

## **JAPANESE INDUSTRY AND POLICY NEWS**

**June - July 2022**

### **Legislation and Policy News**

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### Legislation and Policy News

#### **Ministry of Economy, Trade and Industry newly establishes "EPA Utilization Promotion Council"**

On July 5, the Ministry of Economy, Trade and Industry announced on July 5 that it newly established the "EPA Utilization Promotion Council" to consider measures to promote the utilization of EPA by more companies including small and medium-sized enterprises, and the first meeting would be held on July 6.

Through discussions at the plenary session, issues related to the utilization of EPA will be shared across industries, effective improvement measures will be considered, and these results will be widely disseminated.

Currently, Japan has 20 EPAs in force with 50 countries including the EU. In particular, with the entry into force of the RCEP Agreement in January this year, the number of companies that are newly working on EPA utilization is increasing significantly. However, when analyzing the procedures for SMEs to newly utilize EPA, there are three "walls". Specifically, (1) the "knowledge wall" where understanding of complicated and specialized systems and usage processes cannot keep up, (2) the "process wall" where complicated procedures cannot be completed, and (3) the "wall of cooperation of partner companies" which are not cooperative with supplying information on origin survey.

Based on this recognition, industry groups and companies from 10 industries, private companies that provide related services, academics, and government-affiliated organizations will come together to consider measures for more companies to overcome the three barriers. At the meeting, creating a manual that summarizes the standard work flow of EPA utilization for each industry, a standard document format to facilitate cooperation between exporters and business partners, and a digital platform to support companies in a one-stop manner will be expected

METI website (in Japanese) :

<https://www.meti.go.jp/press/2022/07/20220705004/20220705004.html>

## **Heads of Patent Offices of Japan, Europe, Korea, China, and the U.S.**

### **Discuss Role of Intellectual Property in Achieving SDGs**

On June 9, 2022, the Patent Offices of Japan, the United States, Europe, China and South Korea held the 15th online meeting of the commissioners of the five offices (IP5 Heads of Office Meeting) under the auspices of the European Patent Office. At this meeting, the secretaries of the five agency exchanged views on the role of intellectual property in achieving the SDGs. This time, as the first project based on the work roadmap for cooperation in the field of new technology and AI, they agreed to launch a data collection project on the examination practice of the five agencies about AI-related inventions proposed by the Japan Patent Office.

Patent applications to the five offices (2020: about 2.78 million) account for about 85% of the world's patent applications (2020: about 3.28 million). The five offices have been holding the secretary-general's meeting since 2007, and multiple working groups have been discussing issues such as mutual use of examination results, simplification of procedures, and improvement of examination quality. In addition, since 2012, they have been holding meetings with the five agency user organizations, and this year marks the 10th anniversary of the collaboration between the five agency and the five agency user organizations.

This time, the five agencies focused on Goals No. 7, Goals No. 9 and No.17 of the United Nations Sustainable Development Goals (SDGs) and discussed the contribution of the IP system to global issues.

First, with the SDGs Goal No. 7 and Goal No.9 in mind, it was confirmed that the IP system plays an important role in the development of technologies to mitigate climate change by providing incentives to inventors and supporting research and development. In addition, it was shared that the patent system provides access to a wealth of technology-related information, which enables us to identify trends in green innovation and consider the status of energy transformation to be useful for policy making and investment.

In addition, it was agreed in relation to Goal No.17 of the SDGs, the framework of the five offices with the five offices user organizations also is important to contributes to the achievement of the SDGs.

The Japan Patent Office has also announced that it will soon publish the "Green Transformation Technologies Inventory (GXTI)," which is a technology classification table that provides a bird's-eye view of climate change countermeasure technologies.

METI website:

[https://www.meti.go.jp/english/press/2022/0613\\_001.html](https://www.meti.go.jp/english/press/2022/0613_001.html)



IP5 Heads along with Dr. Jorgenson, Deputy Director General of WIPO  
from METI website

## Survey and Business Data

### More than 10% of new electricity goes to "contract suspension / withdrawal"

On June 13, Teikoku Data Bank, private credit research institute announced the results of a survey on the trend of withdrawal from new electric power companies (registered retail electric power companies). As of June 8, 104 companies, which account for more than 10%, announced that they went bankrupt, closed their businesses, suspended or withdrew from electric power business contracts. From 31 companies as of the end of March, it has tripled in two months.

According to the Ministry of Economy, Trade and Industry, it has become difficult to continue contracts due to the bankruptcy or withdrawal of electric power retailers, and 13,045 "electric power refugee" companies that receive supply from major electric power companies have occurred in May. The number increased significantly from 5,477 in March and 5,133 in April. Teikoku Data Bank said, "The

successive withdrawals and bankruptcies of new electric power, which made it difficult to secure profits due to soaring electricity procurement prices, have had a great impact on users, and the limits of the electric power sales business without power generation facilities have also been exposed".

Of the 104 companies that suspended or withdrew their contracts, 69 companies was "suspension of contracts" including suspension of new applications. It increased about five times from 14 companies at the end of March. There were 16 companies withdrawing from the electricity sales business, more than five times. There are 19 companies that are "bankruptcy / closed". Many of the new electric power companies that have suspended or withdrawn from the electric power sales business do not have their own power plants.

However, due to the soaring prices of crude oil and liquefied natural gas (LNG) following the crisis in Ukraine, the supply and demand of electricity in Japan, has become significantly tight. The soaring wholesale electricity prices in the winter of 2020-21 have put a great deal of pressure on the management of new electric power companies, which have made it difficult to maintain profitability.

Looking at the data from the Japan Electric Power Exchange (JEPX), the average system price in May 2022 was JP¥ 17 per kW. Although it decreased from March 2022 (JP¥ 26), which was close to JP¥ 30, it has remained at a level more than double that of the same month of the previous year.

On the other hand, the average electricity selling price for new electricity in February, estimated by the Teikoku Data Bank from the data of the Electricity and Gas Market Surveillance Commission, was about JP¥ 20,900 per 1 MWh of supply. The price has exceeded JP¥ 16,500 in the same month of the previous year, and has increased for 6 consecutive months since September 2021, and the movement to reflect the increase in procurement price in the selling price continues. However, in most months, the increase in selling price is far below the rate of procurement price, and the increase in costs cannot be absorbed.

The sales profit per MWh of new electric power (electric power selling price-electric power procurement price) was only JP¥ 295 in February 2022, a sharp decrease of 97% from the same month of the previous year (JP¥ 9,013). In

January, when electricity demand increased due to heating demand, etc., the company turned into a deficit of JP¥ 1,784, and the procurement price exceeded the selling price.

Teikoku Databank (in Japanese):

<https://www.tdb.co.jp/report/watching/press/pdf/p220605.pdf>

### **SDGs achievement ranking, Japan down to 19th place in 2022**

On June 2, the international research organization Sustainable Development Solutions Network (SDSN) released the 2022 edition of the Sustainable Development Report, which assesses the achievement of SDGs around the world. Japan's achievement of SDGs was 19th out of 163 countries, down one rank from 18th (out of 165 countries) in the previous year (2021). Of the 17 goals, 6 goals have "serious issues" such as the fields of gender and the environment.

The report is published annually by SDSN, headed by Professor Jeffrey Sachs, an economist at Columbia University. Based on statistical data from the United Nations and research institutes, the SDGs Achievement Level (SDG Index), which scores the efforts of each country's SDGs on a scale of 100, is published and ranked.

Finland (86.5) ranked first in the 2022 edition, the top for the second consecutive year. 2nd place is Denmark (85.6), 3rd place is Sweden (85.2), 4th place is Norway (82.3), and Scandinavian people dominate the top. European countries continued after 5th place. Japan is in 19th place with a score of 79.6. The United States was 41st (75.6) and China was 56th (72.4).

Ranking (in parentheses is the previous year), country name and score

- 1 (1) Finland 86.5
- 2 (3) Denmark 85.6
- 3 (2) Sweden 85.2
- 4 (7) Norway 82.3
- 5 (6) Austria 82.3
- 6 (4) Germany 82.2
- 7 (8) France 81.2

- 8 (16) Switzerland 80.8
- 9 (13) Ireland 80.7
- 10 (10) Estonia 80.6
- 11 (17) United Kingdom 80.6
- 12 (15) Poland 80.5
- 13 (12) Czech 80.5
- 14 (22) Latvia 80.3
- 15 (9) Slovenia 80.0
- 16 (20) Spain 79.9
- 17 (11) Netherlands 79.9
- 18 (5) Belgium 79.7
- 19 (18) Japan 79.6
- 20 (27) Portugal 79.2

According to the report, the achievement of the world average SDGs has decreased slightly for the second consecutive year from 2020 to 2021. This is because the COVID-19 has affected the achievement of SDGs Goal 1 "Let's get rid of poverty" and Goal 8 "Welcome to work and economic growth", and the efforts of Goals 11 to 15 have not progressed. In addition, there are concerns about the impact on food security and energy prices due to military conflicts such as Russia's invasion to Ukraine.

Japan's ranking has been declining after peaking at 11th place in 2017. The rank down was the third consecutive year, and "19th place" was the lowest since the start of the ranking. The transition so far is as follows.

- 2016: 18th
- 2017: 11th
- 2018: 15th
- 2019: 15th
- 2020: 17th
- 2021: 18th
- 2022: 19th

It seems that the reason why the ranking continues to decline is that the goal of "having serious problems" accounts for about one-third of the total, and the



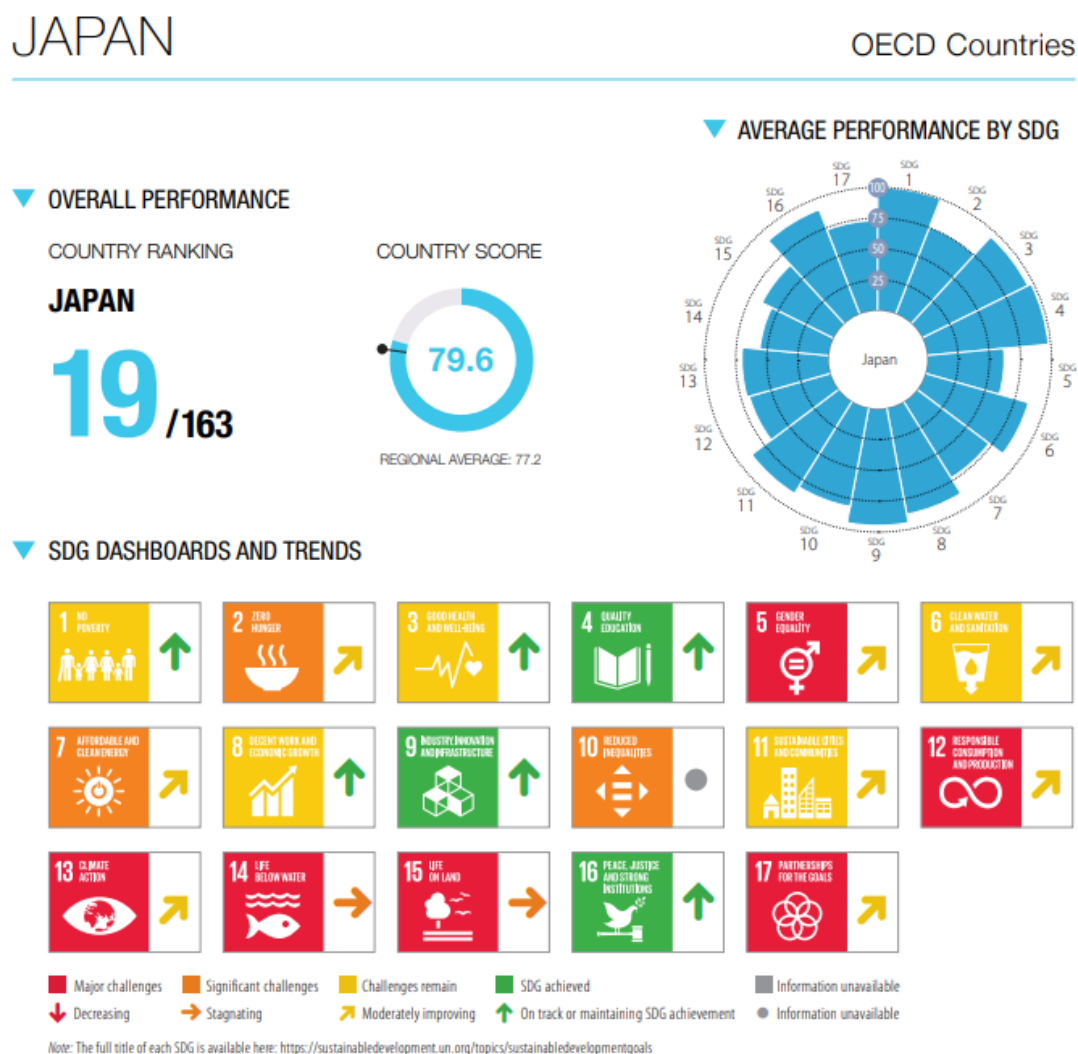
improvement is not progressing as expected.

However, of the top 20 countries in the ranking, 19 countries other than Japan are occupied by European countries, and Japan is the top in Asia. South Korea was 27th (77.9) and China was 56th (72.4). Among other major developed countries, Canada is 29th (77.7), Australia is 38th (75.6), the United States is 41st (74.6), Russia is 45th (74.1), etc., and SDGs aren't generally achieved outside Europe.

Sustainable Development Report 2022:

<https://dashboards.sdgindex.org/>

Japan's overall performance from the report website





## Company & Organization News

### **NTT started joint research on hydrogen transportation by NTT's telephone and communication pipelines**

On July 14, NTT Anode Energy announced that in collaboration with the Industrial Technology Research Institute and Toyota Tsusho, it will start to survey to take safety measures for hydrogen pipelines using existing pipes to realize a pipeline transportation model for mass and stable transportation of hydrogen. This project will be supported by the New Energy and Industrial Technology Development Organization (NEDO).

It is considered effective to utilize the pipeline as a means of mass and stable transportation of hydrogen, but when constructing a new pipeline, the cost, land acquisition, construction period, etc. will be issues. This problem can be expected to be solved by utilizing the piping of existing infrastructure such as telephone and communication pipelines, but on the other hand, it is required to establish safety measures. In this project, as a basic survey for examining safety measures necessary when using existing piping, they will implement necessary measures to verify countermeasures for actual operation such as acquisition of various technical data and extraction of problems. At the same time, economic evaluation will be conducted and a pipeline transportation model will be formulated.

In the future, based on the knowledge and know-how gained from this project, they will promote and establish specific technical studies on safety measures assuming actual operation, and supply hydrogen to urban areas through pipelines. Along with aiming, they will contribute to the establishment of hydrogen supply means by pipeline and the development of smart cities in the region with an eye on the hydrogen mass consumption society.

NTT Anode Energy is aiming to realize a double piping system in which a hydrogen pipeline is placed inside an existing pipe buried in the ground as one of the hydrogen transportation formats using a pipeline.

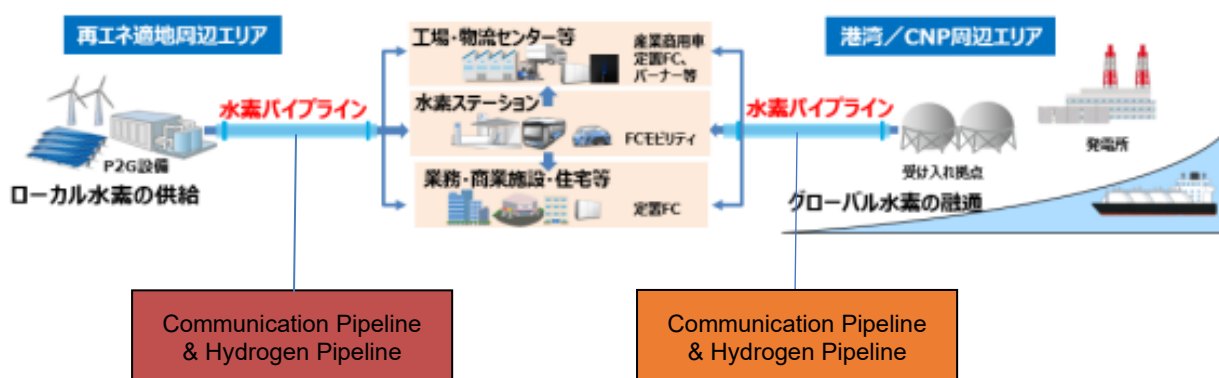
In addition, they will conduct a safety measure survey assuming unsteady states such as breakage accidents and natural disasters during operation, and in addition, they will analyze costs from the viewpoint of efficiency, energy input, and economic efficiency during transportation. They will also verify the profitability of

the business related to the utilization of existing pipes compared to transportation means.

ATT Anode Energy website (In Japanese):

<https://www.ntt-ae.co.jp/pdf/press20220714.pdf>

Image of Communication Pipeline & Hydrogen Pipelines



### Fujitsu develops technology to estimate human movement with millimeter-wave radar

Fujitsu announced on July 6 that it has developed a new technology that can estimate a person's posture with high accuracy from coarse-grained point cloud data acquired by a general millimeter-wave sensor. With consideration for privacy, it is possible to reliably detect and analyze falls. By linking with the original artificial intelligence (AI) "Actlyzer", it is possible to analyze the behavior before and after a fall in detail with only a sensor without installing a camera in hospitals and nursing care facilities. Aim for service by the end of 2023.

Although the particle size of the point cloud data obtained by irradiating radio waves from the millimeter wave sensor is coarse, it can be treated as time-series information by irradiating it multiple times. With the new technology, point cloud data can be appropriately selected from the large amount of acquired data, and can be expanded to fine-grained point cloud data required for posture estimation.

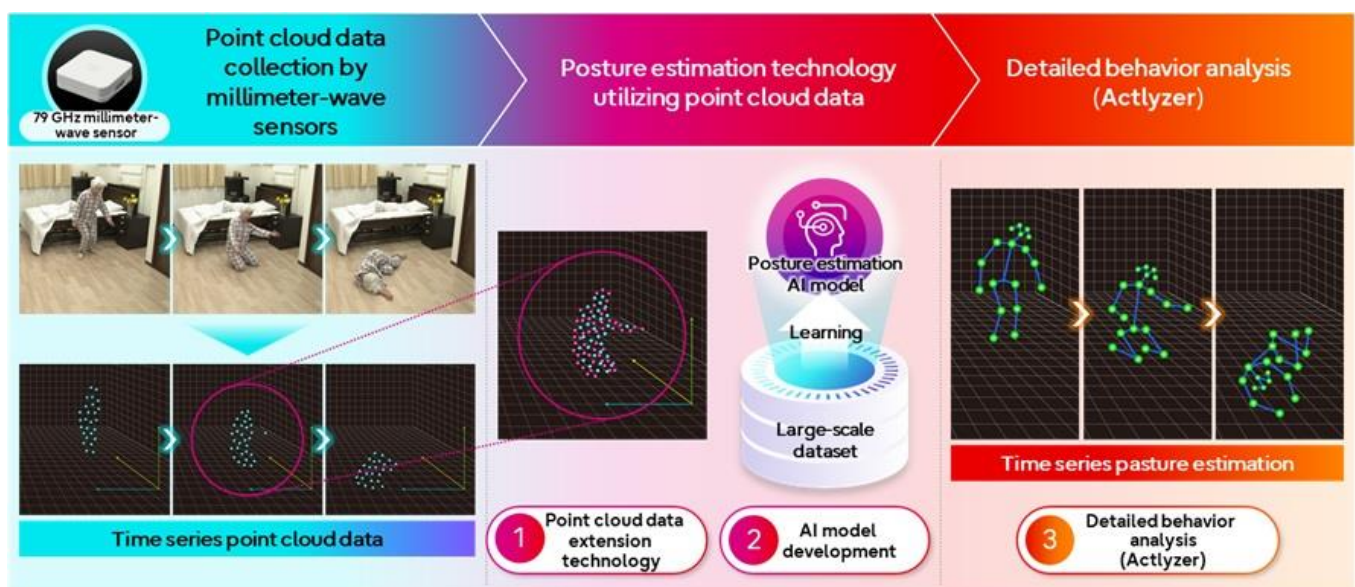
At the same time, It has newly developed a highly accurate posture estimation AI model using a large-scale data set that associates point cloud data with 3D coordinate information of human joint points. Approximately 100 types of basic motion data were combined and linked with an Actlyzer that can analyze complex

human behavior.

The new technology can both detect falls when walking or getting up from bed and consider privacy, reducing the burden of visual monitoring by nurses and caregivers and delays in emergency response. Together with Kawasaki City, which is working on the development of welfare products and services, it is verifying the usefulness of the new technology in June, and based on the results, it plans to conduct a demonstration experiment at an actual facility for the elderly after August.

Fujitsu website:

<https://www.fujitsu.com/global/about/resources/news/press-releases/2022/0706-01.html>



Overview of the newly developed technology  
from Fujitsu website

### **MOL developed new micro plastic collection device, always collects while sailing**

On July 5, Mitsui O.S.K. Lines (MOL) and Miura Co., Ltd announced that they have developed a type microplastic recovery device, making use of the

technology and knowledge of a plastic particle (microplastic) recovery device with a small size of 5 mm or less with a new type of centrifugal separation that can always be recovered during navigation. From June, the device was installed on a trial basis on the automobile ship "EMERALD ACE" operated by MOL.

In order to recover microplastics, which is one of the causes of marine pollution, both companies have so far collected the microplastics collected by the filter with backwash function that constitutes the ballast water treatment equipment of ships at the time of unloading. They have developed the equipment and installed it on a total of five vessels, three bulk carriers and two wood chip vessels.

These onboard vessels have treated a total of about 16,000 cubic meters of seawater at the port of unloading site, but in order to further increase the treatment time, area, and capacity, they have developed this new recovery device. By installing a new centrifuge device, the new device separates concentrated water with a high concentration of suspended matter such as microplastic from seawater without closing the piping, and efficiently captures the suspended matter.

By connecting to a cooling seawater line that constantly takes in seawater, it is possible to recover microplastics at all times during navigation, and it can treat seawater about 70 times a year compared to conventional ship. The launch routes for car vessels cover the entire world. Both companies say, "By operating the equipment while sailing, we will clean up all sea areas and contribute to the conservation of the marine environment."

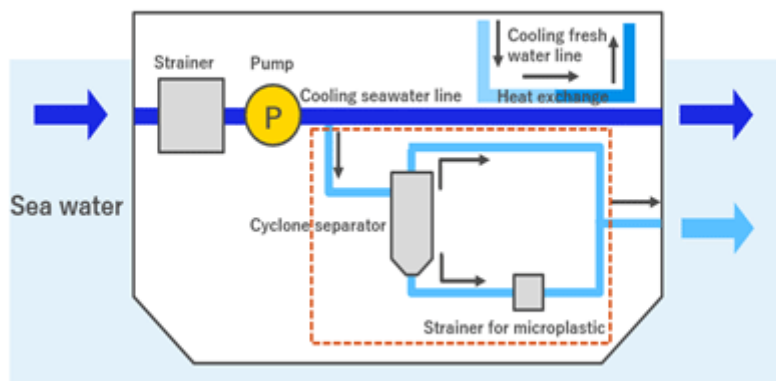
MOL is also considering utilizing data such as the composition, quantity, location, and timing of microplastics recovered by the device in future research fields. In addition, Miura Co., Ltd. plans to develop a total amount treatment system for ballast wastewater and a total amount treatment system for seawater cooling systems, which combines products capable of even larger capacity treatment with ballast water treatment equipment and microplastic recovery equipment.

MOL Website:

<https://www.mol.co.jp/en/pr/2022/22084.html>



Track record of the car carrier *EMERALD ACE* in service from MOL website



Systematic view of centrifugal microplastic collection device and piping from MOL website

### **Kajima develops marine ecological conservation technology that contributes to "blue carbon"**

Kajima Construction, a major construction company in Japan, announced on July 5 that it has developed a technology that can produce large seaweeds that grow in each region throughout the year with the aim of solving the problem of seaweed bed decline in coastal areas nationwide.

The "free gametophyte technology" used this time is to collect spores released by large seaweeds, to store them in a small amount of liquid as gametophytes for a long period of time, and then to float the gametophytes. The technology has made it possible to supply large seaweed seedlings throughout the year in line with the local seaweed bed regeneration plan.



"Free gametophyte technology" has been used in the aquaculture field such as breeding of wakame seaweed, but with this technological development, it will be applicable to underwater forest conservation for perennial large seaweeds such as Arame and Ecklonia cava. This will enable sustainable conservation of large seaweeds that are endemic to the region, taking into consideration the genetic regional characteristics. Actually, at the company's technical research institute at Hayama coast in Kanagawa pref. it was confirmed about 10 cm of Arame larvae grew to 60 cm or more in half a year.

In the future, the company plans to contribute to the realization of a nature-positive and decarbonized society in social activities through various research and development technologies related to biodiversity and marine ecological conservation that contributes to "blue carbon," which is one of the CO2 absorption sources.

Kajima website (in Japanese):

<https://www.kajima.co.jp/news/press/202207/5e1-j.htm>



Arame, 6 months later from Kajima website



Fry of rockfish that lives near Arame from Kajima website

### **Idemitsu and UMICORE jointly develop high-performance materials for all-solid-state batteries**

Idemitsu Kosan and Umicore (Belgium) announced on June 23 that they will

develop jointly a high-performance material that combines a positive electrode material and a solid electrolyte, with the aim of commercializing and expanding the use of all-solid-state batteries.

Idemitsu Kosan is developing a solid electrolyte, which is a key material for all-solid-state lithium-ion batteries. It has established a high-purity lithium sulfide production method cultivated in the petrochemical business, and holds many patents for solid sulfide electrolytes made from lithium sulfide. In addition, Umicore is a leading company of positive electrode materials used in lithium-ion batteries required for hybrid vehicles, plug-in hybrid vehicles, and fully electric vehicles. And it has been working on solid positive electrode material chemistry since 2017 and has obtained several major patents in the same technical field. By utilizing the knowledge and technological capabilities of both companies, they aim to accelerate the development of new high-performance materials for all-solid-state batteries and contribute to the practical application and popularization of all-solid-state batteries.

All-solid-state batteries are expected to be put into practical use and spread as a technology that meets performance needs such as electrification, acceleration of decarbonization by EV, safety, high capacity, and quick charging mainly in the automobile industry. Ensuring adhesion between solid particles is important for demonstrating and improving the performance of all-solid-state batteries, and the two companies are jointly developing a new high-performance material that fuses a positive electrode material and a solid electrolyte.

UMICORE website:

<https://www.umicore.com/en/newsroom/news/umicore-and-idemitsu-to-jointly-develop-high-performance-solid-state-battery-materials/>



### **Toshiba ESS collaborates with Swedish company Ecahndia on ship electrification**

Toshiba Energy Systems & Solutions Corporation announced on June 22



announced that it will start collaborating with Echandia (Sweden), which develops, manufactures and sells battery and fuel cell systems for ships in order to respond to the accelerating electrification of ships in Europe.

Specifically, they will consider installing the next-generation pure hydrogen fuel cell under development by Toshiba ESS in the electric system for ships developed by Echandia. By installing Toshiba ESS's next-generation pure hydrogen fuel cell, it is expected that the service life will be extended by about 200%. The two companies will aim to put it into practical use by around 2024, and will also seek a cooperative relationship to expand the decarbonized vessel market in Europe in the future.

In response to the global trend of decarbonization, the shipping industry is also accelerating its environmental friendliness. According to the International Maritime Organization (IMO), CO<sub>2</sub> emissions from the shipping industry as a whole increased by nearly 10% between 2012 and 2018, accounting for 2.9% of global anthropogenic emissions. The organization has set its own goals to significantly reduce emissions by 2030. Especially, Scandinavian countries are leading the movement toward decarbonization of ships, such as the passage of a regulation bill for environmental measures of ships unique to each country, and they are accelerating the development of electric systems using fuel cells and batteries.

Echandia develops energy storage solutions for maritime electrification, mainly in Europe. It's proceeding with a project aimed at decarbonization and electrification in collaboration with various companies, such as receiving orders for fuel cell systems and large batteries for high-speed ferries operated in Stockholm.

Toshiba has been developing technologies related to hydrogen since it started developing fuel cell systems in the 1960s. Going forward, it will continue to aim to provide high-value-added hydrogen solutions that integrate hydrogen energy-related technologies derived from renewable energy toward the realization of a hydrogen-based society.

Toshiba Energy Systems & Solutions Corporation website:

<https://www.global.toshiba/ww/news/energy/2022/06/news-20220622-01.html>



Echandia to supply battery system for a emission-free high-speed catamaran  
from Echandia website

### **Nippon Express and French company EMBALL'ISO begin new environmentally friendly services in international air transportation**

On June 16, Nippon Express announced the new service will start collaborating with EMBALL'ISO (France), which has a proven track record in vaccine transportation, to maintain a strict temperature during transportation and to contribute to the reduction of CO2 emissions of users. A new service is that combines reusable passive type (non-power supply type) temperature control container with high temperature control performance of EMBALL'ISO in international air transportation.

Strict temperature control is required in transportation, mainly in the medical and pharmaceutical industries. In addition, there is increasing interest in environmentally friendly logistics services in each industry. As a priority measure in the growth strategy of the core business, the company group has positioned the pharmaceutical industry as a priority industry and has been developing temperature-controlled transportation services. This time, for the first time as a Japanese logistics company, in collaboration with EMBALL'ISO, it has started selling a new service for international air transportation using an environment-friendly temperature control container.

The container can be collected in 80 countries and regions around the world contributing for reducing supply chain CO2 emissions by transporting in reusable containers. According to the company, it is possible to select the optimum content for the cargo volume of the user in three temperature zones.

Nippon Express website:

<https://www.nipponexpress-holdings.com/en/press/2022/20-Jun-22-1.html>



Environmental-friendly isothermal packaging  
from Nippon Express website

### **IHI, CO2 free power generation achieved with the world's first gas turbine using 100% liquid ammonia**

On June 16, IHI announced that it realized "CO2-free power generation" using only liquid ammonia as fuel in a 2,000kW class gas turbine, and succeeded in reducing greenhouse gas (GHG) generated during combustion by 99% or more.

Since ammonia (NH<sub>3</sub>) does not contain carbon (C), it can be used in existing power generation facilities as a fuel that does not emit CO<sub>2</sub> during combustion. The combustion method that the company is working on, in which liquid ammonia is directly sprayed into the combustor of a gas turbine, has advantages for social implementation such as simplification of the supply system from the storage tank to the gas turbine and improvement of controllability.

On the other hand, liquid ammonia has lower flammability than natural gas and ammonia gas and is hard to burn. Therefore, when the ammonia co-combustion rate is increased, stable ammonia combustion and suppression of GHG emission in the exhaust gas are issues. CO<sub>2</sub> emissions can be reduced by replacing fossil fuels with ammonia, but until now, when operating at a high ammonia co-firing rate of over 70%, a type of greenhouse gas, nitrogen (N<sub>2</sub>O) that has an effect

about 300 times is generated. And even if CO<sub>2</sub> emissions could be reduced, it would not lead to greenhouse gas reduction.

This time, the company installed a newly developed combustor on a 2,000kW class gas turbine at the Yokohama Plant and conducted a test. As a result, it has achieved a greenhouse gas reduction rate of 99% or more even with a high ammonia co-firing rate of 70 to 100%. In future development, it tries further reduction of NO<sub>x</sub> improving operability and durability toward the practical application of a 100% liquid ammonia combustion gas turbine in 2025.

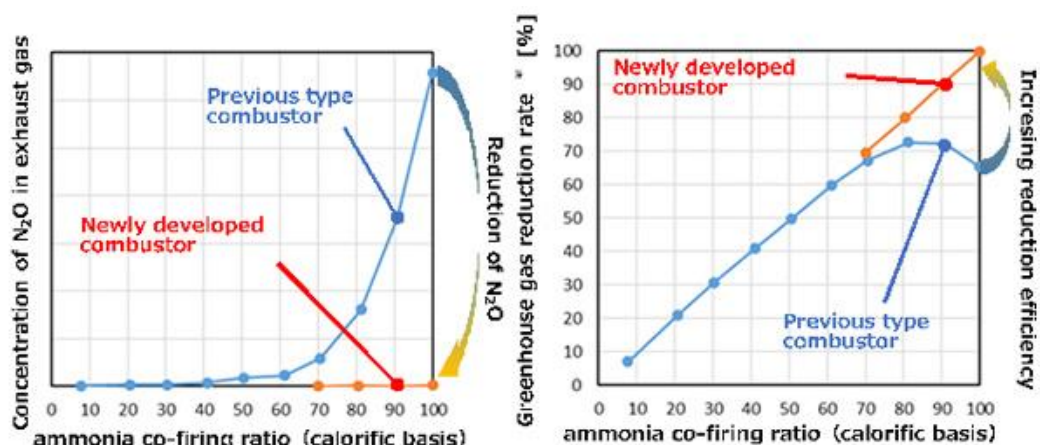
The company group is also promoting a project to produce green ammonia that does not emit CO<sub>2</sub> during production and use by using renewable electricity in a country suitable for renewable energy. It is also promoting the construction of a hydrogen / ammonia value chain.

IHI website:

[https://www.ihl.co.jp/en/all\\_news/2022/resources\\_energy\\_environment/1197938\\_3488.html](https://www.ihl.co.jp/en/all_news/2022/resources_energy_environment/1197938_3488.html)







2,000-kilowatt-class gas turbine “IM270” at IHI Yokohama Works

N<sub>2</sub>O concentration and greenhouse gas reduction rate

from IHI website

### **MOL conducts "carbon offset voyage" on car vessels for Europe, offsetting approximately 4,000 tons**

MOL announced on June 15 that it has carried out a carbon offset voyage for marine transportation of finished vehicles from Japan to Europe. The amount of CO<sub>2</sub> emitted by the ship during the voyage between Japan and Europe was about 4,000 tons including the entire process from the production of fuel oil to the consumption by the ship, but this total amount was offset.

This initiative was implemented as a pilot case for considering the specific use of carbon credits in shipping for CO<sub>2</sub> emissions that are difficult to reduce at the current technological level. The "BELUGA ACE" operated by MOL has loaded a completed Mazda vehicle, departed Hiroshima Port on April 18, and completed its voyage at Bristol Port in the United Kingdom on May 28.

The calculation method of emissions was verified by Bureau Veritas (Washington), a third-party verification organization. In addition, the entire process from the calculation of CO<sub>2</sub> emissions including the verification process to the total offset by carbon credit was also certified by Climate Neutral Commodity (Geneva), a third-party certification body.

In this effort, it used carbon credits created from afforestation and reforestation projects in Ghana and China. Both projects are credits created within the last five

years, accredited by the international carbon credit standards management body Verra. These projects not only absorb and remove CO<sub>2</sub> from the atmosphere, but also contribute to multiple synergistic benefits such as biodiversity conservation and job creation for local residents.

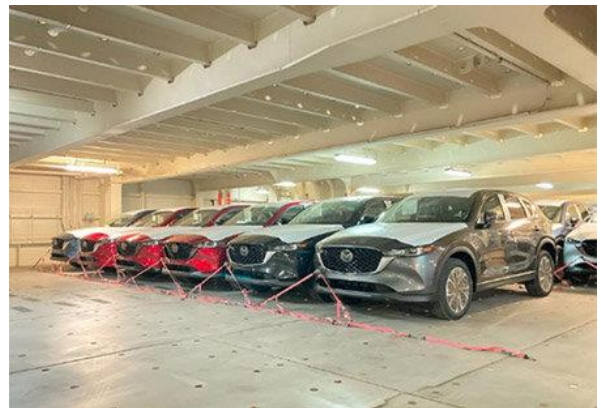
MOL Group aims to achieve "net zero emissions" by 2050, and in addition to maximizing emission reduction efforts such as research and development of zero emission fuels and renewal of vessels to low carbon vessels, with various stakeholders. Through co-creation, it will also work on the utilization of carbon credits and the creation of negative emissions based on nature and technology.

MOL website:

<https://www.mol.co.jp/en/pr/2022/22077.html>

#### Applied carbon credits from MOL website

<b>Project name</b>	(1) Reforestation of degraded forest reserves	(2) Qianbei Afforestation Project
<b>Country/region</b>	Ashanti Region, Ghana	Zunyi City, Guizhou Province, China
<b>Number of credits</b>	2,082 tCO <sub>2</sub> e	2,081 tCO <sub>2</sub> e
<b>Year credits created</b>	2018-2019	2018
<b>Type of credit</b>	Carbon absorption/ removal (Note 5)	Carbon absorption/ removal (Note 5)
<b>Certification body</b>	VCS	VCS
<b>Outline</b>	Promote sustainable afforestation using teakwood and native species, regenerate natural forests in waterside buffer zones, and prevent illegal logging, with the purpose of reforesting devastated forests. The project contributes to increased biodiversity by reforestation and improve soil and water quality, in addition to creating employment through an intercropping program and reforestation.	The project aims to accelerate carbon sequestration and enhance biodiversity in deteriorated lands by planting native tree species with long maturing periods. It creates employment by passing on afforestation/ forest management/ maintenance technology to local communities and aims at recovery of biodiversity through establishment of new forest ecosystems and preventing their decline, and improvement of soil and water conservation.



Loading cars on the *Beluga Ace* at the Port of Hiroshima, and loaded Mazda cars in the hold of the vessel from MOL website



Reforestation in Ghana (left) and afforestation project in China (right) from MOL website

### **Glasgow Financial Alliance Launches New Network Supporting Asia's Transition to Net Zero**

The Glasgow Financial Alliance (GFANZ), a global coalition of financial institutions, announced on June 9 that it would establish the "GFANZ Asia-Pacific (APAC) Network." In the future, centering on this network, it will promote the transition to net zero by financial institutions in the Asian region.

Yuki Yasui, who was in the Asia-Pacific region at the United Nations Environment Program and Financial Initiative (UNEP FI) and is the new director of GFANZ, will be appointed as the head of the network. He will lead the GFANZ with the leadership team of Mark Carney, Michael Bloomberg and others, as well as the newly established GFANZ APAC Advisory Board.



More experts will be added to the advisory board in the future to increase the diversity and equity of the region and sector, which will allow the network to represent the region on economic and policy conditions.

In order for the world to curb temperature rise, it is important to encourage investment in low-carbon and renewable energies in the Asia-Pacific region. According to the United Nations-promoted Race to Zero campaign, the region will need to invest US \$ 13.6 trillion over the next decade to advance the global transition to net zero and avoid the worst effects of climate change.

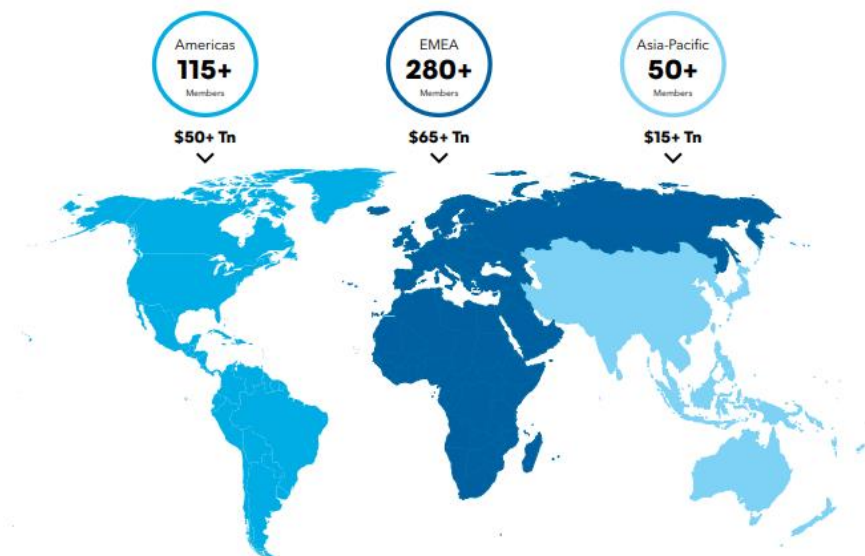
In order to accelerate such efforts, GFANZ launch the APAC network and strengthen cooperation with financial institutions and policy makers in the region, so that efforts related to Net Zero will be adopted by all companies and institutions.

In the coming months, GFANZ will also launch regional networks in Africa and Latin America, with secretariat staff on all major continents, reflecting GFANZ's global characteristics.

Glasgow Financial Alliance for Net Zero website:

<https://www.gfanzero.com/press/gfanz-launches-asia-pacific-network-to-support-asia-pacific-financial-institutions-move-to-net-zero/>

GFANZ global reach — members and assets represented by region  
from Glasgow Financial Alliance for Net Zero website



### **Sharp Corporation, achieves the world's highest conversion efficiency solar cell with a light and bendable**

Sharp corporation announced on June 6 that it developed a lightweight and flexible solar cell module of practical size in the "Research and Development Project for Mobile Solar Cells" of the New Energy and Industrial Technology Development Organization (NEDO), with the world's highest conversion efficiency of 32.65 %.

It updated a new world record of conversion efficiency of 31.17%, which the company achieved in the NEDO project in 2016. The prototype compound 3-junction solar cell module has a structure in which the solar cell is sandwiched between films, so it has the features of being lightweight and flexible, and can be mounted on various moving objects that require high efficiency and light weight.

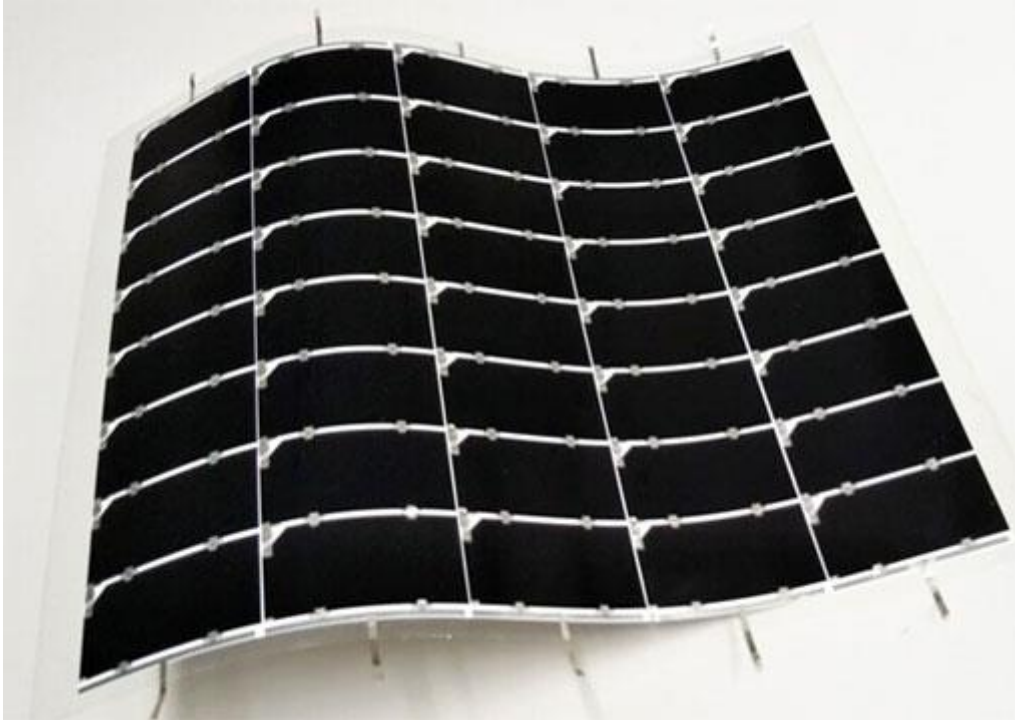
Previously, the module had a structure in which the solar cell was sandwiched between two pieces of glass, but by changing to a structure in which the solar cell is sandwiched between thin films, it has realized a module that combines lightweight and flexible features. The module is about 29 cm x 34 cm (area 965 cm<sup>2</sup>), which is large enough for practical use, and weighs about 56 g (0.58 kg / m<sup>2</sup>).

The company's compound 3-junction solar cell adopts a unique structure that can efficiently convert sunlight into electricity by stacking three light absorption layers with indium, gallium, and arsenic as the bottom layer. In April 2013, a cell with this structure achieved a conversion efficiency of 37.9% in a small size (area 1.047 cm<sup>2</sup>). And in 2016, a solar cell of a practical size (area 27.86 cm<sup>2</sup>) with a modular (area 968 cm<sup>2</sup>) achieved the world's highest conversion efficiency of 31.17% at that time.

From the module manufactured in 2016, it improved the average conversion efficiency (about 34.5% → about 36%) of the compound 3 junction type solar cell (area 22.88 cm<sup>2</sup>) and improved the cell filling rate in the module. The conversion efficiency of the practical size module (area 965 cm<sup>2</sup>) could be increased to 32.65%.

Sharp website:

<https://global.sharp/corporate/news/220606-a.html>



A flattened solar module anchored in a frame to facilitate measurement of its electrical characteristics from Sharp website