2/3 of the 18 month compliance period ending December 31, 2014

B – Renewable diesel, renewable gasoline and renewable naphtha can be produced by co-processing biogenic feedstocks alongside crude oil in a refinery or at renewable diesel production facilities.



**Transportation Energy Use**

Transportation energy use has generally trended upward over this period, except for the drop in use due to the COVID-19 pandemic. Year over year, an increasing proportion of energy demand is being met by fuels with lower carbon intensities than the fossil fuels they replace.

**Table 3 – Annual energy in Petajoules supplied by Part 3 fuels**

	2014 <sup>A</sup>	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 (Baseline)
<b>Diesel</b>	143.2	133.1	131.1	142.7	147.3	143.0	125.1	131.5	132.1	117.9	<b>127.7</b>
<b>Gasoline</b>	156.9	160.6	169.0	168.8	164.7	167.6	145.5	152.6	147.6	148.2	<b>164.5</b>
<b>Biodiesel</b>	3.7	3.8	3.8	3.8	4.1	4.0	3.8	4.4	4.8	4.7	<b>2.3</b>
<b>CNG</b>	0.4	0.6	0.7	0.8	1.0	1.2	1.3	1.4	1.5	1.6	<b>9.7E-03</b>
<b>Electricity</b>	0.6	0.7	0.7	0.8	0.9	0.9	1.0	1.2	1.3	1.6	<b>0.7</b>
<b>Ethanol</b>	7.1	8.1	8.8	8.9	8.7	7.9	7.2	8.5	10.1	11.1	<b>5.5</b>
<b>HDRD</b>	4.6	4.4	2.7	3.9	4.2	7.8	12.6	12.6	13.5	25.4	<b>1.1</b>
<b>Hydrogen</b>	1.2E-02	1.4E-04	1.6E-04	1.6E-04	2.0E-04	3.7E-04	4.3E-04	1.7E-03	3.9E-03	3.7E-03	<b>2.1E-02</b>
<b>LNG</b>	0.3	0.5	0.5	0.6	1.0	1.3	1.4	1.3	1.6	1.5	-
<b>Propane</b>	1.6	1.8	1.8	1.7	1.7	1.7	1.5	1.4	1.3	1.2	<b>4.0E-02</b>
<b>Renewable Diesel</b>	-	-	-	-	-	0.1	0.3	0.8	0.8	0.7	-
<b>Renewable Gasoline</b>	-	-	-	-	-	0.4	0.9	1.7	2.5	2.0	-
<b>Renewable Naphtha</b>	-	-	-	-	-	-	-	-	0.1	0.4	-
<b>Total</b>	318.4	313.4	319.1	332.0	333.6	336.0	300.6	317.6	317.1	316.2	<b>301.9</b>

A – Quantities represent 2/3 of the 18 month compliance period ending December 31, 2014



### Carbon Intensity

Fuel producers may apply for a unique carbon intensity based on the specific lifecycle parameters of the fuel they produce. Once the carbon intensity is approved, anyone who supplies that fuel must use the approved carbon intensity and corresponding B.C. low carbon fuel code. For the current list of approved carbon intensities and fuel codes, see: [RLCF-012: Approved Carbon Intensities - Current](#).

To encourage producers to apply for specific carbon intensities, precautionarily high default carbon intensities were set for each fuel type.

**Table 4<sup>A</sup> – Annual weighted average carbon intensity (gCO<sub>2</sub>e/MJ) of fuels reported**

	2014	2015	2016	2017 <sup>B</sup>	2018	2019	2020	2021	2022	2023	2010 (Baseline)
<b>Biodiesel</b>	20.37	16.07	15.37	6.49	2.48	-1.62	-3.39	-3.06	-2.54	-2.82	<b>15.23</b>
<b>CNG</b>	62.14	62.14	62.14	63.64	63.64	62.41	60.95	58.66	60.92	55.92	<b>59.74</b>
<b>Electricity</b>	11.00	11.00	11.00	19.73	19.73	19.73	19.73	19.73	19.73	19.73	<b>11.94</b>
<b>Ethanol</b>	49.74	49.47	41.00	32.51	30.43	29.18	31.73	30.86	28.39	23.68	<b>55.51</b>
<b>HDRD</b>	24.72	16.37	16.40	20.08	20.27	17.87	15.12	16.10	16.83	23.21	<b>48.04</b>
<b>Hydrogen</b>	95.51	95.51	95.51	96.82	96.82	91.26	96.82	46.66	55.36	58.35	<b>92.06</b>
<b>LNG</b>	63.26	63.26	63.26	63.08	63.04	64.70	63.99	62.95	63.42	63.30	-
<b>Propane</b>	68.46	68.17	68.02	67.97	67.84	67.52	67.60	67.77	67.34	67.35	<b>78.29</b>
<b>Renewable Diesel</b>	-	-	-	-	-	-0.21	3.81	7.40	5.26	4.52	-
<b>Renewable Gasoline</b>	-	-	-	-	-	-5.94	3.86	-5.92	-4.21	-3.71	-
<b>Renewable Naphtha</b>	-	-	-	-	-	-	-	-	30.98	33.35	-

A – The calculation of average carbon intensity for ethanol, biodiesel and HDRD excludes the small volumes of biofuels reported with a default carbon intensity

B – Changes in carbon intensities occurred as a result of adopting newer versions of the lifecycle assessment model, GHGenius, on January 1, 2017



**Table 5 – Gasoline class renewable content (Ethanol + Renewable Gasoline + Renewable Naptha) supplied (million litres) by carbon intensity range (gCO<sub>2e</sub>/MJ)**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 (Baseline)
< 0	-	-	-	-	-	11.4	15.7	49.9	69.4	58.2	-
0 to 10	-	-	-	-	-	94.1	47.0	33.6	1.0	-	-
10 to 20	1.8	17.2	64.3	105.0	124.1	2.9	11.2	0.1	54.5	170.6	-
20 to 30	-	-	-	-	3.0E-02	11.0	22.7	130.5	194.1	185.5	-
30 to 40	12.9	2.4	93.0	219.6	211.2	196.9	203.7	151.2	139.1	93.0	<b>15.1</b>
40 to 50	115.2	108.5	102.8	19.8	14.9	14.9	23.7	20.3	26.6	13.4	<b>0.5</b>
50 to 60	157.2	177.5	108.2	31.3	20.1	14.7	9.1	18.6	14.0	7.0	<b>132.1</b>
60 to 70	11.4	37.2	6.8	3.8E-02	-	-	1.0	5.3	2.3	-	<b>54.2</b>
CI > 70	-	-	-	-	-	-	-	-	-	-	-
Default	0.4	-	-	0.3	-	1.7E-03	8.2E-03	0.3	1.0	0.1	<b>32.8</b>

**Table 6 – Diesel class renewable content (Biodiesel + HDRD + Renewable Diesel) supplied (million litres) by carbon intensity range (gCO<sub>2e</sub>/MJ)**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 (Baseline)
< 0	-	-	1.7	10.0	35.0	48.2	61.8	69.1	83.7	93.4	-
0 to 10	18.6	11.1	25.3	87.9	97.6	148.4	170.0	65.1	64.9	49.7	-
10 to 20	122.2	182.8	118.5	76.6	56.9	65.7	208.8	305.2	289.9	25.6	<b>39.0</b>
20 to 30	46.5	19.2	30.7	35.4	39.4	63.9	19.8	51.0	86.8	673.7	<b>6.6</b>
30 to 40	9.4	9.7	1.2	0.4	1.3	5.4	-	-	0.2	1.7	-
40 to 50	19.6	-	-	-	-	-	-	-	-	-	<b>30.6</b>
50 to 60	6.4	-	-	-	-	-	-	-	-	-	-
CI > 60	3.7	-	-	2.7	-	-	-	-	-	-	-
Default	0.2	-	-	-	-	-	1.0E-03	-	-	-	<b>15.5</b>



### Biofuel Feedstocks

As part of the approval process for the carbon intensity of a fuel, the producers are required to identify the feedstock being used to manufacture the fuel. This allows the Ministry to quantify the fuels that were supplied in each year by feedstock.

**Table 7 – Annual renewable fuel volume by feedstock supplied (million litres)**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 (Baseline)
<b>Barley &amp; Wheat</b>	12.8	0.2	1.0	-	-	-	-	-	-	-	-
<b>Biodiesel Bottoms</b>	-	-	-	-	-	-	6.2	1.6	2.1	-	-
<b>Canola</b>	76.8	91.3	95.5	92.9	79.0	64.8	81.3	69.3	76.9	287.5	<b>38.6</b>
<b>Canola &amp; Soy</b>	-	-	-	-	-	-	-	-	-	-	<b>3.2</b>
<b>Canola &amp; Tallow</b>	-	-	-	-	-	-	-	-	-	-	-
<b>Corn</b>	270.7	287.0	269.2	236.0	244.8	190.2	170.4	254.7	323.4	312.3	<b>66.5</b>
<b>Corn Oil</b>	7.1	1.5	1.3	-	-	-	-	-	-	3.9	-
<b>Corn &amp; Wheat</b>	-	-	-	-	-	-	-	-	-	-	<b>121.8</b>
<b>Fatty Acid Distillate</b>								6.5	4.4	-	-
<b>Palm Sludge Oil (PSO)</b>	92.7	71.6	43.7	-	-	3.1	1.3	-	-	-	-
<b>Pea Starch</b>						0.1	0.1	0.02	-	-	-
<b>Refined Palm Oil (RPO)</b>	29.7	-	-	-	-	-	-	-	-	-	<b>30.6</b>
<b>Renewable Natural Gas<sup>A</sup></b>	-	-	-	-	-	0.8	1.6	3.0	1.4	4.4	-
<b>Sorghum</b>	-	-	-	-	-	-	-	-	-	11.6	-
<b>Soy</b>	15.2	11.1	9.5	14.4	36.5	54.3	55.3	60.9	101.1	57.0	<b>14.8</b>
<b>Spent Bleaching Earth Oil (SBEO)</b>	-	-	-	34.6	27.6	33.8	-	-	-	-	-
<b>Sugarbeet &amp; Potato Waste</b>								0.6	-	11.9	-
<b>Tallow</b>	-	0.3	0.4	0.5	3.7	44.6	24.4	35.1	38.7	56.2	-
<b>Unknown</b>	0.6	-	-	-	-	1.7E-03	9.2E-03	-	-	-	<b>25.6</b>
<b>Water</b>								9.66E-03	1.84E-02	1.63E-02	-
<b>Wheat</b>	16.8	55.6	104.9	139.9	133.1	144.4	136.9	104.2	93.4	132.7	<b>25.2</b>
<b>Yellow Grease (UCO)</b>	3.2	46.8	26.9	27.9	72.5	142.5	318.3	288.9	275.8	423.3	-

A – The volume of renewable natural gas feedstock is represented in millions of m<sup>3</sup>



### Credit and Debit Generation

Fuel suppliers generate credits for supplying fuels with a carbon intensity below annual carbon intensity limits and receive debits for supplying fuels with a carbon intensity that exceeds the limits. The debits and credits are proportional to the emissions a fuel generates over its full life cycle. Credits or debits for a quantity of fuel in a given compliance year are calculated by the following formula:

$$\text{Credit or Debit} = (\text{CI fuel class} \times \text{EER fuel} - \text{CI fuel}) \times \text{EC fuel} / 1,000,000$$

Where:

Credit or Debit = the number of credits generated, if the number is positive, or the number of debits incurred, if the number is negative, for the compliance period

CI fuel class = the prescribed carbon intensity limit for the compliance period for the class of fuel of which the fuel is a part

EER fuel = the prescribed energy effectiveness ratio for that fuel in that class of fuel

CI fuel = the carbon intensity of the fuel

EC fuel = the energy content of the low carbon fuel calculated using the prescribed energy densities

Values for the Credit or Debit formula for 2023 and earlier, including CI fuel class, EER and prescribed energy densities are published in the [Renewable & Low Carbon Fuel Requirements Regulation](#).





**Table 8 – Net credits (debits) generated by fuel**

	<b>Fuel Class</b>	<b>2013-14</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
<b>Diesel</b>	Diesel	(238,201)	(299,357)	(409,470)	(649,293)	(872,718)	(997,492)	(971,832)	(1,192,028)	(1,411,061)	<b>(1,520,879)</b>
<b>Gasoline</b>	Gasoline	(245,043)	(340,347)	(500,784)	(729,216)	(922,015)	(1,125,260)	(1,081,031)	(1,288,310)	(1,466,459)	<b>(1,778,471)</b>
<b>Biodiesel<sup>A</sup></b>	Diesel	402,547	283,579	287,813	317,198	352,323	357,746	338,939	389,414	412,853	<b>396,252</b>
<b>CNG</b>	Diesel	9,572	10,447	11,659	13,744	15,097	18,473	21,329	25,467	22,183	<b>27,833</b>
	Gasoline	1,770	1,276	986	674	559	543	485	422	413	<b>385</b>
<b>Electricity</b>	Diesel	232,071	154,282	151,206	164,162	162,211	158,457	151,640	152,206	158,973	<b>156,583</b>
	Gasoline	425	866	9,342	14,688	29,772	53,348	80,091	117,151	130,124	<b>190,851</b>
<b>Ethanol<sup>A</sup></b>	Gasoline	385,064	288,175	382,431	454,515	453,956	409,634	350,803	409,406	505,327	<b>579,667</b>
<b>HDRD</b>	Diesel	464,919	329,343	197,776	270,095	285,936	543,505	893,038	866,476	905,646	<b>1,487,869</b>
<b>Hydrogen</b>	Diesel	1,405	-	-	-	9	8	2	4	2	-
	Gasoline	0	16	18	18	8	28	42	247	537	<b>484</b>
<b>LNG</b>	Diesel	14,216	12,747	12,870	17,150	26,211	29,062	30,508	29,670	32,217	<b>28,389</b>
<b>Propane</b>	Diesel	-	-	-	-	-	-	-	-	-	<b>138</b>
<b>Propane</b>	Gasoline	42,906	30,431	29,169	27,413	24,625	22,659	18,368	16,321	14,461	<b>10,347</b>
<b>Renewable Diesel</b>	Diesel	-	-	-	-	-	10,349	28,615	65,250	66,968	<b>50,881</b>
<b>Renewable Gasoline</b>	Gasoline	-	-	-	-	-	34,320	70,400	147,240	202,095	<b>163,674</b>
<b>Renewable Naphtha</b>	Gasoline	-	-	-	-	-	-	-	-	3,757	<b>15,015</b>
<b>Total Net Credits (Debits)</b>		<b>1,071,651</b>	<b>471,458</b>	<b>173,016</b>	<b>(98,852)</b>	<b>(444,026)</b>	<b>(484,620)</b>	<b>(68,603)</b>	<b>(261,064)</b>	<b>(421,964)</b>	<b>(190,982)</b>

A – Some biodiesel and ethanol were reported using the default carbon intensity resulting in debits. The data reflects the net number of credits generated in the compliance period



### **Lifecycle Greenhouse Gas Emissions Avoided**

“Emissions avoided” for a given compliance period means the avoided lifecycle emissions calculated according to the following formula. Most fuels have lifecycle emissions that occur in several jurisdictions. The values below therefore include emission reductions that occur in British Columbia and elsewhere.

$$\text{Tonnes of CO}_2\text{e Avoided} = (\text{CI fossil fuel displaced} \times \text{EER fuel} - \text{CI fuel}) \times \text{EC fuel} / 1,000,000$$

Where:

CI fossil fuel displaced = the carbon intensity prescribed for the displaced fuel in that compliance period

EER fuel = the prescribed energy effectiveness ratio of the low carbon fuel

CI fuel = the carbon intensity of the low carbon fuel

EC fuel = the energy content of the low carbon fuel calculated using prescribed energy densities



**Table 9<sup>A</sup> – Lifecycle emissions avoided (tonnes CO<sub>2</sub>e) by fuel**

	2014 <sup>B</sup>	2015	2016	2017	2018	2019	2020	2021	2022	2023	2010 (Baseline)
<b>Biodiesel</b>	273,195	292,410	300,376	335,198	377,524	388,282	371,532	432,035	463,759	456,614	<b>176,238</b>
<b>CNG</b>	7,935	12,947	14,576	17,939	21,025	27,063	31,950	38,398	37,280	46,637	<b>294</b>
<b>Electricity</b>	157,051	159,314	166,637	189,087	206,501	231,838	256,922	302,559	329,079	407,088	<b>159,245</b>
<b>Ethanol</b>	264,753	305,801	409,500	493,529	503,998	465,265	408,865	485,510	606,177	712,276	<b>192,072</b>
<b>HDRD</b>	315,406	339,641	206,529	288,400	311,712	602,947	1,001,285	987,642	1,049,473	1,815,150	<b>50,564</b>
<b>Hydrogen</b>	963	17	20	20	20	42	53	288	634	594	<b>1,821</b>
<b>LNG</b>	9,858	13,814	14,428	20,168	32,529	38,863	42,360	42,592	48,868	48,125	-
<b>Propane</b>	30,361	34,347	34,676	35,062	34,306	34,426	30,107	29,169	27,696	24,746	<b>478</b>
<b>Renewable Diesel</b>	-	-	-	-	-	11,247	31,607	73,353	76,042	59,367	-
<b>Renewable Gasoline</b>	-	-	-	-	-	37,100	77,793	162,761	226,856	188,270	-
<b>Renewable Naphtha</b>	-	-	-	-	-	-	-	-	4,548	19,226	-
<b>Total</b>	1,059,522	1,158,291	1,146,742	1,379,403	1,487,615	1,837,073	2,252,474	2,554,307	2,870,412	3,778,093	<b>580,711</b>

A – The calculations in this table do not account for the difference in efficiency between compression ignition engines (i.e. diesel) and spark ignition engines (i.e. gasoline), and are therefore conservative estimates of emissions avoided for those fuels that were consumed in a compression ignition engine. Prior to July 1, 2013, compression ignition engines were prescribed an EER of 1.2 under the Regulation (relative to spark ignition engines)

B – Quantities represent 2/3 of the 18 month compliance period ending December 31, 2014



Credit Market Scope

Fuel suppliers generate credits by supplying a fuel with a carbon intensity below the prescribed carbon intensity limit and incur debits when supplying a fuel with a carbon intensity above the limit (e.g., petroleum-based gasoline and diesel). In addition, fuel suppliers may also enter into Initiative Agreements with the director to earn credits for actions that have a reasonable possibility of reducing GHG emissions. The table below shows the quantity of debits incurred and credits generated each year.

Table 10 - Credit Market Scope

Compliance Period	Debits Incurred from Fuel Supply	Credits Generated from Fuel Supply	Credits Awarded from Initiative Agreements	Surplus Credits (Debits)
2013	(161,091)	518,308	-	357,217
2014	(322,182)	1,036,616	-	714,434
2015	(639,704)	1,111,162	66,355	537,813
2016	(910,254)	1,083,270	166,636	339,652
2017	(1,379,343)	1,280,491	97,833	(1,019)
2018	(1,794,734)	1,350,708	200,592	(243,434)
2019	(2,122,753)	1,638,133	231,774	(252,846)
2020	(2,052,864)	1,984,261	188,853	120,250
2021	(2,480,410)	2,219,346	475,561	214,497
2022	(2,877,866)	2,455,902	279,985	(141,979)
2023	(3,299,641)	3,108,659	497,989	307,007
<b>Total</b>	<b>(18,040,842)</b>	<b>17,786,856</b>	<b>2,205,578</b>	<b>1,951,592</b>

The credits awarded from Initiative Agreements are for the completion of project milestones during a given compliance period. For the 2013 and 2014 time periods, the quantities of debits and credits represent 1/3 and 2/3, respectively of the 18-month compliance period ending December 31, 2014.



**Ministry of Energy, Mines and Low  
Carbon Innovation**

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Renewable and Low Carbon Fuel Requirements

**Summary for 2010 - 2023**

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**Need more information?**

Please visit the Low Carbon Fuels website at [www.gov.bc.ca/lowcarbonfuels](http://www.gov.bc.ca/lowcarbonfuels) or email us at [lcfs@gov.bc.ca](mailto:lcfs@gov.bc.ca).

This information is for your convenience and guidance only and does not replace or constitute legal advice. It is recommended that parties who may be fuel suppliers review the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* and the Renewable and Low Carbon Fuel Requirements Regulation and 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 at: <http://www.bclaws.ca>.