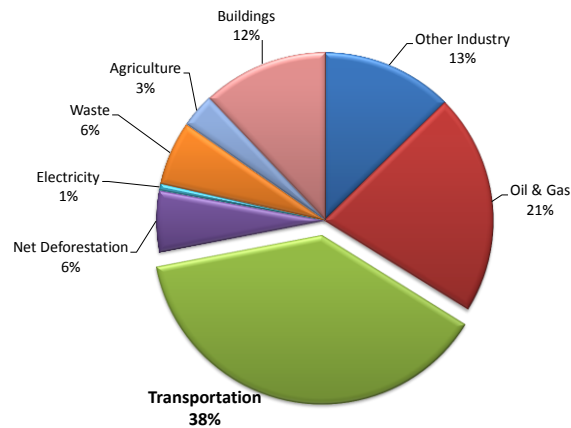


Transportation contributed 38 percent of B.C.'s GHG emissions in 2012





Renewable and Low Carbon Fuel Requirements Regulation

Goals

- Reduce B.C.'s reliance on fossil fuels
- Reduce environmental impact of transportation fuels
- Contribute to a new low-carbon economy



Renewable and Low Carbon Fuel Requirements Regulation

Part 2 - Renewable Fuel Requirement

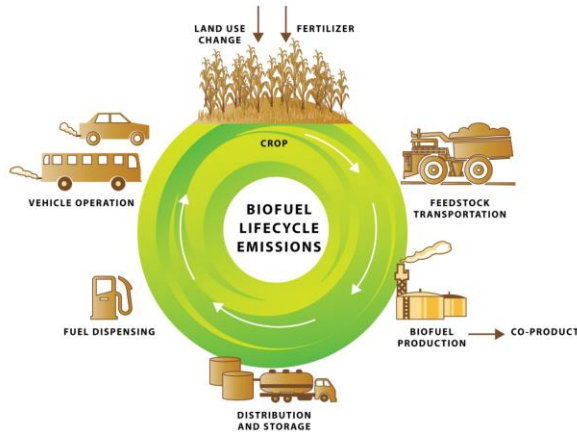
- 5% renewable content in gasoline
- 4% renewable content in diesel

Part 3 – Low Carbon Fuel Requirement

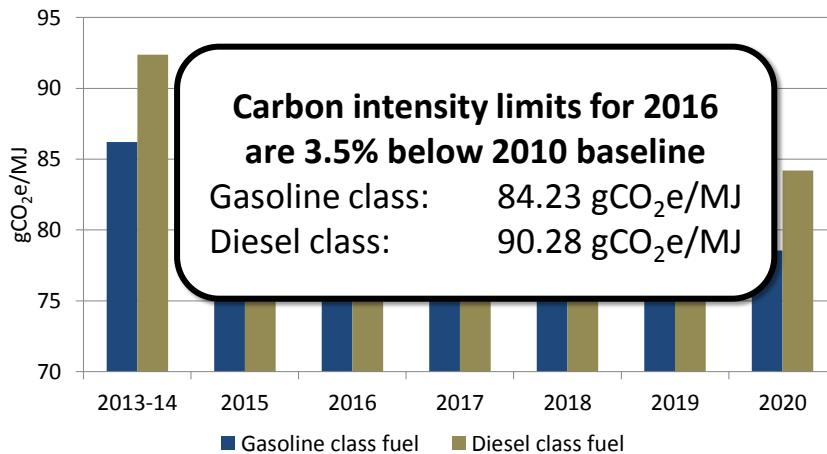
- Reduce carbon intensity 10% by 2020



Carbon intensity represents the lifecycle GHG emissions of transportation fuels



Carbon intensity limits

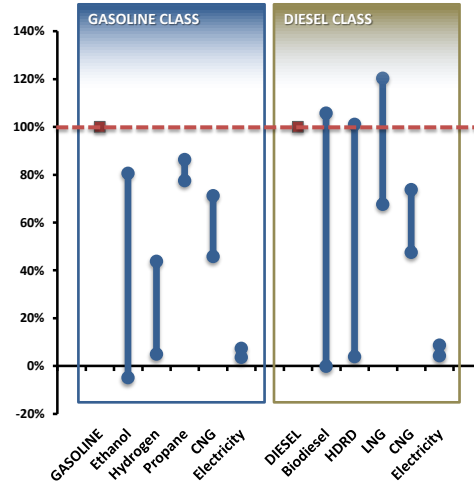




Part 3 fuel suppliers receive credits when they supply low carbon fuels

These credits are used to offset debits for supplying high carbon fuels

Net credits can be traded with other Part 3 fuel suppliers



Impact of the Regulation 2010-2015

- The proportion of B.C.'s transportation energy provided by renewable and low carbon fuels increased from 1% to **6%**
- Carbon intensity of transportation energy
 - Part 3 requirement in Regulation: 2.5% reduction
 - Part 3 fuels actually supplied: **3.4% reduction**



Production and supply under the Regulation

Low carbon fuel producers...

- Complete lifecycle assessments of the low carbon fuels they produce
- Apply to Ministry for approval of carbon intensity and B.C. fuel code
- Price low carbon fuels based in part on carbon intensity and B.C. fuel code

Part 3 fuel suppliers...

- Purchase low carbon fuels with B.C. fuel codes
- “Supply” these fuels
 - Individual fuels
 - Finished fuel blends
- Report this supply to Ministry and acquire credits
- Use credits to offset debits, or sell credits to offset costs



B.C. low carbon fuel codes

- Each code represents a unique fuel lifecycle (pathway)
- Assigned after Ministry verification of lifecycle assessment

Fuel	Active fuel codes	Carbon Intensity (gCO ₂ e/MJ)		
		Weighted average	Lowest	Highest
Biodiesel	38	16.69	-15.74	98.96
HDRD	19	36.53	13.70	94.58
Ethanol	55	51.11	-2.77	74.91



Biofuel options for gasoline and diesel

Gasoline

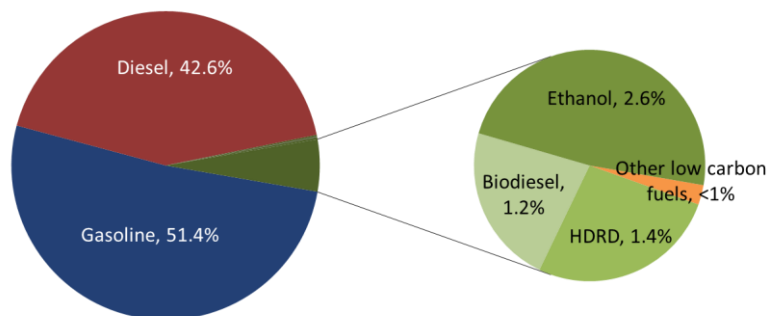
- Ethanol
- Renewable Gasoline from co-processed bio-crude
- Renewable Gasoline

Diesel

- Biodiesel
- Hydrogenation-derived Renewable Diesel
- Renewable Diesel from co-processed bio-crude
- Renewable Diesel



Transportation energy supplied in 2015





The opportunity in British Columbia

- **Goal:** low carbon fuel production that leverages existing industrial facilities and B.C. feedstocks
 - A 250 million litre facility producing an ultra-low carbon diesel replacement could avoid over 500,000 tonnes of GHG emissions per year
- **Challenges**
 - What feedstock?
 - Which production process?



Part 3 Agreements

- Provide credits to Part 3 fuel suppliers for actions that reduce CO₂e emissions through the use of low carbon fuels
- Intended for projects and activities that would not occur without the credit incentive



Part 3 Agreements

- A limited number of credits are available for Part 3 Agreements in each compliance year
 - ≤ 25% of gross debits reported in the previous compliance year
- Credits awarded through the Part 3 Agreement are additional to those earned through the sale of the low carbon fuel



Part 3 Agreements

Key principles

- Support the market penetration of low carbon fuels
- Award the greatest number of credits possible each year
- Equal credit is awarded for equal action, within project types

Sharing project risk

- The risk that emission reductions may not be realised is that of the Ministry
- The risk that a project may not be completed is that of the proponent



Part 3 Agreements

Projects to date

- Largest agreement is for 120,000 credits over 4 years
- Smallest agreement is for 7,600 credits
- Agreements award an average of 22,000 credits per year



Part 3 Agreements – example projects

2014

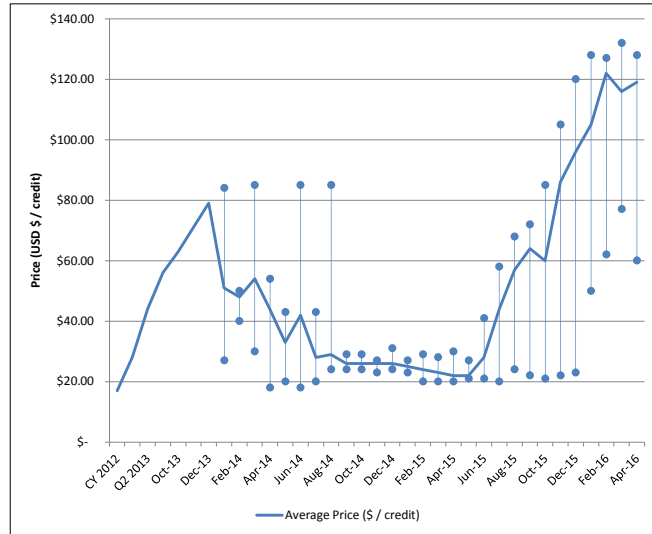
- Fuel terminal retrofits to enable increased ethanol supply
- Scrap-It incentive for the replacement of an older fossil fuel vehicle with an electric vehicle

2015

- Bio-oil testing to produce conventional gasoline and diesel with renewable content
- Construction and operation of hydrogen fuelling station



California's LCFS credit market



Thank you

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