



Renewable and Low Carbon Fuel Requirements Summary: 2010-2024

British Columbia's *Low Carbon Fuels Act* (Act), and associated regulations resulted in the avoidance of over 4.9 million tonnes of greenhouse gas emissions globally in 2024, and a total of over 27.5 million tonnes between 2010 and 2024.

This Bulletin presents summary compliance data for the Act, the Low Carbon Fuels (General) Regulation, and the Low Carbon Fuels (Technical) Regulation which repealed and replaced the *Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act* (Act) and the Regulation on January 1, 2024. The Act is designed to reduce greenhouse gas emissions associated with the use of transportation fuels in B.C. by establishing requirements for renewable content and greenhouse gas emission intensity reductions. Reporting under the new legislation and regulations commenced for the first time in 2025 when suppliers report their 2024 fuel supply.

This report compiles supply data submitted to the Ministry of Energy and Climate Solutions (Ministry) by fuel suppliers as part of their compliance reporting obligations. The report includes the most recent 10 years of data for 2015 to 2024. 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.

As of January 1, 2024, fuel suppliers are required to report jet fuel supplied in B.C. Currently, the renewable fuel percentage for jet fuel is set at 0% and will increase to 1% in 2028, 2% in 2029 and 3% in 2030. Companies that supply less than 100,000,000 litres of jet class fuel in a year are eligible to apply to be exempted from the renewable and low carbon fuel target until 2027. That exemption threshold will reduce to 10,000,000 litres in 2028 and 4,000,000 litres in 2030.



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

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------------------|
| Total Gasoline | 4629.2 | 4871.3 | 4865.8 | 4747.2 | 4831.5 | 4193.8 | 4399.8 | 4253.6 | 4273.2 | 4369.3 | 4,741.1 |
| Non-exempt Gasoline | 4500.5 | 4717.6 | 4777.5 | 4638.5 | 4601.1 | 3890.5 | 4140.2 | 4252.8 | 4272.3 | 4368.4 | 4,459.2 |
| Exempt Gasoline | 128.7 | 153.7 | 88.3 | 108.7 | 230.5 | 303.3 | 259.6 | 0.7 | 0.9 | 0.9 | 281.9 |
| Renewable Gasoline^A | 342.9 | 375.1 | 376.0 | 370.4 | 346.0 | 334.0 | 409.7 | 504.5 | 538.4 | 559.7 | 234.7 |
| % Renewable Content | 7.1% | 7.4% | 7.3% | 7.4% | 7.0% | 7.9% | 9.0% | 10.6% | 11.2% | 11.4% | 5.0% |
| | | | | | | | | | | | |
| Total Diesel | 3443.5 | 3392.7 | 3692.1 | 3811.8 | 3721.6 | 3258.0 | 3422.8 | 3434.9 | 3069.0 | 2604.9 | 3,305.1 |
| Non-exempt Diesel | 3310.0 | 3239.8 | 3544.2 | 3665.6 | 3404.8 | 2920.4 | 3196.0 | 3418.3 | 3050.5 | 2586.4 | 2,977.2 |
| Exempt Diesel | 133.5 | 152.9 | 147.9 | 146.2 | 294.9 | 316.3 | 206.3 | 0.5 | 0.1 | 0.2 | 327.9 |
| Renewable Diesel^B | 222.7 | 177.3 | 213.0 | 230.2 | 331.7 | 460.3 | 490.4 | 525.5 | 844.1 | 1178.3 | 91.7 |
| % Renewable Content | 6.3% | 5.2% | 5.7% | 5.9% | 8.9% | 13.6% | 13.3% | 13.3% | 21.7% | 31.3% | 3.0% |
| | | | | | | | | | | | |
| Total Jet | - | - | - | - | - | - | - | - | - | 1806.1 | - |
| Non-exempt Jet | - | - | - | - | - | - | - | - | - | 1725.4 | - |
| Exempt Jet | - | - | - | - | - | - | - | - | - | 80.6 | - |
| Alternative Jet | - | - | - | - | - | - | - | - | - | 16.5 | - |
| Jet % Renewable Content | - | - | - | - | - | - | - | - | - | 0.9% | - |

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

B – Includes biodiesel, hydrogenation-derived renewable diesel (HDRD), 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. A schedule of reductions has been established to achieve a 30% reduction in carbon intensity for diesel and gasoline by 2030, alongside a 10% reduction target for jet fuel.

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

| | Fuel Class | Units | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|-------------------------------------|------------|----------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------------|
| Diesel | Diesel | L | 3443.5 | 3392.7 | 3692.1 | 3811.8 | 3699.7 | 3236.7 | 3402.3 | 3418.8 | 3050.8 | 2586.6 | 3,305.1 |
| Gasoline | Gasoline | L | 4629.2 | 4871.3 | 4865.8 | 4747.2 | 4831.5 | 4193.8 | 4399.8 | 4253.6 | 4273.2 | 4369.3 | 4,741.1 |
| Jet | Jet | L | - | - | - | - | - | - | - | - | - | 1806.1 | - |
| Alternative Jet | Jet | L | - | - | - | - | - | - | - | - | - | 16.5 | - |
| Biodiesel | Diesel | L | 102.2 | 104.0 | 107.3 | 115.6 | 113.4 | 106.4 | 124.3 | 134.2 | 131.9 | 131.5 | 61.1 |
| CNG | Diesel | m ³ | 13.7 | 15.9 | 20.9 | 24.8 | 29.5 | 32.1 | 34.1 | 37.8 | 36.6 | 35.3 | - |
| | Gasoline | m ³ | 1.5 | 1.2 | 0.9 | 0.8 | 0.8 | 0.8 | 0.7 | 0.8 | 0.8 | 0.8 | 0.3 |
| CRNG | Diesel | m ³ | - | - | - | - | 0.8 | 1.6 | 3.2 | 1.8 | 4.4 | 6.8 | - |
| Electricity | Diesel | kWh | 182.2 | 180.5 | 204.2 | 205.3 | 204.1 | 197.9 | 201.3 | 213.0 | 216.2 | 210.0 | 184.3 |
| | Gasoline | kWh | 0.9 | 9.4 | 15.4 | 31.8 | 57.9 | 88.0 | 130.5 | 146.9 | 212.9 | 231.8 | - |
| Ethanol | Gasoline | L | 342.9 | 375.1 | 376.0 | 370.4 | 334.6 | 307.4 | 359.8 | 430.3 | 468.6 | 464.9 | 234.7 |
| HDRD | Diesel | L | 120.5 | 73.3 | 105.8 | 114.6 | 214.8 | 344.4 | 343.9 | 368.9 | 694.9 | 1046.5 | 30.6 |
| Hydrogen | Diesel | kg | - | - | - | 9.0E-04 | 8.5E-04 | 1.8E-04 | 4.0E-04 | 1.8E-04 | - | - | 0.2 |
| | Gasoline | kg | 1.2E-03 | 1.3E-03 | 1.2E-03 | 5.3E-04 | 1.7E-03 | 3.0E-03 | 1.1E-02 | 2.7E-02 | 2.6E-02 | 3.1E-02 | - |
| LNG | Diesel | kg | 8.6 | 9.0 | 12.1 | 19.6 | 24.6 | 26.2 | 25.5 | 29.7 | 29.2 | 30.9 | - |
| Propane^B | Diesel | L | - | - | - | - | - | - | - | - | 0.3 | 0.3 | - |
| | Gasoline | L | 70.2 | 70.3 | 68.3 | 66.3 | 65.5 | 57.4 | 55.3 | 52.3 | 45.7 | 12.9 | 1.6 |
| Renewable Diesel^A | Diesel | L | - | - | - | - | 3.1 | 9.0 | 21.7 | 22.0 | 17.0 | - | - |
| Renewable Gasoline | Gasoline | L | - | - | - | - | 11.4 | 26.6 | 49.9 | 71.8 | 59.1 | 71.1 | - |
| Renewable Naphtha | Gasoline | L | - | - | - | - | - | - | - | 2.4 | 10.7 | 23.7 | - |

A – In 2024, renewable diesel was reported under HDRD.

B – The observed decrease in propane volumes is attributed to legislative changes. The Ministry will be clarifying reporting responsibility to reconcile supply discrepancies.



Transportation Energy Use

Transportation energy use peaked in 2019 before a significant reduction due to the COVID 19 pandemic. In 2024, total transportation energy use was 5% higher than in 2010. 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 gasoline and diesel

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|---------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------------------|
| Diesel | 133.1 | 131.1 | 142.7 | 147.3 | 143.0 | 125.1 | 131.5 | 132.1 | 117.9 | 100.0 | 127.7 |
| Gasoline | 160.6 | 169.0 | 168.8 | 164.7 | 167.6 | 145.5 | 152.6 | 147.6 | 148.2 | 151.6 | 164.5 |
| Biodiesel | 3.8 | 3.8 | 3.8 | 4.1 | 4.0 | 3.8 | 4.4 | 4.8 | 4.7 | 4.7 | 2.3 |
| CNG | 0.6 | 0.7 | 0.8 | 1.0 | 1.1 | 1.2 | 1.3 | 1.5 | 1.4 | 1.4 | 9.7E-03 |
| CRNG | - | - | - | - | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.3 | - |
| Electricity | 0.7 | 0.7 | 0.8 | 0.9 | 0.9 | 1.0 | 1.2 | 1.3 | 1.5 | 1.6 | 0.7 |
| Ethanol | 8.1 | 8.8 | 8.9 | 8.7 | 7.9 | 7.2 | 8.5 | 10.1 | 11.1 | 11.0 | 5.5 |
| HDRD | 4.4 | 2.7 | 3.9 | 4.2 | 7.8 | 12.6 | 12.6 | 13.5 | 25.4 | 39.7 | 1.1 |
| Hydrogen | 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 | 4.3E-03 | 2.1E-02 |
| LNG | 0.5 | 0.5 | 0.6 | 1.0 | 1.3 | 1.4 | 1.3 | 1.6 | 1.5 | 1.7 | - |
| Propane | 1.8 | 1.8 | 1.7 | 1.7 | 1.7 | 1.5 | 1.4 | 1.3 | 1.2 | 0.3 | 4.0E-02 |
| Renewable Diesel | - | - | - | - | 0.1 | 0.3 | 0.8 | 0.8 | 0.7 | - | - |
| Renewable Gasoline | - | - | - | - | 0.4 | 0.9 | 1.7 | 2.5 | 2.0 | 2.5 | - |
| Renewable Naphtha | - | - | - | - | - | - | - | 0.1 | 0.4 | 0.8 | - |
| Total | 313.4 | 319.1 | 332.0 | 333.6 | 335.9 | 300.6 | 317.5 | 317.2 | 316.1 | 315.3 | 301.9 |
| | | | | | | | | | | | |



Table 3 – Annual energy in Petajoules jet fuel

| | | | | | | | | | | | |
|-----------------|---|---|---|---|---|---|---|---|---|------|---|
| Jet | - | - | - | - | - | - | - | - | - | 67.5 | - |
| Alternative Jet | - | - | - | - | - | - | - | - | - | 0.6 | - |
| Total | - | - | - | - | - | - | - | - | - | 68.1 | - |



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 ensure accurate reporting of fossil fuels and to incentivize producers to apply for specific carbon intensities, default carbon intensities are set at the highest known value for each fuel type supplied in British Columbia.

Table 4^A – Annual weighted average carbon intensity (gCO₂e/MJ) of fuels reported

| | 2015 | 2016 | 2017 ^B | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|---------------------------|-------|-------|-------------------|-------|-------|-------|-------|-------|-------|-------|-----------------|
| Alternative Jet | - | - | - | - | - | - | - | - | - | 32.56 | - |
| Biodiesel | 16.07 | 15.37 | 4.51 | 2.48 | -1.62 | -3.39 | -3.06 | -2.54 | -2.82 | 0.29 | 15.23 |
| CNG | 62.14 | 62.14 | 63.64 | 63.64 | 63.64 | 63.64 | 63.64 | 63.64 | 63.64 | 63.91 | 59.74 |
| CRNG | - | - | - | - | 14.08 | 5.97 | 3.84 | 1.73 | -9.26 | -6.81 | - |
| Electricity | 11.00 | 11.00 | 19.73 | 19.73 | 19.73 | 19.73 | 19.73 | 19.73 | 19.73 | 12.14 | 11.94 |
| Ethanol | 49.47 | 41.00 | 32.43 | 30.43 | 29.18 | 31.73 | 30.86 | 28.39 | 23.68 | 12.68 | 55.51 |
| HDRD | 16.37 | 16.40 | 20.08 | 20.27 | 17.87 | 15.12 | 16.10 | 16.83 | 23.21 | 22.97 | 48.04 |
| Hydrogen | 95.51 | 95.51 | 96.82 | 96.82 | 91.26 | 96.82 | 46.66 | 55.36 | 58.35 | 81.79 | 92.06 |
| LNG | 63.26 | 63.26 | 63.08 | 63.04 | 64.70 | 63.99 | 62.95 | 63.42 | 63.30 | 66.85 | - |
| Propane | 68.17 | 68.02 | 67.97 | 67.84 | 67.52 | 67.58 | 67.64 | 67.34 | 67.25 | 76.51 | 78.29 |
| Renewable Diesel | - | - | - | - | -0.21 | 3.81 | 7.40 | 5.57 | 5.01 | - | - |
| Renewable Gasoline | - | - | - | - | -5.94 | 3.86 | -5.92 | -4.02 | -3.19 | -2.55 | - |
| Renewable Naphtha | - | - | - | - | - | - | - | 30.98 | 29.35 | 26.18 | - |

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 resulted from iterative refinements to the GHGenius lifecycle assessment model



Table 5 – Gasoline class renewable content (Ethanol + Renewable Gasoline + Renewable Naphtha) supplied (million litres) by carbon intensity range (gCO₂e/MJ)

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|----------------------|-------|-------|-------|-------|---------|---------|-------|-------|-------|-------|--------------------|
| < 0 | - | - | - | - | 11.4 | 15.7 | 49.9 | 69.4 | 56.4 | 61.6 | - |
| 0 to 10 | - | - | - | - | 94.1 | 47.0 | 33.6 | 1.0 | 1.8 | 275.7 | - |
| 10 to 20 | 17.2 | 64.3 | 105.0 | 124.1 | 2.9 | 11.2 | 0.1 | 54.9 | 171.0 | 112.3 | - |
| 20 to 30 | - | - | 0.3 | 0.0 | 11.0 | 22.7 | 130.5 | 194.1 | 191.3 | 68.7 | - |
| 30 to 40 | 2.4 | 93.0 | 219.6 | 211.2 | 196.9 | 203.7 | 151.2 | 141.2 | 97.5 | 28.3 | 15.1 |
| 40 to 50 | 108.5 | 102.8 | 19.8 | 14.9 | 14.9 | 23.7 | 20.3 | 26.6 | 13.4 | 10.5 | 0.5 |
| 50 to 60 | 177.5 | 108.2 | 31.3 | 20.1 | 14.7 | 9.1 | 18.6 | 14.0 | 7.0 | 1.6 | 132.1 |
| 60 to 70 | 37.2 | 6.8 | 0.0 | - | - | 1.0 | 5.3 | 2.3 | - | - | 54.2 |
| CI > 70 | - | - | - | - | - | - | - | - | 0.1 | - | - |
| Default ^A | - | - | - | - | 1.7E-03 | 8.2E-03 | 0.3 | 1.0 | - | 1.0 | 32.8 |

A – Ethanol and renewable gasoline that were reported with a default carbon intensity generated debits. The data in Table 9 reflects the net number of credits generated in a compliance period.

Table 6 – Diesel class renewable content (Biodiesel + HDRD + Renewable Diesel) supplied (million litres) by carbon intensity range (gCO₂e/MJ)

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|----------------------|-------|-------|------|------|-------|---------|-------|-------|-------|-------|--------------------|
| < 0 | - | 1.7 | 10.0 | 35.0 | 48.2 | 61.8 | 69.1 | 83.7 | 93.0 | 44.6 | - |
| 0 to 10 | 11.1 | 25.3 | 90.3 | 97.6 | 148.4 | 170.0 | 65.1 | 64.9 | 50.0 | 153.5 | - |
| 10 to 20 | 182.8 | 118.5 | 76.6 | 56.9 | 65.7 | 208.8 | 305.2 | 289.9 | 25.7 | 124.0 | 39.0 |
| 20 to 30 | 19.2 | 30.7 | 35.4 | 39.4 | 63.9 | 19.8 | 51.0 | 86.8 | 673.7 | 837.5 | 6.6 |
| 30 to 40 | 9.7 | 1.2 | 0.4 | 1.3 | 5.4 | - | - | 0.2 | 1.7 | 17.9 | - |
| 40 to 50 | - | - | - | - | - | - | - | - | - | 0.8 | 30.6 |
| 50 to 60 | - | - | - | - | - | - | - | - | - | - | - |
| CI > 60 | - | - | - | - | - | - | - | - | - | - | - |
| Default ^A | - | - | - | - | - | 1.0E-03 | - | - | - | - | 15.5 |

A – Biodiesel that was reported with a default carbon intensity generated debits. The data in Table 9 reflects the net number of credits generated in a compliance period.



Table 7 – Jet renewable content volume supplied (million litres) by carbon intensity range

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|----------|------|------|------|------|------|------|------|------|------|------|-----------------|
| < 0 | - | - | - | - | - | - | - | - | - | - | - |
| 0 to 10 | - | - | - | - | - | - | - | - | - | - | - |
| 10 to 20 | - | - | - | - | - | - | - | - | - | 3.3 | - |
| 20 to 30 | - | - | - | - | - | - | - | - | - | 0.2 | - |
| 30 to 40 | - | - | - | - | - | - | - | - | - | 13.0 | - |
| 40 to 50 | - | - | - | - | - | - | - | - | - | - | - |
| 50 to 60 | - | - | - | - | - | - | - | - | - | - | - |
| CI > 60 | - | - | - | - | - | - | - | - | - | - | - |
| Default | - | - | - | - | - | - | - | - | - | - | - |



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 8 – Annual renewable fuel volume by feedstock supplied (million litres)

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|--|-------|-------|-------|-------|-------|-------|----------|----------|----------|----------|--------------------|
| Barley & Wheat | 0.2 | 1.0 | - | - | - | - | - | - | - | - | - |
| Biodiesel Bottoms | - | - | - | - | - | 6.2 | 1.6 | 2.1 | - | - | - |
| Camelina | - | - | - | - | - | - | - | - | - | 0.8 | - |
| Canola | 91.3 | 95.5 | 92.9 | 79.0 | 64.8 | 65.6 | 69.3 | 76.9 | 288.0 | 426.9 | 38.6 |
| Canola & Soy | - | - | - | - | - | - | - | - | - | - | 3.2 |
| Corn | 287.0 | 269.2 | 236.0 | 244.8 | 190.2 | 170.4 | 254.7 | 323.4 | 312.4 | 362.6 | 66.5 |
| Corn Oil | 1.5 | 1.3 | - | - | - | - | - | - | 4.2 | 43.0 | - |
| Corn & Wheat | - | - | - | - | - | - | - | - | - | - | 121.8 |
| Fatty Acid Distillate | - | - | - | - | - | - | 6.5 | 4.4 | 0.9 | 3.0 | - |
| Organic Waste | - | - | - | - | - | - | - | - | 1.1 | 2.5 | - |
| Palm Sludge Oil (PSO) | 71.6 | 43.7 | - | - | - | - | - | - | - | - | - |
| Pea Starch | - | - | - | - | 0.1 | 0.1 | 0.0 | - | - | - | - |
| Refined Palm Oil (RPO) | - | - | - | - | - | - | - | - | - | - | 30.6 |
| Renewable Natural Gas^A | - | - | - | - | 0.8 | 1.6 | 3.0 | 1.4 | 3.3 | 4.3 | - |
| Sorghum | - | - | - | - | - | - | - | - | 11.6 | 2.4 | - |
| Soy | 11.1 | 9.5 | 14.4 | 36.5 | 54.3 | 55.3 | 60.9 | 101.1 | 56.3 | 126.8 | 14.8 |
| Spent Bleaching Earth Oil (SBEO) | - | - | 34.6 | 27.6 | 33.8 | - | - | - | - | - | - |
| Sugarbeet & Potato Waste | - | - | - | - | - | - | 0.6 | - | - | - | - |
| Tall Oil | - | - | - | - | - | - | - | - | - | 2.3 | - |
| Tallow | 0.3 | 0.4 | 0.5 | 3.7 | 30.1 | 4.5 | 35.1 | 38.7 | 56.5 | 423.5 | - |
| Water | - | - | - | - | - | - | 9.66E-03 | 1.84E-02 | 1.63E-02 | 1.29E-02 | - |
| Wheat | 55.6 | 104.9 | 139.9 | 133.1 | 144.4 | 136.9 | 104.2 | 93.4 | 132.7 | 98.9 | 25.2 |
| Yellow Grease (UCO) | 46.8 | 26.9 | 27.9 | 72.5 | 142.4 | 318.3 | 288.9 | 275.8 | 423.3 | 263.2 | - |

A – The volume of renewable natural gas feedstock is represented in millions of m³



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 which was updated effective January 1, 2024:

$$\text{Number} = (\text{TCI} \times \text{EER} - (\text{RCI} + \text{UCI})) \times \text{EC} / 1,000,000 \text{ Grams}$$

Where:

TCI = the target carbon intensity for the fuel.

EER = the energy effectiveness ratio of the fuel, as determined in accordance with the regulations of the minister;

RCI = the recorded carbon intensity of the fuel;

UCI = the additional carbon intensity attributed to the use of the fuel, as determined in accordance with the regulations of the minister;

EC = the energy content of the fuel in megajoules, as determined in accordance with the regulations of the minister.

$\text{TCI} = \text{BCI} \times (1 - \text{R})$

BCI = the carbon intensity specified in section 19 (a) of the Act for the base fuel for the category to which the fuel belongs;

R = the prescribed reduction for that category, expressed as a percentage.

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 9 – Net credits (debits) generated by fuel

| | Fuel Class | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|-----------------------------------|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Diesel | Diesel | (299,356) | (409,470) | (649,294) | (872,719) | (997,493) | (971,831) | (1,192,028) | (1,411,008) | (1,520,913) | (1,509,546) |
| Gasoline | Gasoline | (340,347) | (500,784) | (729,216) | (922,015) | (1,125,260) | (1,081,031) | (1,288,310) | (1,466,459) | (1,778,471) | (2,271,171) |
| Biodiesel | Diesel | 283,579 | 287,812 | 324,741 | 352,323 | 357,746 | 338,939 | 389,414 | 412,853 | 396,252 | 368,294 |
| CNG | Diesel | 10,447 | 11,659 | 13,744 | 15,097 | 16,588 | 16,964 | 16,747 | 17,219 | 13,916 | 10,052 |
| | Gasoline | 1,276 | 986 | 674 | 559 | 543 | 485 | 422 | 413 | 385 | 199 |
| CRNG | Diesel | - | - | - | - | 1,885 | 4,365 | 8,720 | 4,965 | 13,917 | 20,325 |
| Electricity | Diesel | 154,282 | 151,206 | 164,162 | 162,211 | 158,457 | 151,640 | 152,206 | 158,973 | 156,686 | 160,125 |
| | Gasoline | 866 | 9,342 | 14,688 | 29,772 | 53,348 | 80,091 | 117,151 | 130,136 | 183,290 | 219,680 |
| Ethanol | Gasoline | 288,175 | 382,431 | 454,953 | 453,956 | 409,634 | 350,803 | 409,406 | 505,327 | 579,667 | 723,503 |
| HDRD | Diesel | 329,343 | 197,776 | 270,095 | 285,936 | 543,505 | 893,038 | 866,476 | 905,646 | 1,487,900 | 2,232,740 |
| Hydrogen | Diesel | - | - | - | 9 | 8 | 2 | 4 | 2 | - | - |
| | Gasoline | 16 | 18 | 18 | 8 | 28 | 42 | 247 | 537 | 484 | 464 |
| LNG | Diesel | 12,747 | 12,870 | 17,150 | 26,211 | 29,062 | 30,508 | 29,670 | 32,217 | 28,389 | 2,900 |
| Propane | Diesel | - | - | - | - | - | - | - | - | 138 | 9 |
| | Gasoline | 30,431 | 29,169 | 27,413 | 24,625 | 22,659 | 18,356 | 16,226 | 14,461 | 10,335 | (1,930) |
| Renewable Diesel | Diesel | - | - | - | - | 10,349 | 28,615 | 65,250 | 66,702 | 50,559 | - |
| Renewable Gasoline | Gasoline | - | - | - | - | 34,320 | 70,400 | 147,240 | 201,623 | 162,604 | 200,348 |
| Renewable Naphtha | Gasoline | - | - | - | - | - | - | - | 3,757 | 16,418 | 42,973 |
| Total Net Credits (Debits) | | 471,459 | 173,015 | (90,871) | (444,026) | (484,620) | (68,615) | (261,159) | (422,637) | (198,445) | 198,965 |



Table 9 – Net credits (debits) generated by jet fuel

| | | | | | | | | | | | |
|----------------------------|-----|---|---|---|---|---|---|---|---|---|--------|
| Fossil-derived Jet | Jet | - | - | - | - | - | - | - | - | - | - |
| Alternative Jet | Jet | - | - | - | - | - | - | - | - | - | 33,425 |
| Total Net Credits (Debits) | | - | - | - | - | - | - | - | - | - | 33,425 |

A - Jet fuel must be reported; however, negative compliance units (debits) will not be incurred until 2026, and credits may be generated under applicable conditions.



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.

$$\text{Emissions Avoided} = (\text{Baseline CI} \times \text{EER} - (\text{RCI} + \text{UCI})) \times \text{Energy Content} / 1,000,000$$

(Tonnes of CO₂e)

Where:

Baseline CI = the carbon intensity specified in section 19 (a) of the Act for the base fuel for the category to which the fuel belongs

EER = the energy effectiveness ratio of the fuel, as determined in accordance with the regulations of the minister;

RCI = the recorded carbon intensity of the fuel;

UCI = the additional carbon intensity attributed to the use of the fuel, as determined in accordance with the regulations of the minister;

EC = the energy content of the fuel in megajoules, as determined in accordance with the regulations of the minister.



Table 10^A – Lifecycle emissions avoided (tonnes CO₂e) by fuel

| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2010 (Baseline) |
|---------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------------|
| Biodiesel | 292,410 | 300,376 | 342,741 | 377,524 | 388,282 | 371,532 | 432,035 | 463,759 | 456,614 | 438,708 | 176,238 |
| CNG | 12,947 | 14,576 | 17,939 | 21,025 | 24,979 | 27,112 | 28,637 | 31,670 | 30,772 | 29,003 | 294 |
| CRNG | - | - | - | - | 2,085 | 4,837 | 9,761 | 5,610 | 15,865 | 23,860 | - |
| Electricity | 159,314 | 166,637 | 189,087 | 206,501 | 231,838 | 256,922 | 302,559 | 329,092 | 398,359 | 455,826 | 159,245 |
| Ethanol | 305,801 | 409,500 | 493,967 | 503,998 | 465,265 | 408,865 | 485,510 | 606,177 | 712,276 | 887,798 | 192,072 |
| HDRD | 339,641 | 206,529 | 288,400 | 311,712 | 602,947 | 1,001,285 | 987,642 | 1,049,473 | 1,815,181 | 2,831,538 | 50,564 |
| Hydrogen | 17 | 20 | 20 | 20 | 42 | 53 | 288 | 634 | 594 | 620 | 1,821 |
| LNG | 13,814 | 14,428 | 20,168 | 32,529 | 38,863 | 42,360 | 42,592 | 48,868 | 48,125 | 27,882 | - |
| Propane | 34,347 | 34,676 | 35,062 | 34,306 | 34,426 | 30,074 | 28,850 | 27,696 | 24,556 | 2,642 | 478 |
| Renewable Diesel | - | - | - | - | 11,247 | 31,607 | 73,353 | 75,776 | 59,045 | - | - |
| Renewable Gasoline | - | - | - | - | 37,100 | 77,793 | 162,761 | 226,384 | 187,200 | 237,314 | - |
| Renewable Naphtha | - | - | - | - | - | - | - | 4,548 | 20,629 | 55,239 | - |
| Total | 1,158,291 | 1,146,740 | 1,387,386 | 1,487,616 | 1,837,074 | 2,252,440 | 2,553,987 | 2,869,686 | 3,769,213 | 4,990,429 | 580,711 |
| | | | | | | | | | | | |
| Alternative Jet | - | - | - | - | - | - | - | - | - | 33,425 | - |
| Total | - | - | - | - | - | - | - | - | - | 33,425 | - |

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



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 reduce the carbon intensity of fuel, or increase the supply of low carbon fuel in B.C. The table below shows the quantity of debits incurred and credits generated each year.

Table 11 – Credit Market Summary

| 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 | 537,814 |
| 2016 | (910,254) | 1,083,270 | 166,636 | 339,651 |
| 2017 | (1,378,557) | 1,287,687 | 97,833 | 6,962 |
| 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) | 1,984,248 | 188,853 | 120,238 |
| 2021 | (2,480,410) | 2,219,251 | 475,561 | 214,402 |
| 2022 | (2,877,812) | 2,455,175 | 279,985 | (142,652) |
| 2023 | (3,299,404) | 3,100,959 | 497,989 | 299,544 |
| 2024 | (3,785,420) | 4,017,810 | 421,885 | 654,275 |
| Total | (21,825,184) | 21,803,325 | 2,627,463 | 2,605,604 |

A - 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.



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Need more information?

Please visit the Low Carbon Fuels website at www.gov.bc.ca/lowcarbonfuels or email us at 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 *Low Carbon Fuels Act*, and associated regulations and seek independent legal advice to confirm their status, legal obligations and opportunities. The *Low Carbon Fuels Act*, its associated regulations, 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>.