



Hydrogenation-Derived Renewable Diesel (HDRD)

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Group P2

Project Objectives

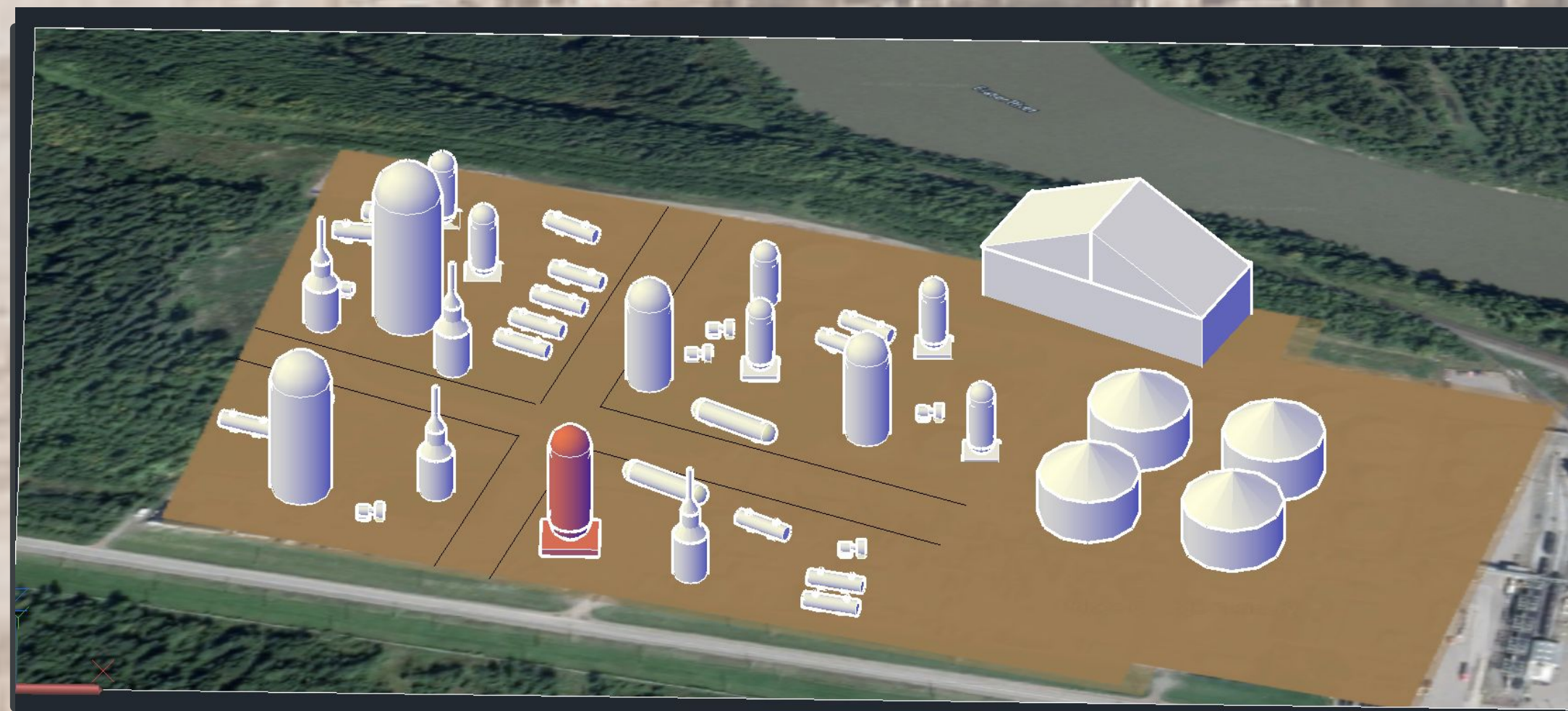
Climate change mitigation requires lower net carbon emissions from fossil fuel products.

OBJECTIVES:

Modify existing equipment, plant layout, and other safety features for co-processing adaptability

Explore different bio-oils available to blend with the existing straight run distillate for economic analysis feasibility study

Plant Layout



Environmental Analysis

Reduced Net-Carbon Emissions from HDRD Products

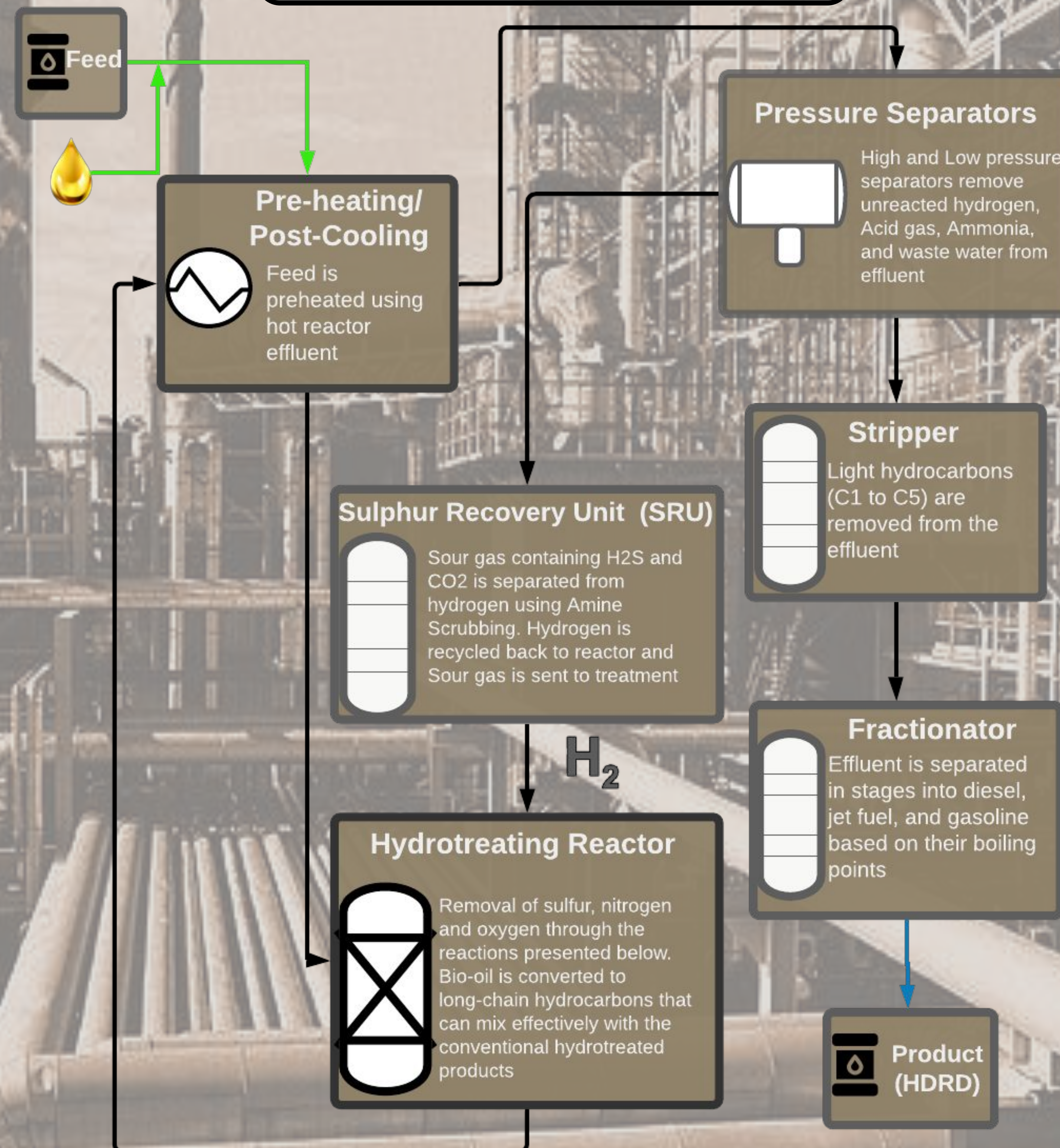
On-Site Emissions:

- Sour Water (NH3 & H2S)
- Sour Gas (H2S)
- Flue Gas (NOx, COx, SOx, PM, VOC)

Control Strategies Mitigate Harm, Adhering to Provincial/Federal Regulatory Acts

Hydrotreating subsystem is designed with the purpose of gas treating & emission reduction

Process Overview



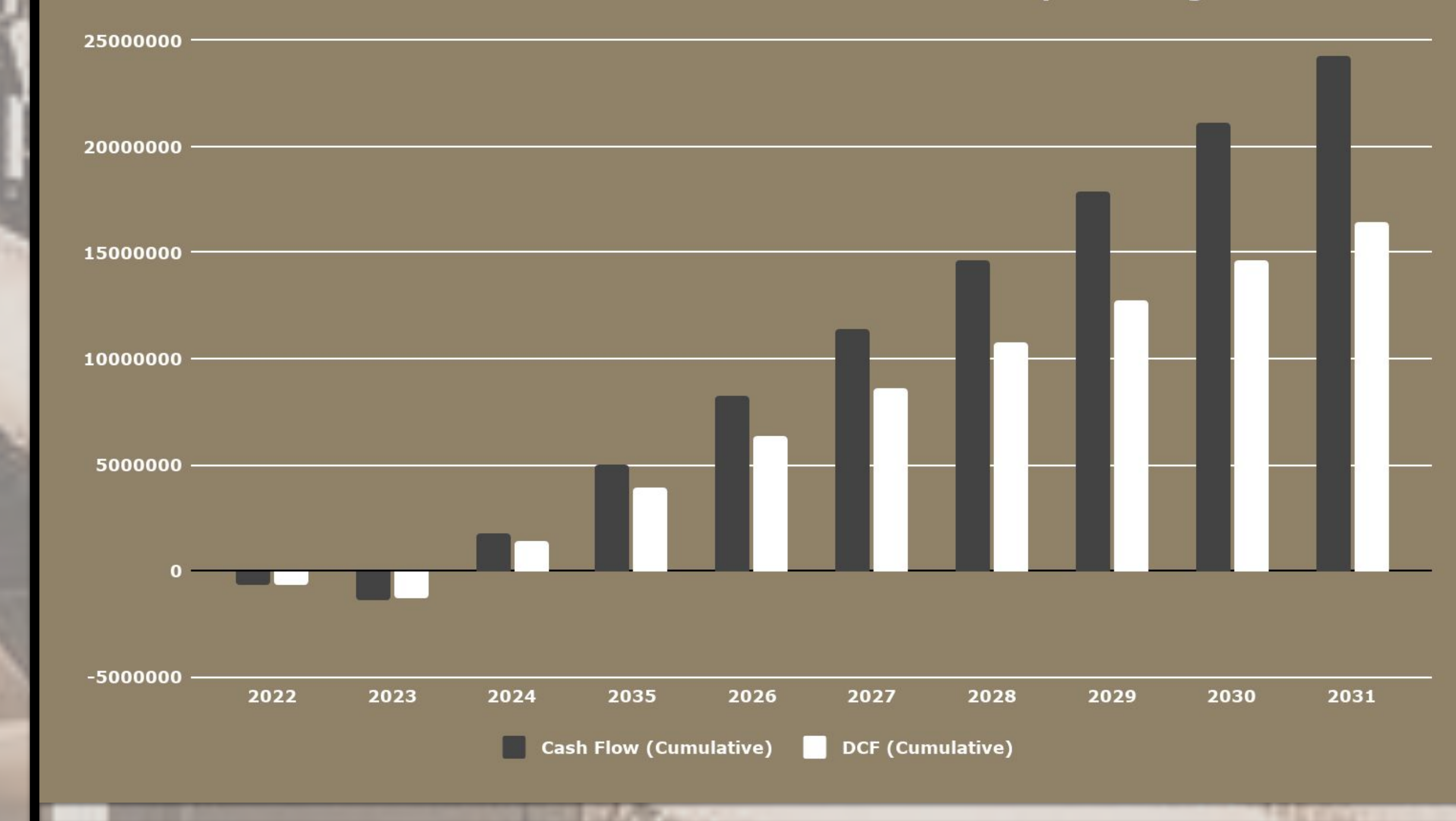
Product Overview

Distillate	Product and Use
Light	Kerosene (Jet Fuel)
Intermediate	Diesel (Automotive)
Heavy	HFO Vessels (Machinery)
Heavy-Heavy	Industrial Use (Asphalt Base)

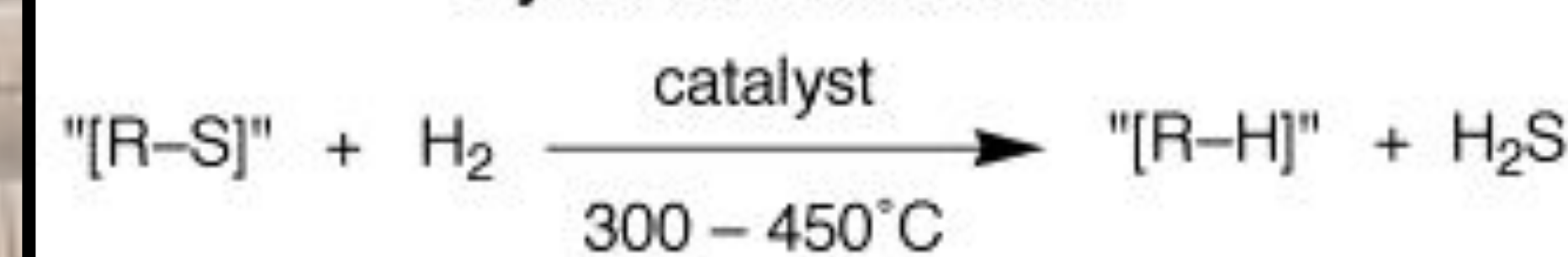
Economic Analysis

	Corn Oil	Canola Oil	Used Cooking Oil
Carbon Intensity (gCO ₂ e/MJ)	28	51	20
Credits Received per year	30930	20341	34706
Dollar value of credits	6185938	4068188	6941154
Diesel Revenue	12325083	12325083	12325083
Cost (dollars/barrel)	158	119	164
Net revenue	\$8,132,326	\$8,588,111	\$8,497,095

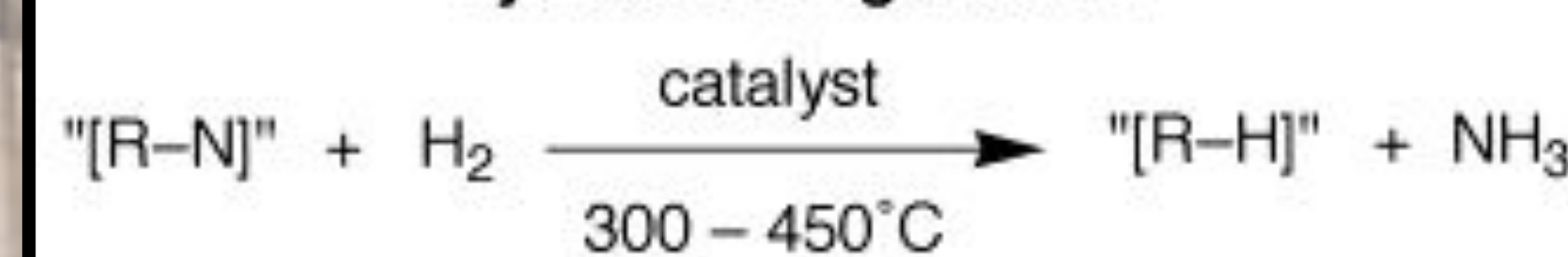
Additional Cash Flow Generated From Canola Coprocessing



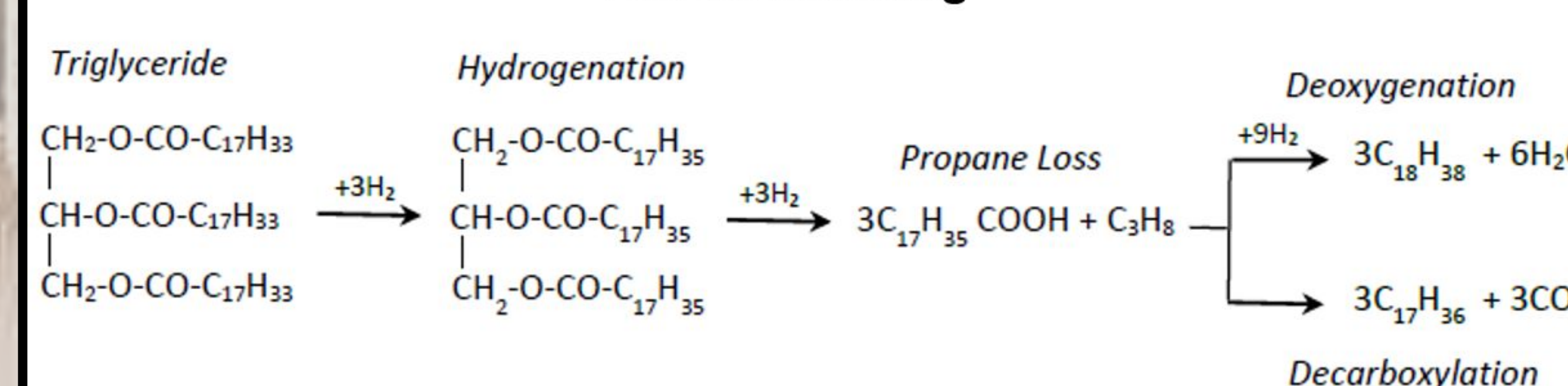
Hydrodesulfurization



Hydrodenitrogenation



Bio-oil cracking



Acknowledgements

Special thanks to Dr. Dusko Posarac, Mr. Sergio Beretta, Dr. Jonathan Verrett, other capstone instructors and our Canadian Refinery sponsor in support of our project.