

ASIA CLEAN ENERGY FORUM 2025

Empowering the Future: Clean Energy
Innovations, Regional Cooperation and
Integration, and Financing Solutions

2–6 June | ADB Headquarters



ASIA CLEAN ENERGY FORUM 2025

Empowering the Future: Clean Energy Innovations,
Regional Cooperation and Integration, and Financing Solutions

2-6 June | ADB Headquarters, Manila



Jung Sun, Kim

Group Leader of Sales Group
Sales & Business Development Division
Samsung E&A Co., Ltd.

Featured Speaker

SAMSUNG E&A

ASIA CLEAN ENERGY FORUM 2025

Empowering the Future: Clean Energy Innovations,
Regional Cooperation and Integration, and Financing Solutions

2–6 June | ADB Headquarters, Manila



Sustainable Aviation Fuel for Net Zero: Innovation and Global Collaboration

4 June 2025 | 4:25 – 4:40 p.m. (GMT+8)

SAMSUNG E&A

ASIA CLEAN ENERGY FORUM 2025

Empowering the Future: Clean Energy Innovations,
Regional Cooperation and Integration, and Financing Solutions

2–6 June | ADB Headquarters, Manila



Table of Content

- ✓ Company Introduction - Samsung E&A
- ✓ SAF Market Outlook / Policy
- ✓ Biorefinery Project – Pengerang in Malaysia
- ✓ Global Cooperation in SAF project

SAMSUNG E&A – At a Glance




Number of Projects

1,593


Revenue (IFRS) in 2024

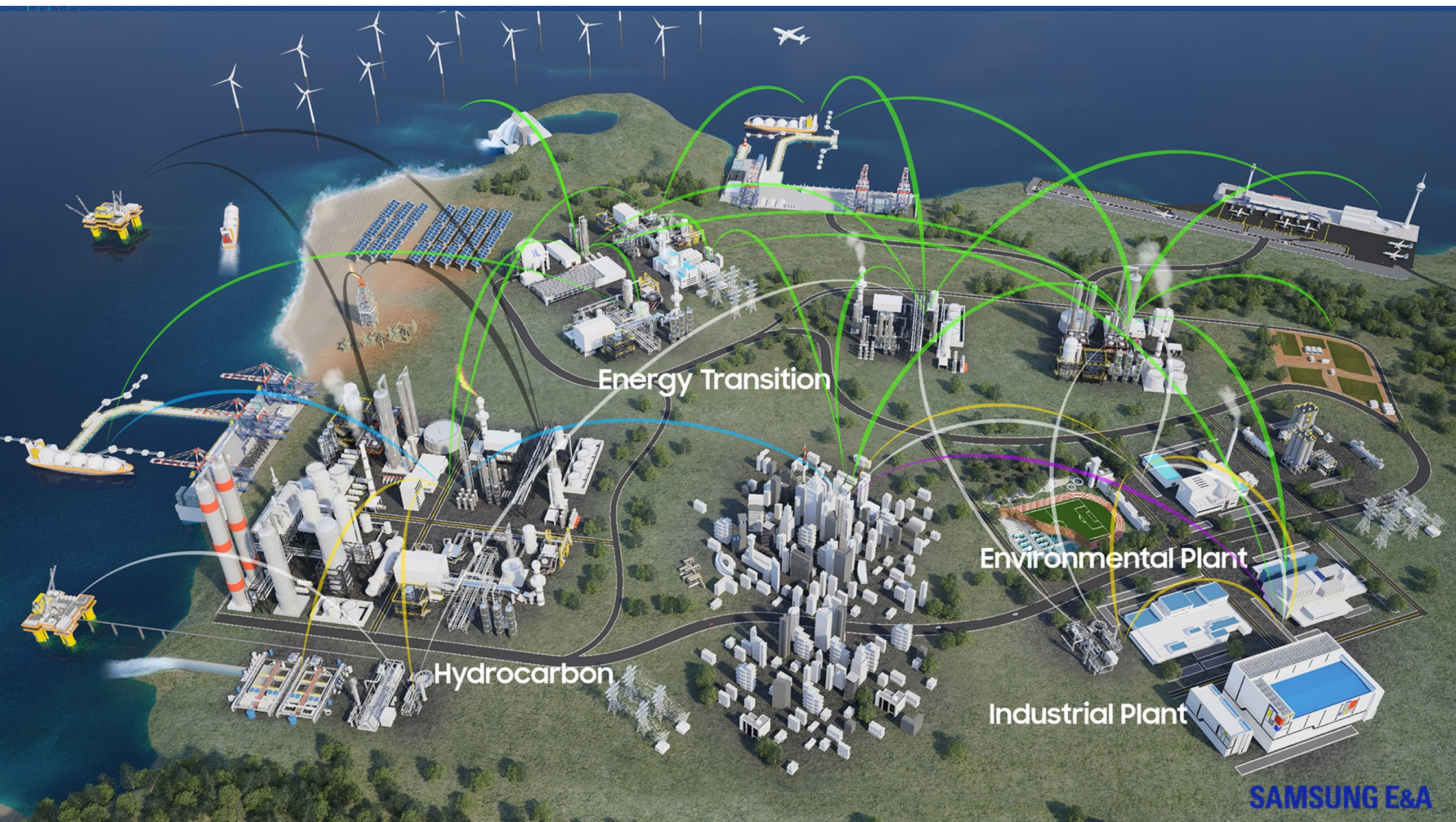
\$7.3B


Operating in

47
(countries)


Order backlog in 2024

\$15.6B



Energy Transition






Hydrocarbon

Environmental Plant

Industrial Plant

SAMSUNG E&A

Sustainable Aviation Fuel – Key Facts

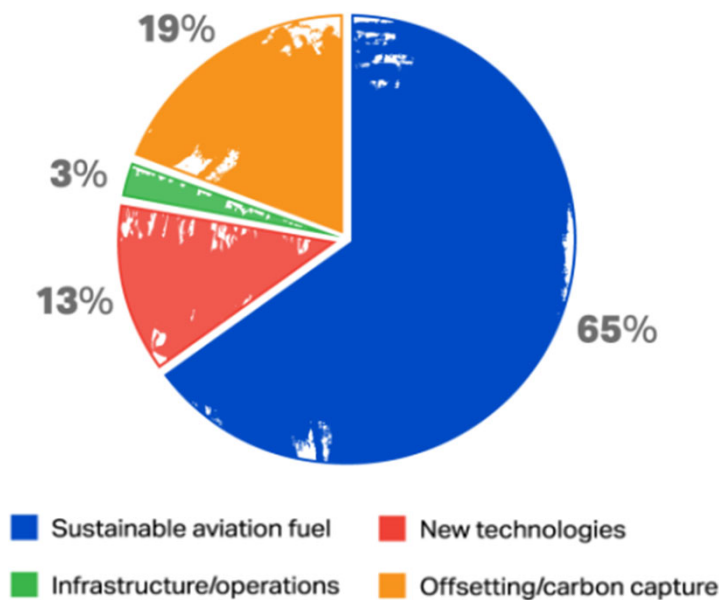
CARBON REDUCTION	SUSTAINABLE FEEDSTOCK	FUTURE POTENTIAL	DROP-IN FUEL	CERTIFIED & SAFE FUEL
<div>  </div> <p>The aviation industry aims to achieve net zero carbon emissions by 2050. The adoption of SAF is a key part of achieving this goal.</p>	<div>  </div> <p>SAF is made from sustainable feedstocks such as used cooking oil and household waste.</p>	<div>  </div> <p>SAF will enable lifecycle carbon emission savings compared to the conventional jet fuel it replaces.</p>	<div>  </div> <p>SAF has been designed as a 'drop-in' fuel when blended up to 50% with traditional jet fuel.</p>	<div>  </div> <p>The SAF blend is certified as Jet A or Jet A-1 and is safe to use in existing aircraft and airport infrastructure.</p>

* Source: BP.com

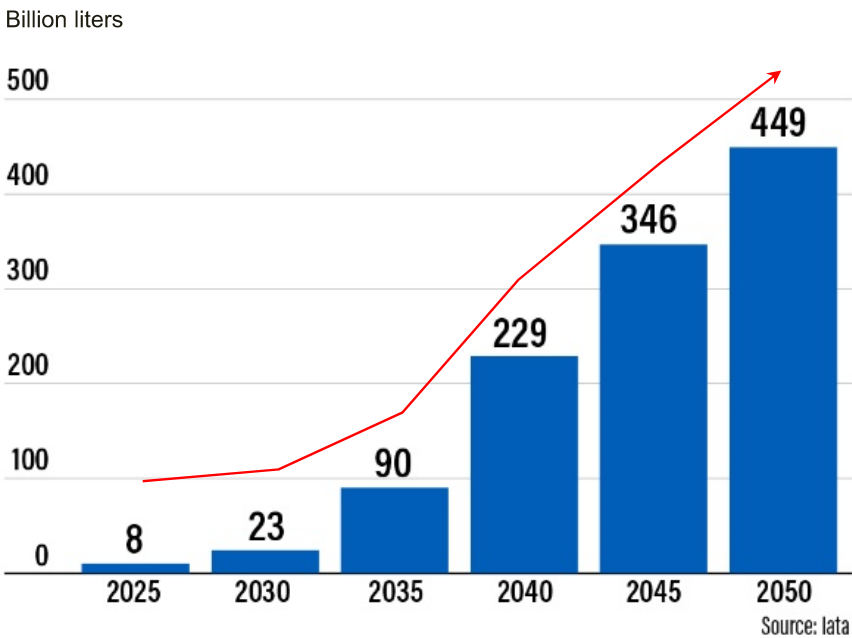
Sustainable Aviation Fuel – Market Outlook

Net Zero Carbon in Aviation Industry

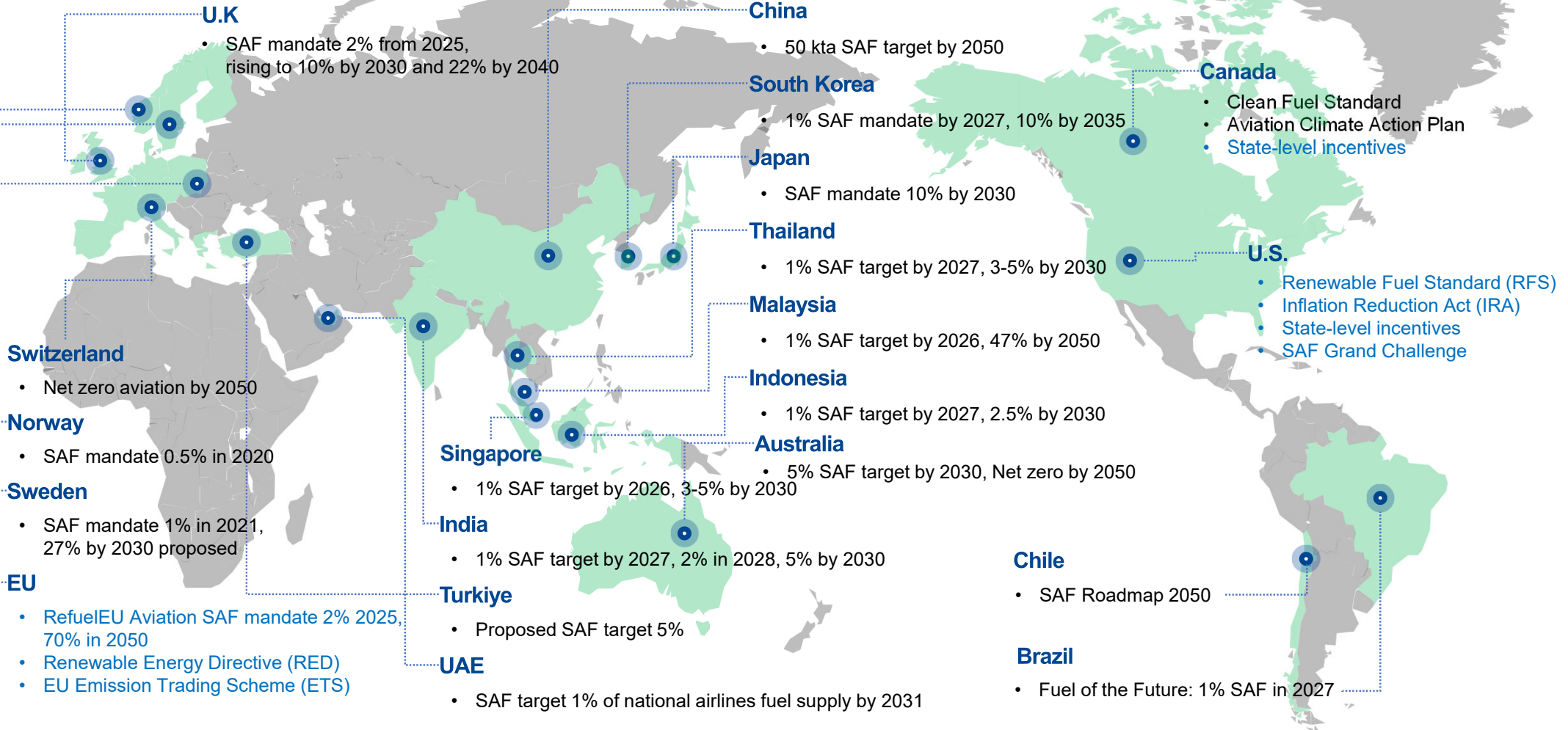
Contribution to achieving Net Zero Carbon in 2050



Expected SAF required for Net Zero 2050



Sustainable Aviation Fuel – Policy



Sustainable Aviation Fuel – Mandate vs. Incentives



ReFuelEU Aviation (Mandate)

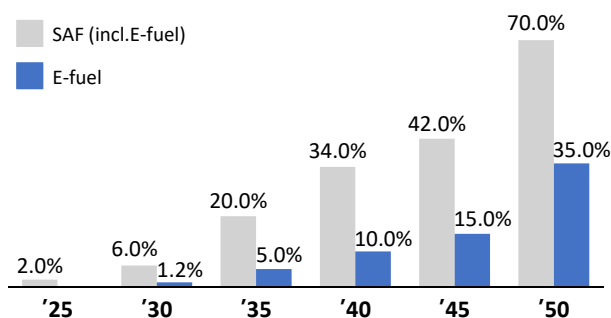
• ReFuelEU Aviation policy

: The **ReFuelEU Aviation** policy is an initiative introduced by the **European Union (EU)** to reduce carbon emissions in the aviation sector.

- Its core objective is to **mandate the use of Sustainable Aviation Fuels (SAF)**. This policy is part of the EU's broader **"Fit for 55"** package, which aims to **cut greenhouse gas emissions by 55% by 2030 compared to 1990 levels**, and to **achieve climate neutrality by 2050**.

* Source: International Atomic Energy Agency(IATA)

ReFuelEU SAF Mandates (2025~2050)



SAF Penalty Fee(€) = SAF usage shortfall(ton) x Penalty rate(€/ton)

Example:

- In 2025, the mandatory SAF blending ratio is 2%
- An airline uses 100,000 ton of total jet fuel, but only 1,000 ton of SAF used (actual ratio: 1%)
- Assuming a Penalty rate 2,700 €/ton
- SAF Penalty = (2,000 ton – 1,000 ton) x 2,700 €/ton = **2,700,000 €**



Inflation Reduction Act (Incentive)

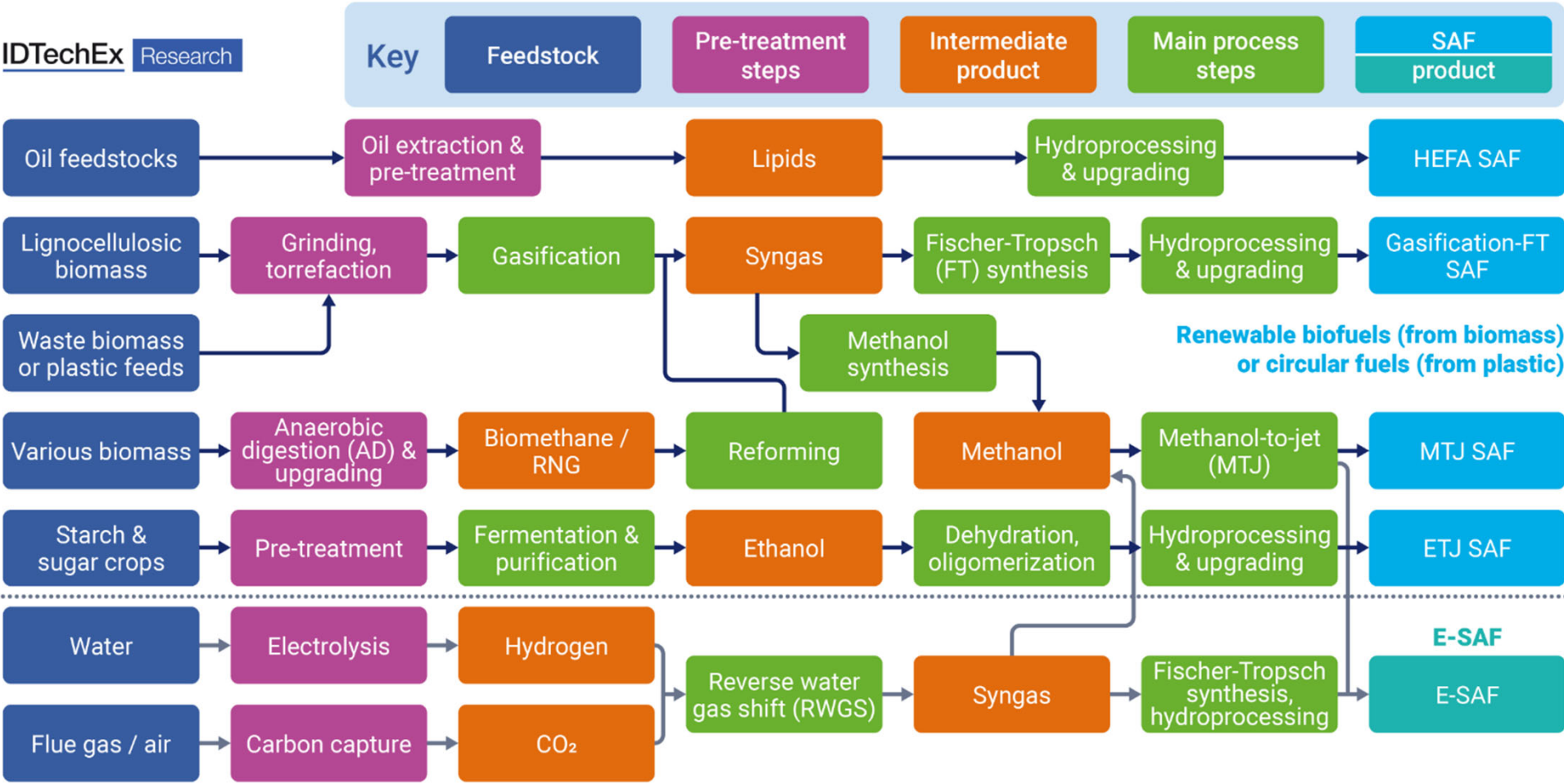
• Internal Revenue Code Act. 45Z

: The existing 45Z tax credit, established by the Inflation Reduction Act, provides a tax credit for the production and sale of low-emission transformation fuels.

- The credit starts at 20 cents per gallon for non-aviation fuels and 35 cents per gallon for sustainable aviation fuel (SAF). For facilities that satisfy the prevailing wage and apprenticeship requirements, the value of the tax credit is up to \$1 per gallon for non-aviation fuels and \$1.75 per gallon for SAF. The tax credit is currently in place for 2031.

* PWA: prevailing wage and apprenticeship requirements	Renewable Diesel Biodiesel Agri-biodiesel	Sustainable Aviation Fuels (SAF)
PWA Not Satisfied	\$0.2/gal	\$1.25/gal
PWA Satisfied	\$1.0/gal	\$1.75/gal

Sustainable Aviation Fuel – Production Pathways



* Source: IDTechEx Research

PENGERANG BIOREFINERY PROJECT



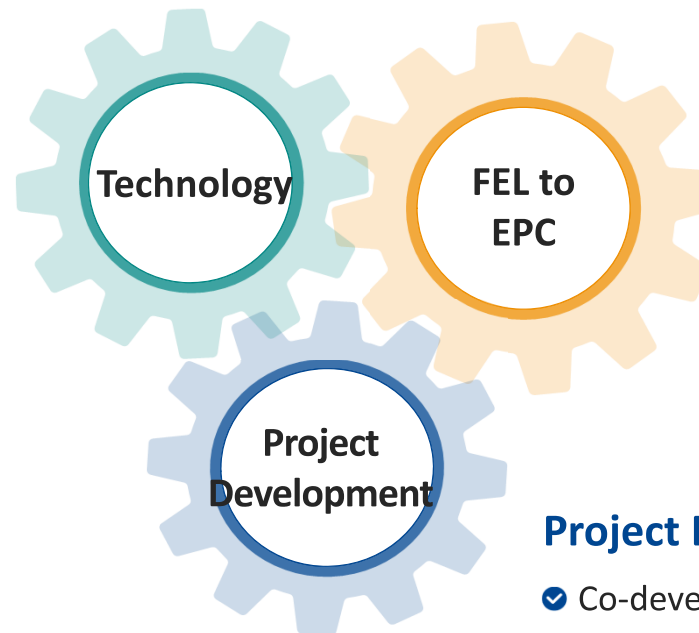
- **Project Name: Pengerang Biorefinery Project**
- **Client: JV of Petronas, Euglena, ENI**
- Located in Pengerang, Johor, Malaysia
- Final Investment Decision achieved in July 2024
- **Engineering, Procurement, and Construction is currently executed by SAMSUNG E&A**, target to be operational by 2028
- Consists of Process units, Utilities & Offsites, Hydrogen facilities, dedicated tankage
- Capacity of 650,000 tonnes per year of raw materials to produce SAF, HVO and bio-naphtha.



SAMSUNG E&A, Total Solution Provider for SAF

Technology Collaboration

- ✓ Engagement with Technology Providers
- ✓ Investment and Collaboration with Technologies



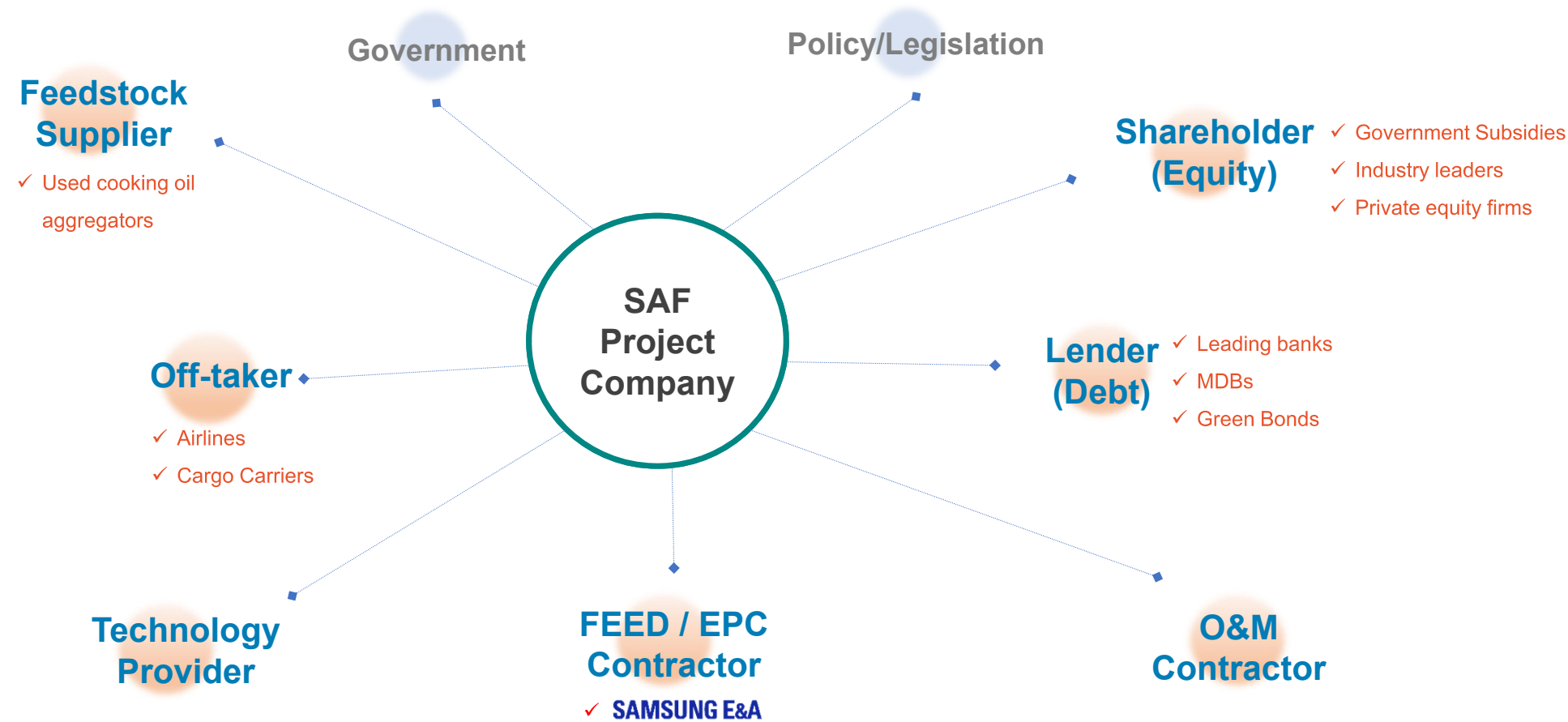
FEL to EPC Full Lifecycle Execution

- ✓ Seamless One Team Execution utilizing Samsung's Innovative Solutions
- ✓ Schedule & Cost Optimization

Project Development

- ✓ Co-development with Company
- ✓ Involvement with entire shareholders

Accelerating Global Cooperation : Various Stakeholders



Market Potentials for Further Growth

Producers



'Want to be' producers





THANK YOU
감사합니다

SAMSUNG E&A