



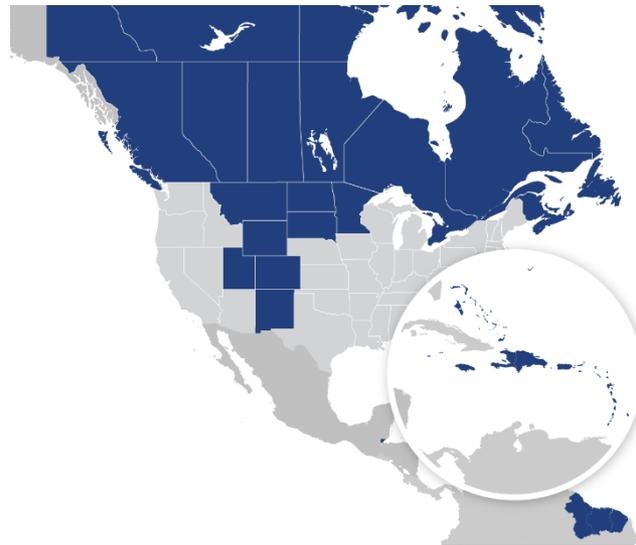
Parkland
FUEL CORPORATION

**Council of Marine Carriers
Victoria
May 2019**



Parkland Fuel Corporation

- Parkland is Canada and the Caribbean's largest and one of North America's fastest growing independent suppliers and marketers of fuel and petroleum products and a leading convenience store operator
- We are a Canadian company celebrating our 50th anniversary in 2019
- The core of Parkland's strategy is our **people** and **values** of:
 - **Safety**
 - **Integrity**
 - **Respect**
 - **Community**





Refining Landscape & History

- BC is not self-sufficient in the supply and production of finished petroleum products
- 2/3rds of the finished petroleum products consumed in BC are imported from Alberta
- In the 1980's there were four operating petroleum refineries on Burrard Inlet. Three of those were decommissioned and are now terminals for Alberta-based production.
- Burnaby Refinery is the only remaining local refinery supplying the Lower Mainland and Vancouver Island
- Burnaby Refinery began operating in 1936 under Standard Oil





Transportation Fuels are Changing

- New environmental policies from all levels of government
- Changing fuel specifications
 - Reduced sulphur in marine distillate
 - Gasoline sulphur from 30 ppm to 10 ppm
- More stringent criteria air contaminants emissions
 - Federal targets being used for regulation
 - Main issues SO_x, NO_x, PM 2.5
 - Particulate matter an increasing focus
- Green House Gas Reductions- Climate Change
 - Regulations to reduce carbon intensity of fuels
 - Drives electrification, renewables blending, transitional fuels (LNG, CNG)
 - Drives fuel production from alternative feedstocks
 - Also impacts all elements of the fuel business, emissions, storage, infrastructure, refining process



Policy Driven Changes

- LNG bunkering
- Equipment changes to lower emissions
- Electrification including the Port, particularly in BC
- Changing diesel composition (HDRD)
- Lower Sulphur
- Port tenants reducing emissions
- Reduced GHGs – lower carbon, fuel composition
 - Affects on land (rail and truck), marine and aviation
 - Federal policy also affects gaseous and solid fuels and will apply to buildings and industry.
 - Over time products shipped will change



IMO Sulphur Regulations

- Most significant specification change in this generation
- Enforcement a significant challenge.
- Extent of vessel-based scrubbers unknown
- The current maximum fuel oil sulphur limit of 3.5 weight percent (wt%) will fall to 0.5 wt% for vessels in international waters. 80% reduction
- IMO 2020 regulations will see the largest reduction in the sulphur content of a transportation fuel undertaken at one time.*
- Will dramatically change distillate market



Emissions Stringency

- MetroVancouver has increasingly stringent emissions targets for conventional air contaminants
 - SO_x, NO_x, PM 2.5, VOC
- PM emissions are gaining focus
- Also new GHG reduction goals by all governments



Marine Diesel in the BC Market

- Vancouver diesel – low carbon intensity 5% ULSD
- Unusually low environmental impact for marine diesel
- Meets all BC Low Carbon Requirements
- Federal and Provincial low carbon policies will drive further change in distillate composition





The Future of Transportation Fuel

- Petroleum products will remain important for the foreseeable future, particularly in marine, aviation, rail and trucking sectors
- Provincial and Federal requirements exist to lower Carbon Intensity (CI) of fuels to lower greenhouse gas (GHG) emissions
- CI is how much carbon is emitted relative to a given output of energy and is determined using Life Cycle Assessment (LCA) modeling
- These low-carbon policies have led us to **co-processing biocrudes**
- Co-processing is the process by which a portion of crude oil feedstock is supplemented with renewable feedstock
- The residuals from the forest industry represent a significant biomass opportunity for BC
- This method of production will help us achieve our goal of becoming a **Greener Refinery**



Co-Processing

- **Integrating biomass feedstocks into petroleum refineries to produce lower carbon intensity fuels**
- May utilize different refinery units
- Crude oil and current renewable feedstocks will remain foundational
- Current at scale renewable feedstocks- seed oils and tallow
- A wide variety of new feedstocks are possible
- BC forest biomass is a major opportunity
- Produces a full slate CGSB fuels including renewable gasoline, diesel and jet
- Important pathway but not a silver bullet. All other options, EV's and blending renewables needed to meet GHG goals



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