

JAPANESE INDUSTRY AND POLICY NEWS

February 2020

LEGISLATION AND POLICY NEWS

Measures for Supporting SMEs Affected by Novel Coronavirus Announced

The Ministry of Economy, Trade and Industry (METI) announced on February 28 that it would exercise “No.4 Safety Nets for Financing Guarantee” as a measure to support financing of small and medium-sized enterprises (SMEs) negatively affected by the novel coronavirus. This measure permits the affected SMEs to make use of a financing guarantee separate from a general financing guarantee. METI received requests from all of 47 prefectures across Japan for designation as areas subject to No.4 Safety Nets for Financing Guarantee where the novel coronavirus has negatively affected or may negatively affect business activities of numerous SMEs and small enterprises.

Based on the requests, METI decided to exercise No.4 Safety Nets for Financing Guarantee targeting all of the 47 prefectures as a measure for supporting financing of SMEs.

“No.4 Safety Nets for Financing Guarantee” aims to support financing of SMEs and small enterprises whose sales and other profits are declining. In this system, the Japan Federation of Credit Guarantee Corporations (JFG) will guarantee the full loan amount for such SMEs under a framework separate from a general financing guarantee. In this scheme, maximum amount of guarantee is set at 280 million yen per affected SME.

https://www.meti.go.jp/english/press/2020/0228_001.html

Automobile Industry Council for Studying Countermeasures against the Novel Coronavirus to be Launched

According to a press release of the Ministry of Economy, Trade and Industry (METI) dated February 20, the Japan Automobile Manufacturers Association, Inc. (JAMA), the Japan Auto Parts Industries Association (JAPIA) and the METI will jointly launch a Council of the Automobile Industry for Studying Countermeasures against the Novel Coronavirus. The council will tackle the following efforts for the time being. Details to be discussed will be added or amended according to the future situations.

(1) Information sharing and ascertaining the current situations

The council will share such information as common challenges across the industry (e.g., measures for preventing the novel coronavirus and those for smooth supply chains and distribution), measures for addressing such challenges, and policy measures offered by the government.

(2) Discussions on necessary measures

The council will hold discussions on a variety of measures to be taken in the case of prolonged influences, e.g., measures for financing and a variety of policy-based support measures.

https://www.meti.go.jp/english/press/2020/0220_002.html

Revision of JIS Includes Way of Assessment for Photo Voltaic Cell Module

According to a press release of the Ministry of Economy, Trade and Industry (METI) dated February 20, METI newly established 30 standards and revised 71 standards. METI believes that the following establishment of new standards and revision of the existing standards are especially important.

- (1) Establishment of the JIS for quality and test methods for chemically colored films for stainless steel
- (2) Streamlining of the JIS for assessment of more diverse photovoltaic cell modules
- (3) Revision of the JIS for coaxial cables for receiving television signals



Example of ignition-property tests for photo voltaic cell modules
Photos provided by the Japan Electrical Manufacturers' Association

As for photovoltaic cell modules, measurement technologies for assessing such modules are improving and the mechanisms of changes over time of materials are becoming clearer. These advancements have permitted industries to assess

the functions and safety of such modules in a more refined manner than conventional assessment approaches. Against this backdrop, METI revised the existing JIS on the assessment of photovoltaic cell modules, making it consistent with the corresponding international standards.

https://www.meti.go.jp/english/press/2020/0220_001.html

Winners of the First ESG Finance Awards Announced

Ministry of the Environment announced on February 26 winners of the first ESG Finance Awards Japan which the Ministry created for promoting the Environment, Social and Governance (ESG)-related Financing, targeting at financing institutions, associations and enterprises engaging in the ESG finance.

A total of 42 companies received awards, of which following seven companies won gold prize in each category.

Environmentally sustainable enterprises category: Kao Corporation and Kirin Holding Co., Ltd.

Investor category: The Dai-ichi Life Co., Ltd and Nissay Asset Management Corporation

Bond category: Fuyo General Lease Co. Ltd.

Financial Service category: S&P Dow Jones Indices

Financing category: Sumitomo Mitsui Trust Bank, Limited

<http://www.env.go.jp/press/107759.html> (in Japanese)

SURVEY AND BUSINESS DATA

Preliminary Report of 2019 Basic Survey of Japanese Business Structure and Activities Compiled

The Ministry of Economy, Trade and Industry (METI) has been conducting a survey titled the “METI Basic Survey of Japanese Business Structure and Activities” with the aim of clarifying how the management strategies of Japanese enterprises and industrial structures evolve and also obtaining basic data to support administrative measures.

The following is a summary of preliminary report of the 2019 survey based on actual results of FY2018, published on January 30. Key points revealed, targeting 28,270 enterprises in total are as follows.

Sales per company increased by 1.3% on a year-on-year basis, an increase for

two consecutive years, while operating profit per company showed a decrease by 3.2% on a year-on-year basis for the first time in seven years.

The ratio of ordinary profit to sales per company decreased by 0.2 percentage points (%pt) on a year-on-year basis for the first time in seven years.

Value added decreased due to a decrease in operating profits and other factors.

Labor share ratio increases due to an increase in the total payroll and a decrease in gross value added.

https://www.meti.go.jp/english/press/2020/0130_003.html

Census of Industry Reveals Increase of Employment and Shipment in Manufacturing Sector in 2019

According to a preliminary result of the Census of Industry which the Ministry of Economy, Trade and Industry (METI) published on February 28, the number of business entities with more than four employees in industrial sector was 184,839, as of June 1, 2019. Total employment in the sector actually engaging in the manufacturing activities was 7.76 million people and the shipment of manufactured products reached 331 trillion yen. As compared to the previous year, both of employment and shipment registered increase while the number of entities decreased slightly.

By sector, metal product manufacturers were the most numerous with 25,176 entities, followed by food processing companies (24,409 entities). It was the food processing companies who employ the most with 1.14 million people, followed by the transportation equipment manufacturers (1.09 million people). As for the shipment, transportation equipment manufacturing was the biggest (70.0 trillion yen) followed by chemical industry with 29.8 trillion yen.

<https://www.meti.go.jp/press/2019/02/20200228002/20200228002.html>

(in Japanese)

Factory Location Trends in the First Half of 2019 Announced

The Ministry of Economy, Trade and Industry (METI) announced on February 4 a preliminary result of the Survey of Location Trends, targeting companies in the manufacturing and gas supply, heating supply and electricity supply sectors that acquired 1,000 m² or more of land in the first half of 2019 (January-June) for the purpose of constructing factories .

The number of new factory locations acquired by the manufacturing and energy supplying sectors in Japan between January and June 2019 was 531 (down by

20% on a year-on-year basis), covering a total area of 684ha (down by 7% on a year-on-year basis).

Changes in the number of new factory locations

	2014	2015	2016	2017	2018	2019
First half	511	478	467	525	663	531
Second half	526	592	559	510	479	
Annual total	1,037	1,070	1,026	1,035	1,142	

https://www.meti.go.jp/english/press/2020/0204_001.html (in Japanese)

Environment-related Sectors Remain Optimistic on Future Business

Ministry of the Environment published a result of bi-annual business condition survey on February 21, in which opinions expressed in environment-related business sector stay favorable. Diffusion index which is the difference between brighter and gloomy future prospects was 19 point in December 2019, slightly down from 21 registered in an earlier study in June but still remain optimistic. It is a result of a questionnaire survey answered by a total of 4,800 companies.

By sector, prospect of the “counter-measure activities against global warming” sector was the highest at 24. As for the current situation, “energy-efficient automobile” was indicated as the fastest developing while renewable energy is regarded most promising in ten years’ time.

<http://www.env.go.jp/press/107725.html> (in Japanese)

COMPANY NEWS

Nippon Shokubai Succeeded in Improving the Performance of the Electrolyte for All Solid Polymer Batteries

NIPPON SHOKUBAI Co., Ltd. announced on February 13 that it has succeeded in improving the performance of the electrolyte for all solid polymer batteries. All solid-state batteries using polymer electrolyte have features such as long life and high safety. On the other hand, the polymer electrolyte has poor lithium-ion conductivity, so it is necessary to heat the battery to more than 50-degree Celsius. The newly developed polymer electrolyte shows high lithium conductivity performance. The operating temperature of the battery can be lowered near to room temperature. Therefore, new applications of all solid

polymer batteries can be expected.

<https://www.shokubai.co.jp/en/news/news0222.html>

Nippon Shokubai Developed New Separator for Alkaline Water Electrolysis Which Supports the Conversion of Renewable Energy to “Green Hydrogen”

NIPPON SHOKUBAI Co., Ltd. also announced on February 17 that it has developed the new separator for alkaline water electrolysis by applying their unique organic-inorganic hybrid technology and sheet forming technology. This new separator is suitable for producing “green hydrogen” because it has a high resistance against the gas cross-permeation and high efficiency of hydrogen generation. Also, it can be handled easily even in the dry condition.

NIPPON SHOKUBAI believes that their new separator can be expected to reduce the electrical power consumption and enables higher hydrogen purity.

<https://www.shokubai.co.jp/en/news/news0223.html>

Vegetable Factory Placed in a Supermarket

The Seiyu, Ltd., a supermarket chain owned by Walmart, announced on February 13 that it would open an instore vegetable factory at the Kamifukuoka store located in Fujimino City, Saitama Prefecture.

The instore factory which produce lettuce is operated jointly with Plants Laboratory, Inc. Plants Laboratory has developed their hydroponic culture system called PUTFARM in collaboration with the University of Tokyo.

PUTFARM is an energy-saving indoor farm system.

According to Plants Laboratory, the patent pending high performance internal environment control and low construction cost were achieved, based on a novel thermo-shielding theory, by replacing the heat insulation frame wall with two layers of specially processed films covering the greenhouse-like framework, across which the heat transfer is effectively blocked. Coupled with an advanced air-conditioning system (the latent and sensible heat separation-type,), their indoor farm (plant factory) system performs accurate and precise control of air temperature and humidity, Plants Laboratory says.



Image of PUTFARM

https://www.walmartjapansaiyu.com/media-library/document/pdf/_proxyDocument?id=00000170-3d6c-dd21-adfc-3fef60260000 (in Japanese)
<https://www.plantlaboratory.com/en/>

Japan's First Wooden Structured High-rise Apartment to be Marketed



Conceptual drawing of "Proud Kanda Surugadai"

Nomura Real Estate Development Co., Ltd. and Takenaka Corporation jointly announced on February 27 that they have started the promotion of a high-rise apartment building which use wooden structural members for the first time in Japan. The apartment called the “Proud Kanda Surugadai” which accommodates 36 households on 14 stories will be completed in March 2021. <https://www.nomura-re.co.jp/cfiles/news/n2020022701674.pdf> (in Japanese)

Toyota and Panasonic to Establish Joint Venture Specializing in Automotive Prismatic Batteries

Toyota Motor Corporation and Panasonic Corporation announced on February 3 that they have decided to establish Prime Planet Energy & Solutions, Inc., a joint venture specializing in automotive prismatic batteries. This decision comes just over a year since the two companies announced on January 22, 2019 that they had concluded a business integration contract and a joint-venture contract toward the establishment of a new company.

The joint venture announced by Toyota and Panasonic will develop highly competitive, cost-effective batteries that are safe and feature excellent quality and performance in terms of capacity, output, durability, etc. The joint venture will supply batteries not only to Toyota but also to all customers.

https://global.toyota/en/newsroom/corporate/31477926.html?_ga=2.157404082.944262296.1583476757-2041262639.1579502586

JAL and Sumitomo Corporation Sign Agreement to Develop the Air Mobility Industry with Bell

On February 12, Japan Airlines (JAL) and Sumitomo Corporation entered into a cooperation agreement with Bell Textron Inc. (headquartered in Fort Worth, Texas, U.S.A.), a Textron Inc. to promote the development of the Air Mobility Industry, including the infrastructure for next generation air transportation methods.

As urban areas become highly concentrated, electric Vertical Take-Off and Landing (eVTOL) technology has attracted global attention in their efforts to develop the highly anticipated concept of a "flying car", as Urban Air Mobility can transport people and goods without the need of a runway and has the potential to operate an eco-friendly service.

With this agreement, jointly and collectively, JAL, Sumitomo and Bell will

explore business opportunities for the air mobility services, deploying Bell's eVTOL in Japan and Asia.



Outline of the Cooperation Agreement is as follows.

- Market research in Japan and Asia for mobility service utilizing eVTOL
- Study mobility services operation platform, including Air-Taxi service
- Promote activities to solve the issues to realize eVTOL operation, including safety, noise, and social acceptance
- Approach related companies and organizations to promote the Air Mobility business

<https://www.sumitomocorp.com/en/jp/news/release/2020/group/13020>

<https://investor.textron.com/news/news-releases/press-release-details/2020/Bell-Teams-Up-with-Sumitomo-Corporation-and-Japan-Airlines-to-Explore-Air-Mobility/default.aspx>

Test Flights of Cargo Drone for Construction Site Proved Successful

Obayashi Corporation announced on February 13 that it has engaged in the verifying test of cargo drone to transport heavy load to construction site with SkyDrive Inc. SkyDrive is developing the cargo drone for use in industries that carry heavy materials on complex terrain such as slopes, mountain valleys, overpasses, power transmission towers, civil engineering/construction sites, agricultural fields, etc.

During the actual test, it was verified that the cargo drone could transport load capacity of 30kg in autonomous flight. Obayashi and SkyDrive will continue verifying test in actual construction site for developing new models tailored to suit construction work.

Implemented test flight



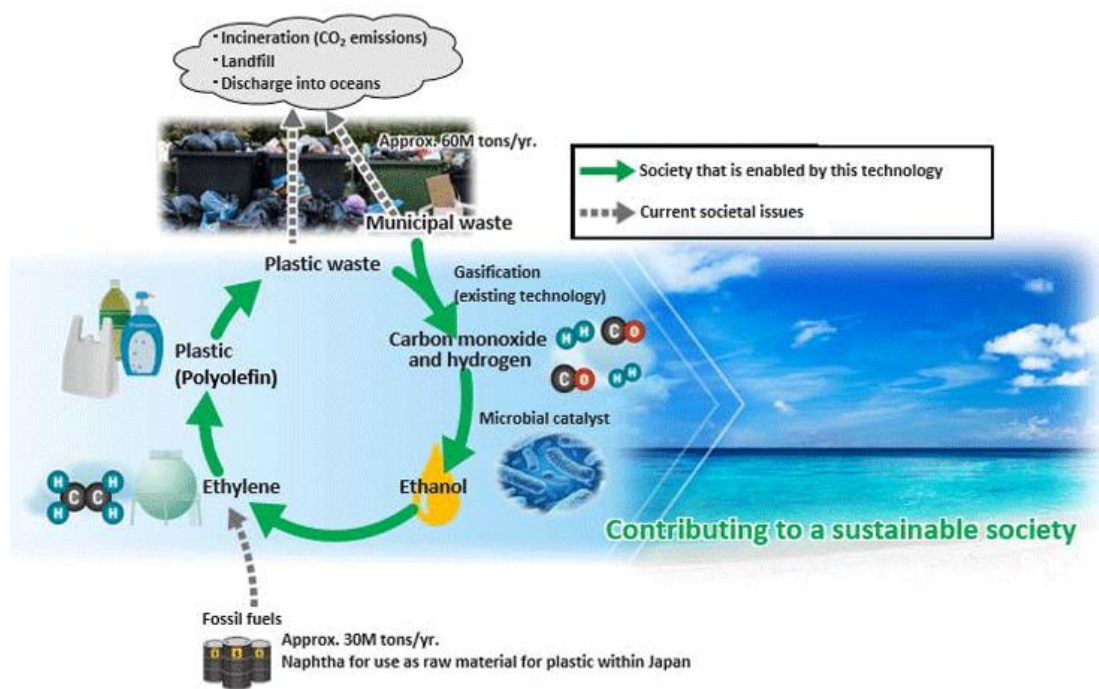
https://www.obayashi.co.jp/news/detail/news20200213_2.html (in Japanese)
<https://en.skydrive2020.com/2019/12/17/post4/>

SEKISUI CHEMICAL and Sumitomo Chemical to Cooperate on Circular Economy Initiative

SEKISUI CHEMICAL CO., LTD. and SUMITOMO CHEMICAL COMPANY, LIMITED jointly announced on February 27 that they have agreed to form a strategic alliance to benefit society by deploying technology for manufacturing polyolefin using waste as a raw material. This alliance combines SEKISUI CHEMICAL's production technology for transforming waste into ethanol with Sumitomo Chemical's technological know-how in manufacturing polyolefin, thereby promoting circular economy initiatives to chemically recycle waste into polyolefin. Pilot production will begin in fiscal 2022, with SEKISUI CHEMICAL turning waste into ethanol, and Sumitomo Chemical using this ethanol as raw material for polyolefin. A full-scale market launch of this production method is expected in fiscal 2025.

According to the joint press release, Japan discards approximately 60 million tons of combustible waste each year. When converted to energy, this equates to approximately 200 trillion kcal. The amount of combustible waste is significantly larger than the amount of fossil fuels used to produce plastic materials in Japan (approximately 30 million tons annually), which is equivalent to roughly 150 trillion kcal in energy. However, the effort to reuse combustible waste is yet to be fully implemented, and most waste is currently incinerated or buried in landfills. Recycling efforts have been hampered by difficulty in utilizing waste as industrial raw material, since the composition and quality of combustible waste varies widely.

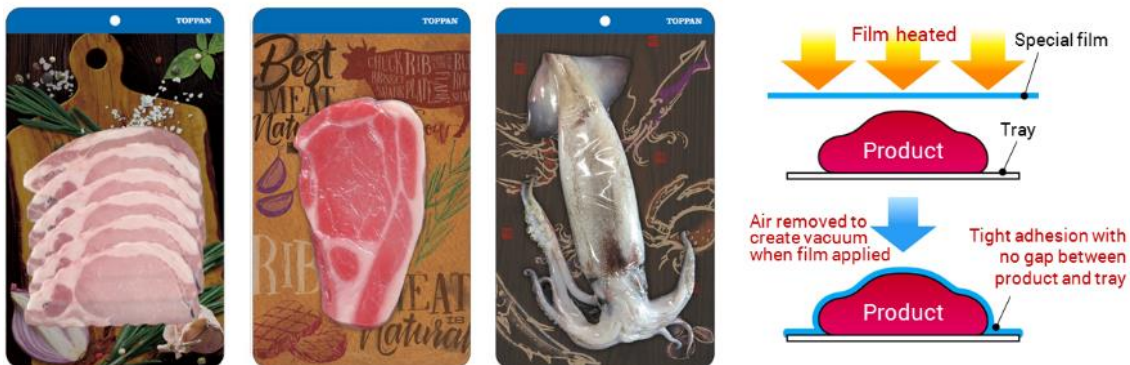
Organigram on how it works



https://www.sekisuichemical.com/whatsnew/2020/1347675_36556.html

Toppan Launches Paper-based Food Packaging System for Freshness Preservation and Lower Environmental Impact

Toppan Printing announced on February 12 that it would launch sales of a new food packaging system called Green Flat, which addresses the need to reduce plastic packaging and can be used as an alternative to conventional skin packs.



Skin packs are becoming widely used in Europe, North America, and Asia because their complete sealing helps to maintain the freshness of food and extend shelf lives due to the reduction of drip from food during storage. Green Flat replaces the polystyrene or plastic tray often used in skin packs with a paper-based material incorporating Toppan’s proprietary GL FILM. This provides freshness retention and lowers environmental impact by reducing the use of plastic without sacrificing functionality. The tray can be made using paper from certified forests and, because it is flat, can also be used as a chopping board for preparing food.

According to Toppan, Green Flat also offers advantages in terms of attractive package design and eye-catching displays in stores. High-quality printing is possible on both surfaces of the tray and the prevention of drip made possible by the tight seal means that even packages for fresh foods can be stood up or suspended from hooks for display. QR code can also be printed onto the tray to enhance customer engagement by providing information or running online or online/offline hybrid promotions.

<https://www.toppan.com/en/news/2020/02/newsrelease200212e.html>

EKO Instruments Pledge to Phase Out All Single-use Plastics

On February 13, EKO Instruments Co., Ltd have issued a public pledge to phase out all possible single-use, and non-recyclable plastics from product packaging by the end of 2022. The pledge covers all of the companies’ own products, such as environmental sensors and other scientific instruments. Speaking about the pledge, EKO Instruments President, Toshikazu Hasegawa said “We wanted to set an ambitious, but achievable goal. To take the first step, as a company, in addressing the global challenge of pollution and the climate crisis”. He went on to explain that “this isn’t a Japanese problem, a China, US,

or European problem; it is a global problem, a human challenge.”

The pledge commits EKO to the re-design of all product packaging within three years. The initial goal will be to use more environmentally friendly alternatives, before finally transitioning to no single-use or non-recyclable plastics.

<https://eko-eu.com/news/2020-02-13-eko-instruments-pledge-to-cut-bad-plastics>

SoftBank and Y! mobile Replace Plastic Bags with “Bio LIMEX Bags”

SoftBank Corp. and TBM Co., Ltd. jointly announced on February 17 that they would replace plastic bags used at the mobile phone shops of SoftBank and their affiliate Y! mobile with “Bio LIMEX Bags” that TBM produce. Replacement starts in May 2020 at SoftBank/Y! mobile shops which extends to a total of 6,000 in Japan. SoftBank use approximately 5.5 million plastic bags in a year. LIMEX bag is made of limestone, containing zero petroleum derived resin, TBM says.



Bio LIMEX bags

https://www.softbank.jp/corp/news/press/sbkk/2020/20200217_01/ (in Japanese)

<https://tb-m.com/en/limex/>

Paper-using Laminated Tube Containers Developed

Dai Nippon Printing Co., Ltd. (DNP) announced on February 27 that it has

developed paper-using laminated tube containers which use less amount of plastics. The “DNP laminated tube container, paper version” reduces the use of plastics by 15% in using paper for its body. According to DNP, about 75% of materials can be substituted with plant-derived ones, except for caps, if biomass polyethylene is used in addition to paper.



DNP laminated tube container, paper version

https://www.dnp.co.jp/news/detail/10157795_1587.html (in Japanese)

NSG to Test the World’s First Use of Hydrogen Fuel for Glass-Making

NSG Group announced on February 27 that it would test the use of hydrogen as an alternative fuel for the float furnace to manufacture glass at its Greengate Works in St. Helens, U.K. A global first, the initiative is part of a project managed by HyNet, a consortium of industries in the North West of England, aimed at reducing carbon emissions from industry, homes and transport. NSG Group will investigate whether hydrogen can be used to wholly or partly replace the natural gas and oil that are the standard fuels for the glass making industries. If all of the natural gas can be replaced with hydrogen this would reduce emissions of CO₂ by around 80%.

The work is supported by £5.2m of funding from the UK government under the Industrial Fuel Switching Scheme with first trials planned for November 2020.

https://www.nsg.com/-/media/nsg/site-content/ir/press-releases/2020/27feb2020testhydrogenfuelforglass_e01.pdf

Chubu Electric to Participate in Japan's First Commercial Large-scale Offshore Wind Power Generation Project in Akita Prefecture

Chubu Electric Power Co., Inc. announced on February 3 that it had decided to undertake a project to construct, operate and maintain a bottom-fixed offshore wind farm that would be Japan's first commercial large-scale offshore wind power generation project at Akita and Noshiro Ports in Akita Prefecture. It is implemented through investment in the Special Purpose Company named "Akita Offshore Wind Corporation" (AOW), jointly with Marubeni Corporation, Obayashi Corporation, Tohoku Sustainable & Renewable Energy Co., Inc. and nine other companies.

In July 2016, Chubu Electric Power invested in AOW established by Marubeni, which was selected as the business operator through the "Public Offering for an Offshore Wind Farm Operators at Akita and Noshiro Ports" that the Akita Prefectural Government conducted with the aim of expanding renewable energy and promoting industry within the prefecture. Thereafter, based on the results of a feasibility study conducted by AOW, Chubu Electric Power reached this decision on commercialization.

The project will construct offshore wind farms with a total power output of approximately 140 MW as well as operate and maintain them for a period of 20 years. In February 2020, work is scheduled to begin on the overland transmission and distribution portion, aiming at starting commercial operation in 2022.

http://www.chuden.co.jp/english/corporate/ecor_releases/erel_pressreleases/3272559_18939.html

Chugoku Electric Power to Close Oil-Fired Power Plants

The Chugoku Electric Power Co., Inc. announced on February 25 that it would close its Iwakuni Power Plants 2&3 in Yamaguchi Prefecture, both of which are oil-fired. Commercial operation started in 1972 at Plant 2 and in 1981 at Plant 3 with combined generation capacity of 1.07 million kw.

Plants 2 and 3 have been inactive since February 2018, treated as back-up power stations when supply becomes tight. The Chugoku Electric judges this time that it is too costly to maintain old petrol-firing power stations under current

situation of eased supply-demand balance.

<http://www.energia.co.jp/press/2020/12331.html> (in Japanese)

Toyota Develops Fuel Cell System for Maritime Applications

Former racing catamaran turned ship of the future, “Energy Observer” has made waves as it has been navigating its six-year odyssey around the world as the first energy-autonomous hydrogen vessel. On February 3, Toyota Motor Corporation, official partner of Energy Observer and an avid supporter of their project from the start, announces that it has developed a fuel cell system for maritime applications, with its first delivery destined for Energy Observer. Embarking in June 2017 from Saint- Malo Port in France, Energy Observer is an electrically propelled vessel of the future that is operated using a mix of renewable energies and an on-board system that produces carbon-free hydrogen from seawater. The operators of the vessel are on a mission to go and meet people in 50 countries and 101 ports during their voyage who are designing the future, with an aim to prove that a cleaner world is not only possible, but that the innovations can open some doors to a new economic expansion.



The maritime-specific fuel cell system was developed by Toyota Technical Center Europe in only seven months. It required a re-design of the system, followed by the build and installation of the compact fuel cell module. This was accomplished using components first introduced in Toyota’s fuel cell vehicle,

“Mirai”, which were fitted into a more compact module suitable for marine applications.

https://global.toyota/en/newsroom/corporate/31321325.html?_ga=2.191924770.944262296.1583476757-2041262639.1579502586

Panasonic Announces Withdrawal from Lighting Device Manufacturing in Europe

Panasonic Corporation announced on February 5 that it has entered into a share transfer agreement with Munich-based Fidelium Partners, under which all shares of Panasonic Lighting Europe GmbH, which focuses on the lighting device business in Europe as a wholly owned subsidiary of Panasonic, will be transferred to the German investment firm.

Panasonic acquired German lighting device manufacturer Vossloh Schwabe in August 2002 to expand its lighting device business in Europe and worked to strengthen sales of lighting devices for conventional light sources such as fluorescent lamps and mercury lamps, and LED devices to lighting fixture manufacturers.

However, according to Panasonic, competition in the lighting industry has been intensifying globally as the broad use of LEDs provided an opening to new entrants. In the European market, in particular, the commoditization of LED-based lighting devices and the shift to a vertically integrated business model driven by the popularity of LEDs is in progress. Under such circumstances, Panasonic, with aim to accelerate the concentration of the business, has decided to transfer the shares of the European lighting device business to Fidelium Partners.

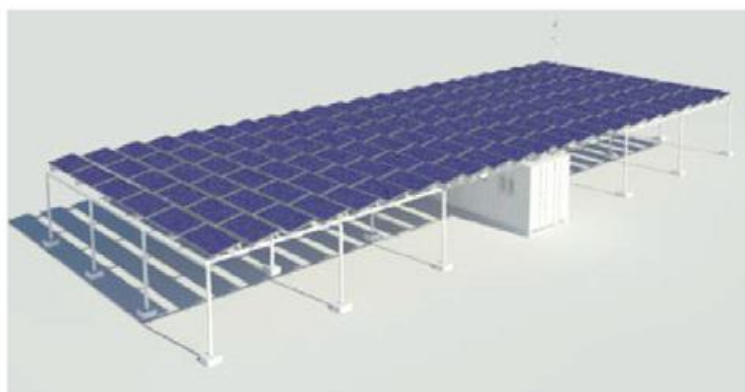
<https://news.panasonic.com/global/press/data/2020/02/en200205-4/en200205-4-1.pdf>

ITOCHU Announces Strategic Investment in Winch Energy Limited Promoting Development of Non-Electrified Regions

ITOCHU Corporation announced on February 10 that it has made a strategic investment in Winch Energy Limited (headquartered in London) through its wholly owned subsidiary ITOCHU Europe PLC. Winch Energy develops, markets, and operates autonomous mini generation and distribution systems comprised of photo voltaic (PV) panels, battery storage, distribution lines and smart meters (“Mini-Grid Systems”).

For every Mini-Grid System installed, 100 African households can gain access to electricity for the first time. Winch Energy has initiated pilot projects in Benin, Uganda, Togo, Mauritania and Sierra Leone and aims to expand the Mini-Grid System as an electricity solution across the continent and beyond. In addition to providing electricity, Winch Energy will introduce important new services to non-electrified regions, including Wi-Fi internet, postal services, and cold storage, which will improve living standards and assist with the development of local industry.

Winch Energy Mini-Grid System



<https://www.itochu.co.jp/en/news/press/2020/200210.html>

Chiyoda Corporation to Collaborate with Australian Hazer Group on Low Emission Hydrogen Production

Chiyoda Corporation announced on February 12 that it has entered into an memorandum of understanding (MOU) with Hazer Group Limited in Australia to collaborate on the commercialization of the HAZER Process to efficiently produce hydrogen and graphite in Japan. Under the MOU, Chiyoda and Hazer will collaborate on the development of hydrogen and graphite production

facilities using the HAZER Process, based on under-utilised biogas or other methane resources, to establish a local hydrogen supply chain business model towards building of hydrogen society in Japan.

https://www.chiyodacorp.com/media/200212_e.pdf

<https://www.hazergroup.com.au/about/>

Marubeni Makes Investment in UK-based Carbon Clean Solutions Ltd

Marubeni Corporation announced on February 17 that it has invested in Carbon Clean Solutions Ltd. (CCSL), a United Kingdom based company that develops and owns the technology to capture carbon dioxide (CO₂) from the flue gas emitted by coal/gas fired power plants and industrial plants. Marubeni recognizes the importance of CO₂ as a resource, and with this investment, jointly with CCSL, will begin to develop Carbon Capture, Utilization (CCU) projects that reuse CO₂ or convert it into other valuable products.

By developing a proprietary new solvent to be used in the conventional chemical absorption process, CCSL has enabled CO₂ to be captured more efficiently and at lower cost than other existing technologies. According to Marubeni, the cost competitiveness of CCSL's technology is the highest in the world compared to other technologies that have been commercialized to date.

<https://www.marubeni.com/en/news/2020/release/20200217E.pdf>

Idemitsu Participates in a Large-scale Solar Power Generation Project in the Philippines

Idemitsu Kosan Co., Ltd. announced on February 17 its participation in the large scale (80,900kWp) solar power generation project called PowerSource First Bulacan Solar in its pre-construction phase in the Province of Bulacan in the Philippines. Its first participation in a solar power plant development project in the Philippines will be made through investing in a subsidiary of PowerSource Group Development Corporation.

Furthermore, Idemitsu and PowerSource entered into a joint development agreement to contribute to economic and community development by responding to the Philippines' rapidly growing demand for power. In addition to the large-scale solar power plant, this partnership aims to build diverse business models in the community, such as hybrid power plants combined with batteries and power generation stations for self-consumption on the rooftops of commercial facilities.

https://www.idemitsu.com/news/2019/200217_1.html

Tokyo Gas invests in an American Company, Electriphi Specialized in Creating New Energy Services for Corporate EV Customers

Tokyo Gas Co., Ltd. announced on February 21 that it invested in Electriphi Inc., a U.S.-based company through its wholly owned subsidiary, Acario. Electriphi is a developer of software solutions and services for electric vehicle (EV) fleet and energy management. It offers an open-standards based charging management platform that saves energy costs and simplifies the transition to EV fleets in the United States.

Tokyo Gas aims to acquire the know-how of EV charging management business from Electriphi through this investment and deliver solutions to reduce energy costs and EV charging infrastructure costs for its customers.

https://www.tokyo-gas.co.jp/Press_e/20200221-01e.pdf

Sumitomo Heavy Industries Invests in Highview Enterprises Limited, U.K.

Sumitomo Heavy Industries, Ltd. (SHI) announced on February 25 that it has invested USD46million in Highview Power Limited, U.K., leading the development of Liquid Air Energy Storage (“LAES”) technology globally, which is expected to play an important role in the electric power industries just around the corner, in order to acquire the energy storage technology.

LAES is a technology which stores energy in form of liquefied air and discharges the stored energy as electricity when needed. The mechanism is 1) ambient air is taken from the surrounding environment, 2) carbon dioxide and water vapor are removed, 3) cleaned and dried, 4) refrigerated until minus 190 degree centigrade through a series of compression and expansion stages until the air liquefies, 5) the liquefied air is kept in insulated tanks. The liquid air is firstly evaporated and then heated further via a heat exchanger, which utilizes hot water/gas to transfer heat. The resulting high pressure gas is then used to drive turbine generators to generate electricity. At each of the liquefying and evaporating process, secondarily obtained heating and cooling energy is stored to re-use at the opposite process and to raise the overall energy conversion efficiency.

<https://www.shi.co.jp/english/info/2019/6kgpsq0000002j40.html>

Mitsubishi Chemical to Acquire European Engineering Plastics Recycling Companies

Mitsubishi Chemical Corporation (MCC) announced on February 26 that it has decided to acquire two Swiss engineering plastics recyclers, i.e. Minger Kunststofftechnik AG and Minger Plastic AG (collectively, the Minger Group), through its group company Mitsubishi Chemical Advanced Materials (Head office: Zurich, Switzerland) as a part of the company's efforts to promote the circular economy.

Based on the Mitsubishi Chemical Holdings (MCHC) Group's Vision for 2030, MCC makes the circular economy a key element in its realization, and plastics recycling is an important initiative within this basic policy.

The Minger Group has superior proprietary recycling technologies for engineering plastics like PEEK (Polyether Ether Ketone), PVDF (Poly Vinylidene DiFluoride) and nylon. It possesses a material collection network that spans a wide area of Europe, a track record of recycled material transactions with over 100 customers, and an established business model for recycling engineering plastics in the region.

The acquisition will allow MCC to establish an integrated business model for engineering plastics, from manufacturing to sales, machining, collection, and reuse. Going forward, the company will continue to strengthen its capability to propose solutions to users as a leader in the engineering plastics industry and will contribute to the realization of a recycling-based society.

https://www.m-chemical.co.jp/en/news/2020/1208424_7667.html

Marubeni Acquires a Solar Power Developer in Taiwan

Marubeni Corporation announced on February 27 that it has executed a Share Purchase Agreement with I Squared Capital to acquire Chenya Energy Co., Ltd, a solar power developer and operator in Taiwan. Chenya will become a wholly owned subsidiary of Marubeni upon the conclusion of this transaction.

Chenya is a solar power investor, developer, contractor and operator in Taiwan. With a net portfolio of investments totaling approximately 270MW of solar power generation assets, Chenya is one of the leading players among renewable energy developers in Taiwan.

By acquiring Chenya and Chenya's solar power generation assets, including one of the world's largest floating solar power plants, Marubeni will gain expertise in the floating solar power business and continue to enhance its

renewable energy development capabilities.

<https://www.marubeni.com/en/news/2020/release/20200227E.pdf>

Yanmar and Italian Smartgyro Announce Strategic Partnership in Boat Stabilization Systems

Yanmar Co., Ltd., a major provider of marine engines and propulsion systems, and Smartgyro S.r.l., a gyro stabilization technology company, announced on February 28 that they have entered into a strategic partnership. The partnership includes close collaboration between the two companies and an equity investment by YANMAR enabling Smartgyro to accelerate its design, development and launch of a full line-up of highly advanced gyro stabilizers for recreational and commercial marine applications.

“We are pleased to partner with Smartgyro, a company with deep understanding of boat stabilization, great engineering expertise and compelling gyroscopic stabilization products under development that together are uniquely complementary to our marine systems, equipment and knowhow,” said Shiori Nagata, President YANMAR Marine International B.V. and leading YANMAR’s Recreational Marine Business Unit. “The partnership provides YANMAR an entry to the growing gyro stabilizer market and perfectly matches YANMAR’s vision to enhance enjoyment, comfort and safety with technologically-advanced marine systems.” Smartgyro is designing and developing a full range of gyro stabilizers, which will come to market soon.



Gyro stabilizer of Smartgyro

The partnership includes an equity investment through which YANMAR acquired majority ownership of Smartgyro. Smartgyro will operate as stand-alone entity within YANMAR's Recreational Marine Business Unit and remains located in La Spezia (SP), Italy.

<https://www.yanmar.com/global/news/2020/02/28/70280.html>

ADDITIONAL TOPICS

JPO Facilitates the Spread of Green Technologies in the World

On February 19, the Japan Patent Office (JPO) participated as a partner in the online platform of "WIPO GREEN" to promote the utilization of green technologies, which is run by the World Intellectual Property Organization (WIPO). The JPO will work together with WIPO to continuously strive to facilitate the spread of green technologies in the world.

Over 100 partners, including government agencies, industry groups, companies, and universities, have participated in the activities, and in fact the JPO was the first IP Office in the Asia-Pacific Region to participate in this platform.

Partners are members of the WIPO GREEN Advisory Board, who work together with the International Bureau of WIPO to lead discussions at WIPO GREEN.

They play a key role, offering support and advice on its activities.

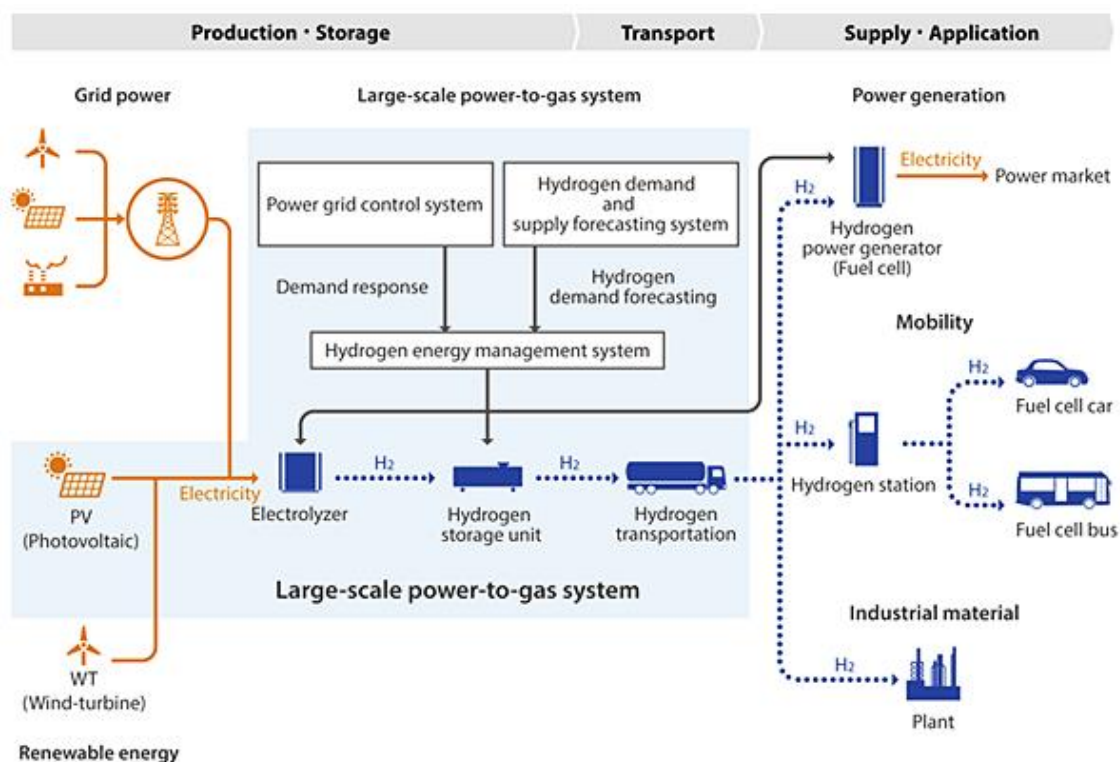
https://www.meti.go.jp/english/press/2020/0219_002.html

World's Largest-Class Hydrogen Producing Base Using Renewable Energy to Start in Namie Town, Fukushima Prefecture

The Ministry of Economy, Trade and Industry (METI) announced on February 13 that the Fukushima Hydrogen Energy Research Field (FH2R) would start operation in March 2020. This is the world's largest-class facility for producing hydrogen derived from renewable energy, the construction of which has been advanced by the METI and the New Energy and Industrial Technology Development Organization (NEDO) under their technical demonstration project. Using this facility, they will advance a technical demonstration targeting a new technical approach, called "Power-to-Gas," in which excess electricity, which is expected to be generated as more and more renewable energy is introduced, is

converted to hydrogen, which is then stored and utilized.

In addition, METI and NEDO will strive to enhance efforts for realizing a hydrogen-based society by taking advantage of hydrogen produced at the facility in a variety of opportunities.



Overview of FH2R system explained by NEDO

https://www.meti.go.jp/english/press/2020/0213_001.html

https://www.nedo.go.jp/english/news/AA5en_100422.html

JAL, together with Three Partners, to Start Feasibility Study on Sustainable Aviation Fuel Made from Plastic and Other Wastes

Japan Airlines Co., Ltd. (JAL), Marubeni Corporation, JXTG Nippon Oil & Energy Corporation and JGC JAPAN CORPORATION jointly announced on February 25 that they have agreed to jointly conduct a feasibility study on Sustainable Aviation Fuel (SAF) production and sales in Japan through the use of industrial and municipal waste, including plastic waste.

As the demand for air transport steadily increases, the aviation industry recognizes the importance of working to counter the effects of climate change. Additionally, the International Civil Aviation Organization (ICAO) has introduced

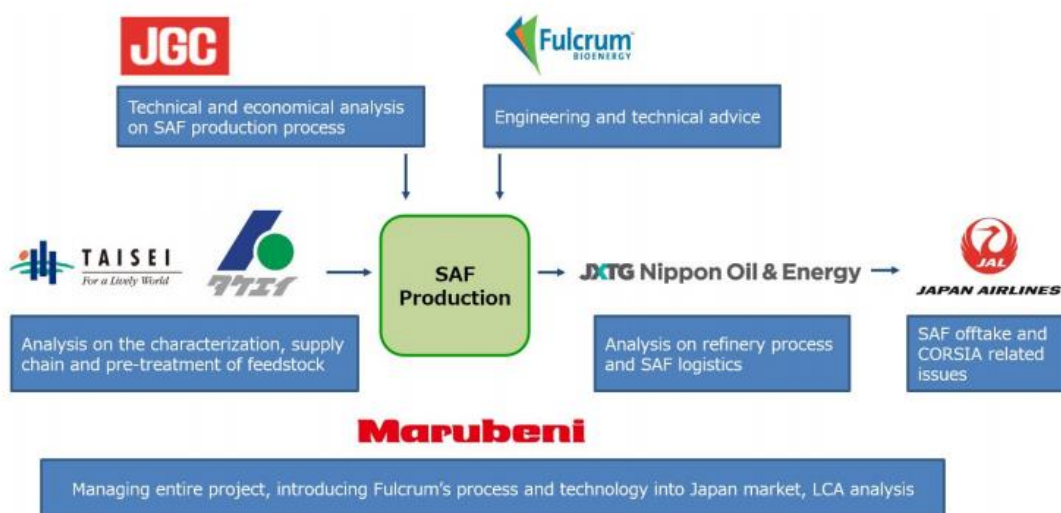
carbon-reduction initiatives which takes effect in 2021.

Currently, SAF is considered to be a realistic and effective means of reducing CO2 emissions, and there is growing momentum for its adaptation.

Furthermore, the disposal and/or processing of plastic waste is a recognized social issue, one to which the world awaits an innovative solution that will lead to a more sustainable society.

In this joint study, the parties plan to evaluate the feasibility of the entire supply chain with respect to creating SAF from industrial and municipal waste, including middle and low grade plastic waste (these types are currently either incinerated, or become landfill), by applying the process and technology of Fulcrum BioEnergy, Inc., a United States company that produces biojet fuel.

Role of participating companies



<https://www.marubeni.com/en/news/2020/release/2020022501E.pdf>

JWPA and GWEC Launch Joint Task Force to Drive Offshore Wind Growth in Japan

According to a press release of the Japan Wind Power Association (JWPA) dated February 27, JWPA and the Global Wind Energy Council (GWEC) have launched a joint effort called Japan Offshore Wind Task Force (JOWTF) with key local and global industry players to accelerate Japan's offshore wind market.

JOWTF aims to achieve;

- To accelerate the offshore wind power development in Japan

- To build the infrastructure for the offshore wind power
- To raise up the offshore wind power industry in Japan

JOWTF is consisted by 14 Japanese and 10 foreign companies/organizations (at present) who are the major players at offshore wind power.

The current theme of discussion is "how to achieve cost reduction at offshore wind power development in Japan."

The Task Force meeting will be held every 3 months for several years.

http://jwpa.jp/page_293_englishsite/jwpa/detail_e.html

<https://gwec.net/gwec-and-jwpa-launch-joint-task-force-to-drive-offshore-wind-growth-in-japan/>

Japan and the United States Concluded MoC on Strengthening Energy and Infrastructure Finance and Market Building Cooperation

On February 4, the Ministry of Economy, Trade and Industry (METI) and the Ministry of Finance (MOF), from the government of Japan, and the U.S.

Department of the Treasury signed a Memorandum of Cooperation (MoC) on Strengthening Energy and Infrastructure Finance and Market Building Cooperation.

Japan and the U.S., within economic dialogue and other occasions by the two countries, have worked cooperatively, to promote free, open, and competitive energy/infrastructure market building in the Indo-Pacific region; establish energy security by securing universal access to reliable energy at a fair price; and advance a "Free and Open Indo-Pacific" through quality infrastructure investment.

Under the MoC, the two countries will further promote cooperation in energy and infrastructure finance and market building in the Indo-Pacific region as well as other efforts.

https://www.meti.go.jp/english/press/2020/0204_003.html

https://www.meti.go.jp/english/policy/external_economy/cooperation/infrastructure/pdf/toolkit.pdf