JAPANESE INDUSTRY AND POLICY NEWS
August 2022

Legislation and Policy News

Ministry of Economy, Trade and Industry holds Tokyo GX Week in September-October

The Ministry of Economy, Trade and Industry announced on August 1 that it will hold a series of conferences on GX (Green Transformation) under the name of "Tokyo GX Week" from September 29 to October 7. This conference invites ministers from various countries, as well as world experts and leaders in various fields, with the aim of realizing GX (Green Transformation), which connects emission reductions to economic growth and development.

(1) Second Asia Green Growth Partnership Ministerial Meeting: September 26
(2) Fourth International Conference on Carbon Recycling: September 26
(3) Fifth Hydrogen Energy Ministerial Meeting: September 26
(4) Second International Conference on Fuel Ammonia: September 28
(5) 11th LNG Producer-Consumer Conference: September 29
(6) Second Asia CCUS Network Forum: September 30
(7) Fourth TCFD Summit: October 5
(8) Ninth ICEF: October 5 and 6
(9) Fourth RD20 (Leaders' Session): October 6
(10) First Global Green Transformation Conference (GGX): October 7

METI emphasizes that in order to achieve carbon neutrality throughout the world, it is important to accelerate the "transition" that utilizes a wide range of technologies and energy sources, rather than a uniform approach. In addition, it is important to engage developing countries toward decarbonization while promoting the creation and social implementation of revolutionary innovations that are not on the extension of conventional technology.

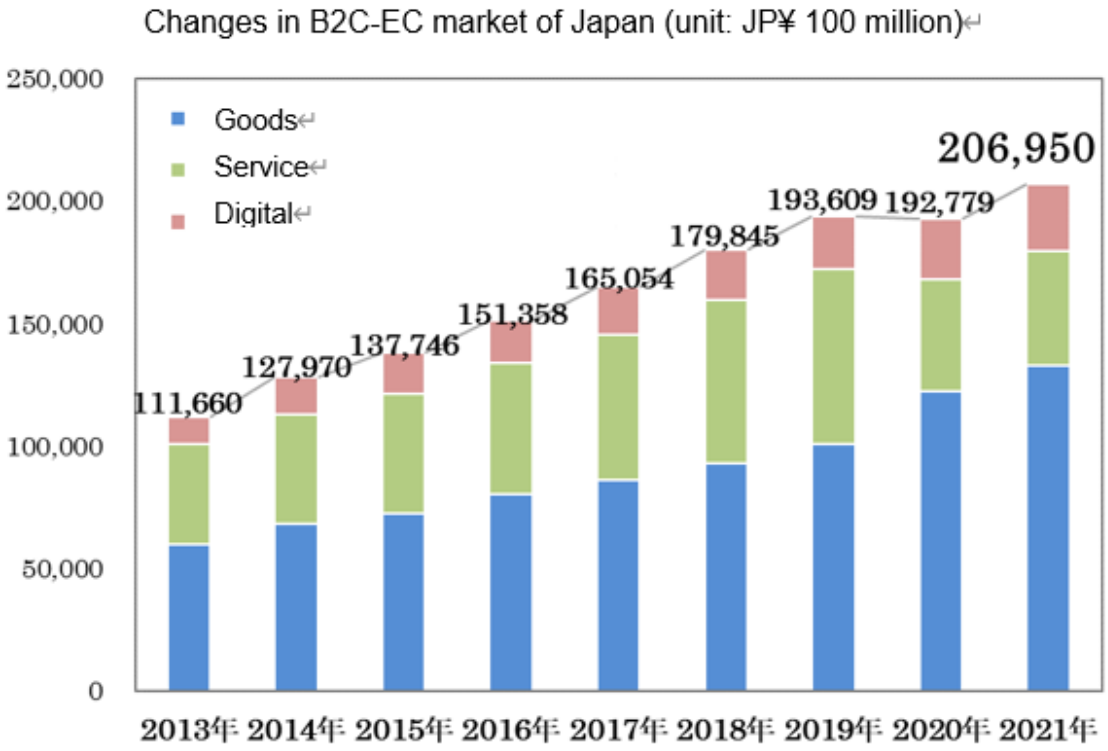
The majority of each conference will be held publicly in a hybrid format of online and physical. For details, contact the person in charge of each conference from the METI website below.

METI website:
https://www.meti.go.jp/english/press/2022/0801_001.html

Survey and Business Data

Ministry of Economy, Trade and Industry announced the survey results of E-Commerce market in FY2021

On August 12, the Ministry of Economy, Trade and Industry announced the results of a survey on the e-commerce market in FY 2021. According to this, the size of the B2C-EC (electronic commerce to consumers) market in Japan in FY 2021 expanded to JP¥ 20.7 trillion (JP¥ 19.3 trillion in FY 2020, JP¥ 19.4 trillion in FY 2019). In addition, the size of the B2B-EC (business-to-business electronic commerce) market in the same year increased to JP¥ 372.7 trillion (JP¥ 334.9 trillion in FY 2020, JP¥ 353.0 trillion in FY 2019). The rate of e-commerce in all transactions is 8.78% (up 0.7 percentage points fiscal year-on-year) in B2C-EC and 35.6% (up 2.1 percentage points fiscal year) in B2B-EC at), indicating continued progress in digitization of commercial transactions.



Data from METI website

B2C-EC Japan

	FY2019	FY2020	FY2021	G rate %
Goods	10.0515	12.2333	13.2865	8.61
Service	7.1672	4.5832	4.6424	1.29
Digital	2.1422	2.4614	2.7661	12.38
Total	19.3609	19.2779	20.685	7.35

Unit: JP¥ trillion

Data from METI website

Looking at the breakdown of B2C by dividing it into goods, services, and digital, in goods, "food, beverages, alcoholic beverages" (JP¥ 2.5199 trillion), "home appliances, AV equipment, PCs, peripheral equipment, etc." (JP¥ 2.4584 trillion), “clothing/apparel miscellaneous goods” (JP¥ 2.4279 trillion), and “household goods, furniture, interior goods” (JP¥ 2.2752 trillion) occupied 73% of the transaction.

In the service sector, “travel services” (JP¥ 1.4003 trillion) account for a large proportion. In FY 2020, due to the spread of the COVID infection, the market size of "travel services", "restaurant services", and "ticket sales" has shrunk significantly compared to the previous fiscal year, but the market size has recovered.

In the digital field, "online games" (JP¥ 1.6127 trillion) account for a large proportion. Although the growth rate has slowed down since FY 2020, the expansion of the "online games", "paid video distribution", and "electronic publishing (e-books and e-magazines)" markets is due to the spread of the COVID. Stay-at-home consumption is behind this trend.

By the way, person-to-person EC (C2C-EC) is rapidly expanding as one of the EC channels, and the market size of C2C-EC in FY 2021 is estimated to be JP¥ 2.2121 trillion (up 12.9% from the previous year). As with the B2C-EC market, the expansion of the market is due to the increase in purchases of indoor entertainment and hobby goods due to the COVID.

C2C-EC of Japan

	FY2019	FY2020	FY2021	G rate %
Total	1.7407	1.9586	2.2121	12.90

Unit: JP¥ trillion

Data from METI website

In addition, in FY 2021, the cross-border EC market size among the three countries of Japan, the United States and China has increased. The amount of cross-border EC purchases by Chinese consumers from Japanese businesses was JP¥ 2.1382 trillion (up 9.7% year-on-year), and the amount of cross-border EC purchases from USA businesses was JP¥ 2.5783 trillion (up 11.5% year-on-year) and it has continued to increase.

Market size of cross-border EC
between Japan, the United States and China

	FY2019	FY2020	FY2021	G rate %
Japan	0.3175	0.3416	0.3727	9.10
USA	1.5570	1.7108	2.0409	19.30
China	3.6652	4.2617	4.7135	10.70

Unit: JP¥ trillion

Data from METI website

METI website (in Japanese):
https://www.meti.go.jp/press/2022/08/20220812005/20220812005.html

First population decline in Tokyo area, nationwide for 13 consecutive years

On August 9, the Ministry of Internal Affairs and Communications announced a demographic survey based on the Basic Resident Register as of January 1, 2022. The number of Japanese in the Tokyo metropolitan area (Tokyo, Saitama, Chiba, and Kanagawa) decreased by 34,498 from the previous year to 35,610,115, marking the first decrease since 1975. It was the 13th consecutive year of decline nationwide, and the largest drop ever was 619,140.

This is believed to be due to a decrease in the influx of people to the Tokyo metropolitan area due to factors such as the spread of telecommuting due to the spread of the COVID-19. The number of Japanese in the Tokyo metropolitan area increased year-on-year in both Tokyo and the three prefectures in 2021, but all decreased in 2022. The number of people in Tokyo decreased for the first time in 26 years, dropping by 20,037 from 2021 to 13,277,052.

The number of Japanese nationals was 123,223,561. The decrease from the previous year is the largest since the survey began in 1968. The difference between the number of deaths and the number of births, or the "natural decrease," was just under 630,000, an increase of about 100,000 from the previous year. Of the 47 prefectures, only Okinawa increased in the number of Japanese people compared to 2021.

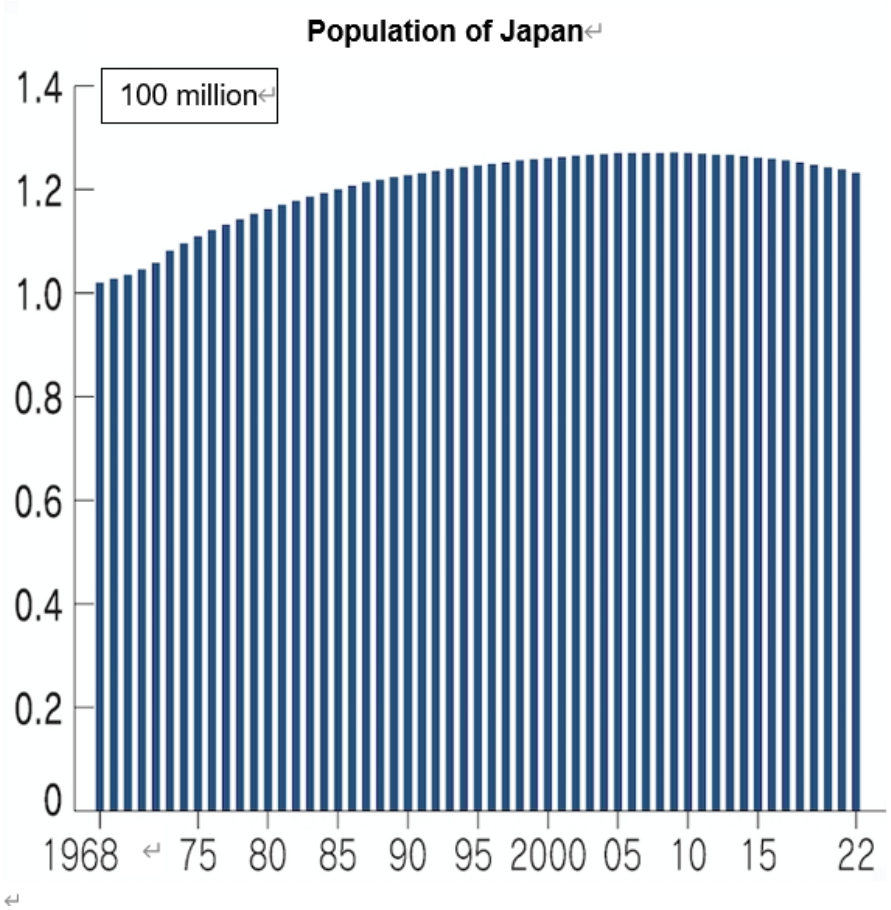
After deducting the number of people moving out of Japan from the number of people moving into Japan, the number was 10,563, down 90% from 2021. The number of Japanese returning from overseas has decreased due to the effects of the COVID. The decline in the population has been accelerated by the weakening of the effect of offsetting the domestic natural decline.

The Japanese working-age population (15-64 years old) was 72,692,237. The percentage of all Japanese people was 58.99%, the lowest ever. The elderly population aged 65 and over was 35,735,422, accounting for 29.00% of the total.

The number of foreigners nationwide decreased by 107,202 from 2021 to 2,704,341, marking the second consecutive year of decline. It was affected by the COVID. By prefecture, the number fell the most in Tokyo, with 28,555. Aichi Prefecture (8,172 people) followed by Osaka Prefecture (7,872 people). The working-age population accounted for 83.96% of all foreigners. Most of the foreigners are young, such as international students and technical interns. Although they are responsible for labor, they have decreased by 175,633 in two years.

Ministry of Internal Affairs & Communication website （in Japanese）:
https://www.soumu.go.jp/main_content/000829114.pdf

Data:



Ministry of Internal Affairs & Communication website

Current account surplus of JP¥ 3,505.7 billion, the lowest level in 8 years in the first half of 2022

According to the Ministry of Finance's January to June 2022 balance of payments statistics (preliminary) released on August 8, the current account surplus, which indicates the status of transactions of goods and services with overseas countries, decreased by 63.1% year-on-year. It was JP¥ 3.5057 trillion. High resource prices such as crude oil against the backdrop of Russia's invasion to Ukraine and the depreciation of the JP¥ in the foreign exchange market had an impact. The current account surplus for the first half of the year was the lowest in eight years since 2014.

The current account surplus has decreased by JP¥ 6.0021 trillion from the first half of2021. The amount of decrease was the second largest after the JP¥ 7.1454 trillion recorded in the second half of 2008, which was affected by

the financial crisis. It was the largest decline in the first half since 1986, when comparable data are available.

The current account surplus has narrowed because of soaring crude oil and food prices and the depreciation of JP¥, which has led to an increase in imports. The balance of trade in the first half was a deficit of JP¥ 5.668 trillion. In the first half of 2021, it was in the black of JP¥ 2.2823 trillion.

In terms of exports, electronic parts such as steel and semiconductors performed well, increasing 18.2% year-on-year to JP¥ 46.4079 trillion. Imports increased by 40.8% to JP¥ 52.0767 trillion, both record highs, but imports outpaced export growth. Imports of fuels such as crude oil, liquefied natural gas (LNG), and coal ballooned.

In addition to rising energy prices, there is also the impact of the JP¥'s depreciation. In the first half of 2021, the average exchange rate was JP¥ 107.81 per dollar, but in the first half of 2022, the yen depreciated 14.2% and the dollar strengthened to JP¥ 123.13. On a yen basis, the price of crude oil was JP¥ 75,506 per kiloliter, an increase of 83% from the previous year.

The primary income balance, which indicates income from overseas interest and dividends, increased by 22.4% year-on-year to JP¥ 12.8728 trillion, a record high. Dividends received from overseas subsidiaries are on the rise due to the expansion of corporate activities.

The service balance was a deficit of JP¥ 2.4947 trillion. The deficit increased by JP¥ 410.6 billion. The increase in research and development expenses paid overseas by Japanese companies, mainly in the manufacturing industry, was a factor in the expansion of the deficit. Due to the spread of the COVID-19, the slump in inbound (foreigners visiting Japan) has led to a decrease in tourism revenue.

MOF website: https://www.mof.go.jp/policy/international_policy/reference/balance_of_payments/preliminary/bpch2022.pdf

国際収支状況（速報）
Balance of Payments (Preliminary)

（単位：億円,%）
(100 million yen,%)

項　目	令和4年上半期 2022 C.Y.1st half	前期 2021 C.Y.2nd half	前年同期 2021 C.Y.1st half	Item
貿易・サービス収支	− 81,634	− 27,598	1,983	Goods & services
（対前年同期比）	（ — ）	（ — ）	（ — ）	(Changes from previous year)
貿易収支	− 56,688	− 6,122	22,823	Goods
（対前年同期比）	（ — ）	（ — ）	（ — ）	(Changes from previous year)
輸出	464,079	430,163	392,674	Exports
（対前年同期比）	（ 18.2 ）	（ 21.8 ）	（ 22.9 ）	(Changes from previous year)
輸入	520,767	436,285	369,851	Imports
（対前年同期比）	（ 40.8 ）	（ 39.1 ）	（ 11.7 ）	(Changes from previous year)
サービス収支	− 24,947	− 21,476	− 20,841	Services
（対前年同期比）	（ 19.7 ）	（ 24.3 ）	（ 8.1 ）	(Changes from previous year)
第一次所得収支	128,728	99,615	105,166	Primary income
（対前年同期比）	（ 22.4 ）	（ 9.6 ）	（ 4.9 ）	(Changes from previous year)
第二次所得収支	− 12,037	− 12,218	− 12,071	Secondary income
（対前年同期比）	（ − 0.3 ）	（ − 28.9 ）	（ 41.7 ）	(Changes from previous year)
経常収支	35,057	59,799	95,077	Current account
（対前年同期比）	（ − 63.1 ）	（ − 37.7 ）	（ 56.5 ）	(Changes from previous year)
資本移転等収支	− 62	− 2,889	− 1,308	Capital account
直接投資	41,357	64,415	69,629	Direct investment
証券投資	− 73,718	− 153,642	− 66,591	Portfolio investment
金融派生商品	31,568	4,978	19,163	Financial derivatives (other than reserves)
その他投資	15,333	76,292	24,385	Other investment
外貨準備	2,584	57,569	11,330	Reserve assets
金融収支	17,125	49,611	57,916	Financial account
誤差脱漏	− 17,870	− 7,299	− 35,854	Net errors and omissions

（備考）四捨五入のため、合計に合わないことがある。
(Note) Totals may not add due to rounding.

Data from：MOF Website

Japanese passenger car manufactures production down 6% in first half of 2022

According to the production, sales and export results of the first half of 2022

(January to June) announced by eight passenger car manufacturers on July 29, the total global production volume of the eight companies was 11,555,703 units, down 6.0% from the same period last year. It is the first time in two years that the figure has fallen below the same period of the previous year. Due to the prolonged shortage of semiconductors and the lockdown in Shanghai, China, each company was forced to reduce production.

Domestic production decreased by 14.3% to 3,420,600 units, while overseas production decreased by 2.1% to 8,135,643 units. There was a supply shortage of parts that are used only in domestic production, and the rate of decrease was large. On the other hand, Toyota and Daihatsu Motor posted record high overseas production. The increase in capacity and optimization of production in China boosted sales.

In the shortages of parts, manufacturers are trying to find ways to meet strong demand. Suzuki has increased production of vehicles for export, which use less semiconductors, in its main market, India. However, the difficult situation is likely to continue. Major manufacturers are planning to adjust production, mainly in Japan, through autumn. It is not expected that global production volume will grow positively throughout 2022.

Production, Sales & Export of 8 Passenger Vehicle Manufactures of Japan
（Jan.-Jun. 2022）

	Domestic production	Domestic sale	Export	Overseas production	Total production
Toyota	1,271,659 -18.4	659,534 -19.2	810,537 -13.5	3,087,480 4.4	4,359,239 -3.5
Nissan	233,679 -17.9	228,605 -9.3	100,354 -41	1,364,915 -13.8	1,598,594 -14.5
Honda	312,265 -1.3	290,738 -7.9	36,142 47.8	1,601,717 -11.8	1,913,982 -10.3
Mitsubishi	197,666 -11.8	45,178 2.9	95,863 -17.4	272,274 -6.4	469,940 -8.8

Mazda	331,922 -20.7	79,062 -12.6	260,457 -25.4	160,405 -12.9	492,327 18.3
Suzuki	423,935 -6.1	290,192 -16.2	109,995 4.4	1,131,415 9.5	1,555,350 4.8
Daihatsu	240,273 -17.7	319,160 15.5	0 0	301,751 24.2	798,012 -1.8
Subaru	240,273 -0.8	46,008 -20.7	185,401 -6.7	142,564 4.0	382,837 0.9
Total	34,206,060 -14.3	1,909,015 -14.8	1,598,749 -15.9	8,135,643 -2.1	11,555,703 -6.0

* Unit: No. of unit (Unit below: % to the same period of the previous year)

JPO compiles 2022 annual report on patent administration

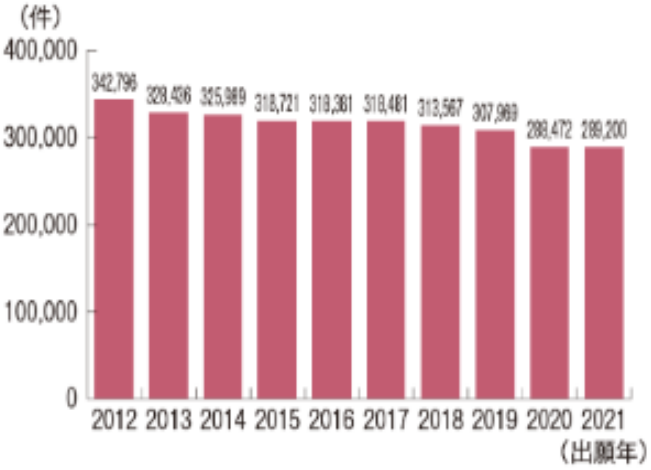
On July 27, the Japan Patent Office compiled and announced the Patent Administration Annual Report 2022. According to the same report, (1) the number of patent applications filed and the number of requests for patent examination in 2021 increased from the previous year, and (2) the number of patent applications filed by foreigners in Japan increased by not only from China, but from the United States and Europe. (3) The number of first-stage trademark examination notifications (FA) increased significantly by 23.3% from the previous year as a result of promoting the strengthening and streamlining of the examination system.

- Number of patent applications and patent examination requests
  The number of patent applications in 2021 increased by 728 year-on-year to 289,200, and the number of examination requests increased 6,342 year-on-year to 238,557.

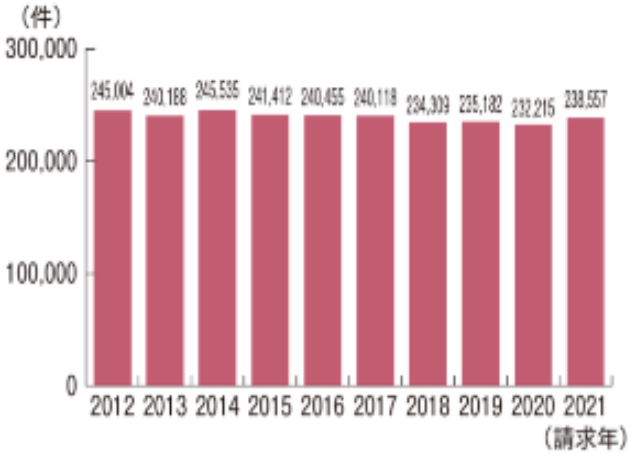
- Number of patent applications and number of design registration applications filed by foreigners in Japan
  The number of patent applications filed in Japan from the United States and Europe was on the decline until 2020, but turned to increase in 2021. The number of patent applications filed in Japan from China is still on the rise. In addition, the number of design registration applications filed in Japan from

China has also shown a marked upward trend, surpassing the number of design registration applications filed in the United States.

The number of patent applications



The number of PCT international



・ Number of patent applications and number of design registration applications filed by foreigners in Japan

The number of patent applications filed in Japan from the United States and Europe was on the decline until 2020, but turned to increase in 2021. The number of patent applications filed in Japan from China is still on the rise. In addition, the number of design registration applications filed in Japan from China has also shown a marked upward trend, surpassing the number of design registration applications filed in the United States.

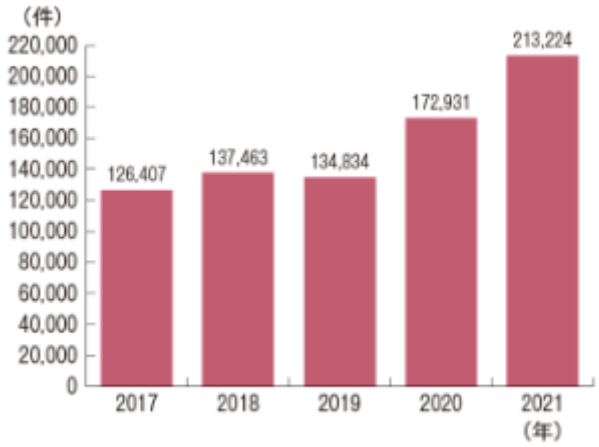
No. of patent applications filed by foreigners

No. of design registration applications filed by foreigners

・ Current status of trademark examination

As a result of promoting the strengthening and streamlining of the examination system to prevent the prolongation of the examination period, the first stage in 2021, the number of notices of examination (number of FAs) increased by 23.3% year-on-year.

No. of notice of examination on trademark



Reference data: Ranking of No. of registered patents by Japanese company

2021	2020	Applicant	No. of registration in 2021
1	2	Mitsubishi Electric	3,494
2	3	Toyota motor	3,389
3	1	Canon	3,134
4	4	Panasonic	2,706
5	5	Denso	1,650
6	10	NEC	1,608
7	6	Honda	1,591
8	7	Ricoh	1,469
9	13	Toshiba	1,433
10	9	Fujitsu	1,416

The trade deficit from January to June 2022 was JP¥ 7,924.1 billion, the largest ever as the first half of the year

According to the trade statistics from January to June this year released by the Ministry of Finance, the trade balance after deducting imports from exports is a deficit of JP¥ 7,924.1 billion, which was the largest deficit since 1979. Exports increased 15.2% compared to the same period last year, while imports also increased significantly by 37.9%.

The reason for the significant increase in imports is that Russia's military invasion to Ukraine has kept energy prices such as crude oil and LNG = liquefied natural gas high, and the JP¥ value has depreciated, pushing up the total amount. The import value was JP¥ 53,861.9 billion, exceeding JP¥ 50,000 billion for the first time as the first half.

Imports of "mineral fuels" such as crude oil, coal, and LNG = liquefied natural gas account for almost half of the increase in imports. Import quantity of crude oil increased by 12.7% compared to the first half of last year, and the value of imports increased by 106.3%, more than doubling. Import quantity of LNG decreased by 3.5%, while import value increased by 94.1%, which also doubled. The import quantity of coal increased by 3.9%, while the import value increased by 212.8%, which is more than tripled.

As to the foods, despite the 1% increase in imports in the first half of the year, the import value of grains such as wheat, which is the raw material, increased by 48.1%. The rise in unit prices also pushed up the import value.

Looking at the relationship with the EU, Japan's exports to the EU were JP¥ 4,379.4 billion, up 15.8% from the same period of the previous year, and imports from the EU were JP¥ 5,536.3 billion, up 22.7 %. Although both imports and exports increased, the trade balance was a deficit of JP¥ 1,156.9 billion as the Japanese side. The deficit was for 10 consecutive terms.

Among Japanese export items, semiconductor manufacturing equipment increased by 352.3% year-on-year, steel increased by 148.8% and scientific optics increased by 35.6%. Among Japanese imported items, pharmaceuticals including vaccines increased by 45.7% year-on-year, wood increased by

167.9% and wood products increased by 150.6%. But automobiles decreased by 12.8%.

MOF website:
https://www.customs.go.jp/toukei/latest/index_e.htm

Exports by Principal Commodity
by Area(Country)

2022(Calendar Year)
(January-June)
(Unit:millions of YEN,%)

Commodity	E Unit	E Quantity	E Percent Change	U Value	U Share	U Percent Change	U Contribution degree
Grand Total				4,379,447	100.0	15.8	15.8
1 FOODSTUFF				26,754	0.6	29.4	0.2
2 RAW MATERIALS				44,047	1.0	22.3	0.2
3 MINERAL FUELS				14,457	0.3	171.6	0.2
4 CHEMICALS				568,334	13.0	13.8	1.8
ORGANIC CHEMICALS				174,397	4.0	19.3	0.7
MEDICAL PRODUCTS	KG	2,941,155	72.9	73,460	1.7	25.5	0.4
PLASTIC MATERIALS	MT	181,357	-4.3	124,517	2.8	20.5	0.6
5 MANUFACTURED GOODS				390,561	8.9	44.7	3.2
IRON AND STEEL PRODUCTS	TMT	910	117.3	130,210	3.0	148.8	2.1
NONFERROUS METALS	MT	18,802	28.4	42,618	1.0	31.9	0.3
MANUFACTURES OF METALS				61,270	1.4	2.7	0.0
TEXTILE YARN, FABRICS				38,685	0.9	29.2	0.2
NON-METALLIC MINERAL WARE				53,137	1.2	21.0	0.2
RUBBER MANUFACTURED	MT	66,838	16.6	53,981	1.2	27.1	0.3
PAPER & PAPER MANUFACTURES	MT	16,115	18.2	10,430	0.2	16.5	0.0
6 MACHINERY				1,063,595	24.3	22.7	5.2
POWER GENERATING MACHINE	MT	51,509	7.9	132,892	3.0	13.6	0.4
COMPUTERS AND UNITS	TNO	612	-51.1	48,628	1.1	-7.7	-0.1
PARTS OF COMPUTER	MT	13,847	-1.3	97,506	2.2	-6.3	-0.2
SEMICON MACHINERY ETC	MT	4,763	154.1	156,559	3.6	352.3	3.2
METALWORKING MACHINERY				75,545	1.7	61.1	0.8
PUMP AND CENTRIFUGES				109,126	2.5	0.5	0.0
CONSTRUCTION MACHINES				123,945	2.8	2.5	0.1
MECHANICAL HANDLING EQUIP				30,287	0.7	-0.4	-0.0
HEATING OR COOLING MACHINE				37,319	0.9	25.2	0.2
TEXTILE MACHINES				6,379	0.1	12.6	0.0
BALL OR ROLLER BEARINGS	MT	22,551	1.5	36,615	0.8	11.2	0.1
7 ELECTRICAL MACHINERY				760,163	17.4	7.9	1.5
SEMICONDUCTORS ETC				103,602	2.4	16.9	0.4
(IC)	MNO	367	-3.4	45,112	1.0	23.7	0.2
AUDIO & VISUAL APPARATUS	TNO	2,882	-35.3	46,251	1.1	25.1	0.2
(VIDEO REC OR REPRO APP)	TNO	412	-5.1	33,103	0.8	15.7	0.1
(TV RECEIVER)	TNO	81	-81.8	2,150	0.0	-63.2	-0.1
PARTS OF AUDIO, VISUAL APP.				6,693	0.2	-7.7	-0.0
ELECTRICAL POWER MACHINERY				94,781	2.2	17.8	0.4
TELEPHONY, TELEGRAPHY				18,579	0.4	-25.0	-0.2
ELECTRICAL MEASURING				128,914	2.9	-2.4	-0.1
ELECTRICAL APPARATUS				74,673	1.7	13.5	0.2
BATTERIES AND ACCUMULATORS				50,915	1.2	47.8	0.4
8 TRANSPORT EQUIPMENT				841,402	19.2	-2.4	-0.6
MOTOR VEHICLES	NO	172,936	-15.3	446,371	10.2	-5.1	-0.6
(CAR)	NO	158,503	-15.8	412,513	9.4	-5.4	-0.6
(BUS&TRUCK)	NO	14,432	-8.6	33,858	0.8	-0.8	-0.0
PARTS OF MOTOR VEHICLES	MT	126,866	-12.2	234,461	5.4	-6.0	-0.4
MOTORCYCLES, AUTOCYCLES	TNO	92	-13.0	71,659	1.6	-3.5	-0.1
AIRCRAFT				8,072	0.2	20.9	0.0
SHIPS	GT	160,255	0.0	12,859	0.3	14.5	0.0
9 OTHERS				670,134	15.3	29.5	4.0
SCIENTIFIC, OPTICAL INST				194,166	4.4	35.6	1.3
PHOTOGRAPHIC SUPPLIES				25,512	0.6	7.9	0.0

Imports by Principal Commodity by Area(Country)

2022(Calendar Year)
(January-June)
(Unit:millions of YEN,%)

Commodity	E			U			
	Unit	Quantity	Percent Change	Value	Share	Percent Change	Contribution degree
Grand Total				5,536,337	100.0	22.7	22.7
1 FOODSTUFF				604,611	10.9	19.7	2.2
FISH AND FISH PREPARATION	MT	27,185	-4.6	40,628	0.7	19.3	0.1
MEAT AND MEAT PREPARATION	MT	211,900	44.8	114,601	2.1	45.0	0.8
CEREALS, CEREAL PREPARATION	MT	162,641	7.9	29,678	0.5	25.0	0.1
VEGETABLES	MT	170,593	20.1	33,290	0.6	30.6	0.2
FRUITS	MT	29,230	1.6	12,570	0.2	16.4	0.0
2 RAW MATERIALS				231,349	4.2	50.2	1.7
WOOD				101,856	1.8	167.9	1.4
ORE OF NONFERROUS	TMT	7	-4.0	6,513	0.1	-13.9	-0.0
IRON ORE AND CONCENTRATES	TMT	-		-	-		-
SOY BEANS	MT	-		-	-		-
3 MINERAL FUELS				56,184	1.0	107.4	0.6
PETROLEUM	TKL	-		-	-		-
PETROLEUM PRODUCTS				54,638	1.0	128.1	0.7
(PETROLEUM SPIRITS)	TKL	640	44.6	49,640	0.9	140.1	0.6
LNG	TMT	-	ZENGEN	-	-	ZENGEN	-0.0
LPG	TMT	0	-53.8	19	0.0	6.0	0.0
COAL	TMT	-		-	-		-
(COAL N.E.S)	TMT	-		-	-		-
4 CHEMICALS				2,049,735	37.0	37.8	12.5
ORGANIC CHEMICALS				220,269	4.0	19.2	0.8
MEDICAL PRODUCTS	KG	9,261,714	22.6	1,505,225	27.2	45.7	10.5
5 MANUFACTURED GOODS				365,491	6.6	32.7	2.0
IRON AND STEEL PRODUCTS	MT	55,650	11.4	24,446	0.4	53.0	0.2
NONFERROUS METALS	MT	41,670	-6.1	110,978	2.0	30.6	0.6
MANUFACTURES OF METALS				54,355	1.0	15.5	0.2
TEXTILE YARN, FABRICS				26,176	0.5	12.1	0.1
NON-METALLIC MINERAL WARE				41,009	0.7	11.2	0.1
WOOD & CORK MANUFACTURED				66,482	1.2	150.6	0.9
6 MACHINERY				447,905	8.1	10.3	0.9
POWER GENERATING MACHINE	MT	21,830	6.2	79,344	1.4	3.7	0.1
COMPUTERS AND UNITS	TNO	187	-2.6	32,135	0.6	22.2	0.1
PARTS OF COMPUTER	MT	275	-5.5	3,542	0.1	18.1	0.0
7 ELECTRICAL MACHINERY				455,999	8.2	11.6	1.1
SEMICONDUCTORS ETC				86,153	1.6	43.6	0.6
(IC)	MNO	946	16.8	72,657	1.3	48.0	0.5
INSULATED WIRE AND CABLE	MT	1,046	26.3	6,733	0.1	30.3	0.0
AUDIO AND VISUAL APPARATUS				21,632	0.4	-0.6	-0.0
ELECTRICAL POWER MACHINERY				47,831	0.9	-1.0	-0.0
TELEPHONY, TELEGRAPHY				34,868	0.6	-22.2	-0.2
(TELEPHONE SETS)	NO	991	-79.0	62	0.0	-40.2	-0.0
ELECTRICAL MEASURING				83,373	1.5	3.2	0.1
8 TRANSPORT EQUIPMENT				647,292	11.7	-5.8	-0.9
MOTOR VEHICLES	NO	83,562	-22.7	434,689	7.9	-12.8	-1.4
PARTS OF MOTOR VEHICLES				58,705	1.1	0.1	0.0
AIRCRAFT				115,615	2.1	18.7	0.4
9 OTHERS				677,770	12.2	21.0	2.6
SCIENTIFIC, OPTICAL INST				211,775	3.8	10.3	0.4
CLOTHING AND ACCESSORIES				71,716	1.3	14.9	0.2
FURNITURE	MT	25,741	-3.5	32,920	0.6	10.6	0.1
BAGS				130,673	2.4	28.7	0.6

Data: MOF website

Company & Organization News

Sharp develops "flow-type zinc-air battery" to realize low-cost large-scale storage battery

On August 24, Sharp announced that it had begun developing energy storage technology using a "flow-type zinc-air battery," which is suitable for large-scale power storage. The flow-type zinc-air storage battery to be developed is a type of air battery that uses oxygen in the air to charge and discharge, and uses zinc (Zn) as a material for storing electricity (energy storage material). It consists of cells that charge and discharge, which is the basic configuration of a general storage battery, and a storage section that stores zinc charged in the cells as a flow type system.

During charging, electrons are stored when zinc oxide (ZnO) chemically changes to zinc. When it discharges, it interacts with oxygen contained in the air, and when the zinc returns to zinc oxide, it releases the electrons that have been stored, thereby extracting electricity.

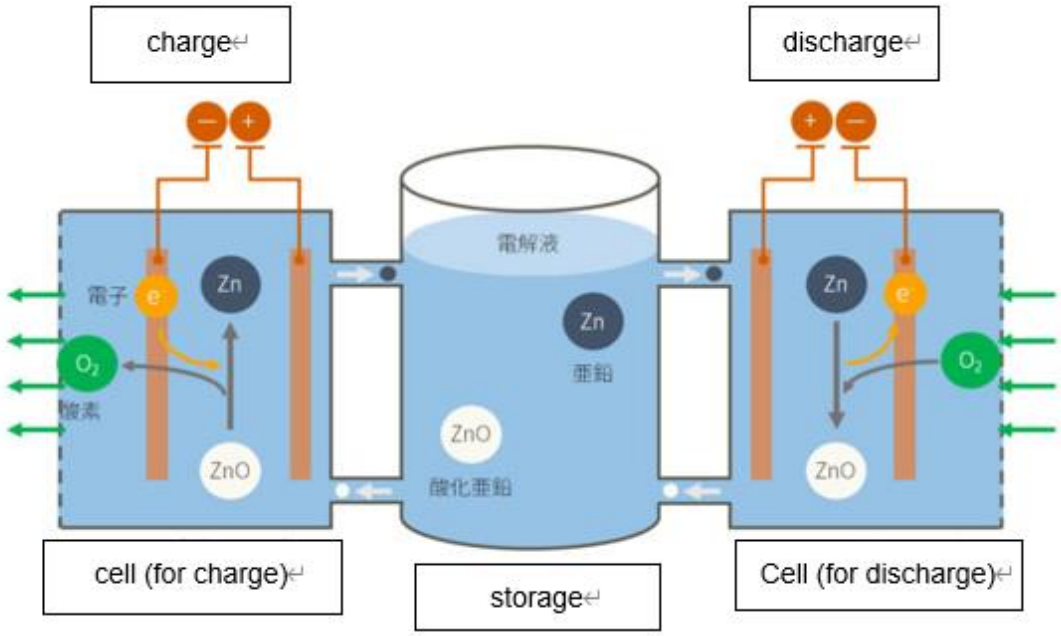
Currently, storage batteries that use lithium are becoming mainstream, but lithium is expensive because the countries that produce and refine it are limited, and it has been pointed out that there is a risk of tight supply and demand in the future. On the other hand, zinc can be stably procured and has the advantage of being cheaper than lithium. Furthermore, the possibility of ignition is extremely low because a water-based liquid is used for the electrolytic solution in which the zinc is soaked.

In addition, by adopting a flow-type system, the cells and the storage section are independent, so it is possible to easily increase the capacity of the power storage system by increasing the size of the storage section. In principle, the cost of the storage unit is lower than that of the cell, so the synergistic effect with the use of inexpensive zinc makes it possible to realize a low-cost, high-capacity storage battery.

With the recent expansion of the introduction of renewable energy, the stabilization of power systems by absorbing output fluctuations has become an issue, and the use of large-scale power storage systems is attracting attention

as one of the countermeasures. To meet these needs, Sharp is aiming for early commercialization of flow-type zinc storage batteries.

Sharp website (in Japanese)
https://corporate.jp.sharp/news/220824-a.html



Processed from the picture in Sharp website

Toray developed raw materials for nylon from non-edible biomass
On August 24, Toray announced that it had developed 100% bio-adipic acid, a raw material for nylon, using sugar obtained from non-edible biomass. This is the world's first development of adipic acid using sugar derived from non-edible biomass. The company has started a scale-up study, and will proceed with trial polymerization of nylon 66, development of production technology, market research, etc., aiming for practical use by around 2030.

Adipic acid is a raw material for polyamide 66 (nylon 66), which is used in a variety of applications as clothing fibers and resins. Toray has developed 100% bio-adipic acid using a unique synthesis method that combines microbial fermentation technology and chemical purification technology that utilizes separation membranes. Unlike petroleum-derived adipic acid, the bio-adipic acid obtained by this method does not generate nitrous oxide (N2O), one of the

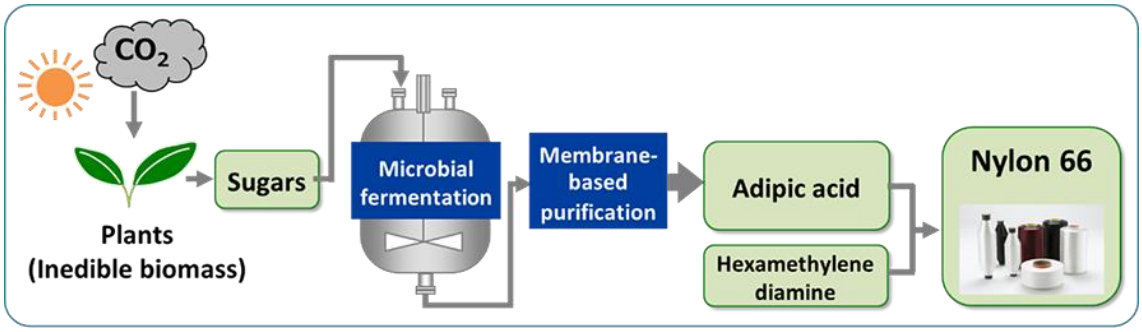
greenhouse gases, during the manufacturing process, so it is expected to help reduce global warming.

For the first time in the world, Toray has discovered a microorganism that produces an adipic acid intermediate from sugar. It utilizes information biotechnology, such as genetic engineering technology that artificially recombines genes so that synthesis proceeds more efficiently within microorganisms, and the design of microbial fermentation pathways that are optimal for synthesis. As a result, the amount of intermediates produced by microorganisms has increased by more than 1,000 times compared to when they were first discovered, achieving a dramatic improvement in synthesis efficiency.

Toray will use the sugar obtained from this process as a raw material for bio-adipic acid to build a total supply chain for manufacturing chemicals from non-edible biomass.

Nylon 66 has excellent durability, strength, and rigidity, and has been used for many years in various applications as fibers and resins. However, in recent years, due to the growing awareness of the need to realize a sustainable society, there is an increasing demand for environmentally friendly nylon 66.

Toray website:
https://www.toray.com/global/news/details/20220818103248.html



Overview of process, from inedible biomass-derived sugars to nylon 66 from Toray website

Panasonic participates in framework for free access to low-carbon patents

On August 23, Panasonic Holdings announced that it became the first Japanese company to participate in the Low-Carbon Patent Pledge (LCPP), which opens its patents free of charge to realize a low-carbon society. It provides a royalty-free license to any individual or entity under the terms and conditions set forth by the LCPP.

The patent that Panasonic has listed in LCPP this time relates to an artificial photosynthesis technology that has achieved the same level of energy conversion efficiency as plants used in biomass in the past. The company expects that releasing this patent free of charge through the LCPP will promote the development of the artificial photosynthesis technology, which is still under development, toward practical application, leading to the improvement of the global environment.

LCPP is a framework launched in April 2021 with the aim of accelerating the social implementation of low-carbon technologies and promoting joint innovation throughout society. Participating companies include Hewlett-Packard Enterprise, Meta, Microsoft, Lenovo, and Alibaba. The LCPP lists a wide range of technology patents to combat climate change, including technologies such as power management, enabling zero-carbon energy sources, efficient data center architectures, and thermal management.

Panasonic website:
https://news.panasonic.com/global/press/en220823-3

LCPP website:
https://lowcarbonpatentpledge.org/the-pledge/

LCPP participating companies from LCPP website

MOL signs to build 2nd bulk carrier equipped with 'Wind Challenger' hard sail system

Mitsui O.S.K. Lines（MOL）decided to equip a bulk carrier that transports wood pellets to the United States with a hard-sail wind propulsion system (*1 Wind Challenger) that utilizes wind power for propulsion and it has signed a contract to build the ship. The vessel is scheduled to be completed in 2024, and will be the second vessel to be equipped with the Wind Challenger, following the bulk carrier scheduled for completion in October 2022.

In addition to the Wind Challenger, it is also considering the feasibility of installing a propulsion auxiliary device (*2 Rotor Sail) that utilizes wind power developed by Anemoi Marine Technologies Ltd in the UK. When used together, an average GHG reduction effect of approximately 20% can be expected.

The MOL Group has made it clear that it will use its collective strengths to achieve "net zero emissions by 2050." It plans to further promote the use of energy-saving technologies that make use of the wind, such as the Wind Challenger and Rotor Sail, and contribute to the reduction of GHG emissions and the realization of a low-carbon society.

*1 Wind Challenger
Concept video: https://www.youtube.com/watch?v=UswVjqeSep8
It is a device that converts wind energy into propulsion power with a retractable sail (rigid sail). A GHG emission reduction effect of approximately 5 to 8% can be expected. A bulk carrier for Tohoku Electric Power Company, which will be the first ship equipped with the Wind Challenger, is scheduled for completion in October 2022.

* 2 Rotor Sails
A rotor sail obtains propulsion from the wind blowing into a cylindrical rotor that rotates during navigation, creating a pressure difference around the rotor. This thrust is generated at right angles to the wind direction, so by changing the direction of the rotor, the wind from directions other than the fore and aft direction can always be used to propel the ship.

MOL website:
https://www.mol.co.jp/en/pr/2022/22092.html

CG rendering of a bulk carrier equipped with the Wind Challenger and Rotor Sails from MOL website

JAXA and Hitachi Zosen succeed in charging and discharging an all-solid-state battery in space

On August 5, the Japan Aerospace Exploration Agency (JAXA) and Hitachi Zosen announced that they conducted a demonstration experiment of charging and discharging in space with an all-solid-state lithium-ion battery installed in the Japanese Experiment Module "Kibo" on the International Space Station (ISS). It was the world's first successful.

All-solid-state lithium-ion batteries have a wide usable temperature range of -40°C to 120°C, and the risk of explosion and ignition is extremely low. It is useful for weight reduction and low power consumption. Conventionally, lithium-ion batteries with organic electrolytes used in space can be applied to small equipment, which was difficult, and can be used in outboard experiments.

In the future, as the next step to evaluate the characteristics of the battery in the space environment, they will evaluate the transition of capacity deterioration due to basic charge-discharge characteristic data and conditions unique to the space environment exposed part (vacuum, radiation, microgravity, etc.). And they plan to use all-solid-state lithium-ion batteries in spacecraft such as observation equipment installed on the moon, small rovers, and full-scale large rovers.

In this experiment, the all-solid-state lithium-ion battery on-orbit demonstrator (Space As-Lib), which was launched to the ISS on February 20 (Japan time), will be used as an outboard experiment platform in the Japanese Experiment Module "Kibo." And it was confirmed that the world's first successful charging and discharging had been successful.

JAXA website (in Japanese):
https://www.jaxa.jp/press/2022/08/20220805-1_j.html

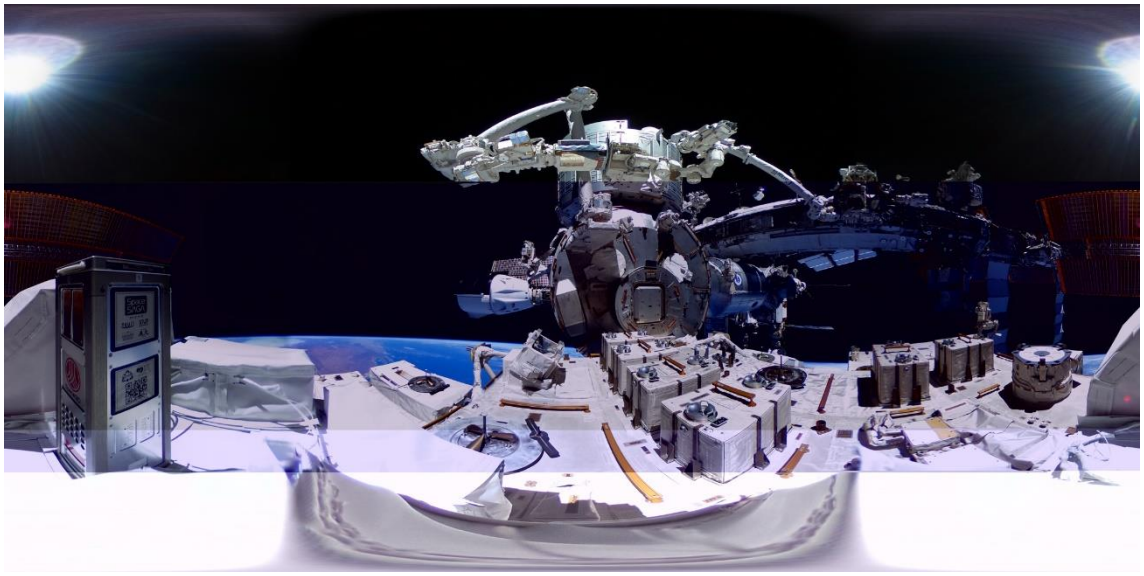


Image captured by the monitor camera of the all-solid-state lithium-ion battery demonstration device (Space As-Lib) from JAXA website

Siemens Gamesa Participates in Ishikari Bay Offshore Wind Farm

Siemens Gamesa Renewable Energy (Spain) announced on July 29 that it has received a formal order from Green Power Investment to supply wind turbines for the 112 MW Ishikari Bay New Port Offshore Wind Power Project. This is the first time for Siemens Gamesa to participate in an offshore wind power generation project in Japan.

Siemens Gamesa received an order for 14 "SG8.0-167DD" offshore wind turbines with an output of 8 MW and a rotor diameter of 167 m for the project, and signed a 15-year operation and maintenance service contract. Installation of the wind turbines is scheduled to begin in July 2023. The windmill will be built about 5 km from the coast of Ishikari Bay in Hokkaido.

SG8.0-167DD is designed for offshore wind power generation to meet Japanese regulations and standards, such as typhoons, earthquakes, 50 Hz operation, and operation in high and low temperature environments. It has been confirmed by ClassNK certification that it complies with the technical standards required for the Ishikari Bay New Port Project. The 167m diameter rotor has a swept area of 21,900m2 and uses 81.4m B81 blades.

Siemens Gamesa operates in the fields of onshore wind power generation, offshore wind power generation and services. In Japan on the onshore wind power generation, it has a track record of approximately 600 MW in installed capacity (approximately 340 MW in operation are under maintenance and operation). For the company, the Japanese market is the second country in the Asia-Pacific region where it has secured orders for offshore wind farms. Taiwan installed its first offshore wind farm in 2019, and since then has received more than 3GW of confirmed orders.

Siemens Gamesa website:
https://www.siemensgamesa.com/en-int/newsroom/2022/07/072922-siemens-gamesa-press-release-first-offshore-project-ishikari-japan

Image from Siemens Gamesa website

BYD enters the Japanese passenger car market, EV 3 models from 2011
BYD, a major Chinese electric vehicle (EV) company, announced on July 21 that it will enter the Japanese passenger car market. BYD Auto Japan, newly established by the Japanese subsidiary BYD Japan, will start selling three electric vehicles (EVs) in January 2023.

Starting with the middle-sized EV SUV "ATTO 3" scheduled to be released in January 2023, the hatchback compact EV "DOLPHIN" and the high-end EV sedan "SEAL" are scheduled to be released before the end of 2023. The selling

price is undecided. BYD Auto Japan plans to build a service system that meets the needs of Japanese customers by providing passenger car sales and after-sales service through distributors.
Headquartered in Shenzhen, China, BYD is deploying new energy vehicles NEV = New Energy Vehicle, including passenger vehicles as well as commercial vehicles such as EV buses and EV trucks, in more than 70 countries and regions (NEV is a general term for EVs, PHEVs (plug-in hybrids), and FCVs (fuel cell vehicles) in China). According to BYD, in 2021, about 604,000 NEVs will be sold, up 220% from the previous year. Furthermore, from January to June 2022, sales of about 640,000 units, which more than tripled from the same period of the previous year, were sold.

BYD already sells electric buses for public transportation in the Japanese market, but this is the first time it sells a passenger car. In the Japanese passenger car market, where the spread of infrastructure for EV has been delayed and EV sales have been sluggish, people are watching how much Chinese brands are accepted.

BYD Japan website:
https://byd.co.jp/e-life/?utm_source=google_byd&utm_medium=G_cpn&utm_campaign=+live_0721&utm_id=220721&gclid=Cj0KCQjw_viWBhD8ARIsAH1mCd65wVNeQZdleiXATAIthGTo_AdCIG-s_dQyt5dPCOFrsOxSwuVRljQaApkEEALw_wcB

From BYD Japan website

Laundry net that reduces microplastic emissions, removes more than 85%
On July 15, Itochu Fashion System announced that it conducted a demonstration experiment of using a certified laundry net jointly with a Kyoto University research team, and confirmed that more than 85% of the weight of microplastic fibers (MPF) that flow out during washing can be removed.

The laundry net used this time was developed by Fujiei (Tokyo). Using a 0.025mm ultra-fine special nylon material, it captures the MPF that comes out of the clothes during washing and prevents it from flowing into the ocean through wastewater.

In this demonstration, the weight, quantity, and length of the MPF discharged for each washing cycle (1st, 5th, 20th, 50th) were measured. As a result, the amount of MPF shedding when using general fleece products and when selecting a laundry net certified by Less Micro Plastic, it turned out that the latter case can removed more than 85% of MPF.

From 2020, ITOCHU FASHION SYSTEM has developed a service to measure the amount of MPFmp emissions from washing and other processes. From emissions inspections, it determines the average emissions and the level at which emissions can be reduced, and give them to their products as their own certification "Less Micro Plastic".

The laundry net used this time is sold as "LAUNDRY NET Micro" from the laundry brand "FREDDY LECK". The size is about W40×D50cm, 100% nylon. The price is JP¥ 2,970 (tax included). Sold at FREDDY LECK dealers nationwide, as well as the official online shop. https://www.freddy-leck-sein-waschsalon.jp/goods/007/

Fujiei website (in Japanese):
https://www.fujiei.co.jp/news/1477/

Image from Fujiei website