



IEA Bioenergy

Technology Collaboration Programme

Task 39
IEA Bioenergy



Country Update - Japan 2021

Bio Jet Fuel Project in Japan

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New Energy and Industrial Technology
Development Organization (NEDO)

Japan, 19 April 2021

<https://www.youtube.com/watch?v=MdcK7tRNf-8&list=PLZH3AKTCrVsV2xmw7dXUxTt5pjhXve3CL&index=2>

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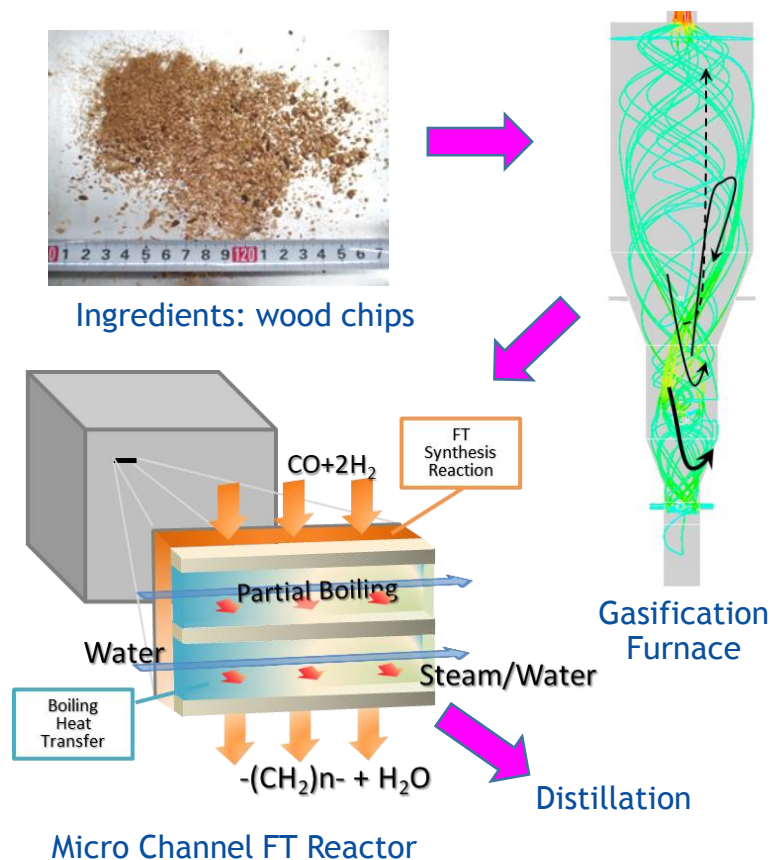
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Recent Japanese Fuel Policy, Topics

- The Japanese government has decided to reduce GHG emissions in 2030 by 26% from the 2013 level, and at inaugural speech last autumn by New Prime Minister, he also announced that Japan would aim for carbon neutrality in 2050.
- Since Japan has long relied on imports for most of its fossil fuel resources, Bio Fuel deployment has also focused on domestic technology development with a view to guaranteeing energy security and reducing its own GHG. In particular, ICAO/CORSIA requires reduction of GHG emissions from aircraft after 2027 as mandatory, NEDO already started “Pilot scale test on integrated manufacturing process project” since 2017 in order to realize the social implementation of BioJet fuel. Then the field of new-generation technology is expanding.
- The Ministry of Economy, Trade and Industry(METI) also formulated The Basic Policies for the “Green Innovation Fund Project (FY2021-FY2031)” totaling 2 trillion yen(equivalent to 20 billion USD) for March in this year, aiming to become carbon-neutral by 2050. These projects are also planned to be carried out by NEDO, and the target 14 theme includes Bio Fuel production.
(https://www.meti.go.jp/english/press/2021/0312_002.html)

Current status and Achievements in development of once-through process of biomass Gasification and FT synthesis for SAF



Standard: ASTM D 7566 Annex -1

Technology: Gasified FT synthesis

Gasification Furnace- Spouted method

FT Reactor- Micro Channel Process Technology

Material: Wooden waste (Japanese cedar, 8 mm grain size or smaller)

Results: Neat SAF- ASTM Compliant Aug.2020

Mixing SAF with Jet A-1 -
ASTM Compliant Mar.2021

Production: Neat SAF 2,400L

Usage: Mixing SAF has also been completed and is currently being adjusted for aircraft refueling.

Current status and Achievements in development of once-through production process of SAF using Hyper-Growth Botryococcus Braunii



Standard: ASTM D 7566 Annex -7

Technology: Hydroprocessed Hydrocarbons, HEFA

Material: Microalgae (Botelio Coccus Brownie)

Cultivated in Thailand
in Japan

Results: Neat SAF- ASTM compliant Oct. 2020

Mixing SAF with Jet A-1 -
ASTM Compliant Mar. 2021

Usage: Mixing SAF has also been completed
and is currently being adjusted for
aircraft refueling.

Other NEDO BioJet fuel projects FY2020-FY2024

1. Construction of supply chain model through demonstration

- ① Demonstration of production technologies for BioJet fuel derived from Domestic 2nd generation BioEthanol. (AtJ)
- ② Building a commercial supply chain for BioJet fuel and reducing manufacturing costs through oil-based processes. (HEFA)

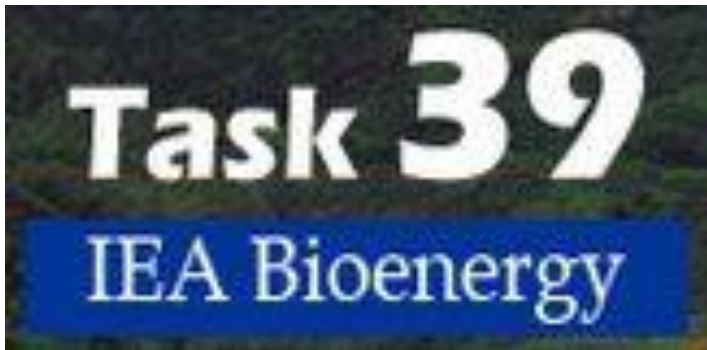
Additional Projects FY2021-FY2024 will start through open call.

2. Development of microalgae basic technology

- ① Establishment of a large-scale Microalgae cultivation facility under tropical outdoor conditions using flexible plastic film type photo bioreactor technology.
- ② Empirical research of next-generation BioJet fuel business model based on cascade utilization of microalga biomass.
- ③ Development of the hybrid methods using the closed and open marine diatoms cultivation systems.
- ④ Establishment and Development of a Research Test Bed and Core Technologies Contributing to the Commercialization of Microalga-Derived BioJet fuel and the Improvement of CO₂ Utilization Efficiency (Tertiary item).

Arigou Gozaimashita.
Thank you for participating.

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