JAPANESE INDUSTRY AND POLICY NEWS
May 2020

LEGISLATION AND POLICY NEWS

Japanese government lifted emergency declaration

On May 25, the government decided to cancel the declaration of emergency situation issued to prevent the spread of COVID-19 to Tokyo, Kanagawa, Chiba, Saitama and Hokkaido where were not canceled until the end, and announced to be implemented from May 26.

This means that the cancellation has been implemented in all regions of the country. The governor of each prefecture will decide on the resumption of economic activities. However, if the second wave of infection is confirmed, the government will issue an emergency declaration again and economic activities will be restricted.

The restart of economic activities in Tokyo is planned to proceed in the following steps. Step 1 will be implemented from May 26, but the schedule after step 2 is undecided at this stage, and it will be implemented while monitoring the infection status.

Step 1: Some museums, athletic facilities, (excl. gym) and schools will be cancelled, but cram schools, theaters, meeting venues, manga cafes, pachinko parlors, game centers, amusement parks, etc. will remain closed. However, restaurants now accept business until 10 pm (before 8 pm) and serve alcohol until 10 pm (before 7 pm).

Step 2: Reopen museums, exercise facilities (incl. gym), and schools, as well as cram schools, theaters, and venues. However, Tokyo Met. Government will continue to request closures for manga cafes, pachinko parlors, game centers, amusement parks, etc. Business hours of the restaurant are the same as in step 1.

Step 3: Manga cafe, pachinko parlor, game center, amusement park, karaoke, etc. are restarted. The business hours of the restaurant will be until 12:00 (even

for alcoholic drinks).

- Those steps mentioned above are not compulsory, but request of cooperation from the governor.

The event will be gradually relaxed to 50 people in Step 1, 100 people in Step 2, and 1,000 people in Step 3. However, even in step 3, entertainment venues, clubs, etc. that are entertaining will be closed. As there is a high possibility that a cluster occur at these facilities, Tokyo Met. Government will decide those cancelation considering the country's coping policy.

For reference, the numbers of infection in Japan as of the evening of May 26 were 1,950 infected people, 21 new infected people on that day, 16,623 cumulative infected people, 846 dead people, and 13,810 discharged from the hospital.

(History of the emergency declaration)
April 7 Announcement of emergency declaration in 7 prefectures (until May 6)
Apr. 16 Expanded national emergency declaration
May 4 Extend emergency declaration until the end of May
May 14 Canceled declaration in 39 prefectures except 8 prefectures such as Tokyo and Osaka
May 21 Canceled in Osaka, Kyoto and Hyogo
May 26 Canceled in Tokyo, Kanagawa, Chiba, Saitama and Hokkaido (Cancelled nationwide)

https://corona.go.jp/en/
https://www.mhlw.go.jp/stf/seisakunitsuite/bunya/newpage_00032.html
https://translation2.j-server.com/LUCTBOUSAI/ns/tl.cgi/https://www.bousai.metro.tokyo.lg.jp/1007942/1007962.html?SLANG=ja&TLANG=en&XMODE=0&XPARAM=q,&XCHARSET=UTF-8&XPORG=,&XJSID=0

COVID-19 confirmed cases in Japan as of noon, Apr. 26

	PCR tested	PCR tested positive	Need inpatient treatment	Critically ill	Discharge or end of medical treatment	Death	Under confirmation
Domestic cases (excluding returnees by chartered flights)	233,399 (+1,611)	16,445 (+20)	1,939 (-172)	155 (-10)	13,643 (+197)	846 (+16)	20
Airport quarantine	41,942 (+645)	163 (+1)	11 (+1)	0	152 (+1)	0	0 (-1)
Returnees by chartered flights	829	15	0	0	15	0	0
Total	276,170 (+2,256)	16,623 (+21)	1,950 (-171)	155 (-10)	13,810 (+198)	846 (+16)	20 (-1)

Source: MHLW

Japanese government formulates the second supplementary budget as an emergency economic measure

The government established the first supplementary budget for fiscal 2020 on April 30 as an emergency economic measure in response to the spread of COVID-19. But, as there are criticisms that this is not enough, the government aims to establish the second one by the end of the Diet, on June 17.

The total amount of the first supplementary budget was about ¥ 25.7 trillion, the largest ever. "Special fixed benefit" that distributes ¥ 100,000 to all people and "BCP benefit" for small and medium-sized enterprises of up to ¥ 2 million are the highlights, and the payment work has just begun in earnest since the large holiday break in May (golden Week). However, the both ruling and opposition parties were increasingly criticizing that they were “slow” and “not enough”.

Regarding the second supplementary budget, the government has decided the total expenditure for the general account to ¥ 31.9 trillion. By project basis, the amount expands around ¥ 117 trillion.

The principal measures menu of the second supplementary budget are as follows (tentative, as of May 27) ;

- ¥ 2.9892 trillion is for strengthening the medical care provision system,

including the development of vaccine and related medicines, and benefits for medical staff.

- To reduce the burden of rents at stores, the amount of ¥ 2.0242 trillion is recorded, in which two-thirds of the rent is paid for half a year to businesses whose sales have dropped.
- To raise the upper limit of the employment adjustment subsidy to ¥ 15,000 per day, which provides up to ¥ 330,000 yen per month. The total amount of the budget is ¥ 451.9 billion.
- ¥ 11.6390 trillion has been included in measures to strengthen the financial base of companies and expansion of cash flow support such as interest-free and unsecured loan systems.

The support measures for businesses by the first supplementary budget established on April 30, are introduced on the METI English site below.

METI: https://www.meti.go.jp/english/covid-19/index.html
Cabinet office: https://corona.go.jp/action/pdf/shiensakugoannai_20200512.pdf （Japanese）

METI demonstrates trial to charge plastic bag

Ahead of the nationwide mandatory introduction of fee-incurring plastic checkout bags scheduled for July 1, 2020, METI, JPO, MOF and MOFA implemented a trial to reduce plastic checkout bags at in-house convenience stores. It was conducted for three weeks, from January 27 (Mon.) to February 14 (Fri.), 2020. METI released the result on April.

Specifically, the in-house stores participating in the trial requested consumers to present to the stores an intention-declaration card, which declares either an intention to use a plastic checkout bag ("use" card) or an intention not to do so ("non-use" card). The type of card used was varied across the participating stores in order to examine which type is effective in encouraging consumers to refrain from using plastic checkout bags.

Participated stores are as follows;

- FamilyMart convenience store at METI;
- Lawson convenience store at MOFA;

- Seven-Eleven convenience store at the JPO; and
- FamilyMart convenience store in the MOF main building

At the stores that provided a plastic checkout bag as the default practice while requesting consumers who did not need a bag to present a "non-use" card, it was found that the non-use rate remained unchanged compared with before the trial.

On the other hand, at the store whose default practice was not providing a plastic checkout bag (while requesting consumers who needed a bag to present a "use" card), the non-use rate rose significantly. After the trial ended, the non-use rate remained at a relatively high level.

The above results indicate that while the effects of the use of the intention declaration card could not be evaluated precisely because of differences across stores in the type of card used and various other conditions, adopting the non-provision of a plastic checkout bag as the default practice may be effective in reducing the use of plastic checkout bags.

METI explained that Given that the non-use rate remained at a relatively high level after the end of the trial, the behavior pattern of refraining from using plastic checkout bags may be expected to take hold.

https://www.meti.go.jp/english/press/2020/0327_008.html

Card type	A card printed with a picture of marine litter 	A card printed with information on regulations in other countries 	A card declaring an intention to use a plastic checkout bag 	A card declaring an intention not to use a plastic checkout bag 
Default practice	Provision of a plastic checkout bag upon declaration	Provision of a plastic checkout bag upon declaration	Provision of a plastic checkout bag upon declaration	Non-provision of a plastic checkout bag upon declaration
The non-use rate before the trial	24.5%	20.8%	21.8%	23.1%
January 27 to January 31	28.7%	**54.2%**	**44.1%**	24.2%
February 3 to February 7	**65.7%**	**63.9%**	**50.2%**	25.0%
February 10 to February 14	**74.5%**	49.0%	49.7%	23.5%
The non-use rate after the trial (no card)	62.8%	41.6%	47.0%	25.8%

COVID-19 has triggered discussions about changes from April to September enrollment

In Japan, with a few exceptions, it is common to enroll in educational institutions in April from early childhood education to universities. However, with the opportunity to leave the school due to COVID-19, discussions have begun to change this to the beginning of September which is the same as in EU and the Us., and it has been taken up by the Diet.

Since long time ago, there was a discussion that April enrollment is not fit for studying abroad such as in EU and the US where centered on September enrollment. It is also bad timing for new graduates to find employment. Of course, there were many opinions that the gap also occurred for non-residents when studying or getting a job in Japan and it is an obstacle to promoting internationalization.

Originally, Japan adopted a system of admission in September from 1872 to 1886 in the early Meiji era, in line with Western countries. However, in 1886, the government's fiscal year was set to start in April, and the school gradually moved to April admission, and in 1921, April admission was completely unified. The fiscal year of most Japanese companies is from April to March, which is also in line with the government's fiscal year.

The shift to September admission will also have a major impact on corporate activities. As corporate accounting is usually done quarterly, so it is expected that there will be no significant change, but will affect the hiring of new graduates. With a few exceptions, Japanese government agencies and companies often decide that April is the time to hire new graduates. For this reason, they also need to rebuild the hiring schedule and students have to change the plan of job hunting, too.

Some experts say that it should be revised at once to reduce social confusion on the occasion of COVID-19, but there is also a cautious argument that it takes time to introduce the system. Minister of Education, Mr. Hagyuda in the press conference said enrollment in September is not a problem that involves only our ministry, but has an impact on society as a whole, and it is a project that requires coordination with various fields.

The University of Tokyo, which stands at the top of Japan's national universities, tried to adopt September enrollment, in 2015. But, there was a history of giving up because it was not possible to obtain an understanding from the concerned parties.

For this reason, there are many views that recruitment for September admission from 2020 is unrealistic, but the discussion can be said to be a by-product of COVID-19. For reference, according to a national survey conducted by the Yomiuri Shimbun (one of the major newspapers) from May 8 to 10, 54% of the respondents agreed and 34% expressed their opposition. Only in large 13 cities such as Tokyo and Osaka, the approval ratio rises to 59%.

https://www.mext.go.jp/b_menu/daijin/detail/mext_00060.html
(in Japanese)

Japan Patent Office (JPO) obtained its own patent for the first time
On May 11, JPO filed a patent / trademark application for the patent document search system, and announced that it was the first time for JPO to obtain a patent right. The application was filed on January 22, 2020 and was published in the Patent Gazette on April 28, 2020. Prior to this, trademark applications were filed both in Japan and overseas.

Using the AI technology, this patent provides patent documents all over the world with various types of languages and patent classifications, in the desired language and patent classification (for example, Japanese and Japanese detail patent calcification FI).

According to JPO, the purpose of having this patent is that; 1) enabling the self-developed patent document search system to be carried out on a stable basis, and 2) allowing both domestic and overseas users to utilize this patented technology with peace of mind.

Regarding acquisition of a patent by the governmental patent office, Mr. Kiyoshi Kurihara, a patent attorney and visiting professor at Kanazawa Institute of Technology, said in a Yahoo news, "There are some examples which the

Minister of Economy, Trade and Industry and the Minister of Internal Affairs and Communications are right holders. In all cases, employees of the ministries made inventions on the job, so they applied for and registered a patent under the name of the Minister. It may be the employee (in this case, the examiner) made the invention for the purpose of work. In the US, there are some patents under the name of the Department of Commerce, but there are no cases which the USPTO (United States Patent and Trademark Office) is the right holder. "

JPO:https://www.meti.go.jp/press/2020/05/20200511001/20200511001.html
Yahoo:https://news.yahoo.co.jp/byline/kuriharakiyoshi/20200513-00178324/
(both in Japanese)

SURVEY AND BUSIINESS DATA

Real GDP from January to March decreased 3.4% at annual rate

On May 18, the Cabinet Office announced preliminary figures for gross domestic product (GDP) for the first quarter (January to March) of 2020. According to this, GDP growth was down 0.9% to the previous quarter and down 3.4% annually. Negative growth is the second consecutive quarter. Real GDP for FY2019 (April to March) was down 0.1% from the previous FY and the first negative growth in five years.

Immediately after raising the consumption tax rate to 10%, real GDP of the fourth quarter (October to December) 2019 decreased 7.3% to the previous quarter, marking the second consecutive quarter of negative growth. It is expected that the second quarter (from April to June) will fall further due to the declaration of an emergency.

Personal consumption, which accounts for more than half of GDP, fell 0.7% to the previous period marking the second consecutive quarter of negative growth. Due to the refraining from going out and the cancellation of events, consumption related to eating out, traveling, and leisure decreased sharply.

Along with consumption, fixed investment fell by 0.5% for the second consecutive quarter. Concerns over the worsening outlook for the global

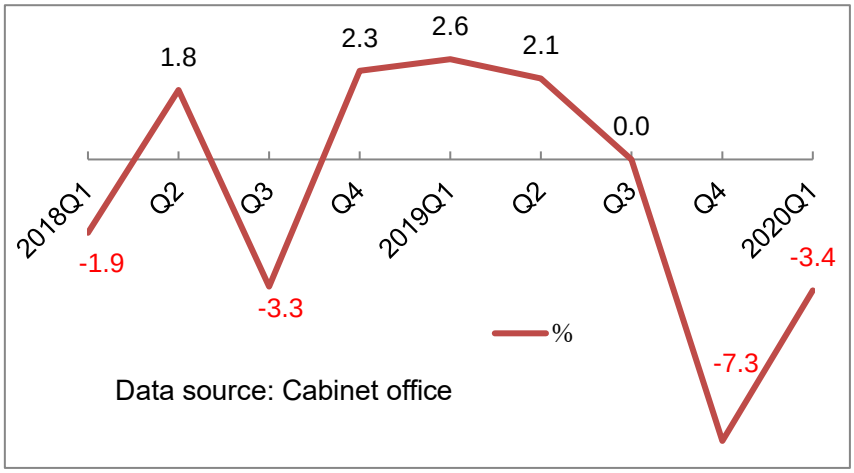
economy have led to a move to postpone investment of companies. Housing investment fell by 4.5%. The negative range widened from the 2.5% decrease from October to December 2019. Weakness continued due to the impact of the consumption tax hike.

Exports fell by 6.0%, showing a significant negative result. Exports of goods decreased by 2.3%, mainly due to sluggish sales to China where infections had spread. Imports fell by 4.9%, and in addition to the decline in crude oil and natural gas, COVID-19 disrupted the supply chain.

At the press conference after the announcement of the GDP, Mr. Nishimura, Minister in charge Economic Revitalization stated that
"Both domestic and external demands are showing severe conditions in Japan's economy and after the declaration of an emergency in April and May, severity will increase further. We will execute the first supplementary budget as quickly as possible and submit the second supplementary budget proposal as soon as possible to establish it and firmly support the economy."

https://www.esri.cao.go.jp/en/sna/data/sokuhou/files/2020/qe201/gdemenuea.html

Real GDP annual growth rate of Japan



Both export and import dropped sharply in April

According to the trade statistics in April released by the Ministry of Finance (preliminary report), exports amounted to ¥ 5.2023 trillion, down 21.9% from the same month last year. The rate of decline was the first time in 10 and a half years since October 2009 when the financial shock had an impact.

Extorts to almost all regions and countries decreased du to the spread of COVID-19. The decline expanded significantly from the 11.7% decline in March. In particular, automobile exports fell by half by 50.6% and automobile parts also fell by 39.2%.

Looking at exports by major region and country, exports to the US fell 37.8% to ¥ 879.7 billion. It has been a decline since July 2009. Automobiles decreased by 65.8%, and prime movers such as aircraft engines and automobile parts also decreased by more than 40%. Sales to EU were down 28% to ¥ 483.5 billion. Exports to China were ¥ 1.1182 trillion, down 4.1%. The amount of reduction was reduced from March (down 8.7%). Semiconductor increased by 29.4%. The expansion of demand for telework may have affected the recovery of personal computer production in China. Exports to Asia as a whole declined 11.4% to ¥ 3.1297 trillion.

The total import value decreased by 7.2% to ¥ 6.1327 trillion. The rate of decrease expanded slightly from March (down 5.0%). Crude oil imports fell by 40%. The trade balance was a loss of ¥ 930.4 billion. The deficit is the first time in 3 months. By region and country, imports from China increased by 11.7% to ¥ 1.7348 trillion. This is the first increase in nine months. While the raw materials for chemicals decreased, the number of textile threads and textile products such as masks increased. Imports from the US increased by 1.6% to ¥ 698.6 billion due to expansion of aircrafts and meat. Imports from the EU decreased by 6.8% to ¥ 674.7 billion because of minus of aircrafts and consumer goods.

https://www.customs.go.jp/toukei/shinbun/trade-st_e/2020/202004ce.xml

Exports & Imports with EU (April 2020)

	Value (Billions of ¥)	% to 2019	Reference
Exports	483.5	-28.0	Decreased 9 months continuously
Imports	674.7	-6.8	Decreased 4 months continuously
Balance	-191.2	265.2	In red 10 months continuously

Exports & Imports of principal goods with EU (April 2020)

Export goods	% to 2019	Import goods	% to 2019
Vehicles	-55.8	Medicines	+30.8
Auto parts	-47.1	Bags	-73.9
Metal working machineries	-58.3	Aircrafts	-66.5
-	-	Clothing	-68.4

Data source: MOF

Vehicle sales in April fell 13.4%

Although vehicles sales are sluggish worldwide due to the impact of COVID-19, according to Japan Vehicles Dealers Association (JADA), vehicle sales in Japan from January to April 2000 (including imported vehicles, excluding micro vehicles) are 1.036 million units, down 13.4% from the previous year, and that of micro vehicles are 605 thousand units, down 14.6%. These depressions are better that of the US and EU, but far below the previous year's results. In China where COVID-19 infections are shrinking, vehicle sales in April have already turned positive compared to the same period last year, there are no signs of demand recovery yet.

The Japanese vehicles market once recorded a 5.562 million units in 2014, but then continued to move back and forth, dropping to 5.195 million units in 2019. The market size will continue to shrink in 2020 due to the COVID-19 shock. Under these circumstances, sales of imported vehicles fell to 97 thousand units from January to April, down 14% from the previous year. Japan's imported vehicle market will be about 350 thousand units in 2019 and more than 90% is

from EU. Of these, three companies, Mercedes, VW and BMW have 50% of the market share, but all were below the previous year's results.

Looking at passenger vehicle sales in April by powertrain, gasoline vehicles were 56.6%, HV38.5%, PHV0.5%, clean diesel 4.2% and EV0.2%. But about imported market, gasoline vehicles are 67.2%, HV6.5%, PHV1.2%, clean diesel 24.9%, EV 0.2%. HV occupies the second largest position after gasoline vehicles in the whole market, while diesel has a large share in imported market. Due to the spread of HV in Japan, consumers are less interested in EVs, and the rate of penetration is slower than in EU, the US, and China.

In order to spread the next-generation powertrain, the government provide subsidies of ¥ 76,000 to ¥ 400,000 for purchasing EVs, ¥ 200,000 to ¥ 222,000 for purchasing PHVs, and ¥ 15,000 to 150,000 for purchasing clean diesel vehicles in FY2020. It continues, and it can be said that it is an advantageous condition for imported vehicles from EU.

http://www.jada.or.jp/data/month/m-fuel-hanbai/ (in Japanese)
http://www.jaia-jp.org/english-stat/

Share of vehicle sales by powertrain in Japan (as of April 2020)

Powertrain	All vehicles (%)	Imported vehicles (%)
Gasoline	56.6	67.2
HV	38.5	6.5
PHV	0.5	1.2
Diesel	4.2	24.9
EV	0.2	0.2
FCV	-	-
Total	100.0	100.0

Data source: JADA and JAIA

Bankruptcy by the spread of COVID-19, 166 cases as of May 19

According to a statement by Tokyo Shoko Research Co., Ltd. (TSR), a major private credit research company, as of May 19, there were 166 bankruptcies related to the "COVID-19" nationwide (109 bankruptcies, 57 attorney-in-law preparation). The first business failure occurred in Aomori and Oita prefectures

and spread to 42 prefectures. The blank areas are Fukui, Wakayama, Tottori, Kochi and Nagasaki prefectures.

The number of management failures related to COVID-19 rapidly increased from 2 in February and 23 in March to 84 in April. In May, there were 57 cases by May 19, and the number of cases per month is approaching 100.

By prefecture, Tokyo Met. had a record of 35 cases .Below are 16 cases in Hokkaido, 13 cases in Osaka, 9 cases in Shizuoka, 8 cases in Hyogo, 6 cases in Niigata and 6 cases in Fukuoka.

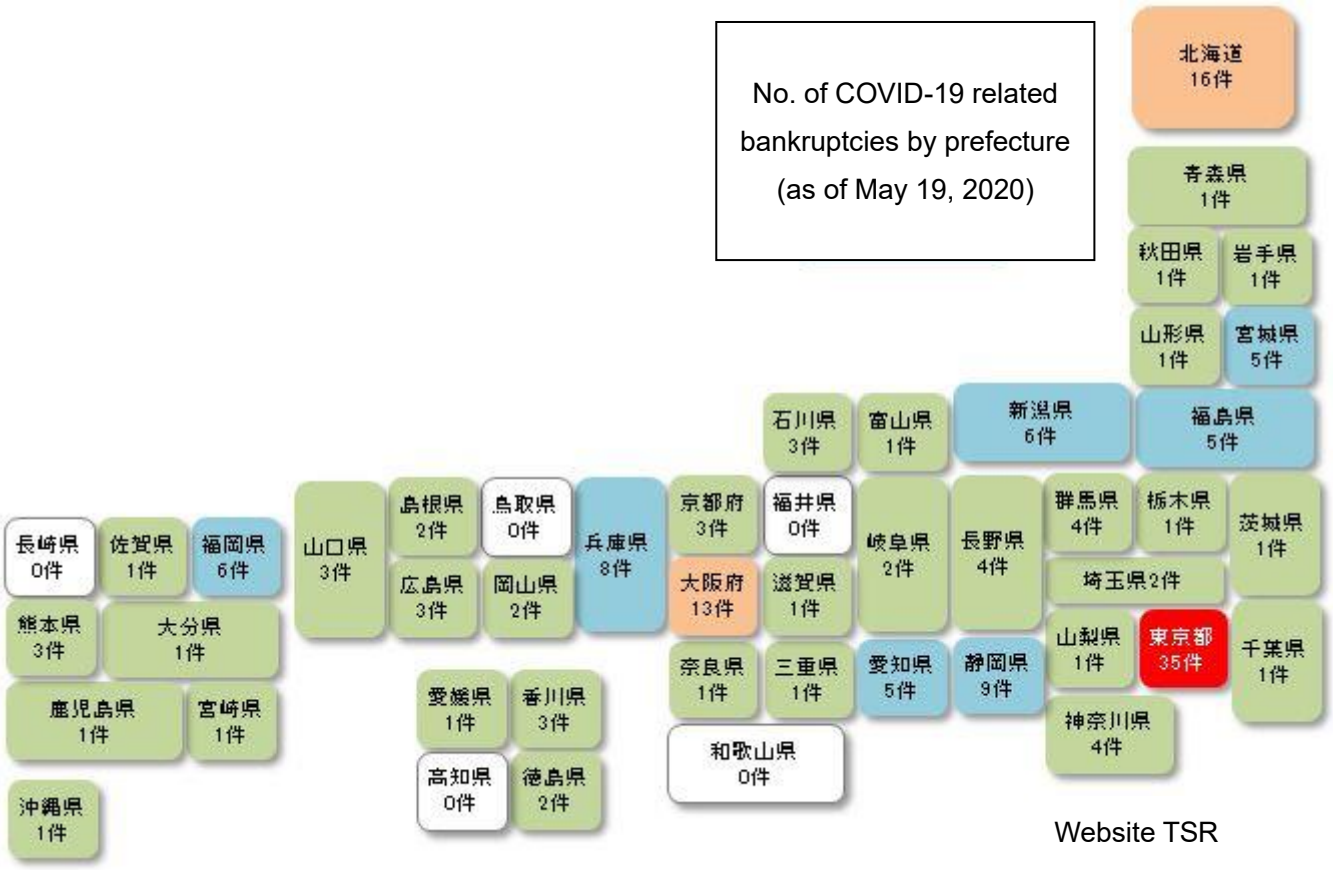
By industry, in addition to the disappearance of inbound travel, the largest number was the lodging industry with 31cases. Next were food and beverage businesses with 26 cases, which were affected by a decrease in the number of customers visiting stores, temporary closures, and shortened working hours due to the declaration of emergency. Apparel industry also has 21 cases of bankruptcy and there were 13 food manufacturing industries affected by the closure of elementary, junior high schools and the cancellation of events.

Businesses that have collapsed are often exhausted due to the shortage of manpower and the consumption tax hike (October 2019). TSR pointed out the cash flow of companies whose sales have failed and various support measures is approaching the limit. For these companies to continue their business, immediate assistance such as loans and repayment grace is urgently needed.

* Corporate bankruptcies are aggregated by legal and private arrangements of debt of ¥ 10 million or more.

* The “COVID-19” related business failures are cases confirmed by the lawyers in charge and the parties concerned.

https://www.tsr-net.co.jp/news/analysis/20200519_02.html
(in Japanese)



Japanese telework has not progressed

On April 30, the Ministry of Health, Labor and Welfare announced the analysis results of conducting "national survey for COVID-19 countermeasures" three times with the cooperation of SNS LINE. Among them, the telework implementation rate centered on office work (administration, planning, development, etc.) was 27% on a national average at the time of the third survey (April 12-13).

Even in the 7 prefectures in which the emergency declaration was first issued, 52% was the most advanced in Tokyo and 20% was the most delayed in Fukuoka, although the government goal is "minimum 70% reduction of office workers". In the third survey, the number of valid respondents was 23,779,431 (response rate 28.5%).

On the other hand, Keidanren (Japan Federation of Economic Organizations) conducted the same survey on 1,470 member companies from April 14 to 17,

the ratio of companies that are performing telework is high at 97.9%. According to Keidanren, 66% of the respondent company employees and 760,000 people use telework. However, the number of companies that responded to the survey was only 406 (response rate is 27.6%), and many of Keidanren's member companies are large companies representing Japan, which seems to be the reason for the high ratio.

Furthermore, Tokyo Shoko Research Co., Ltd.,(TSR) a major private credit research company, announced on May 15 the results of a similar survey conducted from April 23 to May 12. According to the research, 56% of the 21,741 responding companies are conducting telework. Of these, 83.3% is by companies with capital of ¥ 100 million or more, 51% is companies with less than ¥ 100 million. The higher the company size, the higher the implementation rate.

Of the above three surveys, the Ministry of Health, Labor and Welfare's survey is for individuals who use LINE, and the surveys by Keidanren and Tokyo Shoko Research are on a company basis. Although it is necessary to consider such factors, it seems that the disparity in company size and in region is larger than expected. In each survey, there are many answers that the factors that can not perform telework such as due to the nature of the duties and IT environment.

https://www.mhlw.go.jp/stf/newpage_11109.html (in Japanese)
https://www.keidanren.or.jp/policy/2020/036.pdf (in Japanese)
https://img03.en25.com/Web/TSR/%7B67c4270f-694f-4e54-8fba-a2bde917e296%7D_20200515_TSRsurvey_CoronaVirus.pdf (in Japanese)

COMPANY NEWS

World's first international hydrogen transport was realized
The Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD) created by Mitsui & Co. and NYK Line etc. announced on April 24 that they made the world's first international hydrogen transport.

This event marked a significant milestone in the "Demonstration Project for a Hydrogen Energy Supply Chain Utilizing the Organic Chemical Hydride Method"

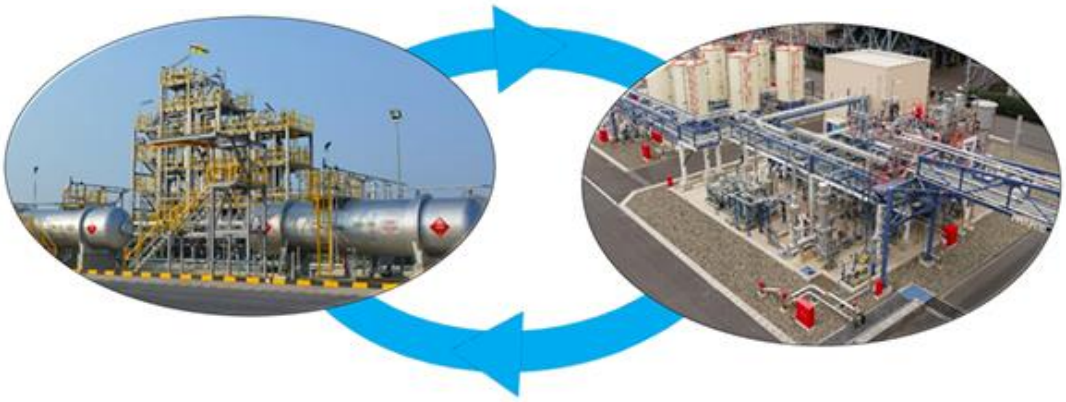
and made the world’s first international hydrogen supply chain by connecting between Brunei Darussalam and Japan through a processes of MCH production in Brunei, maritime MCH transport, and dehydrogenation of MCH in Japan.

The commencement of global hydrogen supply chain operation is a notable step toward the realization of CO2-free “Hydrogen Society”. Going forward, AHEAD will team up with partner companies including Chiyoda Corporation, Mitsubishi Corporation, Mitsui & Co. and NYK line KK to confirm the effectiveness of international hydrogen transportation through a project to demonstrate a hydrogen supply chain in operation.

* MCH = Methylcyclohexane is a colorless liquid with a benzene-like odor and is a type of cycloalkane. A type of fraction obtained from heavy oil used as solvent and fuel.
*Toluene separated from MCH will be returned to Brunei Darussalam, where it is integrated again with hydrogen and transformed back into MCH. The toluene will be repeatedly used as a means of transporting hydrogen in the future hydrogen supply chain.

https://www.ahead.or.jp/en/

【Kawasaki Dehydrogenation Plant 】【Brunei Hydrogen Production & Hydrogenation Plant 】



7 companies established ‘e5 Consortium’ to realize Zero Emission EV vessels

7 companies, Asahi Tanker Co., Ltd., Idemitsu Kosan Co., Ltd. (trade name: Idemitsu Showa Shell), Exeno Yamamizu Co., Ltd., Mitsui OSK Lines, Tokyo Marine & Nichido Fire Insurance Co., Ltd., TEPCO Energy Partner Co., Ltd., and Mitsubishi Corporation established the "e5 Consortium," which aims to build a new shipping infrastructure service toward the development, realization, and spread of zero-emission electric propulsion vessels.

‘e5’ is to provide peace of mind, safety and quality by realizing the five values of "electrification", "environment", "evolution", "efficiency", and "economics" in the shipping industry.

Domestic shipping, which is an important social infrastructure in Japan, faces structural problems such as shortage of seafarers, aging seafarers, and aging ships. In addition, as one of the measures against climate change that Japan tackles, reduction of greenhouse gas emissions from the shipping industry is also required.

As a promising solution to these urgent issues, seven ‘e5 Consortium’ member companies focused on the rich potential and future potential of EV vessels. By joining and fusing their strengths, technological know-how, networks, etc., each member company will build a platform that provides innovative shipping infrastructure services based on EV vessels.

As the first step of the "e5 Consortium" initiative, the world's first zero-emission EV tanker powered by a large capacity lithium-ion battery is scheduled to be completed in March 2022.

https://asahi-tanker.com/news-release/2020/135/
https://youtu.be/6sJjzCbRFWw
http://e5ship.com/

Image of Zero emission EV tanker (Website e5)

Joint Agreement Reached for GHG Zero-Emission Ship

Imabari Shipbuilding Co., Ltd. ("Imabari"), MAN Energy Solutions, Germany (hereinafter “MAN”), Mitsui E&S Machinery Co., Ltd. ("Mitsui E&S Machinery"), ClassNK ("ClassNK"), ITOCHU ENEX Co. Ltd. ("ITOCHU ENEX") and ITOCHU Corporation ("ITOCHU") have agreed to jointly develop ships equipped with a main engine using ammonia as its main fuel (“Ammonia-fueled Engine”).

With international momentum towards the transition to a decarbonized society on the increase since the Paris Agreement came into effect in 2016, the International Maritime Organization (IMO) adopted a strategy for the reduction of greenhouse gas (GHG) emissions within the shipping industry in 2018.

This strategy set targets to reduce CO2 emissions per transport work – as an average across international shipping – by at least 40% by 2030 (compared to 2008 levels), by 50% by 2050, and to phase them out entirely (zero-emissions) during this century. In order to achieve these goals, the early development of zero-emission ships is anticipated with ammonia a prime candidate for a suitable zero-emission, alternative fuel.

The purpose of the joint agreement is not limited to the development of ships

equipped with an Ammonia-fueled Engine, but also extends to the question of owning and operating the ships, supplying ammonia fuel and developing ammonia supply facilities. The consortium intends to promote initiatives to reduce GHGs with the cooperation of domestic and overseas companies, as well as the relevant government agencies.

As such, each member of the consortium will concentrate on its own, respective area of expertise during the zero-emissions vessel project as follows.

Imabari: Develop ships with Ammonia-fueled Engine
MAN: Develop Ammonia-fueled Engine
Mitsui E&S Machinery: Develop and supply Ammonia-fueled Engine
ClassNK: Safety evaluation of ammonia fueled ship
ITOCHU ENEX: Supply fuel to ammonia fueled ship
IITOCHU: Materialization of integrated project

https://www.itcenex.com/en/index.html

NEC developed a terminal that can identify an individual even with a masked face

On May 14, 2020, NEC Corp. announced that it has developed a multi-modal biometric authentication terminal that incorporates face recognition and iris recognition technology. They would like to carry out a verification test by the end of FY2020 and commercialize it for purposes such as settlement and entry / exit by 2021. Individuals can be identified with high accuracy by properly using technologies such as face recognition when wearing sunglasses or color contacts, and iris recognition when the face cannot be seen well in a mask or darkness.

The multi-modal biometric terminal developed by incorporates the face recognition technology, which became the number one in the world in the benchmark test for the authentication technology of the National Institute of Standards and Technology (NIST) in 2018.

If both face recognition and iris authentication work, the false acceptance rate is less than 1 in 10 billion. The camera built into the terminal automatically adjusts

the inclination of the face and eyes of the user and enables authentication in about 2 seconds. A Chinese company is also developing software that recognizes mask faces, but the recognition rate is reported to be around 95%, which falls short of NEC's recognition rate.

Taking advantage of the features that enable face recognition while wearing a mask or hat, NEC aims to receive orders from food factories, clean rooms inside the factories, medical institutions, etc. It is said that the company's biometrics authentication system has a track record of introducing more than 1,000 systems in about 70 countries and regions around the world. They plan to expand the scale of the biometrics authentication and video analysis business, including terminals that have been developed this time.

https://jpn.nec.com/press/202005/20200514_01.html
(in Japanese)

Example of using payment when wearing a mask (Website NEC)

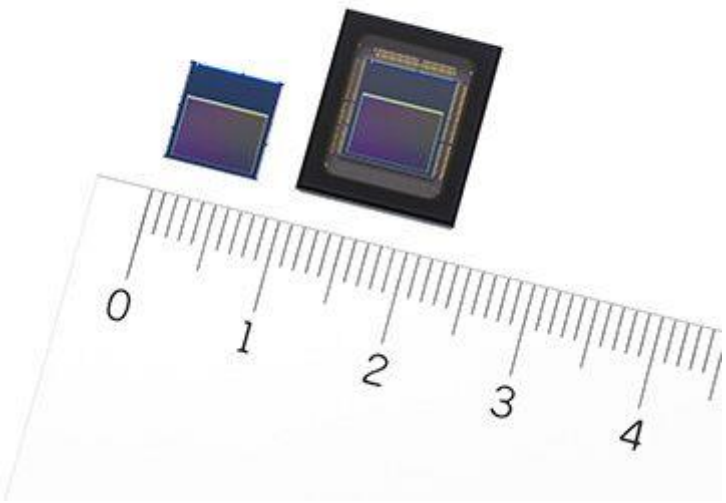
SONY released world's first Intelligent vision sensors with AI processing functionality

Sony Corporation on May 14, 2020 announced the upcoming release of two models of intelligent vision sensors, the first image sensors in the world to be equipped with AI processing functionality.[*1] Including AI processing functionality

on the image sensor itself enables high-speed edge AI processing and extraction of only the necessary data, which, when using cloud services, reduces data transmission latency, addresses privacy concerns, and reduces power consumption and communication costs.

*1Among image sensors. According to Sony research (as of announcement on May 14, 2020).

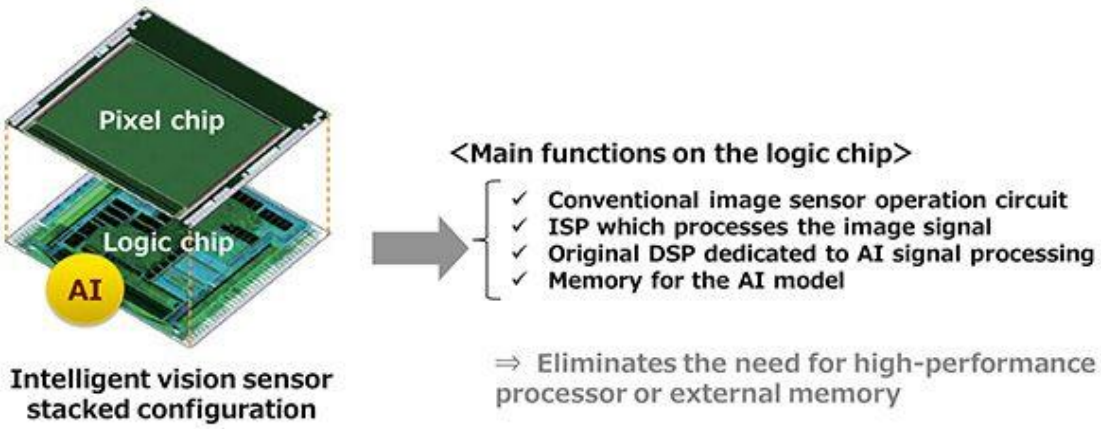
These products expand the opportunities to develop AI-equipped cameras, enabling a diverse range of applications in the retail and industrial equipment industries and contributing to building optimal systems that link with the cloud.



Intelligent vision sensors
Left: IMX500 Right: IMX501

The spread of IoT has resulted in all types of devices being connected to the cloud, making commonplace the use of information processing systems where information obtained from such devices is processed via AI on the cloud. On the other hand, the increasing volume of information handled in the cloud poses various problems: increased data transmission latency hindering real-time information processing; security concerns from users associated with storing personally identifiable data in the cloud; and other issues such as the increased power consumption and communication costs cloud services entail.

The new sensor products feature a stacked configuration consisting of a pixel chip and logic chip. They are the world's first image sensor to be equipped with AI image analysis and processing functionality on the logic chip. The signal acquired by the pixel chip is processed via AI on the sensor, eliminating the need for high-performance processors or external memory, enabling the development of edge AI systems. The sensor outputs metadata (semantic information belonging to image data) instead of image information, making for reduced data volume and addressing privacy concerns. Moreover, the AI capability makes it possible to deliver diverse functionality for versatile applications, such as real-time object tracking with high-speed AI processing. Different AI models can also be chosen by rewriting internal memory in accordance with user requirements or the conditions of the location where the system is being used.



https://www.sony.net/SonyInfo/News/Press/202005/20-037E/

ADDITIONAL TOPICS

Mt. Fuji, all climbing routes are prohibited by COVID-19

Mt. Fuji is one of the most popular sightseeing destinations for foreigners visiting Japan, but Shizuoka Prefecture on May 18, in order to prevent the spread of COVID-19, 3 routes (Fujinomiya, Subashiri and Gotemba route) will be closed during the summer season (July 10 to September 10). All mountain huts are also closed. Yamanashi prefecture has already decided to close the

mountain trail (Yoshida route), and this summer it has become impossible to climb Mt. Fuji.

Shizuoka Prefecture was discussing measures with local governments and people involved in mountain huts, as the mountain huts and mountain trails may be congested and the risk of infection may increase. The closure of 3 mountain trails is the first since 1960, when the prefecture started to manage them.

The union organized by the mountain hut on the Fujinomiya route, which is used by the most climbers, decided to refrain from operating in late April and requested the prefecture to close the trail.

According to the Ministry of the Environment, 235,000 people have climbed Mt. Fuji from both Shizuoka and Yamanashi prefectures in 2019.

http://www.fujisan-climb.jp/en/index.html
(in Japanese)

Opening intellectual property free against COVID-19
The COVID-19 is an unprecedented crisis after the war, and there is an urgent need to develop, manufacture, and provide the vaccines, medical devices, and infection control products as quickly as possible. To this end, cooperation between industry, government and academia is required without intellectual property rights such as patent rights, utility model rights, design rights and copyrights hindering these acts.

In the United States, an increasing number of companies are agreeing to the

"Open COVID Pledge" activity, which is an activity to promote the free opening of intellectual property rights, only for the purpose of suppressing the spread of COVID-19 infection.

Japan has also declared that it will not exercise any rights or demand any compensation for patent rights, utility model rights, and design rights owned by companies in the "COVID-19 infectious disease related to intellectual property". An increasing number of companies and organizations agree with the movement of "Countermeasure support declaration (OA CVD 19)".

The declaration was issued in April 2020, centered on Geno Concierge Kyoto Inc., a venture company from Kyoto University. It is said that more than 750,000 patents have become unconditionally available at the moment (May 25), as 57 Japanese manufacturers such as Canon Inc., Shimadzu Corp. and Toyota Motor Corp. responded to such movements. The Declaration also is supported by economic organizations such as Keidanren, New Economic Federation, Computer Software Association, and WIPO Japan Office.

As a general rule, the declaration is valid until the day when the World Health Organization (WHO) makes a declaration to end the spread of COVID-19 infection. With regard to the intellectual property rights subject to the declaration, it is expected that they can be used promptly without spending time and money for investigating whether there is any infringement or negotiating for licensing.

https://www.gckyoto.com/covid-2

Trade Mark of OPEN COVID PLEDGE	Trade Mark of OA CVD 19

Four automobile associations expressed messages on COVID-19

On April 10, four associations of Japanese automobile industry; Japan Automobile Manufacturers Association (JAMA), Japan Auto Parts Industries Association (JAPIA), Japan Auto-Body Industries Association (JABIA), Japan Automotive Machinery and Tool Manufactures Association (JAMTA) held a joint press conference on the web, and issued a message about the responsibility and social contribution of the Japanese automobile industry regarding the spread of new coronavirus infection.

The message was announced by the chairman of JAMA, Mr. Akio Toyoda (President of Toyota Motor Corporation) on behalf of four associations. Among them, the chairman expressed his gratitude to all medical staffs at the beginning, and he said the industry must manufacture medical products such as masks for their use to prevent medical collapse, provide 3,000 rooms such as recreation facilities for hospitalization of infected people, provide technology and contribute to the manufacture of ventilators, provide vehicles and beds for medical institutions and public offices., etc.

Also he stressed Japanese automobile industry employs 5.5 million people directly and indirectly, and can contribute to the recovery of the economy due to the high production induction coefficient of 2.5 in other industries, and closed the message with the words that's the reason why the automobile industry has to be revitalized at first as social responsibility.

The whole statement of Mr. Toyoda is in the following URL.
https://global.toyota/en/newsroom/corporate/32286549.html

NEDO developed a search engine specialized for COVID-19 case reports
New Energy and Industrial Technology Development Organization (NEDO), Precision Co., Ltd. and Jichi Medical University have developed a search engine specialized for case report of COVID-19 using an algorithm under development, and released on May 3, 2020. This makes it possible to visualize and analyze approximately 70 cases of COVID-19, and is expected to contribute to the sharing of information and the development of diagnostic / treatment methods for medical personnel working on COVID-19.

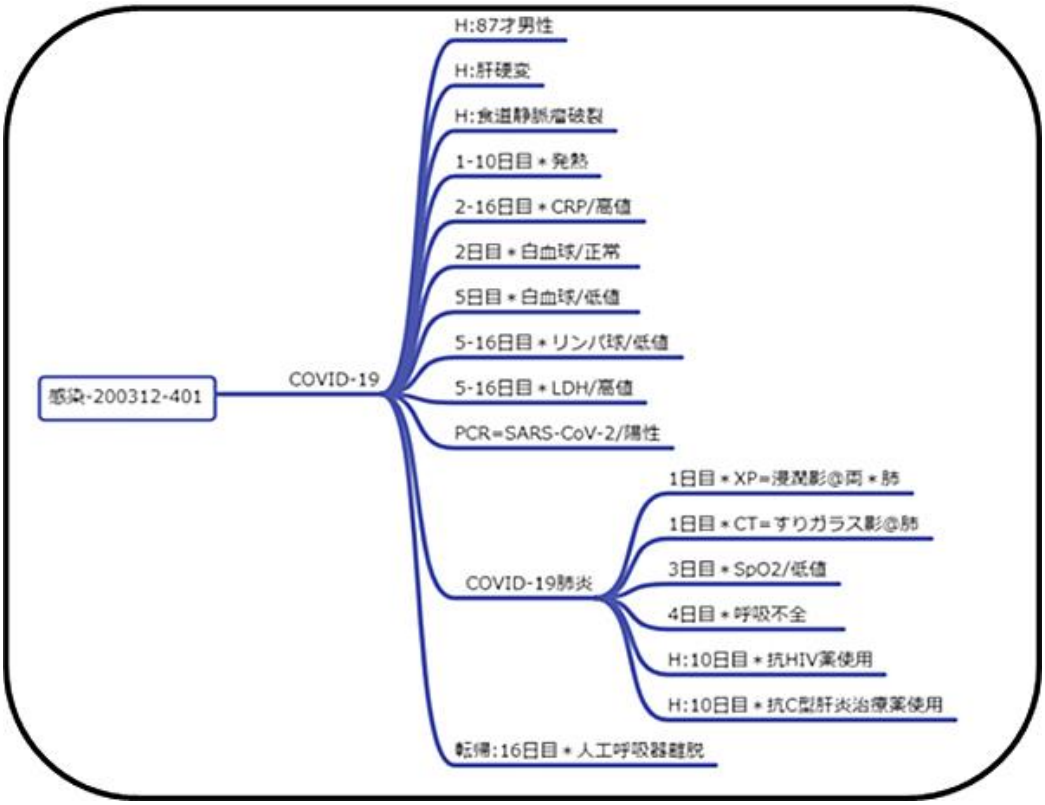
COVID-19 is a disease that humanity experiences for the first time, and it is urgent to collect many case reports, organize them in an easy-to-understand manner, and analyze patient trends. The "COVID-19 Case Presentation" has already been posted on the website of the Japanese Society of Infectious Diseases, which provides valuable information. However, in order for non-specialists to utilize the information in case reports, it is necessary to display the relationship between the reporting context and clinical findings in an easy-to-understand manner.

Therefore, from the case reports published on the website of the Japanese Society of Infectious Diseases, 3 parties organized the reports of about 70 cases with the author's permission and created a search engine using developed the algorithm.
By tracing the context of the case and showing the relationship between the time series of events that occurred and the medical terms, it became possible to visualize COVID-19 cases and perform simple analysis (see the figure below).

For overcoming COVID-19 requires repeated trial and error between medical professionals and non-specialists. This database, which is structured and digitized medical knowledge, will be utilized for information sharing among medical personnel working on COVID-19 in the future, and will contribute to the development of diagnostic and therapeutic methods as a tool to help overcome COVID-19.

Image of COVID-19 case report structuring (in Japanese)

A case map of COVID-19 from case report. This format enables computer analysis.



Source: NEDO website
https://www.nedo.go.jp/news/press/AA5_101308.html

AIST and NIMS research team developed a new sensor to food loss reduction

On May 12, a research team from the National Institute of Advanced Industrial Science and Technology (AIST) and the National Institute for Materials Science (NIMS) announced that they have developed a small sensor that can constantly monitor ethylene, a plant hormone.

Ethylene accelerates the ripening of vegetables and fruits, but when it is present in excess, it causes spoilage. By constantly monitoring ethylene using the newly developed small sensor, optimal transportation and storage management of vegetables and fruits will be possible. It is expected to lead to adjustments when

eating and reduction of food loss. The outline of the small sensor is as follows.

- With the newly developed small sensor, continuous monitoring of ethylene will enable optimal transportation and storage management of vegetables and fruits.

- Most of the small sensors for ethylene detection currently on the market need to be driven at high temperature (200-300 ° C), and the surface of the sensor material has high activity. The problem is that it is difficult to selectively detect ethylene because it also reacts with other educing gas molecule (alcohol, methane, etc.).

- High sensitivity of ethylene was developed by combining three elements; a highly active catalyst, a reagent that reacts with acetaldehyde to generate acidic gas, and an electrode modified with single-walled carbon nanotubes to detect acidic gas.

- The sensor is small and power saving, and it becomes possible to install a sensor device for integrating and networking big data at low cost. It makes realize Society 5.0 in the agricultural and food industries.

https://www.aist.go.jp/aist_j/press_release/pr2020/pr20200512/pr20200512.html
https://www.nims.go.jp/news/press/index.html
(Both in Japanese)