



TIDEWATER
Midstream and Infrastructure Ltd.

TIDEWATER MIDSTREAM AND INFRASTRUCTURE LTD. (Tidewater)
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PRINCE GEORGE REFINERY RENEWABLE DIESEL FACILITY PROJECT INFORMATION

CORPORATE OVERVIEW

Tidewater Midstream and Infrastructure Ltd. (Tidewater) is headquartered in Calgary, Alberta and was incorporated on February 4th, 2015. Since incorporation, Tidewater's experienced management team has acquired and developed a variety of oil and gas infrastructure such as gas plants, pipelines, railcars, trucks, export terminals, and storage facilities. Tidewater acquired the Prince George Refinery from Husky Energy on October 4th, 2019, keeping the existing capable and experienced workforce in their entirety.

Tidewater is committed to developing and maintaining meaningful, long term relationships with its neighbours, the communities in which it operates and other stakeholders that may be affected by its operations. Our reputation as a respected and valued corporate citizen is paramount to us and we take extra steps to ensure our investments add value to our communities. Tidewater adheres to the highest standard of ethics when it comes to health, safety, and the environment, and through this commitment we believe that the communities in which we live and operate should be impacted in a positive way.

PROJECT NEED AND DESCRIPTION

The proposed project is the construction and operation of a renewable diesel facility to be co-located at the existing Prince George Refinery. The construction of the new facility will include a two stage proprietary hydrotreating process unit, a renewable hydrogen process unit and associated storage of feedstocks and sales product. The renewable diesel production will be integrated with the existing refinery infrastructure (utilities, tank farm, loading racks, skilled workforce) and will leverage the existing rail and truck routes as primary modes of transportation and distribution. By leveraging this existing infrastructure, the resulting environmental footprint for the project will be minimized.

**THE MAJOR EQUIPMENT
ASSOCIATED WITH THE PROJECT
HAVE BEEN SELECTED TO ENSURE
A MINIMAL INCREASE IN AIR
EMISSIONS AT THE SITE.**



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The project also includes a Selective Catalytic Reduction (SCR) unit on the reformer gas fired heater flue gas for environmental control. SCR is a process capable of abating emissions of nitrogen oxides (NOX) to extremely low levels by utilizing an ammonia catalyst to convert the nitrogen oxides to naturally occurring nitrogen and water.

Renewable diesel is produced through a proprietary hydrotreating process and is a low carbon intensity (CI) transportation fuel that is immediately suitable for diesel engines, with no need for modification or retrofitting engines and no blending limitations. Produced from biomass sources, the resulting fuel is largely identical to petroleum diesel and meets the specifications for diesel in Canada (CGSB 3.517) and in the United States (ASTM D975). Renewable diesel production technology has been commercialized by several large-scale technology licensors worldwide, with most renewable diesel facilities currently operating in the US, Europe, and SE Asia.

THIS WILL BE THE FIRST COMMERCIAL RENEWABLE DIESEL FACILITY IN CANADA.

GOVERNMENT SUPPORT AND REGULATORY ALIGNMENT

Both the Canadian federal government and the provincial government of British Columbia are dedicated to reducing greenhouse gas (GHG) emissions from transportation fuels. The Canada-wide Clean Fuel Standard (CFS) will come into effect in 2022; with a stated objective to reduce annual GHG emissions 13% from a 2016 baseline by 2030. The government of British Columbia's Renewable and Low Carbon Fuel Requirement Regulations originally mandated a 10% reduction in carbon intensity by 2020; and have now been updated to mandate a further 10% reduction by 2030 (20% total reduction from 2010 baseline). Part of that mandate includes a target of having 650 million litres of renewable fuel production in the province by 2030. With an estimated production of 150 million liters per year of renewable diesel; the project would represent almost 25% of that target.

This project is being supported by the BC Ministry of Energy, Mines and Low Carbon Innovation under the Renewable and Low Carbon Fuel Requirement Regulations with a Part 3 Agreement to encourage the development of low carbon fuels within the province. In 2018, fuel suppliers in BC imported and sold 115 million liters of renewable diesel.

THE REDUCTION OF GHG EMISSIONS FROM THE USE OF RENEWABLE DIESEL COMPARED TO PETROLEUM DIESEL IS ESTIMATED TO BE ~ 440,000 MT OF CO₂; THIS IS THE EQUIVALENT OF REMOVING 70,000-80,000 ^{NOTE 1} CARS FROM THE ROAD ANNUALLY.

Renewable diesel differs from bio diesel in that it lacks the oxygen that makes bio diesel prone to separation and unsuitable for cold temperatures without blending; renewable diesel does not require blending with traditional diesel to be utilized, and is, therefore not subject to blending limitations. Once in operation, the Prince George renewable diesel facility is estimated to have a carbon intensity (CI) rating of 10-20 g CO₂eq/MJ, which yields an ~80-90% reduction in greenhouse gas (GHG) emissions based on various viable feedstocks.



25%

**THIS PROJECT REPRESENTS ALMOST A
QUARTER OF BC'S TARGET PRODUCTION
OF RENEWABLE FUEL BY 2030.**



PROJECT FACTS

Facility Type	Hydrogenation Derived Renewable Diesel (HDRD), Renewable Diesel Facility to be co-located with the existing Prince George Refinery.
Location	2542 PG PULPMILL RD Latitude: 53.9275 N, Longitude 122.6969 W
Potential Feedstocks	Below are the potential feedstocks that will be utilized in the renewable diesel production: <ul style="list-style-type: none">• Vegetable oils• Animal fats• Used cooking oil
Project Details	The Facility is currently operating as a traditional Refinery. The project's Process Unit would require the construction of a gas fired reformer heater, two gas fired process heaters where one is for start-up and the other for normal operations (only one will run at any given time), one small boiler, six additional storage tanks at the refinery site (three for feedstock storage and three for produced renewable diesel), and an emergency flare stack. The gas fired heaters and the small boiler will utilize modern burner technology to minimize combustion emissions. The reformer gas fired heater will be equipped with a Selective Catalytic Reduction (SCR) unit to minimize emissions. All new equipment will be positioned to meet all applicable equipment spacing requirements.
Associated Required Regulatory Approvals	<ol style="list-style-type: none">1. Rezoning of an adjacent 23.36 ha section of land to heavy industrial2. Amendment to the existing MOE Air Discharge Permit 2065
Product(s)	Renewable Diesel to provide ~ 150 million liters per year of low carbon intensity diesel for the BC market.
Project Schedule and Duration	Pending obtaining all applicable required regulatory approvals, Tidewater plans to begin construction in July of 2021 with completion expected in 18-24 months. Tidewater will provide updated information if timing changes significantly.





Traffic	<p>There will be a slight increase in traffic on PG Pulpmill Road during construction due to the movement of equipment and construction personnel to and from the site. Once construction is complete and the Renewable Diesel Facility is in operation, the increase in traffic as a direct result of the new addition, is estimated to be additional 4-8 trips a day (very small increase).</p>
Noise	<p>As with any construction project, Tidewater does expect some construction noise associated with the Prince George Renewable Diesel Facility addition. Typical construction schedules and activities are either 10 or 12 hour shifts, centred in the daylight hours. If there are concerns regarding excessive noise during construction, they should be reported to Tidewater using the contact information provided in this information package. During normal operations, noise levels will comply with the British Columbia Noise Control Best Practices Guideline (2018).</p>
Setbacks	<p>All associated setbacks are in accordance with applicable bylaws, codes, and best engineering practices.</p>
Contaminants of Concern	<p>After construction, during normal operations at the facility, the two added gas fired heaters and the small boiler will utilize modern burner technology to minimize combustion emissions. A Selective Catalytic Reduction (SCR) unit will be installed on the gas fired reformer heater flue gas for environmental control. There will be a slight increase in critical air contaminants from the gas fired heaters and negligible additional emissions as a result venting from the new renewable diesel storage tanks.</p>
Odours and Emissions	<p>Tidewater will consider the effects of light associated with construction and normal operations. The goal is to prevent excessive emanation of light according to best industry practices, which is defined as light that is in excess of that required for site security and safe operations. Mono directional lights will be used to ensure that the lights face downward to reduce any potential light contamination. Nuisance odour mitigation is a high priority and will be incorporated into the project design. Fugitive dust control practices will be applied as per City of Prince George Clean Air Bylaw No. 8266, including the use of dust suppressing liquids and speed control.</p>
Groundwater Protection	<p>Project construction activities that have the potential to affect groundwater quality include storage, use, and the potential for fuel spills as well as other activities, such as drilling and excavations that can expose groundwater to surface contamination. Applicable regulatory and best practices will be utilized during construction, such as fuel transfer containment and drilling in accordance with the Groundwater Protection Regulation. Best engineering design principles will be applied to protect groundwater from the operating facility. This will include appropriate segregation, containment and treatment of all liquid components including process and surface waters.</p>



**Emergency Response
Plan ("ERP")**

Tidewater conducts annual emergency response training exercises to practice and determine the effectiveness of its emergency response plans. Tidewater conducts these training exercises in accordance with applicable regulations and administers them with local emergency responders, regulatory agencies, Tidewater employees and key contractors. Tidewater uses the Incident Command System (ICS) which supports a unified approach to emergency response and is a system widely used by emergency response support agencies.

In addition to emergency response planning and ongoing emergency preparedness, Tidewater personnel are trained to recognize hazards and deal with emergency situations, such that, in the unlikely event that an abnormal situation should arise, it will be quickly detected and corrected. Tidewater has a Prince George ERP that is registered with the applicable regulatory authorities. Note that there is no change in the existing Emergency Planning Zone (EPZ) for the Prince George Refinery, as a result of the proposed addition of the Renewable Diesel Facility.

**Health, Safety, &
Environment**

Tidewater is committed to conducting its operations in a manner that protects the health and safety of the public and its workforce. It has a highly skilled workforce and provides ongoing training to maintain the skills and understanding necessary for a safe and healthy work environment. Tidewater has adopted a suite of policies, procedures, and safe operating practices, which it reviews, evaluates and updates based on changes in laws and regulations, technology developments, industry standards and the operational needs of its facilities. Tidewater's health, safety and environmental policies set an expectation that everyone must share in the responsibility to work safely and responsibly, while meeting or exceeding all applicable laws and regulations.

Tidewater recognizes and values the importance of responsible environmental stewardship and has made significant investments in infrastructure to improve efficiencies and enhance environmental performance. Tidewater's environmental programs focus on preventing environmental impacts and adopting appropriate remediation strategies when required. Tidewater is committed to conducting its business in a way that balances diverse stakeholder expectations, respects the environment, and emphasizes the health and safety of its employees and communities. Tidewater is committed to only partnering with other businesses, organizations and contractors that share our commitment to excellence in Health, Safety, and Environmental management.

All applicable environmental and regulatory approval conditions pertaining to the construction and operation of the Prince George Renewable Diesel Facility will be met or exceeded.

Note 1: Based on the US EPA Calculation of Greenhouse Gas Emissions from a Typical Passenger Vehicle.