

JAPANESE INDUSTRY AND POLICY NEWS

January, 2022

Legislation and Policy News

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Legislation and Policy News

JIS established "vacuum glass" to improve the heat insulation of windows

On January 20, the Ministry of Economy, Trade and Industry (METI) announced that it has established an industrial standard (JIS) included in detail the test and inspection methods for ensuring the quality of "vacuum glass," which greatly enhances the heat insulation of windows, such as heat insulation, decompression conditions, and weather resistance.

Vacuum glass is also called "glass with ultimate heat insulation performance" because it shuts off heat by decompressing the space between two glass plates to a vacuum state. Until now, vacuum glass has expanded its market by evaluating heat insulation and durability according to international standards. With the establishment of JIS this time, 1) The performance of vacuum glass is transmitted to consumers as reliable, 2) This leads to the ability for manufacturers to maintain a certain level of performance in an easy-to-understand manner.

By having this JIS used as the basis for choosing vacuum glass, the ministry expects expansion in the vacuum glass market, promoting energy conservation, and keeping the room cool in summer and warm in winter. It looks forward to the realization of a comfortable and healthy life that can be maintained.

The key to energy saving in houses and buildings is "insulation." Insulation is used for the walls to keep the inside of the building at a comfortable temperature, but since it is not possible to put insulation in the window glass and heat is easily passed through, it has been insulated. Various windowpanes with excellent properties have been developed and commercialized.

Japan was the first in the world to commercialize vacuum glass as a window glass. If this becomes widespread, it will greatly contribute to keeping the inside of the building at a comfortable temperature by improving the heat insulation of the window glass. It also helps avoid heat shocks, which are said to be caused by sudden temperature differences.

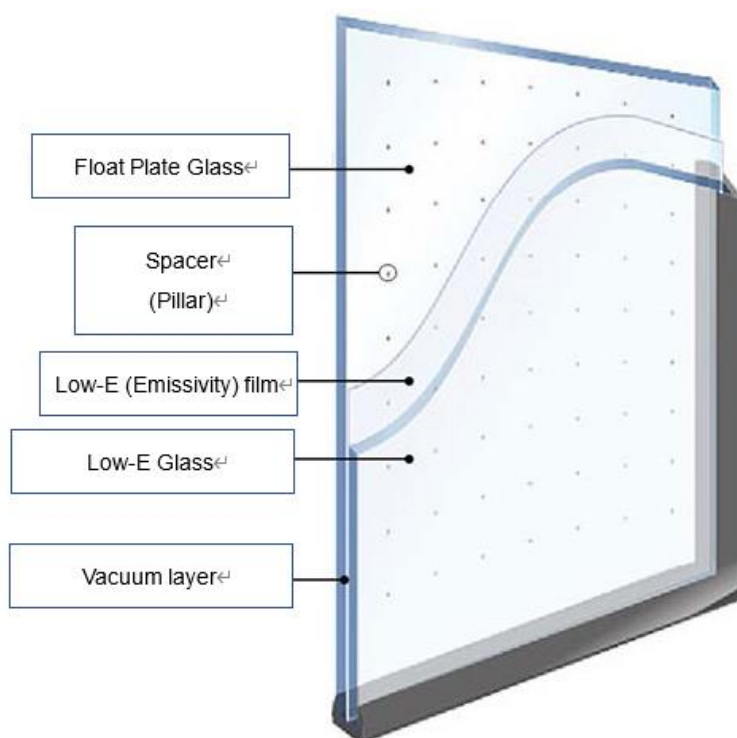
Therefore, the international standard (ISO 19916-1) was developed in 2018 with the aim of popularizing vacuum glass all over the world. The main purpose of this

international standard is to confirm the performance (for example, heat insulation and weather resistance) required for vacuum glass in an actual test as a performance evaluation confirmation at the time of designing.

On the other hand, in order to spread widely for the energy-saving and housing market in Japan, it is necessary to ensure that a large number of vacuum glasses according to each customer's needs are manufactured with satisfactory quality. It is also necessary to make such excellent vacuum glass usable for a long period of time. Therefore, JIS R 3225, which is a more detailed Japanese industrial standard, was established.

METI website (in Japanese):

<https://www.meti.go.jp/press/2021/01/20220120004/20220120004.html>



* Low-E glass: Glass coated with a Low-E (Emissivity) film to improve heat insulation.

New promotion law enforced on April 1 to reduce 12 disposable plastic items such as forks and spoons

On January 14, the government passed a cabinet order stipulating that convenience stores, hotels, cleaning shops, etc. will be enacted on April 1 with a new law, the "Plastic Resource Recycling Promotion Law," which obliges convenience stores, hotels, and cleaning shops to reduce the use of disposable plastic products. In addition, 12 items such as spoons, hairbrushes, and clothes hangers are obliged to reduce the use of disposable plastic products, and retailers, restaurants, etc. that provide these items free of charge are designated as the target industries, and these are also specified. Businesses that provide 5 tons or more of these products annually (massive providers) are subject to compulsory.

Regarding the 12 items targeted this time (targets for products using specific plastics), mass providers will take measures such as changing and switching to alternative materials in order to reduce the use of disposable plastic products in the future. When the national government finds it necessary, it can give necessary guidance and advice to all specified plastic-using product providers, and its efforts are extremely unsatisfactory for large-scale providers of specified plastic-using products. Recommendations, publications, and orders can be made when sufficient.

Under this new law, in order to promote the recycling of resources related to plastics, the rationalization of the use of plastic-based products, the recycling of wastes of plastic-based products by municipalities, and the voluntary collection and recycling of resources by businesses will be promoted.

Ministry of Environment website:
<https://plastic-circulation.env.go.jp/>

Plastic products / industries for which reduction measures are obligatory

Products	Industries
Forks, spoons, table knives, muddlers, food and beverage straws	<ul style="list-style-type: none"> ▪ Various product retailers (including those without stores) ▪ Food and beverage retailers (excluding vegetable and fruit retailers, meat retailers, fresh fish retailers and liquor retailers, including those without stores) ▪ Accommodation business ▪ Restaurant ▪ Take-out / delivery food service industry
Hairbrush, comb, razor, shower cap, toothbrush	<ul style="list-style-type: none"> ▪ Accommodation business
Clothes hangers, clothing covers	<ul style="list-style-type: none"> ▪ Various product retailers (including those without stores) ▪ Laundry industry

RCEP comes into effect, 30% of the world's GDP starts in a huge economic zone

The Regional Comprehensive Economic Partnership (RCEP) Agreement, in which 15 countries including Japan, China and South Korea and the Association of Southeast Asian Nations (ASEAN) participate, came into effect on January 1, 2022. Of the 15 participating countries, Japan came into effect on the 1st, as well as Brunei, Cambodia, Laos, Singapore, Thailand, Vietnam, Australia, China, and New Zealand, for a total of 10 countries. The agreement was to come into effect 60 days after the majority of each of the 10 ASEAN countries and the other 5 countries completed ratification procedures. South Korea, which ratified it late, will come into effect on February 1.

The agreement is Japan's first free trade agreement (FTA) with China and South Korea, and a huge economic zone, in which the population of the region and the gross domestic product (GDP) both account for about 30% of the world total, will start to move. The tariff elimination rate on an item basis is about 91%, although it is lower than the Trans-Pacific Partnership (TPP), which is about 99%. For exports to China and South Korea, tariffs will be eliminated mainly for important parts for automobiles. In the case of lithium-ion batteries for electric vehicles (EVs) exported to China, the 6% tariff on some of the materials will be gradually reduced and will be abolished in the 16th year of entry into force.

On the other hand, the tariffs on Shaoxing wine and makgeolli, which are imported to Japan, are currently JP¥ 42.4 per liter, but they will be gradually reduced and eliminated in the 21st year. Retail prices can also be expected to fall to some extent. Matsutake, which is often imported from China, will gradually reduce the tariff by 3% and eliminate it in the 11th year. On the other hand, the five important items (rice, wheat, beef / pork, dairy products, and sugar) imported into Japan will be excluded from tariff reduction and elimination to protect the domestic agriculture, forestry and fisheries industry. In terms of rules, there are provisions to ensure the free economic activities of companies, such as prohibiting foreign companies from requesting technology transfer.

METI website:

https://www.meti.go.jp/english/press/2021/1103_001.html

Forestry Agency announces CO2 absorption calculation method for forests

On December 27, 2021 the Forestry Agency compiled and published the "Calculation Method for Carbon Dioxide Absorption by Forests". It shows the standard calculation method when trying to calculate and publicize the amount of CO2 absorbed by the forest, which is one of the effects, in the forest where companies and local governments have maintained the forest.

The Forestry Agency has been making efforts such as supporting the calculation of CO2 absorption by forests, but this time, it has decided to make the calculation method known again with a list. When the companies engaged in forest-building activities have carried out appropriate operations (reforestation / childcare) such as planting, weeding, clearing, and thinning, they can calculate the amount of

CO₂ absorbed by the forest, etc. The following three calculation methods are shown as standard calculation methods when trying to calculate and publish.

- 1) A simple calculation method for the amount of CO₂ absorbed by forests in one year

The amount of CO₂ absorbed by a 1ha forest (tree) in one year is calculated by the following formula.

Annual CO₂ absorption per ha of forest (t-CO₂ / year / ha) = Annual trunk growth per ha of forest (m³ / year · ha) × Expansion coefficient × (1 + Underground ratio) × Bulk density (t / m³) × Carbon content × CO₂ conversion coefficient

The calculation by this formula can be performed by inputting necessary information into the sheet of the following website.

<http://www.foeri.org/co2calc/index.html>

- 2) Calculation method of the increase in the amount of CO₂ absorbed in the forest by reforestation and childcare (calculation by comparison between the case where artificial forest is grown and the case where it is not grown)

In order to secure the amount of forest absorption in Japan, it is important to surely carry out reforestation in the logging area. If you want to evaluate the effect of reforestation / nursery on the logging site instead of natural regeneration and growing artificial forest, calculate the increase in CO₂ absorption due to reforestation / nursery using the following formula.

Increase in the amount of CO₂ absorbed by the forest due to reforestation and childcare (t-CO₂) = Difference in expected accumulation of forests with and without reforestation / nursery (m³) × expansion coefficient × (1 + underground ratio) × bulk density (t / m³) × carbon content × CO₂ conversion coefficient

- 3) Calculation method of soil carbon content (CO₂ conversion) maintained by forest cultivation



Calculate the amount of soil carbon (CO₂ equivalent) retained by growing forests using the following formula.

Amount of soil carbon retained by growing forests (CO₂ equivalent) (t-CO₂) =
Average soil carbon accumulation (t-C / ha) × Coefficient related to soil
amount maintained by growing forests × Area to be operated (ha) × Number
of years to be calculated × Coefficient of carbon emission into the air when
soil flows out × CO₂ conversion coefficient

In the Global Warming Countermeasures Plan revised in October 2021, the amount of CO₂ absorbed by forests is requested approximately 38 million tons-CO₂ (equivalent to 2.7% of total annual emissions in FY 2013) in FY 2030 by working on measures for forest sinks such as the development of healthy forests. There is a need to further demonstrate the CO₂ absorption function of forests, such as the goal of securing forest absorption.

On the other hand, forest-building activities are being carried out in various parts of the country with the participation of the public by private companies and local public organizations. In the future, in order to further promote forest maintenance efforts by companies, it will be important to appeal the significance and effects of those efforts to consumers and stakeholders.

<https://www.rinya.maff.go.jp/j/press/kikaku/211227.html>



Image of tree plant from Isehara town news (in Kanagawa pref.)

Survey and Business Data

Total population of 126.14 million, decreased by 940,000 in 5 years, FY 2020 census

On December 30, the Ministry of Internal Affairs and Communications announced the final figures for the FY 2020 census. The total population including foreigners was 126,146,000 as of October 1, 2020. The number has decreased by about 949,000 from the previous survey in FY 2015, and it has decreased twice in a row.

The working-age population (15-64 years old), who is the main player in economic activity, decreased by 3% to 75,088,000, a decrease of about 2,266,000 in the last five years. The population of children under the age of 14 was down 6% to 1,0532,000. On the other hand, the population aged 65 and over increased by 7% to 3,627,000, and the trend of declining birthrate and aging population became clear.

Future growth will depend on how to increase the capacity of each individual and boost productivity on the premise of population decline. Encouraging employment in a variety of work styles and expanding the acceptance of foreign labor are also issues to be considered for alleviating labor shortages.

The number of households reached a record high of 55.83 million due to the increase in living alone. Single households accounted for 21.151,000 households, accounting for 38% of the total. It may contribute to social problems such as the lonely death of elderly households.

By prefecture, the population of 39 prefectures has shrunk. The highest rate of decrease was 6.2% in Akita Prefecture. There were less than 1 million people in 10 prefectures such as Fukui and Wakayama.

The census surveys the situation of all people and households in Japan, including foreigners, once every five years as of October 1. For FY 2020, it is a "large-scale survey" once every 10 years, which is conducted by increasing the number of questions such as educational background. Based on the spread of the COVID-19, 40% of the respondents answered via the Internet.



Statistics Bureau, Ministry of Internal Affairs and Communications Website:
<https://www.stat.go.jp/english/data/kokusei/2020/summary.html>

Population Estimates by Age (Five-Year Groups) and Sex

Age groups	December 1, 2021 (Provisional estimates)			July 1, 2021 (Final estimates)					
	Total population			Total population			Japanese population		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
	Population (Ten thousand persons)			Population (Thousand persons)					
Total	12547	6099	6448	125,682	61,109	64,572	122,928	59,759	63,170
0 - 4 years old	437	224	214	4,421	2,263	2,159	4,339	2,220	2,119
5 - 9	503	258	245	5,063	2,593	2,469	4,984	2,553	2,432
10 - 14	535	274	261	5,365	2,750	2,615	5,302	2,718	2,584
15 - 19	559	287	272	5,635	2,891	2,743	5,542	2,844	2,698
20 - 24	626	320	306	6,294	3,221	3,073	5,909	3,014	2,895
25 - 29	639	328	311	6,381	3,276	3,104	5,948	3,034	2,914
30 - 34	654	334	320	6,595	3,372	3,224	6,243	3,183	3,060
35 - 39	734	373	361	7,398	3,757	3,641	7,127	3,625	3,502
40 - 44	814	413	401	8,244	4,180	4,064	8,025	4,083	3,942
45 - 49	969	491	479	9,778	4,949	4,829	9,591	4,871	4,720
50 - 54	935	470	464	9,077	4,569	4,508	8,906	4,502	4,404
55 - 59	781	390	391	7,864	3,929	3,935	7,729	3,874	3,856
60 - 64	738	365	373	7,393	3,653	3,739	7,301	3,615	3,686
65 - 69	782	380	402	7,938	3,856	4,082	7,869	3,826	4,043
70 - 74	964	455	509	9,670	4,565	5,105	9,618	4,541	5,077
75 - 79	673	300	373	6,714	2,989	3,725	6,681	2,974	3,706
80 - 84	561	233	328	5,494	2,279	3,215	5,472	2,271	3,201
85 - 89	388	139	249	3,851	1,377	2,474	3,839	1,373	2,466
90 - 94	192	54	138	1,886	525	1,361	1,882	524	1,358
95 - 99	55	11	44	536	104	432	535	103	431
100 and over	9	1	8	86	10	75	86	10	75
Regrouped									
15 Under	1475	756	719	14,849	7,606	7,243	14,625	7,491	7,134
15 - 64 years old	7449	3771	3678	74,658	37,797	36,861	72,321	36,644	35,677
65 and over	3624	1573	2051	36,175	15,706	20,469	35,982	15,623	20,358
75 and over	1878	738	1140	18,567	7,285	11,283	18,494	7,256	11,238
85 and over	644	205	439	6,359	2,017	4,343	6,342	2,011	4,331
	Percentage distribution (%)								
15 Under	11.8	12.4	11.2	11.8	12.4	11.2	11.9	12.5	11.3
15 - 64 years old	59.4	61.8	57.0	59.4	61.9	57.1	58.8	61.3	56.5
65 and over	28.9	25.8	31.8	28.8	25.7	31.7	29.3	26.1	32.2
75 and over	15.0	12.1	17.7	14.8	11.9	17.5	15.0	12.1	17.8
85 and over	5.1	3.4	6.8	5.1	3.3	6.7	5.2	3.4	6.9

Notes) • Figures may not add up to the totals because of rounding.
• Based on the 2020 Population Census.
• Final estimates for this month's population will be computed 5 months later using updated sources.

Data: Statistics Bureau, Ministry of Internal Affairs and Communications Website:

Japan's greenhouse gas emissions in FY 2020 were the lowest ever at 1,149 million tons

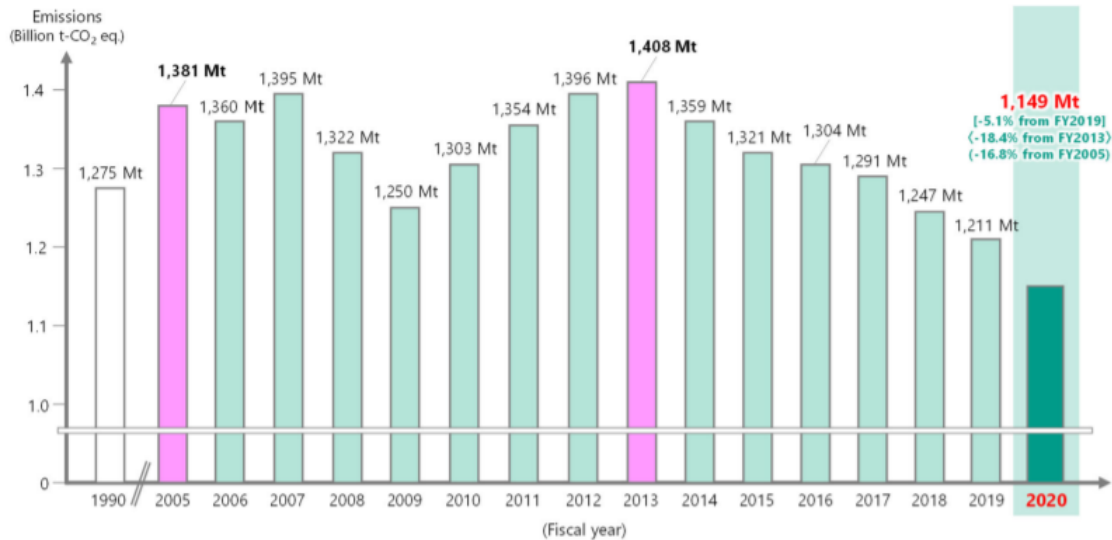
According to the data released by the Ministry of the Environment and the National Institute for Environmental Studies on December 10, Japan's total greenhouse gas emissions in FY2020 (April 2020 to March 2021) are minus 5.1% of the previous year's preliminary figures in terms of carbon dioxide. It decreased by (62 million tons) to 1,149 million tons, which was the lowest ever since FY2019. The stagnation of economic activity due to the spread of the COVID-19 seems to be cause of the decrease in energy consumption of companies in particular.

Emissions have decreased for the seventh consecutive year. The survey cited carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and CFC substitutes as the main greenhouse gases, of which carbon dioxide accounted for 90.8% of the total. The Government of Japan has declared that Japan's greenhouse gas emissions will be "substantially zero" in 2050, and the immediate goal is to reduce emissions in FY2030 by 46% compared to FY2013. Emissions in FY2013 were the highest ever at 1,408 million tons, but compared to that, the actual results in FY2020 decreased by 18.4%.

Looking at the "CO₂ emissions after electricity / heat distribution" calculated by the CO₂ emissions from consumers of that electricity and heat, the largest number of industrial sectors is in top. It decreased by 8.3% from the previous year to 353 million tons, and the transportation sector decreased 10.2% to 185 million tons, and the business and other sectors decreased 4.1% to 184 million tons. On the other hand, the household sector, which is the fourth largest, increased by 4.9% to 167 million tons. It seems that the influence of telework and nesting life under the COVID-19 was reflected.

National Institute for Environmental Studies website:

<https://www.nies.go.jp/whatsnew/20211210/20211210-e.html>



Japan's total national GHG emissions in FY2020 (preliminary figures)

From National Institute for Environmental Studies website

Company & Organization News

Private lunar exploration project, "ispace lander" assembly at final stage

On January 25, ispace held a debriefing session on the development progress of the private lunar exploration program "HAKUTO-R" in Tokyo. In "Mission 1" of the program, the lander (Lunar module) is scheduled to be launched and the technology is demonstrated at the end of 2022, and the assembly status of the flight model was reported.

Mission 1 aims to provide power and communication environment to seven payloads (baggage) such as that of the Japan Aerospace Exploration Agency (JAXA). Currently, the lander assembly is in the final stages in Germany and will be shipped to the United States around spring. On the other hand, it was announced on the same day that "Mission 2 (Lunar explorer)", which was scheduled to be carried out in 2023, will be postponed to 2024.

The company is a space venture that aims to explore the moon by a private company. The company participated in the webinar CHALLENGES, AND OPPORTUNITIES IN THE SPACE SECTOR organized by the EU-Japan Centre for Industrial Cooperation (EUJC) on December 16, 2021 and explained the outline of the project. It's possible to watch the recorded video of the webinar from the following website.



EUJC website:

<https://www.eu-japan.eu/events/challenges-and-opportunities-space-sector>

ispace website:

<https://ispace-inc.com/news/?p=2168>



Image of Lunar Lander of ispace from ispace website

The world's first liquefied hydrogen carrier "Suiso Frontia" arrives in Australia

Power Development, Kawasaki Heavy Industries, Marubeni, Sumitomo Corporation, Iwatani Sangyo, and AGL Energy Limited in Australia announced on January 21, the first of the world's first liquefied hydrogen carrier "Suiso Frontia" to depart Japan arrived in Australia after an international voyage.

The ship departed from Japan's liquefied hydrogen cargo handling demonstration terminal "Hy touch Kobe" on December 24, 2021, and landed at the liquefied hydrogen loading base at Istings Port, Victoria on January 20, 2022. In the future, after loading hydrogen and inspecting various equipment on the ship, it will leave Australia and return to Japan from mid-February to late February.

Six companies are participating in an international hydrogen supply chain construction demonstration test in which hydrogen produced from brown coal produced in Latrobe Valley, Victoria, Australia is liquefied and transported to Japan by a dedicated liquefied hydrogen ship. The demonstration will work on

technological development necessary for the realization of mass production and mass transportation of hydrogen and extraction of issues when building a supply chain in order to make it possible to use hydrogen that is price-competitive in Japan.

In collaboration with the CO2 capture and storage (CCS) project "Carbon Net Project" jointly promoted by the Australian Federal Government and the Victorian Government for commercialization, CO2 generated during hydrogen production will be underground. By storing it, they aim to produce clean hydrogen.

Marubeni cooperation website:

<https://www.marubeni.com/en/news/2022/release/00008.html>



Liquefied hydrogen carrier "Suiso Frontia" arrived in Australia
from Marubeni website

Honda participates in V2G large-scale demonstration PJ in Switzerland utilizing EV as a storage battery

Honda Motor announced on January 19 that it will participate in the Swiss V2G (Vehicle to Grid) energy management demonstration project that utilizes electric vehicles (EVs) as storage batteries. A demonstration experiment will start in September using 50 EVs "Honda e" and 35 bidirectional chargers "Honda Power

Manager".

In this demonstration experiment, V2G using car-sharing vehicles will be demonstrated mainly by the major Swiss car-sharing company Mobility. In the future, it is thought that EVs can contribute to the stabilization of electric power by charging in both directions and returning energy to the power grid when not in operation. It is said that this demonstration experiment will be the world's first initiative to introduce a mass-produced vehicle that is compatible with the European EV charging standard "CCS" and enables bidirectional charging. The period is from September 2022 to December 2023.

In addition, this demonstration experiment will be jointly conducted by seven companies, with Honda Motor Europe, Honda's local subsidiary in the UK, participating in the consortium "V2X Suisse (Switzerland)" that conducts a V2G energy management demonstration project in Switzerland. The project is supported by the Swiss Federal Department of Energy (SFOE) Pilot Demonstration Program.

Honda will provide 50 "Honda e", the only EV in Europe that supports the European EV charging standard "CCS" and enables bidirectional charging. The "Honda e" will be deployed at 40 charging stations in Switzerland by Mobility, and will be used as a car-sharing vehicle for the movement of local residents, and will also serve as a storage battery when not used for movement.

Honda also provided 35 two-way chargers "Honda Power Manager" for demonstration purposes. These will be used in the demonstration experiment together with the consortium member EVTEC's bidirectional charger. By connecting the "Honda e" to a bidirectional charger, it is possible to supply up to 20kW of power to the power system per unit.

That's 60 MW as all Mobility car-sharing vehicles, and it's more than, for example, the Peccia pumped-storage power plant in Ticino. This power regulation is believed to help stabilize the grid, minimize grid bottlenecks, and avoid, reduce, or delay the need for expensive grid expansion.

Through this demonstration, Honda will collect and analyze data in the actual environment, verify the operating time and frequency of car sharing and V2G, customer convenience, etc., and utilize it for future energy service development.

Honda website:

<https://global.honda/newsroom/news/2022/c220119beng.html>



「Honda e」 and 「Honda Power Manager」 from Honda website

NYK establishes new company for liquefied CO₂ sea shipping and storage business with Norwegian company

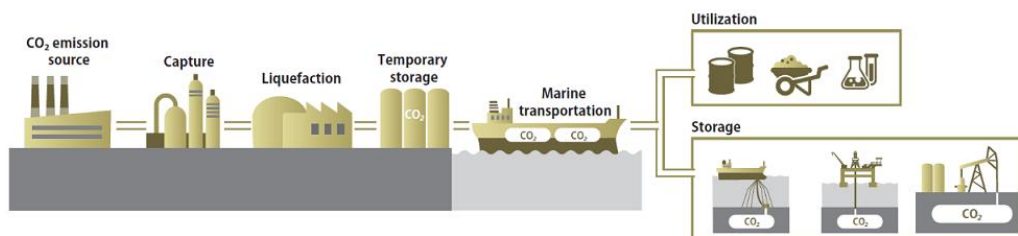
NYK announced on January 18 that it has established a joint venture with Norway's Knutsen Group to develop and market new businesses related to the marine transportation and storage business of liquefied CO₂. The new company will develop a liquefied CO₂ transport vessel using Knutsen's unique technology "PCO₂ (R)" that enables the transport and storage of liquefied CO₂ at room temperature. They will also consider the development of low- and medium-pressure liquefied CO₂ transport vessels that use technologies other than "PCO₂." The new company name is Knutsen NYK Carbon Carriers (KNCC). The investment ratio is 50% each for NYK and Knutsen Group.

CCUS collects CO₂ emitted from thermal power plants and factories and uses it in the production process of crops, chemicals, construction materials, etc., or stores it in a stable underground stratum. In its value chain, liquefied CO₂

transport vessels are expected to grow in demand in the future as they play a role in transporting liquefied CO₂ to bases that store and use it.

NYK Line and Knutsen Group continue to adopt new technologies and take an approach toward further development toward the realization of a carbon-neutral society in the future. The two companies are jointly developing Knutsen NYK Offshore Tankers, one of the world's leading shuttle tanker operators, and KNCC is also loading liquefied CO₂ on land and offshore.

https://www.nyk.com/english/news/2022/20220118_02.html



CCUS value chain image from NYK website



Image of liquefied CO₂ carrier with bow loading system from NYK website

Toray develops 100% plant-derived nylon fiber, commercialize from the fall / winter 2023 season

Toray Industries announced on January 14 that it has developed and started commercialization of a new nylon fiber "Ecodia ® N510" that uses all plant-derived polymers as raw materials. Textiles will be sold in the fall / winter 2023 season, and fibers will be sold in the fall / winter 2024 season.

The material is 100% plant-derived nylon fiber made by polymerizing and spinning plant-derived sebacic acid (plant: castor-oil plant) and pentamethylenediamine (plant: corn), and has a high melting point. In addition, as a practical 100% plant-derived nylon, such as having excellent dimensional stability, there are features that other 100% plant-derived nylons do not have. In addition, because it has the same strength and heat resistance as conventional nylon 6, it is possible to plan sustainable products with the same specifications as products using current petroleum-derived nylon.

In the future, the company will promote further sophistication of fibers, such as weight reduction by reducing the thickness of fibers and adding functionality by making the cross-sectional shape of fibers irregular. And it will be used in a wide range of applications including apparel applications.

Nylon fiber was invented in the United States in the 1930s and Toray commercialized in Japan in the early 1950s. It is supple, durable, wrinkle-resistant and easy to wash, including apparel products. It has been used for many years in a variety of applications.

On the other hand, the raw material of synthetic fiber is generally derived from petroleum, and due to global environmental problems, the raw material has been derived from plants. In particular, in recent years, with the growing awareness of the realization of a sustainable society, the demand for environment-friendly materials has increased, and materials using various plant-derived materials have been developed and commercialized. The company has been selling polyester, nylon, and other materials with some of the raw materials replaced with plant-derived materials.

Toray website (in Japanese):

<https://www.toray.co.jp/news/details/20220113102107.html>



Textile



Sewn product



From Toray website

Marubeni work on demonstration PJ for manufacturing, transportation and utilization of "green hydrogen" between Australia and Indonesia

Marubeni announced on January 12 that it will start a demonstration project on green hydrogen production, transportation and utilization between Australia and Indonesia. They work on inexpensive renewable energy hydrogen (green hydrogen) production in South Australia, transportation to the Republic of Indonesia using hydrogen storage alloys (alloys that absorb hydrogen when cooled and pressurized and release hydrogen by heating and depressurizing), and the utilization of hydrogen through batteries.

The demonstration project was adopted by the Ministry of the Environment. By utilizing surplus renewable electricity in Southern Australia and optimally operating water electrolyzes and batteries through an energy management system (EMS), it aims to provide inexpensive and stable green hydrogen production and grid adjustment functions.

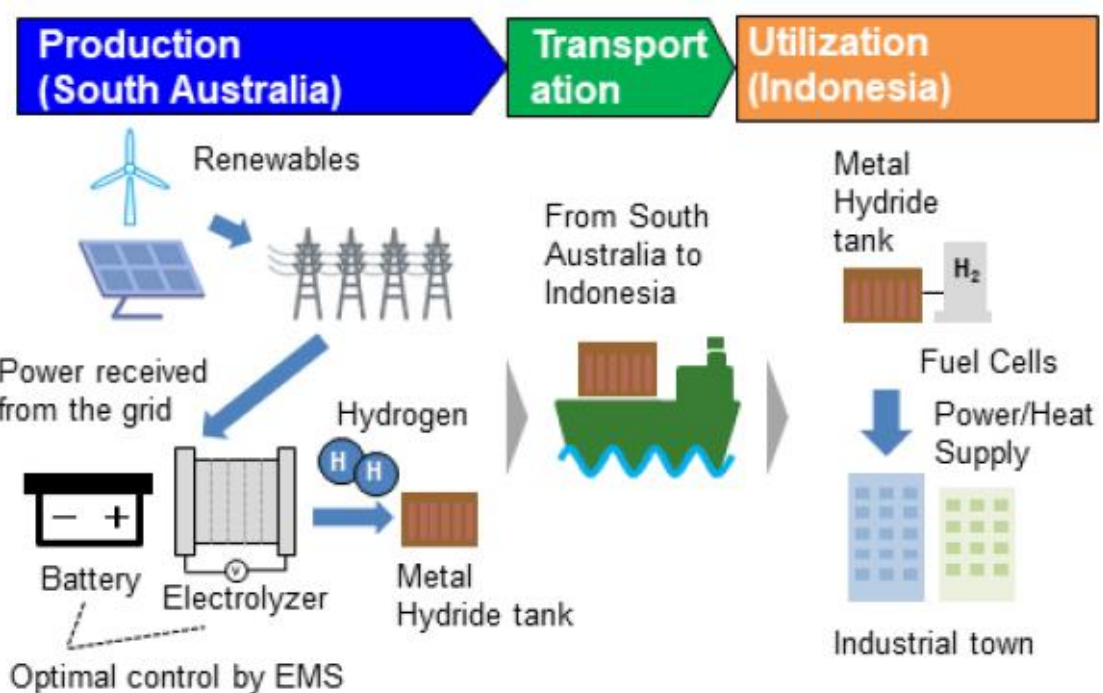
In addition, green hydrogen produced in South Australia is transported to Indonesia, which is a partner country of the bilateral credit system (JCM), using a hydrogen storage alloy tank. By supplying thermoelectric power through fuel cells in an industrial zone near Jakarta, it aims to contribute to environmental measures and decarbonization, which are one of the priority items of the

Indonesian government's national medium-term development plan.

Through this demonstration project, it aims to contribute to building a value chain for future hydrogen projects and to achieving Japan's greenhouse gas emission reduction targets through a bilateral credit system. In addition to the demonstration project, the company is participating in demonstration tests related to the construction of a hydrogen supply chain in Victoria, as well as feasibility studies and surveys on the production and export of ammonia derived from renewable energy in Tasmania.

Marubeni website:

<https://www.marubeni.com/en/news/2022/release/00003.html>



Project flow from Marubeni website

MOL participates in mangrove regeneration and conservation business in Indonesia

MOL announced on January 6 that it will participate in a blue carbon project aimed at mangrove regeneration and conservation in South Sumatra, Republic of Indonesia, in collaboration with YL Forest. In addition to making financial contributions, the company is also involved in running local projects.

Through this project, the two companies will carry out mangrove regeneration and conservation activities, and will also introduce Silvo Fishery (a method of planting mangroves in shrimp ponds and growing shrimp and fish in a state close to nature). It aims to support the improvement of the livelihoods of local residents through the management of fish and forests, and to create a society where people and nature coexist.

Silvo Fishery is a natural symbiotic aquaculture method that does not require the administration of food or chemicals and does not pollute the environment. By continuing proper forest management, it is possible to carry out sustainable aquaculture at almost no cost for operating the aquaculture industry, which will contribute to improving the livelihoods of local residents. Synergistic benefits such as adaptation measures to climate change such as measures against high waves and revetment functions, purification of water and soil, and restoration and conservation of ecosystems are expected.

Under the technical guidance of the International Mangrove Ecosystem Association (ISME), YL Forest has been carrying out conservation activities for the remaining 14,000 hectares of mangrove in South Sumatra since 2013. The project aims to reduce CO2 emissions by about 5 million tons through forest conservation activities over 30 years, and to absorb and fix about 6 million tons of CO2 by newly planting mangroves and other trees on approximately 9,500 hectares of bare land. Currently, they are in the process of registering the project in the first half of 2022 in order to be certified by the international carbon credit standard management organization Verra.

Mangroves not only take in CO2 and store carbon, but are also called "cradles of life". They protect the biodiversity of living organisms that live with mangroves, and protect the lives of people living along the coast from high waves.

Through its natural environment restoration project in Mauritius, the company group learns about the importance of mangroves from partners such as ISME, and aims to be a nature-positive company that protects the abundance of the sea, such as climate change countermeasures, marine environment conservation, and biological life.

They decided to actively work on diversity protection. Nature positive refers to avoiding biodiversity loss and ensuring that the positive impact outweighs the negative impact. They says that it is important to put biodiversity on a recovery track by 2030 for the sustainable future of all life on earth.

MOL website:

<https://www.mol.co.jp/en/pr/2022/22002.html>

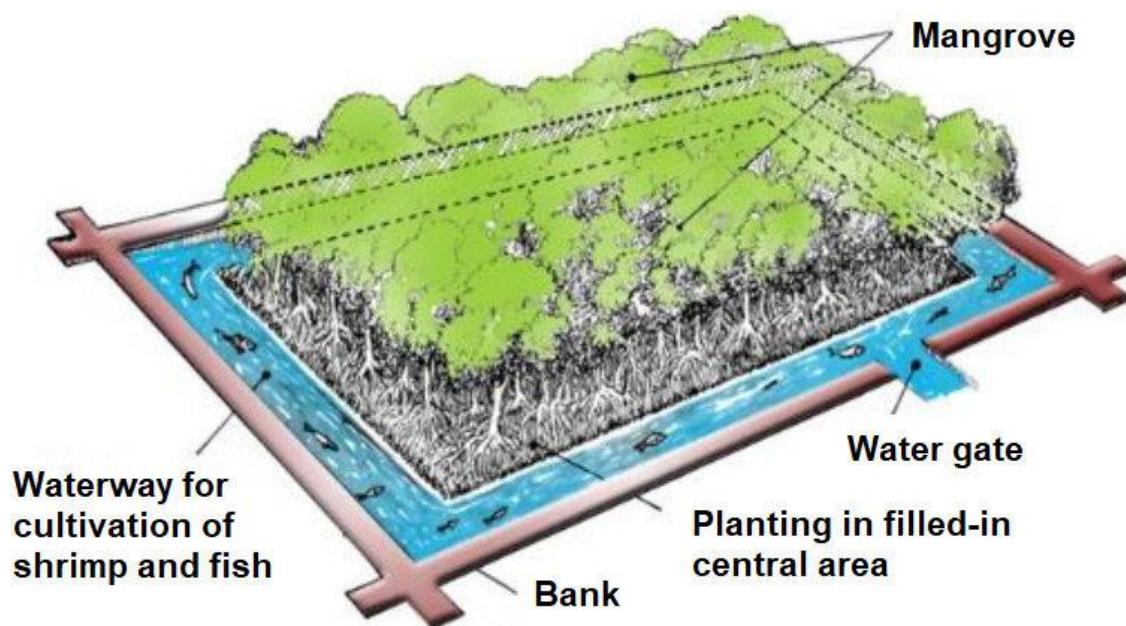


Image from MOL website

Sony Group to consider full-scale introduction to EV market, establish operating company in spring

The Sony Group announced on January 4 that it will establish an operating company "Sony Mobility" in the spring of 2022 and will seriously consider launching an electric vehicle (EV) under development. At the technology trade fair "CES" that started on January 5 in Las Vegas, USA, a new SUV type prototype vehicle (VISION-S 02) was announced and exhibited.

At a press conference prior to the public release of "CES," the Sony Group

explained the progress and future direction of the EV development initiative "VISION-S," which aims to contribute to the evolution of mobility. "Sony believes it can be a creative entertainment company that redefines mobility," said Kenichiro Yoshida, chairman and CEO of the company.

At the "CES" booth, an SUV type prototype vehicle (VISION-S 02) was exhibited along with a prototype (VISION-S 01) that is developing public road driving tests. The SUV type prototype vehicle uses the same EV / cloud platform as the prototype. Through entertainment experiences using a large interior space and variations of 7-seater passengers, along with prototypes, we will promote support for various lifestyles in a society where values are diversifying.

The newly established business company aims to make the best use of AI / robotics technology, realize a world where everyone can coexist with robots on a daily basis, impress people, and contribute to society. With the addition of the entertainment robot Aibo, the drone Airpeak, and VISION-S, which contributes to the evolution of mobility, the company plans to create new value in various fields.

SONY website:

<https://www.sony.com/en/SonyInfo/News/Press/202201/22-002E/>



Image from SONY website

Other topics

Chinese GDP 2021 slows to 4.0% growth in real terms

Gross domestic product (GDP) for October-December 2021, announced on January 17, by the National Bureau of Statistics of China, increased by 4.0% year-on-year in real terms adjusted for price fluctuations. It slowed from a 4.9% increase in July-September, the lowest since April-June 2008 (3.1%). Behavioral restrictions following the re-expansion of the COVID-19 have hampered economic activity. The tightening of government regulations such as the environment and real estate also affected. However, the real GDP for the full year 2021 announced at the same time increased by 8.1% from the previous year. It has grown since 2011 (up 9.6%), but the main reason is the reaction to 2020, when economic activity stopped at the beginning of the year with the COVID-19.

In the corporate sector, industrial production for the full year 2021 increased by 9.6% year-on-year, but slowed from the year-on-year growth rate (11.8%) from January to September. Production of steel and cement, whose power supply was restricted by the government due to environmental regulations, fell.

Fixed asset investment was up 4.9%. Of this, infrastructure investment, which supports the local economy, increased by only 0.4%. Real estate development investment slowed down due to financial regulations aimed at curbing the bubble, and condominium sales were sluggish.

The household sector was also sluggish. The total retail sales of social consumer goods, which is the sum of department store and supermarket sales and Internet sales, increased by 12.5% from the previous year. It decreased from the year-on-year increase rate (16.4%) from January to September. Under the "Zero COVID" policy, strict movement restrictions have become a headwind for service industries such as eating out, travel, and entertainment.

Due to the economic stagnation, the recovery of employment and income is also lacking momentum. In 2021, there were 12.69 million new jobs in urban areas. It increased by 7% year-on-year, but fell 6% from 2019 before the COVID-19. Growth in per capita disposable income slowed to an average of 6.9% over the past two years, down from 7.1% in January-September.

In contrast to sluggish domestic demand, external demand remained strong. Both



imports and exports (dollar-denominated) from October to December increased by more than 20% from the same period of the previous year. The trade surplus, which is exports minus imports, was the largest. However, the Chinese economy is likely to remain stagnant in early 2022. This is because the mutant "Omicron type" infection spreads and the movement restriction may be prolonged.

National Bureau of Statistics of China website:

http://www.stats.gov.cn/english/PressRelease/202201/t20220119_1826672.html

Preliminary Accounting Results of GDP for the Fourth Quarter and the Whole Year of 2021

	Total (100 million yuan)		Growth Rate over the Same Period Last Year (%)	
	Q3	Q1-Q4	Q4	Q1-Q4
Gross Domestic Products	324237	1143670	4.0	8.1
Primary Industry	31472	83086	6.4	7.1
Secondary Industry	130650	450904	2.5	8.2
Tertiary Industry	162115	609680	4.6	8.2
Farming, Forestry, Animal Husbandry, and Fishery	32822	86775	6.4	7.1
Industry	105223	372575	3.8	9.6
#Manufacturing	87556	313797	3.1	9.8
Construction	26013	80138	-2.1	2.1
Wholesale and Retail Trades	31280	110493	5.9	11.3
Transport, Storage, and Post	12375	47061	4.0	12.1
Accommodation and Restaurants	5428	17853	4.7	14.5
Finance	22573	91206	5.5	4.8
Real Estate	19734	77561	-2.9	5.2
Information Transmission, Software and Information Technology Services	11049	43956	11.5	17.2
Renting and Leasing Activities and Business Services	10570	35350	5.6	6.2
Others	47172	180701	5.0	6.3

Notes:

1. The total is computed at current price, and growth rate is computed at constant price.

2. The Three Industries Classification is according to the *Three Industries Classification Regulations* enacted in 2018 by the NBS.

3. Industrial Classification adopts the *"Industrial Classification for National Economic Activities"* (GB/T4754—2017).

4. Due to error generated from rounding off of numerical value, among the total GDP and its data composition, some data is not equal to the sum of all industries, and no mechanical adjustment is made for that.

The Y/Y Growth Rate on GDP

	Q1	Q2	Q3	Q4
2016	6.9	6.8	6.8	6.9
2017	7.0	7.0	6.9	6.8
2018	6.9	6.9	6.7	6.5
2019	6.3	6.0	5.9	5.8
2020	-6.9	3.1	4.8	6.4
2021	18.3	7.9	4.9	4.0

Notes: The Y/Y growth rate is the growth rate over the same period last year.

Source: National Bureau of Statistics of China website



The number of births in China is 10.62 million, the lowest since the country was founded

The National Bureau of Statistics of China announced on January 17 that the number of births in 2021 was 10.62 million, a decrease of 1.4 million from the previous year. This is the fifth consecutive year of decline, falling below the record low of 61 years since the country was founded in 1949. It has become clear that the declining birthrate is accelerating due to soaring educational costs and distortion of the population ratio of men and women. More than 14% of the population aged 65 and over has entered an "aging society". The number of deaths (10.14 million) is thin with the number of births, and the arrival of a declining population is imminent.

The Chinese government decided to abolish the "one-child policy" in 2015. From 2016, it has announced that it allows up to two children in a couple and allows a third child in 2021. In the same year, it announced a policy to abolish the "social support costs", which had been a substantial fine for violating birth control, and to virtually abolish the population control policy that had been in effect for more than 40 years. However, there is no prospect that the declining birthrate will slow down.

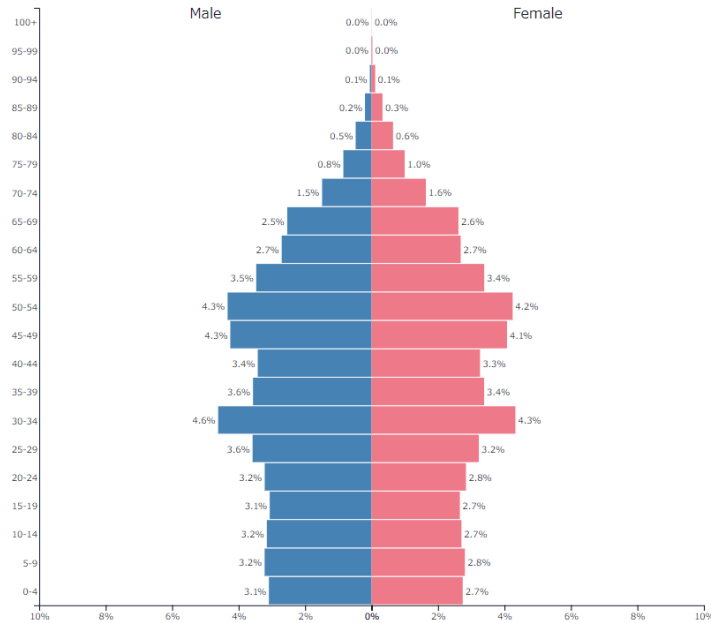
As of the end of 2021, the total population of China was 1,412.6 million (up 480,000 from the previous year). While the number of births has decreased significantly, the population aged 65 and over has increased, and the aging rate is 14.2%, which is an aging society defined by the World Health Organization (WHO) and others. It took 20 years for China to shift from an "aging society" (aging rate 7%) to an aged society (14%), and the population is aging at a faster pace than Japan, which took 24 years.

According to newspaper reports, director of the National Bureau of Statistics of China, emphasized at a press conference on Jan. 17 that "declining birthrate and aging population are common problems faced by developed countries and some emerging countries." The reasons for the decrease in the number of births include a decrease in the female population at the appropriate age for childbirth, a decrease in motivation to give birth due to soaring childbirth costs, and the delay in marriage and childbirth due to the COVID-19.

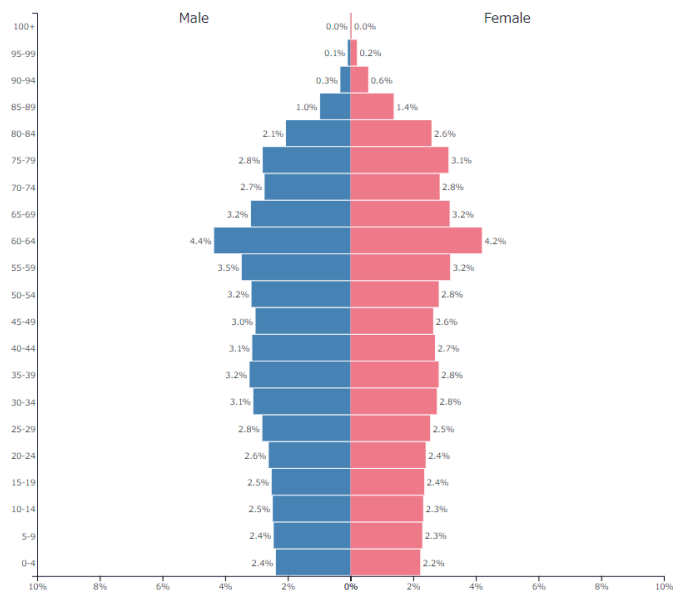
National Bureau of Statistics of China website (in Chinese):

http://www.stats.gov.cn/tjsj/sjjd/202201/t20220118_1826538.html

Chinese population pyramid (2020)



Chinese population pyramid (2050)



Source: Population Pyramid Net

New car sales 2021 in China for the first time plus in 4 years

The number of new cars sold in 2021 announced by the China Association of Automobile Manufacturers (CAAM) on January 12 was 26.27 million units, up 3.8% from the previous year. It is the first time in four years since 2017 that it has exceeded the previous year's results. Although it was affected by the global semiconductor shortage mainly in the latter half of last year, it achieved a positive effect from the reactionary effect of the previous year when it was hit directly by the COVID-19.

China has maintained its position in the world's largest automobile market for 13 consecutive years. The growth of "new energy vehicles" such as electric vehicles (EVs), which the Chinese government is supporting to spread, was also remarkable.

According to the breakdown in 2021, the number of passenger cars increased by 6.5% to 21.48 million units, driven by sports utility vehicles (SUVs), which are popular in the Chinese market. On the other hand, commercial vehicles decreased by 6.6% to 4.79 million units. Demand for commercial vehicles was sluggish due to the chill in real estate development.

The number of new energy vehicles increased by about 2.6 times to 3.52 million units, a new record high. The association analyzes the reasons for the strong performance that market needs for EVs are increasing. The Chinese government has shown its support for expanding EV sales. President Xi Jinping has set a goal of virtually zero greenhouse gas emissions by 2060, which is pushing the back. It is difficult for conventional gasoline-powered vehicles to completely reverse the preceding Japan, the United States and Europe, but it seems that China is trying to reverse the situation with the shift to new industries such as EVs.

Even a major Japanese company Honda has announced plans to use electric power such as EVs and hybrid vehicles (HVs) for all four-wheeled vehicles in China after 2030. Toyota and Nissan have also announced policies to strengthen EVs in China.

China Association of Automobile Manufacturers website:

<http://en.caam.org.cn/Index/show/catid/52/id/1632.html>



Sales of Automobiles in December 2021

2022/01/12

Unit: 10000, %

	Volume	Jan. — Dec.	MoM	YoY	YoY Jan. — Dec.
Cars	278.6	2627.5	10.5	-1.6	3.8
Passenger Cars (PC)	242.2	2148.2	10.5	2.0	6.5
Cars	112.6	993.4	11.6	7.5	7.1
MPV	11.3	105.5	4.7	-20.8	0.1
SUV	114.1	1010.1	10.2	0.3	6.8
Crossed Passenger Cars	4.1	39.1	5.5	-11.8	0.8
Commercial Vehicles (CV)	36.4	479.3	10.5	-20.1	-6.6
Buses	5.4	50.5	34.4	-13.6	12.6
Buses incomplete vehicles	0.2	1.6	24.9	-17.9	-9.6
Trucks	31.1	428.8	7.2	-21.2	-8.5
Semi-trailer	2.1	67.7	-8.0	-59.3	-18.9
Trucks incomplete vehicles	3.9	63.9	40.3	-23.6	-10.0

Source: China Association of Automobile Manufacturers website