



Monthly Japanese Industry and Policy News
March (March 1 – March 28) 2024

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

Legislation and Policy News

Offshore wind power generation expands into EEZ

On March 12, the government approved a bill to revise the Renewable Energy Maritime Utilization Act, which would expand the installation location of offshore wind power generation from the current territorial waters to the exclusive economic zone (EEZ). Taking advantage of Japan's advantage of being surrounded by the sea, it will expand the range of areas suitable for renewable energy and aims to achieve net zero greenhouse gas emissions by 2050. Based on the Renewable Energy Sea Area Utilization Act, the winning bidder can occupy the waters within Japan's territorial waters for up to 30 years. Currently, offshore wind turbines that are fixed to the seabed are the mainstream, but in the EEZ, floating wind turbines that can be installed even in deep waters are expected to become mainstream.

In anticipation of the spread of floating structures, the government will create a new system that will allow business operators to install power generation equipment for long periods of time even in EEZs. Compared to territorial waters, EEZs require a two-step process for businesses to obtain permission to use them. First, the business operator submits a draft of the offshore wind power installation area and implementation plan and receives provisional permission from the government. After that, the business operator and the government will hold a council that includes fishermen and other local stakeholders to provide explanations. If understanding is gained, the government will issue formal installation permission to the operator.

You Tube METI Channel:

<https://www.youtube.com/watch?v=gwv-fH8baZo>

Japan, the US, South Korea and Australia will contribute \$33 million to IPEF's decarbonization fund



On March 14, Minister of Economy, Trade and Industry Takeshi Saito attended an online ministerial meeting of the Indo-Pacific Economic Framework (IPEF), a new economic zone initiative involving 14 countries including Japan, the United States, and Australia. They confirmed that Japan, the United States, Australia, and South Korea will contribute a total of \$33 million to a fund to help decarbonize emerging countries. IPEF member countries had agreed to establish the fund in November 2023. It is envisioned that it will be used in projects such as introducing renewable energy within the region. The meeting also announced that the United States will hold an in-person ministerial meeting in Singapore in June 2024. As a joint project to support decarbonization among participating countries, it was agreed to establish new working groups in areas such as "clean electricity" such as renewable energy and "sustainable aviation fuel," in addition to hydrogen, which Japan has led. IPEF has been attended by 14 countries including Japan, the United States and Southeast Asia, and has been negotiating on four themes. Although measures had been compiled by November 2003 in three areas: "clean economy" to encourage decarbonization, "fair economy" to prevent tax evasion, and "strengthening of supply networks," there remains an agreement on "trade facilitation." was carried over.

METI website:

https://www.meti.go.jp/english/press/2024/0314_001.html

Bank of Japan cancels negative interest rate

The Bank of Japan (BOJ) decided to end its negative interest rate policy at its monetary policy meeting on March 19. The policy interest rate, which had been set at minus 0.1%, was raised to around 0-0.1% (uncollateralized overnight call rate). The Bank also decided to control long-term and short-term interest rates (yield curve control, YCC) to keep long-term interest rates low and to end purchases of risk assets such as exchange-traded funds (ETFs). When asked why he decided to lift the negative interest rate policy this time, Governor of BOJ Ueda explained the reason for the decision to raise interest rates for the first time in 17 years, saying, "The virtuous cycle of wages and prices is becoming stronger." The negative interest rate policy is a clever scheme in which BOJ charges a minus 0.1% interest rate on some of the money private banks deposit with the BOJ, allowing private banks to increase lending instead of hoarding money, thereby improving the money flow. However, corporate borrowing demand did not increase dramatically, and the side effects such as



the weaker ¥JP became significant, so Governor Ueda, who took office last year, has been looking for the timing to lift the restrictions.

Bank of Japan YouTube Channel:

https://www.boj.or.jp/en/mopo/mpmdeci/mpr_2024/k240319a.pdf

747 organizations participate in GX League

The Ministry of Economy, Trade and Industry (METI) announced on March 27 that 179 new organizations will join the GX League from FY 2024, bringing the total to 747 organizations. The GX League is a framework that drives green transformation centered on large companies, and as of 2023, 568 organizations are participating. Participating organizations have set their own greenhouse gas emission reduction targets for 2025 in addition to 2030, and are taking on the challenge of reducing them, as well as participating in emissions trading that is currently being implemented on a trial basis. They also actively discuss and make proposals regarding the creation of rules that would be difficult to tackle on an individual company basis, with regard to reducing emissions throughout the supply chain and introducing green products. By industry, a wide range of industries will newly participate from FY 2024, including the transportation sector such as aviation, railways, and land transportation, as well as semiconductor manufacturing, real estate, and information and communication industries. The GX League is a framework that covers over 50% of Japan's greenhouse gas emissions.

METI website (in Japanese):

<https://www.meti.go.jp/press/2023/03/20240327003/20240327003.html>

Next-generation fighter jets can now be exported to third countries

At a cabinet meeting on March 26, the government revised the operational guidelines for the Three Principles for Transfer of Defense Equipment in order to lift the ban on the export of the next-generation fighter aircraft jointly developed and produced by Japan, the UK, and Italy to third countries. The export destinations have been narrowed down to countries with which it has agreements for the transfer of defense equipment and technology. Until now, when finished defense equipment developed and produced internationally was exported from Japan, it was only allowed to be exported to development partner



countries. The revised guideline has made it possible to export this to third countries. However, it made clear that the cabinet would decide on each individual project when it comes to actually exporting it. Also, this time the approval is limited to next-generation fighter jets. Additionally, requirements for export destinations for the next fighter jet were also written down. It was limited to countries that are signatories to international agreements requiring its use to be consistent with the purposes and principles of the United Nations Charter. In order to export other jointly developed defense equipment to a third country, it must be added to the operational guidelines after consultation with the ruling parties. Japan, the UK, and Italy will soon begin full-scale negotiations regarding the division of roles among companies. Britain and Italy were pressing Japan to make efforts to export to third countries.

METI website (in Japanese)

<https://www.meti.go.jp/press/2023/03/20240326006/20240326006.html>

Digital Agency will formulate data distribution guidelines this fall

On March 25, the Digital Agency announced the "International Data Governance Advisory Committee," was established which will serve as a forum for public-private discussions to create a common information infrastructure that promotes the international flow of corporate data. It will gather the leaders of companies representing each industry to accelerate the development of an environment that is lagging behind the United States and Europe. First, it will establish a system for each industry to share data based on common specifications within Japan. One of the foundations envisaged by the Digital Agency is a system for sharing information on greenhouse gas emissions and material procurement throughout the supply chain. From the perspective of economic security, there is also a growing need to understand the situation at suppliers. Once industry-specific data sharing methods are established, it will be easier to collaborate with similar frameworks that are taking precedence overseas. Europe is proceeding with an initiative called GAIA-X. In the United States, the giant IT (information technology) company GAFAM is central to expanding data collection and analysis. Japan is lagging behind other countries in terms of domestic infrastructure development, and is aiming to catch up through public-private consultations.



Digital Agency website (in Japanese):

<https://www.digital.go.jp/councils/global-data-governance-advisory/972b24ec-1b12-4695-be5d-c564e1f10ed1>

A council on nuclear fusion with 50 companies launches

The Cabinet Office announced on March 22 that it will launch an industry council in March with approximately 50 participating companies, aiming to realize fusion power generation. Research into nuclear fusion power generation is becoming more active, with startups appearing overseas aiming to realize it in the 2030s, and related companies in Japan are gathering to give momentum to development and market development. The name of the council is "Fusion Energy Industry Council (J-Fusion)." The number of member companies is approximately 50 as of December 2023, and recruitment of additional members will begin in April.

The chairman of the council was KYOTO FUSIONEERING, a startup that develops nuclear fusion-related equipment, and the vice chairman was Sumitomo Corporation and Helical Fusion. In addition to executives from companies involved in the production of fusion reactors such as Mitsubishi Heavy Industries and IHI, the company also includes Mitsui & Co. and NTT. The council will serve as a contact point for the private sector regarding the fusion industry, introducing advanced examples from Japan and abroad and matching companies with related companies. They will also make recommendations to the government regarding safety regulations and technology standardization aimed at realizing fusion power generation.

YouTube Government Online:

https://www.gov-online.go.jp/press_conferences/minister_of_state/202403/video-282333.html

Survey and Business Data

Global PC demand will increase by 0.4% in 2024, recovering due to replacement demand

The Japan Electronics and Information Technology Industries Association (JEITA) announced on February 29 that the global demand for personal computers (PCs) in 2024 is expected to increase by 0.4% from the previous



year to 238 million units. A recovery is expected due to the end of support for Microsoft's operating system Windows 10 in 2025 and demand for replacement PCs for working from home. JEITA predicts that demand will remain strong and continue to increase after 2024, with a 1.7% increase to 242 million units in 2025 and a 0.2% increase to 242.5 million units in 2026. On the other hand, sales in 2023 were 237 million units, down 9.4% from the previous year. The decline was a reaction to pre-empting demand due to the spread of working from home due to the COVID-19 pandemic.

JEITA also announced that global demand for televisions in 2024 is expected to decrease by 0.6% from the previous year to 208.67 million units. In emerging countries, demand is expected to increase slightly due to economic growth, but it is expected to remain almost flat until 2028 as the proportion of video viewing on smartphones will increase due to an increase in video content. In 2023, sales were 210.01 million units, down 2% from the previous year. As the effects of the COVID-19 pandemic subsided, people spent less time at home and watched more videos on smartphones.

JEITA website (in Japanese):

<https://www.jeita.or.jp/japanese/topics/2024/0229.pdf>

Company & Organization News

Toshiba signs contract with Belgian company for hydrogen production equipment technology

Toshiba announced on February 29 that it has signed a licensing agreement with material technology developer Bekaert (Belgium) for core technology for hydrogen production equipment. The contract fee associated with the license is not disclosed. Toshiba will develop and manufacture the core components used in the equipment, and will grant Bekaert overseas manufacturing and sales rights. Bekaert will start producing and selling parts by 2025. MEA is a necessary component to electrolyze water and create hydrogen. Using special membrane technology, it increases the reaction during electrolysis while reducing the use of rare metals required for decomposition. Under this license agreement, Bekaert will manufacture MEA at its factory in Belgium and sell it



mainly in Europe. Bekaert is a world-leading manufacturer and developer of titanium nonwoven fabric, a material used in MEAs.

Toshiba website:

<https://www.global.toshiba/ww/news/energy/2024/02/news-20240229-01.html>

Murata Manufacturing reduces fossil fuel consumption by up to 53% during exhaust gas treatment

Murata Manufacturing Co., Ltd. announced on February 29 that it has developed the world's first heat-resistant ceramic catalyst material for exhaust gas treatment by applying its ceramic capacitor material design technology. By using a catalyst made from the same material, fossil fuel consumption can be reduced by up to 53% when treating exhaust gases such as VOCs. The material developed by the company has an active element embedded within its highly heat-resistant ceramic structure that accelerates the decomposition reaction of VOCs. This makes it possible to apply it to devices where conventional catalysts could not be used, and it does not deteriorate even in high-temperature environments with a combustion chamber temperature of 850°C, and can be used safely and efficiently even when the temperature rises due to concentration fluctuations. The material does not contain any precious metals and its production is not affected by market price fluctuations.

Murata website (in Japanese):

<https://www.murata.com/ja-jp/news/other/other/2024/0229>

JOGMEC signs joint copper exploration agreement in Ecuador

JOGMEC announced on March 1 that it has signed an agreement with Adventus, a Canadian junior exploration company, to conduct joint exploration in the Tres Picachos region of Ecuador. In addition to the large-scale Mirador copper mine, the Trespicachos region is located within a copper belt where new copper deposits are being discovered one after another. In the Trespicachos area, the distribution of copper-rich rocks has been confirmed through exploration activities, and it is hoped that future exploration will lead to the discovery of economically viable copper deposits.



Ecuador significantly improved its investment environment in the 2010s, promoting investment from overseas in resource development projects, and in 2019, two large-scale mines with 100% foreign capital started production. It is attracting a lot of attention as a mining country. JOGMEC entered the Orquideas region in December 2021 as its first project in the country, and has conducted drilling surveys and completed evaluations in that region, as well as exploring candidates for a new JV exploration project. This is the second joint exploration project between the two companies.

JOGMEC website:

https://www.jogmec.go.jp/news/release/news_08_00043.html

Mitsubishi Corporation develops lithium mine in North America, moves away from China through local refining

Mitsubishi Corporation announced on March 5 that it will participate in the development of a lithium mine in North America. The company will develop the business in a joint venture with a Canadian mining exploration company and begin production in 2027. The company will also establish a local refining base and establish a system that can handle everything from mine development to ore refining in North America. This is the first Japanese company to produce lithium in North America. There has been a growing movement to establish new supply networks in preparation for the US-China split.

Lithium is mainly produced from brine from salt lakes and from ore. Salt lakes are concentrated in areas with high geopolitical risks, such as China and Chile. Most of the ore is located in Australia and Canada, but many of the refinery plants that process it for use in batteries are in China. It is said that half of the new refinery plant plans to be built by 2030 will be located in China, posing an economic security issue.

The plan is for Mitsubishi Corporation to invest as early as this spring in a new company to be established by Frontier Lithium, a Canadian company with interests in lithium mining. The lithium mine the company is considering participating in is located in Ontario. With over 58 million tons of resources, it will be the largest lithium mine in which a Japanese company has an interest. A study will be carried out with a view to commercialization by 2025, and



production will begin in 2027, starting with industrial products such as glass and ceramics. The company aims to begin production in 2030 for batteries used in electric vehicles (EVs) and storage batteries.

Mitsubishi Corporation website:

<https://www.mitsubishicorp.com/jp/en/pr/archive/2024/html/0000053204.html>

JAPEX creates new businesses such as CCS/CCUS and blue hydrogen in Canada

Japan Petroleum Exploration Agency (JAPEx) announced on March 4 that it will begin collaboration with Invest Alberta (IAC), the investment attraction agency of the Government of Alberta, Canada, with the aim of creating new businesses in the decarbonization field. In addition to CCS/CCUS, it aims to create businesses in the fields of BECCS (Bio-Energy with Carbon dioxide Capture and Storage), blue hydrogen, and ammonia. Alberta is the center of Canada's energy market. IAC provides support tailored to individual needs for companies and investors aiming to start a business or create or expand a business in the state. JAPEx will utilize the company expertise in CCS/CCUS and E&P business in Japan and overseas to create a business that will contribute to net zero CO₂ emissions. BECCS is a technology that combines biomass power generation and CCS. By capturing and storing the CO₂ generated during combustion, it is possible to reduce the amount of CO₂ emitted during power generation to virtually zero.

JAPEx website:

https://www.japex.co.jp/en/news/detail/20240304_01/

Itochu and Softbank invest in U.S. nuclear fusion power generation startup

Itochu Corporation and Softbank announced on March 7 that they have invested in Blue Laser Fusion (BLF), a US startup that produces nuclear fusion power. The company aims to enable stable power generation using a unique laser and commercialize it by 2030. BLF was founded in November 2022. Including venture capital (VC), the company has raised \$37.5 million in just over a year since its founding. Itochu and SoftBank will be the first investors in a Japanese operating company. BLF's CEO is Shuji Nakamura, who won the



Nobel Prize in Physics in 2014 for the development of blue light-emitting diodes (LEDs). The company established a Japanese subsidiary in February of this year and is collaborating with domestic companies and research institutions such as Osaka University. BLF is working on a method to trigger a nuclear fusion reaction by applying a powerful laser to fuel. A newly developed unique laser will address the issue of nuclear fusion, which cannot extract energy continuously.

Itochu website:

<https://www.itochu.co.jp/en/news/press/2024/240307.html>

Google establishes cyber defense base in Tokyo, first in Asia Pacific

Google announced on March 7 that it has opened its first cyber defense base in the Asia-Pacific region in Japan. It will collaborate with the government, companies, universities, and others to research countermeasures and develop human resources. In Japan, there is growing concern about unauthorized access to government offices and companies from countries such as China and North Korea. Google will use Japan as a hub to improve the cyber defense capabilities of the entire region. The company's engineers will share the latest attack techniques with corporate personnel and other personnel, promoting the development of human resources who are knowledgeable about defense technology and cyber defense. In addition to Japan, engineers from companies from India, Australia, South Korea, and Southeast Asian countries will be invited to research countermeasures against cyber-attacks. Google does not receive compensation for joint research. Google established its first overseas subsidiary in Japan in 2001, and there are many researchers in the cyber defense field.

Google Japan blog (in Japanese):

<https://japan.googleblog.com/>

Idemitsu Kosan invests in Australian company producing SAF

Idemitsu Kosan announced on March 13 that it will invest in Jet Zero Australia, an Australian start-up company involved in SAF. They will cooperate in the procurement of raw materials and mass production technology for plant-based SAF. This is the first time that a Japanese company has invested in an overseas SAF company. Jet Zero Australia was founded in 2021 and is working on the



mass production of SAF made from plant-based ethanol. The company plans to start operating a plant that will produce 100,000 kiloliters of SAF in the January-March period of 2027. Idemitsu is preparing for mass production of SAF using similar technology in Chiba Prefecture. It was determined that the company could cooperate in securing raw materials and providing plant operation know-how. The plant planned by Jet Zero Australia has also received investment from Australia's Qantas Airways and Europe's Airbus, and Idemitsu will collaborate in building the supply chain.

Idemitsu website:

<https://www.idemitsu.com/en/news/2023/240313.html>

Sumitomo Mitsui FL and TES enter storage battery recycling business with pole companies

Sumitomo Mitsui Finance & Lease (SMFL) announced on March 12 that it has signed a memorandum of understanding with Singapore's TES to start a recycling business for lithium-ion batteries used in electric vehicles (EVs) and other vehicles. They aim to build a factory in Japan in 2024 and process approximately 10,000 tons per year. First, they will start operating a factory that produces "black mass," which is made by crushing batteries into powder. All manufacturing plants in Japan generate approximately 13,000 tons of scrap annually, and the plant to be built is expected to have a processing capacity of 10,000 tons per year. Using TES's technology, it is possible to produce about 80% more black mass than conventional methods. For the time being, Black Mass will be sent to TES overseas factories, and the extracted nickel and other materials will be transported back to Japan. The recovered rare metals will be supplied to domestic battery manufacturers.

TES website:

<https://www.tes-amm.com/press-release/sumitomo-mitsui-finance-and-leasing-company-limited-smfl-smfl-rental-and-tes-on-joint-development-of-lithium-ion-battery-recycling-business>

Private small rocket explodes and launch failure

The first small rocket developed by Tokyo venture company Space-one was launched from a rocket launch site in Wakayama Prefecture in the morning of



March 13, but some trouble occurred shortly after and equipment onboard the aircraft was suspended. The rocket exploded and the launch failed. It is carrying a small government satellite that conducts empirical research on collecting information, and if successfully placed into orbit, it was attracting attention as it would be the first privately-operated vehicle in Japan. The plan was to put the satellite into orbit around the Earth at an altitude of 500 km in about 50 minutes, but the rocket exploded after climbing for about 5 seconds. The company is investigating the detailed cause by analyzing data sent from the rocket.

Space One website (in Japanese):

https://www.space-one.co.jp/news/news_20240313_02_01.pdf

Mitsui E&S succeeds in hydrogen combustion operation for the first time in the world in a large marine engine

On March 7, Mitsui E&S announced that, in collaboration with German MAN Energy Solutions SE, it has succeeded in hydrogen combustion operation in a large marine engine for the first time in the world. A marine two-stroke test engine with a cylinder diameter of 50 cm was fired with hydrogen. One of the test engine's four cylinders was modified for hydrogen combustion, and hydrogen was supplied and combusted. The test engine was able to operate at 100% load without any problems such as hydrogen leakage. Hydrogen fuel is easily ignited and requires appropriate combustion control. Hydrogen fuel provides 95% of the cylinder's heat, and a combustion pressure waveform comparable to that of other cylinders can be obtained. The company confirmed that it can stably burn hydrogen and provide a stable supply of high-pressure hydrogen based on the design of an existing engine. In the future, the company plans to increase the number of hydrogen combustion cylinders and increase the combustion capacity.

Mitsui E&S website:

https://www.mes.co.jp/english/press/2024/0307_002400.html

Hitachi Zosen tests methanation in Oman

On March 12, Hitachi Zosen and its wholly-owned subsidiary Hitachi Zosen Inova AG (HZI/Switzerland) signed a memorandum of cooperation for the commercialization of methanation with Oman LNG LLC, which is invested by



the Omani government and Japanese trading companies. A methanation device will be installed at the LNG plant owned by Oman LNG, with the aim of turning CO₂ into a resource. Methanation is a technology that synthesizes methane, the main component of natural gas, by reacting hydrogen and carbon dioxide in a reaction vessel filled with a catalyst. Based on the memorandum, Oman LNG plans to construct a small-scale pilot plant adjacent to the existing LNG plant to produce 1,200 Nm³/h of synthetic methane.

The memorandum of understanding was concluded in recognition of Hitachi Zosen and HZI's methanation-related knowledge and track record, water electrolysis technology and water treatment technology to produce the hydrogen necessary for methanation, and EPC capabilities to construct large-scale plants. Japan and Oman aim to achieve net zero greenhouse gas emissions by 2050, and the two governments signed a "Memorandum of Cooperation on Carbon Recycling Including Hydrogen, Ammonia, and Methanation" in December 2022. This memorandum is an initiative based on the memorandum of cooperation between the two countries.

Hitachi Zosen website:

<https://www.hitachizosen.co.jp/english/newsroom/news/release/assets/pdf/FY2023-97.pdf>

PET bottle recycling factory by France's Veolia and others begins operation

On the 14, a used plastic bottle recycling plant was completed in Tsuyama City, Okayama Prefecture, a joint venture between the Japanese subsidiary of French environmental services giant Veolia, Mitsui & Co., and Seven & i Holdings. Low-grade PET bottles with labels or dirt, which were previously difficult to reuse, are processed and recycled into resin for beverage bottles. Taking advantage of its location, which has easy access to Kyushu and Shikoku, it will become the western Japan base for horizontal recycling of PET bottles.

The production capacity will be approximately 25,000 tons per year, equivalent to approximately 4% of annual domestic sales of PET bottles. Using Veolia's latest technology, the resin is recycled into flakes of PET resin through



automatic sorting, crushing, washing, and melting. The raw material is plastic bottles collected from JR West and JR Kyushu stations, Seven-Eleven convenience stores, commercial facilities, and households.

Veolia Japan website:

<https://www.veolia.jp/en/newsroom/news/veolia-and-partners-accelerate-circular-economy-new-plant-recycle-plastics-food-grade>

Mitsui O.S.K. Lines, Idemitsu Kosan, and HIF jointly develop synthetic fuel/synthetic methanol supply chain

Mitsui O.S.K. Lines, Idemitsu Kosan and HIF USA LLC and HIF Asia Pacific Pty Limited, subsidiaries of HIF Global, agreed to jointly develop a synthetic fuel (e-fuel)/synthetic methanol (e-methanol) supply chain, including maritime transportation of CO₂. It was announced March 19. Challenges for commercialization are the production, transportation, and supply of synthetic fuel/synthetic methanol, as well as the stable supply of CO₂ as a raw material. In this joint development, they will mainly investigate the feasibility of items as below, and work on building a supply chain for synthetic fuel/synthetic methanol, including the stable securing and transportation of raw material CO₂; 1) Transporting CO₂ by sea from Japan to overseas synthetic fuel/synthetic methanol production plants operated by HIF, 2) Build a supply chain to transport synthetic fuel/synthetic methanol produced by HIF at overseas manufacturing plants to Japan, 3) Efficient maritime transport of CO₂ and synthetic methanol.

Mitsui O.S.K.Lines website:

<https://www.mol.co.jp/en/pr/2024/24035.html>

Eight Gas companies including Tokyo Gas and Osaka Gas establish international organization to promote synthetic methane

Tokyo Gas and Osaka Gas announced on March 19 that they will establish an international organization to promote the use of synthetic methane (e-methane), which is made from hydrogen and other raw materials, in order to promote the decarbonization of city gas. Three of the world's major energy companies, including France's Engie, will also join in efforts to raise awareness and build an international certification system. The name of the group is "e-NG Coalition" and it will be established by June. Tree Energy Solutions (TES), a Belgian company



that promotes business development in Europe, will serve as representative. Japanese companies such as Toho Gas and Mitsubishi Corporation have also joined, and a total of eight companies have agreed to become members, including France's Total Energies and the US Sempra Group.

Synthetic methane is made from hydrogen and carbon dioxide (CO₂). CO₂ emissions when using gas can be reduced to virtually zero, and since the main components are the same as city gas, gas equipment can be used without having to be replaced. In Japan, Tokyo Gas and Osaka Gas are planning to introduce around 1% of gas sales by 2030. However, mechanisms to offset CO₂ emissions and systems to ensure quality are still immature. Major gas companies from around the world will gather together and work with other countries to encourage the development of international rules and aim for early dissemination. In the future, they will invite companies involved in production and transportation to participate.

Osaka Gas website:

https://www.osakagas.co.jp/en/whatsnew/_icsFiles/afieldfile/2024/03/18/240319.pdf

Sakana AI evolves through new methods and “combination” of multiple technologies

Sakana AI, which was founded in Japan by researchers from Google in the US, announced on March 21 that it has developed a new method that combines multiple types of artificial intelligence (AI) to create better AI. By encouraging the evolution of AI through repeated cross-breeding in a short period of time, it is possible to shorten the development period to several hundredths of what it used to be. Developing generative AI typically requires high-performance semiconductors and vast amounts of training data. The ability to develop advanced fundamental technologies was limited to a handful of well-funded technology companies.

Sakana AI aims to implement a different approach than before and change the game in the development of generative AI. Sakana AI was founded in 2023 by David Ha and Lion Jones, both of whom used to work at Google, and Ren Ito, who previously worked at the Ministry of Foreign Affairs and served as



executive director of Mercari. Jones is known as one of the co-authors of a paper published by Google in 2017 that laid the groundwork for today's generative AI.

AI developed by US technology companies and other companies has improved its ability to handle language by using giant computers and training them on vast amounts of textual data. Sakana AI has set itself apart from these conventional development methods and has set the goal of achieving advanced intelligence by combining small-scale AIs, much like fish forming a school. This announcement is the first step toward making this a reality. It typically takes years for American technology companies to develop their own large-scale language models. Although it is not possible to make a simple comparison because the conditions and methods are different, Sakana AI's new method has the potential to reduce the time it took to learn large amounts of data to improve language skills by several tens to hundreds of times.

SAKANA website:

<https://sakana.ai/evolutionary-model-merge/>

JERA considers purchasing ammonia from Exxon

JERA, Japan's largest power generation company, announced on March 25 that it has begun considering purchasing ammonia from ExxonMobil in the US. From 2028 onwards, 500,000 tons will be purchased annually and mixed and burned at domestic coal-fired power plants. JERA plans to start commercial power generation in 2027-2028, using some ammonia to reduce carbon dioxide (CO₂) emissions during power generation. Exxon is developing a hydrogen and ammonia production base in Texas, with the aim of starting supply in 2028. It will produce 900,000 tons of hydrogen and more than 1 million tons of ammonia annually. JERA will also consider investing in Exxon's production project.

JERA website:

https://www.jera.co.jp/en/news/information/20240325_1852

NEC and Skyloom collaborate to develop 100Gbps space optical communication technology

NEC Corporation and Skyloom Global Corporation (Denver, Colorado, USA)



announced on March 19 that they have agreed to jointly develop cutting-edge optical communication equipment for satellite networks. In recent years, with the spread and expansion of satellite constellations, demand for high-speed communications on low-orbit satellites is expected to increase rapidly. In particular, optical communications are attracting attention in inter-satellite communications because they enable high-speed, large-capacity communications and are easy to deal with, including measures against radio wave interference. Based on this technology, the two companies will jointly develop, test, and manufacture a 100 Gbps optical communication terminal (OCT), aiming for completion by the end of 2025. They plan to demonstrate the developed product in the space environment in 2026, and then offer it to the global market. Traditionally, radio waves have been the mainstream method of communication in space, but this collaboration will apply to space communication the optical communication technology cultivated in ground-based optical communication systems, which have rapidly developed since the mid-1980s.

NEC website:

https://www.nec.com/en/press/202403/global_20240319_01.html

JX Nippon Oil & Gas Exploration Corporation collaborates with Chevron subsidiary on CCS

JX Nippon Oil & Gas Exploration Corporation announced on March 19 that it will collaborate in carbon dioxide (CO₂) capture and storage (CCS) with Chevron New Energies, a U.S. subsidiary of Chevron that engages in decarbonization-related businesses. JX Nippon Oil & Gas Exploration Corporation will collect and separate the CO₂ emitted in Japan, transport it by sea, and Chevron will store it in Australia. Chevron is developing liquefied natural gas (LNG) off the coast of western Australia, and also storing CO₂ in the surrounding area. In addition to cooperating in the formulation of international rules regarding CO₂ transport, the two companies will also consider jointly developing CO₂ storage facilities in the Asia-Pacific region.

JX Nippon Oil & Gas Exploration Corporation website:

https://www.nex.jx-group.co.jp/english/newsrelease/upload_files/20240319EN.pdf