ISCC CORSIA Certification of LanzaJet's First Commercial AtJ SAF Production Facility

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ISCC Technical Stakeholder Meeting
September 12,2024

NON-CONFIDENTIAL

Growing momentum in SAF industry

The global aviation market is growing at a rapid pace. This is due to increased passenger traffic and emerging economies.

Government regulations and rising environmental concerns are driving development and adoption of alternative jet fuels, propelling market growth.

SAF is an ideal substitute for petroleum-based jet fuel. It offers several advantages such as lower carbon emissions and higher energy density.

MULTIPLE LEVERS

Decarbonizing aviation to net zero

Industry consensus views SAF as the key driver for net zero aviation


Operational efficiency


Offsets & market based measures


Advanced technology


SAF

Building a global market

GROWING SUPPLY

The LanzaJet ATJ platform is ready to deploy today and flexible to thrive well into the future.

SAF PRODUCTION IN 2023 GALLONS PER YEAR (GPY)

13M
GPY | USA

159M
GPY | World

FOSSIL JET FUEL CONSUMPTION
(2019, PRE-COVID)

21B
GPY | USA

96B
GPY | World

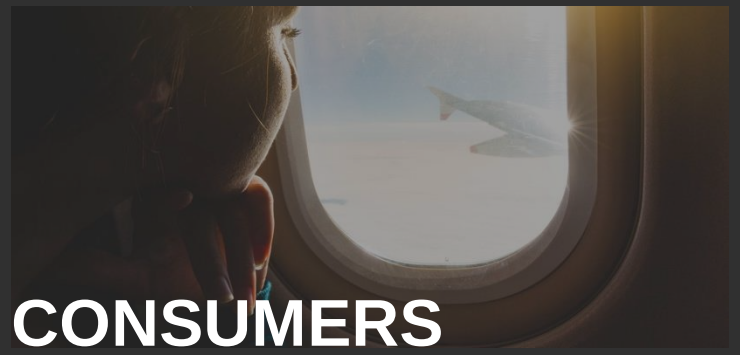
New:

- Goals
- Mandates
- Incentives
- Technology innovation and scale-up

Leads to…

Growing a new global market

The infrastructure is developing, but there is still more to do



SUSTAINABILITY

World's first commercial ethanol ATJ plant

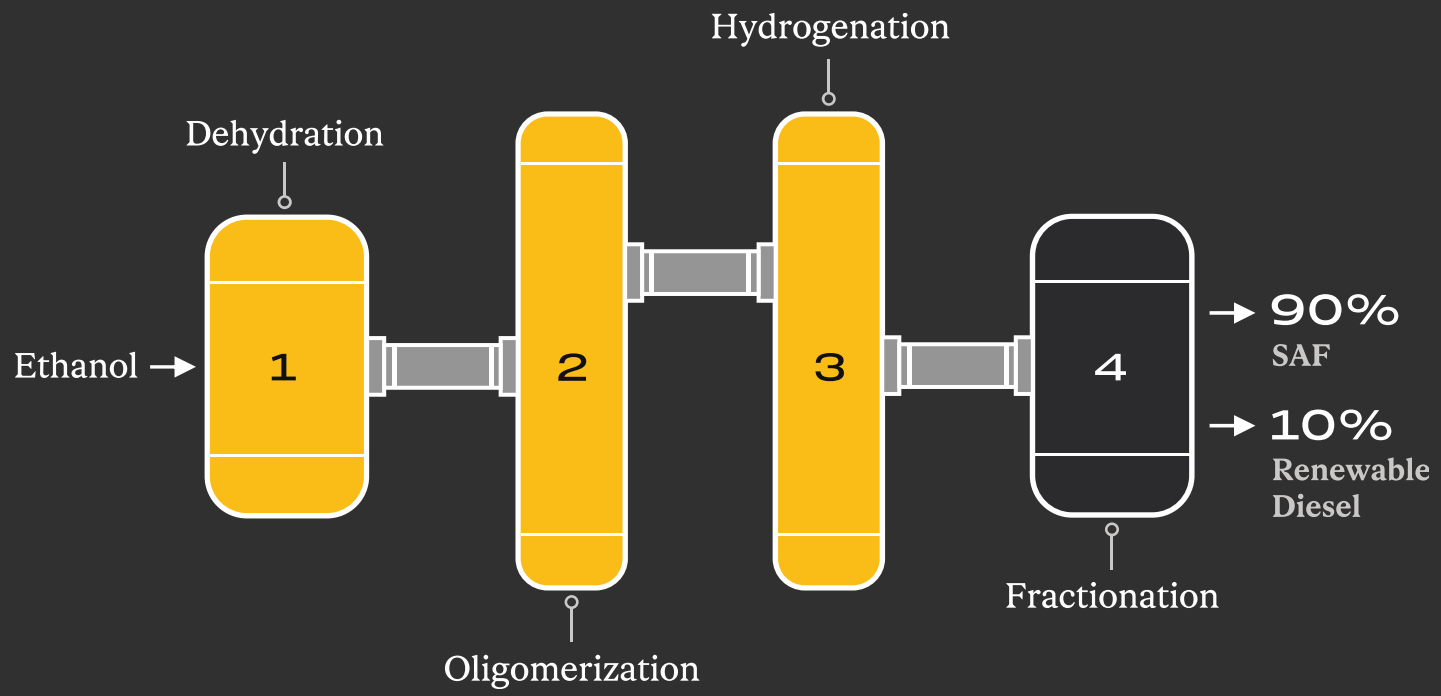
Freedom Pines Fuels

Soperton, GA

- The first and only SAF company to have funded and constructed a commercial ethanol-to-SAF biorefinery
- Located in Soperton, GA – 100 miles West of Savannah, GA
- Total SAF / RD production of 10M GPY (90% SAF / 10% RD)
- Multiple ethanol feedstocks including sugarcane ethanol, cellulosic ethanol, and waste-based ethanol

Ethanol Alcohol-to-Jet (ATJ) technology

High selectivity to SAF, high carbon conversion, abundant feedstock, and platform versatility



30B gallons of ethanol available today (140 million MTA)

Leveraging & transitioning existing ethanol supply

- Existing low-CI ethanol production
- Cellulosic ethanol
- Waste-based ethanol

Unlimited potential

Building new waste-based ethanol supply

- Industrial / landfill off-gasses
- Agricultural waste and residues
- Municipal Solid Waste (MSW)
- Corn fiber cellulose / sugarcane bagasse
- Direct Air Capture (DAC) – CO_2 + H_2

SUSTAINABILITY GOAL

Certify LanzaJet SAF as CORSIA Eligible Fuel by the first day of production.

- Assessment of all environmental impact and NEPA (National Environmental Policy Act) documentation
- Model LCA based on feedstock, engineering design and planned offtake agreements
- Review certification bodies and identify certifications that already exist in the planned supply chain upstream and downstream
- Develop and implement policies, procedures, training and management systems to ensure cross-divisional awareness of the sustainability criteria in all business aspects

Do all of the above in conjunction with obtaining all regulatory permits for the facility which includes:

EPA Biointermediate Rule for RFS (new rule started as facility was being constructed)

TTB Alcohol Distilled Spirits Plant Specially Denatured Alcohol approval

Wastewater Pretreatment Permit

Stormwater Permit

Air Permit

State Fire Marshall Permits

Certification through ISCC was identified as the most optimal certification organization for our supply chain.

ISCC CORSIA Certified Supply Chain

LanzaJet chose SCS Global Services as our auditor for this project

- Challenges to certification based on design vs existing facilities:
- The procedures on IT systems and data collection have to be very detailed to ensure that we would be collecting the correct data.
- Traceability and trackability procedures had to identify systems that weren't necessarily used at that point, so we developed a tabletop training exercise with our upstream suppliers to go through all sustainability certifications processes, batch vs lot naming, tracking from farm to mill to ship to storage to Freedom Pines.
- Development of a mass balance system that could be utilized for both ISCC CORSIA and the new EPA Biointermediate Rule auditors but not duplicate our efforts.
- The biggest challenge was our LCA model and making sure that we were accounting for everything not only from the design of the facility but also making sure our management of change process was working.

Georgia plant is Important to global, commercial deployment

2010–2015

Lab Bench & Pilot

2014–2016

Lab Demo

2016–2020

ANA · ASTM International · virgin atlantic · National Research Council Canada

ASTM Approval & Commercial Flights

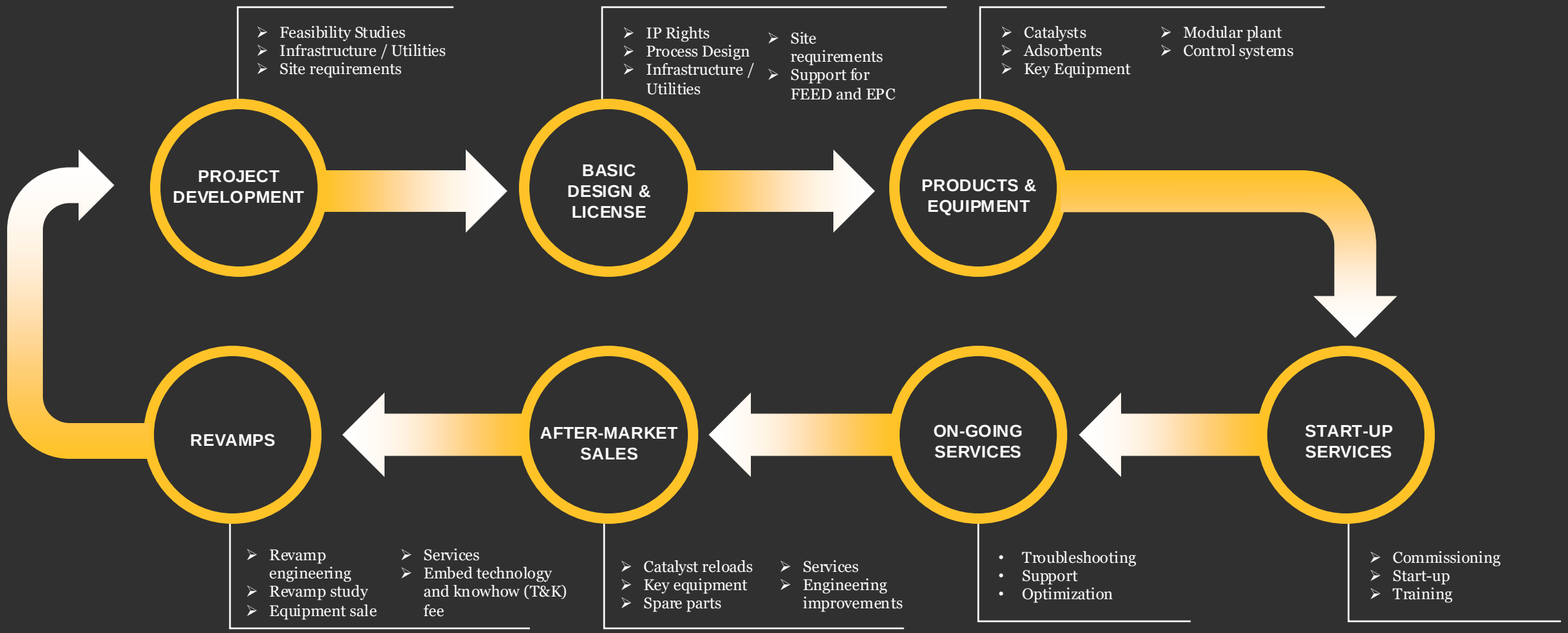
2020–2024

Commercial Plant

2025+

Global Technology Deployment

Anchored in technology, development, and engineering




LanzaJet is best positioned to enable aviation's current and future needs to meet carbon reduction goals