

FORGE Hydrocarbons Corporation

2021 CAAFI Mini-Symposium

SAF Producer Sessions

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FORGE Hydrocarbons Overview

1. Introduction
2. How did we get here?
3. FORGE LTH Technology
4. First Plant: (pre-commercial plant)
5. FORGE SAF

Introduction

FORGE Hydrocarbons Corporation has Developed a Lipid-to-Hydrocarbon (“LTH”) technology that transforms low-value fats, oils and greases into a Low Carbon Intensity SAF

- FORGE’s patented technology was invented by Dr. David Bressler at the University of Alberta and the renewable naphtha and SAF produced is truly “drop-in” i.e. chemically indistinguishable from a petroleum-based fuels
- FORGE pilot plant was commissioned in 2014 with a capacity of 200,000 litres per year of renewable fuels
- The first in kind pre-commercial plant in Sombra, Ontario Canada with a production capacity of 7.5 Million Gallons per year is in the final stages of detailed engineering design.
- The first plant will be a wholly owned subsidiary of FORGE Hydrocarbons Corp.
- FORGE’s roll-out strategy post Scale up (SPV 1) is to Build Own Operate commercial scale plants on our own or with partners

Feedstock – is EVERYTHING!

FORGE is able to process any lipids (0%-100% FFA)

- Any of the traditional lipid feedstocks currently used by existing SAF technologies
- From 0%-100% FFA without pretreatment
- Able to tolerate high levels of metals (i.e. Sulphur, phosphate etc.) without pretreatment

FORGE is undergoing further R&D to use other novel Lipid sources; such as

- **Algal oil** from MARA Renewables Corp. or others
- **Waste fats & oils**
- **Purpose Grown Crops** such as camelina and carinata

Overview of the LTH Process

The LTH technology utilizes a robust bio-refining approach to produce a renewable, drop-in fuel that is chemically indistinguishable from petroleum derived fuels



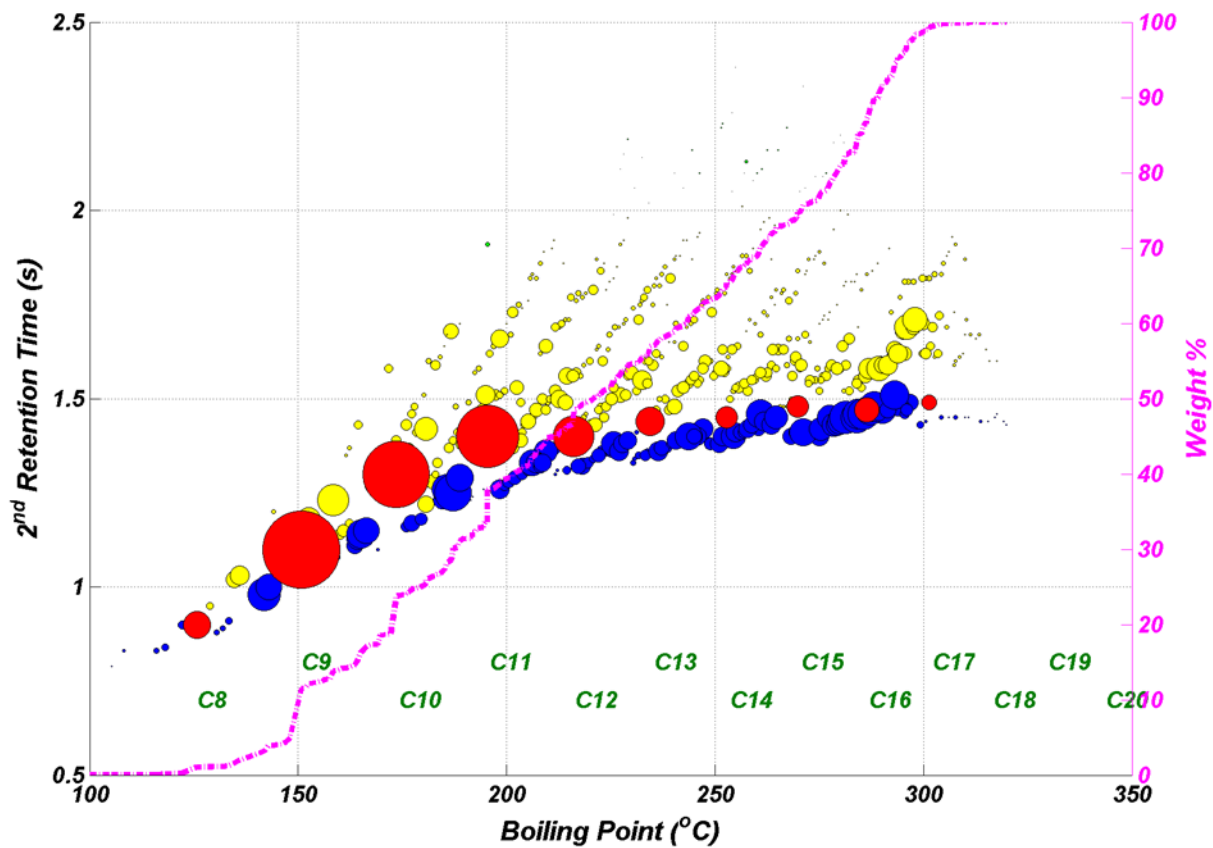
LTH Process

- FORGE LTH technology was previously optimized to produce renewable diesel (RD) and renewable naphtha
- The FORGE LTH production of RD requires no hydrogen or catalyst
- FORGE is one of the four finalists in the Sky's the Limit Challenge and that enabled the further development to expand the LTH process to produce SAF
- The FORGE SAF production involves catalyst and hydrogen via isomerization to convert the RD into SAF
- Hydrogen use in the FORGE LTH is a fraction of that used by competing technologies
- As seen on the following slides the FORGE SAF is similar to some existing ASTM D7566 approved pathways

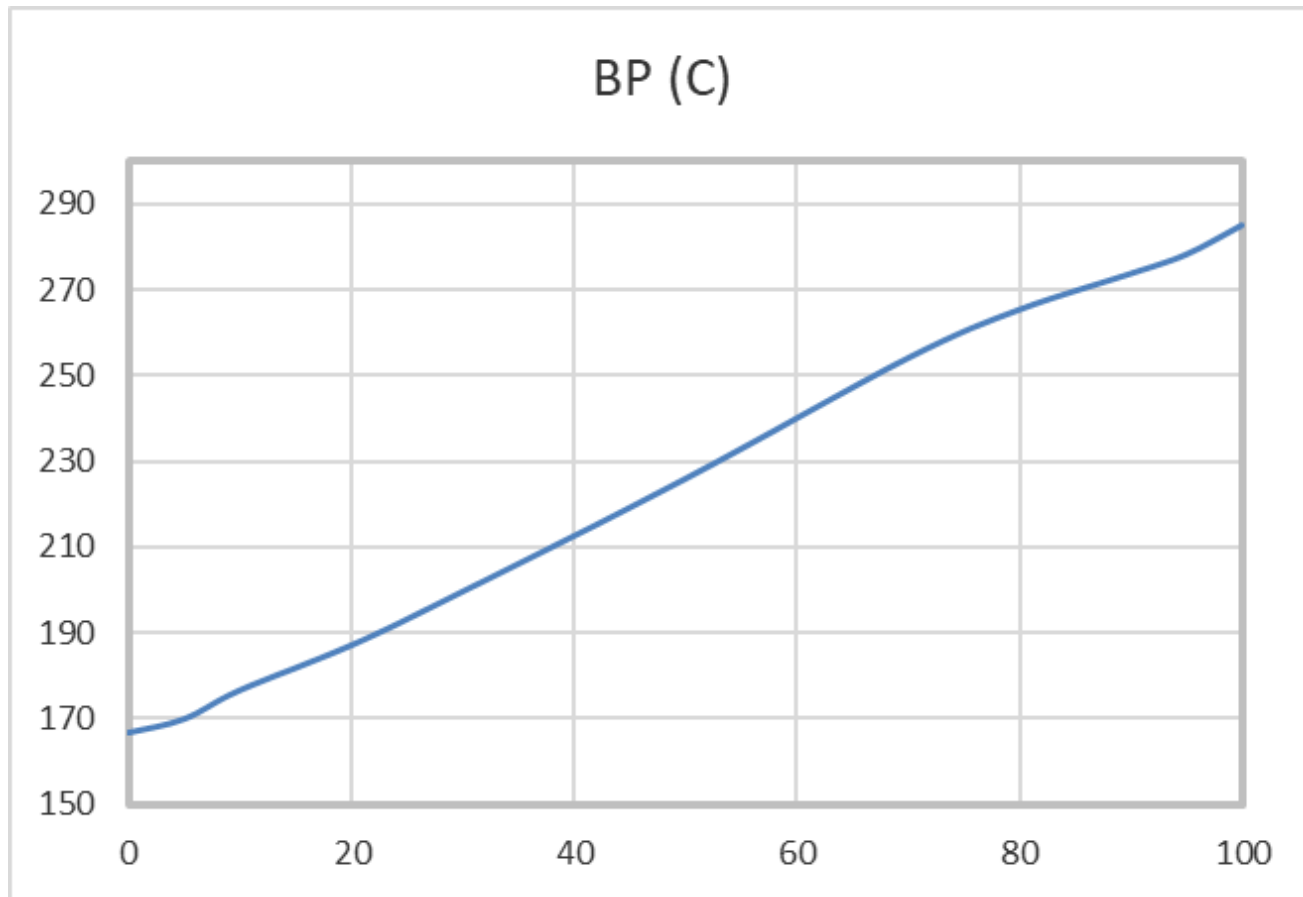
FORGE SAF



FORGE SAF GCxGC



FORGE SAF D86



LTH Technology: 3 Distinct Advantages

FORGE's Lipid-to-Hydrocarbon technology offers an innovative approach for SAF

1

Product Quality

The SAF produced meets ASTM D7566 Table 1 properties

2

Lower Cost Lower CI Feedstocks

The FORGE LTH process can utilize a broad range of 'dirty', high fatty acid, waste feedstocks which are lower cost, lower carbon intensity and have greater societal acceptance than cleaner feedstocks required for some current commercial processes

3

Simpler, Less Capital Intensive Process

FORGE's primary LTH process for producing RD is non-catalytic and doesn't require the use of hydrogen, making it simpler than its competitors. The FORGE LTH isomerization step to produce SAF does use hydrogen and catalyst, but hydrogen use is a fraction of competing technologies

These factors lead to greater margins compared to competitors