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JAPANESE INDUSTRY AND POLICY NEWS
June - July, 2021

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Legislation and Policy News

Ministry of Land, Infrastructure, Transport and Tourism submitted a third dissenting opinion on the expansion of the EU emissions trading system to international shipping

On June 7, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) responded to the expansion of the EU Emissions Trading System (EU-ETS), which the European Union (EU) is considering as part of its climate change countermeasures, to international shipping.

MLIT disagreed with the introduction of its own regional regulations by the EU, saying that it would not lead to effective greenhouse gas reduction, and that the Global Maritime Organization (IMO)'s Global Economic Method (MBM) was effective. They called for accelerating the development of countermeasures. Currently, the EU is considering expanding EU-ETS to international shipping, which has already been applied to the electric power field, and plans to propose specific details during the second quarter of 2021.

Japan points out that the EU's own regional regulation has the following problems.

- The EU's introduction of its own regional regulations may not lead to effective greenhouse gas reductions and may discourage the shipping industry from investing in decarbonization technologies.

- There is a risk that discussions on the introduction of global economic methods MBM (Market Based Measure) in IMO will be stagnant. A system that provides economic incentives for the introduction of reduction and decarbonization technologies.

- While the policy-making process is carried out by a limited number of members, if the EU-ETS expands to international shipping, the shipping industry in countries other than EU member states will also be affected.

Therefore, on June 4, Japan sent a written opinion from the Director-General of the Maritime Bureau of the MLIT to the Director-General of the European

Commission.

IMO will reduce CO2 emissions by 40% or more by 2030 (compared to 2008) toward the decarbonization of international shipping, and will apply new regulations to existing large ocean-going vessels.

In 2020, Japan proposed to IMO a new CO2 reduction measure for ships. A new international regulation proposal based on this, "Existing Ship Fuel Economy Regulation (EEXI) / Fuel Economy Performance (CII) Rating," was adopted by the IMO 76th Marine Environmental Protection Committee in June and will be regulated from the beginning of 2023 (Information as of the beginning of June 2021).

MLIT Website (in Japanese) :
https://www.mlit.go.jp/report/press/kaiji07_hh_000187.html

Image of VLCC from MOL website

Power source composition in FY 2030, renewable energy about 36-38%, non-fossil total 60%, Ministry of Economy, Trade and Industry draft

On July 21, the Ministry of Economy, Trade and Industry presented a draft of the next basic energy plan. Regarding the power source composition in FY 2030, it is proposed that renewable energy is about 36 to 38%, nuclear power is about 20 to 22%, hydrogen and ammonia is about 1%, and the total non-fossil

power source is about 59%. The total amount of power generated was about 930 to 940 billion kWh, a decrease from FY2019.

Of the renewable energy, solar power is about 15%, wind power is about 6%, geothermal power is about 1%, hydropower is about 10%, and biomass is about 5%. As to 41% of fossil power sources, about 20% was LNG, about 19% was coal, and about 2% was oil. Of course, figures are provisional and may change in the future.

The "Basic Energy Plan", which shows the basic direction of energy policy, is based on the basic energy policy policies of "safety," "stable supply," "improvement of economic efficiency," and "adaptation to the environment." It is reviewed approximately every 3-4 years.

METI has made the outlook which is an ambition to overcome various issues in terms of both supply and demand in promoting thorough energy conservation and expansion of non-fossil energy, based on the new goals for 2030.

METI explained that when implementing measures for this ambitious outlook, it is necessary to give due consideration to the strength of the measures and the timing of implementation so that stable supply will not be hindered. For example, if measures to curb fossil power sources are taken immediately before the introduction of non-fossil power sources is sufficient, the stable supply of electric power may be hindered.

If an ambitious outlook is realized, the energy self-sufficiency rate will be about 30% (about 25% in the current mix), and the reduction rate of energy-derived CO2 in the greenhouse gas reduction target will be about 45% (25% in the current mix).

In addition, METI predicts if the introduction of renewable energy is expanded and the price of fossil fuels is reduced as expected by the IEA, the total electricity cost will be about JP¥ 8.6-8.8 trillion (in the current mix JP¥ 9.2-9.5 trillion) and the unit price will be approximately JP¥ 9.9-10.2 / kWh (in the current mix JP¥ 9.4 to 9.7 / kWh).

Power ratio in Japan (Source: METI)

	2019(%)	2030(%)
Hydrogen & Ammonia	0	1
Renewable	18	36-38
Nuclear	6	20-22
LNG	37	20
Coal	32	19
Oil	7	2
Total power	1,024 billion kwh	930-940 billion kwh

= Non-fossil

METI website (in Japanese):
https://www.enecho.meti.go.jp/committee/council/basic_policy_subcommittee/2021/046/046_004.pdf

Survey and Business Data

Japanese exports surpass before COVID-19, January - June 23% increase
According to the preliminary trade statistics for the first half of 2021 (January to June) released by the Ministry of Finance on July 21, exports increased by 23.2% from the same period of the previous year to JP¥ 39,857 billion. It exceeded the level in the first half of 2019 before the spread of COVID-19. The growth rate is the largest in 11 years. Exports to the United States and China, which are leading the economic recovery, were strong, and exports of vehicles in particular increased. Imports increased 12.2% to JP¥ 38,872 billion. The trade balance, which is exports minus imports, was a surplus of JP¥ 984 billion.

The increase in exports was the first in five terms, 4.2% higher than in the first half of 2019. Exports to the US increased 23.9% year-on-year JP¥ 7,580 billion. Both Vehicles and automotive parts increased by about 40%. Exports to China increased by 27.0% to JP¥ 8,604 billion, and manufacturing equipment such as semiconductors increased by nearly 70%, leading the whole. In Asia as a whole, it was strong at JP¥ 2,286 billion, up 23.4%. Exports to the EU were also strong, at JP¥ 3,784 billion, up 23.4% year-on-year. Sales of vehicles and parts increased.

Looking at exports by item, vehicles increased by 32.8% and automotive parts increased by 38.8% year-on-year. Vehicle exports, which had fallen due to the spread of COVID -19, are recovering rapidly as the economies of each country resume.

Imports also increased by double digits on a value basis due to rising prices of resources such as crude oil, but the recovery in import quantity was only 5.6%, reflecting weak domestic demand mainly due to the declaration of emergency. Imports from the EU amounted to JP¥ 4,502 billion, up 16.4% year-on-year, the first increase in four terms. Pharmaceuticals, auto parts and aircrafts expanded

MOF website:
https://www.customs.go.jp/toukei/shinbun/trade-st_e/2021/2021_314e.pdf

- Exports & Imports with EU (Jan. - Jun., 2021)

	Value (Billions of JP¥)	% to the same period in 2020	Reference
Exports	3,782.4	+23.4	Increase for the first time in 5 terms
Imports	4,502.0	+16.4	Increase for the first time in 4 terms
Balance	-719.6	-106	In red 8 terms continuously

- Movement of principal goods with EU (Jan. - Jun., 2021)

Export goods	% to the same period in 2020	Import goods	% to the same term in 2020
Auto parts	54.1	Pharmaceuticals	24.9
Vehicles	8.0	Vehicles	36.9
Pumps	45.7	Airplanes	152.8

Data source: MOF

Company & Organization News

Euglena's biofuel realizes first flight, manufactured with microalgae and waste cooking oil

Euglena carried out flight and flight inspection operations using bio-jet fuel produced from microalgae and waste cooking oil on June 4 at the flight

inspection machine "Citation CJ4" of the Civil Aviation Bureau of the Ministry of Land, Infrastructure, Transport and Tourism.

- The flight inspection machine refueled with bio-jet fuel flew from Tokyo International Airport to Chubu International Airport for about 2 hours and 30 minutes to carry out flight inspection work.
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- This fuel has passed the conformity inspection of the international standard "ASTM D7566 Annex 6" for bio-jet fuel, and the fuel mixed with the existing petroleum-based jet fuel has also passed the standard. In response to this, Euglena provided this fuel to the flight inspection aircraft of the Civil Aviation Bureau of the Ministry of Land, Infrastructure, Transport and Tourism.
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- Euglena has set the goal of introducing biofuels into mobiles on land, sea and air. In March 2020, biodiesel fuel was completed and started to be supplied, and the introduction of biofuel is expanding in buses, delivery vehicles, ferries, tugboats, etc. Bio-jet fuel was completed in March 2021, and this time the first flight was finally realized. The company plans to continue supplying bio-jet fuel in the future.
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- Euglena website: https://www.euglena.jp/en/news/20210604-2/

From Euglena website: Flight inspection machine "Citation CJ4"

Sony developed sustainable "Original Blended Material" from bamboo, sugarcane and post-consumer recycled paper to be used as packaging material for products without coloring

Sony announced on June 9 that it has developed an "original blend material" that is made from bamboo, sugar cane, and recycled paper collected on the market.

It is a highly durable and strong recyclable paper material that does not use any plastic. It was adopted in the package of the company's completely wireless headphones "WF-1000XM4". It is used without coloring in order to make the best use of the various shades that are the characteristics of the material. The policy is to continue using it in product packaging.

Bamboo

Bamboo used for the original blend material is limited to those cultivated in the three mountains of Guizhou, China. Bamboo is a plant that grows in a short period of time like sugar cane, and it is said that the impact on nature is reduced by selecting the necessary amount and logging it making the entire bamboo mountain a sustainable growing cycle.

Sugar cane

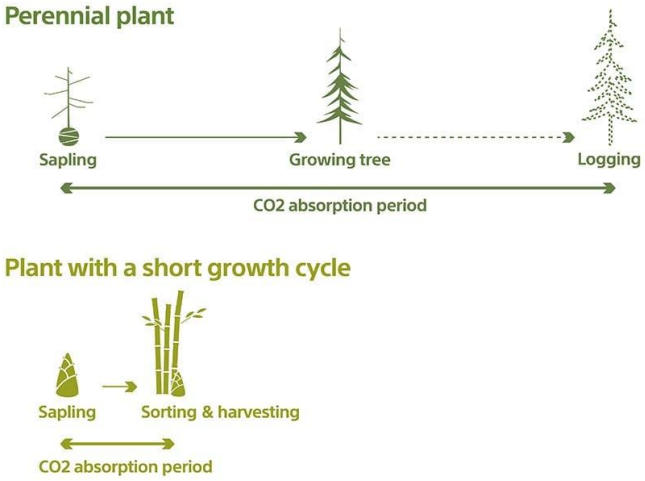
Normally, most of the pomace of sugar cane is burned as fuel for power generation and causes carbon dioxide emissions. But it can be used as a recycling resource. It is used only for sugar cane pomace cultivated in fields within a radius of 100 km, Nakhon Sawan, Thailand.

Market recovery recycled paper

For the original blend material, they use recycled paper collected from the market at the place of production of the package. In addition, the strength is increased by combining recycled paper with bamboo and sugar cane. It is possible to provide a unique texture by making use of the material of recycled paper without coloring.

Sony website: https://www.sony.com/en/SonyInfo/News/Press/202106/21-039E/

(Pictures and drawing are from Sony website)



Made from bamboo, sugarcane and recycled paper

Samples

Embossing without ink

ITOCHU launches the first power storage system that utilizes EV reuse batteries

ITOCHU Corporation announced on June 29 that it has started operation of the first power storage system "Bluestorage" that utilizes reused batteries of electric vehicles (EV) at its partner company factory in Yamaguchi Prefecture.

In the future, the company will provide competitive medium- and large-sized power storage systems for power applications combined with renewable energy power generation, for which demand is expected to grow, and energy management applications in industry, including recycling. The company plans to promote the construction of a new business model that is conscious of life cycle assessment.

The State of Health (SOH), which is the capacity of a lithium-ion battery when fully charged, gradually decreases as charging and discharging are repeated. Generally, when SOH drops to about 80%, it becomes unsuitable for in-vehicle use. On the other hand, compared to in-vehicle applications that require operation in a wide variety of operating environments, the environment is stable for stationary applications, so even batteries removed from the EV can still be used sufficiently, leaving "reuse value".

Focusing on this point, the company entered into a capital and business alliance with Shenzhen Pandpower (Shenzhen, China), which is engaged in the reuse and recycling business of EV batteries in China since 2019, and has been developing a power storage system using EV reuse batteries.

Currently, the market needs for medium- and large-sized power storage systems are increasing from the viewpoint of the spread of renewable energy, improvement of resilience to natural disasters, and BCP measures. Reused batteries also lead to effective use of resources.

Itochu website: https://www.itochu.co.jp/en/news/press/2021/210629.html

Bluestorage Prototype from Itochu website

Shimizu Corporation collaborates with Norwegian FOO in the field of offshore wind power, aiming to receive EPC orders in Japan

Shimizu Corp. announced on June 30 that it has signed a memorandum of understanding with Norwegian Fred. Olsen Ocean (FOO), which has been involved in many offshore wind power projects in Europe, the United States and Asia, on building a cooperative structure in the field of offshore wind power construction. The companies aims to receive EPC (engineering, procurement, construction) orders for offshore wind power generation facilities.

Shimizu Corporation invested about 50 billion yen to gain the top share in the Japanese offshore wind construction market, and is constricting a self-propelled SEP vessel (self-elevating workbench) with the world's largest loading capacity and crane capacity. On the other hand, in order to receive EPC orders for offshore wind power generation facilities, it is essential to collaborate with overseas companies that have accumulated construction results in Europe,

where the introduction of offshore wind power generation is progressing. FOO has one of the leading achievements in the installation of offshore wind turbines in Europe and has advanced knowledge in the operation management of SEP vessels.

FOO is one of Europe's leading offshore wind power construction companies engaged in the SEP ship charter business and the transportation and installation of offshore wind turbines. It has installed more than 700 offshore wind turbines and has a power generation capacity of approximately 4.5 GW. It owns Fred. Olsen Windcarrier (FOWIC) and Global Wind Service (GWS) as subsidiaries related to offshore wind construction, FOWIC for SEP charter business and offshore wind turbine transportation and installation work, and GWS for dispatching engineers for offshore wind turbine installation.

In Japan, based on the Renewable Energy Sea Area Utilization Law that came into effect in April 2019, the movement toward the introduction of offshore wind power generation is accelerating, such as the designation of promotion areas and the selection of businesses through open recruitment. The government's "Offshore Wind Industry Vision (1st)" has set a goal of increasing offshore wind power generation capacity to 10 GW by 2030 and 30 to 45 GW by 2040, and the offshore wind construction market will accelerate rapidly in the future.

Shimizu website (in Japanese): https://www.shimz.co.jp/company/about/news-release/2021/2021022.html

From Shimizu website: Berth of a self-propelled SEP ship that Shimizu Corporation is constructing

Siemens Gamesa obtains typhoon-resistant type approval for 11MW class offshore wind turbine

Siemens Gamesa Renewable Energy announced on July 6 that it has obtained IEC type certification as a second offshore wind turbine model of the company for RNA and wind turbines with a rotor nacelle assembly that is resistant to harsh wind conditions in the typhoon class.

The certification was granted to the 8MW class SG 8.0-167DD offshore wind turbine in December 2020, followed by the 11MW class SG 11.0-200DD offshore wind turbine on May 12, 2021. Both Simens Gamesa models are said to be able to withstand wind speeds equivalent to Class T (Typhoon) set by the IEC (10-minute average extreme wind speed of 57 m / sec, 3-second average gust of 79.8 m / sec).

The SG11.0-200DD offshore wind turbine, which was certified in May, has a rated output of 11 MW (11,000 kW) and uses an integrally molded blade with a length of 97 meters for a rotor with a diameter of 200 meters. The SG8.0-167DD offshore wind turbine has a rated output of 8 MW (8,000 kW) and uses an integrally molded blade with a length of 81 meters for a rotor with a diameter of 167 meters. These two products utilize patented direct-drive generator technology. And the next-generation model 14MW class SG 14-222 DD offshore wind turbines, whose prototypes are scheduled to start operation in the latter half of 2021, are also designed to withstand the harsh wind conditions specified.

The company's direct-drive offshore wind power generation platform, which is also applied to the models that have obtained type approval this time, has already been installed and is in operation in more than 1,200 units around the world. Taiwan's Formosa 1 offshore wind project in the Asia-Pacific region is one of them. The operating rate of these 1,200 units in 2020 will be over 97%.

In addition to Class T-equivalent wind speed compliance, the company works closely with relevant and certification bodies in each country to ensure that all required local standards for wind farms are taken into account.

Siemens Gamesa website:
https://www.siemensgamesa.com/en-int/newsroom/2021/07/210706-siemens-gamesa-press-release-typhoon-proof

From Siemens Gamesa website:

Toyo, Itochu, etc. start survey phase 2 for establishing value chain of "blue ammonia" from Eastern Siberia, Russia

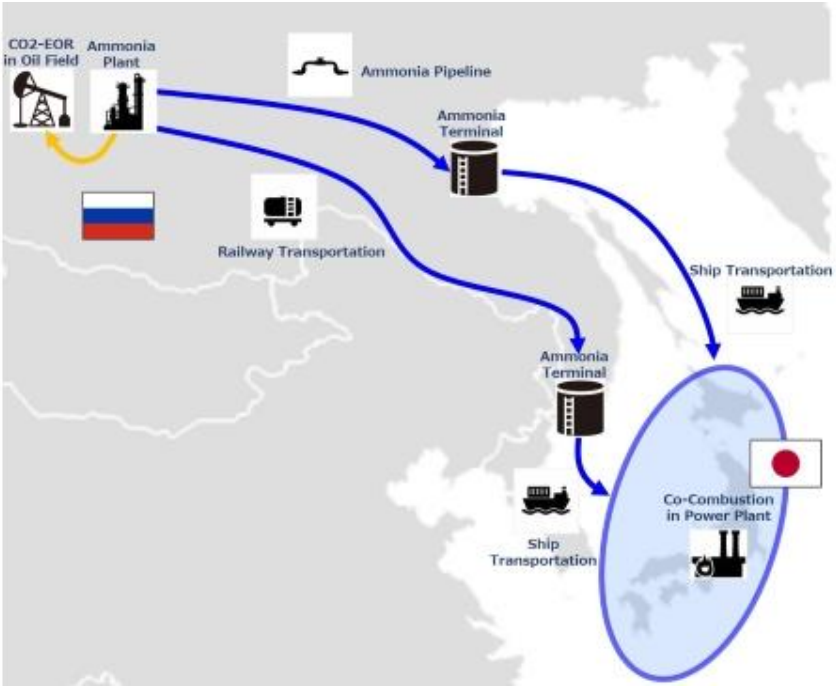
Toyo Engineering, Itochu, Narais an Irkutsk Oil Company and Japan Oil Natural Gas and Metal Mineral Resources Organization (JOGMEC) announced on July 7 that they will start a commercialization survey "Phase 2" following "Phase 1" conducted in FY 2020 toward the construction of a blue ammonia value chain between East Siberia and Japan.

In phase 2, the parties will make a conceptual design to produce hydrogen and even ammonia from the IOC's natural gas produced in Eastern Siberia's oil towards the commercialization of a large blue ammonia value chain from Eastern Siberia to Japan. In this design, it is assumed that the company will combine CO2-EOR, which the company holds in Eastern Siberia to increase oil production, with CO2 emitted during the production process. For inland ammonia transportation, applications of railways and pipelines are considered.

Similar to Phase 1, Toyo and Itochu will build a master plan for the value chain to convert the natural gas produced by the IOC in Eastern Siberia into ammonia and transport it to Japan as a commissioned survey by JOGMEC.

The four parties are expected to establish a blue ammonia value chain between Eastern Siberia and Japan through collaboration that makes use of their own technology and knowledge, to be a promising measure for decarbonization of the fuel field such as power plants and ships.

Toyo Engineering website:
https://www.toyo-eng.com/jp/en/company/news/?n=588



From Toyo Engineering website: Blue ammonia value chain flow diagram

ENEOS collaborates with French company on floating offshore wind turbines

ENEOS announced on July 7 that it has signed a joint business development agreement with French company BW Ideol for a commercial-scale floating offshore wind farm in Japan.

In the future, the two companies will set specific candidate areas and jointly promote the development of a floating offshore wind power generation business using dumping pool technology, aiming for early commercialization such as cost reduction of floating offshore wind power generation in Japan.

The damping pool technology is to suppress the shaking of the floating body at sea by making the center of the floating body donut-shaped. Floating foundations using this technology are excellent in workability and can be made of concrete, so they have a great cost advantage in manufacturing and installation. BW Ideol has successfully demonstrated operations in France and Japan for floating offshore wind turbines using damping pools.

In its long-term vision for 2040, the ENEOS Group has set out to contribute to the formation of a low-carbon, recycling-oriented society by pursuing carbon neutrality for its own emissions. And they aim to expand the total power generation capacity of the energy business to over 1 million kW by 2022.

In the offshore wind power business, in addition to participating in business development off the coast of Taiwan in April 2019 and off the coast of Akita pref. in September 2020, the company was selected as a floating offshore wind turbine company off the coast of Goto archipelago in Nagasaki pref. as the first participants in June 2021 based on the Renewable Energy Sea Area Utilization Law.

ENEOS website:
https://www.eneos.co.jp/english/newsrelease/2021/pdf/20210707_01.pdf

From ENEOS website: Floatgen project using BW Ideol's technologies

Tokai Carbon participates in EV battery development project led by French battery manufacturer

The company announced on July 8 that it will join a battery development project for electric vehicles (EV) which is led by French emerging battery maker Verkor through its French subsidiary Tokai COBEX Savoie SAS (Tokai COBEX Savoie SAS / a wholly owned subsidiary of its German subsidiary Tokai COBEX GmbH).

In the Verkor's EV battery development project, OEM Renault and some French company have participated, under the joint system by materials manufacturers, battery manufacturers and automobile manufacturers. And they are studying the construction of giga factory by 2024.

By taking a stake in this project, Tokai Carbon aims to supply anode materials while being involved in the development of high-performance batteries with low CO2 emissions in collaboration with each company.

Verkor was born with the support of EIT InnoEneergy, Schneider Electric, and Groupe IDEC to expand battery cell production in Europe. It is promoting low carbon battery manufacturing in Southern Europe to meet the rising demand for EVs and stationary power storage.

Since 2006, Tokai Carbon has been engaged in research and development of anode materials for lithium-ion batteries at Tokai COBEX Savoie SAS, utilizing existing production facilities for graphite products, in order to meet the rapidly increasing demand for EVs in Europe. On January 26, 2021, Tokai COBEX Savoie SAS was certified as the only Japanese company in the subsidized companies (42 companies in total) of the IPCEI (Important Project of Common European Interest).

Tokai Carbon website: https://contents.xj-storage.jp/xcontents/AS04435/1b6f2232/d0f6/417b/ae9d/e28b8f6ea822/20210706135904811s.html

Verkor's battery for EV from Verkor website

INPEX, JERA and others start investigation to clean ammonia production in Abu Dhabi

INPEX, JERA, Japan Oil, Gas and Metals Mineral Resources Organization (JOGMEC) announced on July 8 that Abu Dhabi National Oil Company of the United Arab Emirates (ADNOC) announced that it will start a survey to carry out a project to produce low carbon ammonia (clean ammonia) with reduced CO2 emissions in Abu Dhabi.

In this study, ammonia is synthesized from hydrogen produced by reforming natural gas in Abu Dhabi, and the CO2 emitted at the same time is used for enhanced oil recovery (CO2 EOR). This is a survey of the feasibility of a business that transports clean ammonia, which has significantly reduced CO2 emissions, to Japan.

On the same day, INPEX, JERA, and JOGMEC signed a joint research agreement with ADNOC regarding the feasibility (F / S) of this business. The parties confirmed the schedule, cost sharing, management system, etc. for implementing F / S. The online signing ceremony for this agreement was part of an online meeting between Hiroshi Kajiyama, Minister of Economy, Trade and Industry of Japan and Jarbel, UAE Minister of Industry and Advanced Technology and ADNOC CEO.

Ammonia is a promising candidate as an energy carrier (transportation / storage means) for hydrogen since it does not emit CO2 during combustion, it is

expected as a fuel for power generation and ships against the backdrop of the transition to a global decarbonized society.

Enhanced oil recovery (CO2 EOR) is a technology that improves the crude oil recovery rate and increases production by injecting CO2 underground. It is expected that the CO2 reduction effect by CO2 injection and storage and the economic effect by promoting crude oil recovery will be compatible.

INPEX plans to develop hydrogen business including ammonia business in anticipation of the arrival of medium- to long-term hydrogen society in "Future Business Development-2050 Net Zero Carbon Society" announced in January 2021.

JERA is a power generation company funded by TEPCO Fuel & Power and Chubu Electric Power. Under the banner of "JERA Zero Emission 2050," they are working to virtually eliminate CO2 emissions from domestic and overseas businesses as of 2050. Regarding thermal power generation, they are promoting the introduction of greener fuel toward the realization of zero-emission thermal power that does not emit CO2 during power generation.

JOGMEC, which provides development support for oil / natural gas, metals, coal, and geothermal power, promotes international cooperation in the CCS (Carbon dioxide Capture and Storage) and clean hydrogen / ammonia fields, including the implementation of this joint survey, and carbon neutrality through a stable supply of resource energy.

INPEX website: https://www.inpex.co.jp/english/news/assets/pdf/20210708.pdf

INPEX website: Signing ceremony held online

NPC provides solar panel dismantling equipment to French industrial waste company

NPC announced on July 8 that it will provide solar panel dismantling equipment to the Bordeaux plant of French industrial waste disposal company Envie. This time, Envie adopted a photovoltaic panel dismantling device equipped with NPC's "hot knife separation method". The hot knife separation method is a patented technology of NPC, and it is possible to separate the glass part and the metal part of the panel to realize high recyclability.

SOREN, an organization that collects and recycles used panels in France, has newly adopted a solar panel recycling company with a tag to improve processing power as the number of discharged panels increases. One of the selected operators was Envie, which adopted NPC's panel dismantling equipment to participate in the bidding.

Currently, recycling of photovoltaic power generation panels after use has become a global issue. In Europe, the installation of panels has been progressing since the early 2000s with the introduction of the feed-in tariff (FIT), and the amount of used panels is increasing.

From NPC website: Automatic solar panel dismantling device / line

NPC website:
https://contents.xj-storage.jp/xcontents/62550/3f1f3c44/dc4c/455a/94a8/545eb1ce5f48/20210708162139071s.pdf

JOGMEC and Australian & Japanese companies build clean fuel ammonia supply chain between Japan and Australia

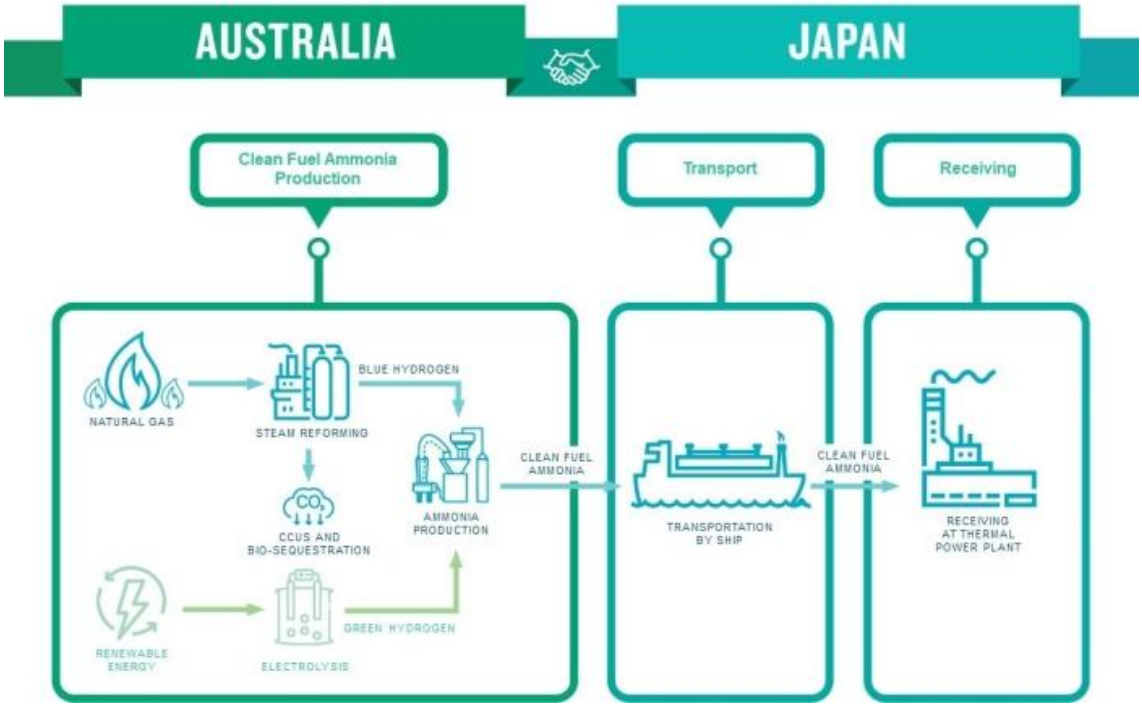
Japan Oil, Gas and Metals Mineral Resources Organization (JOGMEC), Marubeni, Hokuriku Electric Power Company, Kansai Electric Power Company and Woodside Energy Ltd. (Australia) jointly conduct a commercialization survey on the construction of a clean fuel ammonia supply chain from Australia to Japan. They announced on July 20 that they had signed a joint research agreement.

The project will be led by Japanese and Australian companies, and will focus on clean fuel ammonia, which combines CO2 emitted in the process of producing ammonia derived from natural gas with CO2 emission reduction measures such as CCS / CCU and tree planting. It conducts a commercialization survey of the entire supply chain, including production in Australia, marine transportation to Japan, utilization as fuel for power generation and ships, and examination of financing.

The five parties participating in this project will strive to build a clean fuel ammonia supply chain between Australia and Japan by utilizing their respective technologies and knowledge, and promote efforts toward decarbonization in both Japan and Australia.

Regarding the relationship between Japan and Australia, at the Japan-Australia summit meeting in June 2021, the "Japan-Australia Partnership on Decarbonization through Technology" including fuel ammonia was announced, and the joint statement of dialogue between Japan-Australia Economic Ministers in July said Japan and Australia will work together on efforts on clean fuel ammonia.

JOGMEC website:
http://www.jogmec.go.jp/english/news/release/news_15_000001_00022.html



From JOGMEC website: Graphics of the clean fuel ammonia supply chain between Australia and Japan