

21 September 2022

Chiyoda Corporation and INERATEC GmbH announce a Memorandum of Understanding to strategically collaborate on e-fuel projects to accelerate decarbonization in Japan and the Asia-Pacific

Chiyoda Corporation (Chiyoda) is pleased to announce that it has signed a Memorandum of Understanding with the German Clean Tech company INERATEC GmbH (INERATEC) to collaborate on establishing joint e-fuel (*) projects in Japan and the Asia-Pacific region, using INERATEC's innovative Power-to-X (PtX) technology.

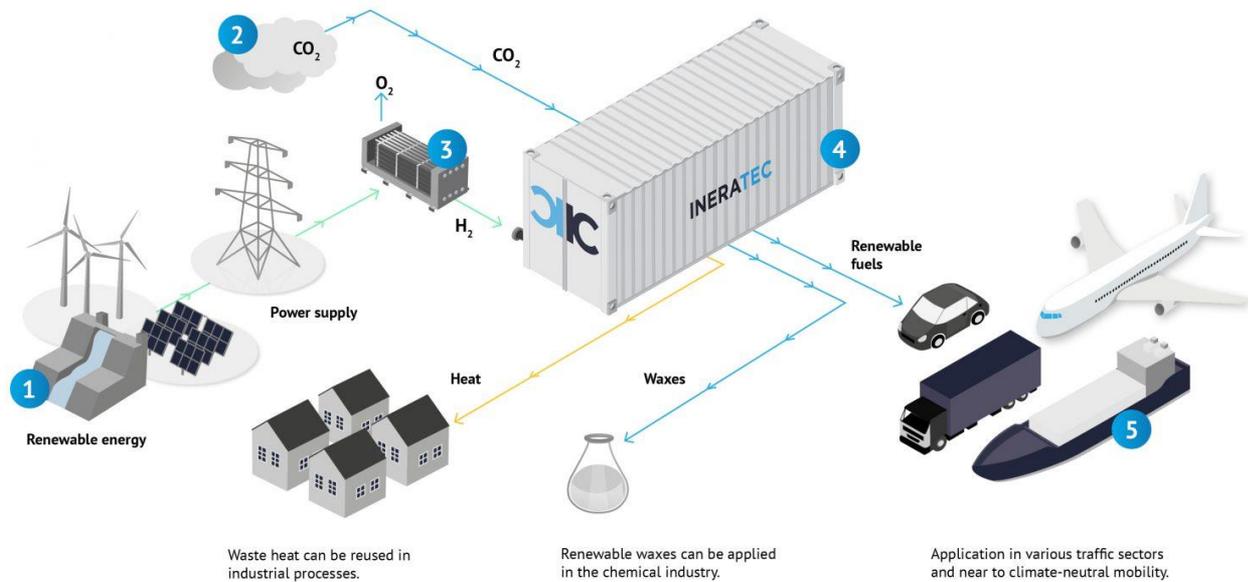
By combining Chiyoda's extensive supplier network and project execution expertise with INERATEC's leading PtX technology producing sustainable e-fuels and chemicals from CO₂ and renewable hydrogen, the signatories are addressing the global requirement for sustainable alternatives to fossil fuels, such as oil and gas, and the growing demand for technologies that deliver such alternatives.

PtX is an emerging market and there is significant potential to apply German technology through global partnerships in the construction of high value e-fuel projects in Japan and the Asia-Pacific to meet Climate Goals.

"As a leading Japanese Engineering company, we have a responsibility in achieving sustainable economic growth and carbon neutrality in Japan and the Asia-Pacific through the energy transition. With INERATEC's innovative PtX technology platform, Chiyoda's world-class engineering capabilities and our collective track records in real-world project execution, we are keen to deliver sustainable e-fuel projects, eg: Sustainable Aviation Fuel (SAF), that contribute to the decarbonization of Japan and the Asia-Pacific", explains Kimiho Sakurai, Associate Director of Chiyoda.

"This is a pioneering step to unlocking the Japanese and Asia-Pacific market. We are very excited to take this step with a strong international partner, such as Chiyoda. The technology has the potential to globally shift huge industries from fossil energy sources to a climate-friendly future", explains Tim Böltken, managing director of INERATEC.

* As shown in Figure 1 below, e-fuels are produced from renewable electricity, eg: solar power, wind energy or hydropower. The electricity is used to produce green hydrogen via electrolysis. Together with the greenhouse gas CO₂, synthetic fuels are then produced in the power-to-liquid process, i.e.: sustainable e-kerosene, climate-neutral gasoline or clean diesel.



1
RENEWABLE ENERGY
Energy is obtained from renewable sources.

2
CARBON DIOXIDE
CO₂ is obtained from sustainable sources or the surrounding air.

3
ELECTROLYSIS
Hydrogen and oxygen are attained by the electrolysis of water, the latter is emitted into the surrounding atmosphere.

4
SYNTHESIS
In a chemical two-step process hydrocarbon chains are produced from CO₂ and hydrogen.

5
PRODUCTS
The final products are compatible with existing infrastructure, engine technology as and can replace fossil fuels.

Figure 1 – Production of e-fuels from Renewable Electricity

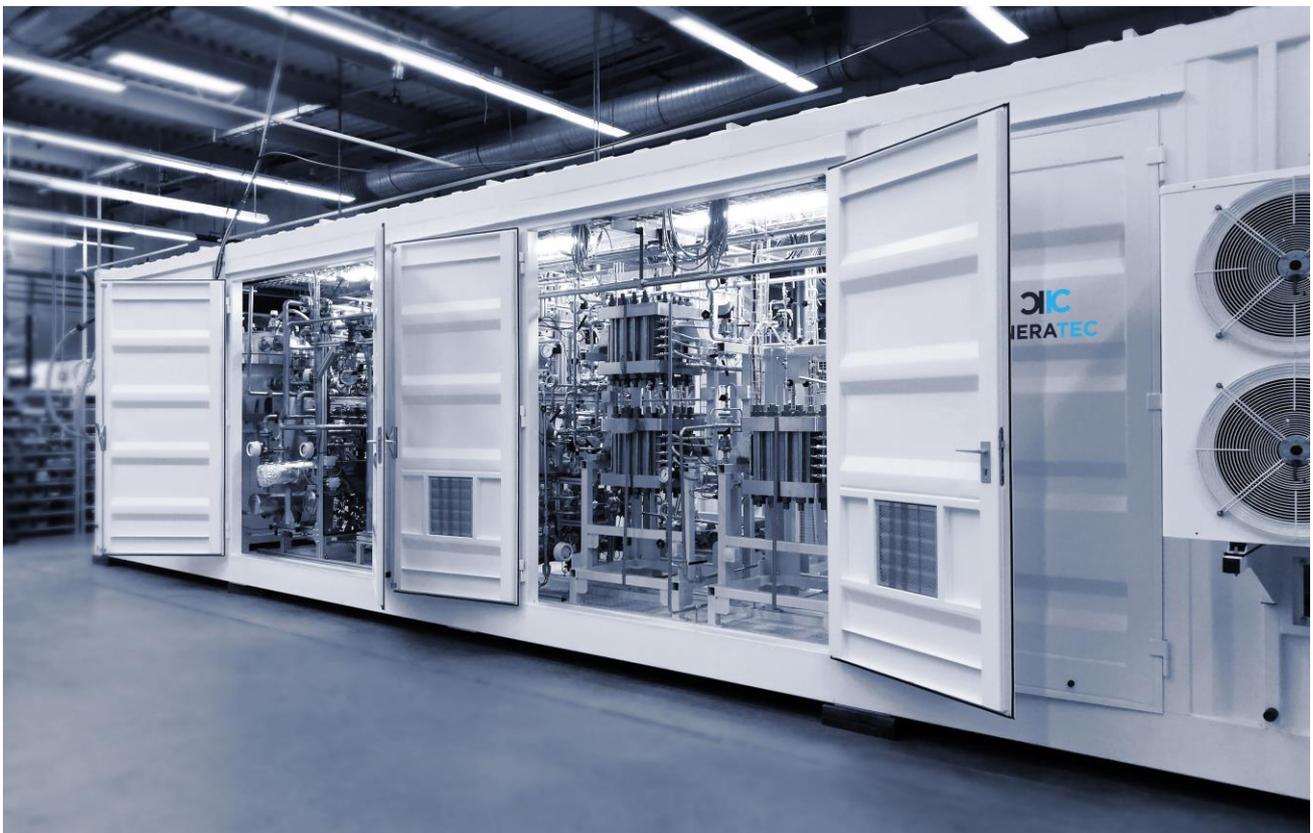


Figure 2 – An industrial-scale container size Power-to-Liquid plant module (refer to Step 4 in Figure 1) by INERATEC



Chiyoda Corporation is a world leading, fully integrated engineering company, with over seventy (70) years worldwide project experience, providing services including consulting, planning, engineering, procurement, construction, commissioning and maintenance for facilities related to gas, electricity, petroleum, petrochemical, chemical, pharmaceutical, antipollution, environment, preservation and others. Chiyoda's research and development supports carbon neutrality and the global drive towards a sustainable future including, for example, 'in-house' developed proven SPERA Hydrogen technology for the supply of low carbon hydrogen to produce e-fuel in countries such as Japan. For further information, refer to <https://www.chiyodacorp.com/en/>.



INERATEC

INERATEC GmbH is a pioneer in the field of Power-to-Liquid applications. The company supplies sustainable fuels and chemical products. Modular chemical plants for power-to-X and gas-to-liquid applications use hydrogen from renewable electricity and greenhouse gases, such as CO₂, to produce e-kerosene, CO₂-neutral gasoline, clean diesel or synthetic waxes, methanol or SNG. Founded in 2016, INERATEC has implemented industrial-scale power-to-liquid plants at German sites to boost the availability of sustainable fuels and chemicals in various transport sectors, such as aviation. For further information, refer to www.ineratec.com.

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