



Monthly Japanese Industry and Policy News
March (March 3 - March 30) 2023

- This was compiled by "[Weekly Japanese Industrial and Policy News](#)".

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Legislation and Policy News

Extension of mid-drying period by cultivation of paddy rice is newly approved in J-Credit

On March 1, the Ministry of Agriculture, Forestry and Fisheries (MAFF) announced that the extension of the drying period for paddy rice cultivation, which reduces the emission of methane from paddy fields, has been approved for credit certification under the J-credit system. Implementation is scheduled for mid-April.

This methodology targets emissions reduction activities that curb methane emissions from the soil by extending the period of NAKABOSHI, which drains the water from the paddy field and dries the surface of the paddy field during the rice cultivation period. In order to reduce the amount of methane emitted from paddy fields, it is important to lengthen the period during which the water is drained. It has been confirmed that the amount of methane emitted can be reduced by 30% by extending the period of mid-drying, which is normally practiced in paddy rice cultivation, by seven days. Methane emissions from paddy fields account for about 40% of all methane emissions in Japan, and the reduction of methane emissions is included in the government's Global Warming Countermeasures Plan (approved by the Cabinet on October 22, 2021).

The J-credit system allows the government to certify the amount of greenhouse gas emission reductions as "credits" and enable transactions. In addition to "visualization" of emissions reductions by farmers, forestry and fisheries workers, they can earn sales income from credits generated by efforts to reduce and absorb greenhouse gases.

MAFF website (in Japanese):

https://www.maff.go.jp/j/press/kanbo/b_kankyo/230301.html



Zero Carbon City International Forum 2023 was held

The Ministry of the Environment (MOE), Japan, and the Office of Special Presidential Envoy for Climate, the United States of America, co-organized the "Zero Carbon City International Forum 2023" on March 1, 2023.

In the panel discussion of the first session, the role of cities that can take concrete climate actions according to regional characteristics through dialogue with citizens was reaffirmed, and the importance of dialogue between national and subnational governments (G7 and U7 dialogue) in promoting urban climate actions was also confirmed. They also exchanged views on how to expand the G7/U7 initiatives to the G20/U20, and confirmed that they will continue to increase the momentum of urban initiatives globally in preparation for COP28.

In the 2nd and 3rd session, speakers shared lessons of advanced efforts and discussed challenges and future activities on net-zero transition, and multiple benefits such as smart/compact cities, digital technologies, resilience, circular economy, and nature positive economy.

Throughout the forum, the importance of subnational actions on climate change, circular economy and biodiversity conservation was recognized, as well as the importance of close cooperation between national and local governments and international city-to-city collaboration to further promote subnational initiatives.

MOE website:

https://www.env.go.jp/en/press/press_01155.html

METI held Asian Zero Emission Community (AZEC) Ministerial Meeting and AZEC Public-Private Investment Forum

On March 4, 2023, the Ministry of Economy, Trade and Industry held the Asian Zero Emission Community (AZEC) Ministerial Meeting. In conjunction with this, on March 3, the AZEC Public-Private Investment Forum was held to create and accelerate concrete cooperation in the AZEC concept.

At the Ministerial Meeting, a joint statement was agreed including three common recognitions that (1) achieving both "decarbonization" and "energy security," (2) promoting "decarbonization" while achieving "economic growth," and (3) the path towards carbon neutrality should be "diverse and realistic" in



accordance with the circumstances of each country. In addition, it launched the “Asia Zero Emissions Community” as a framework.

At the Public-Private Investment Forum, Asian ministers and state-owned enterprises made comments on their respective efforts toward decarbonization and their expectations for cooperation with Japan. On the other hand, the nine Japanese companies that attended introduced their technologies and their own efforts toward decarbonization, and Japanese government agencies and others introduced related support. In conjunction with this forum, a total of 28 MOUs were newly announced in a wide range of decarbonization fields such as renewable energy, biomass, hydrogen, ammonia and LNG.

On March 3, it was announced that Japan's first hydrogen supply chain would be launched, with the support of the Japanese government, connecting Victoria, Australia, and Kawasaki, Japan, a major industrial hub. A memorandum of understanding was signed between the state of Victoria, Nippon Hydrogen Energy, Iwatani Sangyo, Electric Power Development, and Sumitomo Corporation in the presence of Minister of Economy, Trade and Industry Nishimura and Australia's Assistant Minister for Climate Change and Energy McAlister.

METI website:

<https://www.meti.go.jp/press/2022/03/20230306005/20230306005-24.pdf>

<https://www.meti.go.jp/press/2022/03/20230306005/20230306005-26.pdf>

Cabinet decided on Japanese government's participation in WTO MPIA (Multilateral Provisional Appellate Arbitration Arrangement)

On March 10, the Ministry of Economy, Trade and Industry (METI) announced that the cabinet decided to participate in the Multi-Party Interim Appeal Arbitration Arrangement (MPIA) for dispute resolution of the WTO.

The WTO dispute settlement system is a two-tier system consisting of a subcommittee (panel) and an Appellate Body to determine the consistency of disputed measures with WTO rules. However, since December 2019, the system's Appellate Body has ceased functioning. In response to this situation, in



April 2020, some WTO member countries proposed the Multi-party Interim Appeal Arbitration Arrangement (MLIT) as an interim response while the Appellate Body has stopped functioning. MPIA is a framework that provides for settlement by arbitration. As of March 2023, 52 countries and regions including the EU, Australia, Canada, China, Singapore, New Zealand, and Brazil are participating.

Currently, two disputes filed with the WTO by Japan have already been “empty appeals”, and no final settlement has been reached. In the future, further panel reports on the two disputes filed by Japan are scheduled to be issued. For these reasons, the Japanese government has decided to participate in the MPIA as a temporary measure until the dispute resolution function is restored.

METI website:

https://www.meti.go.jp/english/press/2023/0310_001.html

A bill to partially revise the Unfair Competition Prevention Act was approved by the Cabinet

On March 10, the Ministry of Economy, Trade and Industry (METI) announced that a bill to partially revise the Unfair Competition Prevention Act was approved by the Cabinet. It was mainly a revision of the intellectual property system, which was implemented with the aim of supporting new business development utilizing intellectual property by start-ups and SMEs.

The main revision points are (1) Strengthening protection of brands and designs in light of the diversification of business activities accompanying digitization, (2) Improvement of intellectual property procedures in response to the COVID crisis and digitization, (3) Development of systems for international business development; three main pillars. Among these, the main contents of the (1) above mentioned are as follows.

(1) Expansion of registrable trademarks

- According to the Trademark Law, trademarks that are similar to trademarks already registered by others cannot be registered. However, if the prior trademark owner agrees and there is no risk of confusion of origin, registration will be allowed.



- In certain cases, it will be possible to register trademarks that include names without the consent of others so that those who carry out business activities under their own names can use their names as trademarks.
- (2) Relaxation of requirements for design registration procedures
Relaxation of requirements for procedures to obtain remedies in cases where creators, etc. publish multiple designs before filing an application.
- (3) Prevention of counterfeiting in the digital space
Regarding acts of imitation of product forms, the act of providing products imitating others' product forms in the digital space will also be subject to acts of unfair competition, and it will be possible to exercise the right to demand an injunction.
- (4) Strengthening protection of trade secrets and restricted data
In services that share big data with other companies, even if the data is confidentially managed, it will be protected as limited provision data, and it will be possible to demand an injunction against infringement.

METI website (in Japanese):

<https://www.meti.go.jp/press/2022/03/20230310002/20230310002.html>

METI announced interim report on Hydrogen Security Strategy

On March 13, the Ministry of Economy, Trade and Industry (METI) announced an interim report on the hydrogen security strategy based on discussions at the study group on the hydrogen security strategy. In anticipation of the realization of a hydrogen-based society, it has been discussed since August 2022 with the aim of organizing the current status and challenges of hydrogen safety regulations at each stage of the hydrogen supply chain, and building an environment that encourages the safe use of hydrogen.

As a course of action for building a rational safety regulation system in cooperation with the public and private sectors ahead of the rest of the world, it aims to realize a hydrogen society and provide society with a safe and secure usage environment using Japan's world-leading hydrogen technology. To that end, the following three policies of action and nine specific measures were presented. At the same time, as part of the interim report, a technical map and progress schedule for hydrogen security were also released.



Action policy 1: Efforts based on scientific data and evidence through technological development

Means 1: Strategic acquisition of scientific data and sharing of data related to shared areas

Means 2: Realization of a smooth experiment/demonstration environment

Action policy 2: Rationalization and optimization of rules for the gradual implementation of a hydrogen society

Means 3: Concept of areas to be prioritized in the supply chain

Means 4: Clarification of the future path

Means 5: Developing and cultivating third-party certification bodies and inspection bodies

Means 6: Collaboration with local governments

Action policy 3: Development of hydrogen utilization environment

Means 7: Risk communication

Means 8: Human resource development

Means 9: Understanding trends in each country, efforts to harmonize regulations and formulate international standards

METI website:

<https://www.meti.go.jp/press/2022/03/20230313001/20230313001.html>

METI starts acceptance of subsidies for purchasing clean energy vehicles for FY 2022 supplementary budget

The Ministry of Economy, Trade and Industry (METI) announced on March 23 that it has started accepting applications for vehicle purchase subsidies for electric vehicles, plug-in hybrid vehicles, fuel cell vehicles, etc., for the FY 2022 supplementary budget. The transportation sector accounts for about 20% of Japan's carbon dioxide emissions, and automobiles account for about 90% of this. Toward the realization of carbon neutrality in 2050, it is important to spread clean energy vehicles with excellent environmental performance.

The FY 2022 supplementary budget for this subsidy is JP¥ 70 billion, and the subsidy will end as soon as the budget runs out. However, the system itself is scheduled to continue in FY 2023. The specific subsidy amounts are



JP¥ 650,000 to 850,000 for EVs, JP¥ 450,000 to 550,000 for micro EVs, JP¥ 450,000 to 550,000 for PHEVs, and JP¥ 2.30 to 2.55 million for FCVs.

However, although this system has been implemented every year for the past few years, the share of clean energy vehicles in total automobile sales is only about 2%, which is very small compared to Europe, the United States and China. In Japan, many automobile users believe that hybrid vehicles have good fuel efficiency and can reduce CO2 most efficiently, so it is difficult to completely eliminate ICE (Internal Combustion Engine) in the near future.

METI website in Japanese:

<https://www.meti.go.jp/press/2022/03/20230323002/20230323002.html>

Government procurement by the Ministry of the Environment, giving preferential treatment to eco-certified companies

On March 23, the Ministry of the Environment announced that it would give preferential treatment in public procurement to companies working to protect the environment through measures against global warming and recycling. Additional points will be added if the company is certified as an environmental conservation company in bidding for survey work and computer purchases. It encourages companies to work together on biodiversity and resource recycling in addition to climate change.

It utilizes the "Eco-First System," in which the Minister of the Environment certifies companies that engage in environmental conservation. The Ministry of the Environment launched the system in 2008, and as of February it has certified 54 companies. The Ministry of the Environment gives preferential treatment to certified companies over other companies by giving them additional points when they bid on eligible procurement projects.

For example, it is expected that the bidding will be for research and development to create basic data for policymaking, and public relations for environmental policies. Consideration will be given to preferential treatment, such as adding 5 points to certified companies out of a maximum of 200 technical points. It will apply from procurement announced after March 2022.



Ministry of the Environment (in Japanese):

https://www.env.go.jp/press/press_01357.html

METI formulates research and development plan for "Decarbonization of Thermal Processes in the Manufacturing Field"

The Ministry of Economy, Trade and Industry (METI) announced on March 28 that it has formulated a research and development and social implementation plan for the "Decarbonization of Thermal Processes in the Manufacturing Sector" project, which is scheduled to be implemented using the Green Innovation Fund. This was formulated based on discussions at the Industrial Structural Transformation Working Group for proper execution of the fund.

Specifically, with the aim of decarbonizing metal heating processes such as the pig iron casting manufacturing industry, the forging manufacturing industry, and the metal heat treatment industry, on the premise of establishing a cheap and large supply base for ammonia and hydrogen, By FY 2031, it will carry out essential research and development to advance the combustion technology required for carbon-neutral industrial furnaces and the conversion from combustion furnaces to electric furnaces.

METI website (in Japanese):

<https://www.meti.go.jp/press/2022/03/20230328006/20230328006.html>

Japan-U.S. important minerals supply chain strengthening agreement entered into force

The Ministry of Economy, Trade and Industry (METI) announced on March 28 that at the Office of the U.S. Trade Representative in Washington, D.C., between H.E. Ambassador Katherine Tai, United States Trade Representative and H.E. Ambassador Katherine Tai, "Agreement between the Government of Japan and the Government of the United States on Strengthening the Supply Chain of Important Minerals" (the Japan-U.S. Agreement to Strengthen the Supply Chain of Important Minerals) was signed and that the agreement came into effect.

METI explained on the website that the agreement is for an urgent issue to secure important minerals essential for the production of electric vehicle



batteries which is expected to continue to grow significantly in the future and it aims to build a strong supply chain through cooperation with like-minded countries.

METI website:

https://www.meti.go.jp/english/press/2023/0328_001.html

Survey and Business Data

Decarbonization of Japanese electricity achieved 90% by 2035, Japan-U.S. research institute estimates

A research team consisting of research institutes and universities in Japan and the United States announced on February 28, 2023 announced a report that depending on Japan's future decarbonization strategy, it was found that the ratio of the annual power generation of clean energy (renewable energy and nuclear power generation) in 2035 could increase to 90% which was 24% in 2019. Fossil fuel imports could be reduced by 85% in monetary terms, while the average wholesale cost of power generation could be reduced by 6% compared to 2020.

The report was published by a research team consisting of researchers from Lawrence Berkeley National Laboratory (LBNL), a US national laboratory, the University of California Berkeley, and Kyoto University. Based on the cost reduction trend of photovoltaic power generation, wind power generation (especially offshore wind power generation), and storage battery technology, they simulated the introduction of optimal power generation equipment in the future and conducted cost analysis at that time on an hourly basis.

As a result, it is assumed that by 2035 it will be possible to generate 90% of Japan's annual electricity demand from clean energy alone. At that time, 27% of the total annual power generation will be solar power, 26% will be wind power (especially offshore wind power), 20% will be nuclear power, and 6% will be biomass power. If looking only at renewable energy, including hydroelectric power generation, it will be 70%. In addition, the storage battery equipment connected to the power system is assumed to have a total rated output of 29 GW and a rated capacity of 116 GWh. At that time, the average wholesale



electricity cost will be 6% lower than in 2020. Considering the social cost of carbon, the wholesale power cost will be 36% lower than the previous year.

Lawrence Berkeley National Laboratory website:

<https://emp.lbl.gov/publications/2035-japan-report-plummeting-costs>

Japan ranks second worst for 7 consecutive years in 29 countries for ease of working for women

On March 7, the British magazine The Economist announced the 2022 ranking of 29 countries, mainly developed countries, that indexed the ease of working for women. Nordic countries occupy the top four countries, including Iceland at the top. Japan ranks 28th, with South Korea at the bottom. Japan and South Korea have remained in the same ranking for at least seven consecutive years since 2016.

The survey ranked workers based on 10 criteria, including wages, education levels, and gender disparities in labor force participation rates. It is conducted every year as an indicator of the "glass ceiling" that impedes the active participation of women. Sweden, which had held the top spot for two years in a row until last year, ranked second overall, followed by Finland, Norway, and Portugal.

Regarding both Japan and South Korea, the magazine pointed out that women are still in a situation where they have to choose between family and work. Among the 29 countries, Japan was the best in taking paid paternity leave, but the gender gap in salary levels and the percentage of women in key corporate positions and parliamentarians were either the worst or the close to that level.

The Economist website:

<https://www.economist.com/graphic-detail/glass-ceiling-index>

Company & Organization News

German Evonik to build new fumed alumina production plant for EV batteries in Mie pref.

On March 2, Evonik Industries, a major chemical company in Germany announced that it constructs a new plant to manufacture fumed alumina, a



material for lithium-ion batteries for electric vehicles (EVs), at its group company Nippon Aerosil Yokkaichi Plant (Mie Prefecture). Operations are scheduled to start in 2025.

The facility will be the first fumed alumina production plant in Asia. In Asia, the market for next-generation batteries and powder coatings for EVs is expanding. The construction of the new plant will accelerate the growth of the lithium-ion battery market and meet the needs of the rapidly growing battery industry in China, Japan and South Korea. The investment this time will be JP¥ several billion. Construction is scheduled to begin in the summer of 2023.

As a joint venture between Evonik and Mitsubishi Materials Corporation, Nippon Aerosil has been manufacturing fumed oxides at the same plant for more than 50 years, providing a stable supply of products to Asian countries.

EVONIK website:

<https://www.silica-specialist.com/en/service-center/press-releases/evonik-invests-into-fumed-aluminum-oxide-production-plant-expansion-for-battery-applications-in-yokk-192580.html>

Japan's main rocket "H3" No. 1 launch failure

Japan's new main rocket "H3" No. 1 was launched from the Tanegashima Space Center in Kagoshima Prefecture at around 10:37 am on March 7, but the ignition of the second stage engine was not confirmed. About 15 minutes later, the organization (JAXA) sent a command destruction signal to the aircraft from the ground, and the launch failed. On the same day, the Ministry of Education, Culture, Sports, Science and Technology set up a task force to investigate the cause.

The H3, the successor to the current flagship H2A rocket, was expected to participate in the global satellite launch market by reducing costs and increasing launch capacity, but it was a big blow to the government and JAXA. Japan's rocket failure follows the solid fuel rocket "Epsilon 6" in October last year.

The H31 is equipped with the government's earth observation satellite "DAICHI-3", which is used to assess the extent of damage in the event of a disaster. In



the future, H3 was scheduled to launch an unmanned resupply ship "HTV-X" that will carry supplies to the International Space Station (ISS) and a lunar orbiting base, and a satellite probe to Mars. It will be an important rocket in ensuring the autonomy of Japan's space development, and depending on the cause, there is a risk that it will have a long-term impact on future plans.

JAXA website (in Japanese)

https://www.jaxa.jp/press/2023/03/20230307-2_j.html

JAXA press conference (youtube in Japanese)

<https://www.youtube.com/user/jaxachannel>

Sojitz and JOGMEC sign Japan's first supply agreement with an Australian company for heavy rare earths

On March 7, Sojitz and the Japan Energy and Metals National Corporation (JOGMEC) announced that they signed a contract to supply heavy rare earths to Japan with Lynas, a major Australian rare earths company. Heavy rare earth elements are used in magnets for electric vehicle (EV) motors. According to the Ministry of Economy, Trade and Industry, it is the first time for Japan to acquire an interest in heavy rare earth. Japan depends on China for production of most of its heavy rare earth metals, and the aim is to secure a new supply chain.

Sojitz and JOGMEC will invest approximately 200 A\$ million (approximately JP¥ 18 billion) in Lynas by the end of March through Japan-Australia Rare Earth Co., Ltd., which was jointly established by Sojitz and JOGMEC in 2011. Through investment from Sojitz and others, Lynas will expand production of light rare earths, which it has been involved in, and will start producing dysprosium and terbium, which are types of heavy rare earths.

Sojitz will supply Japan with up to 65% of these heavy rare earth rare earths mined from the Mount Weld Mine (Western Australia). Rare earths are roughly divided into two types: light rare earths, which are the main raw materials of magnets for motors, and heavy rare earths, which are responsible for giving heat resistance to magnets. China currently produces almost all heavy rare earth metals.



Sojitz website:

<https://www.sojitz.com/en/news/2023/03/20230307.php>

MOL to build clean hydrogen and ammonia supply network in Thailand

Mitsui O.S.K. Lines (MOL) announced on March 6 that it will start working on building a clean hydrogen and ammonia value chain derived from renewable energy in Thailand. In addition to the company, Chiyoda Corporation, Electricity Generating Authority of Thailand (EGAT) and Mitsubishi Corporation will participate in this initiative.

In order to achieve the decarbonization target in Thailand, in the future, in the southern part of Thailand, they will build a series of supply chains from the production of clean hydrogen and ammonia derived from renewable energy to storage, transportation, use, and supply inside and outside the country. MOL will consider safe and efficient transportation means and methods for hydrogen and ammonia.

In January 2022, the Kishida Cabinet proposed the "Asia Zero Emissions Community (AZE)" concept to contribute to the decarbonization of Asia. In particular, Thailand is positioned as an important country, and it is expected that the movement toward carbon neutrality will further accelerate in the future.

MOL website:

<https://www.mol.co.jp/en/pr/2023/23024.html>

Osaka Gas to manufacture and export synthetic methane derived from non-fossil energy in Australia

On March 7, Osaka Gas announced that its subsidiary, Osaka Gas Australia Pty, will work with Australian company Santos to produce synthetic methane "e-methane" made from non-fossil energy sources such as green hydrogen, and export it to Japan and other countries. The methane can be used in existing city gas infrastructure and consumer equipment, and is expected to be used in the fields of power generation and transportation due to the smooth transition to carbon neutrality and the suppression of social costs.



Specifically, in Australia, e-methane will be produced from CO₂ recovered from industrial exhaust gas and natural gas liquefaction plants, and green hydrogen produced by electrolyzing water using renewable energy. The produced methane will be liquefied at LNG terminals owned by Santos or third parties and exported to Japan and other countries. In the future, they are considering the use of CO₂ captured from the air.

In FY2023, they will consider business details such as procurement of renewable energy and CO₂, site selection for manufacturing plants (assumed to be 10,000Nm³/h class), efficiency and process optimization during manufacturing, and business feasibility. The basic design will be completed in FY2024, the investment decision will be made in FY2025, and exports will begin in 2030. The initial target is 60,000 tons per year.

Osaka gas website:

https://www.osakagas.co.jp/en/whatsnew/_icsFiles/afieldfile/2023/03/07/230307.pdf

Nippon Express releases a CO₂ emissions calculation tool for international transportation

NIPPON EXPRESS HOLDINGS announced that it has started offering from March 6 "the NX-GREEN Calculator", a tool that can calculate CO₂ emissions from international air, sea, truck and rail transport on its website. "NX-GREEN Calculator" supports each transport mode of air, ship (including barges for river transport), truck, and railroads used in international transport routes. By simply entering the origin/arrival point, quantity, weight, and transportation mode, the CO₂ emissions from the point of departure to the point of arrival can be calculated and visualized.

The main features are that almost all cities, ports, airports and railway freight stations in the world can be specified as departure and arrival points, and CO₂ emissions of multiple transportation modes can be compared. It is also possible to calculate CO₂ emissions in a more detailed transportation simulation that specifies the transportation mode between transit points. It supports three languages, Japanese, English and Chinese, so that it can be used globally.



The NIPPON EXPRESS Holdings Group has developed and provided tools for visualizing CO2 emissions in domestic transportation, "One-Stop Navi" and "Ecotrans Navi."

NIPPON EXPRESS website:

<https://www.nipponexpress-holdings.com/en/press/2023/08-Mar-23-1.html>

Sumitomo Corporation starts collaboration with Israeli company on commercial production of green hydrogen

Sumitomo Corporation announced on March 9 that it will start collaborating with Israeli startup H2Pro on commercial production of green hydrogen. H2Pro was founded in 2019, as a start-up company from the Technion-Israel Institute of Technology. It has succeeded in producing 10kg/day of green hydrogen in 2022.

In addition, the company is currently conducting verification tests of green hydrogen production of 200 kg/day in collaboration with domestic petrochemical companies and renewable energy companies until the end of 2023. The company is aiming for commercial production of about 10 tons/day in the region. Sumitomo Corporation supports this demonstration experiment and the introduction of H2Pro's green hydrogen production equipment inside and outside the company group, and plans to start producing several hundred tons of green hydrogen per day in the latter half of the 2020s.

Currently, most commercially produced hydrogen is produced using low-cost fossil fuels such as coal and natural gas, and the production process emits CO2. Electrolysis of water is a method that does not emit CO2 during hydrogen production, but the problem is the high production and operating costs. H2Pro has a new hydrogen production technology "E-TAC" that utilizes electrolysis of water. The technology developed by the company uses electrodes to generate oxygen and hydrogen separately, eliminating the need for isolation membranes and greatly improving electrolysis efficiency.

Sumitomo corporation website:

<https://www.sumitomocorp.com/en/jp/news/topics/2023/group/20230309>



UK emerging quantum computer to be offered to Japanese companies at a low price from the second half of the year

Oxford Quantum Circuits (OQC), a start-up company from the Oxford University announced on March 14 that it will make quantum computers available in the cloud based in Japan. It will be installed in a facility in Tokyo of Equinix, a major US data center company. This will be the company's first overseas base outside of the UK, and will serve as a foothold for developing the global market.

OQC is developing a quantum computer that uses cryogenically cooled superconducting circuits. In Japan, the actual machine with 32 qubits, which is the basic unit of calculation and serves as a measure of performance, is installed. OQC is also linked with Amazon Web Services (AWS) cloud and can be connected from a remote location. It is characterized by the fact that it is easy to use for a wide range of companies.

RIKEN plans to release the first domestically produced quantum computer to companies and universities at the end of March. Compared to RIKEN, which is expanding its use in stages, OQC is expected to be available to a wide range of companies from the start of the service. OQC intends to provide low-cost services to Japan and capture diverse demand.

Quantum computers differ from conventional computers in terms of calculation principles, etc., and new know-how is required when using them. In the past, there were few actual machines in operation in Japan, and the opportunity to use it was limited to some large companies, but the entry of OQC may expand the base of use.

OQC press release on the PR TIMES (in Japanese):

<https://prtimes.jp/main/html/rd/p/000000001.000118311.html>

Mitsubishi Chemical Group considers world's first PC resin chemical recycling business

The Mitsubishi Chemical Group announced on March 15 that it has begun studying the commercialization of the world's first polycarbonate resin (PC resin) chemical recycling business. The aim is to achieve a processing capacity of 10,000 tons per year by 2030. Currently, the company is proceeding with the



construction of a demonstration facility at the Fukuoka Office (Kitakyushu City, Fukuoka Prefecture), aiming for completion in August 2023. Demonstration experiments will be completed within the same fiscal year, and specific commercialization studies will proceed.

Used PC resin is generally recycled by material recycling, which is molding after pulverization and melting. On the other hand, in chemical recycling, the used PC resin is depolymerized, returned to the raw material monomer, and then polymerized again. A wider range of used PC resins can be recycled into high-quality recycled PC resins.

In addition to establishing chemical recycling technology, the company is also aiming to build a recycling system for used PC resin, and plans to actively promote cooperation with companies that use PC resin in their products.

The Mitsubishi Chemical Group website:

https://www.mcgc.com/english/news_release/01528.html

Toray triples production capacity for hydrogen production equipment components

Toray Co., Ltd. announced on March 16 that it will triple the production of the core components of production equipment for "green hydrogen," which does not emit carbon dioxide (CO₂) during production. The production capacity of the German plant will be increased from 2023. Toray has a global market share of more than 50% for this component, and is responding to the growing demand for green hydrogen production equipment in line with the global decarbonization trend.

The production will be increased for the core component of the water electrolyzer that produces hydrogen through electrolysis, the catalyst-coated electrolyte membrane (CCM). Water electrolyzers are used to produce green hydrogen using renewable energy. Water is electrolyzed through the CCM and split into hydrogen and oxygen. New facilities will be installed at the production base of the German subsidiary acquired in 2015. It is scheduled to start operation in the fall of 2023. The investment amount, including increased



production of core components for fuel cell vehicles (FCV), is expected to reach nearly JP¥ 10 billion.

The German subsidiary is a pioneer in CCM and has been engaged in research and development for 20 years. It has commercialized hydrocarbon-based (HC) electrolyte membranes, which have higher production efficiency than fluorine-based membranes. CCMs manufactured in Germany currently use fluorine-based membranes, but will switch to HC electrolyte membranes in the future.

TORAY website:

https://cs2.toray.co.jp/news/eu/eu_newsrrs01.nsf/0/0E311D8D6AFA3DBA49258975000591A2?open

GE introduces offshore wind turbine with the world's largest output to the Japanese market

General Electric (GE) of the United States announced on March 17 that it will introduce an offshore wind turbine with the world's largest power generation capacity to the Japanese market. The aim is to improve power generation efficiency by increasing the amount of power generated per unit. In the Japanese market, where offshore wind power generation is expected to grow, it will introduce wind turbines with an output of 17,000 to 18,000 kilowatts, one of the largest in the world.

The output has been increased by about 30% by lengthening the rotating "blade" compared to conventional products. It is calculated that one unit can supply electricity for 24,000 households. The large wind turbines that are currently being marketed in the United States and other countries are currently in the process of acquiring a certification called "Class T", which can withstand typhoons, in order to receive orders in Japan as well.

Denmark's Vestas, Spain's Siemens Gamesa Renewable Energy, and GE are said to be the world's top three manufacturers of offshore wind turbines. GE will provide wind turbines to consortiums such as Mitsubishi Corporation, which were selected in all three waters, including off the coast of Akita Prefecture, in a large-scale offshore wind power public offering announced by the Japanese government in December 2021. Together with Toshiba, it is involved in the



domestic production, maintenance and operation of the nacelle, which is the driving part of the wind turbine.

GE Japan website (in Japanese):

<https://www.ge.com/news/press-releases/ge-17-18-megawatt-haliade-jp>

Marubeni starts demonstration of injection and delivery of green hydrogen in gas distribution pipes in Portugal

Marubeni announced on March 17 that it has launched Portugal's first green hydrogen injection demonstration project. The demonstration will be carried out through Floene, the largest gas distribution company in Portugal. Specifically, green hydrogen produced by a local company using electricity derived from solar power generation will be injected into an existing natural gas distribution pipeline via a new hydrogen distribution pipeline constructed by Floene. Delivers to approximately 80 consumer, commercial and industrial customers.

Portugal currently aims to inject 10-15% hydrogen into its gas distribution network by 2030, and the demonstration is expected to increase the hydrogen injection rate to up to 20% in two years. Floene boasts a market share of over 70% in gas distribution in Portugal. The number of delivery destinations is about 1.13 million households and businesses, the total length of pipelines is 13,498 km, and the annual delivery volume is 1.7 billion cm. Marubeni has invested in the company since 2016.

Marubeni website:

<https://www.marubeni.com/en/news/2023/release/00033.html>

CHITOSE GROUP starts operation of world's largest 5ha algae production facility

Chitose Group, a group of bio-venture companies, announced on March 20 that the world's largest 5ha algae production facility "CHITOSE Carbon Capture Central" (C4 / Sarawak, Malaysia) has been completed and started operation. C4 aims to produce 350 tons of algae biomass (dry weight) per year while fixing 700 tons of CO₂ per year.



C4 has started a long-term, large-scale algae production demonstration test for the production of sustainable aviation fuel (SAF), etc., using CO₂ contained in the exhaust gas emitted from the adjacent thermal power plant. According to the company, it is the world's largest demonstration of algae production using CO₂ in industrial exhaust gas. In the future, it will proceed with the development of a wide range of applications, such as chemical products, cosmetics, fuel, feed, and food, using the algae biomass produced at this facility as a raw material.

The Chitose Group is planning to expand the scale of algae production to 2,000 ha, and is proceeding with fund procurement for this plan. For algae production on a scale of 2,000 ha, it aims to establish a system that can supply 140,000 tons (dry weight) of algae biomass per year at a production cost of 300 JP¥/kg or less as raw material for products. In the future, it aims to produce 700 million tons (dry weight) of algae per year on a scale of 10 million ha at a production cost of 60 JP¥/kg or less.

CHITOSE Group website:

<https://chitose-bio.com/news/5155/>

JERA acquires European offshore wind power company Parkwind

JERA announced on March 22 that it would acquire Parkwind, a major Belgian offshore wind farm operator, through its subsidiary. The purchase price is expected to be approximately €1.55 billion (approximately JP¥ 220 billion).

Parkwind has extensive experience in the development, construction and operation of offshore wind power projects in Europe. Currently, there are four offshore wind power projects in Belgium (total power generation capacity: 771,000 kW; company's share of capacity: 420,000 kW) and in Germany, an offshore wind power generation project (generating capacity: 257,000 kW; company's share of capacity: 180,000 kW) is working on. In addition, it owns a total capacity of 4,526,000 kW (the company's share) as an offshore wind power project under development mainly in Europe.

Through this acquisition, JERA hopes to utilize Parkwind's know-how and knowledge in the offshore wind power generation business in Europe to



promote projects in which it is already participating and acquire new business development.

JERA website:

https://www.jera.co.jp/english/information/20230322_1109

Itochu and Resonac produce ammonia from waste clothing

Itochu and Resonac Holdings announced on March 29 that they signed a memorandum of understanding (MOU) to embark on ammonia production using used clothing made from chemical fibers. Itochu will manufacture and supply a solid raw material that is a mixture of chemical fibers and waste plastics contained in used clothing, and Resonac will start ammonia production at its Kawasaki Plant (Kawasaki City) by the end of FY2023.

Resonac, which uses materials derived from used clothing and waste plastics, is expected to reduce CO2 emissions by about 80% if the mainstream method with natural gas is replaced by new method. This is because, in principle, a new heat source is not required when producing hydrogen, and the CO2 produced as a by-product is also recovered and reused. Itochu will supply 1,000 tons of solid raw materials for ammonia production in the first year. The plan is to increase this to 10,000 tons by FY2027. It is estimated that about 9,000 tons of ammonia can be produced from 10,000 tons of raw materials.

Ammonia is generally produced by reacting natural gas and water at high temperature to generate hydrogen and synthesizing it with nitrogen. CO2 reduction by their new method is expected.

ITOCHU website (in Japanese):

https://www.itochu.co.jp/ja/news/press/2023/230329_2.html

JOGMEC strengthens relationship with Saudi Aramco to build ammonia value chain

Japan Organization for Metals and Energy Security (JOGMEC) agreed with Saudi Aramco, a state-owned company in Saudi Arabia, to consider areas of cooperation in the value chain of fuel ammonia, which is expected to be a future



low-carbon energy toward carbon neutrality, and it has signed a Memorandum of Understanding in the value chain of fuel ammonia on March 27, 2023.

In October 2022, JOGMEC and Aramco entered into a Memorandum of Cooperation to cooperate in project support, technology development, and human resource development for hydrogen and fuel ammonia, which are expected to be low-carbon energy sources in the future. Under this MOC, the two sides agreed to explore areas of cooperation in the fuel ammonia value chain and signed an MOU.

JJOGMEC is focusing on areas where synergistic effects can be expected, such as building a supply chain and financial support measures that will enable the large-scale and economical use of hydrogen and fuel ammonia produced in Saudi Arabia. Aramco aims to become a major producer of not only crude oil and natural gas, but also hydrogen and fuel ammonia, and Japan is expected to become a major consumer of hydrogen and fuel ammonia.

JOGMEC website:

https://www.jogmec.go.jp/english/news/release/news_10_00030.html

230 Japanese companies submit a statement to the G7 meeting, demanding decarbonization

On March 28, the Japan Climate Leaders' Partnership (JCLP) announced that it made a proposal to the Japanese government toward the G7 Climate, Energy and Environment Ministers' Meeting and the Hiroshima Summit (summit) calling for five commitments, including 100% zero-emission vehicles (ZEVs) excluding hybrid vehicles by 2035. JCLP is a corporate group that has a sense of crisis about climate change and aims to quickly realize a decarbonized society. As of 2023, 230 companies are members.

In the opinion, it is essential to maintain Japan's competitiveness by communicating Japan's stance of "renewable energy top priority" and "reducing dependence on fossil fuel energy sources" both domestically and internationally, as a signal to attract investment. emphasized. In addition, it is necessary to phase out coal-fired power generation, which has not taken measures to reduce emissions, as soon as possible. The line should be reviewed and, if necessary, further measures and corrective actions should be taken.



Furthermore, it is urgent to introduce carbon pricing that contributes to the rapid expansion of cost-effective decarbonization technologies. The outline of the commitment requested in the written opinion is as follows.

- Decarbonization of the power sector by 2035
- Prioritize renewable energy and reduce dependence on fossil fuels
- Early phase-out of coal-fired power generation
- Introduction of carbon pricing
- ZEV 100% in new passenger car sales by 2035

JCLP website:

<https://japan-clp.jp/archives/13383>