
Enabling Economical and Scalable Sustainable Fuels
Aether Fuels

Company Intro

Vision:

Enable a net zero world through drop-in sustainable liquid fuels

Focused on "hard-to-abate" applications of liquid fuels like aviation and ocean shipping which produce 6% of global GHGs today

About:

Incubated by Xora Innovation; now backed by a world class investor syndicate and team

Seed funded by Xora Innovation, an early-stage deep tech investment platform of Temasek

Highly experienced and proven successful leadership team

Recent Series A led by AP Ventures with strategic investments by Chevron, JetBlue and others

Approach:

Lowest cost, highest yield, and most flexible platform for sustainable aviation fuel (SAF) and diesel

Novel catalysts, equipment, and process flow that dramatically reduces CapEx and drives down feedstock costs vs alternatives – with key innovations licensed from Chicago-area-based technology development partner GTI Energy

XORA

APVentures
ADVANCE & PIONEER

TechEnergy Ventures

Chevron

jetBlue | ventures

eni next

TTV
TWIN TOWERS VENTURES

foothill ventures

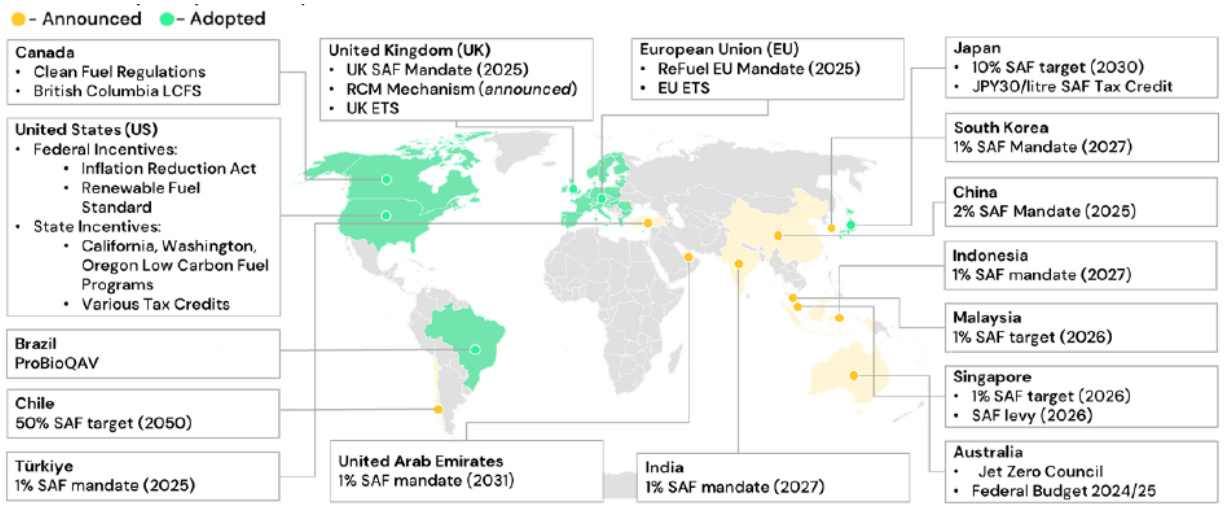
DORAL
Tech Ventures

cdp
CDP Venture Capital Sgr

zeon ventures

Exploding Gap in SAF Supply – Demand

→ Massive SAF demand coming as mandates and other SAF policies build momentum



Source: ICF Analysis (Jan 2025)

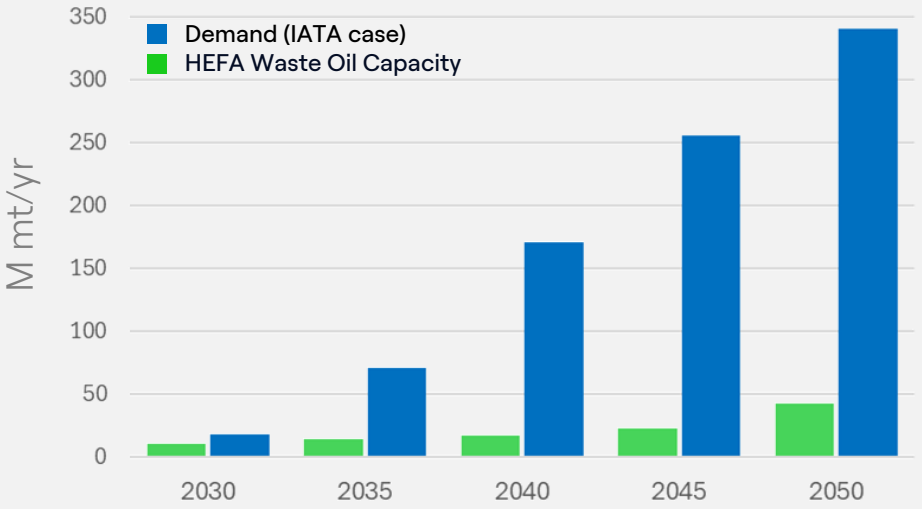


Chart source:
Aether visualization of data from SkyNRG SAF Market Outlook 2024

→ Urgently need next generation solutions converting abundant feedstocks

(And FuelEU Maritime + IMO policy create similar demand for diesel in ocean shipping)

Aether Fuels

Aviation and Ocean Shipping will need ~1B mt / yr of sustainable fuel by 2050 to get to net zero

Source notes: Aviation fuel demand in 2050 estimated as 520M mt from 2020 World Economic Forum report "Clean Skies for Tomorrow" prepared by McKinsey; Maritime fuel demand in 2017 was reported in the IMO 4th GHG Study 2020 (Table 56) as 349M mt, and we conservatively project that same consumption for 2050 (assuming fuel efficiency gains roughly balance growth in shipping demand.)

Leadership Team

Veteran team with proven success building deep-tech start-ups and developing $60B+ of operating syngas and energy projects

Conor Madigan

Founder and CEO

Successful serial deep tech entrepreneur

Sanjiv Dabee

Core Engineering

Former Fluor top domain expert in syngas generation conversion

Steve Liang

Asia Engineering

Former Shenhua GM of $40B asset gasification to liquids and chemicals business

Elie Fayad

R&D

Former UOP head of R&D for Naphtha and Aromatics business

Claudio Bertelli

Business Development

Former LanzaTech head of BD and Tech Sales lead of UOP's Petrochem biz

Ric Redman

Corp Strategy and Government Affairs

Former head of Summit Power Group, developing $10B in energy projects

Cynthia Wang

Strategic Financing

Former Rothschild & Co, and JP Morgan Chase climate-finance leader

Chris Brookhouse

Project Development

Former Texaco, and British Gas capital project development expert

Monica Kaldani

People

Former Lam Research and Hitachi Data Systems HR and employee operations

Why Is This Hard?

- Many types of abundant waste carbon sources: CO_2, Biogas, Solid Waste, and Industrial Waste Gas
- But CapEx cost (CapEx per BPD of capacity) much higher than in refining
  - More complex process: typically need to break down the feedstock into base chemicals and then synthesize the fuel
  - Plant scale much smaller (as it is expensive to aggregate large amounts of feedstock)
  - Some companies have found ways to reduce capex, but give up too much yield
- Routes that require clean H_2 (e.g. CO_2 + H_2) will scale slowly in the near/mid-term due to clean H_2 cost and availability challenges

➔ Need a High Yielding and CapEx efficient solution with flexibility to use feedstocks that can be scaled today

Fuel Production Technology Landscape

Fischer Tropsch (FT) Fuel

→ Syngas Generation → FT Synthesis → Upgrading →

Alcohol to Fuel

→ Bacterial EtOH Synthesis OR Syngas Generation + MeOH Synthesis → Deoxygen-ation → Oligomer Formation → Upgrading →

Direct CO_2 Hydrogenation

→ CO2 Hydrogenation → Upgrading →

➔ Aether innovated the FT route to achieve high yield and CapEx efficiency, with broad feedstock flexibility

Our Solution:

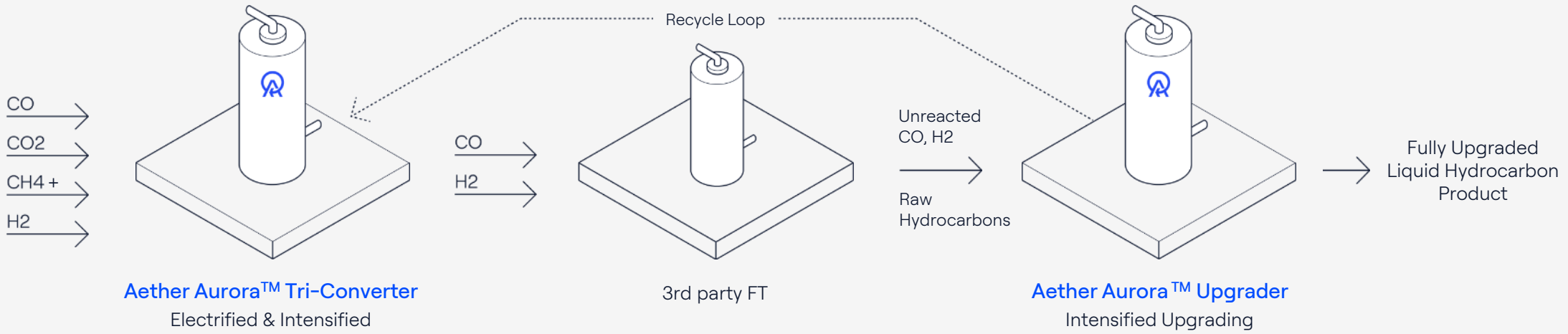
Aether Aurora™

- Aether Fuels' proprietary Aurora technology slashes CapEx while simultaneously delivering high yield and broad feedstock support

Our Solution:

Aether Aurora™

In partnership with GTI ENERGY

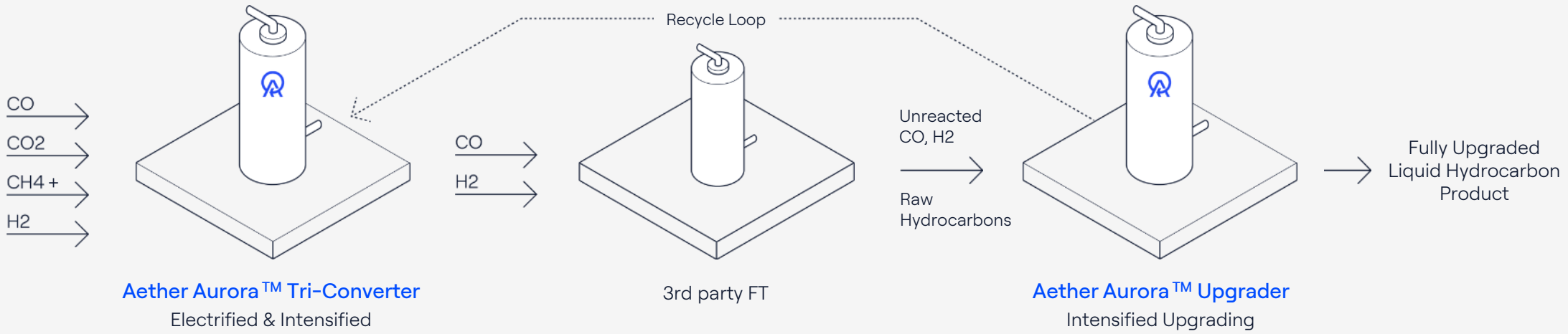


- **Electrified Syngas Generation** Our novel electric thermochemical reactor provides higher yield, higher energy efficiency, and a smaller reactor footprint
- **Intensified Syngas Generation** Our Fewer reactors and steps enabled by our novel catalyst
- **Compatible with 3rd Party FT** Aether Aurora™ builds on two decades of technical progress by integrating with leading FT vendors
- **Intensified Upgrading** Less equipment and higher energy efficiency enabled by our two novel catalysts that eliminate expensive separations

Our Solution:

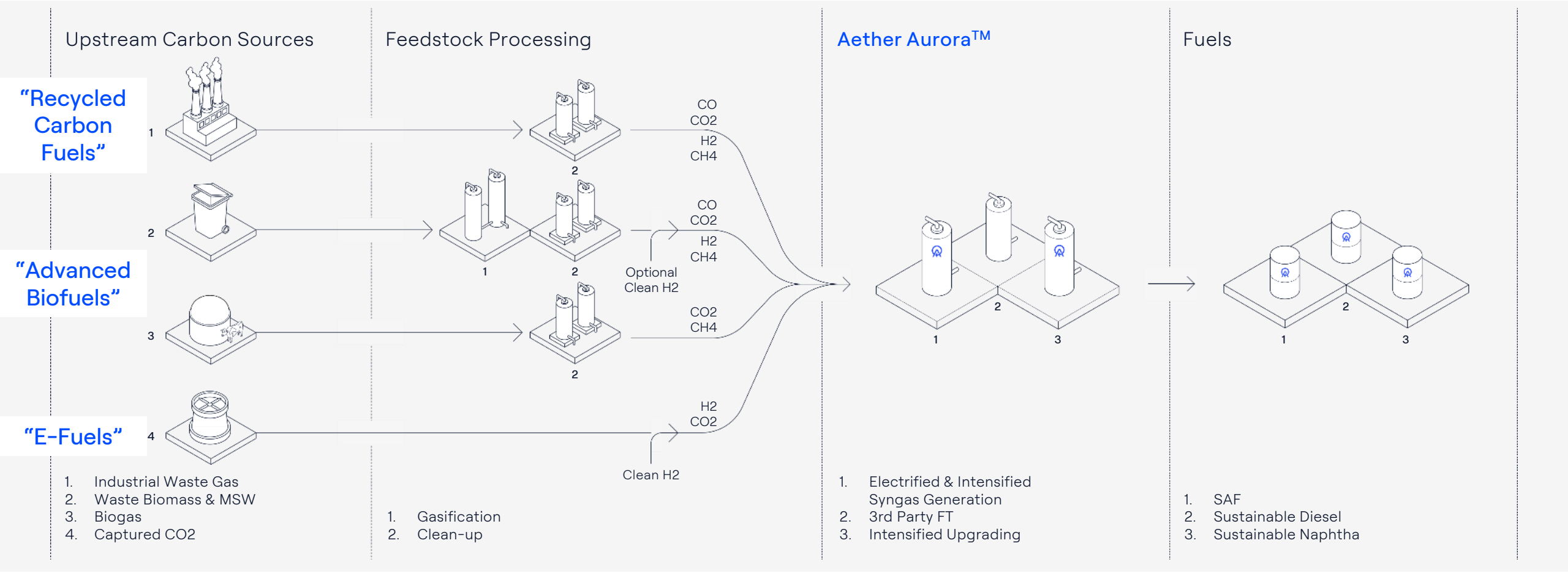
Aether Aurora™

In partnership with GTI ENERGY



- **Near ideal carbon conversion efficiency** to liquid hydrocarbon products (95+% possible) due to complete wax conversion and recycling of all light end by products
- **Dramatically lower CapEx** compared to other commercial or near commercial routes – crucially, as FT costs have come down for medium scale plants, we now address the critical need to cost optimize the syngas generation and upgrading sections
- **Intrinsic feedstock flexibility** — from the start we engineered our solution to convert carbon from CO_2, CO, and hydrocarbons (i.e. CH4 as well as other light hydrocarbons) without requiring any extra steps or equipment

Feedstock Flexibility



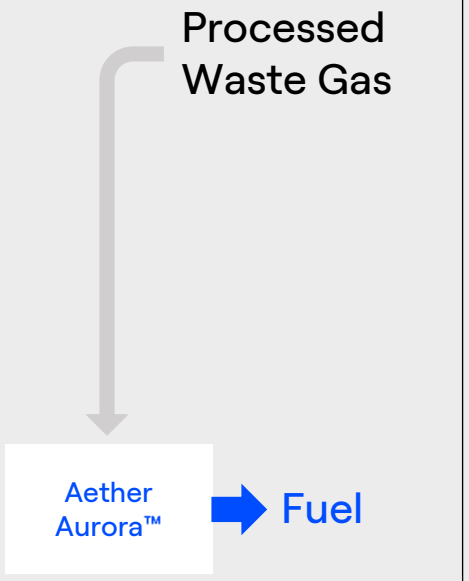
Key Benefits of Flexibility:

- **Scalability:** Not limited by a single feedstock's availability or price
- **Resilience:** Diverse inputs reduce risk from supply or policy changes.
- **Cost-Effectiveness:** Enables use of the lowest-cost, locally available feedstocks.
- **Policy Fit:** Adaptable to local carbon intensity rules and regulations.

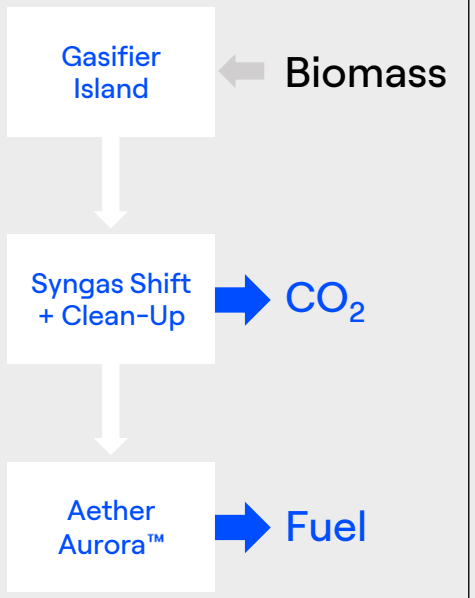
Aether Fuels

Aether Aurora™ Route Comparison

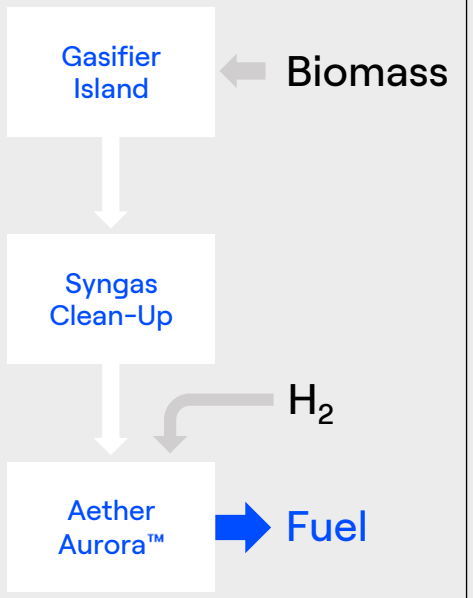
Ind. Waste Gas
Category: RCF



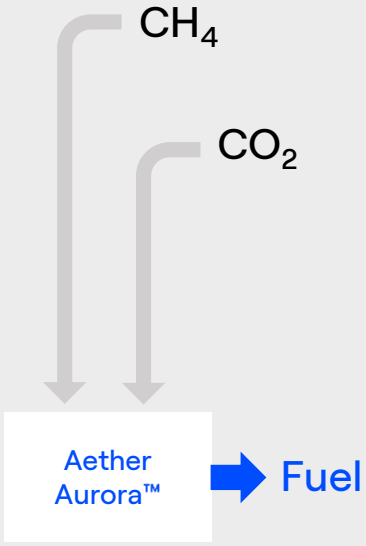
Biomass Only
Category: Bio-Fuel



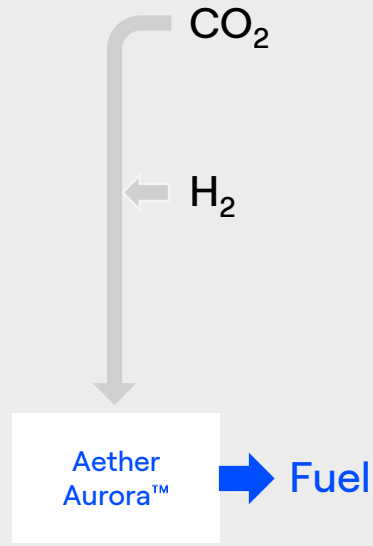
Biomass + H_2
Category: Bio-Fuel
(or mix of Bio-Fuel & E-Fuel)



CO_2 + CH_4
Category: Bio-Fuel



CO_2 + H_2
Category: E-Fuel (RFNBO)



Fuel Price Targets

- Our first commercial plants will be cost competitive with HEFA, without the feedstock supply limitations
- Prices will come down in subsequent plants as we optimize CapEx/OpEx and mature our supply chains
- Potential to hit fossil parity if H2 prices fall enough

Phase 1 – First Commercial Plants

Parity with waste-lipid HEFA, but without feedstock supply limitations

$2-3K /mt

Phase 2 – Initial Optimizations

Premium to fossil fuel of $300 per mt of CO2 avoid for 80% GHG reduction fuel

$1.6k /mt

Phase 3 – Ultimate Optimizations

Premium to fossil fuel of $100 per mt of CO2 avoided for 80% GHG reduction fuel

$1k /mt

Our Pilot Plant (1.5 gpd)

In partnership with GTI ENERGY

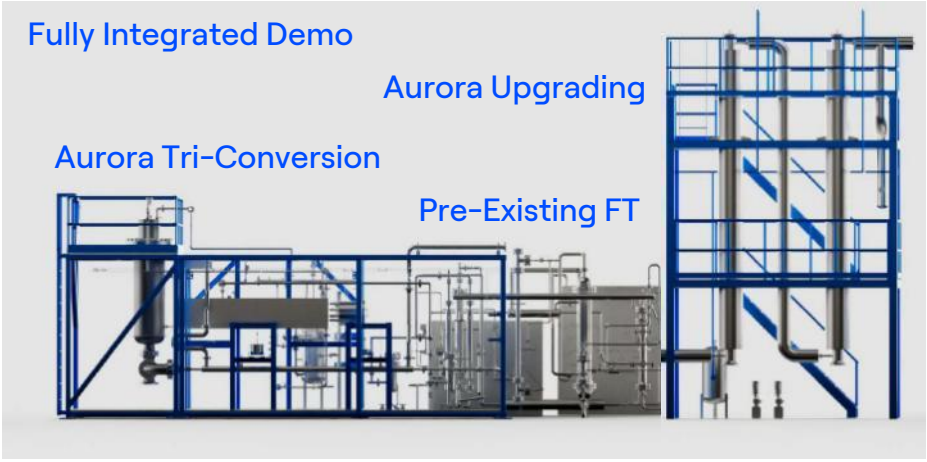
- Operational since 2021
- Fully integrated line with capability to run 24/7 campaigns
- High quality liquid hydrocarbon product

Our Demo Plant (1+ Barrels per Day)

In partnership with

GTI ENERGY

RTI INTERNATIONAL



- Successful operation of the electric Tri-Converter in March, 2025 under joint project with GTI Energy
- We are building a fully integrated line (with Tri-Conversion, FT, and Upgrading) in North Carolina on the campus of Research Triangle Institute (RTI), leveraging their pre-existing FT unit

Aether Fuels Signs MOU with JetBlue and SIA

Agreement creates pathway for Aether to supply sustainable aviation fuel to JetBlue

CHICAGO, Illinois, Sep. 23, 2024—Aether Fuels (Aether), a venture-backed climate technology company, today announced that it has signed a Memorandum of Understanding (MOU) with JetBlue (NASDAQ: JBLU). Aether has developed a breakthrough technology that utilizes a diverse array of waste feedstocks to produce sustainable liquid fuels at a lower cost and greater scale than existing approaches. The agreement creates a pathway for Aether to supply JetBlue with sustainable aviation fuel (SAF) when commercial production begins.

Singapore Airlines Group and Aether Fuels Sign Memorandum of Understanding for Sustainable Aviation Fuel

04 February 2025

Joint SIA, Scoot and Aether Fuels Release

The Singapore Airlines (SIA) Group has signed a Memorandum of Understanding (MoU) to potentially source neat sustainable aviation fuel (SAF) from Aether Fuels (Aether), a climate technology firm that plans to set up SAF production plants in the United States of America and South East Asia.

The agreement outlines the SIA Group's intention to procure neat SAF for five years when Aether plants begin commercial production, with an option for a five-year extension. The neat SAF will be blended with regular jet fuel before being supplied to selected airports served by Singapore Airlines and Scoot.

Aether Aurora™ Commercialization Path

- Doubled headcount for last 12 months
- Established new R&D Center
- Announced offtake MOUs with JetBlue and Singapore Airlines
- On track to complete installation of fully integrated Demo line in North Carolina later this year
- Progressing development of our 50+ BPD Small FOAK

➔ Rapidly scaling up our highly flexible and disruptive solution

Thank You