

CLEAN RESOURCES

ADVANCED HYDROCARBONS

INNOVATIVE HYDROCARBON PRODUCTS – PARTIAL UPGRADING

FUNDING DETAILS

CleanSeas Project – Demonstration Plant

The CLEANSEAS Demonstration Project, by Field Upgrading, a division of [Enlighten Innovations Inc.®](#), is a 100 Bpd Fit-For-Purpose DSU plant, constructed in the Alberta’s Industrial Heartland region, to demonstrate production of finished low sulphur marine fuel from Alberta based heavy oil. The DSU technology is a disruptive approach to removing sulphur and metals from heavy oil with very little direct emissions and waste products. Demonstration of Field Upgrading’s innovative DSU® technology at this scale will show that the technical risks have been successfully overcome as well as provide the technical and economic data for commercial deployment.



RECIPIENT:
**Enlighten
Innovations Inc.®**



PARTNERS:



TOTAL BUDGET:
\$43,010,000



AI FUNDING:
**\$5,000,000
(TIER ERP)**



PROJECT DATES:
**FEB 2021 –
MAY 2023**



PROJECT TRL:
**Start: 7
End: 8**

APPLICATION

DSU is a Made-in-Alberta clean solution to a global pollution issue. It takes high sulphur heavy oil feedstock and reduces it to only 0.5% sulphur, producing a finished low sulphur marine fuel to meet the new global sulphur limits. With DSU we can use Alberta oil to produce a new low sulphur marine fuel product to help the international shipping industry meet global sulphur limits while increasing the netback for Alberta oil.

ALBERTA INNOVATES CLEAN RESOURCES

ADVANCED HYDROCARBONS

INNOVATIVE HYDROCARBON PRODUCTS – PARTIAL UPGRADING

PROJECT GOALS

- Show that the scale-up risk has been eliminated by building and operating the full set DSU process operations end to end at a suitable scale.
- Validate the commercial assumptions which include capital & operating costs, yield, and on-stream factor
- Confirm utility demands & make-up rates for key process reagents such as sodium
- Produce a DSU marine fuel product that meets market specifications
- Serve as a showcase for global prospective customers, partners, and investors as they evaluate the potential of DSU.

BENEFITS TO ALBERTA

- The CleanSeas FFP demonstration plant is the initial phase of a Billion Dollar DSU Commercial Facility in Alberta
- Using the DSU technology, the CleanSeas project will create a value-added marine fuel product from Alberta heavy oil and diversify Alberta oil price and product exposure, providing Alberta with the uplift to refined product values without the cost of a full refinery
- The project will create up to 200 new jobs in the Heartland area and many of our selected vendors are local or within Alberta, resulting in expected direct benefit of \$50 Million annually
- The demonstration plant will be used as a research facility, to further optimize and develop DSU as well as other related applications such as providing feedstock for carbon fibre development and hybrid flow batteries.
- Market GHG reductions will be realized outside of Alberta's emission reporting boundaries



167 Project Jobs



3000 Future Jobs



1 New Products/Services

CURRENT STATUS

APR-2021

Detailed engineering design for the project is underway.