



Monthly Japanese Industry and Policy News December (December 1– December 28) 2023

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

Legislation and Policy News

G7 Digital and Technology Ministers Meeting held

On December 1, 2023, the Digital Agency, the Ministry of Internal Affairs and Communications, and the Ministry of Economy, Trade and Industry held the "G7 Digital and Technology Ministers' Meeting" online. The meeting was attended by G7 member countries and regions as well as related international organizations, and mainly discussed the Hiroshima AI process, DFFT (Data Free Flow with Trust), and its international framework (IAP: Institutional Arrangement). The main points of the ministerial statement are as follows.

- IAP bring together a community of data governance experts from various backgrounds and work together to materialize DFFT, including presenting practical solutions.
- The G7 committed to ensuring that the IAP achieves concrete progress based on the principles confirmed in the Ministerial Declaration and Annexes, and that it contributes to cross-border and reliable data flows in cooperation with relevant international organizations.
- The G7 welcomes discussions on the establishment of an IAP at the OECD, as it believes that the OECD is suitable to advance this international initiative. From this perspective, it looks forward to Japan assuming the presidency of the 2024 OECD Ministerial Council.
- The G7 welcomes Italy, as its next G7 Presidency, to continue and develop its agenda on the establishment of the DFFT and IAP, which Japan has promoted in its previous G7 Presidency.

Digital agency website:

<https://www.digital.go.jp/en/390de76d-d4f5-4f45-a7b4-f6879c30c389-en>

Japan receives criticism outside COP28

Prime Minister Kishida gave a speech on December 1 at the COP28 summit meeting held in Dubai, United Arab Emirates (UAE). Japan has set a goal of



reducing greenhouse gas emissions by 46% in fiscal 2030 compared to fiscal 2013, and reaching net zero by 2050. The prime minister explained, "We have already reduced the consumption by about 20% and are making steady progress."

Regarding efforts to prevent the increase in coal-fired power plants, which emit a lot of CO₂, he said, "We will end the construction of new domestic coal-fired power plants that do not have measures in place to reduce emissions." However, on Dec. 3, the Climate Action Network, a group of environmental organizations from around the world, announced that it had selected Japan for the Fossil Prize, which is given to countries that are reluctant to take countermeasures. The network criticized the move as having little effect in reducing CO₂ emissions and calling it "greenwashing" (a sham for the environment) as it seeks to extend the lifespan of coal and gas in Japan and across Asia (major media reports).

The Japanese government has high hopes for a demonstration-stage technology that mixes fuel with materials such as ammonia that do not emit carbon dioxide (CO₂) when burned, as a decarbonization technology for thermal power generation. Prime Minister Kishida also gave a speech in which he emphasized his efforts to expand into Southeast Asia and other countries, but this has been seen as a backlash and has become the target of criticism.

Prime Minister's Office website:

https://japan.kantei.go.jp/101_kishida/statement/202312/02speech.html

Japan-France summit meeting announces new roadmap

On December 2, Prime Minister Kishida spoke by phone with French President Macron during his visit to the United Arab Emirates (UAE), and announced a new roadmap that included 122 areas of cooperation, including security, economy, and culture. Economic security will be included as a new area of cooperation, and working groups will be held and cooperation will be promoted regarding important minerals. The two leaders were originally scheduled to meet face-to-face, but due to mutual inconvenience, the talks were held over the phone.



This is the third time the roadmap has been announced, and the target period is five years until 2027. The two countries will also reaffirm their commitment to stability in the Indo-Pacific region, and will strengthen cooperation in maritime security through joint training and exercises. The plan also includes invitations between the Self-Defense Forces and the French military to participate in space-related exercises, and promotes exchanges in areas such as space and cyberspace.

MOFA website (in Japanese):

<https://www.mofa.go.jp/mofaj/files/100590070.pdf>

US Nvidia to establish research base in Japan

On December 4, Jensen Huang, CEO of US semiconductor giant Nvidia, met with METI Minister Nishimura and announced the company's intention to establish an artificial intelligence (AI)-related research and development base in Japan. The Minister Nishimura said that NVIDIA's cooperation is essential to improving the computing power necessary for AI development, and that the company's image processing semiconductors (GPUs) are necessary for the development of AI and generative AI. And as the Japanese government, he has requested the supply of GPUs.

Mr. Hwang did not mention the specific timing or location of the establishment, but when the Minister mentioned the National Institute of Advanced Industrial Science and Technology as a candidate for the research center, Mr. Hwang responded that he would consider it positively. He also stated that he would like to invest in Japan in three areas: research bases, startups, and AI human resource development, and acknowledged that he would be able to stably supply GPUs to Japanese companies, where demand is increasing around the world and inventories are tight.

METI website (in Japanese):

<https://www.meti.go.jp/speeches/kaiken/2023/20231205001.html>

METI Minister's X (in Japanese):

https://twitter.com/meti_NIPPON/status/1731977384868659473



METI revised list of foreign users with concerns about developing weapons of mass destruction

On December 6, the Ministry of Economy, Trade and Industry (METI) revised and published the "Foreign User List," which provides information on organizations located in foreign countries and regions where concerns about the development of weapons of mass destruction, etc. remain unresolved. In order to improve the effectiveness of catch-all regulations* regarding cargo related to weapons of mass destruction, etc., this will provide exporters with information on organizations located in foreign countries and regions where concerns about the development of weapons of mass destruction, etc. are not eliminated. After this revision, a total of 706 organizations are listed in 15 countries and regions. It is applicable from December 11, 2023.

This list is different from the export prohibition list. If the user of the goods to be exported is listed on this list, the exporter is required to apply for an export license, unless it is clear that the goods will not be used for the development of weapons of mass destruction, etc. It has been published since April 2002, when the catch-all regulation was introduced.

*A system that requires an application for an export license if there is a risk that the item may be used for the development of weapons of mass destruction, etc., even if the item is not subject to export controls under international agreements.

METI website:

www.meti.go.jp/policy/anpo/20231206-3.pdf

Japanese and Norwegian leaders confirm cooperation on decarbonization

Prime Minister Kishida met with Prime Minister of the Kingdom of Norway STØRE at his official residence on December 7, and issued the first joint statement between the two countries. It was confirmed that Japan and Norway which faces the challenge of becoming an economy that does not rely on oil and natural gas exports, will expand cooperation in areas such as decarbonization. This is the first face-to-face summit meeting between Japan and Norway in five years since 2018. The two countries agreed to upgrade their bilateral relationship to "strategic partnership" and deepen cooperation.



The joint statement lists areas of cooperation such as offshore wind power, hydrogen, ammonia, CCS that captures and stores carbon dioxide (CO₂) and CCUS that reuses CO₂, and welcome the Joint Partnership Communiqué between the Minister of METI and Industry and the Minister of Trade and Industry of Norway. Prime Minister STØRE cited the Japanese government's procurement of the Norwegian cruise missile "JSM" as an example, and emphasized that companies from both countries cooperate in security and defense. The two countries also agreed to strengthen political cooperation through regular meetings and dialogue between government officials.

MOFA website:

https://www.mofa.go.jp/erp/we/no/pageite_000001_00027.html

MOE Minister announced support package for Asia at COP28

On December 9, at the COP28 ministerial meeting, Environment Minister Ito announced an "Investment Promotion Support Package" with cooperation with Asian countries, and announced Japan's policy to contribute to the prevention of global warming.

At the meeting, Minister Ito talked about the greenhouse gas reduction targets set by each country for decarbonization, using data from a satellite that Japan will launch next year to observe greenhouse gases, and encouraging developing countries in Asia to formulate plans. He also added, in order to respond to weather disasters in developing countries that are occurring due to the effects of global warming, the government of Japan will work with private companies to develop an "early warning system" in the Asia-Pacific region that uses weather radar to promptly notify disaster risks.

Environmental groups say that Japan is reluctant to take measures against climate change, as Japan is the only G7 country not to participate in the Coal Free Alliance, a group that aims to move away from coal-fired power generation. During this time, he demonstrated his commitment to contributing to global decarbonization through technical assistance.

MOE website:

https://www.env.go.jp/en/press/press_02190.html



Following the next fighter jet, Japan and Italy cooperate on semiconductors and AI

On December 12, Minister of Economy, Trade and Industry (METI) Nishimura met with Italy's Minister of Enterprise Urso, who was visiting Japan, and signed a joint statement on cooperation in cutting-edge fields such as semiconductors and artificial intelligence (AI). The two countries, including the UK, are collaborating on the joint development of the next generation fighter jet, but this time they will expand their cooperative relationship to areas such as semiconductors and AI, with the aim of establishing economic security.

The relationship between the two countries was upgraded to a "strategic partnership" earlier this year. In addition to the joint development of the next fighter jet, the two countries are deepening their cooperation in a wide range of security-related fields, including participating in an international cooperation framework aimed at realizing nuclear fusion power generation, which is expected to be the next generation of energy. Following the joint statement signing ceremony, the two governments also held a closed semiconductor workshop meeting.

METI website (in Japanese):

<https://www.meti.go.jp/press/2023/12/20231212003/20231212003.html>

Japan-ASEAN Special Summit Meeting agrees on promoting security cooperation, including maritime issues

A special summit meeting between Japan and ASEAN (Association of Southeast Asian Nations) was held from December 16 to 17 in Tokyo, and the leaders agreed to promote security cooperation, including in the maritime domain, keeping China's movements in mind. In addition to nuclear disarmament and non-proliferation and cybersecurity measures, they also confirmed cooperation in the area of economic security, including strengthening supply chains.

And, in order to further develop the friendly and cooperative relationship between Japan and ASEAN, which celebrates its 50th anniversary this year, they also agreed to launch a new people-to-people exchange program called "Next Generation Co-Creation Partnership," which will involve more than 10



million people over the next 10 years. Furthermore, they plan to invest a total of \$35 billion in public and private sectors over the next five years to decarbonize the ASEAN region, strengthen infrastructure connectivity, and support startups. The results of the series of discussions were summarized and announced as a joint statement and implementation plan.

MOFA website:

https://www.mofa.go.jp/a_o/rp/pageite_000001_00062.html

Japan, UK and Italy sign treaty with fighter jets

The defense ministers of Japan, the UK, and Italy met at the Ministry of Defense on December 14 and agreed that an organization called "GIGO" (the Global Combat Air Program, International Government Organization) would be established to jointly manage the development plans for the next generation of fighter jets by the three countries. The organization's headquarters will be located in the UK, with a Japanese person serving as the first company's top executive. Defense Minister Kihara, British Defense Ministers Shapps and Italian Defense Minister Crossett signed a treaty outlining the details of the organization. The aim is to deploy the first unit in 2035.

GIGO will be established in 2024 after each country goes through the process of approving the treaty. It will handle the division of roles in the development and production of the next generation of fighter jets. The joint statement stated that work would be distributed according to "the degree of financial and technical contribution." Candidates for the top position at GIGO include people from the Ministry of Defense. Personnel matters are rotated among the three countries over a period of three years.

Japan, Britain, and Italy will also form a joint venture (JV) to design and manufacture the aircraft. Mitsubishi Heavy Industries, Britain's BAE Systems, and Italy's Leonardo are included. The JV's headquarters will also be located in the UK, with the first top management coming from Italy and replacing them in three countries. The decision to locate the two headquarters in the UK was based on the decision that the country is close to a member state of the military alliance NATO and has a large accumulation of defense technology. Germany and Saudi Arabia are said to be interested in getting involved in the next fighter



jet project, but the treaty stipulates that if a new country requests to join, a "unanimous agreement" between Japan, the UK, and Italy is required.

Ministry of Defense website:

<https://www.mod.go.jp/en/article/2023/12/8cca4af1a6d679e53ab110da3e338b877f7faefd.html>

Government's GX Implementation Council supports JP¥ 13 trillion to 16 fields including hydrogen

On December 15, at the GX Implementation Council, the government decided a policy of supporting a total of JP¥ 13 trillion over the next 15 years in 16 areas, including the spread of hydrogen and the development of "next generation innovative reactors" for nuclear power plants, in order to promote decarbonization. It was announced on the same day. The main financial source will be GX Transition Bonds. The government has prepared a support framework of JP¥ 20 trillion, and is considering target areas for the remaining JP¥ 7 trillion.

The largest amount of investment promotion measures through GX Transition Bonds that the government has indicated is hydrogen fuel support of JP¥ 3 trillion. When using hydrogen as a fuel, it will support the price difference compared to existing fuels such as coal for 15 years. Hydrogen is expected to be used as a fuel for automobiles and power plants, as well as for industrial uses such as decarbonizing the steel manufacturing process. However, the current supply cost is about 10 times higher than that of natural gas, which is hindering its widespread use.

Cabinet secretariate office (in Japanese):

https://www.cas.go.jp/jp/seisaku/gx_jikkou_kaiqi/dai10/siryou1.pdf

Asian Zero Emission Community (AZEC) Summit held

The Asia Zero Emission Community (AZEC) Summit was held on December 18, 2023, on the occasion of the 50th anniversary of Japan-ASEAN Friendship and Cooperation Special Summit. Prime Minister Kishida and METI Minister Saito attended from Japan, as well as leaders from AZEC partner countries, and discussions regarding AZEC's ideas and activities were made.



Prime Minister Kishida communicated the importance of three breakthroughs: achieving the common goal of net zero through diverse paths and simultaneously realizing “decarbonization, economic growth and energy security.” In addition, he touched on Japan's efforts to develop and accelerate the introduction of next-generation GX technology, and expressed his intention to share Japan's technology and experience through the AZEC initiative.

METI Minister Saito commented on the first AZEC Ministerial Meeting held in March this year and the progress of cooperation. He stated that significant progress was being made.

- (1) Efforts that are closely aligned with Asia's policy needs, such as support for roadmap formulation, are progressing,
- (2) Specific projects are underway in a wide range of fields, including solar power, wind power, hydropower, geothermal power, biomass, hydrogen/ammonia, LNG, synthetic fuels, CCUS, energy conservation, and industrial decarbonization. Approximately 70 MOUs have been signed between companies, and a total of approximately 350 cooperation projects are underway,
- (3) And AZEC has supported the human resource development of approximately 8,500 people regarding energy transition.

Prime Minister's office website:

https://japan.kantei.go.jp/101_kishida/actions/202312/18azec.html

WTO releases co-chairman's statement on e-commerce negotiations

On December 20, Japan, Australia, and Singapore, which are co-chairs of the WTO e-commerce negotiations, issued a co-chairman's statement declaring the substantive conclusion of negotiations on Article 13 of digital trade rules. The key points of the co-chairman's statement are as follows.

- Substantively concluded negotiations on Article 13 of digital trade rules.
- Continue efforts to converge remaining provisions, such as those related to information and communication technologies that use cryptography.



- Encouraging participating countries to join the consensus on the commercial impact of the agreement on tariff provisions for electronic transmissions.
- All negotiating participants supported the development provisions.
- Difficult proposals such as cross-border data flows, data localization, and source code are important to many participating countries and regions, but will require more time to discuss.
- Participating countries and regions will make efforts to conclude negotiations at an appropriate time in 2024.

METI website:

<https://www.meti.go.jp/press/2023/12/20231220004/202312004-1.pdf>

METI compiles sector-specific investment strategies to realize green transformation

On December 22, the Ministry of Economy, Trade and Industry (METI) compiled and announced investment strategies in priority areas for the next 10 years, with the aim of realizing Green Transformation, which aims for three areas: decarbonization, economic growth, and stable energy supply. This was compiled by the GX Executive Committee based on the "Basic Policy for Realizing GX" approved by the Cabinet in February 2023. It shows the basic principles, specific policies, and commitments required of businesses eligible for support measures for each of the 16 industrial sectors. The 16 sectors are as follows.

Steel, chemicals, pulp and paper, cement, automobiles, storage batteries, aircraft, SAF, ships, daily life, resource circulation, semiconductors, hydrogen, next-generation renewable energy (perovskite solar cells, floating wind power, etc.), nuclear power, CCS.

The government has earmarked JP ¥ 663.3 billion in FY 2024 (April to March) budget proposal as support measures for these areas. The main source of funds will be GX Economic Transition Bonds, which will focus the use of funds on decarbonization projects. Over the next 10 years, it will raise funds on the scale of JP ¥ 20 trillion, leading to over JP ¥ 150 trillion in decarbonization investment in the public and private sectors. Issuance will begin in February



2024, and is expected to amount to JP ¥ 1.6 trillion in FY 2023, and JP ¥ 1.4 trillion in FY 2024, when it will be in full swing.

METI website (in Japanese):

<https://www.meti.go.jp/press/2023/12/20231222005/20231222005.html>

Government revises rules to increase exports of defense equipment

On December 22, the government revised the three principles and operational guidelines for defense equipment transfer at a cabinet meeting. One area where progress has been made is the handling of licensed products. Instead of being able to send only parts, it has now made it possible to send finished products to countries that hold patents. If requested by the patent-holding country, Japan can send the patent to a third country after deliberation. The first step was to export the Patriot air defense missile interceptor to the United States. This is the first time that a finished product with lethal force has been exported under the Three Principles.

The United States has provided its homegrown Patriots to countries such as Ukraine. Filling up the inventory shortage with Japan's supplies would lead to indirect support for Ukraine. However, there are some measures for which no conclusions could be drawn this time. A typical example is whether or not equipment jointly developed with other countries can be sent from Japan to a third country. The release of finished products has been postponed until after the new year. The handling of the finished product is important because it could affect plans for the next fighter jet, which will be jointly developed by Japan, Britain, and Italy. The government is looking at the outcome of the trilateral talks and is asking the ruling parties to reach a conclusion by February 2024, but the future remains uncertain.

METI website (in Japanese):

<https://www.meti.go.jp/press/2023/12/20231222011/20231222011-aa.pdf>

Flying base stations (HAPS) will be put into practical use in 2025

At the International Telecommunication Union (ITU) World Radiocommunication Conference (WRC) held in Dubai in November and December, Japan proposed making four frequency bands used by flying base stations (High Altitude



Platform Station=HAPS) international standards and all countries agreed. The Ministry of Internal Affairs and Communications announced this on December 27. HAPS are expected to be put into practical use as early as 2025.

The 1.7 GHz, 2GHz, and 2.6GHz bands, which are the core frequencies used internationally for mobile phones, will be adopted as global standards. The platinum band 700-900 MHz band, where radio waves are easily connected, is used in Europe, Africa, North and South America, and parts of Asia. HAPS flies an unmanned aircraft into the stratosphere, 18 to 25 kilometers above the Earth's surface, and uses it as a base station for mobile phone communications. It is expected to be the next generation of communications that will extend the communication area of smartphones and other devices to the sea and sky.

In October, Japanese SoftBank used HAPS to enable video calls between Rwanda, Africa and Japan using 5G-enabled smartphones. SoftBank will work with the Rwandan government to conduct research toward its introduction in Africa. Next-generation communication technologies such as HAPS are likely to contribute to closing the digital divide. This agreement increases the possibility that Japan will be able to export unmanned aerial vehicles, communication systems, and operations in one package.

Ministry of Internal Affairs and Communications website (in Japanese):

https://www.soumu.go.jp/menu_news/s-news/01kiban10_02000045.html

Japan and Saudi Arabia agree to jointly invest in important minerals

On December 24, METI Minister Saito met with Minister of Industry and Mineral Resources Khoreifu in Riyadh, Saudi Arabia, and they exchanged a memorandum of understanding toward securing important minerals such as rare earths. They will strengthen economic security and create a framework for cooperation that includes joint investments such as resource development in third countries. The Japan Energy, Metals and Minerals Corporation (JOGMEC) and Saudi investment company Manara Minerals also signed a memorandum of understanding. Manara is funded by the Saudi state fund and was established for international mineral investment. The aim is to start concrete projects within two years.



METI website (in Japanese)::

<https://www.meti.go.jp/press/2023/12/20231226004/20231226004.html>

Survey and Business Data

India ranks first as a promising destination for Japanese manufacturers for the second consecutive year

On December 14, Japan Bank for International Cooperation (JBIC) announced the results of a survey on overseas business development targeting Japanese manufacturing industries. Among the countries/regions with medium-term prospects for the next three years or so, India ranked first for the second year in a row. Vietnam overtook China and moved into second place for the first time. The survey was conducted on manufacturers in the automobile, electrical and electronics industries, etc. When asked multiple answers about countries and regions that are promising as destinations for overseas business development, India came in first with 48.6%. The most common reason given for seeing it as promising was "the future growth potential of the local market."

The percentage of companies that view China as promising was the lowest ever at 28.4%. The ranking dropped from 2nd place last year to 3rd place. Since 2015, it has remained in either 1st or 2nd place. Headwinds such as the US-China conflict and the slowdown of the Chinese economy are blowing. The strengthening of anti-espionage laws is also a cause for concern. Vietnam rose from 4th place in 2022 to 2nd place at 30.1%. They received high praise for their cheap labor force and excellent human resources. It is said although the salary level of local employees is rising year by year, there is still little concern about rising labor costs. On the other hand, the percentage of companies with concrete investment plans in Vietnam tends to be lower than in India and China.

Japan Bank for International Cooperation website (in Japanese) :

https://www.jbic.go.jp/ja/information/press/press-2023/press_00148.html

Global digital industry market hits record high in 2024 due to spread of generative AI

The Japan Electronics and Information Technology Industries Association (JEITA) announced on December 21 that the global market size of digital-related industries such as IT (information technology) services and



semiconductors will increase by 9% from the 2023 estimate to \$3.6868 trillion. This is the first increase in two years and a new record high. The spread of advanced technologies such as generative AI (artificial intelligence) will provide a tailwind.

Looking at the breakdown of the software and hardware market size, IT services increased by 12% from the previous year to \$1.474 trillion, setting a new record. Generative AI will become widespread, and the development of systems to support its introduction by companies will expand. Software development for electric vehicles (EVs) will also raise the overall standard. Sales of hardware such as electronic parts and communication equipment are expected to increase by 7%. Due to the expansion of the AI and EV markets, semiconductors that support data processing will increase by 13% to \$588.4 billion, a new record high.

The market size of the digital industry provided by Japanese companies is expected to increase by 5% to JP¥ 41,563.8 billion. Semiconductors increased by 8% to JP¥ 6,512.8 billion, and electronic components increased by 7% to JP¥ 10,358.9 billion, both turning positive for the first time in two years. However, the growth rate of Japanese companies pales in comparison to the global growth rate of 9%.

JEITA website:

<https://www.jeita.or.jp/english/press/2023/1221.pdf>

Company & Organization News

Sekisui Chemical enters into business partnership with Circularise, a Dutch resource circulation traceability system company

Sekisui Chemical announced on December 1 that it has entered into a capital and business alliance agreement with Circularise B.V. of the Netherlands, which develops supply chain traceability systems for resource recycling. The Circularise has identified a social issue in the sharing of information (management, tracking, and certification) in the supply chain, which is essential for realizing resource circulation, and has developed a unique supply chain tradability system that utilizes blockchain and zero-knowledge certification (*1).



Through this partnership, Sekisui Chemical Group will be able to manage, track, and verify environment-related information such as raw materials, recycling history, mass balance, carbon footprint, and third-party certification on a highly reliable platform, while ensuring the confidentiality of important information. Sekisui Chemical Group aims to achieve a circular economy in 2050 by collaborating with the supply chain, minimizing the amount of fossil-derived raw materials used, and promoting resource circulation through recycling.

(*1) Zero-knowledge proof

Cryptographic techniques that demonstrate to others the accuracy or validity of information without making the information itself explicit when proving it.

SEKISUI CHEMICAL website:

https://www.sekisuicheical.com/news/2023/1395833_40406.html

Idemitsu Kosan procures synthetic methanol from Chile's HIF Group

Idemitsu Kosan announced on December 1 that it will begin a joint study on e-methanol with the HIF Group, which produces synthetic methanol (e-methanol) using recovered CO₂ and green hydrogen. HIF USA, a subsidiary of Chile's HIF Global, which manufactures synthetic fuel (e-fuel) in South America, North America, Australia, and other countries, is launching a synthetic methanol production facility with an annual production capacity of 1.4 million tons in Matagorda, Texas, USA. Idemitsu Kosan and HIF USA have agreed to work together to procure synthetic methanol from this facility and consider developing a synthetic methanol business.

Idemitsu Kosan entered into a Memorandum of Understanding (MOU) with HIF Global in March regarding a strategic partnership in the field of synthetic fuels, and has been conducting various studies with the HIF Group toward the early implementation of synthetic fuels in society. Methanol is a liquid at room temperature and pressure, and Idemitsu Kosan's existing equipment such as tanks and pipelines can be used for storage, transportation, and supply. Synthetic methanol (e-methanol) is produced by synthesizing CO₂ recovered from the atmosphere and hydrogen derived from renewable energy (green hydrogen). Unlike methanol, which is produced from fossil fuels, it uses CO₂



itself as a raw material, so it greatly contributes to lower carbon emissions throughout the product life cycle, including the use of the final product.

Idemitsu Kosan website (in Japanese):

<https://www.idemitsu.com/jp/news/2023/231201.html>

Softbank acquires Irish company for ¥5 billion

SoftBank announced on December 5 that it has agreed to acquire a 51% stake in Cubic's Telecom, a Dublin-based Irish telecommunications company that develops an Internet of Things (IOT) platform for automobiles. The investment amount will be €73 million and executives will also be dispatched. SoftBank aims to capture the world's top share in the connected car field, where cars are connected to the internet. The stock acquisition is scheduled to be completed by June 2024.

Cubic Telecom was established in 2009. The company began providing an IOT platform for connected cars in 2016, and it is currently used in over 17 million vehicles, including Audi and Porsche, in 190 countries and regions, and the number is increasing by 450,000 vehicles every month. Meanwhile, SoftBank and Toyota Motor Corporation established a joint venture called Monet Technologies in 2018, which aims to integrate transportation and IoT. Additionally, in 2019, the company formed a capital alliance with Honda and Hino Motors, aiming to improve its services in the "Mobility as a Service (MaaS)" business in anticipation of business development in the era of autonomous driving.

Softbank website:

https://www.softbank.jp/en/corp/news/press/sbkk/2023/20231205_02/

Mitsubishi Heavy Industries and UAE's ADNOC reach agreement to build blue ammonia and blue hydrogen value chain

On December 6, Mitsubishi Heavy Industries (MHI) and ADNOC of the United Arab Emirates (UAE) agreed to cooperate to build a value chain for blue ammonia (NH₃) and blue hydrogen (H₂). As a technology provider, MHI will support ADNOC's efforts to decarbonize its oil and gas production bases. MHI has technologies that accelerate the energy transition, including hydrogen and



ammonia-fired gas turbines, ammonia co-fired boilers, and hydrogen production equipment. Meanwhile, ADNOC is a diversified energy and petrochemical group wholly owned by the Emirate of Abu Dhabi, aiming to achieve net zero in 2045.

MHI website:

<https://www.mhi.com/news/23120805.html>

Marubeni to produce green ammonia in Oman, 1 million tons in 2029

On December 13, Marubeni announced that it will begin studying the production of green ammonia in Oman, which does not emit carbon dioxide during production. In cooperation with local companies, the company aims to achieve annual production of 1 million tons by 2029, which will be one of the largest in the world. Marubeni will acquire sales rights for around 40% of this, and is expected to sell the product mainly to Japan for co-firing with thermal power generation and chemical manufacturing applications.

First, the company will enter into a joint research agreement for green ammonia production with OQ Alternative Energy, a group company of Oman's national oil company, and Samsung C&T (South Korea), a general trading company. The total project cost is expected to be between \$7 billion and \$9 billion. A final decision on commercialization will be made by 2026 after investigating price competitiveness.

It is estimated that 40% of the produced ammonia will be destined for Japan and South Korea, with 20% expected to be consumed locally. Hydrogen is created from desalinated seawater and synthesized with nitrogen to produce ammonia, which costs more than using freshwater from the beginning, but it reduces electricity procurement costs because it builds its own renewable energy power plant such as solar power.

Marubeni website:

<https://www.marubeni.com/en/news/2023/release/00119.html>

Itochu and Osaka Gas invest in world's leading hydrogen company

Itochu Corporation and Osaka Gas announced on December 13 that they will enter the hydrogen business. Both companies will invest up to 40% in Everfuel



(Denmark), the world's leading hydrogen producer. The company will begin producing 3,000 tons of hydrogen per year in 2024, making it one of the world's largest hydrogen producers. Itochu and Osaka gas will establish a joint venture company to acquire a nearly 14% stake in Everfuel in the spring of 2024, and it is expected to invest around 30% to 40% in stages through the subscription of new shares, etc.

Everfuel is a start-up company in the hydrogen business that operates hydrogen stations in Denmark and the Netherlands. Production of 3,000 tons of hydrogen per year will begin in Denmark in spring 2024. The scale of production will be one of the largest in the world with "green hydrogen" made from renewable energy electricity. The hydrogen produced will be used to refine crude oil at an adjacent refinery. Everfuel plans to build new hydrogen production plants outside of Denmark, and Itochu and Ogas will consider investing in each project. The total investment amount is expected to be approximately JP¥10 billion.

ITOCHU website:

<https://www.itochu.co.jp/en/news/press/2023/231213.html>

Toyota accelerates realization of circular economy

On December 7, Toyota Motor Corporation announced its efforts to manufacture cars that aim to achieve carbon neutrality. Based on the concept of 3R (Reduce, Reuse, Recycle), it aims to ensure that the value of recycled raw materials and products can be used for as long as possible, and also to minimize waste by incorporating it into the design. In particular, regarding batteries for electric vehicles, it will first develop batteries that save resources and long-life. After that, it will thoroughly implement the 3R concept of batteries, which involves rebuilding, reusing, and finally recycling using methods that reduce CO2 emissions. The 7th Toyota Environmental Action Plan, which was formulated as an implementation plan, sets the goals of 2025 as “maximum recovery and detoxification of batteries in five regions: Japan, the United States, Europe, China, and Asia.”

TOYOTA website:

<https://global.toyota/en/newsroom/corporate/40102076.html>



Rakuten's mobile infrastructure is in operation in Germany

On December 8, Rakuten Group announced that 1&1, a new German telecommunications company, has launched a service using Rakuten's infrastructure. Rakuten's communications network reduces costs by replacing most of the equipment other than antennas with cloud-based software. The company sells technologies called "virtualization" and "open RAN" to overseas carriers through its subsidiary Rakuten Symphony. 1&1 is the first company in Europe to use virtualization technology to provide high-speed 5G network mobile phone services. Outside of the 1&1 line area, roaming from other major carriers will be used.

Rakuten Group website:

https://global.rakuten.com/corp/news/press/2023/1208_01.html?year=2023&month=12&category=corp%20ir

JCI makes recommendations to the government regarding carbon pricing

On December 5, the Japan Climate Initiative (JCI), which is made up of 186 organizations including companies, local governments, and NGOs, announced the proposal as the government response is insufficient to "carbon pricing," which would put a price on carbon (CO₂) and change the behavior of emitters. The GX Promotion Act, enacted in May 2023, paved the way for the introduction of carbon pricing, which has been discussed for many years. However, compared to carbon taxes and emissions trading systems that are becoming more popular around the world, it is insufficient to achieve the same level of emissions reductions. JCI recommends six principles, including the following three points:

- Bring forward the introduction date to 2025
- Aiming for a carbon price sufficient for 2030, such as \$130/t-CO₂ as indicated by the International Energy Agency (IEA)
- Rather than leaving it up to companies to act independently, the system should be transformed into a cap-and-trade type emissions trading system that is on par with the rest of the world, by setting total emissions limits for target sectors and requiring them to participate in the system and reduce emissions.



JCI pointed out that the active involvement and widespread support for this proposal indicates that non-state actors such as companies share a strong sense of crisis and urgency regarding the current state of Japan's carbon pricing and emissions reductions by the government.

Japan Climate Initiative website:

<https://japanclimate.org/english/news-topics/cp-proposal/>

Itochu participates in South Africa's Hive's green ammonia production business

On December 11, ITOCHU Corporation announced that it has signed an MOC with South Africa's Hive Hydrogen for collaboration to build a green ammonia supply chain using South African resources. The two companies will jointly explore a green ammonia production project at Coega in Nelson Mandela Bay, Cape Province, South Africa.

Coega is working with Built Africa on Hive's flagship green hydrogen and ammonia project to develop a large-scale green hydrogen and ammonia plant powered by renewable energy. It is scheduled to begin operations in 2028. According to Hive, the renewable energy capacity is approximately 3.6GW of solar power generation and onshore wind power generation, and further expansion of capacity through additional phases is also being considered.

In September 2022, ITOCHU Corporation announced that it would collaborate with South African energy giant Sasol in the green ammonia field, too. The Ministry of Economy, Trade and Industry concluded a memorandum of cooperation in the hydrogen and ammonia field with South Africa in September 2023, and recognizes that this MOC with Hive is in line with the purpose of the memorandum between the two countries.

ITOCHU website:

<https://www.itochu.co.jp/en/news/press/2023/231211.html>

Singaporean company invests in Japan with large storage batteries

Gurin Energy, a renewable energy company based in Singapore, will install large-scale storage batteries in the country as early as 2028. The investment



amount is expected to be approximately JP¥ 91 billion. The capacity to store electricity is three times that of large storage batteries operating in Japan, making it one of the world's largest storage batteries operating in a single location. Renewable energy such as solar and wind power generation is rapidly increasing in Japan, but there is a serious lack of free capacity on power transmission lines, making the installation of storage batteries an urgent need.

Gurin Energy's major shareholder is Infratil, a New Zealand investment company. The company operates solar and wind power plants in various parts of Asia, including Indonesia and South Korea, and has over 7 million kilowatts of renewable energy power, including projects under development. A Japanese subsidiary will be established in the first half of 2024 and a large storage battery will be constructed. It has an output of 500,000 kilowatts and a maximum capacity of 2 million kilowatt hours, equivalent to the capacity to charge 50,000 electric vehicles (EVs). A large area of 10 to 15 hectares is required for installation, and candidate sites will be selected in Fukushima and Tochigi prefectures. In the medium to long term, it will consider installing it in other areas of the country.

The reason behind Green Energy's decision to enter the Japanese market is the growing need for storage batteries. Storage batteries are becoming more popular in the United States and Europe, but Japan was lagging behind. With the government's decision to provide support by increasing subsidies for storage batteries in 2023, more companies have begun to enter the market in Japan.

Gurin Energy website:

<https://gurinenergy.com/wp-content/uploads/2023/12/Gurin-Energy-enters-Japanese-market-to-develop-2GWh-battery-energy-storage-project.pdf>

Hydropower development in Mozambique with French company Sumitomo Corporation

Sumitomo Corporation announced on December 14 that it will begin hydropower development in Mozambique. The company will create a business plan jointly with Mozambique's national power company, Electricity France (EDF), France's Total Energies, and others. The power generation capacity is



expected to be approximately 1.5 million kilowatts, equivalent to the annual power consumption of approximately 3 million Mozambique households, and will be sold to Mozambique and neighboring countries. The agreement to participate in a project to build a hydroelectric power plant in the Zambezi River basin that runs through the country, and Sumitomo Corporation owns approximately 20% of the project. Mozambique is rich in water sources, including the Zambezi River, and it is said that around 80% of the country's electricity comes from hydroelectric power.

Sumitomo Corporation website:

<https://www.sumitomocorp.com/en/jp/news/release/2023/group/17250>

Nippon Steel acquires US Steel for \$14.1 billion

Nippon Steel announced on December 18 that it will acquire US steel giant US Steel. The total acquisition price is approximately \$14.1 billion. This is the largest M&A (merger and acquisition) ever for Nippon Steel. As demand for high-performance steel materials used in decarbonized electric vehicles (EVs) increases, Japan and the United States will establish a system for supplying important materials with economic security. Nippon Steel will acquire all shares of US Steel at a price of \$55 per share. The closing price of the company's stock price on December 15 was \$39, representing a premium of approximately 40%. The company will retain its US Steel name even after the acquisition.

According to the World Steel Association, Nippon Steel's crude steel production in 2022 will be 44.37 million tons, ranking fourth in the world. U.S. Steel is second only to Nucor and Cleveland-Cliffs in the United States, but only ranks 27th in the world. Nippon Steel's acquisition of US Steel will make it the third largest company in the world. However, it will still need to be reviewed by regulatory authorities, negotiate with labor unions that have expressed opposition, and be approved at a general meeting of shareholders.

NIPPON STEEL CORPORATION website:

https://www.nipponsteel.com/common/secure/en/ir/library/pdf/20231218_100.pdf

"Setouchi-Shikoku CO2 Hub Concept" launched - Five companies including Sumitomo Corporation and Australian companies collaborate



On December 18, five companies, Sumitomo Corporation, JFE Steel, Sumitomo Osaka Cement, Kawasaki Kisen, and Australia's Woodside Energy agreed to conduct a feasibility study to realize the "Setouchi-Shikoku CO2 Hub Concept" and signed a memorandum of understanding. The aim is to build a CCS value chain in which CO2 is recovered from CO2 emission sources in the Setouchi and Shikoku areas, collected and stored at domestic export hub ports, and then transported to Australia where it is injected and stored.

This initiative aims to collectively handle CO2 emitted from multiple regions, industries, and companies in the Setouchi and Shikoku areas, increasing scale and reducing costs. Five Japanese and Australian companies will work together to build a CCS value chain that is difficult for individual companies to build. In the future, they will further increase the amount of CO2 captured and pursue further economies of scale. The companies hope to contribute to the carbon neutralization of the entire Setouchi and Shikoku region by creating an efficient supply chain.

Sumitomo corporation website:

https://www.sumitomocorp.com/en/jp/news/topics/2023/group/20231218_1

IHI begins hydrogen production experiment using natural gas pyrolysis

IHI announced on December 25 that it will begin experiments on a prototype hydrogen production device that uses natural gas pyrolysis, which is currently being developed as a new hydrogen production technology. The hydrogen production technology using natural gas pyrolysis that it has recently started developing is a technology that heats natural gas and decomposes it into hydrogen and solid carbon. Compared to conventional hydrogen production technology using steam reforming, this technology is characterized by the fact that the energy required to produce hydrogen per unit can be reduced by approximately 40%. Additionally, as more than 90% of the carbon produced by pyrolysis is recovered as solid, a significant reduction in CO2 emissions is expected.

Iron ore will be used as a catalyst, and the aim is to produce up to 100 tons of hydrogen per day. Based on these specifications, it aims to establish a hydrogen production technology that is cheaper and emits less CO2 than



EU-Japan Centre for Industrial Cooperation

一般財団法人 日欧産業協力センター

conventional hydrogen production technologies. In addition to assuming that solidified carbon will be stored, it will also consider its effective use, such as for soil reform and water quality improvement. This technology uses electricity derived from renewable energy as a heat source, and aims to be put into practical use in the United States and Australia, which are iron ore and natural gas producing countries, in the late 2020s.

IHI website (in Japanese):

https://www.ihj.co.jp/all_news/2023/technology/1200517_3546.html