GAS-to-OIL:
NEW GENERATION *of* GTL TECHNOLOGY

INFRA
GTL TECHNOLOGY

Sell Your Gas at
$75 per Barrel

INFRA Technology is a technology licensor and catalyst supplier for the commercially ready Fischer-Tropsch process for the production of value-added light synthetic crude oil and clean liquid synthetic transportation fuels from Natural, Associated and Renewable Natural Gas and Biomass feedstock.

INFRA's Catalyst Factory

INFRA's Demonstration GTL Plant

INFRA
GTL TECHNOLOGY

Gas-to-Synthetic Crude Oil
Innovative Technology

INFRA's Fischer-Tropsch product – light synthetic crude oil – is fully compatible with the existing oil industry infrastructure and technological processes.

Mixes well with mineral crude oil.

Clean product has no aromatics, no sulphur and no asphaltenes.

Can be upgraded to ultra-high quality drop-in diesel, jet fuel or gasoline.

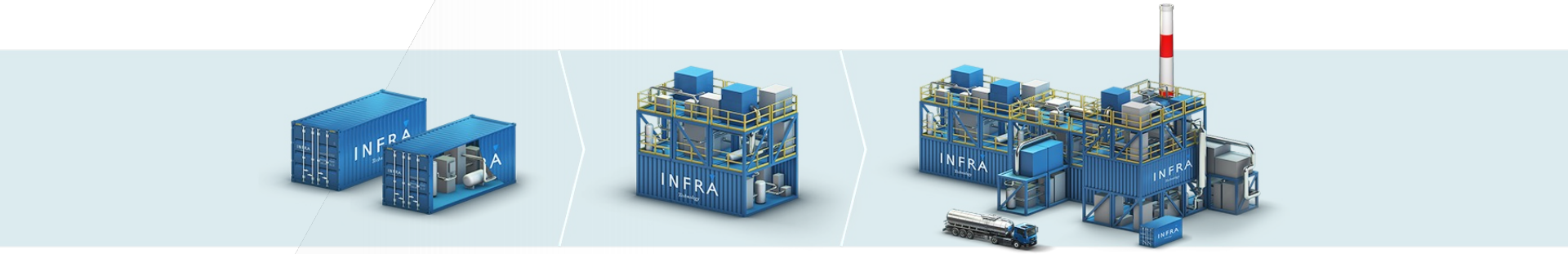
75%

Emissions reduction of up to 75% over conventional motor fuels.

INFRA
GTL TECHNOLOGY

Value Proposition

INFRA's technology offers significantly (by up to 50%) lower capital costs and operating expenses. INFRA's technology makes production of synthetic oil economically feasible, ensuring that GTL process is profitable as a rule and cost competitive with oil refining. It is at least 50% less expensive than comparable technologies.



High quality single liquid product – *synthetic oil* - that does not require hydrocracking and upgrading; and high process efficiency are key to the technology's economic feasibility.

Green Technology

INFRA aims to become the internationally leading provider of economically viable GTL technology for the production of Clean burning synthetic fuels, in a Low Carbon plant design with an industry leading reduced carbon footprint.

The product qualifies under Renewable Fuel Standard Program (RINs) (USA) and Renewable Fuel Transport Obligations (UK) legislation.

Applications for INFRA's high carbon efficiency products include:

- Renewable sulfur-free biodiesel and gasoline for environmentally friendly urban and other road transport.

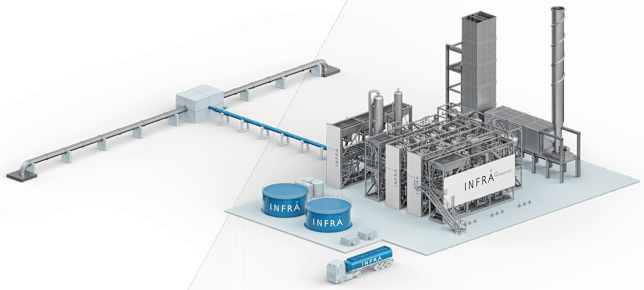
  Synthetic fuel is a premium product that improves engine performance, extends engine life and significantly reduces emissions;
- Environmentally friendly aviation fuel (SAF) from renewable raw materials;
- Environmentally friendly marine fuel in accordance with IMO 2020;
- Specialty chemicals.

INFRA
GTL TECHNOLOGY

Business Model

Our Objective

The company aims to become the internationally leading provider of economically viable GTL technologies for the production of Clean burning synthetic fuels, in a Low Carbon plant design with an industry leading reduced carbon footprint.



Transportable modular GTL plant for processing natural gas into synthetic crude oil

Business Lines

- Sale of technology licenses for design of industrial plants based on INFRA's GTL technology, including small-scale modular transportable GTL units for flared gas and associated gas utilization, Biomass to Liquids production, and RNG conversion;
- Regular supplies of the proprietary catalyst, as well as
- Engineering studies (feasibility studies, conceptual studies, pre-FEED, FEED),
- Project-related support services (owner's engineer, operator training, catalyst replacement),
- Commissioning and operations support.

INFRA
GTL TECHNOLOGY

Unique Patented Catalyst

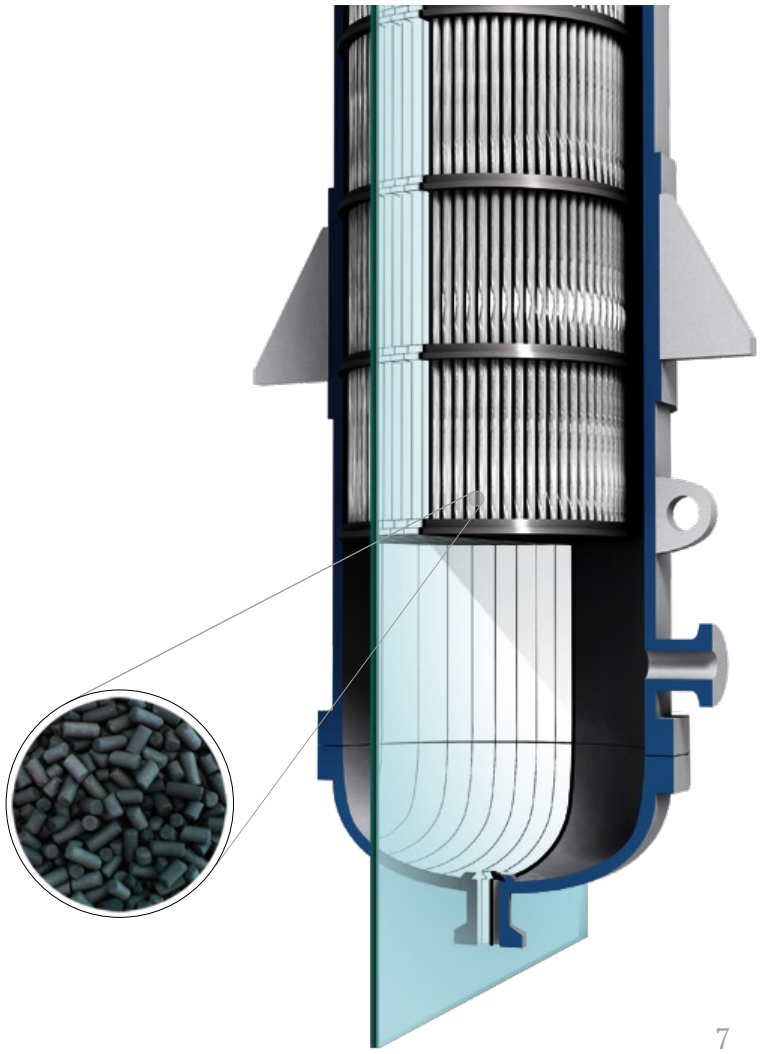
INFRA has developed a unique Fischer-Tropsch (FT) catalyst for producing synthetic crude oil from synthesis gas

- Less than 2% of waxes (long-chain hydrocarbons) in the FT product;
- High productivity (smaller FT reactor size – lower capital cost);
- Up to 1.5 years catalyst life, requires little rejuvenation during this period

INFRA continues to work on improving existing catalysts to increase conversion, selectivity and productivity, and also develops selective catalysts for certain petroleum fractions (diesel, kerosene)

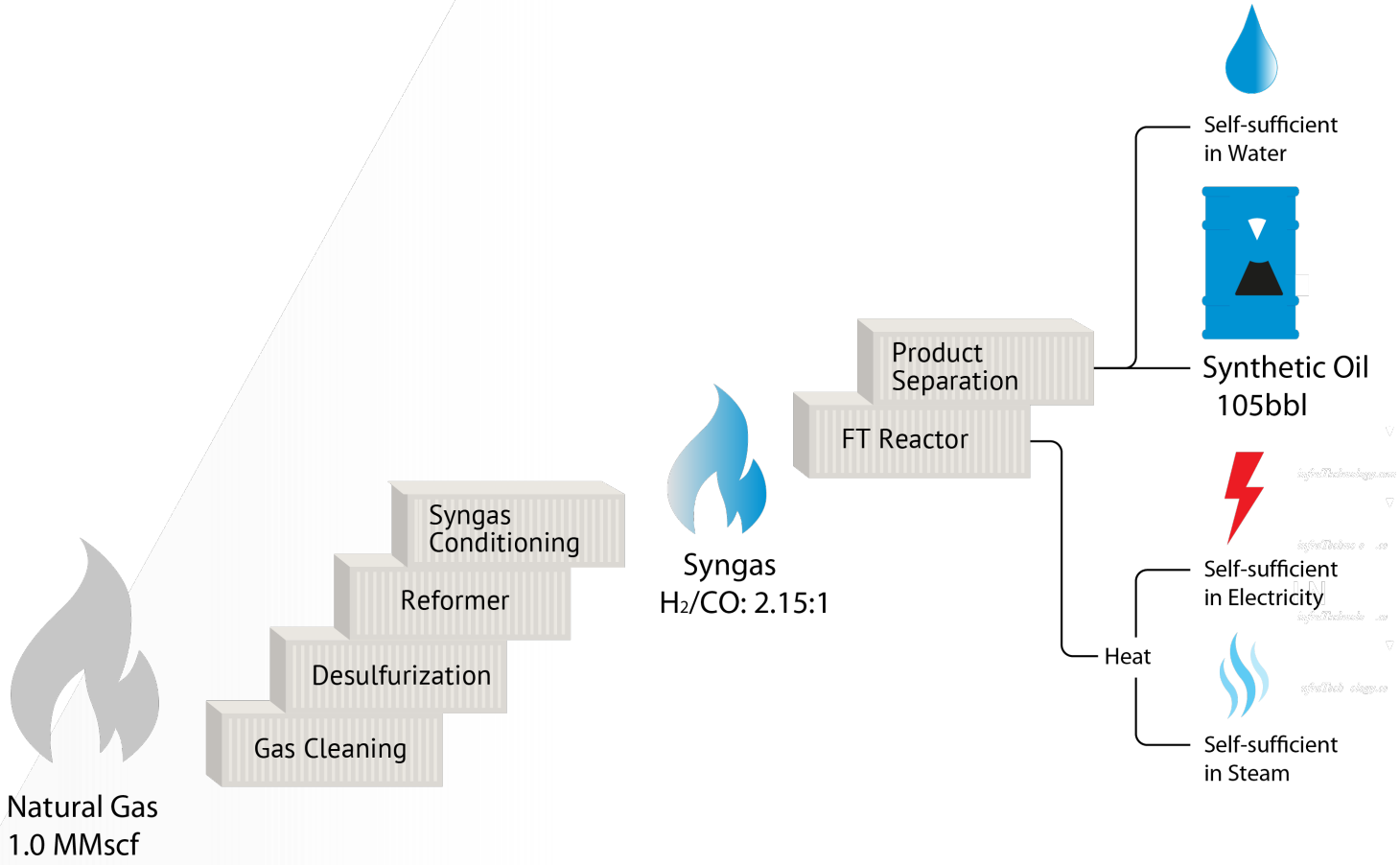
The current catalyst for synthetic oil (S2) represents the 3rd generation of catalysts specifically designed for industrial-size reactor tubes

INFRA files international patent applications for all catalyst improvements, and upon receiving the patent continues to maintain it in the key jurisdictions. All key inventions are patented, patent protection until 2037.



INFRA
GTL TECHNOLOGY

Illustrative Process Flowsheet



INFRA
GTL TECHNOLOGY

Key Technology Differentiation

Clean, liquid product straight out of the Fischer-Tropsch reactor. No heavy waxes. No by-products.

No need for hydrocracking and product upgrading — simplified process flowsheet significantly reduces capital costs, operating expenses and plant carbon footprint.

Synthetic crude is fully compatible with the existing oil infrastructure.

An option to upgrade the FT product to clean burning motor or jet fuels that reduce emissions by 75% over natural crude by adding inexpensive process.

Versatility — technology allows for utilization of feed gas with varying density, composition and volume, from dry methane up to heavy gases. Lowest cost add on to existing Biomass plants.

Compact design enables adaptation to changing or fluctuating production volume.

Self-sustained process — technology is self-sufficient for water, steam and electricity for the plant's needs.

No flaring, emergency flaring only.

Clean Fischer-Tropsch water re-used in the process in the closed loop.

High tolerance to the presence of CO_2 in the feedstock. Moderate CO_2 concentrations (up to 20 %vol.) lead to significant advantages in both capital and operational expenses.

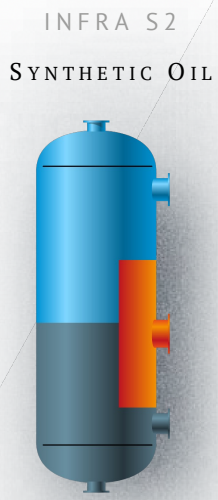
Improved catalyst stability — no less than 1.5 years of useful life without extensive rejuvenation.

Synthetic Crude Oil – Single Liquid Product, No Waxes

Gasoline

Jet Fuel

Diesel



Parameter of INFRA Synthetic Crude Oil	*Method*	*Value*	*Unit*
API at 60°F	ASTM D4052	59.6	API
Vapor Pressure, VPCR at V/L=4 and 100°F	ASTM D6377	1.99	psi
Kinematic Viscosity, at 20°C (68°F)	ASTM D445	1.352	cSt
Pour Point	ASTM D97	-15	°C
Sulphur Content		0	mg/kg
FT Naphtha/gasoline fraction (IBP-300°F)	ASTM D2892	35	wt%
FT Jet/Kerosene fraction (300-575°F)	ASTM D7169	55	wt%
FT Diesel fraction (300°F-FBP)	ASTM D2892	65	wt%
Heavy Paraffin Content	UOP-46 modified	2.8	wt%

Syncrude produced with S2 INFRA FT catalyst in 6m (20ft) reactor tube
Testing by SGS (July 2018); Saybolt (October 2018)

INFRA
GTL TECHNOLOGY

Clean Synthetic Motor Fuels

Diesel

- High cetane index (≅ 70);
- Zero sulphur content;
- Reduced local emissions (particles and NOx);
- Blendable up to 100%;
- Improved engine durability;
- Less noise and smell;
- No by-products;
- Compatible with the existing standards (ASTM D975 D-1 and D-2).

Jet Fuel

- Synthetic paraffinic kerosene (FT-SPK);
- Higher energy density by weight;
- Blend component for jet fuel (up to 50%);
- Lower level of impurities – clean burning;
- SAF study in progress (due Nov 2021)

Gasoline

- Drop-in gasoline or blend stock;
- Excellent steam cracker feed (higher yield for high value chemicals);
- Canadian crude diluent;
- Ethanol denaturant;
- Different solvents.

INFRA
GTL TECHNOLOGY

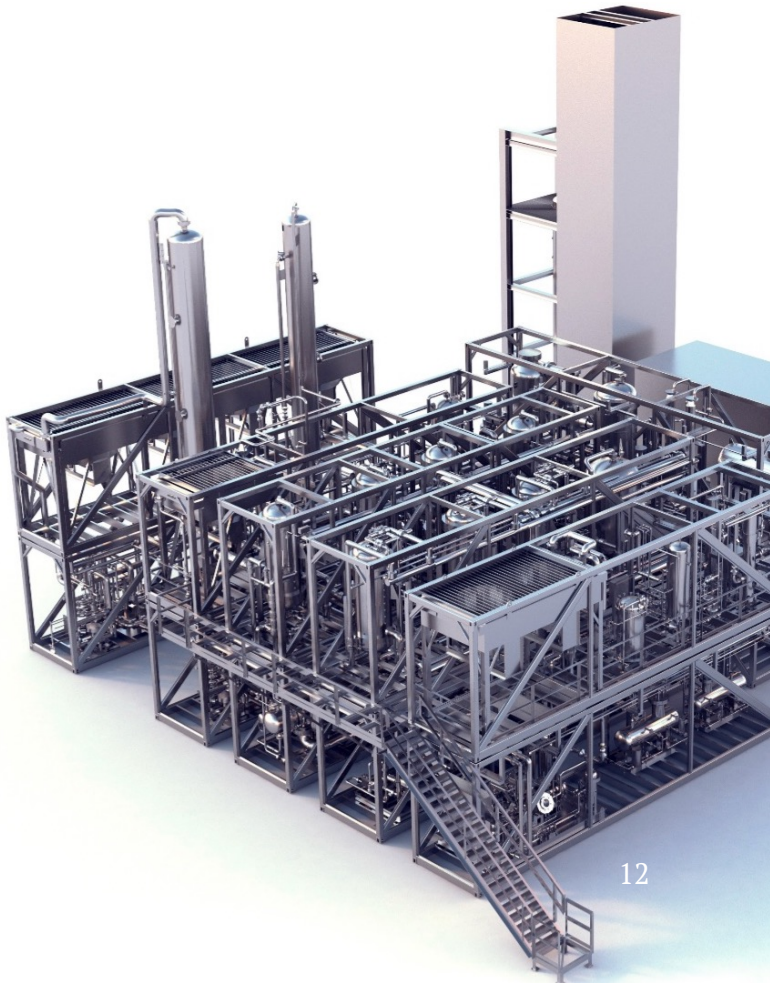
M100 Demonstration GTL Plant

INFRA designed and built a proof-of-concept GTL plant in Houston (M100) in order to test and demonstrate INFRA's unique proprietary GTL technology.

Modular transportable GTL plant for processing natural and associated gas into synthetic oil with the capacity of producing 100 barrels of synthetic oil from 1 million cubic feet of gas per day.

Designed to produce synthetic oil – a mixture of diesel and gasoline fractions in 65/35% proportion. Up to 45% kerosene fraction.

In 2019 M100 was acquired by Greenway Technologies, Inc. (OTC:GWTI), when INFRA issued a technology license for operating M100 to GWTI and supply of its proprietary S2 Fischer-Tropsch catalyst.



4000 square feet plot plan

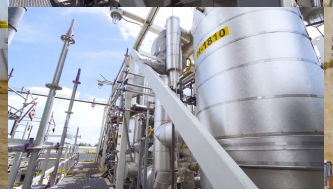
14 road and ship transportable modules

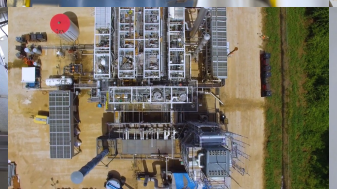
INFRA GTL TECHNOLOGY

M100 GTL Plant
Wharton (Texas, USA)

INFRA designed and built a modular transportable GTL plant for processing natural and associated gas into synthetic crude oil.

Watch video





INFRA
GTL TECHNOLOGY

Capabilities

An outstanding multidisciplinary R&D team, including 9 PhD's, consisting of specialists in catalysis, surface chemistry, chemistry and physics of membranes, material sciences, chemical technology and engineering, and mathematical modeling of chemical processes.

INFRA has commissioned its own production of the proprietary Fischer-Tropsch catalysts with production capacity of up to 20 tons per year.

In 2014 INFRA commissioned and has continually operated a new, larger scale full cycle pilot plant differentiated by a high degree of automation and extensive data gathering system. The unit has tested different single-tube and multi-tube reactors of up to 6000 mm in height, intended for use in INFRA's industrial-scale GTL plants.

INFRA's technology has been verified by leading international labs and Global oil & gas operators.

Watch video

PDF Independent Expertise

INFRA GTL TECHNOLOGY

INFRA
GTL TECHNOLOGY