



## Monthly Japanese Industry and Policy News July (June 30– July 27) 2023

• This was compiled by “[Weekly Japanese Industrial and Policy News](#)”.

### Legislation and Policy News

#### Japanese version of "Product Safety Pledge" started, seven online marketplaces signed

On June 29, the Ministry of Economy, Trade and Industry (METI) announced that seven major online marketplace operators (OM) had signed the Japanese version of the "Product Safety Pledge," and that it had started in earnest. In the signed OM, (1) Efforts to delete the listing of recalled products and products that violate laws and regulations that stipulate safety standards, etc., and (2) Efforts in the event that a consumer is notified of the listing of recalled products or products that violate laws and ordinances stipulating safety standards, etc., are requested. In addition, an internal control system will be established and maintained to implement these efforts.

The Product Safety Pledge was signed by the European Commission in June 2018, by the Australian Competition and Consumer Commission in November 2020, and by the Korean Fair-Trade Commission and the Korean Consumer Agency in April 2021, respectively, with multiple OM. Then, at the OECD International Conference on Consumers held in June 2021, the "Product Safety Pledge Statement" was announced, showing the main commitments required for the "Product Safety Pledge". In response to this, Japan has also been working to formulate a product safety pledge from March 2022.

The Product Safety Pledge aims at protecting consumers more than ever from risks to life and health, such as product fires, caused by recalled products and unsafe products listed and sold on OM. It is a voluntary initiative of public-private partnership that transcends the legal framework related to the law, and its targets are both B to C type businesses such as large-scale Internet malls and C to C type businesses such as online flea markets and Internet auctions.

METI website:

<https://www.meti.go.jp/press/2023/06/20230629001/20230629001.html>



**METI Minister Nishimura signed a memorandum of cooperation on semiconductors with European Commissioner Breton and had a meeting**

On July 4, Mr. Nishimura, METI Minister, held a meeting after concluding a memorandum of cooperation on semiconductors with Mr. Breton, Commissioner of the European Union. Prior to the meeting, both signed a memorandum of cooperation regarding semiconductors; the establishment of an early warning mechanism to deal with supply chain disruptions, R&D on next-generation semiconductors, human resource development, creation of use cases for cutting-edge semiconductors, and transparency of subsidies.

At the meeting that followed, they confirmed that they would continue to work together under the Japan-EU Digital Partnership on cyber security, the realization of DFFT, and Japan-EU cooperation in digital fields such as quantum. In addition, discussions were held on strengthening supply chains in fields such as important minerals and batteries, and on strengthening future cooperation in the space and defense industries. In the evening of the same day, Breton's Commissioner attended a seminar hosted by RIETT, the Japan-EU Center for Industrial Cooperation, etc., and gave a lecture on economic security and the strengthening of the Japan-EU partnership.

METI website:

<https://www.meti.go.jp/press/2023/07/20230704002/20230704002-1.pdf>

EUJC website:

[Recorded video of the seminar on July 4, 2023](#)

**Japan-EU digital ministerial meeting held, agreed to strengthen collaboration on semiconductors and submarine cables**

On June 3, Japan and the European Union (EU) held a ministerial-level meeting at the Digital Agency to promote cooperation in the digital field, and agreed to strengthen cooperation in the field of semiconductors and submarine cables connecting Japan and the EU.

This ministerial-level meeting is based on the Japan-EU Digital Partnership, which was agreed to be launched at the Japan-EU Summit Meeting in May last year, and is the first such meeting. Digital Minister Kono and Internal Affairs and



Communications Minister Matsumoto attended from Japan, and Commissioner Breton of the European Commission (in charge of the internal market) attended from the EU. In the joint statement, it was confirmed that Japan and the EU will establish a forum for permanent communication with the aim of "realizing trustworthy AI". It also stated that both sides would contribute to the discussions on the "Hiroshima AI Process" advocated at the G7 Hiroshima Summit in May.

In addition, the Ministry of Internal Affairs and Communications and the EU signed a memorandum of understanding to cooperate on the development and utilization of submarine cables. Demand for submarine cables is expected to increase in a digitalized society. Japan and the EU will set up a forum for relevant parties to discuss the development of a new route connecting the two country/regions via the Arctic Circle, citing the possibility of revitalizing data distribution. In addition, they confirmed mutual cooperation in utilization such as operating a system that detects failures in submarine cables and detecting signs of disasters using submarine cables.

METI website:

<https://www.meti.go.jp/press/2023/07/20230703003/20230703003-4.pdf>

### **MAFF selects 4 J-credit projects**

On June 28, the Ministry of Agriculture, Forestry and Fisheries (MAFF) announced that it had approved four new J-credit projects in the agricultural field, namely, the extension of the drying period for paddy rice cultivation and the application of biochar to agricultural land. A total of 4 projects were approved this time: 3 projects to reduce CH<sub>4</sub> by extending the drying period in rice cultivation, and 1 project to reduce CO<sub>2</sub> by applying biochar to farmland.

Methane (CH<sub>4</sub>) generated from paddy fields is produced by the action of anaerobic methanogens from organic matter contained in soil and organic matter given as fertilizer. To reduce methane emissions from paddy fields, it is important to lengthen the falling water period (NAKABOSHI). Extending the period of NAKABOSHI (the process of draining the water from the paddy field and drying the surface of the paddy field during the cultivation period to control the growth of the paddy field during the cultivation period of paddy rice before heading) by 7 days reduced 30% of methane generated.



Biochar is a soil improvement material that is recognized for its ability to retain carbon in the soil and improve the permeability of the soil. If the carbon contained in wood, bamboo, etc., which are the raw materials of biochar, is left as it is, it will be decomposed by the activity of microorganisms and released into the atmosphere as carbon dioxide. However, by carbonizing wood, bamboo, etc. and applying it to agricultural soil as biochar, it is possible to trap the carbon in the soil (carbon sequestration) and reduce its release into the atmosphere.

MAFF website:

[https://www.maff.go.jp/j/press/kanbo/b\\_kankyo/230628.html](https://www.maff.go.jp/j/press/kanbo/b_kankyo/230628.html)

### **IAEA releases comprehensive report on safety review of ALPS treated water**

On July 4, the International Atomic Energy Agency (IAEA) published a summary report on the safety review of ALPS treated water from the TEPCO Fukushima Daiichi Nuclear Power Station, which has been recommended between the Japanese government and the agency. The IAEA Director-General delivered the report to Prime Minister Kishida.

The IAEA Comprehensive Report states; 1) The IAEA believes that the approach to the release of ALPS-treated water into the ocean and actions by TEPCO, the Nuclear Regulation Authority and the Government of Japan are consistent with relevant international safety standards, 2) The IAEA states that TEPCO's currently planned ocean discharge of ALPS-treated water will have negligible radiation effects on humans and the environment.

The IAEA also committed to engage with Japan regarding the release of ALPS-treated water before, during and after release. The IAEA said that additional reviews and monitoring will continue, providing additional transparency and reassurance to the international community, too. The government of Japan noted that after confirming the details of the report, it will disseminate information both domestically and internationally with transparency.



IAEA website:

<https://www.iaea.org/newscenter/pressreleases/iaea-finds-japans-plans-to-release-treated-water-into-the-sea-at-fukushima-consistent-with-international-safety-standards>

### **IMO agreed to reduce greenhouse gas emissions from ships to zero by around 2050**

On July 11, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) announced that a new international goal had adopted that greenhouse gas emissions from ships traveling around the world should be reduced to virtually zero by around 2050 at a meeting held by the International Maritime Organization (IMO) in London, England from July 3 to 7. This is a significant increase from the previous goal of reducing emissions by 50% or more from 2008 levels by 2050.

The IMO is a United Nations specialized agency that sets the rules for international shipping, with 175 member countries. The new target sets intermediate indicators to measure progress toward net zero emissions by 2050. It aims to reduce by at least 20% from 2008 in 2030, and strive to reduce by 30%. It also aims to reduce emissions by at least 70% by 2040, preferably 80%. It also includes the introduction of at least 5% of the use of fuels with zero or near-zero emissions by 2030.

According to the IMO, emissions from international shipping of carbon dioxide (CO<sub>2</sub>), a major greenhouse gas, account for about 2.5% of the world's total. However, it is not included in the greenhouse gas emissions data that each country submits to the United Nations, and it is not taken into consideration in each country's reduction targets.

MLIT website (in Japanese):

[https://www.mlit.go.jp/report/press/kaiji07\\_hh\\_000289.html](https://www.mlit.go.jp/report/press/kaiji07_hh_000289.html)

### **Approval of the UK's accession to the TPP**

On the 16, 11 countries participating in the Trans-Pacific Partnership (TPP), including Japan and Australia, signed an agreement formally recognizing Britain's membership at a ministerial-level meeting held in New Zealand. It is the



first time that a new member country has been admitted after the agreement entered into force in 2018. The TPP expands the economic zone from the Asia-Pacific region to Europe.

The UK will complete its withdrawal from the European Union (EU) at the end of 2020. Immediately after that, in February 2021, it applied to join the TPP as part of its trade expansion measures, and the examination began in June of the same year. The gross domestic product (GDP, 2022) of the UK is approximately US\$ 3 trillion, second only to Japan among the member countries. Britain's accession will increase the combined TPP member countries' share of global GDP from 12% to 15%.

The TPP has established high-level common rules among member countries for the elimination of tariffs, investment, services, and labor. In 2016, 12 countries, including the United States, signed the treaty, but the United States withdrew during the Trump administration. China, Taiwan, Ecuador, Costa Rica, Uruguay, and Ukraine are currently applying to join the TPP. However, China opposed the membership application, claiming that Taiwan is part of its own country. On the other hand, Japan and Australia, concerned about China's economic pressure, are cautious about China's membership. At a press conference after the meeting, Minister of State for Economic Revitalization Goto commented, "We have agreed that countries and regions that are taking coercive measures cannot be targeted."

MOFA website:

[https://www.mofa.go.jp/press/release/press4e\\_003285.html](https://www.mofa.go.jp/press/release/press4e_003285.html)

### **Establishment of Japan-EU Foreign Minister Level Strategic Dialogue**

On July 13, during a visit to Belgium, Prime Minister Fumio Kishida held regular summit meetings with President Michel of the European Union (EU) and President of the European Commission von der Leyen, and issued a joint statement. It makes strengthen cooperation in the field of security with China in mind, which is becoming increasingly hegemonic. They agreed to establish a "Japan-EU Strategic Dialogue" at the foreign minister level.

Japan and the EU have so far focused on economic cooperation, but this time



they confirmed a wide range of security cooperation, including maritime security and cyberattacks. In addition, the EU has announced that it will abolish import restrictions on Japanese food products after the accident at the Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station. Both sides expressed that they "welcome" the release of a comprehensive report by the International Atomic Energy Agency (IAEA), which states that the plan to release treated water from the Nuclear Power Plant into the ocean meets international safety standards. The points of the joint statement are as follows.

- European security and Indo-Pacific security are closely linked. Firmly support Ukraine and oppose Russia's war of aggression. We condemn North Korea's nuclear and ballistic missile development.
- We are prepared to build a constructive and stable relationship with China. Pursue peace and stability across the Indo-Pacific through compliance with the United Nations Convention on the Law of the Sea. Oppose unilateral attempts to change the status quo by force or coercion anywhere in the world.
- Launch the Japan-EU Strategic Dialogue at the foreign minister level to further develop security cooperation. Strengthen dialogue and cooperation on economic security, and coordinate efforts to build a strong supply chain.

MOFA website:

<https://www.mofa.go.jp/mofaj/files/100528227.pdf>

### **METI held the LNG Producer-Consumer Conference 2023 in Tokyo**

On July 18, the Ministry of Economy, Trade and Industry (METI) held the LNG Producer-Consumer Conference 2023 in Tokyo, where liquefied natural gas (LNG) producers and consumers will gather. It proposed a framework for cooperation among countries in preparation for tight supply and demand of LNG, which is used as fuel for thermal power generation. Ministers and business people from 17 countries and regions, including Japan, the United States, South Korea and the European Union (EU), gathered at the conference. The conference started in 2012, and this is the 12th time it has been held. It was the first-time conference co-hosted with the IEA.



At the meeting, a joint statement was signed that included a policy for Japan, the United States, and other countries to work together in public-private partnerships to reduce methane, a greenhouse gas emitted during the LNG production process. Even after the Ukraine crisis, Japan continues to rely on Russian LNG. The aim is to establish a system that can secure a stable supply over the medium to long term in order to reduce the risk of supply disruption in an emergency.

Meanwhile, Japan has issued a joint statement on LNG cooperation with the EU. The content of the agreement is to promote cooperation centered on mechanisms and specific measures for improving LNG security, improving the transparency of information in the LNG market, and dealing with methane. Based on this joint statement and the joint statement of the 29th Japan-EU Summit Meeting announced on July 13, Japan intends to promote LNG cooperation with the EU.

METI website (Chairs summary):

<https://www.meti.go.jp/press/2023/07/20230719001/20230719001-1.pdf>

LNG Producer-Consumer Conference website:

<https://www.lng-conference.org/english/>

### **METI Minister Nishimura signs semiconductor supply chain partnership with India**

On July 20, the Minister of Economy, Trade and Industry, Nishimura visited Delhi, India, and announced the "Japan-India Industrial Co-Creation Initiative" at the "Japan-India Deep Tech and Clean Energy Seminar". He also met with Minister of Electronics and Information Technology, Vaishnaw and signed a memorandum of cooperation on the "Semiconductor Supply Chain Partnership".

At the Japan-India Deep Tech and Clean Energy Seminar, Minister Nishimura announced the Japan-India Industrial Co-Creation Initiative. This initiative aims to take the quality and breadth of Japan-India industrial cooperation to a new dimension, with the following pillars: (1) creation of future industries through innovation, (2) evolution of existing industries, and (3) expansion into new markets such as Africa.





At the meeting with the Minister Vaishnav, they exchanged views on cooperation in the fields of semiconductors, startups, and digital technology between the two countries. And, “The Japan-India Semiconductor Supply Chain Partnership” was concluded with the aim of strengthening cooperation between Japan and India to strengthen the resilience of the semiconductor supply chain.

METI website:

<https://www.meti.go.jp/press/2023/07/20230721005/20230721005.html>

## **Company & Organization News**

### **JAXA signs agreement with German and French research institutions for Mars satellite exploration**

On June 21, the Japan Aerospace Exploration Agency (JAXA) announced that it signed an agreement with the German Aerospace Center and the French National Center for Space Research regarding the project "MMX" to bring back samples from the Martian satellite to the earth with a probe. Both countries are responsible for the development of a small rover to be mounted on the main body of the MMX probe. They will deepen cooperation toward the launch in 2024.

Along with the signing of the agreement, the two European institutions also revealed that they have decided to name their small rover IDEFIX. The plan is to complete IDEFIX in the summer of 2023, and proceed with the final stage of development. MMX is scheduled to be launched in fiscal 2024, and a sample of the Martian moon Phobos will be delivered to Earth in fiscal 2029. If all goes well, it could be the first mission to bring back soil around Mars.

The technology to collect and bring back samples of soil, sand, etc. from extraterrestrial bodies is called "sample return." Japan has strengths in asteroid exploration with Hayabusa and Hayabusa2, which returned to Earth in 2010 and 2020. Both the German and French agencies also worked with JAXA to develop landers for the Hayabusa2 project.

JAXA website:

<https://global.jaxa.jp/news/2023/#news21309>



### **JGC HD mass-produces catalysts for synthetic fuels**

JGC Holdings (HD), a major industrial plant company, announced on July 7 that it will mass-produce catalysts used in the production of "synthetic fuel" made from carbon dioxide (CO<sub>2</sub>) and hydrogen by 2030. It will be produced at two plants in Japan and supplied to petroleum wholesalers. Assuming that the demand for synthetic fuels that do not emit CO<sub>2</sub> during production will increase due to decarbonization, the company will prepare a production system.

It will be produced by Nikki Shokubai Kasei, a subsidiary that handles catalysts used in petroleum refining. Expanded factories at Kitakyushu and Niigata offices. The production volume and the investment amount for the single catalyst have not been disclosed. Approximately JP¥ 20 billion will be invested by 2030, including the production of materials for semiconductor manufacturing.

Synthetic fuels are said to be suitable for aircraft and automobile fuels, and have the advantage of being able to use existing infrastructure such as gas stations for supply. ENEOS Holdings and Idemitsu Kosan are embarking on commercialization.

JGC HOLDINGS website:

<https://www.jgc.com/en/news/2023/20230707.html>

### **Tokyo Institute of Technology achieves the world's highest level of all-solid-state battery capacity**

A research group led by Specially Appointed Professor Ryoji Sugano of the Tokyo Institute of Technology has succeeded in improving the rapid charging performance and capacity of all-solid-state batteries. This was achieved by developing new core materials and reviewing the manufacturing process. The index that determines the performance of quick charging is up to 3.8 times higher than the current one, and the positive electrode capacity per electrode area is also improved by 1.8 times. Both are the best in the world, and were published in the US scientific journal Science.

The research group has newly developed a solid electrolyte, which is a key material for all-solid-state batteries. The new material is an improved version of the sulfide-based solid electrolyte that he and his colleagues developed in 2011,



and the number of constituent elements has been increased from four to seven. The lithium-ion conductivity, which is related to fast charging performance, is 32 milli siemens per centimeter, which is about 2.3 to 3.8 times higher than that of conventional materials. If the ionic conductivity is increased, the charging time can be shortened.

The manufacturing process was also improved, and the solid electrolyte and positive electrode powder were mixed. Therefore, it is expected that the electrode drying process, which was necessary in the past, can be omitted. Lithium metal is used for the negative electrode instead of conventional graphite. The capacity of the prototype all-solid-state battery was more than 20 milliampere-hours per square centimeter of electrode, the highest ever reported.

Tokyo Institute of Technology website:

<https://www.titech.ac.jp/english/news/2023/067100>

### **Mitsui & Co. invests in Danish methanol production company**

Mitsui & Co. announced on July 6 that it will acquire a 49% stake in Kasso MidCo ApS (Denmark), a methanol manufacturer, by the end of 2023. The acquisition price has not been disclosed, but is believed to be more than JP ¥ 10 billion. A factory will be built in Denmark, and from 2012, it will produce 42,000 tons of methanol, which has almost no environmental impact, making it the world's largest scale. Kasso MidCo was launched by Danish renewable energy company European Energy to produce methanol. The company will continue to hold a 51% stake after Mitsui invests.

The methanol produced is called “green e-methanol”. Renewable energy is used to electrolyze water to create hydrogen, which is produced through a chemical reaction with carbon dioxide (CO<sub>2</sub>) emitted from livestock droppings, so it is said to have almost no environmental impact. The total investment in production, including construction costs for the factory, is expected to be several tens of JP ¥ billions. It plans to use Kasso's 304,000-kilowatt photovoltaic power generation facility and wind-derived electricity purchased from an external source. The methanol produced will be sold to major shipping companies AP Moller and Maersk as fuel for ships, and will be sold as a raw material for plastics to major toy companies such as the Lego Group.



Mitsui & company website:

[https://www.mitsui.com/jp/en/release/2023/1246818\\_13943.html](https://www.mitsui.com/jp/en/release/2023/1246818_13943.html)

### **Mitsui & Co. investigates Port of Tilbury, UK for use of green hydrogen**

On July 7, Mitsui & Co. entered into an agreement with RWE, a subsidiary of RWE Generation SE, a major German energy company, and Port of Tilbury, the port operator of the Port of Tilbury in the UK, regarding decarbonization using green hydrogen at the Port of Tilbury. The company announced that it has signed a memorandum of understanding for the purpose of conducting a feasibility study.

In this initiative, they are conducting a survey for a demonstration experiment to convert port cargo handling equipment into a hydrogen fuel cell, a survey on the demand for green hydrogen inside and outside the port, and a verification of green hydrogen production derived from renewable energy of 10,000 kW or more in anticipation of commercialization. The verification is aimed at gradually developing 100,000 kW-scale hydrogen production facilities over the next 10 years or more, with a view to decarbonization centered on ports.

The UK government has set a policy to increase the production capacity of low-carbon hydrogen to 10 million kW by 2030, and promotes the use of hydrogen in power generation, heat sources, transportation, and other industrial fields where decarbonization through electrification is considered difficult. Therefore, it is promoting the development of systems such as subsidies for manufacturers and consumers.

Tilbury Port is centrally located in Thames Freeport, a logistics hub for London and the South East. Through the efforts at the port, it is thought that it will lead to the development of hydrogen production capacity in the country and the spread of hydrogen utilization.

Mitsui & company website:

[https://www.mitsui.com/jp/en/topics/2023/1246850\\_13949.html](https://www.mitsui.com/jp/en/topics/2023/1246850_13949.html)

### **Marubeni to sell new Estonian power storage equipment in 2024**

Marubeni announced on July 10 that it will start selling a new high-output power storage device from 2024. The company invested several JP ¥ billion in the



emerging manufacturer Skeleton Technologies (Estonia), which it invested in, and the company started full-scale production using the funds. The high-output power storage device is called a "capacitor," and is expected to be used in large vehicles such as railway vehicles and construction machinery. It is expected to spread as a partial substitute for lithium-ion batteries.

General capacitors can be fully charged in less than tens of seconds, and unlike storage batteries that require chemical reactions, they do not expand or contract during charging and discharging. Therefore, it has excellent durability without deterioration even after charging and discharging are repeated millions of times. The new high-output capacitor that Skeleton is working on has the world's largest amount of energy (energy density). Duration has also improved. It can be fully charged in 2 minutes, and can run for more than 10 minutes for railway vehicles and about 30 minutes for large construction equipment. When used in railcars, the new capacitors have a lifespan of four years, four times that of lithium-ion batteries. On the other hand, the battery life is about half that of lithium-ion batteries, so it is not suitable for driving electric vehicles (EVs) that require long-distance driving on a single charge.

Skeleton plans to produce capacitors equivalent to 15,000 railway cars from 2024. It is said to be capable of supplying more than 20% of rolling stock in Japan. Marubeni is in charge of sales agency business mainly in Asia, and is proceeding with discussions with major Japanese railway vehicle manufacturers toward the introduction of capacitors.

Marubeni corporation website:

<https://www.marubeni.com/en/news/2023/release/00069.html>

### **Sumitomo Corporation, hydrogen production with UK-Australia resource giant**

Sumitomo Corporation announced on July 12 that it has reached an agreement with Rio Tinto, a major British-Australian natural resource company, to start a hydrogen production experiment in Australia. The total amount of the project is about JP ¥ 10 billion, and about JP ¥ 3 billion will be subsidized by an Australian government agency. From 2025, it will produce up to 300 tons per year and use it for local alumina refining. A hydrogen production plant will be built within Rio Tinto's alumina refining plant. It purchases carbon credits to



reduce carbon dioxide (CO<sub>2</sub>) emissions associated with hydrogen production to virtually zero.

Alumina refining generally uses fossil fuels such as natural gas. Refining using hydrogen is almost unheard of in the world. Through experiments, the company hopes to pave the way for commercial-scale use. Around 2030, Sumitomo aims to produce 200,000 tons of green hydrogen annually using renewable energy such as sunlight, and to supply it to a wide range of applications other than alumina refining. In the future, it is expected to expand to 500,000 tons per year and export outside Australia.

Sumitomo corporation website:

<https://www.sumitomocorp.com/en/jp/news/release/2023/group/16870>

### **University of Tsukuba developed a new catalyst for producing "green hydrogen", no need precious metals**

University of Tsukuba and others announced on July 11 that they have developed with others a new catalyst which can be used to electrolyze water to produce hydrogen. Using cheap boron and sulfur as the main ingredients, they succeeded in improving the functionality without using precious metals as in the past. Taking advantage of the fact that raw material costs can be reduced to a few hundredths, they aim to put it into practical use.

Precious metals such as iridium and ruthenium are mainly used as catalysts for producing green hydrogen. It is said that it is indispensable to replace with cheap materials in order to aim for widespread use. The research group has developed a catalyst that combines boron sulfide and a carbon material called "graphene nanoplates" with a sheet-like structure. When applied to the reaction of "alkaline water electrolysis," in which water is electrolyzed to generate oxygen and hydrogen, the performance exceeds that of conventional catalysts. Sufficient durability was also confirmed.

Although there are cases where inexpensive materials such as nickel and iron are used as catalysts, the new catalyst may promote the reaction with a smaller amount. However, sulfur and boron are heated to 1,500 degrees Celsius under a pressure of about 50,000 atmospheres, and then rapidly cooled, so special



equipment is required, which increases production costs. They will also explore collaboration with companies for practical application, such as developing a synthesis method that reduces input energy.

University of Tsukuba website (in Japanese)

<https://www.tsukuba.ac.jp/journal/pdf/p20230711140000.pdf>

### **JOGMEC and EU commission agreed on critical materials**

JOGMEC announced on July 14 that it has signed a cooperation agreement on critical raw material supply chains with the European Commission DG Grow on July 6. Based on this cooperation agreement, JOGMEC aims to improve the knowledge related to raw material supply chains, risk management, research and technological innovation, information exchange on recycling, etc.

The European Commission is in a position to lead the world in decarbonization efforts and discussions on ESG, while JOGMEC has accumulated technical knowledge on mineral resources over the 60 years since its establishment. Therefore, this agreement is expected to promote not only the exchange of information but also the formation of joint projects, leading to the strengthening of mutual supply chains.

JOGMEC website (in Japanese):

[https://www.jogmec.go.jp/news/release/news\\_10\\_00123.html](https://www.jogmec.go.jp/news/release/news_10_00123.html)

### **Mitsubishi Heavy Industries signs MOU with Port of Newcastle to build clean energy economy**

Mitsubishi Heavy Industries (MHI) announced on July 12 that it has signed a memorandum of understanding (MOU) with the port of Newcastle, located in the state of New South Wales in the southeastern part of Australia, to create a clean energy district of approximately 220 hectares at the port. It was held in conjunction with a visit to the port by Minister Bowen, Ministry of Climate Change and Energy, Australia.

Starting from the Clean Energy District, consider supplying clean energy technology, exporting clean energy products, and cooperating on all clean energy projects in the Port District throughout the Hunter region in the



southeastern part of the state. Specifically, it will promote various initiatives such as the development of inland and offshore wind power generation, power transmission, production, storage, export and bunkering of clean energy. The Port of Newcastle has been designated by the Australian Government as the Hydrogen Hub for New South Wales and is committed to enabling a development, storage and export pathway for a clean energy economy.

MHI website:

<https://www.mhi.com/news/23071201.html>

### **Four parties build a supply network for low-carbon reduced iron in the UAE**

On July 18, ITOCHU, JFE Steel, Emirates Steel (Abu Dhabi), the largest steel company in the United Arab Emirates (UAE), and Abu Dhabi Ports Group (ADPG), a state-owned port management and land developer in Abu Dhabi, signed a memorandum of understanding on building a supply chain for low-carbon reduced iron.

In order to decarbonize the steel industry, ITOCHU, Emirates Steel, and JFE Steel are participating as core members in building a supply chain for low-carbon reduced iron, and conduct a detailed feasibility study with Abu Dhabi as the candidate site for the project. This time, they have agreed to build a cooperative system with ADPG regarding port development and infrastructure development for this project. By collaborating with ADPG, they aim to secure a project area and build a stable logistics system for purchasing raw materials and shipping products.

ADPG has 10 ports and 550 square kilometers of economic and industrial area in Abu Dhabi. Also, like Emirates Steel, the company is a subsidiary of Abu Dhabi's state-owned investment company ADQ (Abu Dhabi government-affiliated holding company), and is entrusted with raw material import operations for Emirates Steel's operations.

ITOCHU website (in Japanese):

[https://www.itochu.co.jp/ja/news/press/2023/230718\\_2.html](https://www.itochu.co.jp/ja/news/press/2023/230718_2.html)





### **Sojitz invests in Nordic Startup to produce Turquoise Hydrogen**

Sojitz announced on July 18 that it has invested in Hycamite TCD Technologies Oy (Hycamite), a Finnish start-up company that develops technology to produce turquoise hydrogen by thermally decomposing methane, the main component of natural gas, without producing CO<sub>2</sub>. Hycamite's proprietary catalyst technology enables the production of hydrogen with 13% of the power consumption of the electrolysis hydrogen production process, and also produces high value-added solid carbon products such as carbon nanotubes.

This time, Hycamite has raised a total of 25 million euros through a third-party allotment of new shares, and in addition to Sojitz, the Finnish Climate Fund, a Finnish sovereign wealth fund, and other investors have agreed to subscribe. Hycamite plans to use the funds procured this time to build a demo-scale plant with an annual production capacity of 2,000 tons (approximately 2,880Nm<sup>3</sup>/h) in terms of hydrogen. Technical demonstration at the pilot level has already been completed, and operations are scheduled to start in the middle of 2024 at the Kokkola Industrial Park in central Finland.

Through this investment, Sojitz has acquired the exclusive right to use Hycamite technology in Japan. In the future, it will promote commercial-scale project formation with Hycamite, aiming to build a business in the latter half of the 2020s. The envisioned commercial plant will have an annual production capacity of tens of thousands of tons of hydrogen equivalent, and will contribute to the decarbonization of various industries not only in Japan but around the world.

SOJITZ website:

<https://www.sojitz.com/en/news/2023/07/20230718-02.php>

### **Interstellar launches beef-derived liquefied methane as rocket fuel**

Rocket developer Interstellar Technologies (IST) announced on July 21 that it will use liquefied biomethane produced from livestock manure such as cows as fuel for the rocket "ZERO" developed in-house. The engine combustor will also be tested at Hokkaido Space Port (HOSPO), a private rocket launch site in autumn.



Liquefied biomethane is made by extracting carbon dioxide (CO<sub>2</sub>) from biogas from cow manure and liquefying the remaining methane. IST uses methane produced by Air Water Hokkaido in Obihiro, Hokkaido. It is characterized by a high purity of 99% or more methane concentration, and was adopted as it is also suitable for rocket fuel. IST's Zero is a rocket for launching microsatellites, aiming to launch in 2024 at the earliest.

Interstellar Technologies website:

[https://www.istellartech.com/news/en\\_news/8180](https://www.istellartech.com/news/en_news/8180)

### **RIKEN develops safe ammonia storage at normal temperature and pressure**

A research team from RIKEN and Saitama University has developed a new method for storing ammonia at normal temperature and pressure. It uses a special crystal that can convert ammonia into another substance and take it in. It may be possible to safely transport ammonia, which is expected to be an energy source for a decarbonized society.

Ammonia is a toxic gas at room temperature. In addition to being liquefied at low temperatures, it is also transported by compressing it under pressure, but this is time-consuming and costly, so there is a need for a method of transporting large quantities at normal temperature and pressure. RIKEN development team has discovered a type of perovskite-type crystal made of organic matter and metal that reacts with ammonia at room temperature and pressure.

It can be easily stored and transported. Since the color changes when it reacts with ammonia, it can also be applied to sensors that detect ammonia. In the future, they will look for a partner company to make it larger and aim to put it into practical use around 2030. Perovskite crystals are also being applied to next-generation solar cells.

RIKEN website:

[https://www.riken.jp/en/news\\_pubs/research\\_news/pr/2023/20230710\\_3/index.html](https://www.riken.jp/en/news_pubs/research_news/pr/2023/20230710_3/index.html)



### **JOGMEC revised technology business strategy**

The Japan Organization for Metals and Energy Security (JOGMEC) announced on July 26 that it has revised its technology business strategy for JOGMEC/TRC (Technology & Research Center). This is based on the new functions given to JOGMEC by the government's 6th Strategic Energy Plan and legal revisions in order to achieve both social demands and stable energy supply toward the realization of carbon neutrality in 2050.

In this revision, JOGMEC/TRC established three new pillars and technical bases for technological development and technical support, with the aim of contributing to carbon neutrality as well as a stable supply of energy.

Pillar 1: Maintain and expand stable energy supply (oil and natural gas business area)

Pillar 2: Contribution to CCS business promotion

Pillar 3: Challenge new businesses toward a carbon-neutral society (new business areas such as hydrogen and ammonia)

Technology base: Maintaining and strengthening human resources/technical capabilities that form the foundation for the above projects

JOGMEC website:

[https://www.jogmec.go.jp/english/news/release/news\\_10\\_00042.html](https://www.jogmec.go.jp/english/news/release/news_10_00042.html)

### **JERA signs memorandum with Saudi Arabian government fund for green hydrogen production**

On July 20, JERA announced that it has signed a memorandum of understanding that it started a feasibility study of a green hydrogen/ammonia production project with the Public Investment Fund (PIF) of Saudi Arabia's sovereign wealth fund, with the aim of supplying Japan and other international markets.

JERA established JERA Middle East & Africa Management in Dubai, UAE in October 2021. In addition to gas-fired power generation and desalination projects, it is constantly exchanging information with business operators in the Middle East region with a view to business development in a wide range of fields, such as large-scale renewable energy projects and low-carbon fuel



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production projects. Saudi Arabia is aiming for net-zero greenhouse gas emissions by 2060. PIF, which promotes strategic investment in highly public fields, is expected to play an important role in achieving this goal.

JERA believes that the Middle East region, which is rich in renewable energy resources, is a promising production base for green hydrogen and ammonia, and is working to build and expand a supply chain for hydrogen and ammonia in cooperation with leading companies in Japan and overseas.

JERA website:

[https://www.jera.co.jp/en/news/information/20230720\\_1568](https://www.jera.co.jp/en/news/information/20230720_1568)