

Kazakhstan Energy Week
Special Session for Japan-Kazakhstan Oil & Gas Industrial Cooperation

transforming waste to fuel for a sustainable future

Marubeni Corporation

9/26/2019

Marubeni

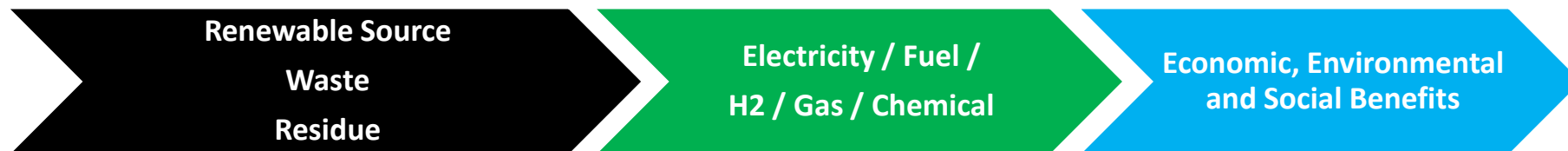
Marubeni Corporation

● Founded	May 1858
● Incorporated	December 1, 1949
● President and CEO	Masumi Kakinoki
● Paid-in Capital	262,686 million yen
● Head Office	Tokyo Nihombashi Tower, 7-1, Nihonbashi 2-chome, Chuo-ku, Tokyo, 103-6060, Japan
● Number of Branches and Offices (Including Tokyo Head Office)	136 branches and offices in 67 countries and regions, consisting of 12 domestic branches and offices, 57 overseas branches and offices and 29 overseas corporate subsidiaries with 67 offices
● Number of Employees* (non-consolidated)	4,418 (Excluding 432 local employees of overseas branches and offices and 1,468 local employees of overseas corporate subsidiaries)
● Number of Employees* (consolidated)	42,882
● Number of Consolidated Companies	431



(As of April 1, 2019 , except * as of March 31, 2019)

Business activities in Renewables / Low Carbon area



1. Hydrogen
2. Green ammonia
3. Thermal Energy Storage
4. Methanation
5. Carbon credit
6. Renewable Fuel
7. Waste to Fuel

○ Addressing Two Global Challenges

Disposal of Waste is a Global Problem



○ Addressing Two Global Challenges

Airlines must reduce Carbon Emissions



○ Processing Municipal Solid Waste into Sustainable Aviation Fuel (SAF)

- Household garbage has great potential for SAF
 - Contains energy-rich materials usable for fuel production
 - Available in large quantities
 - Favorable economics



Case Study: Fulcrum BioEnergy

- Leading Waste to Fuel business with headquarters in Northern California
- First commercial Waste to Fuel plant outside of Reno, Nevada, USA
- Plans to expand to other locations in the US, UK, and other countries
- In September 2018 jointly with Japan Airlines and Japan Overseas Infrastructure Investment Corporation for Transportation, Marubeni made equity investment in Fulcrum
- Fulcrum and Marubeni have a strategic partnership to jointly develop waste-to-fuels plants in international markets where Marubeni has a strong business and market presence
- Included in this development opportunity is a project license agreement allowing these international projects to utilize Fulcrum's patented, proprietary municipal solid waste-to-jet fuel process



○ Case Study: Fulcrum's Sierra BioFuels Plant



- Convert MSW feedstock to Synthesis Gas through gasification system.
- Convert Synthesis Gas to jet fuel and diesel through Fischer-Tropsch Process

Biorefinery (under construction)



Feedstock Processing Facility (in operation)



Contact

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