EU-Japan Centre for Industrial Cooperation
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JAPANESE INDUSTRY AND POLICY NEWS
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Legislation and Policy News

JCM's first credit issuance with Kenya 974 tons in solar power generation business

The Ministry of the Environment announced on February 12 that the credit for the Joint Crediting Mechanism (JCM) was issued for the first time between Japan and Kenya. The total amount of credits this time is 974 tons, of which the Japanese government has acquired 488 tons of credits.The project is supported by the Financing Program for JCM Model Projects by the Ministry of the Environment.

Based on the application from the project participants, on February 7, a joint committee consisting of representatives from both Japan and Kenya decided to issue JCM credits. A solar power generation system with a capacity of 991kW is installed in the area adjacent to the salt factory in Kilifi Province, Kenya, and all the generated power is consumed in-house at the factory.

The factory normally uses grid power, but in the event of a power outage, it also uses a diesel private power generator, so the business will be stable by the solar power generation system and the diesel private power generator by introducing the controller. This will replace the power consumption of grid power and diesel private power generation and reduce CO2 emissions.

The Joint Crediting Mechanism (JCM) aims to facilitate diffusion of leading decarbonization technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contribute to sustainable development of developing countries. Currently, there are 17 partner countries including Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand and Philippines.

MOE Japan website: http://www.env.go.jp/en/headline/2497.html

The salt factory in Kilifi Province from MOE Japan website

Achieves unmanned platooning technology for trucks following trucks on highways

The Ministry of Economy, Trade and Industry (METI) and the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) are aiming to solve the problems facing the logistics industry, such as the shortage of truck drivers, aging population, and improvement of fuel efficiency. With the goal of realizing driving technology, they have been developing vehicle technology and conducting demonstration tests of an unmanned system for following vehicles on the New Tomei Expressway.

Taking advantage of the results of the demonstration experiment, on Monday, February 22, they have realized unmanned platooning technology for following vehicles on trucks with the driver's seat of the following vehicle unmanned on the New Tomei Expressway.

The unmanned platooning technology for following vehicles of the truck realized this time is that three large trucks run in a group of vehicles with a distance of about 9 m at a speed of 80 km / h, and from the viewpoint of ensuring safety, experienced security personnel are in the passenger seat of the following vehicle.

The growth strategy has also upheld a goal that as a future effort, Japan should aim to achieve traveling of trucks having technologies equivalent to the Level 4 Autonomous Driving Technologies on expressways in and after FY2025. To this

end, it should hold discussions on a system for operation control targeting trucks with high performance.

METI website: https://www.meti.go.jp/english/press/2021/0305_003.html

METI website: Platoon shifting from the non-passing lane to the off-ramp for the Hamamatsu Service Area

Government decides to revise the Global Warming Countermeasures Promotion Law by Cabinet decision, "2050 Carbon Neutral" clarified

On March 2, the cabinet approved a bill to revise the Global Warming Countermeasures Promotion Law. The basic idea of "2050 carbon neutral" declared in October 2020 was clearly positioned as a law. It includes a mechanism for municipalities to certify areas that promote renewable energy, and a mechanism for promoting the digitalization and open data of corporate emission information. This bill will be submitted to the 204th ordinary session of the Diet.

In Japan, after declaring carbon neutrality in 2050, many local governments have announced zero-carbon cities in the region. In addition, with the progress of ESG finance, the number of companies engaged in decarbonization management such as information disclosure and target setting regarding climate change is increasing, and it is spreading to local companies through the

supply chain.

The outline of this law revision is as follows.

(1) New establishment of basic philosophy based on the Paris Agreement and the 2050 Carbon Neutral Declaration.
Based on the goals set forth in the Paris Agreement, for the realization of a carbon-free society by 2050, it is stipulated as the basic idea of the integration and improvement of the environment, economy and society, and the close cooperation of the people and other stakeholders.

(2) Establishment of a plan / certification system to promote projects that promote decarbonization utilizing local renewable energy
To the local government implementation plan, municipalities should make an effort to establish promotion areas, environmental considerations, and policies regarding regional contributions related to projects that promote decarbonization utilizing local renewable energy. Then, for the projects plan that has been certified by the municipalities as conforming to the local public body implementation plan, special provisions * such as one-stop procedures for related laws and regulations will be applied.
* One-stop service for procedures related to the Natural Parks Act, Hot Spring Act, Waste Management Act, Agricultural Land Act, Forest Act, and River Act, and omission of procedures for the Environmental Impact Assessment Act at the stage of business planning.

(3) Promotion of digitalization and open data of corporate emission information to promote decarbonization management
Regarding the calculation / reporting / publication system for greenhouse gas emissions of companies, in principle, reporting by digital system will be made. And emission information of each business establishment, which has not been disclosed until now without going through the disclosure request procedure, will be disclosed without requesting procedures.

MOE of Japan: http://www.env.go.jp/press/109218.html

Shinjiro Koizumi, Minister of the Environment from MOE website

Survey and Business Data

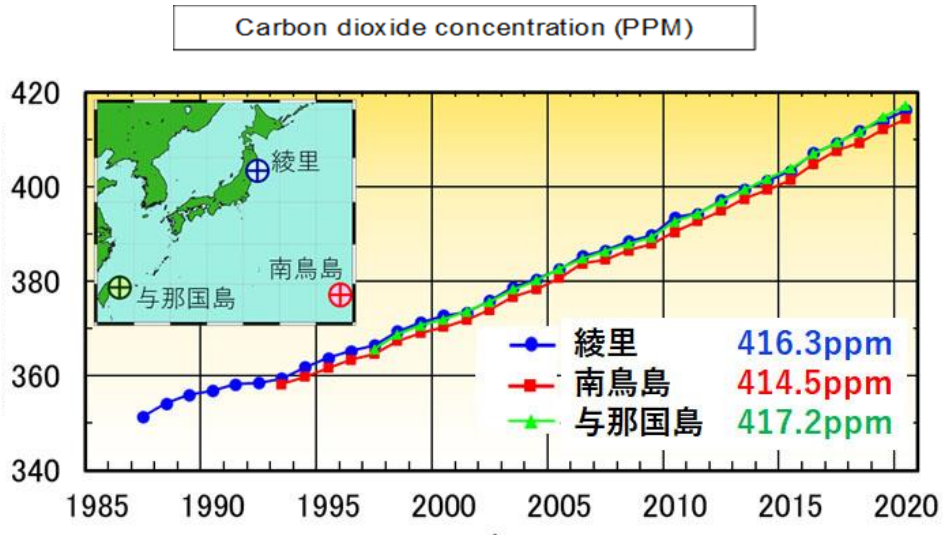
CO2 concentration near Japan continues to increase, Japan Meteorological Agency

On March 29, the Japan Meteorological Agency announced the observation results of carbon dioxide near Japan in 2020. The concentration of carbon dioxide in the atmosphere near Japan has been increasing year by year, and in 2020, it reached the highest level in the history of observations on land, at sea, and in the sky.

According to the report by the Global Carbon Project (GCP), carbon dioxide emissions in 2020 have decreased compared to the previous year due to the effects of movement restrictions and other measures associated with the spread of the COVID-19. However, the amount of decrease was within the range of natural year-to-year fluctuations in atmospheric carbon dioxide concentration, and could not be detected from the observed data of atmospheric carbon dioxide concentration.

About half of the carbon dioxide emitted by socio-economic activities is absorbed by land and ocean, and the annual increase is greatly affected by natural fluctuations. The Japan Meteorological Agency says that the concentration of carbon dioxide in the atmosphere near Japan continues to increase and will continue to be monitored.

JMA Website (in Japanese):
https://www.jma.go.jp/jma/press/2103/29a/2021co2.html



Company & Organization News

J-Power begins production of next-generation energy hydrogen in Australia, Transport to Japan

Electric Power Development Co., Ltd. (J-POWER) announced Feb. 1 commencement of hydrogen production from the coal gasification and hydrogen refining facility in the Japan-Australia Hydrogen Energy Supply Chain (HESC) project.

The Latrobe Valley (Victoria, Australia) coal is low-grade featuring low carbonization and high moisture and impurities content. Despite its huge deposit, it is not suitable for transportation mainly due to its high moisture content. Most of the coal remains unused except for limited purposes like consumption at power plants adjacent to mining areas.

This project aims to develop and demonstrate technologies for the production, storage and transportation of clean hydrogen from Latrobe Valley coal, and to establish a supply-chain of hydrogen through to the use in Japan. It is

subsidized by the New Energy and Industrial Technology Development Organization (NEDO) and the Commonwealth and Victorian governments, and is conducted by CO2-free Hydrogen Energy Supply-chain Technology Research Association and the Australian consortium consisting of Iwatani, Marubeni, Kawasaki Heavy Industries, J-Power, Sumitomo and AGL Energy Ltd.

J-Power is in charge of producing hydrogen from unused lignite in the project. This time, a demonstration facility for producing hydrogen was completed in Latrob Valley, Victoria, Australia, and hydrogen production by lignite gasification was started. In the future, hydrogen will be liquefied and loaded on a liquefied hydrogen carrier at Hastings Port, Victoria, Australia, and transported by sea to the liquefied hydrogen receiving base on Kobe Airport Island.

J-POWER website:
https://www.jpower.co.jp/english/news_release/pdf/news210201e.pdf

Coal gasifier and hydrogen refining facility from J-POWER website

Mitsubishi Heavy Industries establishes "MHI Vestas Japan", a sales company for wind power generation equipment

Mitsubishi Heavy Industries announced on Feb. 1 that it will sell onshore and offshore wind power generation facilities in Japan as part of strengthening collaboration with Vestas of Denmark in the renewable energy field centered on the wind power generator business. They established a joint venture "MHI Vestas Japan" and started operations.

Mitsubishi Heavy Industries has a 70% stake and Vestas has a 30% stake. Utilizing the network acquired by the Mitsubishi Heavy Industries Group through the power generation equipment business, and taking advantage of the strengths of both companies against the background of the track record of wind power generation equipment that Vestas has delivered so far, they sale Vestas' offshore and onshore wind power generation equipment and perform related technical support business in Japan

Global wind power growth is expected to double over the next decade. In addition, the Government of Japan has set the use of offshore wind power as the main power source as a pillar of maximizing renewable energy toward the realization of a carbon-free society in 2050. At the public-private council on Dec. 15, 2020 to strengthen the industrial power of offshore wind power, a goal has been set that the introduction of 10 million kW in 2030 and 30 to 45 million kW in 2040 in the offshore wind industry vision.

MITSUBISHI HEAVY INDUSTRIES website:
https://www.mhi.com/news/210201.html

From MITSUBISHI HEAVY INDUSTRIES website

Japanese "RE100" member companies reached 50, the second largest in the world, but there are challenges in procuring renewable energy

Japan Climate Leaders Partnership (JCLP) will newly announced on February 1 that Ichigo (Tokyo), Kumagai-gumi (Tokyo), Nikon (Tokyo) and Nisshin Foods Holdings (Tokyo) have declared "RE100" aiming for 100% renewable energy of electricity used in business activities. As a result, the number of Japanese companies that have declared "RE100" has reached 50.

The number of Japanese companies participating in the RE100 is second only to the United States in the world, accounting for one-sixth of the total RE100. According to JCLP, 60 overseas companies that declare RE100 are also expanding their business in Japan. In addition, more than 100 member organizations have joined the "Re-Energy 100 Declaration REAction", which aims to procure 100% renewable energy from small and medium-sized organizations. With this, the electricity demand of companies seeking 100% renewable energy procurement in Japan is close to 5% of Japan's electricity consumption (reference value, including overseas bases).

On the other hand, according to the latest RE100 annual report, Japan is one of the world markets where it is extremely difficult to procure renewable energy, despite increasing demand from companies. Due to the high cost and difficulty of obtaining renewable energy in Japan, the target year for achieving 100% renewable energy for many Japanese companies is 2050, which is different from the global average target year of 2028. Given that the Japanese government is currently considering revising Japan's basic energy plan from the perspective of the 2050 net zero target, JCLP said, "It will be noticed whether it can sufficiently meet the renewable energy demand of expanding companies".

Helen Clarkson, CEO of the environmental group "Climate Group", which hosts RE100 together with the international environmental NPO "CDP", announced his comments that "We welcome this memorable milestone, which reflects the growing demand of companies for renewable energy, but since the cost of renewable energy is high in Japan, it is difficult to switch to renewable energy promptly for major companies. Japanese policymakers have to aim for 50% renewable energy by 2030, in line with Net Zero's goal".
RE100 is a corporate collaboration initiative committed to 100% renewable

energy for the electricity that companies use in their businesses. In Japan, JCLP will support the participation and activities for Japanese companies as an official regional partner of RE100. JCLP is a corporate group unique to Japan that was established in 2009 with the recognition that the industry should have a sense of crisis and take positive action in order to realize a sustainable decarbonized society.

JCLP website: https://www.there100.org/our-work/press/50-member-companies-japan

Completed international hydrogen supply chain demonstration by Chiyoda corporation, etc. Supplying over 100 tons

Chiyoda corporation announced Feb. 2 that it had achieved its intended purpose and successfully completed the operation of the international hydrogen supply chain demonstration on December 25, 2020, aiming to use hydrogen transported from overseas for domestic power supply. It was the world's first demonstration.

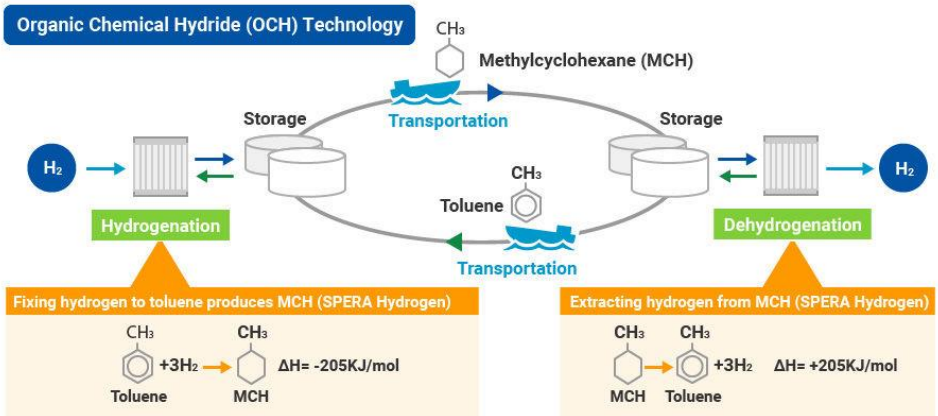
This demonstration was conducted by the Next Generation Hydrogen Energy Chain Technology Research Association (AHEAD), in which Chiyoda Corporation, Mitsubishi Corporation, Mitsui & Co., Ltd., and Nippon Yusen participate as member companies. They implemented it with the support of the New Energy and Industrial Technology Development Organization (NEDO).

The demonstration of the second phase (FY2017-2020) is based on the results of the basic technology examination of the first phase (FY2015-2017), and performed as the operation phase from equipment design / manufacturing / construction, test run to hydrogen supply chain operation.

In the demonstration, transporting methylcyclohexane (MCH) generated from hydrogen in the hydrogen supplying country (Brunei) by sea and supplying hydrogen in the hydrogen demanding country (Japan) were performed by making the best use of existing infrastructure. They have achieved the world's first international mass transportation and supply demonstration of hydrogen (more than 100 tons in 10 months of operation) safely and stably.

Chiyoda corporation confirmed that it is possible to scale up the hydrogen supply chain to a commercial scale using the "SPERA Hydrogen (R)".The company aims to start practical use (quasi-commercialization) in the mid-2020s by further reducing costs by repeating scale-up effects and further technological improvements in line with expanding demand for the early realization of a hydrogen-based society.

Chiyoda corporation website:
https://www.chiyodacorp.com/en/service/spera-hydrogen/innovations/



From Chiyoda corporation website

TEPCO participates in demonstration of floating wind turbines in Northern Europe, aiming for construction in Japan

A renewable energy company, TEPCO Renewable Power announced on Feb. 4 that it has participated in a demonstration project of a "floating" offshore wind turbine that floats a wind turbine in the sea. They invest in a Danish company that handles demonstrations and dispatch engineers. Utilizing the knowledge gained, they aim to build a floating power plant in Japan after the latter half of the 2020s.

TEPCO RP has invested in "Tetraspar Demonstrator," which is funded by European energy giant Royal Dutch Shell, German RWE and Stiesdal Offshore Technologies A/S. The investment amount is not disclosed, but TEPCO RP's investment ratio will be 30% next to Shell. Construction of a demonstration facility is currently underway, with plans to operate a floating wind turbine with an output of 3,600 kW in Norway in the summer of 2021.

It is a "Tetra spar" type facility that is relatively light even in floating wind turbines. TEPCO RP dispatches employees to the site and engages in operations such as equipment transportation and operation. TEPCO RP has set a goal of newly developing 6 to 7 million kilowatts of renewable energy by the first half of the 2030s, and gaining momentum to achieve the goal by gaining floating know-how.

The floating type is easier to construct even in Japan, where there are many deep waters, compared to the "landing type" where the base of the wind turbine is fixed to the seabed. Technological development is progressing worldwide, and demonstration operations are being conducted off the coast of Kitakyushu in Japan.

TEPCO website:
https://www.tepco.co.jp/en/rp/about/newsroom/press/archives/2021/20210204_01.html

Image of floating offshore wind turbine
From Stiesdal Offshore Technologies A/S website

Marubeni, Business alliance with Circularise B.V., introduction of traceability management platform to Asia for building a circular economy
Marubeni Corporation announced on February 8, 2021 that they entered into a business collaboration agreement with Circularise B.V., a Netherlands-based blockchain technology scale-up, to introduce a Traceability Management Platform developed by Circularise to the Japanese and Asian chemicals and plastics markets. Marubeni will conduct demonstration projects for this service together with its domestic clients and after the demonstration both organizations will investigate the benefits of a joint venture in Japan to commercialize Circularise's service.

Recently, the Circular Economy (CE) is in the spotlight due to a shortage of resources and energy triggered by mass-production, mass-consumption and mass-disposal. This is widely regarded as an important environmental and social issue. However, for building CE, it is necessary to mutually share traceability-related information on materials and services provided by each stakeholder in the circular supply chain.

This is achieved with The Platform developed by Circularise which consists of proprietary "Smart Questioning Technology" based on blockchain and zero-knowledge proofs (*1). It enables brands, OEMs and manufacturers to selectively disclose traceability-related information like recipes, specifications and processing conditions for raw materials; recycling history; evironmental indicators like carbon footprints and resource efficient data; and information on

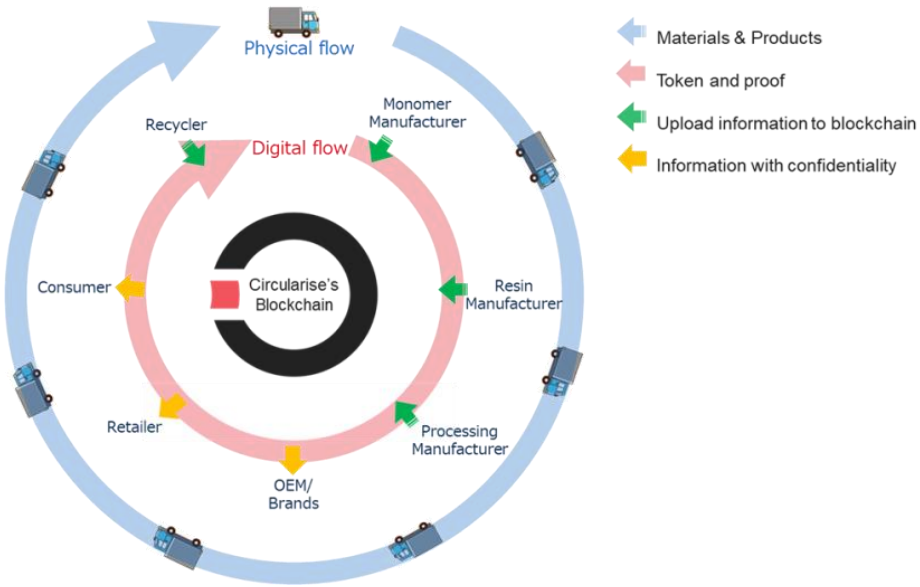
the company's compliance with SDGs and third-party certifications towards customers and regulators.

The Platform does all of this while still maintaining confidentiality, thus making more transparent and sustainable supply chains. In September 2020, Circularise was selected as one of the “EU Horizon 2020” (*2) companies by the European Commission, and is recognized as a provider of solutions to promote CE.

Marubeni will invite customers in the chemicals and plastics sectors to participate in the demonstration with the Platform in order to confirm its feasibility and identify functions to be improved.
(*1) A method by which one party (the prover) can prove to another party (the verifier) that they know a value x, without conveying any information apart from the fact that they know the value x.
(*2) Horizon 2020 is the biggest EU Research and Innovation program ever with nearly €80 billion in public funding available over 7 years (2014 to 2020) provided by the European Commission.

Marubeni website: https://www.marubeni.com/en/news/2021/release/00009.html

The Concept of the Platform in Chemicals Markets from Marubeni website



ITOCHU and Aquafil announce a strategic partnership to support and to expand the nylon circular business

ITOCHU Corporation and Aquafil S.p.A. announced on Feb.12 their strategic partnership to promote and expand the businesses of circular nylon production (hereinafter the "Partnership"). Taking this alliance as an opportunity, they will make full-scale efforts from the recovery of nylon waste to the development, production and sale of ECONYL® nylon products inspired by their common commitment for a sustainable future.

The global achievement of carbon neutrality is urgently necessary, and the improvement of the recycling rate of petrochemical products is recognized as one of the most important challenges. Nylon is used for textiles and plastic materials made through petrochemistry in a range of fields such as fashion, carpeting, fishing, food packaging, and automobiles. However, many products use nylon blended with other materials in a compound form, making it a difficult material to be recycled.

In 2011, Aquafil created its ECONYL® Regeneration System that turns recovered nylon waste such as fishing nets, carpets and post-industrial waste back to caprolactam (CPL), a crude raw material. Through its proprietary chemical recycling technology, Aquafil eliminates impurities completely, to achieve regenerated nylon product having the same features of the virgin quality materials.

ECONYL® nylon is made completely from waste, which enables up to 90% CO_2 reduction compared to conventional nylon made from petroleum. Focusing on the fashion and carpeting industries, ECONYL® nylon has been adopted as an environmentally friendly material by more than 2,000 brands around the world. In the fashion industry, it has drawn attention and received strong support from major fashion brands including Burberry, Gucci and Prada.

ITOCHU is the world’s largest dealer, in terms of quantity, of CPL and nylon chips, the raw materials of nylon. The utilization of ITOCHU’s nylon value chain corresponded the direction of Aquafil’s ECONYL® business, resulting in the purpose of this partnership. Moving forward, ITOCHU will leverage on its Group’s diverse network and expand sales for applications in fashion, carpeting,

automobiles, and packaging materials. Moreover, ITOCHU plans to enforce Aquafil's nylon waste recovery scheme using its existing sales chain and will also implement the Partnership from the perspective of the stable supply of raw materials to Aquafil. Through its collaboration from the recovery of waste to the sale of Aquafil's products, ITOCHU aims to expand the businesses of nylon circularity.

ITOCHU website: https://www.itochu.co.jp/en/news/press/2021/210212.html

Recycle image of ECONYL from ITOCHU website

NYK operates 44 MW wind power generation facility at Belgian finished vehicle terminal

On February15, Nippon Yusen announced that it started operation 11 wind power turbines installed at the completed vehicle terminal at the port of Seebruge, Belgium, which is owned and operated by the Belgian subsidiary International Car Operators (ICO). It is said to be the largest onshore wind farm project in the Flanders region of the country.

With a total power generation capacity of 44 MW, it will be able to meet 100% of the annual power demand in the terminal, and it plans to sell some surplus power. In the future, utilizing the knowledge cultivated at the port of Zeebrugge,

it will also consider horizontal expansion to the finished vehicle terminals operated by NYK around the world.

ICO will operate a terminal dedicated to finished vehicles at the ports of Zeebrugge and Antwerp as gate ports for import and export of finished vehicles in Europe. Regarding the wind power generation business at the completed vehicle terminal, ICO has established and operates a joint venture, ICO Windpark, with Portfineco, an affiliate of the Port Authority of Zeebrugge and ENGIE, a renewable energy company.

In the future, NYK will consider utilizing the knowledge cultivated at Zeebrugge for finished-vehicle logistics terminals operated by NYK Group companies throughout the world.

NYK Line website: https://www.nyk.com/english/news/2021/20210215_01.html

Wind turbine installed in the finished vehicle terminal from NYK Line website

ITOCHU announced strategic joint venture with Air Liquide on hydrogen value chain development

ITOCHU Corporation announced on Feb. 26 that it has agreed to a strategic collaboration on the development of a hydrogen value chain that covers all aspects from upstream to downstream (low-carbon hydrogen production to its utilization), with Air Liquide Japan G.K., the Japanese subsidiary of Air Liquide (France), the world's largest industrial gas company driving the worldwide

hydrogen business, and ITOCHU ENEX Co., Ltd.. The three companies have signed a memorandum of understanding to this effect.

ITOCHU, Air Liquide and ITOCHU ENEX will start by considering local-production-for-local consumption business models in major metropolitan areas, and jointly explore a competitive hydrogen production, supply system and the expansion of the hydrogen station business as part of efforts to help scale up the hydrogen market for industry, including the mobility market. The three companies will be further developed to promote the hydrogen business in Japan and overseas, with the aim of establishing a world-class hydrogen value chain in anticipation of future hydrogen imports to Japan.

ITOCHU's wide-ranging networks focused on consumer-related sectors, in addition to ITOCHU Enex’s customer base and energy distribution systems as a major domestic energy trading company, will be used to demonstrate the comprehensive capabilities of the ITOCHU Group and promote the development of the hydrogen market.

As one of the international major gas companies and joint chair of the Hydrogen Council, Air Liquide has firmly established its position as a global leader championing the utilization of hydrogen. Air Liquide expanded to Japan in 1907 and has supplied industrial and medical gases along with related equipment and services to various industries.

ITOCHU, for its part, will aim to accelerate the development of sustainable energy systems through these initiatives, ensure "contributions to the SDGs and improved efforts" as one of the basic policies of its next medium-term management plan, and achieve a low-carbon society.

ITOCHU website: https://www.itochu.co.jp/en/news/press/2021/210226.html

FCV station from Air Liquide website

Euglena completes bio-jet fuel to fly by the end of the year

Euglena Co., Ltd. (Euglena) announced on Mar.15 that the fuel conforming to the "ASTM D7566 Annex 6" standard has been completed. It is an international standard for biojet fuel manufacturing technology at the "Biojet Diesel Fuel Manufacturing Demonstration Plant", which manufactures biofuels for aircraft from Midorimushi (= Euglena in Japanese), etc.

The Euglena biojet fuel completed this time is manufactured by the BIC process of the biofuel production demonstration plant using fats and oils derived from the microalga Euglena (Japanese name=Midorimushi) and used cooking oil. An external inspection agency conducted a conformity inspection to the ASTM D7566 Annex 6 standard and passed it.

Euglena Co., Ltd. started supplying biodiesel fuel in advance of April 2020, and since the prospect of starting supply of biojet fuel is also in sight, the world's first Euglena biojet fuel will be used within 2021. In the future, they will proceed with final coordination with air carriers and aviation bureaus toward the realization of flights.

Euglena's biofuel production demonstration plant is the biofuel production technology "isoconversion process technology (BIC process)" jointly developed by Chevron Lummus Global (CLG) and Applied Research Associates (ARA) in the United States is adopted. This BIC process acquired the new standard of "ASTM" in 2020. This is the first time in the world that a bio-jet fuel that conforms to the acquired ASTM certification has been completed.

Euglena website: https://www.euglena.jp/wp20160902/wordpress/wp-content/uploads/2021/03/Euglena-CLG-and-ARA-Announce-Successful-Production-of-Renewable-Jet-Fuel.pdf

Euglena bio Jet fuel from Euglena website

The world's largest waste power generation in Dubai with a power generation capacity of 200 MW

On March 29, ITOCHU Corporation announced that a business company invested by six companies including the company and Hitachi Zosen Innova, has signed a project finance-based loan agreement worth US $ 900 million about the waste treatment and power generation business in Dubai.

This project is the first and world's largest waste treatment and power generation facility in the Emirate of Dubai, and a construction, operation and relocation (BOT) concession contract has been signed with the Dubai City Administration Agency, which is the competent authority for waste administration in the Emirate. It was contracted in December 2020.

Located in the Warsan industrial zone about 15km east of central Dubai, it treats about 1,900,000 tons of general waste annually and uses the heat generated during incineration to generate electricity. The power generation capacity is about 200 megawatts. In addition, metal resources will be collected and recycled from the incineration ash remaining after waste incineration. The project period is 35 years.

For this project, in addition to ITOCHU and Hitachi Shipbuilding Innova, DUBAL Holding (United Arab Emirates, Dubai), Dubai Holding (same), BESIX (same), Tech Group (US) have formed a consortium and established Dubai Waste Management Company P.S.C. (DWMC) as a special purpose company.

On Mar. 28, DWMC signed a loan agreement with International Cooperation Bank, Sumitomo Mitsui Banking Corporation, Mizuho Bank, Society General Bank (France), KFW-IPEX Bank (Germany), Standard Chartered Bank (UK), Credit Agricole Bank (France) and Siemens Bank(Germany). In addition, Nippon Export and Investment Insurance will insure some loans from private financial institutions.

Itochu website: https://www.itochu.co.jp/en/news/press/2021/210329.html

Rendering of waste treatment / incineration power generation facility to be constructed from Itochu website

Other Topics

Japanese and European space agencies conclude agreements on two missions, provide mutual support by providing equipment

The Japan Aerospace Exploration Agency (JAXA) announced on February 5 that Hiroshi Yamakawa, the president of JAXA and Jan Wörner, Director-

General of European Space Agency (ESA) had an online meeting. At this meeting held on February 4, the progress of a wide range of cooperation projects such as JAXA and ESA's earth observation, space science and exploration were confirmed. And the cooperation between ESA's binary asteroid exploration project "Hera" and JAXA project regarding the Mars satellite exploration project "MMX" was also confirmed.

Hera is an ESA-led asteroid exploration mission featuring collaboration with the National Aeronautics and Space Administration's (NASA) DART. First, NASA's DART will be launched in June 2021 and will head for one of the near-Earth asteroids, "Didymos" (estimated diameter 780m). Didymos is a binary asteroid paired with "Dimorphos",(estimated diameter 160m) and DART's mission is to collide a spacecraft with the smaller Dimorphos to change its orbit.

Hera will be launched in 2024 and will enter an orbit around Didymos in 2026. Hera observes Dimorphos after the collision of DART including the state of the surface like a new crater expected to be formed by the collision, the internal structure, and mass, etc. The mission of DART and Hera will contribute to the "Planetary Defense" initiative to change the orbit of asteroids that may collide with the Earth in the future and prevent damage.

On the other hand, MMX is a mission led by JAXA, whose main purpose is to land a spacecraft on the moon Phobos of Mars, take a sample of the surface, and bring it back to Earth. The asteroid explorer "Hayabusa 2" and the first "Hayabusa" took samples with a momentary touchdown, but in MMX, the spacecraft stays on the surface of Phobos for several hours and takes a sample of which is deeper than 2 cm from the surface.

JAXA website: https://global.jaxa.jp/news/2021/#news17957

An imaginary view of the MMX spacecraft arriving in the Martian sphere (Credit: JAXA)

The HondaJet is the most delivered aircraft in its class for the fourth consecutive year

Honda Aircraft Company announced on Feb. 24 that in 2020, the HondaJet was the most delivered aircraft in its class for the fourth consecutive year, based on data provided by the General Aviation Manufacturers Association (GAMA). During 2020, Honda Aircraft Company delivered 31 aircraft to customers globally.

“While the COVID-19 pandemic has led to a decline in overall business jet deliveries compared to previous years, we also have seen it accelerating the shift to safer and more sustainable modes of transportation,” stated Honda Aircraft Company President and CEO Michimasa Fujino. “HondaJet deliveries quickly recovered to pre-COVID-19 levels by the end of the year, showing that customers around the globe continue to choose the HondaJet. This includes many first-time business jet owners, who have come to realize the benefit of traveling private. We believe that the HondaJet will keep contributing to the recovery of the global business aviation market.”

In 2020, Honda Aircraft Company expanded its global footprint with type certifications in Pakistan and Russia. Honda Aircraft Company’s sales and service footprint now spans North America, Europe, Latin America, Southeast Asia, China, the Middle East, India, Japan and Russia. The HondaJet fleet

continues to grow - currently, over 170 HondaJets are operated worldwide with more than 68,000 flight hours. The HondaJet also continues to demonstrate its industry-leading dispatch reliability.

To support the global HondaJet fleet, Honda Aircraft Company continues to strengthen its service and support network. In 2020, the company added a new service center and flight training center in the UK.

Honda website: https://global.honda/newsroom/news/2021/c210225beng.html

From Honda website

To mass production of Terumo "1 bottle 7 times" syringe without waste of vaccine

Terumo Corporation has developed a syringe that can inoculate Pfizer's COVID-19 vaccine seven times from one bottle. It is mass-produced in Japan from the end of March, and about 20 million will be produced by the end of March 2022.

By shortening the needle to fit the Japanese body shape and designing it integrally with the main body, the amount of chemical solution remaining in the syringe was reduced. It was possible to inoculate only 5 times with a normal syringe and 6 times with a special syringe. The government is going to allow it to be used in the medical field.

On Mar. 5, the manufacturing and marketing approval of the Ministry of Health,

Labor and Welfare was obtained. It will be produced at the existing equipment of the Kofu Plant (Yamanashi Prefecture). The government buys all the syringes. It is expected that shipments will be made sequentially after this spring, but the government will work on a specific supply plan in the future. After April 2010, production will be increased by adding manufacturing equipment.

Development began at the end of January at the request of the Ministry of Health, Labor and Welfare. It is a kind of special "loaded product" in which the amount of chemical solution remaining in the syringe is small. It has been improved for subcutaneous injection, which was launched for influenza vaccines in 2009, and is compatible with intramuscular injection used for COVID-19 vaccine.

The standard needle for intramuscular injection is 25 mm long, but the new product is 16 mm long. Terumo has determined that even 16 millimeters can reach muscles in the Japanese body, which has thinner subcutaneous fat and more lean shapes than Westerners. The amount of chemical remaining is 0.002 ml, which can be reduced to about one-fifteenth that of conventional general loaded products. By shortening the needle and integrating it with the syringe, the amount of drug solution that stays inside has decreased. In-house verification revealed that seven doses could be collected from the same amount of drug solution as one bottle of Pfizer vaccine.

Terumo website (Japanese)
https://www.terumo.co.jp/pressrelease/detail/20210331/1172/index.html

A syringe newly developed by Terumo for the COVID-19 vaccine (bottom). Needle longer than for conventional subcutaneous injection (top). Photo from FNN prime online

Purifying sewage with oyster shells, small and medium-sized enterprise in Hiroshima developed "toilet that does not drain water"

Eiwa Land Environment Co., Ltd. (Hiroshima) has developed "Aquamake", a toilet that decomposes and purifies human waste with the power of microorganisms and reuses it as washing water to prevent drainage. There are about 700 installation records so far, mainly by local public organizations. It is making efforts to popularize it as it will lead to the realization of the sixth goal of the United Nations SDGs, "Safe and clean water and toilets."

The feature of the company's products is that they are purified using oyster shells, a special product of Hiroshima prefecture. The inside of the sewage tank is divided into 7 layers, and the first 3 layers have the same structure as a normal septic tank. The power of natural microorganisms purifies raw sewage with a biochemical oxygen demand (BOD) of 260 milligrams per liter to about 20 milligrams. Furthermore, the oyster shells and activated carbon in the remaining 4 tanks are used to clean up to 5 milligrams, where fish can live, and reused as washing water. The reason for using oyster shells is that microorganisms settle on the porous surface and the purification capacity increases. It also has the effect of dissolving calcium carbonate and neutralizing nitric acid derived from ammonia.

The company's SDGs support was triggered by the fact that it was adopted as a dissemination / demonstration project by the Japan International Cooperation Agency (JICA)'s SME overseas expansion support project. It was exported in 2018 to install at the Polonnaruwa site, a World Heritage Site in Sri Lanka. Currently, the installation work has almost been completed, but unfortunately the completion inspection has been suspended due to the COVID-19 wreck.

With a septic tank, only one place can be installed in one place, and in order to install multiple toilets, it is necessary to draw a drain pipe to the septic tank. But Aquamake can be installed in any number of places without a drain pipe. Demand is also expected in developing countries where it is difficult to install clean toilets, especially in rural areas.

Eiwa Land Environment website: https://www.ecoeiwa.co.jp/aqwamake-product-english/

Put oyster shells in the treatment tank (constructed in Sri Lanka)
From Eiwa Land Environment website