EU-Japan Centre for Industrial Cooperation
日欧産業協力センター

JAPANESE INDUSTRY AND POLICY NEWS
June 2020

LEGISLATION AND POLICY NEWS

Move across prefectures possible from June 19, determined by the COVID-19 task force of the government

On June 18, the government decided to cancel the request for self-restraint to move across prefectural borders from June 19. Prime Minister Mr. Abe said, "We will raise the level of socio-economic activity one more step." in the press conference.

The prime minister also explained that “There will be no restrictions including the metropolitan area and Hokkaido regarding the request for self-restraint, and some industries, such as restaurants with entertainment, will also "abolish leave requests on the premise of observing the guidelines." "There will be no change to the thorough implementation of infection control measures. Please continue to ask for cooperation."

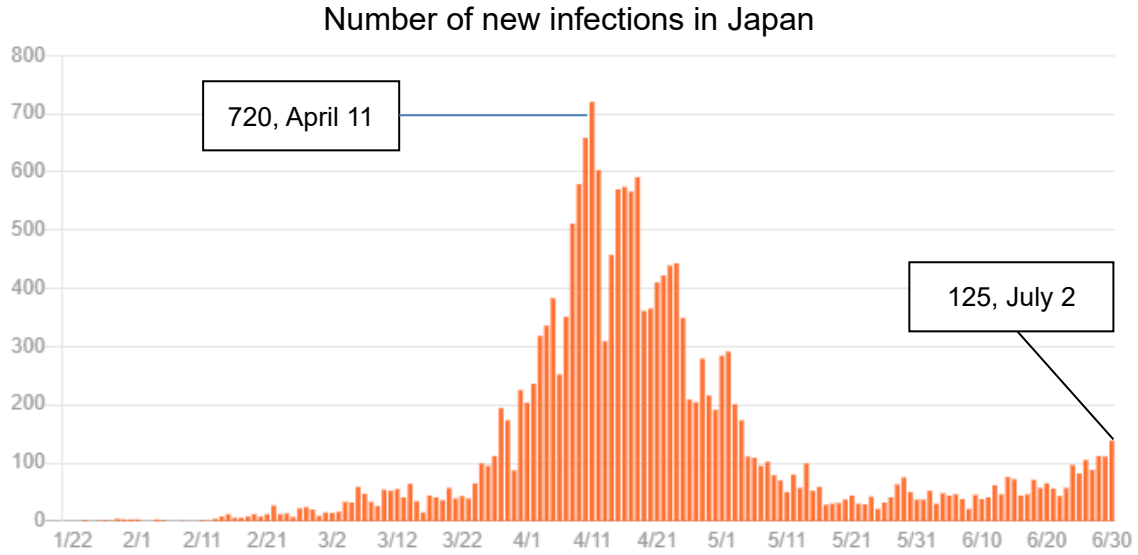
The government lifted the emergency declaration on May 25, positioning the period until the end of July as the "transition period." After analyzing the infection situation, the self-restraint request and facility use restrictions will be gradually eased about every three weeks. From June 19, it will be possible to move throughout the country, including Hokkaido and the Tokyo metropolitan area, which were the target areas of the declaration.

However, concerts and exhibitions will be held until July 9 less than 1,000 people or 50% of the capacity of the venue, and professional sports will be held with no audience. From July 10 to the end of July, exhibitions, concerts and professional sports can be held for up to 5,000 people or 50% of the capacity of the venue. If these gradual cancellations proceed smoothly, it is expected that they will be completely canceled from August 1.

On the other hand, on July 2, 107 new infections were confirmed in Tokyo, and 125 nationwide. It has not been shown decreasing the new infected and there is concern that the secondary infection wave will come due to the cancellation of

the self-restrain.

PM office Website: https://nettv.gov-online.go.jp/eng/prg/prg6842.html?t=1&a=1
MHLW Website:
https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/newpage_00032.html



Data source: Yahoo Japan website

Amended Foreign Exchange Law enforced to strengthen restrictions on foreign investment in Japan

Restrictions on investment by foreign investors in Japanese listed companies were tightened on June 7, 2020. The aim is to prevent technology leaks overseas and prevent the threat of national security by measures based on the revised Foreign Exchange Law. However, the applicable standards lack transparency, and concerns that they may hinder overseas investment in Japanese stocks have not been dispelled.

The tightening of restrictions on investment by foreigners precedes the US, Germany and the United Kingdom. In Japan, the revised Foreign Exchange Law was enacted in November 2019. When foreigners invest in companies such as weapons and aircraft manufacturing, nuclear power business, etc., they will tighten the standard to notify the Japanese government in advance of the investment ratio from 10% or more to 1% or more.

Of the approximately 3,800 listed companies, 2111 were designated as companies that require advance notification. If there is a risk that security is adversely affected, the state will recommend or order the suspension or change of investment.

Considering the fear that overseas investors, who account for 70% of the trading value of the First Section of the Tokyo Stock Exchange, will leave Japan stocks, the system has been set up so that designated companies can also be exempt from notification.

558 companies such as Mitsubishi Heavy Industries, Toyota Motor and TEPCO Holdings are designated as “core industries” that have strict requirements for exemption from reporting such as not participating in the board of directors.

The core industries are composed of 12 categories such as weapons, aircraft, space-related, nuclear-related, military-purpose general products, cyber security, electric power, gas, telecommunications, water supply, railway, and oil correspond including subsidiaries.

In the future, companies that deal with medical devices such as ventilators and medicines for the control of infectious diseases due to the spread of COVID-19 will also be included. 1553 companies other than core industries have been made the exemption requirements.

However, some of the designated as core industries have unclear relations with security while Mitsubishi UFJ Financial Group was excluded from the three major bank groups. The reasons for individual judgment are not clear.

MOF Website:
https://www.mof.go.jp/international_policy/gaitame_kawase/press_release/20200605.htm (in Japanese)

Ministry of Economy, Trade and Industry (METI), and Ministry of the Environment (MOE)announced Home Appliance Recycling Results in 2019
On June 22, METI and MOE announced the number of four household appliances that were collected at designated collection locations nationwide based on the Specified Household Appliance Recycling Law (Home Appliance Recycling Law). According to it, the number of items in FY2019 was about 14.77 million units for all four discarded home appliances, an increase of 8.9% compared to the previous year.

The Home Appliance Recycling Law covers household air conditioners, TVs (CRT type, liquid crystal/plasma type), refrigerators/freezers, washing machines/cloth dryers (so-called “home appliances 4 items”). Manufacturers (including importers) take back four items of waste home appliances at designated collection points and recycle them at home appliances recycling plants.

In FY2019, the total number of 4 items of waste home appliances collected by manufacturers was about 14.77 million units, and the breakdown is as shown in the table below. The total quantity of four items of discarded home appliances increased from the previous year for the fifth consecutive year.

Number of items picked up at designated locations nationwide（FY2019）

	Thousand unit	Share	% to the previous year
Air conditioner	3,581	24.2%	＋5.4%
CRT TV	993	6.7%	＋4.1%
LCD/plasma TV	2,371	16.1%	＋25.2%
Refrigerator/freezer	3,597	24.4%	＋7.3%
Washing machine＆dryer	4,230	28.6%	＋9.0%
4 items total	14,772	100.0%	＋8.9%

Data source: METI

Manufacturers separate the parts and materials such as iron, copper, aluminum, glass, or plastics from the four items of waste home appliances collected at the designated collection place by recycling and use them themselves as parts or raw materials of products, Alternatively, there is an obligation to work on "recycling" so that it can be transferred to the company who uses it as a product part or raw material for a fee or free of charge.

In addition, since it is desirable to recycle waste home appliances as much as possible, it is indicated as a ratio of the total weight of remanufactured parts and materials to the total weight of the 4 waste home appliances that are put into the recycling process. It needs to meet the statutory criteria for rates.

In FS2019, the number of 4 items of waste home appliances that were brought into the home appliances recycling plant and recycled were about 14.62 million units (up about 7.3% from the previous year). The recycling rate of air conditioners is 92% (statutory standard 80%), cathode ray tube TV 71% (55%), LCD/plasma TV 85% (74%), refrigerator/freezer 80% (70%) and 91% for washing machines/clothes dryers (82%), which was higher than the statutory standard for recycling.

METI Website

Recycling rate（Last 3 years）

	FY2017	FY2018	FY2019
Air conditioner	92%	93%	92%
CRT TV	73%	71%	71%
LCD/plasma TV	88%	86%	85%
Refrigerator/freezer	80%	79%	80%
Washing machine & dryer	90%	90%	91%

Data source: METI

Also, in air conditioners, refrigerators/freezers, and washing machines, CFCs that have the potential to have an impact on the environment are used as refrigerants and heat insulating materials. In FY2019, the collected weight of refrigerant CFCs for air conditioners was approximately 2,346 tons, that for refrigerators and freezers was 178 tons, and that for washing machines and clothes dryers was approximately 35 tons and insulation CFCs of refrigerators and freezers was about 282 tons.

METI Website:
https://www.meti.go.jp/press/2020/06/20200622006/20200622006.html
(in Japanese)

Deliberation of international standards started in order to popularize "organic EL lighting" with high energy-saving performance

At the International Electrotechnical Commission (IEC), deliberation of international standards on "performance requirements of flexible organic EL panels for general lighting" proposed by Japan in order to expand the use and popularization of energy-saving organic EL lighting will be started. Ministry of Economy, Trade and Industry (METI) announced on June 22.

In order to promote further energy saving of lighting fixtures, the Basic Energy Plan aims to replace all lighting fixtures with high-efficiency lighting (eg LED lighting, organic EL lighting) in 2030. Some of these high-efficiency lighting products have been commercialized and sold in shapes that have never been available by taking advantage of their features. For example, while LED is mainly a point light source, organic LED is a surface light source, and because it can maintain flexibility. It is also widely used in new applications such as ceilings, wall surfaces and vehicle lighting.

Exterior of flexible bendable organic LED panel (METI Website)

On the other hand, regarding the performance of the conventional flexible organic EL panel itself for general lighting, there is no international standard about the criteria and test contents for properly evaluating the new performance and features described above. It makes difficult to compare and evaluate the above as one of the factors that hinder the spread.

Under such circumstances, Yamagata University (in Yamagata Prefecture) commissioned by METI examined the performance requirements of flexible organic EL panels for general lighting. Based on the results, METI proposed an international standard proposal to the IEC specialized committee on lighting (IEC/TC 34; lamps and related equipment), and the proposal was approved by the IEC in January. The examination will be started to establish the following technical standards.

1. General items and test conditions (eg tests in flat and bent states)
2. Display (eg rated total luminous flux, brightness uniformity, minimum bending radius, maximum bending number)
3. Initial optical and electrical characteristics (eg input power, total luminous flux, luminous efficiency)
4. Other requirements (eg operating environment (temperature, humidity))

If this international standard proposal is established and issued, and the performance display based on this standard is indicated in product catalogs and packages, the performance of flexible organic EL panels will be properly evaluated and proper market formation will be promoted. It is expected that various types of lighting that have significant energy-saving performance due to the features of organic LED lighting and the energy-saving potential will spread and expand in Japan and overseas.

METI Website:
https://www.meti.go.jp/press/2020/06/20200622001/20200622001.html
(in Japanese)

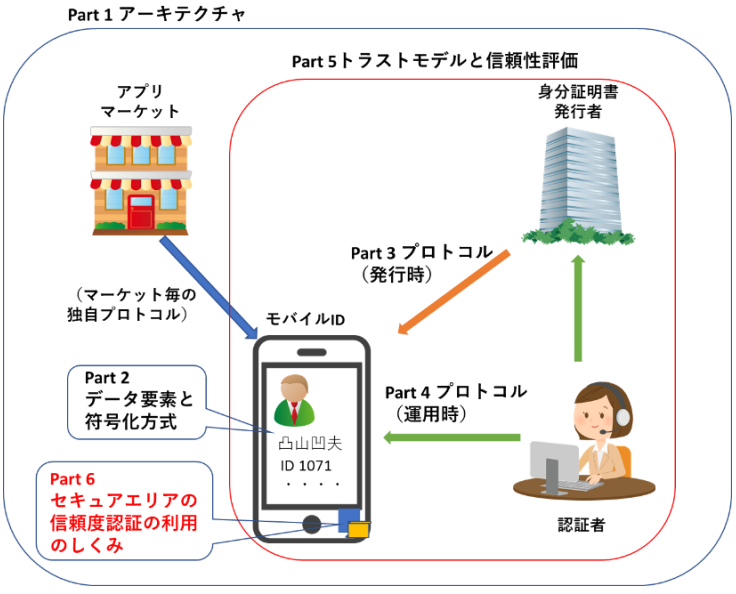
Ministry of Economy, Trade and Industry (METI) proposes an international standard for "identification with a smartphone"
On June 22, METI announced a proposal to ISO/IEC for an international standard for practical application of identity management using mobile devices.

Although efforts are being made overseas to provide mobile devices with identification functions such as passports and driver's licenses, the establishment of an international system to prevent duplication, forgery and tampering, and security functions equivalent to or better than IC cards will be required.

In response to this mechanism, METI has proposed a "certification use mechanism for the reliability of secure areas" to ensure the safety of important information. The proposal of the standard was approved so that the data can be stored and processed safely even when the OS malfunctions.

It was officially approved by the ISO/IEC Technical Committee in May 2020, and full-scale discussions begin in July, aiming for international standardization in 2022. If this standard is established, it will be possible to have sufficient security for downloading and using the ID card installed in mobile devices in the future.

METI Website:
https://www.meti.go.jp/press/2020/06/20200622003/20200622003.html
(in Japanese)



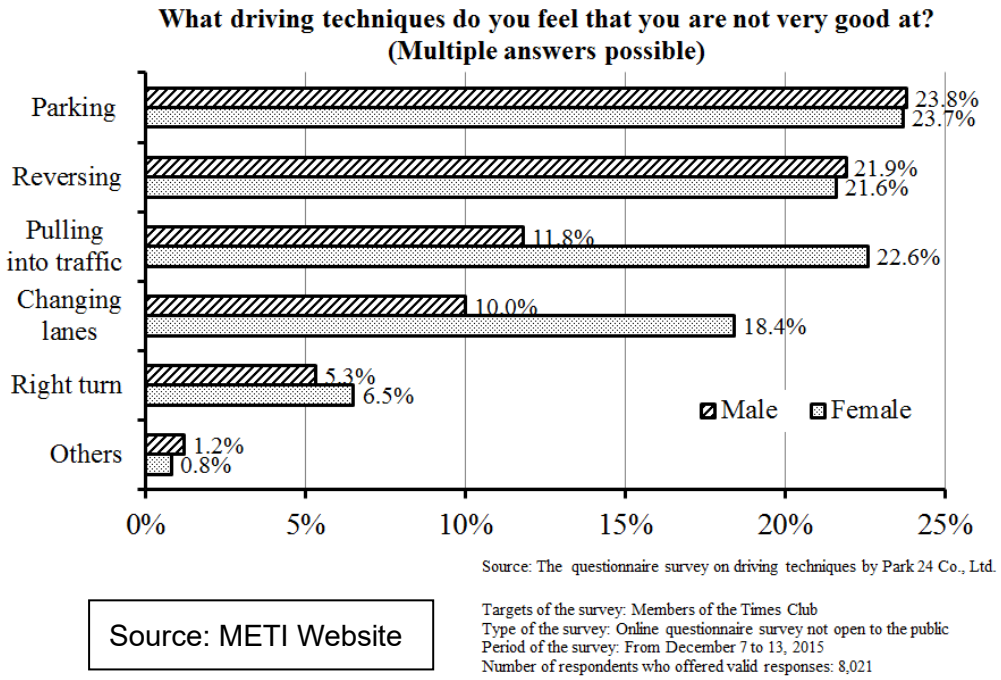
New International Standard for Partially-Automated Lane-Change Systems proposed by Japan was issued

Ministry of Economy, Trade and Industry (METI) announced in May 7 that the International Organization for Standardization (ISO) issued a new international standard proposed by Japan for lane change systems with automated steering control under monitoring by a driver. This issuance is expected to contribute to the dissemination of vehicles with a vehicle control system installed, which will lead to a decrease in the number of traffic accidents on expressways and other public roads.

Aiming to reduce damage caused by traffic accidents with vehicles traveling in a straight line, which accounts for the majority of vehicle collision accidents, the ISO has already issued ISO 22839:2013 (Forward vehicle collision mitigation systems) and ISO19237:2017 (Pedestrian detection and collision mitigation systems) as international standards stipulating performance requirements for collision mitigation systems. And in line with this, manufacturers have commercialized some types of passenger vehicles with such systems that meet these standards.

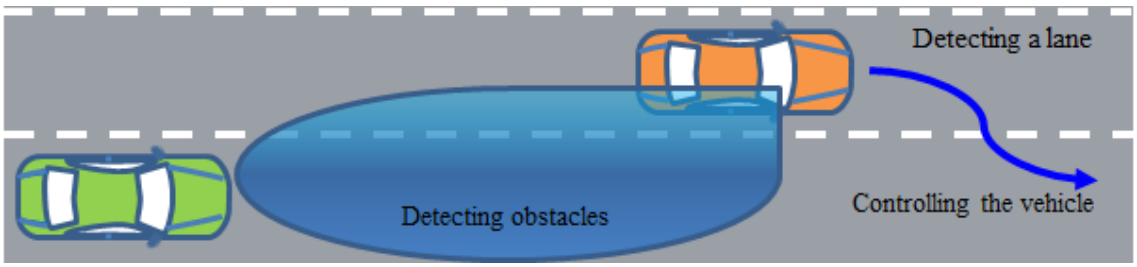
Vehicle collisions occur during vehicle lane changes as seen in the fact that over 7,000 accidents involving injury or fatality occurred according to the 2015 statistics. In addition, many drivers are generally unskilled at changing lanes (see table), and particularly, driving while checking conditions in the reverse direction in the adjacent lane in addition to looking forward is a heavy burden on drivers.

Against this backdrop, manufacturers have already commercialized some types of vehicles with a built-in system for partially automated lane-changing maneuvers in order to reduce the burden on drivers. In response to this trend, Japan clarified the performance requirements of such systems and filed a proposal with the ISO for international standardization to ensure a certain level of performance of such systems.



Source: METI Website

The newly issued international standard ISO 21202 (Partially automated lane change systems) classifies the systems into two types: Type 1 is for systems for which the driver decides to make a lane change and the vehicle then undertakes the maneuver automatically based on the driver's decision, and Type 2 is for systems for which the vehicle proposes a lane change and only undertakes the maneuver based on the driver's approval. And the standard stipulates requirements and verification test methods for these systems.
This standard requires Type 1 to have an obstacle detection function for areas that are blind spots for drivers near the vehicle and requires Type 2 to have a system that covers a wider area behind the vehicle.



Concept of the functions and operations of the vehicle with the partially-automated lane-change systems (METI website)

METI Website: https://www.meti.go.jp/english/press/2020/0507_002.html

SURVEY AND BUSIINESS DATA

January-March GDP revised upward from - 3.4% to - 2.2%

On June 8, the Cabinet Office announced a revised GDP from January to March this year. According to it, the real GDP growth rate for the same period was revised upward from - 3.4% in the preliminary report in May to - 2.2% this time. This is because, according to the latest statistics, corporate capital investment increased from - 0.5% at the preliminary stage to + 1.9% this time.

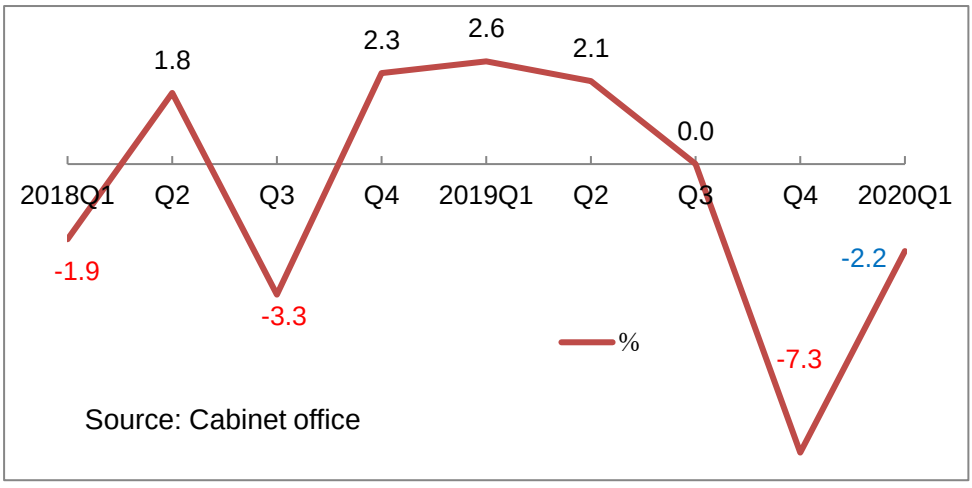
This may be due to an increase in investment in equipment for producing medical devices in response to COVID-19. However, personal consumption, which accounts for more than half of GDP, was - 0.8% this time, although it was - 0.7% in the preliminary report.

According to a private economic institute, the GDP from April to June this year will exceed the annual rate of - 17.8% which falls to a record level after the financial crisis of 2008 due to the impact of the declaration of emergency.

On the other hand, the GDP growth rate for the FY 2019 (from April 2019 to March 2020) was - 0.1% at the time of the preliminary report, but this time it was revised up to 0.03%, which secured positive growth.

Cabinet Office Website:
https://www.esri.cao.go.jp/jp/sna/data/data_list/sokuhou/gaiyou/pdf/main_1.pdf

Real GDP Annual Growth Rate of Japan



Japanese birth rate declined for 4 consecutive years in 2019, the number of births fell below 900,000

According to the 2019 Vital Statistics released by the Ministry of Health, Labor

and Welfare, the total fertility rate, which is the number of children a woman has in her lifetime, was 1.36, down 0.06 points from the previous year. It has been the lowest level in 12 years since 2007 due to the fourth consecutive drop. The government and local governments have been focusing on measures against reduce the birthrate, such as the provision of nursery schools and free education, but they have not paid off.

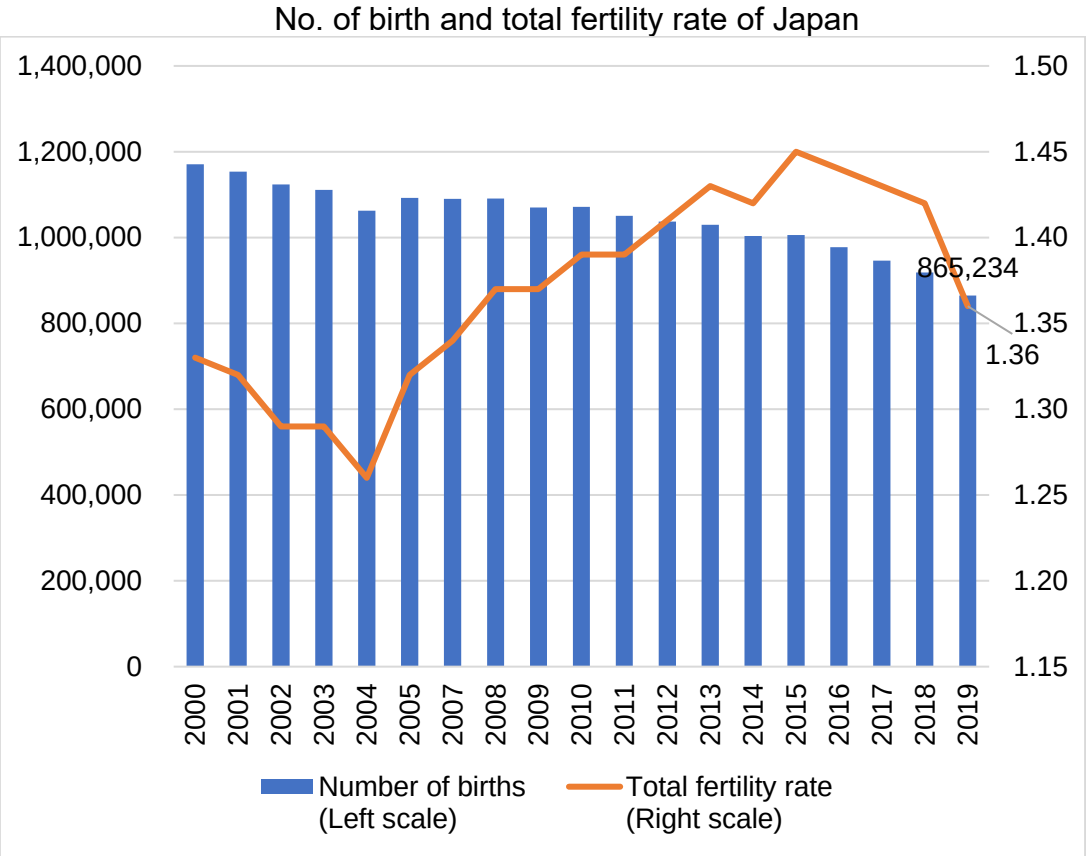
The birth rate dropped to 1.26 in 2005, and then rose to 1.45 in 2015 due to the baby boomer junior generation entering the childbearing age. After 2016, it started to decline again. This is due to the fact that the proportion of working women is increasing and the socialization of the whole society is progressing toward late marriage.

The declining birthrate is progressing at a pace that exceeds government expectations. As of 2017, the National Institute of Population and Social Security estimates that the birth rate in 2019 is 1.42, which is the most likely medium-term estimate. The number of children born in 2019 (the number of births) was the smallest ever (865,234), and it was two years ahead of the forecast that it would break the 900,000 mark in 2021.

The number of births decreased in all ages of women (mothers). There is a large decline between the ages of 25 and 39. The baby boomer junior generation is in their late 40s, and the population of childbearing age is decreasing. The government spends about ¥ 5 trillion a year on measures against the declining birthrate, but the effect has not shown. It is necessary to create an environment in which young people can marry and have children at ease. New efforts are needed to make it easier to raise children while working, such as expanding work from home.

In the future, if the fear of the future spreads due to COVID-19, the declining birthrate may accelerate further. A decrease in the working generation that supports social security systems such as pensions and medical care may lead to higher insurance premiums. The number of fatalities in 2019 was 1,381,098, the highest number after the Word War II. Natural loss, which is the number of deaths - the number of births, reached a record high of 515,864.

MHLW:https://www.mhlw.go.jp/toukei/saikin/hw/jinkou/geppo/nengai19/dl/gaikyouR1.pdf



Data source: MHLW Website

Vehicle sales in China in May, up 14.5% to the previous year
According to the China Association Automobile Manufacturers (CAAM), the country's vehicle sales in May 2020 were 2.194 million units, an increase of 14.5% year-on-year, following April that surpassed the same month last year. Sales in China fell nearly 80% year-on-year in February, but turned positive in April. However, when looking at the full-year period from January to May, it continues to stagnate with 7.95 million units, down 22.6% to the previous year. CAAM said it cannot be optimistic about the outlook for the year 2020.

In terms of movements by vehicle type, as the local government has launched a series of leverage measures such as subsidies for new car replacement, passenger car sales have increased. And by expectations of expanding infrastructure construction as an economic measure, sales of commercial vehicles such as trucks also increased. By investment country to automobile manufacturers, the growth of foreign capital such as German, Japanese and the US companies was higher than that of Chinese companies.

As to the sales of four major Japanese companies, Toyota, Nissan, Honda, and Mazda are as follows. Toyota sold 166,000 units, up 20.1% to the previous year, Nissan 130,000 units, up 6.7%, Honda 134,000 units, down 1.7% and Mazda 22,000 units, up 31.6%. With the exception of Honda, sales were generally strong.

For reference, the sales results by model as of April are; 1st LAVIDA (VW), 2nd COROLLA (TOYOTA), 3rd EXELL GT (BUICK), 4th BULUEBIRD (NISSAN), 5th BORA (VW), 6th CIVIC (HONDA), 7th HAVAL (HAVAL), 8th CR-V (HONDA), 9th EMGRAND (EMGRAND), 10th LEVIN (TOYOTA). VW, Toyota and Honda ranked 2 models each.

CAAM Website: http://www.caam.org.cn/chn/21.html

- Figures on the comment and in the tables as below are a bit deferent from that of CAAM.

No. of vehicle sales in China by type						
	May, 2020			Jan. to May 2020		
	No. of unit (10 thousand)	Share (%)	Ratio to the previous year (%)	No. of unit (10 thousand)	Share (%)	Ratio to the previous year (%)
Sedan	77.6	35.4	-0.9	285.5	35.9	-30.4
MPV	8.1	3.7	-24.6	27.8	3.5	-51.5
SUV	77.7	35.4	20.1	285.5	35.9	-20.2
Van	3.9	1.8	47.0	12.0	1.5	-27.5
Passennger vehicle	167.4	76.3	7.0	610.9	76.8	-27.4
Comercial Vehicle	52.0	23.7	48.0	184.8	23.2	-1.0
Total	219.4	100.0	14.5	795.7	100.0	-22.6
Data souce: Mark Lines						

No. of vehicle sales in China by brand						
	May, 2020			Jan. to May 2020		
	No. of unit (10 thousand)	Share (%)	Ratio to the previous year (%)	No. of unit (10 thousand)	Share (%)	Ratio to the previous year (%)
Chinese Brand	57.40	34.3	1.7	228.44	37.6	-31.5
Japanese brand	41.80	25.0	12.4	144.45	23.7	-19.1
German brand	42.91	25.6	12.1	152.83	25.1	-21.8
U.S. brand	17.94	10.7	14.8	54.00	8.9	-32.9
Korean brand	6.10	3.6	1.9	24.89	4.1	-35.6
French brand	0.64	0.4	-35.0	2.01	0.3	67.1
Data souce: Mark Lines						

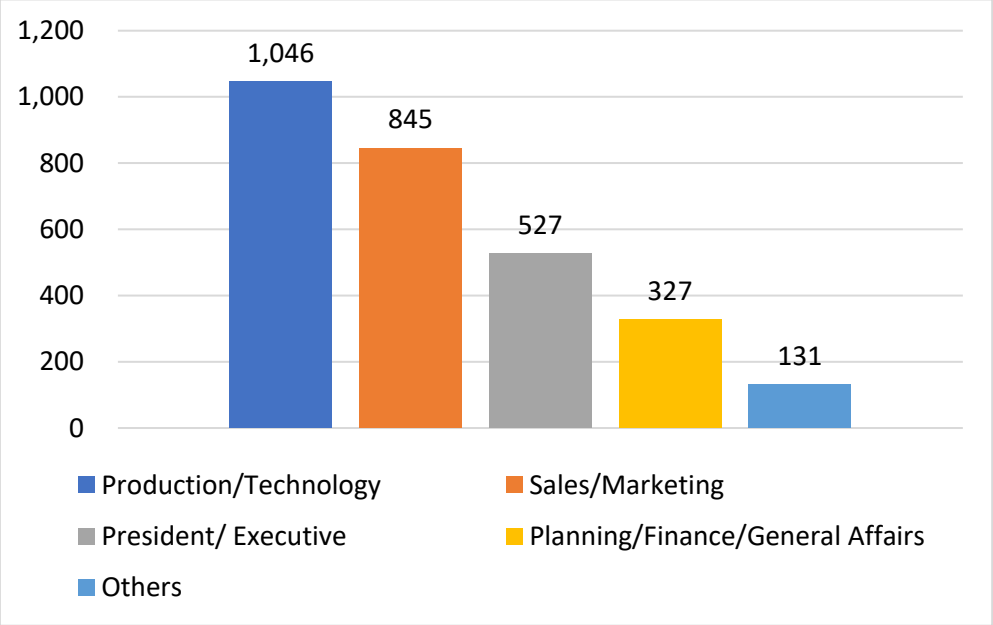
40% of Japanese employees cannot return to China

Due to the prolonged traffic restrictions between Japan and China as a measure against VCVID-19, the business of Japanese companies based in China is being affected.

The East China Region Nissho Club Conference (Secretariat: JETRO Shanghai), organized by Japanese business and industry clubs in Shanghai, Jiangsu, Zhejiang and Anhui announced on June 18, results of the survey conducted from June 11 to 15. According to that, 40% of the respondents said that expatriates including executives could not return to China. Responding companies said that there are many defective products in the factory due to the absence of technical instructors, and there are voices wishing for an early return. The survey was answered by 1,208 companies.

Among the expatriates who have not returned, the most common occupations are 1,046 people in production and technology (multiple answers allowed), followed by sales and marketing staff (845 people), and 527 local top and executives. China continues to take measures to prevent foreigners as a countermeasure for infections. Since March 28, when the Chinese authorities tightened restrictions, only 17 companies, 1% of the total business travelers obtained a visa.

Posts of expatriates who have not returned to China



Respondents say the effect such as, "The local top is absent for half a year, which affects the organization's operation." "The number of people who need to be dispatched for technical quality guidance cannot go to China, and defective products occur frequently."

On the other hand, there were also complaints about life such as "I cannot return to Japan temporarily even if something happens for my family" or "I want to visit a Japanese hospital and obtain medicine."

The East China Region Nissho Club Conference also conducted a

questionnaire for member companies in April, and at the time, most companies, both manufacturing and non-manufacturing, reopened business and more than 60% of them are almost 100% operation ratio. However, looking at the results of the survey in June, it is necessary to deal with situations different from those before COVID-19.

East China Region Nissho Club Conference Website (in Japanese):
https://jpcic-sh.org/uploads/mail_attachment/1592530721.pdf

Passenger vehicle production in April decreased sharply both domestically and overseas

According to the April production, sales and export results announced by eight Japanese passenger vehicle manufacturers on May 28, the total global production of the eight companies was 916,255 units, down 60.9% from the same month last year. Compared to March, the rate of decrease has expanded, marking the ninth consecutive month of decline. World-wide production activities have stagnated due to the spread of COVID-19. In some major regions such as the United States, Europe, and Asia, excluding China, production was zero.

Overseas production dropped significantly by 67.9% to 503,668 units. Lockdowns (city blockades) and disruptions in the supply chain affected countries, and production continued to be impossible. In the United States, Toyota, Nissan, Honda, and Subaru have stopped operating. In Europe, production of Honda and Nissan (excluding Russia) was zero. In Asia, Suzuki cannot produce in India, which is the main market, and overseas production itself fell by 97.1% to 5,598 units.

On the other hand, China is showing signs of resuming production activities. Honda increased 21.1% to 152,447 units, setting a record high for a single month. Toyota's operating level is gradually increasing, up 27.8% to 143,135 units, while Mazda's reactionary increased 44.0% to 23,595 units.

Domestic production fell sharply by 46.7% to 421,587 units. Production adjustments were made by each company due to the decline in demand for new vehicles and turmoils in the supply chain. Nissan's sales decreased by 61.8% to 21,669 units, and Mazda's sales decreased by 86.5% to 11,706 units. Subaru was an only manufacturer which shut down the factory in Japan and the

production decreased by 72.5% to 14,912 units.

Japanese automakers consist of 11 manufacturers (brands), 8 for passenger vehicles and 3 for heavy-duties. The total number of domestic and overseas production in 2019 was about 30 million units; domestic production is 10 million units and overseas production is 20 million units. Moreover, about half of the domestic production, 5 million, are for export. It means more than 80% of the total production is supported by overseas markets. Although the domestic situation in April was a bit better than the US and Europe, the future will be difficult unless overseas markets recover.

Production, Sales & Export of 8 Passenger Vehicle Manufactures of Japan

	Domestic production	Domestic sales	Export	Overseas production	Total production
Toyota	218,054 -25.9	97,563 -20.1	123,064 -35.8	161,039 -66.2	379,093 -50.8
Nissan	21,669 -61.8	20,997 -39.2	11,024 -65.3	128,719 -62.5	150,388 -62.4
Honda	53,114 -32.1	45,006 -19.5	8,208 -35.9	159,633 -56.3	212,747 -52.0
Mitsubishi	15,467 -67.6	2,745 -57.2	6,804 -76.1	19,000 -64.9	34,467 -66.2
Mazda	11,706 -86.5	8,305 -26.0	8,529 -89.3	24,171 -25.8	35,877 -69.9
Suzuki	28,417 -64.9	31,975 -45.2	5,159 -64.6	5,598 -97.1	34,015 -87.4
Daihatsu	49,248 -34.7	36,544 -26.8	0.0 -	5,508 -92.1	54,756 -62.4
Subaru	14,912 -72.5	5,226 -47.5	22,292 -51.3	0.0 -	14,912 -83.4
Total	412,587 -46.7	248,361 -28.7	185,080 -54.2	503,668 -67.9	916,255 -60.9

* Unit: No. of unit (Below unit: % to the previous year)

* Data source: Website of each company, JADA, JAMA, etc.

COMPANY & Organization NEWS

Japan's "Fugaku" gains title as world's fastest supercomputer

The supercomputer "Fugaku", which is being developed jointly by RIKEN and Fujitsu Limited based on Arm® technology, has taken the top spot on the Top500 list, a ranking of the world's fastest supercomputers. It also swept the other rankings of supercomputer performance, taking first place on the HPCG, a ranking of supercomputers running real-world applications, HPL-AI, which ranks supercomputers based on their performance capabilities for tasks typically used in artificial intelligence applications, and Graph 500, which ranks systems based on data-intensive loads.

This is the first time in history that the same supercomputer has become No.1 on Top500, HPCG, and Graph500 simultaneously. The awards were announced on June 22 at the ISC High Performance 2020 Digital, an international high-performance computing conference.

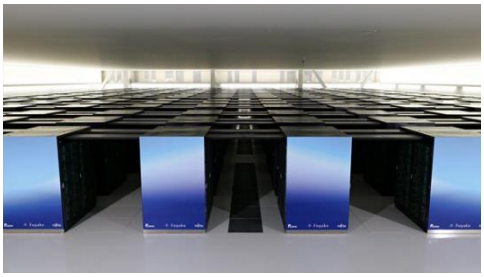
- RIKEN is Japan's largest comprehensive research institution renowned for high-quality research in a diverse range of scientific disciplines. Founded in 1917 as a private research foundation in Tokyo. In 2003, it was reestablished as an independent governmental agency under the Ministry of Education, Culture, Sports, Science and Technology, and after 2015, functioning as the National Institute of Physical and Chemical Research.

- Supercomputer "Fugaku" is the successor to the "Kei" supercomputer. It was developed with the aim of contributing to Japan's growth by solving social and scientific issues, and producing world-leading results in the 2020s. The developers aim to start sharing in 2021 as the world's highest level supercomputer in terms of power performance, calculation performance, user convenience and usability, epoch-making results creation, and comprehensive capabilities of big data and AI acceleration functions.

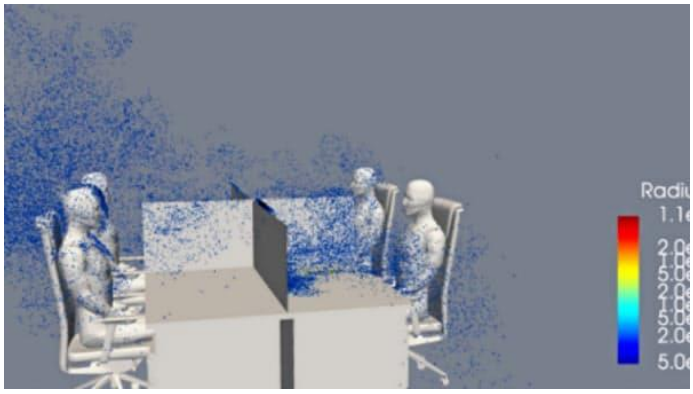
- The name "Fugaku" is a synonym for "Mt. Fuji". "Mt. Fuji" has a high name recognition overseas

  RIKEN Website:
  https://www.riken.jp/en/news_pubs/news/2020/20200623_1/

Supercomputer "Fugaku" from RIKEN Website



Analysis image by “Fugaku”. If the height to prevent COVID-19 infection is 120 cm, people on the opposite side will be splashed with water. From Digital Nikkei Shimbun on June 17 presented by RIKEN and Toyohashi University of Technology



Developed the world's first solid oxide fuel cell drone, enabling long flight

Prodrone Co., Ltd. Atsumitec Co., Ltd. and the National Institute of Advanced Industrial Science and Technology (AIST) announced on June 15 that they have developed the world's first solid oxide fuel cell (SOFC) drone that can fly and work for a long time. It is expected to utilize in fields such as inspection and disaster response.

What they have developed this time is an SOFC system that can generate power even in the air by increasing the output and reducing the weight of the SOFC stack that can use liquefied petroleum gas (LPG) (weight per output is 60% less than before). By supplying the power generated by SOFC to the drone and the secondary battery, the flight and working time can be extended.

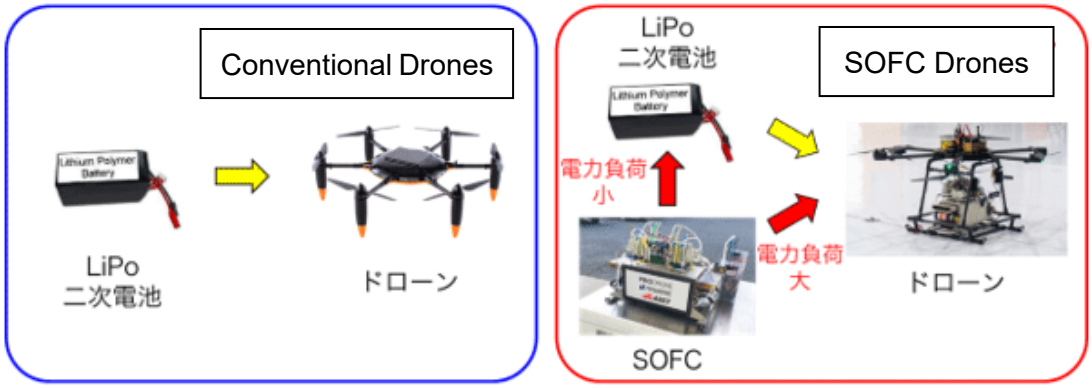
The SOFC can stably reform LPG to hydrogen or carbon monoxide inside the electrode even when the drone's power load fluctuations are large. Since it is driven by a general-purpose and easy-to-carry LPG, it is expected to contribute to the fields of logistics, infrastructure inspection, disaster response, etc. even in areas before hydrogen infrastructure development.

◆Solid oxide fuel cell (SOFC)
Fuel cells that use solid oxides (ceramics) such as zirconia (ZrO_2) and ceria (CeO_2) as the electrolyte.

SOFC Drone (AIST Website)

Lithium ion polymer (LiPo) secondary batteries, which are commonly used as power sources for drones, have a low energy density per unit weight, so flight and working time is only 15 to 30 minutes. Since the power consumption of the drone is proportional to the weight, there is a problem that flight and work time will be shortened when carrying heavy objects.

In addition, it may be difficult to secure a power source for charging at the time of a disaster, and it is assumed that the secondary battery cannot be used. In order to solve these secondary battery problems, development of a drone equipped with a pure hydrogen-powered polymer electrolyte fuel cell (PEFC) is also underway in Japan and overseas, but in the area without the hydrogen infrastructure, there were issues such as difficult fuel procurement. The development of this time attracts attention as showing the direction for solving these problems.

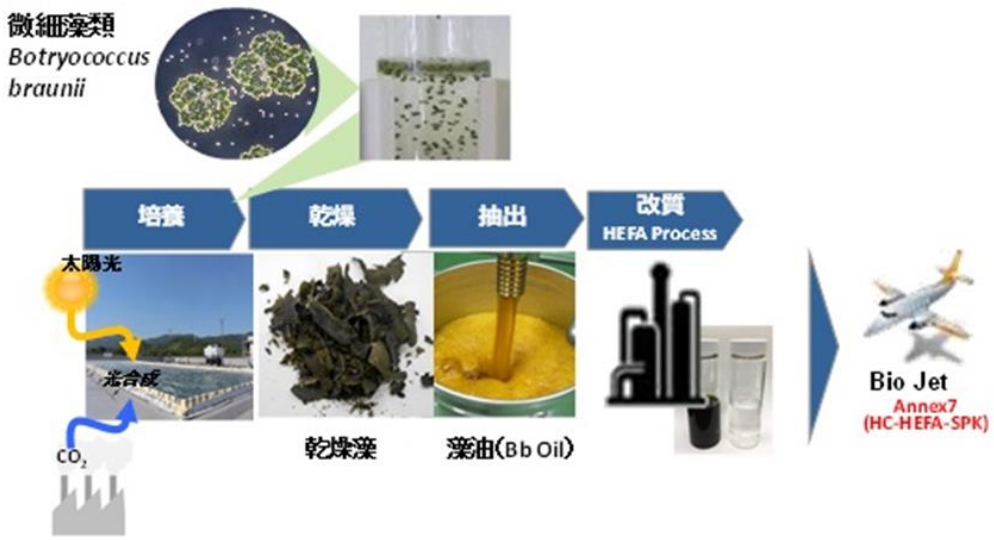


AIST Website:
https://www.aist.go.jp/aist_j/press_release/pr2020/pr20200615/pr20200615.html
(in Japanese)

Biojet fuel manufactured from microalgae newly acquired international standard ASTM certification

New Energy and Industrial Technology Development Organization (NEDO) and IHI Co., Ltd. are advancing the development business of technology for stable production of bio-jet fuel from microalgae. And IHI Co., Ltd. has acquired the international standard “ASTM D7566 Annex 7” due to the biojet fuel production technology established in this project, NEDO announced. As a result, the bio-jet fuel produced by this technology can be mixed with the existing jet fuel at a predetermined ratio and supplied to the operation of commercial aircraft. The effect of reducing CO2 emitted from aircraft is expected. During this year, a demonstration flight using this bio-jet fuel on regular domestic flights is planned.

Biojet fuel manufacturing process from microalgae (NEDO Website)

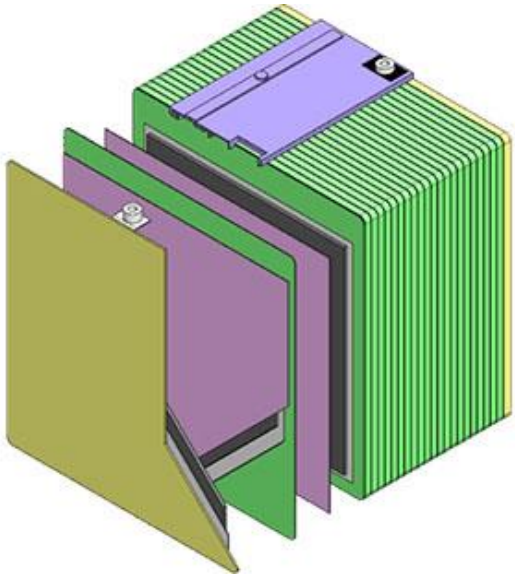


This fuel that conforms to this standard has the same properties as existing jet fuel (kerosene), and even if it is used in combination with existing fuel, it does not require modification of infrastructure such as aircraft materials, engines or fuel supply equipment; just drop-in type fuel. It is used as fuel and can be used not only in Japan but also in the operation of commercial aircraft around the world.

Based on the results of this technological development, IHI Co., Ltd. aims to commercialize bio jet fuel production as soon as possible. They will also study the construction of a supply chain for fuel production and plan to further reduce greenhouse gas emissions in the aviation field by expanding and spreading of bio-jet fuel.

Nedo Website: https://www.nedo.go.jp/news/press/AA5_101314.html

Furukawa Electric Group puts bipolar type storage battery into practical use, a 1/2 cost of lithium ion battery



Bipolar storage battery/ Furukawa Electric Group Website

Furukawa Electric Co., Ltd. and Furukawa Battery announced on June 9 that they have developed "safe, air-conditioning-less, high-capacity" power storage; "bipolar storage battery". It can reduce total cost by half compared to lithium-ion batteries. With the prospect of mass production in practical use, samples are scheduled to be shipped by the end of FY2021 and product shipment is to start from FY2022.

The product is compatible with long cycles for peak shift purposes, and its charge/discharge characteristics are comparable to lithium-ion batteries for power storage. It meets the needs of electric power companies, EPC (design/procurement/construction) companies, equipment manufacturers, etc., who are looking for storage batteries that are also economical.

A bipolar storage battery is a lead storage battery characterized by a simple structure with a positive electrode and a negative electrode on the front and back of a single electrode substrate. Therefore, it is possible to reduce the material compared with the conventional lead-acid battery, and the weight energy density is about double that of the conventional lead-acid battery due to the improved capacity per volume.

Further, by stacking the electrode substrates, a battery configuration with a high degree of freedom in design is possible, and cost competitiveness is expected to improve. The unit price per power consumption is 50% or less compared to lithium-ion storage batteries for power storage. In addition, it does not require air conditioning even during operation, and it is possible to reduce the

temperature management reducing the total cost to less than 1/2.

It is said to have great advantages and reliability in terms of safety such as fire. In addition, the expansion of the use of lead-acid batteries for which a recycling system has been established is effective in achieving the SDGs .The storage battery market for electric power storage in Japan is said to be close to 1.5 trillion yen in 2030, of which about half is expected to be used for long-cycle use. The approximate dimensions of this product are vertical 300 mm x horizontal 300 mm x thickness 250 mm (planned). The capacity is 50 Ah (25 °C) and rated voltage is 48 V.

Furukawa Electric Group Website:
https://www.furukawa.co.jp/release/2020/ene_20200609.html (in Japanese)
https://www.furukawa.co.jp/en/ir/library/finalreport/pdf/2020/20200611_pre01_en.pdf (in English)

Developed the tower crane remote control system "Tawa Remo"
Takenaka Corporation and Kajima Corporation announced on June 16 that they had developed a "Tawa Remo" which can operate tower crane remotely, together with Kanamoto Co., Ltd. and AKTIO Corporation. In fact, they confirmed that it is possible to remotely control such as material transfer, loading/unloading work, etc. by operating a large tower crane installed in Nagoya from the dedicated cockpit on the ground installed in Osaka.

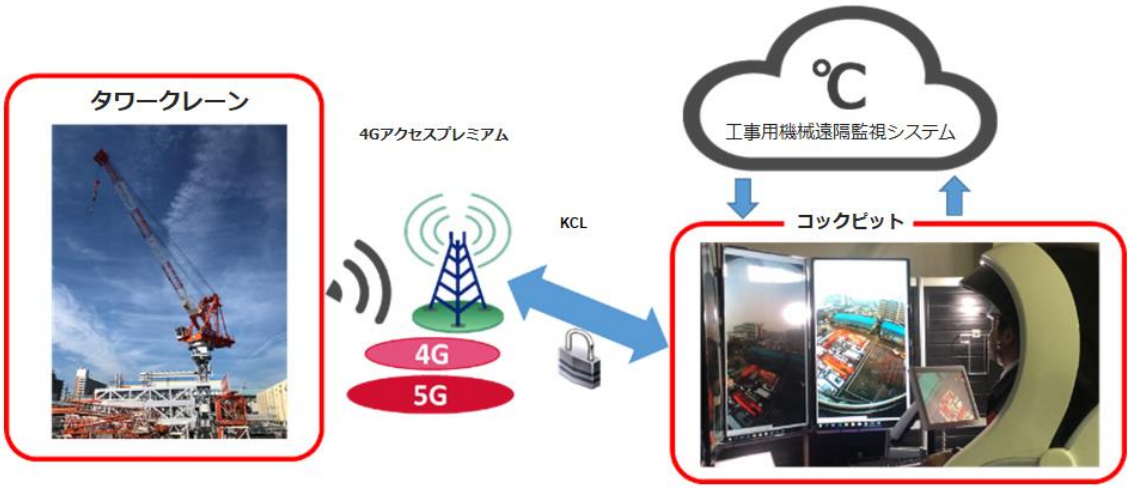
When working, the tower crane operator must use a ladder to climb up to approximately 50 m to the driver's seat installed at the top of the tower crane. Also, once operators get to your seat, they will be restricted to the driver's seat in a high place all day long. For this reason, there has been a demand for efforts toward "work style reform" to reduce the physical burden on operators and improve the working environment.

On the other hand, if the cockpit is placed on the ground with this system, a worker can operate the tower crane regardless of the location. In addition, since multiple cockpits can be placed at the same location, a large number of young operators can be trained by skilled operators.

Cockpit (Takenaka Website)

By September 2020, the two companies will repeat the test at actual worksites while discussing with related governmental offices, to increase production of the cockpit and to install this system in the tower crane. They aim to start full-scale operation by the end of FY2020.

Image of “TawaRemo” (Takenaka Website)



Honda fuel cell vehicle leasing started for personal use in prefectures with hydrogen stations

CLARITY FUEL CELL/Honda Website

Honda Motor Co., Ltd. announced on June 11 that it will start handling personal leases of fuel cell vehicles (FCV) "CLARITY FUEL CELL" from the same day. The CLARITY FUEL CELL is the world's first sedan-type FCV that can accommodate five people. In March 2016, it started leasing sales mainly to local governments and companies.

This FCV has achieved a mileage of about 750km (measured by Honda according to the JC08 mode driving pattern), and the hydrogen filling time is about 3 minutes, which is as easy to use as a gasoline car.

The maximum output of CLARITY is 130kW and the suggested retail price (reference price) as a leased vehicle is ¥ 7,836,400 (including 10% consumption tax). The lease fee varies depending on the period and plan. Insurance charges, taxes (excluding consumption tax), expenses associated with registration, etc. are not included.

Honda has been focusing on the possibility of hydrogen as a solution to problems such as global warming and depletion of fossil fuels, and has been researching and developing hydrogen technology for more than 30 years.

Honda website: https://www.honda.co.jp/news/2020/4200611.html
(in Japanese)

Additional Topics

Nintendo's “Animal Crossing, New horizons” remains popular
According to U.S. research firm Nielsen, global digital game sales topped $10 billion for the first time in March, followed by $10.5 billion in April and $10.2 billion in May. In some countries, although the momentum of the nesting caused by COVID-19 is gradually declining, it remains at a high level.

Among them, Nintendo's game software “ Animal Crossing, New Horizons” has become a worldwide hit. The software released on March 20 sold 5 million copies in March, setting a new world record for monthly downloads of home games. It seems that COVID-19's refraining from going out matched the tastes of consumers who want to connect with others through a quaint space. Although it fell to the second place in sales for consoles in May, it is still very popular in Japan, Europe and the United States.

Top Grossing Titles by Category

Worldwide, ranked by May 2020 earnings

	PC	CONSOLE	MOBILE
1	League of Legends	FIFA 20	Peacekeeper Elite
2	Dungeon Fighter Online	Grand Theft Auto V	Honor of Kings
3	Crossfire	Animal Crossing: New Horizons	Roblox
4	Fantasy Westward Journey Online	NBA 2K20	Pokémon GO
5	Roblox	Fortnite	Gardenscapes
6	World of Warcraft West	Call of Duty: Modern Warfare	PUBG Mobile West
7	Counter-Strike: Global Offensive	Final Fantasy VII Remake	Candy Crush Saga
8	Fortnite	Madden NFL 20	Coin Master
9	Call of Duty: Modern Warfare	Minecraft Dungeons	Last Shelter: Survival
10	World of Tanks	MLB The Show 20	AFK Arena

Source: SuperData Arcade. Please visit: http://bit.ly/sd-arcade for more info.

SUPERDATA
A NIELSEN COMPANY

Data source: Superdata by Nielsen Company

This game is for Nintendo's home video game console "Switch", and in Japan, it is nicknamed "Atsumori". In this game, the hero raises the island while interacting with other people through and communication. A realistic mechanism is also being talked about, such as taking a loan from a raccoon dog to expand the house and simulating stocks by buying and selling turnips of vegetables.

Image of Nintendo “Animal Crossing” from Amazon Japan Website

The hardware "switch" has been an exceptionally long-term hit after the fourth year since its release. Due to nesting demand, switch inventory is in short all over the world, making expensive resale a problem. The production could not catch up because the supply chain in China was broken by COVID-19. As of the

end of June, it's still difficult to obtain even in Japan, and Nintendo itself is selling lots of switches and Animal Crossing as a set.

In the world of digital games, although there were few game releases in May, sales themselves have not dropped significantly; 14% up to the previous year. The digital game market has grown significantly with COVID-19, but there is no reason to see the market shrink sharply even as the nesting life ends.

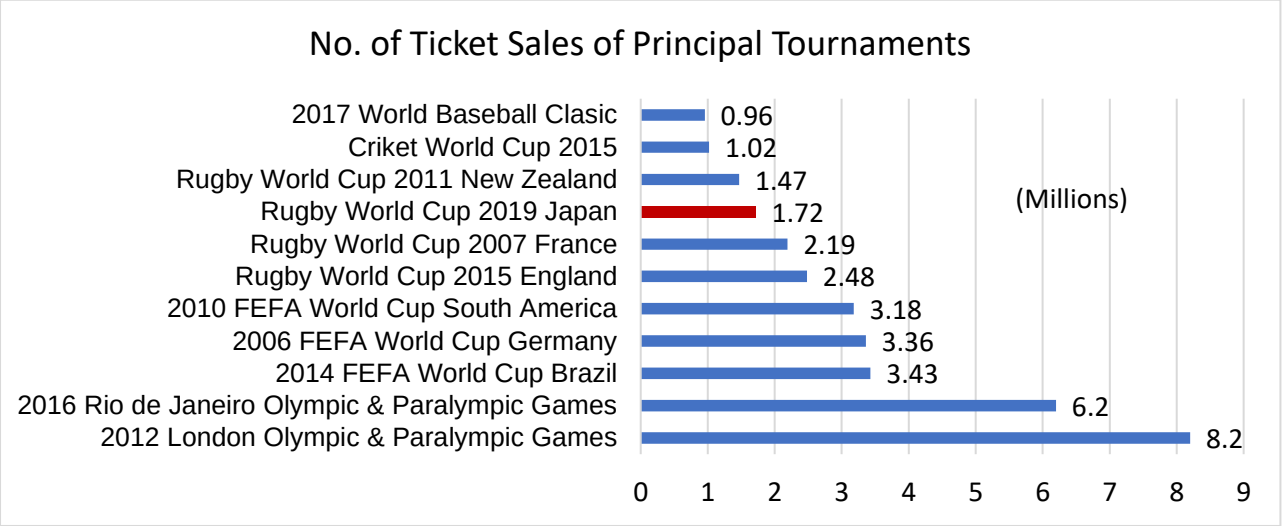
Website Nintendo: https://www.nintendo.co.jp/switch/acbaa/index.html
Website Superdata: https://www.superdataresearch.com/blog/worldwide-digital-games-market

Rugby World Cup 2019 economic effect, record high of ¥ 646.4 billion
Japan Rugby Football Union announced on June 24, the analysis result that the economic effect of 2019 Autumn Rugby World Cup Japan Tournament reached ¥ 646.4 billion, the highest in the history of the Games.

The economic effect has doubled compared to the 2015 England Games due to the excitement of the competition and the increase in consumption of overseas customers. The economic effect of the previous competition was £ 2.3 billion (about ¥ 310 billion), which was the highest ever. The increase of tax revenue is ¥ 41.2 billion and No. of creation of employment is 46,000 people.

The Union estimated the economic effect to be ¥ 437.2 billion before the opening, but as a result, it increased by 50%. The ticket sales rate reached a record high of 99% due to Japan's first entry to the top 8. The consumption of spectators at home and abroad has increased the economic value of the tournament, with foreign visitors dropping more money than expected.

Japan national team won the match against Ireland on Sept. 28, 2019
(Photo from Digital Nikkei Shimbun & Kyodo News)



Data source: Japan Rugby Football Union

54% of the economic effect was consumed by foreigners visiting Japan. 240,000 people came to Japan and bought 490,000 tickets, which is 20% up more than expected. The amount spent by one person was about ¥ 690,000, which was 4.6 times the average number of visitors to Japan in 2018. As the World Cup has a long game interval, the audience stays longer and the consumption per night was 70% higher than that of conventional visitors to Japan.

About 60% of overseas tourists visited Japan this time for the first time, and when asked about their intention to return, 75% answered that they would definitely want to come. Looking at the economic effects of each of the 12 cities that served as the venue for games, Tokyo, which was headquartered by the Games Organizing Committee, was the top with ¥175.7 billion. Kanagawa prefecture as the venue for the final, was ¥ 40 billion, Osaka prefecture was ¥ 39.1 billion and Saitama prefecture was ¥ 28 billion.

The Rugby World Cup can be held at a relatively small cost among international sports events. The cost of the organizing committee of this tournament was ¥ 67.7 billion, which is about 10% of 2020 Tokyo Olympics and Paralympics Games. Following the success of this tournament, the Japan Rugby Football Union is aiming to re-invite the World Cup and win the championship by 2039.

Japan Rugby Football Union Website: https://rugby-japan.s3.ap-northeast-1.amazonaws.com/file/html/142196_5ef20ec718573.pdf

Japanese businessmen are strict about time?
Citizen Watch Co. Ltd, a Japanese watchmaker, conducted a survey on the time observance of businessmen in commemoration of “Time Memorial Day” on June 10. The survey was conducted online from April 3 to 6, targeting 400 business people aged between 20s and 65.

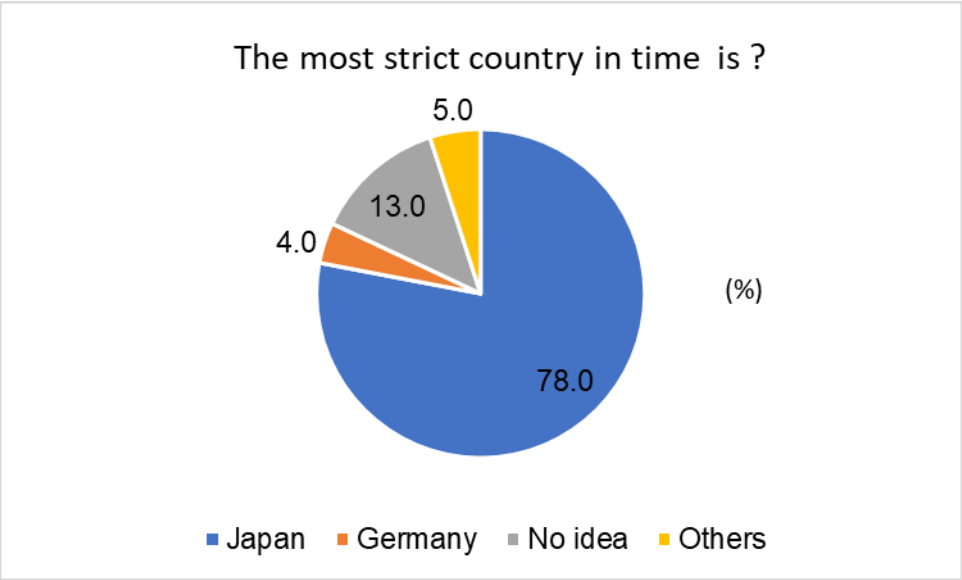
In Japan, June 10 was the day that Emperor Tenchi in 671 AD was the first to inform people of the time in Japanese history. And, on June 10, 1920, 100 years ago, that day was established as "Time Memorial Day" with the intent of imitating Europe and the United States in order to be on time and improve lives.

About the survey. To the question that “Do you think the Japanese are time-accurate?”, 98% say they are accurate and to that “Do you think you yourself are time-accurate?”, 90% replied yes. Many Japanese acknowledge that they are strict with respect to time.

Then, about the question “When do you usually arrive on occasion of (1) business start, (2) internal meeting, (3) meeting with business partners, and (4) meeting with family and friends ?”, more than 80% of the answerers say arrivals within 5 minutes before, for both business and private. As for the question, "How long can you tolerate if the person is late without contact ?", the reply of "up to 10 minutes" are majority.

To the question "Which country do you think the most strict is?", about 80% answered Japanese. Japan aims to save time by emulating the Western countries 100 years ago, but they think the most time keeper is us, now.

Citizen Watch Website: https://www.citizen.co.jp/files/20200602.pdf
(in Japanese)



Data source: Citizen Watch Website