

CLEAN RESOURCES

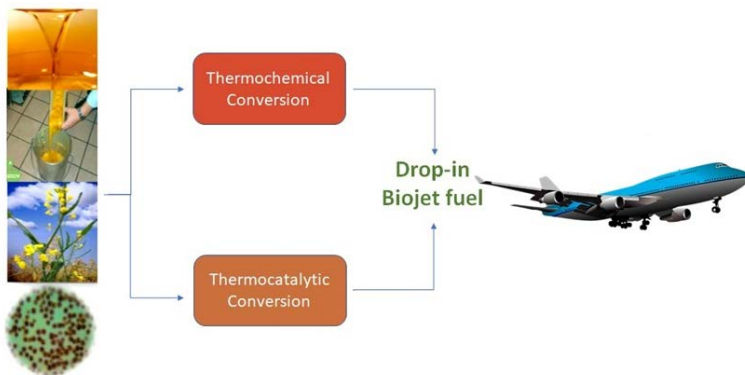
CLEAN TECHNOLOGY

BIOENERGY

FUNDING DETAILS

Alberta Biojet Initiative (ABI): Upgrading of University of Alberta's LTH technology to Biojet

Dr. Bressler’s group at the University of Alberta has developed and patented the Lipid-to-Hydrocarbon (LTH) technology that converts a wide range of lipid feedstocks into platform chemicals and solvents, as well as drop-in naphtha (gasoline) and distillate (diesel) fuels. The current project seeks to develop and test two technology pathways (TRL 7 by the end of the project) to produce drop-in biojet fuels as part of the LTH technology in collaboration with Profs. Luckert, Qiu, and Koch of the University of Alberta, CanmetENERGY Devon, and Forge Hydrocarbons Inc. our industry and commercialization partner. The project sets up advanced biofuels analytical and property testing suite.



RECIPIENT:
University of Alberta



PARTNERS:
Forge Hydrocarbons, Edmonton International Airport, Natural Resources Canada, CanmetENERGY, Western Economic Diversification, Future Energy Systems



TOTAL BUDGET:
\$7,404,000



AI FUNDING:
\$1,500,000



PROJECT DATES:
FEB 2019 – JUN 2022



PROJECT TRL:
Start: 4
End: 7

APPLICATION

The technology developed will target primarily the commercial aviation where the use of renewable jet fuel (biojet) is considered as one of the primary routes for reducing the industry’s carbon footprint. Additionally, since the technology will utilize waste and inedible lipid feedstock, it will provide a market for rendering industries as well as brown grease, distillers corn oil, and off grade oil seeds such as canola.



ALBERTA INNOVATES CLEAN RESOURCES

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PROJECT GOALS

- Develop and test commercially viable drop-in biojet fuels as part of the product portfolio of the patented LHT process
- Setup an advanced analytical suite for biofuel composition and property testing available for use by the wider academic community and industry
- Validate environmental benefits of biojet technologies developed through comprehensive life cycle GHG assessment
- Develop and validate economic model integrating price series and site location analysis for the biojet technologies developed that can be translated to other biojet technologies

BENEFITS TO ALBERTA

- Leveraged Investment to develop a novel biojet fuel pathways in Alberta
- Potential benefit through commercialization of the technology in Alberta could result in approximately \$133 million in revenue, 63 direct and 31 indirect job by 2030
- Contribute to meeting Canada's and global GHG emission reduction targets in the aviation sector
- Meet emerging regional biojet demand for outbound national and international flights departing from Alberta



10 anticipated Publications



15 HQP Trained



10 Project Jobs



50-100 Future Jobs



1 New Product/Service



1 or more Patents



940 kT/yr Future GHGs Reduced

CURRENT STATUS

MAY 2020: In Progress

Laboratory bench scale testing and 1L continuous reactor optimization of the two technological pathways are underway with initial trials showing promising results to creating essential compounds for biojet fuels. In addition, an advanced analytical suite for biofuels and conventional fuels composition analysis and property testing has been set up, providing services that meet national (CGSB) and international (ASTM, ISO, IP) standards and to serve the academic community and industry.