

Second Report
of the Committee on New Direction of
Economic and Industrial Policies

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Second Report of Committee on New Direction of Economic and Industrial Policies

I. Recognition of Current Situation

(1) Reflection on the "Lost 3 Decades" and "New Direction"

The Japanese economy has been in a situation known as the "lost 3 decades" of slow economic growth. During these 3 decades, a deflationary mindset spread in Japan, along with pessimism towards the future of the domestic economy in light of the declining population. As a result, the expected growth rate by Japanese companies declined¹.

Corporate management during this period prioritized retaining employment, and thereby focused on cutting costs in existing businesses and investing abroad where expected returns to investments were higher. This left domestic investment stagnant for 3 decades, resulting in insufficient creation of new businesses.² While current profits of large companies have doubled over the past 30 years and is currently at a historically high level, domestic sales have remained flat. Current profits of companies mainly increased due to the decrease in cost of sales and the increase in overseas profits.³

Unemployment rate has remained at a low level, but average wages have remained consistently flat for the past 30 years.⁴ The expansion of non-regular workers has enabled hiring labor while keeping wage levels low. Accordingly, personal consumption has been stagnant.⁵

It is undeniable that the government's policies provided a reason for this stagnation. The government's efforts were focused on improving the market environment to remove restrictions for the private sector. As a result, it should be said that governmental efforts were excessively neo-liberalistic to create new value.

To overcome the "lost 3 decades" of economic stagnation, it is important to recognize and cope with these factors. Turning our attentions to the future, macro-level trends are changing that will affect the Japanese economic and industrial policies in the mid- to long-term, and these trends must be taken into account when considering policies as the New Direction of Economic and Industrial Policies.

(2) Trends that should be followed in industrial policy over the medium to long term

① Increased geopolitical risks and other uncertainties

Global uncertainty has increased in recent years due to instability in the international economic order and accelerated technological innovation. The World Uncertainty Index had remained in the range of 50-200 until the early 2010s but has often exceeded 300 since around 2020.⁶

The international economic order is facing a growing "fragmentation," especially with the U.S.-China confrontation and Russia's invasion of Ukraine after 2022. Against these developments, "globalization," meaning the continuous increase in flow of people, goods, money, and data under a stable international order, is changing. Today, the system that ensures free trade must be balanced with the need to ensure economic security.

¹ See Reference Materials, p. 3.

² See Reference Materials p. 4,5,6,7.

³ See Reference Materials, p. 8,9.

⁴ See Reference Materials, p.10,11.

⁵ See Reference Materials, p12,13.

⁶ See Reference Materials, p. 15.

These upheavals aggravate the already persistent pessimism in Japan supported by long-term deflation and a declining population. This pessimism overtakes the view that change could be an opportunity. Surveys show that companies are hesitant to invest in plant and equipment because of the lack of confidence; "uncertainty about the future" has always been the number one reason for companies to hesitate capital investment.⁷ This is also explained by the expected growth rate of companies, which has remained around 1% since the late 2010s. The persistent decline in Japan's rank in the World Competitiveness Ranking, becoming 34th among 63 countries in 2022, could also be explained by the gloomy survey results answered by Japanese business managers. While the objective data based on statistics show better results, pessimism of Japanese managers are contributing to the decline in this ranking.⁸

② Long-term price trends

Until the 1990s, Japan had faced the "overseas-domestic price gap problem" where Japan's price level was higher compared to that of the U.S. and other major developed countries. Today, due in part to the long-term deflation in Japan and cost-cutting efforts by companies, Japan has become a country with competitive price levels over the past 30 years.⁹

The price level in Japan has dipped below the OECD average in 2022, and a situation that could be called the "reverse" overseas-domestic price gap is occurring. The price gap with China has narrowed over the past 20 years, and Japan has become a cost competitive country among developed countries.

③ Global inflation

The world has faced inflation unparalleled in the past 30 years, against the backdrop of the recovery from COVID-19 and the Russian-Ukrainian war. Some developed countries faced inflation once exceeding 10% on a year-on-year basis, and in Japan, inflation temporarily reached 4% year-on-year, a reversal of the long-term deflationary situation.¹⁰ The current pace of inflation has already exceeded its peak in many countries and has slowed to a certain degree.

Although various factors determine future price levels, some believe that the world has turned to a structurally high inflationary trend from the following reasons: (i) China, which has continued to provide the world with inexpensive labor supply for the past 30 years through exports of goods and other means of globalization, will experience a decline in its labor force due to its low birthrate and aging population, (ii) labor supply will be constrained by the aging of the population in developed countries as a whole, and (iii) increasing geopolitical risk will cast limits on a full-fledged globalization.

④ Labor Force Trends

Since 1995, Japan's labor input (total hours worked) has been on an increasing trend due to enhanced labor participation of women and the elderly, even as the working-age population declined. However, since 2019, labor input in Japan has begun to decline. During the past 3 decades, the labor participation rate of women, which had previously been low by international standards, has continued to rise, and is now among

⁷ See Reference Materials, p. 16.

⁸ See Reference Materials, p. 17.

⁹ See Reference Materials, p. 18.

¹⁰ See Reference Materials, p. 19.

the highest in the world. Adding to the already high labor participation of men and the elderly, the labor participation rate of men, women and the elderly have all reached highest levels internationally, and some believe that the labor participation rate may have reached a ceiling. Even if birth rates reverse in the future, the working-age population itself is expected to continue declining for more than 20 years.¹¹

Therefore, labor shortage should be viewed as a structural issue that Japan faces. Solutions toward this issue include eliminating restrictions on existing workers (e.g., eliminating barriers related to working hours, creating an environment that facilitates balancing work with childcare and nursing care, etc.), and an increase in the capital equipment ratio through investments in labor-saving and automation, including software investments in labor-intensive industries. It is also necessary to accelerate productivity growth through reskilling, health promotion, and other measures.

Taking a positive view, the pressure of labor shortage could accelerate turnover of labor from low-productivity, low-wage sectors to high-productivity, high-wage sectors. In order to realize smooth labor turnover to high-productivity, high-wage sectors, there is an increasing need for support to facilitate the replacement of industries through individual labor turnover and business succession and M&A at the business and company level.

⑤ Trend of declining birthrate

The largest factor contributing to the long-term decline in the labor force is Japan's declining birthrate. This demographical issue should be viewed as an economic issue that affects the Japanese economy from both the supply side and the demand side. In Japan, the working-age population, which is affected by the supply side, began to decline after peaking in 1995, and the total population, which is affected by the demand side, began to decline after peaking in 2010.¹²

Attention should be given to the fact that the desired fertility rate, in addition to the actual fertility rate, is on a downward trend. The desired fertility rate is calculated based on the percentage of married people, the percentage of never-married people who wish to marry, and the number of children they wish (or plan) to have. The decline of the desired fertility rate has been driven by the decline in the desire to marry, in addition to the decline in the number of children desired by never-married people.¹³ This reflects the decline in hopes for the future, especially among never-married persons. Given the current situation¹⁴ where low income is a major hurdle for both childbearing and marriage, it is necessary to reverse this downward trend in hope through a sustained increase in the income of the low-income group¹⁵ and by creating a workplace where working and spending time with their families can be compatible.

One factor that suppresses disposable income of young people and hinder their rate of marriage is that young people, especially women, are concentrated in Tokyo, where prices and basic expenditures are burdensome.¹⁶ This phenomenon in part is caused by the lack of "good jobs" in rural areas; jobs that match young peoples' desires and also provide sufficient income.¹⁷ Therefore, the importance of small and

¹¹ See Reference Materials, p. 20,21.

¹² See Reference Materials, p. 22.

¹³ See Reference Materials, p. 23.

¹⁴ See Reference Materials, p. 24, 25.

¹⁵ See Reference Materials, p. 26.

¹⁶ See Reference Materials, p. 29.

¹⁷ See Reference Materials, p. 27, 28.

medium-sized enterprises (SMEs) as providers of quality employment in rural areas¹⁸ is increasing as an important measure to reverse the decline in the birth rate.

⑥ Increased importance of domestic investment (tangible and intangible)

Japan's investment toward growth, especially domestic investment, has been particularly sluggish over the past 3 decades. The significance of having a domestic industrial and business base is increasing from the perspective of mitigating geopolitical risk and the spillover and multiplier effects on the domestic economy and industries. Domestic investment is also important amidst changes in industrial structure; the service industry faces lower barriers to overseas expansion due to digitization, and the manufacturing industry, which in the past has driven globalization through exports, is now moving toward localization of production near consumption areas. In relation to national income, there is also a significant correlation between domestic investment and wage growth.¹⁹

Domestic investment should not be promoted through simply reshoring overseas production bases back to Japan. Rather, Japan should seek attracting investments toward a production base for high value-added products and services that contribute to solving global social issues and for which demand is expected to grow in Japan, or as an innovation base for research and development and other activities. In order to continue to attract these high value-added bases to Japan, it is important to invest in intangible assets as well as tangible assets. In relation to intangible assets, as digitization facilitates the international expansion of the service industry, the importance of intellectual property income is increasing, and the development and operation of a collaborative platform to promote the use of data across companies and industries is also becoming increasingly important.

⑦ Current account trends

Current account is another important macroeconomic index that industrial policy should refer to. Japan recorded its largest-ever trade deficit in 2022, mainly due to soaring energy prices.²⁰ The trade balance in electrical and electronics equipment, which had been in surplus for a long time, has also fallen to a deficit. Trade in services is also currently in a deficit. In the long run, the deficit of the ICT sector of services may be equivalent to that of petroleum resources by 2030, due to the shift to cloud services.²¹ The revival of inbound foreign consumption²², which fell sharply after COVID-19, may contribute to gains in trade in services. Still, as of today, the current account is still dependent on investment income.

Relying on investment income alone to stabilize the current account balance is not necessarily desirable, taking into consideration that trade and service income can be expected to contribute more to domestic income through the multiplier effect than investment income. On the other hand, gaining from trade by simply selling cheaply abroad is also undesirable because it worsens the terms of trade²³ and puts downward pressure on real national income. It is necessary to aim at both raising national income and stabilizing the current account, mainly by improving the balance of trade in goods and services by providing high value-added goods and services to foreign countries as well.

¹⁸ See Reference Materials, p30,31.

¹⁹ See Reference Materials, p. 32.

²⁰ See Reference Materials, p. 33.

²¹ See Reference Materials, p. 34.

²² See Reference Materials, p. 35.

²³ See Reference Materials, p. 36.

(3) Shift in industrial policy in the world and Japan

① Urgent response to social issues and increased industrial policy activity around the world

After COVID-19, people's awareness towards social issues have become even more apparent around the world. Countries have come to realize that the entire society must address social issues that have not been fully internalized in the economy. These issues, such as green transformation to address climate change and economic security, are becoming the engines of economic growth. On the other hand, as social issues become more complex, and as the transformation of existing social and economic systems is necessary in order to solve them, it is becoming increasingly difficult for private companies to tackle social issues on their own. Under these uncertain and complex circumstances, there is an increasing need to provide government support to encourage companies to take action by increasing the predictability of private companies and to link the resolution of social issues to economic growth.

Under these circumstances, the U.S. and Europe are actively engaging in large-scale and long-term industrial policies, in addition to China which has traditionally developed large-scale industrial policies.²⁴ The CHIPS and Science Act of 2022, which the U.S. passed in August 2022, provides \$52.7 billion in government support for semiconductor-related investments. Similarly the Inflation Reduction Act, which was enacted in the same month, provides \$369 billion in government support for climate change related investments.²⁵ Apart from the budget size, it should be noted that large-scale financial support is provided not only to initial capital expenditures but also to operational expenditures that are proportional to production in forms of tax credits, which provides incentives for production.²⁶ Requirements for the use of domestic products when receiving government support and targets for domestic production is also included in this legislation. Europe is actively encouraging domestic investment by mobilizing all available means²⁷; the EU has introduced measures such as border adjustment measures to prevent the outflow of investment to countries with less stringent decarbonization regulations and measures to relax subsidy restriction to prevent the offshore transfer of investment.²⁸ These measures are bringing out a situation of policy competition, where investment and employment in the private sector are dependent on comprehensive support from each government.

② Launch of "New Direction of Economic and Industrial Policies"

Amidst this comeback of industrial policy, the Japanese government has initiated the "New Direction of Economic and Industrial Policies" since 2021, where the government takes a proactive role and a "mission-oriented" approach to address global social issues in a large-scale, long-term, and planned manner.²⁹ The government has already implemented several policy initiatives, diverting from excessively neoliberal policies and reducing the uncertainties faced by the private sector by setting/sharing goals and making investments to solve social issues.

²⁴ See Reference Materials, p. 38,39.

²⁵ See Reference Materials p. 40, left figure.

²⁶ See Reference Materials, p. 41.

²⁷ See Reference Materials p. 40, right figure.

²⁸ See Reference Materials, p. 42.

²⁹ See Reference Materials, p. 43.

For example, with regard to the realization of a carbon-neutral society (GX), the government is implementing a growth-oriented carbon pricing concept, including upfront investment support in the amount of 20 trillion yen under the Act on Promotion of Smooth Transition to a Decarbonized Growth-Oriented Economic Structure (GX Promotion Law), and 1.6 trillion yen in support already pledged.³⁰

For the realization of the digital society (DX), the government has committed to large-scale, long-term, and planned policy support, including over 2 trillion yen in investment and R&D for semiconductors and next-generation computing infrastructure, and 0.4 trillion yen for the establishment of manufacturing infrastructure for storage batteries. Some of these measures have already begun to produce positive effects, such as the realization of intensive investment by private companies, including foreign capital, in the relevant fields.³¹

In the area of economic security, the government has designated specific critical commodities, and has allocated 250 billion yen to the Fund for the Development of Key Technologies for Economic Security, and 80 billion yen has already been adopted.³²

In addition, the government has initiated long-term support in various areas, including support for human capital investment such as reskilling (1 trillion yen over 5 years)³³, support for startups through a 1 trillion yen supplementary budget and 7 tax reforms based on the "5-Year Plan for Startup Development"³⁴, and support for the growth of SMEs through measures such as business restructuring subsidies (total 2.4 trillion yen) and manufacturing subsidies.

(4) Signs of change and turning points taking place

Changes in the macro environment, such as the transformation of the international order and labor force trends in Japan, as well as changes in the government's policy to initiate large-scale, long-term, and planned support in areas where social issues exist, are bringing about change that should be called the "turning point" from the trend of the past 30 years.

① Increased willingness to make capital investments by companies

Japanese companies are showing willingness at a historical level to make domestic capital investments. Contributing to this change are factors such as developments in the international economic order, the long-term deflation that has brought a cost environment for companies that is internationally more competitive, and the start of large-scale, long-term, planned policy support.

The growth in capital investment plans by companies (year-on-year) in FY2022 and FY2023 has shown record-high levels since the statistics began in 1983 (Short-Term Economic Outlook, Bank of Japan).³⁵ The Government Economic Outlook, predicts the historically highest level of capital investment by the private sector (including R&D and software investment) in FY2023. Keidanren has set a target of 115 trillion yen in private-sector capital investment in FY2027, with the goal of reaching even higher levels through

³⁰ See Reference Materials, p. 44. Policy execution status is as of June 2, 2023.

³¹ See Reference Materials, p. 45.

³² Policy execution status is as of June 2, 2023.

³³ See Reference Materials, p. 46.

³⁴ See Reference Materials, p. 47.

³⁵ See Reference Materials, p. 49.

strengthened policies, a goal that was declared in the "Public-Private Partnership Forum on Increasing Domestic Investment," chaired by the Prime Minister.³⁶

It should be noted that downside risks regarding domestic investment exist with the increasing uncertainty of the global economy. The IMF forecasts global growth at 2.8% this year, which is significantly lower than the 3.8% average for the past 20 years. While some are pointing out that economic recession could spill over from abroad, efforts to sustain domestic investment are still needed.³⁷

②Largest wage increase in 30 years against a backdrop of global inflation

The results of the annual wage negotiations between management and labor unions were the highest in 30 years in 2023. The average for companies of all sizes was a 3.66% increase, and SMEs realized a wage increase of 3.36% as well (based on the results of the 6th round of responses compiled by RENGO).³⁸ Although historical inflation and labor shortage are suggested as reasons behind this change, it is considered to be a landmark event that could trigger a major change in the trend over the past 30 years.

The focus for the upcoming years will be on making this wage increase prevalent among a wide range of workers including non-regular workers, and on realizing continuous wage increase beyond this year, in order to make this turning point a long-term sustainable movement in the future.

③Signs of replacement of industries

Domestic investment in startups has grown about 10-fold over the past decade³⁹, despite a decline due to COVID-19, showing signs of the growing replacement of industries by the startup ecosystem for the economy as a whole. The number of mergers and acquisitions involving Japanese companies has also more than doubled in the 10 years since 2011,⁴⁰ and business restructuring is also making progress.

Japan has been experiencing a long-term trend of excessive market competition compared to Europe and the U.S. However, after COVID-19 there are signs of improvement in the level of market concentration. The Herfindahl-Hershman Index, which indicates the degree of market concentration, shows an increase in the index from 2020-2022 compared to 2014-2019, suggesting the improvement of the status of excessive market concentration. At the same time, the index showing the reallocation of resources among industries from low-productivity sectors to high-productivity sectors (the redistribution effect in increasing firm productivity) is also improving after COVID-19, indicating a virtuous cycle in which a healthy replacement of industry raises productivity in the economy as a whole.⁴¹

(5) Necessity to carry this momentum to long-term sustainable growth

Amidst this turning point, Japan is experiencing an environment where it is becoming difficult to secure human resources without a sustained wage increase. A structural labor shortage caused by a shrinking working-age population and the labor participation rate reaching the highest level in the world are factors that are contributing to this environmental change.

³⁶ See Reference Materials, p. 50,51.

³⁷ See Reference Materials, p. 52,53.

³⁸ See Reference Materials, p. 54.

³⁹ See Reference Materials, p. 55.

⁴⁰ See Reference Materials, p. 56.

⁴¹ See Reference Materials, p. 57.

With the growing need to support the creation of high value-added and the smooth movement of workers to high-productivity, high-wage sectors, now is the last chance to turn this "turning point" into sustainable and continuous growth, by actively utilizing discontinuous innovation and with a sense of urgency. It is necessary to secure resources for wage increases through the creation of high value-added businesses, business structure reform, and replacement of industry, as well as reform of corporate management to promote such changes. It is also necessary to ensure a safety net by providing reskilling and smooth labor mobility for individuals.

Overcoming the pessimism about the future that has pervaded many citizens over the past 30 years is also necessary, to avoid falling into a shrunk equilibrium in which people try to buy cheap goods and reduce investment. In light of the current uncertainties in the global economy, the accelerating decline of the domestic population, and the international policy competition to induce domestic investment, a policy approach to prevent the economy from falling into this cycle will be important in order to carry the momentum of this "turning point" to achieve sustainable and continuous growth. To this end, the government will implement the "New Direction of Economic and Industrial Policies," in which the government steps forward to create new demand and invest in high-value-added areas on the supply side to meet that demand, focusing on social issues as policy areas to engage in.

II. New Direction of Economic and Industrial Policies

(1) "Fostering Expectations" to achieve sustainable and continuous growth

In order to carry the momentum of the current turning point (the willingness to make capital investments, the first wage increase in 30 years, and signs of replacement of industry) into long-term sustainable and continuous growth, an approach from both the supply and demand sides is necessary. From the demand side, the contractionary equilibrium of buying cheap goods and restraining investment must be avoided, and new demand supported by continuous wage increases must be stimulated. On the supply side, it is necessary to enhance value creation of companies and invest in high-value-added fields to meet new demand. The key to all of this is the "expectation of future growth," which is the concept emphasized in the "New Direction of Economic and Industrial Policies."

As a developed country, it is difficult to identify the next growth "industry" on an industry-by-industry basis, while the industrial structure is rapidly changing due to accelerated technological change and the shift from vertical integration to horizontal integration. What is clear, however, is that there are global social challenges that will persist in the future, and this is the starting point of the "Mission-Oriented Industrial Policies" of the "New Direction of Economic and Industrial Policies. The "Mission-Oriented Industrial Policy" is designed to solve these social issues through industrial policies that are internationally competitive, including budgets (funds and national debt obligations) and taxation systems (long-term durations) to increase predictability and accelerate strategic investment. The "Mission-Oriented Industrial Policy" will create new domestic demand while strengthening international competitiveness, including export capabilities, and expanding overseas.

At the same time, the socioeconomic system must be updated to accommodate the current economic and industrial structure. In particular, in order for companies to secure the necessary labor force in the current labor shortage environment, it is necessary for companies to continuously increase wages as well as to

increase the added value of corporate activities in order to secure the resources necessary for wage increase. Facilitating labor mobility and human investment such as reskilling is also important for this purpose. Utilizing this labor shortage environment, the government will also provide more support for companies that are willing to undertake management reform to create value. The government will also encourage the replacement of industry by fostering the development of sturdy companies, including startups and small and medium-sized enterprises (SMEs) that create new value. At the same time, we will develop human resources who will lead growth industries and create an environment that will attract such human resources from around the world to Japan. This series of structural changes will be implemented as "updating the socioeconomic system (OS)."

The "New Direction of Economic and Industrial Policies," consisting of "Mission-Oriented Industrial Policies" and "Updating Socioeconomic System (OS)," is a policy framework in which the government steps forward to create growth markets through large-scale, long-term, and planned efforts, providing predictability to the market and new public-private partnerships. Now is the time to develop and continue the "New Direction" that was launched two years ago.

(2) Policy Methods Constituting the "New Direction"

① Mission-Oriented Industrial Policy

To overcome the prolonged stagnation of domestic investment and promote investment in high value-added sectors, a credible and foreseeable image of growth with reduced uncertainty is required. Mission-oriented industrial policies are policies in which the government takes a step forward to play a proactive role in areas where social issues exist both in Japan and around the world, and where Japanese companies have the potential to contribute to these issues.

The importance of the private sector and an environment conducive to business remains the same as it has always been. However, it has become clear over the past 30 years that the private sector by itself cannot achieve domestic investment, innovation, and income growth as the public expects. To enhance investment in response to social issues that exist both domestically and internationally, an image of growth and reduced uncertainty is necessary. The private sector's willingness to actively invest was once supported by a "catching-up" mentality, but in the "New Direction," this willingness will be aroused from the starting point of solving social issues.

By setting long-term goals that resonate with many people and mobilizing all policy tools such as regulations, institutions, and standardization, we will develop demand that will expand over the mid- to long-term even under a declining population, while simultaneously fostering the supply side through large-scale, long-term, and planned support. By continuously implementing measures from both the supply and demand sides, including the acquisition of overseas markets, and by ensuring the predictability of the private sector, we will accelerate strategic investment at a global level. Government funds under the "New Direction" should be characterized as "national strategic investments" that will expand the nation's wealth, rather than mere "support".

It should be noted that policy competition for inducing local investment is occurring on a global scale in growth sectors. While taking notice of policies in countries/regions such as the U.S., Europe, China, Korea, etc. in mind, incentive levels that are internationally competitive should be established over a long,

predictable period (e.g., 5-10 years). As a result, domestic investment and innovation will be stimulated as an attractive investment destination for companies even amidst a declining population.

The "New Direction" takes ambitious challenges and fears policy inaction. The government should take bold challenges in solving social issues, an area where government involvement is justified, and learn from failures and change course when policies are not having the desired effect. Similarly, flexible adjustments must be made when environmental changes, including technology, cause major changes in the policy assumptions themselves. To facilitate appropriate course correction, including updating policy methods accordingly, it is important to establish appropriate specific indicators for monitoring and verifying policy effects, and to develop a system that enables the PDCA cycle.

②Updating socioeconomic system (OS)

In order to resolve social issues in the areas identified in the Mission-Oriented Industrial Policies, it is necessary to develop a socioeconomic system that complements the mission-oriented industrial policies for each theme. These areas will be addressed as updates of the socioeconomic system (OS).

For example, in order to realize social transformation in climate change and digital-related areas, it is necessary to develop and secure human capital investments through reskilling and cross-sectoral labor market reforms. Expanding the number and scale of start-ups, which are expected to be the bearers of the innovations necessary for such reforms, as well as management reform of large domestic companies towards making bold investments in new fields and creating new value are also necessary. Further promotion of globalization of the Japanese society in a way that is compatible with economic security is also critical to create a domestic environment that can attract human resources and knowledge that the world is competing for.

Even outside the scope of individual missions, updates of the socioeconomic system contribute to domestic investment, innovation, and income growth. We will implement policies for the update of the socioeconomic system from that perspective as well.

③Reorganization of 14 themes (from "6 Missions + 6 OSs + 2 New Fields" to "8 Missions + 5 OSs")

In the First Interim Report in 2022, we identified six policy areas to be addressed as "Mission-oriented Industrial Policies," six policy areas to be addressed as "Updating Socioeconomic System (OS)," and two policy areas to be addressed as "Areas to be addressed during a turbulent period of economic order," and have been deepening our deliberations and implementing measures. Based on the discussions over the past year, we will review the structure of the Interim Report as follows: 8 policy areas to be addressed as "Mission-oriented Industrial Policy" and 5 policy areas to be addressed as "Updating Socioeconomic System (OS)".⁴²

"Inclusive growth" has been an OS theme, but since the essence of the problem addressed by this policy area is considered to be the social issue of "declining birthrate," we have clarified the issue to be targeted as inclusive growth "in regions that contribute to combating declining birthrate," and have reviewed its position as a Mission-Oriented Industrial Policy.

⁴² See Reference Materials, p. 59.

Of the areas identified as "Areas to be addressed during a turbulent period of economic order," "growth-oriented resource-autonomous circular economy" is positioned as "Mission-oriented industrial policy" because it is considered to be a solution to the social issue of freeing the economy from resource constraints. The other area, "The potential of Web 3.0 and policy response," is a cross-industry issue, but is considered one of the key areas of the digital society, so it shall be integrated into the "realization of the digital society."

(3) Overall Goals of "New Direction

In the First Interim Report, we set the "expansion of investment" as an economic goal, and we have been deeply examining this goal in light of the subsequent economic environment (in particular, global policy trends, changes in the international order, and macroeconomic trends). As a result, although there are a wide range of factors to be considered when examining economic and industrial policies, we have redefined the virtuous cycle of domestic investment, innovation, and income growth as the overall goals of the "New Direction of Economic and Industrial Policies."

The path leading to this virtuous cycle is as follows. Mission-oriented industrial policies will create new demand supported by the need to solve social issues. Such demand will promote domestic investments and the development of new products/services that contributes to resolving social issues. Such investments serve as catalysts to realize innovation. New businesses that emerge from those innovations will also become new investment targets. As a result, wages will rise from improved labor productivity through increased capital-labor ratio and new added value through innovation. To accelerate this change, updates of the socioeconomic system (OS) is necessary such as investment in human capital, enhancing value creation of companies (including start-ups), and strengthening ties with foreign countries. As higher wages prevail, consumption of individuals will increase and demand will expand. Improved corporate earnings and higher expected growth rates will induce companies further domestic investments and accelerate innovation to capture growth markets.

The beginning of this virtuous cycle is already being observed as a "turning point" from the lost 3 decades. To achieve sustainable and continuous growth, it is critical to foster expectations toward future growth. This will contribute to halting the decline in the birth rate through improved economic conditions, stabilize the demographic conditions, and eventually lead to long-term growth. To this end, the next 3-5 years will be a "focus period" to jump-start growth over the next 10 years, and to sustain the three virtuous cycles over the medium to long term (5-10 years).

In order to sustain effective measures, it is important to establish indicators to monitor the progress of the virtuous cycle in the Japanese economy as a whole and in each of the sectors to be addressed under the New Direction, and to continue implementation while making course corrections. To this end, METI will set and monitor these related indicators as organizational KPIs. In addition, it is necessary to add and refine the currently established indicators as necessary based on monitoring trends.

(4) Economic, industrial, and social structures that support goal achievement

① Overall view

The image of long-term sustainable growth in which the return on investment is foreseeable comes from social issues that can be foreseen in the mid- to long-term. Therefore, the goal of the economy, industry, and society is to achieve both economic growth and solutions to social issues.

As Japan becomes a medium-sized economy in the world in the long term, it becomes increasingly difficult to meet all of its domestic needs on its own. Thus Japan will need to cooperate with other countries more than ever before. On the other hand, the global free trade system based on WTO rules is no longer as influential as it used to be due to changes in the international economic order caused by rising geopolitical conflicts.

The industrial structure should become one that generates high added value in response to new demand. Industries competing under global competition need to pursue speed and scale with a view to competing in the world market from the beginning instead of optimizing only for the domestic market, while giving due consideration to economic security. From this perspective, the fields that should become the core of future global competition-oriented investments will be those that aim to become world leaders in solving social issues (GX, health, etc.) or those that aim to play a central role in the global supply chain (semiconductors, storage batteries, etc.).

It is inevitable that labor input as a whole will decline for the foreseeable future due to the small room for growth in the labor participation rate and the continuing downward trend of the working-age population. Under these circumstances, the transfer of labor and other resources from mature industries will be essential to build a new industrial structure centered on solving social issues. To this end, it is necessary to create an environment in which labor can move safely and independently, and to ensure a safety net for this purpose.

At the same time, it is necessary to encourage companies to move their resources to growth areas through the replacement of industry. In addition to supporting startups as bearers of new businesses, existing companies must not only continue their existing businesses, but also pursue new added value and growth, and shift to a startup model that can boldly invest in new business creation as well. In addition, as more thorough digitization and data utilization are needed in many fields to create new added value, it will be essential for the public and private sectors to step forward with the idea of proactively building such a platform, even for cross-industry collaboration infrastructure (platform) with data collaboration at its core.

Demographics, which is one of Japan's most important social and economic issues, must be addressed as an important issue from the perspective of economic and industrial policy as well. It is desirable to create an economic environment in which the desired fertility rate, which is currently declining, is restored to 1.8 and further where demographics could be stable in the future. This would provide an environment where "expectations for the future" mentioned at the beginning of this chapter can be sustained over the long term. To this end, it is necessary to create local jobs that are attractive to young people, especially women, and to promote reforms in working hours and styles.

In advancing the "New Direction of Economic and Industrial Policies," it is important to continue building a clearer vision of the economy, industry, and society to be pursued, including the aspects indicated above, and this will be an ongoing effort.

②Direction of Policy from a Macroeconomic Perspective

First, as a goal for the economy as a whole, emphasis will be placed on the affluence of the people. The realization of affluence is not limited to the mere maximization of corporate profits, but also spills over to each industry through such channels as the revitalization of personal consumption, the realization of an environment in which people can feel hope towards marriage and raising children, and the resulting stabilization of demographic trends. In this sense, it is necessary to be aware of the linkage with macroeconomic management in industrial policy at each policy area.

In addition, it is necessary to clarify the stance that economic growth is the foundation of healthy public finance, and to position the government budget as an "investment" towards future growth of the entire economy. In doing so, it is important to utilize fiscal spending in a flexible manner and at a sufficient scale as necessary, as long as it can be expected to generate a return in the future.

As an example, an EBPM study of government support for semiconductor investment shows that over the first 10 years of support, tax revenues may exceed government spending.⁴³ Government spending to solve social issues is not simply aimed at recovering the amount of spending through tax revenues, but is also intended primarily for policy values, such as revitalizing local economies and addressing issues such as economic security. This is one example of how timely, flexible, and well-planned government spending can generate returns as an investment.

In order to maximize the value of public "investment" as strategic investment that attracts private investment, it is important to create a predictable business environment in which the private sector can invest with confidence. At the Public-Private Partnership Forum on Increasing Domestic Investment held at the Prime Minister's Office, the business community proposed the goal of 115 trillion yen in domestic investment in FY2027, a goal to be raised even higher by strengthening policies. Realizing these goals by creating a predictable business environment is an important target, as it will create quality jobs in rural areas, reverse the downward trend in the desired birth rate, and create momentum for reversing the population decline through a sustained increase in the birth rate.

To this end, the next 3-5 years will be positioned as a focus period to jump-start growth over the next decade, and we will work to sustain the virtuous cycle of domestic investment, innovation, and income growth over the mid- to long- term (5-10 years).

③Market size in individual sectors

The following are examples of the scale of the economy that could be achieved through these New Direction policies in individual mission areas.

- Realization of a carbon-neutral society: Over 150 trillion yen of public and private investment over the next 10 years, with government support of 20 trillion yen for this purpose.⁴⁴
- Realization of a digital society: Demand will be created for new services through digitization, and capital investment, including software, will increase. For example, by 2030, we aim to increase the total sales (semiconductor-related) of companies producing semiconductors in Japan to over 15 trillion yen.⁴⁵ In addition, by 2030 at the latest, establish a domestic manufacturing base of 150

⁴³ See Reference Materials, p. 60.

⁴⁴ See Reference Materials, p. 67.

⁴⁵ See Reference Materials, p. 72.

GWh/year for storage batteries and materials, and secure manufacturing capacity of 600 GWh/year (more than 20% share) in the global market for all Japanese companies by 2030.⁴⁶

- Realization of Economic Security: Increased Autonomy, Securing Superiority and Indispensability, and Maintaining International Order⁴⁷
- Realization of a new healthy society: 77 trillion yen in public uninsured services in 2050⁴⁸
- Realization of a resilient society against disasters: Adaptation market will grow to about 70 trillion yen in developing countries by 2050.⁴⁹
- Realization of the bio-manufacturing revolution: Total market size of 92 trillion yen as of 2030.⁵⁰
- Establishment of a growth-oriented, resource-autonomous economy: Realization of a circular economy market of 80 trillion yen in 2030 and 120 trillion yen in 2050.⁵¹
- Inclusive growth of the region that contributes to combating the declining birthrate: By increasing disposable income and time through the growth of local businesses, etc., the desired birthrate of 1.8 will be restored and the desired level of demographic stability will be realized in an economic environment that will lead to further demographic stability.⁵²

III. Key Policy Tools for the Virtuous Cycle of Domestic Investment, Innovation, and Income Growth

The following policy tools are the major tools to realize the virtuous cycles of domestic investment, innovation, and income growth. Through these measures, we will achieve both the realization of long-term sustainable growth and the resolution of social issues in the areas addressed by the "Mission-oriented Industrial Policy." Supporting this progress are the promotion of private investment based on future growth expectations, high value-added corporate activities, and the transformation of the economic and industrial structure.⁵³

(1) Expansion of domestic investment

- World-class, long-term, and large-scale support is necessary in strategic areas (GX, DX, etc.). This includes multi-year support to improve predictability, support that goes beyond initial investment, and further convenience and flexibility for companies.*
- Industrial sites/infrastructure necessary for investment should be developed in the next several years. Afterwards, necessary measures to promote investment should be implemented from time to time.
- Local investment should be promoted as a measure against the declining birthrate. For this purpose, intensive support for medium-sized enterprises*, creating growth-oriented SMEs, and promoting labor-saving investment to overcome labor shortage is necessary.

⁴⁶ See Reference Materials, p. 74.

⁴⁷ See Reference Materials, p. 84.

⁴⁸ See Reference Materials, p. 90,91.

⁴⁹ See Reference Materials, p. 96.

⁵⁰ See Reference Materials, p. 98.

⁵¹ See Reference Materials, p. 108.

⁵² See Reference Materials, p. 115.

⁵³ See Reference Materials, p. 62.

(2) Acceleration of innovation

- Business structural reforms for high value-added and promotion of replacement of industry is necessary. For this purpose, measures for listed companies with P/B ratios below 1, and promotion of succession within the family, M&A, and spin-offs shall be considered.
- Development of a world-class innovation investment environment, including an innovation box regime and a common data-sharing infrastructure for storage battery CFP, automatic operation data, etc.
- World-class support for innovation in strategic areas such as GX, semiconductors, AI, quantum, space, biomanufacturing, and health.
- Steady promotion and reinforcement of the 5-year plan for startup development, including extending the JIC operation deadline* and expanding the scope and relaxing requirements for overseas investment of LPS investments*.

(3) Income growth

- Improving the environment for wage increase, including providing integrated support for price pass-on measures, expansion of the tax system for wage increase, support for business restructuring and productivity improvement, and career counseling, reskilling, and job change.
- Creating quality jobs in rural areas, including reform of workplaces to balance child rearing and promotion of women within workplaces.

*...Responses to be considered with a view to amending laws such as the Industrial Competitiveness Enhancement Act.

IV. Sector-specific measures

<Mission-oriented industrial policy>

In order to ensure that the aforementioned macro challenges and directions of the Japanese economy as a whole and the micro responses in individual themes are consistent, it is important to organize each policy according to a common framework across themes. For this purpose, for each of the eight themes of "Mission-oriented Industrial Policies" should: ① organize the social issues and needs to be addressed based on a global perspective and Japan's position in the world, ② set a mission to be realized through cooperation between the public and private sectors, and ③ identify the demand to be met upfront and the new supply to meet it, ④ Set long-term goals for the foreseeable future, and ⑤ Organize past and future measures.

(1) Realization of a carbon-neutral society

① Social issues and needs to be addressed

(Global demand and investment competition for GX)

- The global climate change issue has become a common challenge for all humankind, with extreme weather events occurring on a global scale and the number of large-scale natural disasters increasing. In this context, Western countries have already accelerated their decarbonization efforts in the wake of Russia's invasion of Ukraine, and are accelerating their national efforts toward an early transition to a carbon-neutral society by supporting investments that lead to decarbonization in the power generation, industrial, transportation, and household sectors.
- Against this backdrop, according to the IEA, decarbonization demand (capital investment), which currently averages about \$2 trillion per year, is expected to grow to \$5 trillion per year by 2030.
- Surrounded by the sea and lacking readily available resources, Japan has long been active in R&D related to decarbonization-related technologies, and Japanese companies possess technological strengths in many areas. Accelerating GX by making maximum use of these technological fields will not only lead to a stable energy supply, but also has the potential to serve as a catalyst for putting Japan's economy back on a growth trajectory.
- For example, if countries around the world pursue initiatives aimed at a scenario that limits post-industrial temperature rise to within 2°C, the value of the GPIF's domestic equity would increase by 11.2% as Japanese companies demonstrate their technological strengths in meeting global demand for emission reductions.

② Mission

- Achieve international commitments such as carbon neutrality by 2050, and simultaneously realize Japan's industrial competitiveness and economic growth.

③ Demand that should be met proactively and new ways of supply to meet this demand.

- It is estimated that over 150 trillion yen in investment over 10 years will be required to achieve carbon neutrality, industrial competitiveness, and economic growth at the same time. In order to realize such investments through public-private partnerships, it is necessary first of all, to provide an

integrated "road map" for the major areas where GX investments are expected in the future, including targets for the introduction of new products in each area and the timing of the introduction of new regulations and systems, as well as to provide long-term, multi-year support measures as a national government to enhance the predictability of the private sector. The government needs to provide long-term, multi-year support measures to enhance private-sector foresight.

- For this purpose, the GX Promotion Act and other measures will be used to realize and implement the "Growth-Oriented Carbon Pricing Concept," including the creation of a mechanism to put a price on carbon emissions and increase the added value of GX-related products and businesses by introducing carbon pricing in a low initial price and gradually increasing it, along with upfront investment support of 20 trillion yen through the use of GX Economic Transition Bonds, and providing incentives to businesses that are ahead of the curve in GX initiatives. The "Growth-Oriented Carbon Pricing Concept" will be realized and implemented, including the creation of a mechanism to provide incentives to businesses that are ahead of other GX-related businesses, and the use of new financial methods. In addition, promote international development strategies such as the "Asian Zero Emissions Community (AZEC)" concept, fair transition, and GX for society as a whole, including small and medium-sized enterprises (SMEs).
- We will study and implement measures with industry and experts, and will regularly evaluate and analyze progress and make necessary revisions based on them in an effective manner.

④ Long-term goals for the foreseeable future

- Over the next 10 years, public and private GX investments of over 150 trillion yen will be realized.
- Reduce greenhouse gas emissions by 46% in FY2030 and achieve carbon neutrality in 2050

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Examples of measures taken to date】

- Present a 46% reduction target for emissions in FY2030 and formulate measures to achieve it (e.g., global warming action plan).
- Formulate strategies to promote innovation in energy and environment-related technology fields that will be important for becoming carbon neutral by 2050 (e.g., Green Growth Strategy).
 - ⇒ It is necessary to draw a feasible path toward the goals of 2030 and 2050, and to materialize and implement measures based on a "line" rather than a "dot".

【Growth-oriented carbon pricing concept】

- (For each of the 22 priority areas, a comprehensive roadmap is clearly defined, including targets, necessary investment amounts, regulatory and support measures, and international strategies. Progress will be evaluated, analyzed, and revised as necessary based on the opinions of experts, etc.)
- (In common with other areas, consider budget and tax schemes in strategic areas (GX, DX, etc.) that are competitive with Europe and the U.S. for expanding Domestic investment: improve predictability through a multi-year system, support that goes beyond initial investment, and increase convenience and flexibility for companies (consider revisions to the law). (Consideration with a view to revision of

the law as well)

- Issuance of "GX Economic Transition Bonds" (to be discussed by relevant ministries and agencies this fiscal year with a view to issuing a new form of bonds in compliance with international standards)
- Introduction of an emissions trading system (A trial "emissions trading system" will be launched in the GX League in FY2023, and full-scale operation will begin in FY2026. Paid auction" will be introduced for power generators in phases starting in FY2033 (with specific business contribution).
- Introduction of a fossil fuel levy (A fossil fuel levy system will be introduced starting in FY2028, with a levy on importers, etc. based on the CO2 emissions of each fossil fuel.)
- Utilization of new financing methods (To accelerate GX investment, the "GX Promotion Organization" will implement risk supplement measures (debt guarantees, etc.) in the social implementation stage of GX technology. The GX Promotion Organization will also work to foster international understanding of transition finance and create an environment for the promotion of sustainable finance.)
- (Since cooperation among multiple companies is important to implement GX, we will consider measures to support the efforts of businesses, etc. to address issues related to antitrust law, such as joint disposal of equipment, joint procurement of raw fuel, etc., and data sharing, taking into account the international competitive situation.)

【International Expansion Strategy】

- Formation of a clean market (promote the establishment of an international evaluation method for the diffusion of green products, as well as the creation of a new value axis to evaluate the contribution of companies to the reduction of greenhouse gas emissions in society as a whole (reduction contribution)).
- Promote GX in Asia (realize the "Asian Zero Emissions Community (AZEC)" concept and further promote GX in Asia)

【Fair transition, GX for society as a whole, including small and medium-sized enterprises】

- Reskilling support, etc. (Promote both skill acquisition and smooth labor mobility to green and other growth sectors.)
- Promote GX in regions and lifestyles (In addition to the creation and nationwide development of decarbonization leading regions, local governments will take the lead in decarbonizing their administrative operations by utilizing financial support. A new national movement will be developed nationwide to stimulate demand for decarbonized products, etc.)
- Promotion of GX for small and medium-sized enterprises (promote initiatives throughout the supply chain, including SMEs, through support using manufacturing subsidies, human resource development of SME support organizations for push-type support, further expansion of partnership building declarations, etc.)
- GX Startup Support (Radically strengthen support for R&D, social implementation, etc. for startup companies in GX-related fields.)

【Progress evaluation and review】

- Periodic progress evaluation and review (In implementing new policy initiatives to realize GX, such

as the "Growth-Oriented Carbon Pricing Initiative," progress evaluation will be conducted periodically at the GX Implementation Council and other bodies, taking into account the progress of GX investment in the public and private sectors, global trends and their impact on the economy, trends in technological development, etc., and necessary reviews will be effectively conducted based on these assessments). (In implementing the new policy initiatives to realize GX, including the "GX Concept", the progress of GX investment by the public and private sectors, global trends and economic impacts, and trends in technological development will be regularly assessed by the GX Executive Committee and other bodies, and necessary revisions will be effectively made based on the assessment.)

(2) Realization of a digital society

① Social issues and needs to be addressed

(Significance and impact of the realization of a digital society)

- In an advanced digital society (Society 5.0) where cyberspace and physical space are highly integrated, all people and things will be connected, various knowledge, information, and data will be shared, and necessary information, data, and services will be provided when needed. In addition, the use of AI will create new innovations one after another and enable activities that transcend the conventional limits of human cognition and ability, thereby solving various issues that have been difficult to solve in the past. Therefore, through the realization of a digital society, in addition to the GX and economic security, issues such as the declining birthrate, aging population, Labor shortage, depopulation of rural areas, and disparity between the rich and the poor can be overcome.
- The digital-related technologies that support such a digital society are evolving at a remarkable pace, and at times, technological innovations that could be described as discontinuous, such as generative AI, can quickly create new demand and solve previously unimaginable problems.
- To this end, we will create an environment in which innovations that have not yet been seen can be created one after another in order to realize a digital society, thereby helping to overcome these fundamental issues and creating new added value for society. We will also contribute to the realization of a society in which people can have hope and in which each individual can play an active role comfortably.

(Progress of digitization across industry and society)

- Today, digitalization is accelerating in all industries and societies. The rapid advancement of computer-related technologies/communication-related technologies has led to the development of digital-related devices that are larger in capacity, faster in speed, smaller in size, and more power-efficient, and information processing, which was initially utilized only in certain fields, is now used in all areas of industry and society.
- We are entering an era of competition to be the first to adopt cutting-edge digital-related technologies that are constantly innovating, and to compete in how to effectively use technology to create added value (DX) by making full use of data. At the same time, the development of social infrastructure to implement digital services throughout society as quickly as possible is also an urgent issue, so that

people can experience the improvement in their lives and economic standards that digitalization brings.

(Increased demand due to cycles of innovation in digitally related technologies and increased and more sophisticated data processing)

- As semiconductors, which play a central role in information processing, continue to advance in sophistication, and the communications environment continues to increase in speed and capacity, new services that utilize ever more sophisticated technology to process even more data are being created one after another.
- As digital technologies become more sophisticated, the volume of data processing expands, and the demand for advanced utilization of the large amount of data generated by the expansion leads to further development of digital technologies, resulting in a constant cycle of "digital-related technological innovation and data processing sophistication. This is a constant cycle of "digital-related technological innovation and data processing sophistication.
- With the emergence of innovative technologies such as AI and quantum computers, which can be described as discontinuous, and the rapid implementation of technologies including Web 3.0/blockchain, demand for digital-related technologies continues to grow. In particular, with the emergence of generative AI, demand for computation will further expand as digital technologies are used in a wide range of fields, including those with high barriers to entry.

(Need for continued major investment to join the leading group in the realization of a digital society)

- If we fail to ride the virtuous cycle of digital-related technological innovation and data processing sophistication now, we will lose the opportunity to catch up with the leading group in the global digitalization trend and grow our country's economy and society as a whole innovatively.
- Attracting advanced semiconductor industry, fierce competition among startups and major IT companies over generative AI, securing the supply chain for quantum computers, and human resource development, R&D, and regulatory development for Web 3.0/blockchain, the world is making massive investments in digital-related fields and competing for leading group status. Intense competition.
- Japan has just embarked on large-scale investments aimed at realizing a digital society, including the decision to take bold budgetary measures for the semiconductor industry.

②Mission

- To establish a leading position in the world of digital society by quickly realizing the evolution of next-generation computing platforms that incorporate AI and quantum computers, which will be the key to solving all social issues, and the semiconductors that support them, and by utilizing them to a high degree, to add value to industry and society as a whole. We are committed to the following goals.
- Specifically, the following three infrastructure will be developed: (1) digital industrial infrastructure that supports computing power itself; (2) digital lifelines, which are the social infrastructure of hardware, software, and rules necessary for the implementation of digital services, including a data collaboration infrastructure that promotes data sharing across companies and industries; and (3) a digital human

resource infrastructure that supports the development of human resources responsible for social implementation of digital-related technologies (DX). Through the development of a digital human resource infrastructure that supports the implementation of digital technologies, new products, services, and business models utilizing digital technologies will be created in Japan, creating new added value for the global economy and society as a whole (DX).

- We will revitalize the economy by creating many sustainable and valuable Web 3.0-related businesses in the areas of culture, economy, finance, solving social issues, and other areas. The project also pursues the possibility of leading to the seeds of technology that will support the construction of a global data sharing infrastructure and the distribution of trust-secured data in the Society 5.0 era.

③ Demand that should be met proactively and new ways of supply to meet this demand

【Digital Industrial Infrastructure】

- Promote the advancement of key elements that determine computing power itself (semiconductors, software, etc.) and elements that realize an environment that can be utilized in any location (storage batteries, communication infrastructure, etc.).

【Digital Lifeline】

- Developing new social infrastructure throughout the nation to promote social implementation of digital services, such as accelerating data collaboration across companies and industries.

【Digital Human Resource Infrastructure】

- Promote the development and securing of human resources by industry, such as digital promotion personnel who are in charge of utilizing digital-related technologies for social implementation, and semiconductors and storage batteries that support digital industrial infrastructure.

【Web 3.0】

- Developing a business environment for the development of Web 3.0 and blockchain technology.

④ Long-term goals for the foreseeable future

- Semiconductors: By 2030, the total sales (semiconductor-related) of companies producing semiconductors in Domestic will exceed 15 trillion yen through additional public and private investments in the amount of over 10 trillion yen.
- Storage batteries: Establish a Domestic manufacturing base of 150 GWh/year of storage batteries and materials by 2030 at the latest, with additional public and private investment of over 7 trillion yen over the next 10 years, and ensure that Japanese companies as a whole have a manufacturing capacity of 600 GWh/year (a share of over 20%) in the global market by 2030.
- Information Processing Infrastructure: The goal is to promptly foster fundamental research and development capabilities related to generative AI in Japan, and to have a general-purpose quantum/classical hybrid computing infrastructure provided in Japan as a real business by 2030.
- Advanced information and telecommunications infrastructure: Through the development of distributed data centers and other computing resources in the region, a business model of "local

production for local consumption" of data and energy will be realized, with a view to utilizing all-optical network technology, which is expected to be put into practical use around 2030.

- Digital Lifeline: Establish digital lifelines across the nation in every nook and cranny of the country, spanning hardware, software, and rules necessary for providing digitally-enabled services (formulate and implement a comprehensive national development plan for digital lifelines). Regarding the data linkage infrastructure for the supply chain and value chain, the total annual transaction value of products and services will be 10 trillion yen around FY2030 and 100 trillion yen around FY2050.
- Cyber Security: By 2030, establish a certification system for IoT devices and establish a center for improving cyber coping capabilities to improve cyber security measures for the entire country.
- Human resources for digital promotion: Develop 2.3 million digital promotion human resources across the government by the end of FY2026.
- Web 3.0 and blockchain: Establish a business environment, build a global data sharing infrastructure, and promote the distribution of trust-secured data, leading to the realization of Society 5.0. Increase the number of companies and businesses that use Japan as one of their main bases while conducting international business activities and R&D, and the number of high-level human resources.

(Other targets and reference indicators)

【Digital Industrial Infrastructure】

- Semiconductors
 - ◇ In order to develop the industrial infrastructure indispensable for automated driving and robotics, etc., we will establish a domestic supply system for advanced logic semiconductors that will increase the energy efficiency of information processing by 10 times compared to the current level by 2030, and will promote the use of power semiconductors that will reduce power loss by 50% compared to the current level.
- Storage batteries
 - ◇ Full-scale commercialization of all solid-state batteries around 2030, and Japan will maintain and secure its position as a technology leader after 2030.
- Advanced Information and Communication Infrastructure
 - ◇ Aiming to develop open, secure, and robust 5G networks globally, we will increase the open RAN share and the share of Japanese companies in the global 5G base station market by 2030.

【Digital Lifeline】

- DX of human flow and logistics
 - ◇ The software, hardware, and rules infrastructure for drones, self-driving vehicles, service robots, etc. to operate autonomously at or above a certain speed will be provided in the drone area around FY2024, and the service area will be expanded to all of Japan's trunk routes around FY2030, and to all of Japan's inhabitable areas around FY2050. By FY2050, the service area will be expanded to all inhabitable areas in Japan.

【Digital Human Resource Infrastructure】

- Digital Promotion Human Resources

- ◇ From the viewpoint of utilizing new technologies such as generation AI, we will promptly implement policy measures to develop human resources for digital promotion, starting from where possible.
- Semiconductor Human Resources
 - ◇ In addition to individual efforts by industry, educational institutions, and government, industry, academia, and government will work together to promote efforts on a regional basis to develop and secure human resources who will support the semiconductor industry and be responsible for its future.
 - ◇ With the aim of establishing a foundation for the design and manufacturing of next-generation semiconductors in the late 2020s, the LSTC will play a central role in studying the development of professional global human resources who can handle everything from semiconductor circuit design to state-of-the-art packaging and mass production processes.
- Battery Personnel
 - ◇ To develop and secure battery human resources, a battery human resources development program will be implemented at regional technical high schools, technical colleges, and AIST Kansai Center, mainly in the Kansai region, from FY2024, and the efforts will be expanded to other regions from 2025 onward, depending on needs.

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Digital Industrial Infrastructure】

(Semiconductor)

- Development of manufacturing infrastructure for semiconductors, manufacturing equipment, and sub-materials and raw materials (utilizing the Advanced Semiconductor Fund, the Economic Security Fund, etc.), R&D support for the establishment of next-generation semiconductor design and manufacturing infrastructure, etc. (utilizing the Post-5G Fund), and human resource development (see **【Digital Human Resource Infrastructure】** , below).

- Continue and strengthen the development of manufacturing infrastructure and R&D support (based on the revised Semiconductor and Digital Industry Strategy to be compiled midyear). (In accordance with the Semiconductor and Digital Industry Strategies, the Company will improve manufacturing infrastructure and provide R&D support for advanced and next-generation semiconductors, industrial specialty semiconductors, advanced packages, manufacturing equipment and materials, etc., that contribute to power savings and advanced computing power.)

(Information Processing Infrastructure)

- Assistance in securing a stable supply of cloud programs, development of hybrid cloud usage infrastructure and hyper-distributed computing technologies (through the Economic Security Critical Technology Fostering Program and the Post-5G Fund).
- Ensure development capacity for generative AI (development of critical cloud technologies, quantitative and qualitative expansion of computational resources, promotion of data maintenance and AI development in specific fields, accelerated support for companies developing competitive basic

models, and creation of a research environment that attracts top talent from around the world for friendly competition)

- Building information processing infrastructure through industrialization of quantum technology, etc., and strengthening promotion and support of research and development for the industrialization of quantum computing technology.

(Storage battery)

- Expansion of the manufacturing base for storage batteries and sub-materials (utilizing the Economic Security Fund), human resource development (see [Digital Human Resource Base] below), promotion of technological development of next-generation batteries, international collaboration with volunteer countries to strengthen the global supply chain, securing upstream resources, etc.
- Efforts to further expand the manufacturing base for storage batteries, sub-materials, and manufacturing equipment
- Establishment of a public-private partnership system to secure upstream resources and expansion of JOGMEC's functions
- Strengthening global supply chains by promoting strategic alliances of like-minded countries and overseas expansion
- Creation of new innovations in the storage battery field (technological development and verification, human resource development, data linkage infrastructure development, etc., with a view to mass production of next-generation batteries)

(Advanced Information and Communication Infrastructure)

- Assist with feasibility study of decentralizing data centers to rural areas
- Promote regional decentralization of data centers (work to develop a third or fourth core data center in the Hokkaido and Kyushu areas to complement or substitute for the Tokyo and Osaka areas, etc.).
- Collaboration among countries through the economic version of 2+2, QUAD, etc. to promote open RAN, and support for the development of post-5G information and communication systems through the Post-5G Fund
- Strengthening Japan's competitiveness for the advancement and international deployment of telecommunications infrastructure (work on technological development for stable and efficient operation of the entire base station system using post-5G funds, as well as for high-performance and energy-saving technologies).

(Cyber Security)

- Promotion of enhanced cyber security measures throughout the supply chain, including SMEs (formulation and dissemination of guidelines, support for introduction of cyber security helpdesk services for SMEs, and training of security personnel)
- Revision and further dissemination of standards for cyber security help team services (to further address the needs of industry, including small and medium enterprises, to respond to increasingly sophisticated cyber attacks)
- Establishment of a base to improve the cyber coping capability of the entire country through cooperation among industry, academia, and government, etc.

- Creating an environment for secure software distribution and IoT security

(Other)

- In common with other areas, consider budget and tax schemes in strategic areas (GX, DX, etc.) that are competitive with Europe and the U.S. to increase Domestic investment: improve predictability through a multi-year system, support beyond initial investment, and increase convenience and flexibility for companies (also consider legal reform).

【Digital Lifeline】

- Design, development, and provision of mechanisms for data linkage and system linkage (publication of the 4D Spatiotemporal Information Infrastructure Guidelines (April 2023) and the Guidelines for Data Linkage Mechanisms in the Field of Supply Chain (May 2023). Launch of the "URANOS Ecosystem," an initiative to design architectures, conduct R&D and demonstrations, and promote social implementation and dissemination in collaboration with industry, academia, and government in order to link and utilize data across companies and industries (April 2023). (April 2023)).
- Social implementation of data linkage and system linkage mechanisms in Japan (Release of a study policy for the formulation of a "National Comprehensive Development Plan for Digital Lifelines" (March 2023)).
- OSS (Open Source Software) developed based on the guidelines. The goal is to enable private companies to utilize the software when developing their own systems.
- Establishment of a certification system for public interest digital platforms (a data collaboration platform for sharing data across multiple companies, which ensures security, reliability, interoperability, and business stability, and has a certain level of public interest).
- (The "National Comprehensive Development Plan for Digital Lifelines" will be formulated and implemented (The "National Comprehensive Development Plan for Digital Lifelines" will be launched in June 2023, and the "National Comprehensive Development Council for Digital Lifelines" will be established by the end of FY2023. The "National Comprehensive Development Plan for Digital Lifelines" will be formulated by the end of FY2023, including the formulation of digital architecture, etc., the identification of digital lifelines to be developed in line with this plan, the specification of specifications and specifications, the identification of regions to be developed, and the identification of management entities based on an organized division of roles between public and private sectors. In accordance with the plan, the transition of services using digital technology from the demonstration stage to implementation will be accelerated, with the aim of spreading the technology throughout the country.)
- International collaboration on data and system linkage mechanisms (G7 ministers agreed to work on ensuring international interoperability of digital infrastructure (April 2023))
- Ensure international interoperability (Ensure interoperability between initiatives related to data linkage outside of Japan and the Uranos ecosystem.)

【Digital Human Resource Infrastructure】

(Human Resources for Digital Promotion)

- Establishment of digital skill standards (end of 2022) and digital human resource development platform (from 2022) (promotion of corporate DX).
- Human resource development from the viewpoint of utilizing emerging technologies such as generative AI (while continuing discussions with experts and others to examine the need for policy measures, consider short-term measures such as revising digital skill standards and posting courses related to generative AI on platforms).
- Expansion of Unexplored Projects (IPA) and expansion to young human resource development initiatives, particularly in rural areas

(Semiconductor Human Resources)

- Fostering human resources for semiconductors through local industry-academia-government collaboration (e.g., implementation of new curricula at educational sites, on-site classes by companies, etc.)
- Nationwide development of regional industry-academia-government collaboration mechanisms and systems
- Developing professional global human resources for semiconductor design and manufacturing

(Battery personnel)

- The Consortium for Human Resource Development of Storage Batteries in Kansai compiled the direction of the educational program and action plan for FY2023.
- Collaboration between industry, academia, and government to organize learning content and instructional methods for educational programs (FY2023)
- Start a battery human resource development program mainly in the Kansai region, and consider expanding the program nationwide (from FY2024 onward).

【Business Environment Development for Web 3.0】

- Cryptographic assets issued by the corporation itself that meet certain requirements are no longer subject to year-end mark-to-market taxation.
- Other crypto assets will also be examined as necessary, including legal and accounting treatment.
- In April of this year, an interpretation notice was published clarifying, among other things, that security tokens, which are tokens of securities that can be acquired and held by Limited Partnerships for Investment (LPS), are eligible for investment.
- Consideration of adding cryptographic assets, tokens, etc. to the LPS investment targets (promote research and organization of the actual status of funding by businesses, etc., and consider making investment targets under the LPS Law if they contribute to promoting the smooth supply of funds to businesses (with consideration of amending the law)).
- Study to ensure audit opportunities for businesses that handle tokens (study group established at JICPA)
- By the summer of 2023, the committee will proceed with studies to develop the necessary guidelines for audits, etc.
- Support for the creation of Web 3.0 use cases, human resource development in related fields, and the building of communities that contribute to technological development

(3) Realization of economic security

① Social issues and needs to be addressed

(Geopolitical structural changes that reverse globalization)

- Since 2010, while China has increased its presence, its policy of domestic production of strategic technologies and human rights issues have aggravated its confrontation with the United States. Concerns of so-called "decoupling" between the U.S. and China have increased in some advanced technology fields.
- With the disruption of global supply chains due to COVID-19 after 2020, and the addition of Russia's invasion of Ukraine after 2022, a move toward market fragmentation is evident, as countries are increasingly attracting strategic industry sectors domestically and shifting their focus to developing trading rules among volunteer countries rather than WTO trade rules. The WTO is now a market fragmentation mechanism.
- The flow of globalization, in which people, goods, and money come and go freely, which had progressed under the stable international order after the Cold War, has changed, and a reverse turn is taking place.

(Need to respond to political and economic intimidation)

- As changes in the geopolitical environment and conflicts of interest among countries in various positions become more apparent, there are also serious concerns about coercive actions by countries that seek to use their political and economic superiority to impose their will on other countries.
- In order to counter such political and economic intimidation, it is necessary to deepen cooperation with volunteer countries and organize a variety of countermeasures to appropriately respond to the nature of the intimidation.

(Increase investment to maintain and improve autonomy and ensure superiority and indispensability)

- Uncertainty in the international economic order increases as a result of the above changes. Restructuring of the globally expanding supply chain is inevitable.
- In restructuring supply chains, it is necessary to improve autonomy by promoting efforts such as securing domestic production bases for goods and services that are important for maintaining industrial and social activities, and to ensure that Japan has an advantage in supplying essential elements in the supply chain or has a low substitutability. It is necessary to secure an indispensable role.
- Ensure autonomy through the ability to provide essential elements that other countries recognize as necessary for cooperation with Japan, even if they cannot secure their entire supply chain within their own borders. Increased investment in acquiring new capabilities and upgrading existing capabilities to ensure dominance and indispensability.
- In response to political and economic intimidation, we will continue efforts to reduce its effectiveness in peacetime, such as by reducing our dependence on countries that act in an intimidating manner.

② Mission

- Establish a foundation for activities that can maintain and stably develop Japan's industrial and social activities even in the event of a major setback in globalization, disruption of international markets, and fragmentation of supply chains.
- To this end, we will work to promote Economic Security by enhancing autonomy (eliminating vulnerabilities in key infrastructure, supply chains, etc.), ensuring superiority and thus indispensability (improving technological and industrial competitiveness and preventing technology outflows by strengthening R&D, etc.), and maintaining and strengthening the international order based on fundamental values and rules.

③ Demand that should be met proactively and new ways of supply to meet this demand.

(Supply chain resiliency)

- Provide large-scale, intensive, medium- to long-term support to secure stable supply of specific critical commodities, and develop domestic production infrastructure and diversify supply sources.

(Ensuring technological superiority)

- Promote research and development of technologies that are important for Economic Security through programs such as the Economic Security Critical Technology Fostering Program.

(Enhancing Economic Intelligence)

- Initiated the development of a mechanism for information sharing between the public and private sectors to enhance economic intelligence, and the training of specialized personnel.
- Strengthening of management systems related to data and information protection, including the introduction of security clearances, and upgrading of the security of information and communication services.

(Strengthening the security and resilience of critical infrastructure, etc.)

- Preventing external influences from affecting the stable supply of infrastructure services by strengthening the ability to respond to cyber-attacks on critical infrastructure, etc., and through the Economic Security Promotion Act.

(Establishment of countermeasures against political and economic intimidation)

- Strengthening cooperation with volunteer countries that share concerns about political and economic intimidation and establishing a process for organizing and invoking various countermeasures against coercive actions.
- Reinforcement of peacetime efforts to reduce reliance on countries that adopt coercive behavior in order to diminish the effects of coercive behavior.

④ Long-term goals for the foreseeable future

- To realize an environment in which a stable supply of specified critical commodities is ensured, including the achievement of the targets set in the Policy on Initiatives for Securing Stable Supplies of Specified Critical Commodities, as well as to ensure the stable provision of key infrastructure services and to promote research and development of technologies important for Economic Security.

(Example.)

- ◇ Semiconductors: Achieve over 15 trillion yen in total sales (semiconductor-related) for companies producing semiconductors in Japan in 2030 (reiterated).
- ◇ Storage batteries: Establish a domestic manufacturing base of 150 GWh/year and secure manufacturing capacity of 600 GWh/year in the global market by 2030, etc. (reiterated)
- ◇ Machine Tools and Industrial Robots: In 2030, we will secure production capacity of approximately 110,000 units/year for machine tools and 350,000 units/year for industrial robots.
- ◇ Ensure reliability regarding mission-critical infrastructure
- ◇ Cultivation and social implementation of critical technologies through the Economic Security Critical Technology Fostering Program

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Supply Chain Resilience】

- Based on the Law for the Promotion of Economic Security, the government has designated 11 specified critical commodities (8 commodities related to METI, including semiconductors and storage batteries).
- Establishment of a fund to support the efforts of private businesses in making capital investments, etc. to secure domestic production infrastructure to ensure a stable supply.
- Ongoing review of specific critical commodities (constant inspection of Japan's supply chain, ongoing review of specific critical commodities, and consideration of the need for fund projects and capital reinforcement to cope with uncertainties in the business environment, etc., regarding support measures based on the review as well).

【Ensure technological superiority】

- Foster advanced critical technologies through the execution of the Fund for Fostering Critical Technologies for Economic Security (for an immediate 10-year period beginning in FY2022).
- Strengthening of technology preservation (constant review of investment screening and export control, strengthening of measures against forced technology transfer, further promotion of research integrity, and specific studies on measures to prevent human resource outflow, etc.)

【Strengthening the Security and Resilience of Critical Infrastructure】

- Preparations, etc. for the introduction of an advance screening system for the introduction of equipment into key infrastructure in accordance with the Law for the Promotion of Economic Security.
- Consideration of measures to ensure more appropriate management of sensitive data and the safety and reliability of information and communication technology services

【Establish means to respond to political and economic intimidation】

- (To establish a system and framework for a government-wide review of economic coercion (To establish a system and framework for a government-wide review of how to prepare a comprehensive response to economic coercion in a wide range of areas, including people, goods, capital, and

services, under what strategies, in order to materialize cooperation within and outside the G7, so that the national interest is not harmed). (Promote)

【Enhancing Economic Intelligence】

- Establishment of a system necessary for the collection and analysis of information, with the National Security Bureau as the command post, including relevant government ministries and agencies.
- Collect, consolidate, and disseminate information related to Economic Security (to help industries and businesses make autonomous business decisions).

(4) Realization of a new healthy society

① Social issues and needs to be addressed

(Longer life expectancy and growing health needs)

- Longevity is an irreversible trend for the entire world. Staying healthy is one of the fundamental human desires. The need to maintain good health for a long time and to become healthier is great not only among the elderly but also among the young, and both men and women, in Japan and around the world.
- Demand for health-related services, including medical care, is expected to increase against a backdrop of global population growth, urbanization, and aging populations in developed countries.
- At the same time, not only will gene therapy and regenerative medicine become more common, but health-related services are also expected to expand new demands through the use of AI and other digital technologies. PHRs are a prime example.
- As the decline in the working-age population is expected to accelerate in Japan in the foreseeable future, promoting the health of the nation's citizens, regardless of generation, will ultimately contribute to expanding the quantity and quality of the labor force and ensuring the sustainability of the social security system.

(Increased demand with health as a gateway)

- There is potential to add value to all kinds of products and services, including clothing, food, and housing, with health as an entry point. However, if latent needs can be made apparent, demand for such products and services will grow even in a declining population. (Figures in parentheses represent current estimates of the market size in Japan.)
 - ◇ Food will become high value-added due to health consciousness, such as supplements and health foods (3.3 trillion yen in 2020 ⇒ 8.3 trillion yen (3 times) in 2050)
 - ◇ Health tourism (health-oriented travel) will add value to play (2.9 trillion yen in 2020 → 12.7 trillion yen (4 times) in 2050).
 - ◇ The market for prevention-related products (hygiene products, etc.) to maintain health will also expand (0.2 trillion yen in 2020 ⇒ 6.8 trillion yen (34 times) in 2050).
 - ◇ The pure private-sector market for people requiring support and nursing care, such as meal delivery services, will expand (5.4 trillion yen in 2020 ⇒ 18.7 trillion yen (3 times) in 2050), etc.

- Health promotion has the potential to stimulate overall Personal consumption. It has been pointed out that people in Japan, in particular, are hesitant to spend their income and savings on consumption due to uncertainty about whether they will be able to live adequately, including medical care and long-term care. Creating an environment conducive to maintaining good health will reduce anxiety about the future and create a virtuous economic cycle through increased consumption.

(Japan is the world's most advanced country in terms of health)

- Japan leads the world in aging rate and healthy life expectancy.
- In other words, the health challenges in Japan are a mirror image (leading indicator) of the future world, and new products and services that develop domestic demand adapted to the super-aging population can be exported to the rest of the world or otherwise developed overseas.

②Mission

- Based on these issues and needs, as the world's most advanced super-aging society, we will realize a "new healthy society" that simultaneously improves the health of the people, contributes to building a sustainable social security system, and achieves economic growth.

③Demand that should be met proactively and new ways of supply to meet this demand.

(PHR is the key to value-added creation)

- If changes in the highly individualized situation of personal health can be visualized, new added value can be created.
 - ⇒ The core of visualization is the use of PHR (Personal Health Record).

(Health-related, uninsured products and services, including entry into other fields)

- There is a shortage of existing products and services (medical, nursing care, etc.), especially those related to health issues.
- There is potential to add high value to products and services in all areas, including clothing, food, and housing, with health as the starting point. Potential to stimulate new demand by creating an environment where people can safely use products and services that are not covered by public insurance, including not only services covered by public insurance but also those from other fields, and by making daily life the basis for health promotion.
 - ⇒ The market size of the domestic healthcare industry market outside of public insurance is expected to expand (24 trillion yen in 2020 ⇒ 77 trillion yen in 2050).
 - ⇒ The challenge is to ensure quality so that consumers can use the product with confidence, and to manifest latent needs for prevention and health promotion.

(Enhancement of services with business caregivers in mind: especially nursing care)

- In particular, business caregivers who provide care while working are leaving their jobs on a large scale and continuously because they can no longer bear the burden, a major loss from the perspective of securing Japan's labor force. This is due to the fact that the family members of the care recipients are forced to sacrifice their own work to cope with caregiving. If we can develop potential demand for nursing care that cannot be met by current public nursing care services and provide appropriate

private-sector services, along with reforming work styles so that caregivers can balance work and nursing care, we may be able to reduce the number of caregivers leaving the workforce.

- ⇒ Expansion of medical and long-term care services utilizing public insurance is important. However, due to the constraints of company insurance and finances, greater efficiency is needed through the development of nursing care equipment using ICT and robot technology.
- ⇒ Diverse needs that cannot be met by public insurance require expansion of services outside the public insurance system (i.e., long-term care in addition to medical care).

(Responding to new medical needs through programmed medical equipment, etc.)

- There are many unmet medical needs that remain unresolved (unmet medical needs) throughout the world.
- ⇒ Programmed medical devices such as AI imaging diagnostics and apps to help patients change their behavior need to be developed and commercialized.
- ⇒ It is necessary to promote overseas development of innovative products and medicines possessed by start-ups in the medical device and drug discovery fields to expand the scale of their business.
- ⇒ With regard to biopharmaceuticals, in light of the situation where the new corona vaccine was dependent on imports from overseas, it is necessary to establish a dual-use manufacturing base, etc. in Japan and build a production and supply system from normal times.

④ Long-term goals for the foreseeable future

- Healthy life expectancy 72 years in 2016 ⇒ 75+ years in 2040
- Healthcare industry market outside of public insurance (Japan) 24 trillion yen in 2020 ⇒ 77 trillion yen in 2050
- Japanese companies' share of medical devices (global): 3 trillion yen in 2020 ⇒ 13 trillion yen in 2050

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Promotion of PHR, promotion of healthcare startups(mainly contributing to "extension of healthy life expectancy" and "expansion of the healthcare industry market outside of public insurance")】

- (Guidelines for PHR providers will be established by MIC, MHLW, and METI in 2021; private PHR providers will obtain information from public institutions via MyNa Portal with the consent of the individual; information on receipts in 2021 and cancer screening in 2022 will be provided sequentially; tests and medical images will be provided in 2024 and later. (In 2024 and later, information on tests, medical images, etc. will be provided).
- Establish a cross-industry trade association for PHRs (PHR Service Business Association) in July 2023, and provide the necessary support for this purpose.
- Data standardization, rule development, and implementation of demonstration projects to promote the utilization of PHRs (in cooperation with PHR Service Providers Association, if necessary)

- Promotion of information disclosure related to health management, promotion of its spread to small and medium-sized enterprises, and overseas development of related services through proactive information dissemination.
- (To develop a program to foster healthcare startups in collaboration with overseas accelerators, etc., a global healthcare startup contest will be held at the Expo site. In addition, PHR use cases will be created, the business environment will be developed, and the PHR experience will be provided at the Expo site.)
- Establishment of a system to evaluate products with safety functions at a higher level than regulatory standards, etc. (focusing on products for the elderly, which are prone to accidents due to misuse)

【Promotion of services outside the public insurance system, promotion of balancing work and nursing care(mainly contributing to "expansion of the healthcare industry market outside the public insurance system")】

- Estimation and presentation of the future outlook for health-related markets (in Japan) outside of public insurance (24 trillion yen in 2020 ⇒ 77 trillion yen in 2040)
- Estimation and presentation of economic losses due to caregiver turnover, etc. for business caregivers (9 trillion yen in 2030)
- Promotion of services outside the public insurance system as a new source of demand for long-term care (formation and dissemination of models through demonstration projects, and examination of ways to ensure the reliability of services)
- Promotion of support for balancing work and nursing care in companies (visualization of initiatives by leading companies, addition of items related to balancing work and nursing care as evaluation items for "health management," and development of guidelines for companies working to support balancing work and nursing care).
- Expanding the scope of priority areas for nursing care robot development and supporting the acquisition of certification, etc. to capture overseas markets

【Development and overseas expansion of advanced medical devices (mainly contributing to "expansion of the Japanese market share of medical devices")】

- Supporting the development of innovative drugs for practical use by drug discovery ventures funded by accredited venture capitalists through AMED
- Support for the development of dual-use manufacturing sites and other facilities to produce biopharmaceuticals in normal times and vaccines at the request of the government in the event of an infectious disease contingency
- Support for the development environment, research and development, and overseas expansion of programmed medical devices (SaMD: Software as a Medical Device) that create new value
- Promote strategies for international expansion (mainly in Asia and Africa, including the formation of bases in each country in cooperation with international organizations and the building of networks with medical professionals through the dispatch of missions, etc.)

(5) Realization of a resilient society against disasters

① Social issues and needs to be addressed

(Increase in natural disasters due to climate change, etc.)

- Climate change and other factors have led to an increase in damage from natural disasters worldwide (weather disasters increased five-fold in number and economic losses more than seven-fold to US\$3.64 trillion in the 50 years from 1970 to 2019).
- Not only "mitigation" of climate change, but also "adaptation" to climate change that has already occurred is urgently needed. In addition, the COP has begun discussions on loss and damage support measures for vulnerable developing countries in response to the manifestation of the adverse effects of climate change.
- In Japan, not only wind and flood damage but also damage from huge earthquakes are expected in the future. Companies and local governments need to take further measures for disaster prevention and resilience.

(Disaster preparedness needs using advanced technology and innovation)

- Technological progress expands the possibilities for disaster prevention and resilience, including awareness, simulation, and optimization. Contribute to mitigation of disaster damage in municipalities and supply risk spreading through corporate supply chains.
- Japan is leading the world's discussions on disaster reduction, including the "Sendai Framework for Disaster Reduction" (2015). Japan will contribute to solving social issues around the world while simultaneously realizing economic growth by uncovering global needs for the products, services, and technologies of Japanese companies that have been nurtured in Japan, a "disaster-prone" country.

② Mission

- As natural disasters become more severe due to climate change and other factors, we will promote the creation, expansion, and social implementation of innovative technologies that can be cultivated only in Japan, a "disaster-prone country," to reduce the occurrence of disasters, minimize damage, speed recovery, and realize better reconstruction, while developing industries that will contribute to these efforts.
- In addition, we will deploy such advanced technologies overseas to contribute to improving the world's resilience while capturing growth markets overseas.

③ Demand that should be met proactively and new ways of supply to meet this demand

(Promote investment in corporate disaster prevention and resilience)

- In addition to direct damage caused by natural disasters, indirect damage that spills over through the supply chain has become apparent in recent years.
- It is important to create an environment in which companies recognize that investment in disaster prevention and resilience to stabilize corporate activities contributes to the creation of medium- and long-term value for the company, and to promote such efforts on their own.

- ⇒ Increased introduction of products and services that contribute to improving corporate resilience (e.g., software that simulates damage caused by natural disasters, systems that enhance supply chain management, etc.).

(Introduction of advanced disaster prevention and mitigation solutions in municipalities)

- Local governments face various challenges in disaster management, such as accurate and rapid assessment of damage and Labor shortage in disaster response. By promoting the introduction of advanced technology that contributes to solving such problems, we are developing demand and upgrading disaster prevention response.
- ⇒ Provide services that contribute to the advancement of disaster prevention administration (e.g., early detection of disasters, more efficient evacuation center operations and disaster supplies management) in a manner that meets the needs of local governments while ensuring reliability.

(Acquisition of overseas markets)

- Disaster damage is increasing globally against the backdrop of climate change, and the COP has also decided to double adaptation support for developing countries and take new financial measures to address loss and damage, suggesting increased financial flows to cope with weather-related disasters.
- It is important to overcome challenges such as lack of funds in developing countries and lack of understanding of needs and seeds to capture overseas demand.
- ⇒ Development of products, services, and technologies cultivated in Japan, a "disaster-prone country," to overseas markets.

④ Long-term goals for the foreseeable future

- Capture the global market, including the adaptation market in developing countries (up to about 77 trillion yen/year by 2050).

(Other targets and reference indicators)

- Aim to increase the number of companies introducing smart security in conjunction with related initiatives such as industrial DX.
- Regarding overseas markets, double the number of overseas use cases of products and services of Japanese companies that contribute to disaster prevention and adaptation by 2030.
- Create 80 cases of overseas deployment of Japanese products and services utilizing international finance related to climate change (GCF, CTCN) by 2030.
- Accelerate the creation of examples of overseas development of products and services of Japanese companies that contribute to smarter industrial security.
- Consideration of measures to contribute to the targets set by the Sendai Framework for Disaster Reduction (such as significant reduction in the number of disaster victims, reduction in direct economic losses due to disasters as a percentage of GDP, etc.).

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Disaster prevention and resilience investments by companies】

- Promote corporate investment in disaster prevention and resilience (while linking with SX initiatives, organize a path to mid- to long-term value creation, and consider institutional support).
- Establish an environment for the introduction of smart safety (through revisions to the High Pressure Gas Safety Act, the Electricity Business Act, and the Gas Business Act, make digital-based voluntary safety initiatives a mandatory requirement under the certified business operator system, and establish institutional measures to simplify administrative procedures for certified business operators).
- Efforts to promote further introduction of smart security
 - ◇ Study on how inter-company data collaboration should be (organizing criteria for data sharing among plant owners (plant users), IT vendors, IT consultants, etc., and specifications of data necessary for big data formation, starting with petroleum refining complexes and other complexes that have many similarities in their plants).
 - ◇ Organize IT literacy required for personnel to utilize smart security (Survey on digital skills required for operators to introduce and establish smart security. (Survey on the technical knowledge necessary for operators to acquire digital skills, and the awareness that needs to be fostered, etc., was compiled into a manual).
 - ◇ Investigate cost-effectiveness of smart security implementation
 - ◇ (As a subcommittee of the Smart Safety Public-Private Council in the high-pressure gas safety field, a meeting was held where major companies in the high-pressure gas safety field gathered.)

【Introduction of Advanced Disaster Prevention and Mitigation Solutions in Municipalities】

- Support for start-up in the resilience field (promotion of introduction of advanced disaster prevention technologies to municipalities through the SBIR system, etc.)
- Examination of public-private partnerships that contribute to disaster prevention (disaster supplies, etc.)

【Overseas market acquisition】

- FS survey for overseas development (identify institutional and technical issues related to response to weather disasters, etc. in developing countries, and support utilization of international cooperation schemes, etc. and coordination with local governments (national and local) to resolve these issues)
- FS research to overcome institutional and technical issues (conduct research that includes the use of subsidies from international cooperation schemes, etc., necessary to formulate projects in the field of adaptation, and to obtain requests from developing country governments to form a "pattern" for successful overseas expansion).
- Holding international workshops (disseminate Japanese technologies and initiatives necessary for coping with weather-related disasters in developing countries to the rest of the world, and through holding international workshops in the public and private sectors, deepen understanding of the usefulness of Japanese adaptation technologies among governments of developing countries and build a system for utilizing international cooperation schemes, etc.)
- Improving Disaster Preparedness in Developing Countries in Partnership with UN Agencies (The Ministry of Economy, Trade and Industry (METI) and the UN-HABITAT Fukuoka Headquarters announced the "SUBARU Initiative" to improve the resilience of cities in the Asia-Pacific region)

together with Japanese companies. The project will support projects in which Japanese companies contribute to the specific needs of local governments (cities) in developing countries and work with UN agencies to improve disaster preparedness in developing countries. (Consider matching five cities in the Asia-Pacific region with Japanese companies)

- International publicity of adaptation technologies (creation of a collection of adaptation good practice case studies for developing country governments and international organizations to publicize adaptation technologies)
- Dissemination of initiatives through international standardization, cooperation with the Sendai Framework for Disaster Reduction and various international conferences, etc.

(6) Realization of a bio-manufacturing revolution

① Social issues and needs to be addressed

(Potential to solve social issues such as decarbonization, resource autonomy, food crisis, etc.)

- The wide range of social issues common to the world, such as decarbonization, resource autonomy, food crisis, ocean pollution, and Economic Security, are largely due to the way the current manufacturing processes of industrial products are being carried out.
- The manufacturing process needs to be transformed to address various issues, which is especially urgent in Japan, a resource and food importing country.
- Biomanufacturing (production of materials by cells of microorganisms, plants, etc.), which utilizes unused resources such as CO₂ and significantly reduces fossil-derived resources, is a game changer that will enable manufacturing that overcomes the above issues.
- The implementation of bio-manufacturing is foreseen to lead to a massive industrial structural transformation on a global scale. The U.S. Presidential Decree analyzes that bio-manufacturing will displace approximately 4,000 trillion yen (\$30 trillion or one-third of global manufacturing output) worth of existing manufacturing activities within the next 10 years.

(Issues to be addressed in the shift to biomanufacturing)

- What needs to be overcome for social implementation are technical capabilities, marketability (cost competitiveness), and consumer acceptance.
- It is difficult to shift the manufacturing process if the market is left to its own devices. It is necessary to establish a domestic industrial base through the development of a market environment for expanding the introduction of bio-derived products and a business environment for the creation of new industries.

② Mission

- By bio-oriented materials and manufacturing methods, we will realize the world's most advanced bio-economy society in 2030.

③ Demand that should be met proactively and new ways of supply to meet this demand

(Development of high value-added areas)

- To promote investment in biotech manufacturing, it is necessary to ensure return on investment. Needs for bio-products are emerging in high value-added areas, such as products with innovative functions and performance and products that require added value such as low environmental impact.
- Regulations triggered by social issues may create new markets and lead to the use of biomanufacturing (e.g., conversion from aviation fuel to SAF)
- First, the company will focus on high value-added areas, developing technologies for lower cost, mass production and horizontal deployment, and examining the regulations and market conditions necessary to solve social issues, with the aim of entering the market for general-purpose products over the medium to long term.
 - ⇒ Competition for investment in biotechnology is intensifying around the world, and industrial policy competition to induce such investment in their own countries has begun. In Japan, there is an urgent need to strengthen international competitiveness supported by technological development and to promote domestic investment, including the expansion of production capacity to meet global demand on the back of such development.

④ Long-term goals for the foreseeable future

- Bio-related markets (global): 60 trillion yen in 2018 ⇒ 92 trillion yen in 2030
- Biotechnology-related investment (Domestic): 3 trillion yen per year by 2030

(Other targets and reference indicators)

- Contribution to GX (CO2 reduction): In addition to curbing emissions by replacing existing manufacturing processes using fossil raw materials, the company contributes to GX by increasing CO2 absorption through bio-manufacturing using hydrogen-oxidizing bacteria that directly absorb CO2. Based on certain estimates, GX aims to reduce GHG emissions by 1.35 billion tons globally in 2040 and 4.21 billion tons in 2050.
- Contribution to resource recycling and marine pollution: Contributes to the control of marine pollution and resource recycling by enabling the production of biodegradable and easily recyclable products using unused resources such as CO2 and waste as raw materials.
- Contribution to Economic Security: In addition to enabling domestic procurement of raw materials that previously depended on overseas sources by using unused resources such as CO2 and waste as raw materials, the project will contribute to Economic Security by promoting collaboration among volunteer countries while retaining important technologies such as microbial design platform technology in Japan.
- Contribution to the food crisis: It enables the production of alternative proteins and cellular foods, contributing to the food crisis.

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Accelerate the development of microbial platform technology and production technology】

- Strategically formulate projects using the GI Fund Project and the Fund for Promoting the Revolution in Biotechnology Manufacturing (promote technological development and encourage the entry of

businesses in different fields, mainly microbiological equipment platform businesses, as well as collaboration among businesses)

- Steady execution of both projects (~around FY2030), additional support for R&D and social implementation as needed

【Efforts to improve the market environment】

(Efforts to create and expand markets for bio-derived products)

- Mechanisms to transfer the added value of bio-derived products to economic value (certification, crediting, product labeling, etc. for the added value of bio-derived products, such as GHG emission reductions, etc.)
- Safety assessment of bio-derived products
- Mechanisms to create markets (e.g., public procurement of bio-based products that contribute to decarbonization, industry standards for products and technologies, etc.)
- Technology Standardization

(Efforts to form consumer acceptance)

- Communication with Consumers (Promote the value of reducing environmental impact and Economic Security in the medium to long term, while fostering understanding among consumers through risk communication)
- Develop product labeling rules and branding of biotech products to help consumers make appropriate choices

【Establishment of domestic industrial base through improvement of business environment】

- Develop and secure human resources that are in short supply to promote the implementation of bio manufacturing, such as in the bio x digital field.
- Establishment of a base where demonstration projects can be undertaken (to encourage venture companies and companies trying to enter the market from different fields)
- Improvement of investment environment for promising start-ups (in collaboration with start-up support initiatives)
- Strengthen the competitiveness of related industries, including peripheral equipment such as laboratory equipment, measuring instruments, sensors, and reagents that support biotech manufacturing.

(7) Establish a growth-oriented, resource-autonomous circular economy

① Social issues and needs to be addressed

(Constraints and risks to be solved by a resource-autonomous economy, and opportunities for growth through their solution)

- The world's demand for various "resources" is increasing, and there is concern about their future depletion. In addition, there are resources whose supply is unevenly distributed among certain countries. In particular, Japan has a low rate of resource self-sufficiency, and there is concern that procurement risks will increase. (Resource Constraints and Risks)

- On the environmental front, international restrictions on transboundary movement of waste are becoming stricter, while in Japan there is a shortage of final disposal sites for waste. In addition, climate change countermeasures require reduction of greenhouse gas emissions in the raw materials industry. (Environmental Constraints and Risks)
- While the market size of the "circular economy" is expected to expand and capital inflows are expected to increase, there are risks such as increased outflow of national wealth and exclusion from the global market due to the need to secure soaring resource prices (growth opportunities) if the response is delayed.

②Mission

- Control the risk of international supply disruptions as much as possible, and lead to strong growth through making the domestic resource recycling system autonomous and resilient. (i.e., rebuilding a resilient domestic and international resource circulation system over the medium to long term).

③Demand that should be met proactively and new ways of supply to meet this demand.

(Source of value added)

- The total global market related to the Circular Economy is expected to be worth \$4.5 trillion in 2030 and \$25 trillion in 2050.
 - ✧ For example, expect to manufacture, collect, sort, and recycle plastics, metals, renewable energy-related products (solar panels, storage batteries, etc.), recyclable resources related to clothing, etc. (recycled materials and renewable resources (bio-derived resources including wood and woody resources)), etc.
- The Circular Economy enables the efficient and cyclical use of resources, as well as the utilization of "resources" stocked in the market through new services and other means. The source of added value is the seamless connection and optimization of the processes of economic activities, which used to consist of linear processes from resource processing, and the improvement of Well-Being. In the future, it will be possible to increase added value by reversing the relative costs of natural resources and recycled/reused resources.

(Demand to be met ahead of time)

- In order to establish resource recycling as a value in the market economy, the first step is to promote value-oriented services from among initiatives that lead to smarter consumption, unprecedented and exciting experiences, ethical lifestyle practices, etc. by consumers.
 - ⇒ To this end, we will comprehensively implement measures to improve the competitive environment (e.g., deepening the 4R policy of 3R + Renewable), enhance the Circular Economy Toolkit (e.g., support for architecture construction), and launch the Circular Economy Partnership (e.g., sharing ambitious goals and solving problems in collaborative areas through industry-government-academia cooperation). (sharing ambitious goals and solving problems in collaborative areas through industry-government-academia cooperation).

④Long-term goals for the foreseeable future

- The resource recycling market, which is a new value-added market for addressing resource and environmental constraints, will expand significantly both domestically and internationally in the future. 80 trillion yen in 2030 and 120 trillion yen in 2050 will be realized in the circular economy market.

(Other targets and reference indicators)

- Contribute to carbon neutrality, achieving Economic Security, ensuring biodiversity, and alleviating the final disposal site crunch
 - ✧ Contribution to GX (CO₂ reduction): Out of Japan's recent total greenhouse gas emissions of 1.149 billion tons CO₂ equivalent, waste-related emissions contributed to a reduction of 413 million tons CO₂ equivalent (36%).
 - ✧ Contribution to Economic Security: Ensure autonomy (controllability) by reducing dependence on foreign countries for resources through resource recycling
 - ✧ Contribution to biodiversity (consistent with ecosystem preservation): Curbing the destruction of biodiversity caused by large-scale resource extraction, etc., by curbing the use of virgin resources through resource recycling.
 - ✧ Contribution to alleviating the tightness of final disposal sites: The tightness of final disposal sites, which has been resolved mainly through waste combustion (thermal recycling), is being alleviated through resource recycling in a way that is compatible with GX.

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Revision of institutional framework to accelerate arterial and venous linkages, measurement and disclosure of circulation, CO₂ emissions】

- Consideration of expansion and strengthening of 3R-related legislation: addition of items covered by the Law for Promotion of Effective Utilization of Resources, optimization of labeling system to visualize recycling value, deregulation for resource recovery, etc. (Develop "Design for Environment" based on conventional 3R into "Design for Circulation" based on circular economy and establish standard specifications. (Develop product-specific standards to establish standard specifications, and consider a mechanism to evaluate particularly excellent product designs as "Top Runner Designs").
- Promote disclosure through the use of CE (Circular Economy) investment guidance, develop labeling standards, etc. (encourage companies to voluntarily disclose information on risks and opportunities related to the circular economy, and encourage constructive dialogue and engagement between companies and investors, financial institutions, etc.). In addition, "visualization" and "development of evaluation standards" of initiatives will be promoted for appropriate evaluation from the consumer and labor markets).

【Construction of an information distribution platform, etc. to ensure traceability through the use of digital technology】

- Support for the establishment of an information distribution platform to promote data distribution to ensure traceability (standardization of product data, establishment of a framework for sharing product

data using QR codes and digital watermarking technology, and introduction of a mechanism to provide incentives for the provision of product data. This will lead to the calculation and labeling of carbon footprints and material footprints based on life cycle assessments and quality assurance of products and materials.)

- SIP project "Establishment of a Circular Economy System" is implemented (from FY2023 onwards. The project integrates data from the procurement of raw materials such as plastics to the design and manufacturing stages, sales and consumption, sorting and collection, and recycling stages, and creates use cases to ensure traceability).

【Support for R&D and capital investment to realize CE】

- GX up-front investment support (~2 trillion yen over the next 10 years from both public and private sectors in the field of resource recycling): Build the next generation industrial base by providing appropriate funding, including risk money, to startups that solve social issues in the circular economy through companion support.

【Industry-Government-Academia Circular Economy Partnership, International Collaboration】

- Promote industry-government-academia circular economy partnerships (establish industry-government-academia circular economy partnerships to study individual policy issues (standardization, marketing, promotion, international collaboration, technology study, etc.), including the above, and promote them in cooperation with the public and private sectors).
- International collaboration (international standardization of the circular economy, compliance with the Convention on the Control of Plastic Pollution and the revised Basel Convention (plastics, E-waste))

(8) Inclusive growth of the region that contributes to coping with a declining birthrate

① Social issues and needs to be addressed

(Low fertility is a common issue worldwide)

- Low fertility is a common issue in developed and emerging countries. Even in European countries with high fertility rates, no country has a stable fertility rate of 2 or higher, and the fertility rates of South Korea and Singapore are lower than those of Japan. The world as a whole is still in the process of searching for a model to overcome the declining birthrate.
- From an economic perspective, the declining birthrate affects both supply and demand. The decline in market growth expectations due to the declining birthrate is one reason why Japanese firms are inclined to invest overseas. If the declining birthrate is reversed, the effect on the labor supply side will be felt 20 years later, but on the demand side, it will quickly lead to market expansion and help foster future expectations.

(The challenge is to restore hope to young people)

- The desired fertility rate was 1.8 in both 2010 and 2015, but dropped to 1.6 in 2021. This is due to the decline in the hopes of unmarried people, the main reason for which is the low income level.
- In order to overcome the declining birthrate as a social and economic problem, it is necessary to sustainably raise the income level of young people, make it easier for them to balance work and child rearing, and create an environment in which they can realize their hopes for marriage, childbirth, and

child rearing, leading to a recovery of hope among young people, including those who have never married.

- The birth rate is higher in other regions than in the Tokyo area, and there is a possibility that other regions are richer in both disposable income and disposable time, making it easier to raise children. However, young people, especially women, are leaving their hometowns for the Tokyo area due to the lack of desired jobs in their hometowns. If we can create jobs that young people want in the region, we can achieve the dual goals of overcoming the declining birthrate and revitalizing the region.

②Mission

- Recover the desired birth rate of 1.8 in the region by raising the incomes of young people through the creation of quality jobs, reforming workplaces so that men and women can balance work and child rearing, and improving the environment for marriage, child rearing, and living. In the future, we will further improve the desired level.

③Demand that should be met proactively and new ways of supply to meet this demand.

(Increased demand due to the resulting increase in births)

- A recovery in the desired fertility rate and the resulting increase in the number of births will first create demand through increased consumer spending related to child rearing, and in the long run, will also help raise overall demand by stabilizing the demographics of the Japanese economy as a whole.
- To achieve this, it is necessary to create good-quality jobs in the region, add high value to the tourism industry, which is expected to grow with the expansion of inbound tourism, balance work and child rearing through reforms in work styles, etc., and respond to improvements in the environment surrounding marriage and child rearing among young people.

(Creation of quality jobs in the region)

- Young people, especially women, are leaving their hometowns for the Tokyo area due to the lack of desired jobs in their hometowns. It is necessary to create jobs that young people want in the region.
 - ⇒ In order to promote medium-sized enterprises, which are expected to play a role in creating quality jobs, driving the local economy, and serving as new players in the growth of the Japanese economy, the program provides intensive support for the development of management strategies, acquisition, training, and retention of human resources, acquisition of external demand, and new business development.
 - ⇒ Furthermore, in order to create small and medium-sized enterprises that will grow into medium-sized enterprises, we will work to achieve growth by strengthening the ability of small and medium-sized enterprise managers to conceive and implement strategies, and by promoting positive business transformation through business succession and handover, M&A, and grouping of businesses.
 - ⇒ In addition, we promote the revitalization of local economies and job creation through the location of new industries in Japan.

(High value-added tourism utilizing local culture, etc.)

- Promoting and adding value to the tourism industry by taking advantage of local climate, culture, and other resources unique to the region will enhance the attractiveness of the region and lead to regional revitalization and the creation of quality jobs.
 - ⇒ Utilize art, design, and sports to update local culture, revitalize production areas, and refine local resources, as well as to increase customer spend.

(Balancing work and child rearing through reforms in work styles, etc.)

- Reforms in the way companies, including local small and medium enterprises, work will increase the disposable time of the child-rearing generation, enabling them to balance work and child-rearing without difficulty.

(Efforts to improve the environment surrounding marriage and child rearing for young people)

- Need to encourage the use of technology and services in various fields to improve the environment in order to create a community where young people can easily raise their children.
- In light of the changes in customs leading to marriage and the large number of people who wish to marry but have not yet taken action, it is necessary to provide support for matching men and women for marriage with a view to rural areas by utilizing services related to marriage.

④ Long-term goals for the foreseeable future

- Through expansion of disposable income and disposable time of young people (especially in the region),
 - Desired birth rate: 1.6 in 2021 → 1.8 in 2030
 - *In the future, we aim to further increase the desired level of demographic stabilization, and create an economic environment that will make this possible.

(Other targets and reference indicators)

- Growth relationships with core regional firms (medium-sized firms and location relationships):
 - ◇ Increase in the rate of increase in the amount of value added by medium-sized enterprises (regional future driving enterprises, etc.)
 - ◇ Increase in the number of factories and other facilities located in Japan (2022: 922)
- Growth relationships with core regional businesses (SME relationships): Achieve the following in 2025
 - ◇ Number of companies growing into mid-sized companies...over 400 per year
 - ◇ Value added per capita (labor productivity)...5% increase in 5 years
- Establish a vision for the economy and industry of the entire region and an eco-system for the circulation of funds and human resources (related to tourism): 2 nights per foreign visitor to Japan in local areas by 2025.

⑤ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Industrial policies that lead to "increased disposable income" through increased incomes for young people and women】

(Growth of core businesses in the region)

- Intensive support for medium-sized enterprises that drive the local economy (e.g., building a network of managers and a support system of experts for new business development) (to be considered with a view to amending the law)
- Support for Wage increases for small and medium-sized enterprises (SMEs) in conjunction with business restructuring, productivity improvement, and other related measures
- Creation of growth-oriented small and medium-sized enterprises (promotion of transformation using succession within the family and third-party succession including M&A, innovation support, enhancement of internal resources such as human and financial resources, and accompaniment support)
- Infrastructure development related to industrial location (development of industrial infrastructure such as industrial water supply for important industries, facilitation of land use adjustment, etc.)
- Measures to pass on prices, including labor costs, and declaration of partnership building
- Establish an ecosystem to promote projects that aim to solve social issues in the region by utilizing impact investment and financing, etc.
- Promote financing practices that do not rely on management guarantees

(Establish a vision for the economy and industry of the entire region and an ecosystem in which funds and human resources circulate)

- Promote investment in tourism and other sectors through the use of art, design, sports, and other activities that take advantage of local resources

【Reforms in work styles and regulations that lead to an "increase in disposable time" for young people and women】

- Promote appropriate working hours, support for balancing work and childcare, and women's activities through reforms in work styles.
- Improvement of local work environments through the promotion of diversity management and selection of best practices
- Introduction of WLB scoring during grant review
- Promote diverse work styles regardless of gender by utilizing the Nadeshiko brand
- Support for regional medium-sized companies to reform their work styles (among medium-sized companies such as regional future driving companies, select companies that meet the criteria for "reforming work styles" in areas such as childcare, health, and women's activities, and conduct PR, etc. for young people and women at companies with particularly outstanding initiatives)
- Introduction of Fem-tech and other companies to solve women's health issues
- Promote the use of household support services

【Efforts to improve the environment surrounding marriage, child rearing, and the lives of young people and women】

- Realization of an educational environment that responds to diverse needs (through full utilization of resources inside and outside the school, meeting diverse needs regardless of residential area or family environment)

- Sustainability of infrastructure for daily life such as transportation and logistics through the use of digital technology (e.g., realization of a "physical Internet" in logistics)
- Nationwide development of successful examples of businesses that solve social issues (creating peace of mind by revitalizing local communities through businesses that solve social issues)
- Matching support for men and women to get married with an eye to rural areas
- ※ In implementing these measures, it is also necessary to develop entities that can complement and replace local governments, which sometimes face difficulties in terms of human resources and speed of decision-making, and that can conceive and implement a vision for the local economy, as well as entities that can build a system of public-private partnership.

<Updating socioeconomic system (OS)>

In order to ensure that the aforementioned macro challenges and directions of the Japanese economy as a whole and the micro responses in individual themes are viewed consistent, it is important to organize each policy theme according to a common framework. However, "Mission-oriented industrial policies" and "Updating socioeconomic system (OS)" approach issues differently. For this reason, with regard to OS reconfiguration, for each of the five themes, we shall ①organize awareness of the issues and the significance of continuous efforts, ②set long-term goals for the immediate future, ③specify the areas and policy directions to be addressed in the medium- to long-term, and ④organize past and future measures.

(1) Human resources

①Awareness of the problem and the significance of continuous efforts

(Vision for Future Human Resources)

- The "Vision for Human Resources of the Future," released in May 2022, states that the entire social system, from employment and labor to education, needs to be reviewed from the perspective of developing and securing human resources to support the future amid megatrends such as digitalization and decarbonization, and recommends a shift away from the old Japanese employment system and toward education that allows people to be absorbed in what they love to do. He proposed a shift from the old Japanese employment system and a shift to education that allows people to be absorbed in what they love.
- The vision stated that companies need to review their employment and human resource systems without sanctuary by promoting their own human capital management. This will also lead to a shift to a society where multiple career and life planning is the norm and diverse human resources can play an active role in their respective positions. It is important to shift from a uniform, one-size-fits-all approach to education to one that allows greater flexibility in the combination of time, space, teaching materials, etc. In order to respond to this megatrend, it is imperative that industry and educational institutions work together to develop human resources with the abilities and skills that will be needed in the future. In addition, it is urgent for industry and educational institutions to work together to develop human resources with the abilities and skills needed in the future to respond to megatrends.

(The Expansion and Challenges of Human Capital Management)

- The "Ito Report on Human Resources Version" published in September 2020, discussed issues related to human resources and human resources in the context of corporate governance reform and sustainable corporate value enhancement, and attempted to initiate human resources and human resources reform with the help of the capital market.
- Since then, there have been policy developments such as the revision of the Corporate Governance Code (June 2021), the Ito Report 2.0 for Human Resources (May 2022), the Human Capital Visualization Guidelines (August 2022), and the mandatory disclosure of human capital information in annual securities reports (January 2023), and in August 2022, the Human In August 2022, the "Human Capital Management Consortium" was also established.
- Thus, although the term human capital management itself has spread rapidly in Japan, the following issues remain
 - ◇ Weak linkage to corporate value enhancement
 - ◇ The focus is only on "how to disclose," and "practice" is weak.
 - ◇ Not much progress has been made in classifying and visualizing skills.
- In addition, human capital management is limited to reforming the management of individual companies, and is unlikely to have an immediate effect in resolving issues that affect the entire labor market in Japan. Therefore, it is necessary to take a fresh look at the issues facing Japan's labor market from a macro perspective and develop measures based on this perspective.

(Issues surrounding the "human resources" field)

- The major challenges are wages that are sluggish compared to other countries, partly due to rising prices, human investment that is lower than in other countries, and labor supply constraints due to a declining population.
- In attempting to solve these issues, the old Japanese employment system is an obstacle. In response to this, human capital management has been promoted, and in addition to this, it will be necessary to change to a flexible labor market that responds to megatrends such as DX and GX.

(Key in turning the turning point into virtuous cycle)

- Due in part to rising prices, this year's Wage increase is the highest in 30 years. In addition, with labor participation reaching the highest level in the world and a structural Labor shortage due to the decline in the working-age population, it will be difficult to secure human resources without a sustained Wage increase. Reskilling, labor migration, etc. are also important from the perspective of promoting the replacement of industry as a whole.
- This "turning point" will be an opportunity to sustain the three virtuous cycles of Domestic investment, innovation, and income growth, while also taking new measures.
- To avoid becoming a bottleneck for domestic investment, we will take all possible measures to address the Labor shortage, both in terms of quality and quantity of human resources.
- To secure and improve the quality of human resources that will be the source of innovation, promote the smooth movement of labor to companies and industries with high growth potential and strengthen the competitiveness of human resources through human resource investment.

- In order to sustain income growth rather than making it transitory, we will secure resources for companies to raise Wage increases by promoting higher value-added through price pass-on, Domestic investment and innovation, and spread Wage increases to small and medium enterprises and non-regular employees.

②Medium-term goals for the foreseeable future

- The goal is to achieve a sustained Wage increase that exceeds price increases, to eliminate Labor shortages, and to increase human investment.

(Other targets and reference indicators (example))

- Increase the percentage of job changers with wage increases
- Expand human capital investment by companies

③Areas to be addressed in the medium to long term and policy direction

In order to sustain the three virtuous cycles of Domestic investment, innovation, and income growth, we will take necessary measures to address Labor shortage and Wage increase, as well as facilitate labor mobility by revitalizing internal and external labor markets, and promote reskilling and human resource development by the public and private sectors.

【①Thoroughly address Labor shortage】

- With an eye on population decline in the mid- to long-term, the company will ease labor supply constraints by promoting the development of an environment in which women, the elderly, and others can play active roles, as well as by making thorough investments in labor-saving measures.

【②Strengthening Efforts for Wage Increases】

- In order to sustain the wage increase in the annual wage negotiations between management and labour unions, which reached the highest level in 30 years, the government will provide direct support for wage increases through a wage increase tax system and other measures, and secure resources for companies to increase wages through measures to pass on prices to small and medium-sized enterprises and by promoting higher added value through domestic investment and innovation.

【③Facilitation of labor migration through activation of internal and external labor markets】

- In addition to the perspectives of Labor shortage and Wage increase, it is necessary to build a labor market where smooth labor mobility occurs in order to promote the replacement of industry as a whole to create new added value. Therefore, i) to activate the internal labor market and seek concrete actions by companies through human capital management to create a system that allows individuals to follow various career paths within a company according to their needs and be promoted according to their skills, and ii) to develop an external labor market, Provide integrated support for reskilling and labor mobility in order to create momentum for reskilling to lead directly to labor mobility and career advancement.

【④Reskilling and human resource development by the public and private sectors】

- At the same time, in order to meet the human resource needs of companies and to ensure that the necessary human resources are available in terms of both quality and quantity, companies will not only train their own employees, but also actively promote reskilling and human resource development in the public and private sectors.

④ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【① Thoroughly address labor shortage】

- Part-time workers' active participation support (Mainly targeting women)
(Introduction of additional points when examining subsidies for companies that support child-rearing and women's active participation, and introduction to companies such as housekeeping support services and Femtech.)
- Publication and dissemination of guidelines on human resources utilization for small and medium enterprises, etc.
- Promotion of foreign human resources (facilitation of employment of foreign students, measures based on discussions on review of the technical internship system and the specified technical skills system, etc.)
- Promotion of investment in manpower saving (promotion of automation and IT in SMEs through the use of the "digital quota" of the Monozukuri subsidy and the IT introduction subsidy)

【② Strengthening Efforts to Increase Wage Increases】

- Continuation of price pass-on measures and proper business transactions for small and medium-sized enterprises (SMEs)
- Promotion of expanded measures to support productivity improvement of small and medium-sized enterprises
- Expansion of the Wage increase taxation system

【③ Facilitation of labor migration through activation of internal and external labor markets】

- Integrated support from career counseling to reskilling/career change for current employees
- Expand activities of the Consortium for Human Capital Management (e.g., formulate multi-company collaborative actions, lead international discussions on information disclosure, set targets for increased human capital investment as a consortium, etc.)
- Promote the use of side hustles and dual jobs at local companies

【④ Reskilling and human resource development in the public and private sectors, including in individual fields】

- Continue to develop and secure digital human resources (develop human resources for DX promotion, reorganize faculties at universities and technical colleges, acquire IT human resources from overseas, etc.)
- Support for companies to establish joint courses at universities, etc.
- Tax support to encourage corporate involvement in the establishment of higher education institutions

- Promote the development and securing of human resources in the semiconductor and storage battery fields through industry-academia-government collaboration to develop human resources with the skills needed by the industry.
- Integrated support for reskilling and Business structure reform in individual sectors with a view to future value chains, in light of changes in industrial structure due to decarbonization, etc.

(2) Startup Innovation

① Awareness of the problem and the significance of continuous efforts

(Role of startups and innovation: replacement of industry, expansionary cycle of innovation)

- In order to realize Sustainable growth in an environment of future Labor shortage, it is important that resources be concentrated in high-productivity, high-wage sectors through the replacement of industry, and it is essential for companies to engage in the creation of new businesses that generate high added value. It is necessary to provide policy support for the start-up ecosystem as an entity that creates new businesses.
- At the same time, in order to solve social issues and realize Sustainable growth, it is necessary for a wider range of innovative technologies and ideas to be commercialized, create new value, and be implemented in society. It is also important to promote the expansion of intellectual capital, which is a cycle of movement and optimal allocation of human resources and technology in search of opportunities and places where they can maximally demonstrate their abilities.

(Issues to be addressed to revitalize the startup ecosystem)

- Although the number of startups, the bearers of innovation, and the amount of funding they raise have increased over the past decade, the gap between the number of startups and the rest of the world has widened in terms of speed and scale, and the number of unicorns has not increased as much as expected. In particular, the ecosystem in the deep tech sector, which is expected to play an important role in solving social issues (mission realization) and has high potential for Japan, is facing various challenges. Furthermore, various issues that need to be overcome in all fields have emerged, including a lack of human resources and funds to support startups and growth, few carve-outs and spin-offs from existing companies and research institutions, and businesses that do not scale.

(Issues for realizing innovation with R&D and technological development at its core)

- R&D investment is expanding rapidly, especially in the U.S. and China, and the number of researchers is increasing. In addition, start-ups are emerging in the U.S., China, and other countries, both in R&D investment and growth. On the other hand, Japan's R&D investment has remained flat, and Japan is the only major country with no increase in the number of researchers, and start-ups have limited R&D investment and growth. It is necessary to increase both the quantity and quality of R&D investment, and take measures to link this to the realization of innovation (i.e., commercialization and market creation).

② Medium-term goals for the foreseeable future

- Startups: 10x investment in the next 5 years (by 2027)

- R&D investment: Total R&D investment by the public and private sectors to total approximately 120 trillion yen from FY2021 to FY2025.

③Areas to be addressed in the medium to long term and policy direction

(Six pillars to strengthen the startup innovation ecosystem)

In the startup innovation ecosystem, we will focus on the following six pillars to strengthen the cycle in which new technologies and ideas are born, lead to commercialization, grow, and generate value.

【①Startup First】

- In order to realize the five-year goal of increasing investment in startups by a factor of 10 in five years and to promote a cycle of innovation originating from startups, the government will (i) expand startup creation, including attracting diverse human resources, promoting carve-outs of technology seeds, and accelerating funding from private investors, and (ii) take necessary support measures to strengthen the startup ecosystem, including promoting the participation of human resources who support growth, expanding funding from institutional investors, creating global unicorns, and accelerating business development and mass production in the field of deep tech. (ii) Support measures necessary to strengthen the startup ecosystem, including promotion of participation of human resources who support growth, expansion of funding from institutional investors, creation of global unicorns, and acceleration of business development and mass production in the deep-tech field. Also, (iii) as described below, implement intensive measures focusing on the role of startups in realizing innovation in each mission field.

【②Creation of human resources and intellectual capital】

- Create an environment where diverse human resources can seek the optimal location and work together to demonstrate their capabilities, and accelerate the creation and circulation of intellectual capital in companies, universities, and other institutions. Strengthen efforts to link intellectual capital not only to inputs but also to results (earnings).

【③Increase the number of challenges based on the premise of failure】

- From the viewpoint of encouraging entrepreneurs, researchers in cutting-edge fields, etc. to take on challenges, a mechanism will be established to encourage hypothesis building and action based on failure, rather than goal setting and evaluation based on success, since major challenges and successes will not occur if failure is not tolerated at all.

【④Focused support for market creation】

- In order to encourage commercialization and market creation for innovation realization, we support the competitive strategies of business managers and concentrate public and private resources, including regulations and systems.

【⑤Startup and innovation policy focused on mission areas】

- In order to realize innovation accompanied by changes in economic and social structure, we will also focus on and promote effective implementation of start-up and innovation support in collaboration with measures in each mission area.

【⑥Strengthening Computational Infrastructure and General Purpose Technology as a National Strategy】

- As a foundation for the innovation cycle as well as the realization of a digital society, strengthen investments in the development and enhancement of AI, quantum, and other computational resources, and in advanced and general-purpose technologies that will bring about future economic and social transformation.

④Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【①Startup First】

- Steady execution of the 5-year plan for startup development (starting in FY2022)

(Expansion of startup creation)

- Strengthen support for women entrepreneurs (establishment of an overseas training program for women entrepreneurs, JIC's investment in a private fund that recruits and trains women capitalists and in a private fund with a policy of actively investing in women entrepreneurs, etc.)
- Expansion of start-up visas (add VCs, accelerators, etc. to the list of organizations managed and supported by private institutions, and consider extending the maximum period of stay)
- Promotion of startup creation by carving out superior technologies and human resources from business companies, etc. (strengthening support for R&D conducted by those who have carved out their own businesses, and promoting matching of researchers and management personnel and fostering of entrepreneurs)
- Consideration of making permanent the tax regime on partial spin-offs
- Consideration of ways to further promote the use of the angel tax system and improve its convenience

(Promoting the growth of startups)

- Review of tax-qualified stock options (elimination of stock custody requirements, relaxation of requirements for granting stock options to outside high-level personnel and reduction of certification procedures, substantial increase or elimination of exercise limits, etc., to be considered for the FY2024 tax reform request).
- Consideration of deregulation of stock option issuance (validity period and details of delegation of resolution from the General Meeting of Shareholders to the Board of Directors)
- Expansion of LPS investment targets to include cryptographic assets, etc., consideration of relaxing requirements for foreign investment ratio restrictions (with a view to amending the law), and positioning of fair value assessment in LPS accounting rules
- Focused support for the creation of global unicorns
- Consideration of a taxation system to promote open innovation in order to promote the utilization of management resources in large companies
- Strengthen support by dispatching IP specialists to VCs, and promote push-type support from the examiner's side (e.g., providing interview opportunities) in patent examinations
- Extension of JIC's operational deadline (with a view to revising the law)
- Deep Tech Startup Policy Package

- (Strengthening support for startups that solve social issues/support for innovation tied to a group of mission measures)

*See "Startup and Innovation Policy Focusing on Mission Areas" below.

【②Creation of human resources and intellectual capital】

- Promotion of industry-academia collaboration (creation and dissemination of guidelines for industry-academia collaboration, industry-academia fusion center projects, TLO Act, etc.)
- Consideration of an innovation box system (from the perspective of strengthening the competitiveness of the location as an innovation center, tax incentives are provided for income generated from domestically developed intellectual property to promote R&D investment by companies for the creation of intellectual property, etc.).
- Promotion of collaboration between Star Scientists (candidates) and companies (subsidies for industry-academia collaborative research between young researchers who are candidates for Star Scientists and companies, dissemination of guidelines for visualization of "knowledge" as a result, etc.).
- Diversification of employment routes for doctoral personnel

【③Increase the number of challenges based on the premise of failure】

- Pilot introduction of prize-based R&D projects (e.g., in the space and AI fields)
- Expand the fields and scale of prize mold R&D projects in the future (considering full-scale implementation)
- Utilization of stage gates in R&D support business (introduction of a system that allows flexible selection of direction changes (pivots) and early withdrawals)
- (Augment the Moonshot Fund and introduce new evaluation indicators (augment the Moonshot Fund and introduce new indicators and mechanisms to proactively evaluate "failures" that encourage more ambitious challenges)

【④Intensive support for market creation】

- Horizontal development of leading initiatives for social implementation in R&D support projects (Verify initiatives to promote social implementation in the GI Fund (management commitment, linkage with business strategy and financial plan, technology research using TSC, etc., standardization strategy, EBPM, etc.) and expand to other R&D projects (post-5G, for example)).
- (Promote companies' efforts to formulate rules, including international standardization, in their integrated reports based on the "Value Creation Guidance" so that they can incorporate such activities into their management strategies and be evaluated by the capital market, and include standardization strategies in the "Guidelines for Governance of Intellectual Property and Intangible Assets"). Strengthening of the standardization strategy in the "IP/Intangible Assets Governance Guidelines. A framework for encouraging changes in corporate behavior based on these guidelines will also be considered.)
- Strengthening the framework for standardization activities (training and utilization of standardization personnel, improving access to human resource information, strengthening cooperation with academia (academic societies), strengthening support functions, etc.)

- Strengthen JAXA's strategic and resilient funding functions
- Deep Tech Startup Policy Package (reiterated)

【⑤Startup and innovation policy focused on mission areas】

(Startup)

- GX field (Radically strengthen support for R&D and social implementation for startup companies in GX-related fields)
- DX field (support for development costs and other expenses for startups working to create use cases for next-generation semiconductors)
- Healthcare sector (development of startup development programs in collaboration with leading overseas VCs and accelerators with strengths in the healthcare sector, and promotion and environmental improvement of innovative medical device development by startups)
- Resilience field (study on promotion of introduction of advanced disaster prevention technologies to municipalities using SBIR, etc.)
- Biotech sector (Utilization of 350 billion yen fund of the Japan Agency for Medical Research and Development (AMED), improvement of fund-raising environment including appropriate listing criteria for biotech start-ups)
- Impact startups (establishment of "J-startup Impact," dispatch of young human resources for training at overseas impact startups, etc., and promotion of registration and utilization of experts to support certification under the B-Corp system)

(Research and Development)

- Analyze and systematize basic elements and conditions of R&D policies specific to mission areas, and evaluate and inspect related policies. Reflected in setting new goals for R&D policy and in KPI and evaluation methods

【⑥Strengthening Computational Infrastructure and General Purpose Technology as a National Strategy】

- (1) Strengthening of the quantum computing development base (As part of the promotion and support for the industrialization of quantum computing technology, AIST will establish a "Global Center of Excellence for Quantum/AI Integration Technology Business Development (tentative name)" to significantly expand the creation of use cases utilizing quantum computers, accelerate the establishment of a supply chain through the evaluation and international standardization of the materials that make up quantum computers, and expand the environment for using quantum and classical computation through the installation of quantum computers in Japan and overseas. The Global Center of Excellence for Business Development of Quantum-AI Fusion Technology (tentative name) will be established at AIST to promote and support the industrialization of research and development of quantum-AI fusion technology.
- Accelerate public-private sector collaboration on AI R&D (build and expand computational infrastructure, including AIST's ABCI (AI bridging cloud), and also utilize AI Japan (Artificial Intelligence R&D Network) to build and strengthen basic development capabilities for fundamental models in language, imaging, robotics, etc.).

(3) Value Creation Management

① Awareness of the problem and the significance of continuous efforts

(Status since the publication of the 2014 "Ito Report")

- Since the release of the Ito Report in 2014, the return on equity (ROE) of Japanese companies has improved to a certain degree, but the increase in profits during this period was largely the result of "controlling the cost of sales" and other factors.
- Many Japanese companies had problems allocating the funds generated from increased profits to medium- to long-term, strategic allocations of management resources (business restructuring, investment in growth, personnel expenses, etc.) and were not aggressive in raising risk money for growth investments. As a result, the company's competitiveness and future growth expectations did not increase, and it was not able to fully increase its corporate value.
- Furthermore, while expectations for domestic demand growth are low due to the declining population, the globalization of corporate activities has led to an emphasis on overseas locations with higher profitability than domestic locations, making it difficult for companies to achieve the optimal investment strategy of "increasing national income through domestic investment and innovation creation.

(Necessity to promote "value-creating management" to realize "improvement of national income")

- In a situation where the "turning point" of rising wages, increased investment, and increased business restructuring can be seen as the last chance to achieve Sustainable growth by solving social issues, Japanese companies must develop a growth strategy through "value creation management," or solving social issues while ensuring high capital efficiency and profitability (high ROE), in order to The challenge is how to establish management that attracts growth expectations (high PER) and sustainably increases corporate value (resulting in high PBR) in a way that leads to "higher national income through domestic investment and innovation creation.
- The government must step forward and encourage domestic investment by companies with its "Mission-oriented Industrial Policy," and individuals must work on their own career development, while large corporations, which account for the majority of Japan's added value, must reignite their own animal spirits and continue to secure the resources to respond to Wage increases, etc., through share buy-backs and other transitory measures. They are required to go beyond transitory measures such as share buybacks and engage in management that creates value on a sustainable basis, and to achieve immediate results for Japan as a whole.

② Areas to be addressed in the medium to long term and policy direction

In response to the "Capital Market Reforms" that will bring greater discipline from the capital markets to listed companies, the government will encourage Japanese companies to pursue "corporate management reforms" aimed at long-term, sustainable value creation, and will take "Mission-oriented industrial policies" in the area of GX and other social issues to achieve a "threefold virtuous cycle" of promoting domestic investment, creating innovation, and raising national income. The government will realize the "three virtuous cycles" of promoting domestic investment, creating innovation, and raising national

income.

- Capital Market Reform (through capital market reforms, encourage companies to implement value-creating management through increased discipline)
 - ✧ TSE will request all Prime Standard listed companies to analyze the current status of their return on equity (ROE, etc.) and market valuation (PBR, etc.) and to formulate and disclose improvement plans, etc., in order to create an environment where investors can continuously evaluate and engage with corporate management, thereby encouraging value creation management of Japanese listed companies through capital market discipline. This will encourage value-creating management of listed companies in Japan.
- Corporate Management Reform(as the government encourages companies to implement value-creating management centered on SX from a medium- to long-term perspective)
 - ✧ Amidst increasing discipline from the capital markets, listed companies should not limit themselves to transitory responses such as share buybacks, etc., but rather develop a "Sustainability Transformation (SX) Management Strategy" from a medium- to long-term perspective to promote long-term, sustainable value creation through the resolution of diverse social issues, and implement this strategy. Encourage the management team to "strengthen executive functions" and "enhance governance" to discipline the management team. Establishment and implementation of "SX Management Strategy" from a medium- to long-term perspective, and governance
 - (1) Backcast-type long-term management: Mid- to long-term value creation strategies such as solving social issues
 - 2) Balance Sheet Management: Business portfolio management and fast, large-scale investments, including intangibles
 - (3) Human capital management
 - (4) Management reform (strengthening of executive functions): Management that steadily implements strategies from a medium- to long-term perspective
 - 5) Strengthen governance to ensure 1) through 4) above: global-level long-term incentive compensation, creation of a succession plan to select an outstanding CEO, a majority independent and diverse board of directors, and thorough dialogue between the CEO and outside directors regarding long-term management policies.
- Mission-oriented industrial policy" (the government promotes Domestic investment mainly in areas of medium- to long-term social issues in which it is difficult for the private sector alone to invest)

③Medium-Term Targets for the Immediate Future

- Ratio of Japanese representative companies (assuming TOPIX 500 companies) with a P/B ratio of 1x or more in 2030 from about 60% to about 80% (on par with STOXX 600 in Europe)
 - ✧ In order to realize value-creating management, it is important to increase capital efficiency and profitability (improve ROE) by executing necessary business restructuring and growth investments (intangible asset investment and capital investment) from a long-term perspective,

and to continue to attract further growth expectations (improve PER) by formulating medium- to long-term growth strategies (improve PBR), and therefore, the current management PBR, which is the value obtained by multiplying ROE (return on equity), a proxy indicator for efficiency, by PER (price-to-earnings ratio), a proxy indicator for corporate growth expectations, is placed as an indicator.

- ✧ Although the above KPIs are used from the perspective of continuous international comparisons of similar companies, they do not imply that only "representative Japanese companies" such as those in the TOPIX 500 should pursue management reforms. All listed companies are required to manage their businesses with an awareness of the long-term and sustainable cost of capital.

④ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Capital Market Reform】

(TSE Initiatives)

The following initiatives being promoted by the TSE are in line with the discussions at the New Direction Subcommittee, which has been trying to encourage efforts toward value-creating management in a situation where corporate value has not been fully developed, with many listed companies having a P/B ratio of less than 1x. The following efforts will be actively coordinated and supported from the perspective of promoting corporate management reform and industrial policy.

- All Prime Standard listed companies are strongly requested to analyze the current status of their return on equity (ROE, etc.) and market valuation (PBR, etc.), and to formulate and disclose improvement plans.
- Decided to introduce a new price index that selects the top 150 companies by market capitalization with the highest P/B ratio or equity spread (ROE - cost of equity).
- After clarifying the deadline for transitional measures, the purpose of "comply or express" should be reiterated and good and insufficient examples should be clearly indicated to encourage voluntary inspections in order to "substantiate" corporate governance of listed companies that tend to fall into only "formal compliance".
- Develop a system consistent with the concept of the new market, including mandatory English disclosure of necessary information in the prime market.

(Efforts by the Financial Services Agency)

While the development of codes and guidelines for corporate governance contributes to the formulation and establishment of formalities, detailed regulations may lead to the formulation and establishment of formalities, and an environment that encourages autonomous reform of awareness is required. The following issues, which are set forth in the "Action Program" published by the Financial Services Agency, are important issues and should be addressed in cooperation with the FSA. In particular, in order to ensure that the market functions soundly in takeover transactions, we will formulate "Action Guidelines for Corporate Takeovers (tentative name)" and follow up on the situation thereafter and take necessary measures in a timely manner.

- Consideration of reviewing the large shareholding reporting system, which is a disincentive to engagement
- Consideration of Tender Offer System
- Consideration of the state of transparency of real shareholders
- Independent Outside Directors Performing Their Functions

【Business Management Reform】

- Formulate comprehensive guidelines for building a strategy for "value creation management" that leads to higher P/B ratios (to be discussed starting this summer) (Formulate a framework for integrated planning and disclosure of business and financial strategies, organize it in an integrated manner with existing guidelines, and present it in a form that can be used to respond to the TSE's requirement for listed companies to "disclose an 'improvement plan' based on a request to realize management with awareness of cost of capital and stock price"). (The framework will be presented in a form that can be used to respond to the TSE's request for listed companies to "disclose an 'improvement plan' based on a request for measures to realize management with an awareness of cost of capital and stock price.)

(Establishment and execution of SX management strategy from a medium- to long-term perspective, governance)

- Penetration of "Ito Report" (1.0-3.0) and "Value Creation Guidance
- Execution of business restructuring and growth investments (e.g., through JIC)
- Human Capital Management ("Ito Report 2.0 for Human Resources", "Human Capital Visualization Guidelines", "Human Capital Consortium") ⇒ See "Human Resources" part for details.
- Selection of "SX Issues" and penetration of the model [Around spring next year] (Select and commend a group of leading companies that formulate strategies for sustainable value creation through solving social issues, etc. and implement the necessary management and business reforms (SX). The SX Issues will be published as role models along with analysis reports, and will be disseminated so that they can be referenced and utilized when listed companies formulate "improvement plans" in response to the above request by the TSE).
- Examples of the use of sustainability-related data in management strategies (around this summer) (A report including good practices will be developed and published to encourage companies to change their mindset and develop a system to efficiently collect and strategically use sustainability-related data necessary to implement SX management.
- Establishment of "Action Guidelines for Corporate Acquisitions (tentative name)" [this summer] (to improve management through acquisitions, to promote industry restructuring, and to promote healthy replacement of industry through capital markets by making the market function over management control).
- Consideration of making permanent the taxation system for partial spin-offs [FY2024 request].
- Study to develop a business restructuring legislation that facilitates the reduction of financial obligations by majority vote.
- CGS Guideline Revision

- Revision of the "Guide to Executive Compensation" [March this year] (Q&A and examples of proposals and contracts regarding the granting of compensation in the form of company stock to executive candidates and other employees)
- Support for Outside Directors [June of this year] (Organized key points on how training and training should be utilized and prepared a collection of practical case studies)

【Mission-oriented industrial policy】

- The private sector, which is the target of the "Mission-oriented Industrial Policy," expects that the projects it supports will be directly linked to the company's own path and strategy, leading to the creation of innovations and investments for social implementation. To this end, we seek to promote "corporate management reform.
- Furthermore, based on the TSE's strong request to all Prime Standard listed companies to analyze their current status and formulate and disclose improvement plans for return on capital such as ROE and market valuation such as PBR, the TSE will require companies with PBR below 1x in particular to formulate and disclose their improvement policies. (The Green Innovation Fund has begun checking the status of efforts of companies that have implemented the program in advance.)

(4) Thorough globalization of Japanese society

① Awareness of the problem and the significance of continuous efforts

(Direction of foreign economic policy in response to Increasing geopolitical risk)

- The world faces geopolitical structural changes against the backdrop of the U.S.-China confrontation, Russia's aggression in Ukraine, and other factors. The flow of "globalization," in which the flow of people, goods, money, and data continues to increase under a stable international order, is transforming.
- The WTO is dysfunctional and some countries weaponize their economic dependency (economic intimidation).
- Under these circumstances, it is essential for Japan, as an importer of resources and food, to both adhere to a free trade regime and ensure Economic Security (e.g., by building supply chains based on trust among like-minded countries).

(Strengthening Japan's "earning power" that contributes to "income growth")

- Although Japan maintains current account surpluses, export competitiveness has declined over the past 30 years; Japan's trade deficit in FY2022 will be the largest ever, with electrical and electronics equipment also falling into the red. Sluggish export price growth will worsen terms of trade, affecting national income.
- Investment income continues to be important in supporting the current account. On the other hand, it should be noted that the surplus in the Trade balance and the Services balance benefits more from domestic income through the multiplier effect than the surplus in investment income. With the stagnation of real income as an issue for the Japanese economy, it is necessary to consider ways for Japan to "earn" money in the world in a way that also contributes to improving domestic employment and income.

(Need to strengthen promotion of inward FDI in the competition for human resources and wisdom)

- As efforts to add value to industrial structures are underway in various regions, the importance of acquiring the human resources and innovation that drive economies is growing around the world. Countries are intensifying competition to attract highly skilled human resources and investment by offering preferential measures.
- In order to actively bring in people, goods, money, and ideas from overseas, and to strengthen Japan's growth potential by increasing Domestic investment and promoting R&D, it is necessary to further strengthen efforts to increase inward direct investment.

②Medium-term goals for the foreseeable future

- Aiming for inward direct investment of 80 trillion yen in 2030 and 100 trillion yen as early as possible

(Other targets and related indicators)

- Balancing the adherence to a free trade regime with the need to ensure Economic Security (e.g., building supply chains based on trust among like-minded countries)
- Maintain and strengthen Japan's earning power

③Areas to be addressed in the medium to long term and policy direction

(Rebuilding an international order compatible with Economic Security)

- In response to the transformation of globalization, along with the restructuring of the rules-based international trade order, including WTO reform and supplementation of the WTO, we will simultaneously build reliable supply chains in cooperation with volunteer countries and strengthen cooperation with the Global South.

(Strengthening "earning power" including trade and services)

- In order to achieve both income growth and Current account, "earning power" is strengthened in each area as follows.
 - ◇ Export Promotion: To reduce the burden on companies by reducing costs associated with trade procedures, etc., and to improve terms of trade by promoting exports of high value-added products.
 - ◇ Promotion of service exports: linkage with products and technologies integrated with services, strengthening inbound
 - ◇ Overseas investment and expansion: Support for new business search (support for international expansion of startups, formation of international rules in green and digital fields, etc.) to improve productivity and create innovation, strengthen support for financing new investments including scaling up in overseas markets, etc.

(Improvement of the domestic environment to promote inward direct investment)

- In order to accelerate inward direct investment and the acceptance of high-level foreign human resources, we will do our utmost to create an environment that is attractive to foreign companies and high-level foreign human resources.

④ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

【Formulating a Foreign Economic Policy that Balances Free Trade and Economic Security】

○ G7 Leaders' Statement on Economic Resilience and Economic Security

We will take a cooperative approach and discuss the contents adopted as the G7 Leaders' Statement below, not only with countries within the G7, but also with countries outside the G7.

◇ Promote international rules and norms to facilitate trade and promote economic resilience based on a rules-based multilateral trade regime with the World Trade Organization (WTO) at its core.

◇ To strengthen joint assessment, preparedness, deterrence and response to economic intimidation, we will launch a "Coordination Platform Against Economic Intimidation" to strengthen coordination and further promote cooperation with non-G7 partners.

● To promote WTO reform, he participated in discussions in the trilateral and other bodies such as Japan, the U.S., and the EU, and in the launch of the Japan-South Korea Initiative (JSI) negotiations under the WTO umbrella in 2017, in particular leading the e-commerce negotiations as co-chair. He also actively participated in discussions with the U.S. and other volunteer countries and others toward the full restoration of the dispute settlement function and joined the Appellate Arbitration Framework of Volunteer Countries (MPIA) in March 2023 as an interim solution.

○ Reconstruction of a rule-based international trade order (WTO reform) (Aiming at rule formation in line with the times (e.g., e-commerce, subsidies, etc.) and restoration of the dispute settlement function where final decisions can be made. In parallel, aim to rebuild a rule-based international trade order through the development of alternative means, such as the use of the arbitration system in dispute settlement.)

○ (Based on the agreement at the G7 Summit on the principles of a reliable supply chain with volunteer countries ("Principles for a Strong and Reliable Supply Chain"), we will promote specific initiatives for further supply chain resilience in cooperation with the private sector.)

○ (Aiming to solve social issues faced by countries in the so-called Global South by leveraging Japan's technological and other strengths, while utilizing international forums such as the G20, frameworks such as the Economic Partnership Agreement, IPEF, and QUAD, and dialogue with ASEAN and other Asian and African countries). (We aim to solve social issues faced by countries in the so-called Global South by leveraging the strengths of Japan's technologies and other assets.)

○ In addition to the above, we will flexibly determine which venues can be effectively utilized within the various frameworks of a multi-pronged buy-back, taking into account national interests, and will actively engage in international discussions.

【Export Promotion】

● In June 2022, a working group on data linkage in the trade field was established with related businesses as members to discuss measures necessary for the promotion of trade DX for the digitization of trade procedures. At the same time, the Trade Finance Task Force was established to identify differences between data items used in domestic trade finance practices and international standards, and to discuss measures necessary to promote trade data linkage based on international

standards.

- Full-fledged promotion of DX for trade procedures (introduce subsidies to promote the use of trade platforms and encourage the revision of international standards for data models related to trade finance, etc.). (2) Utilizing the occasion of the 50th anniversary of ASEAN-Japan Friendship and Cooperation, formulate a roadmap for the digitization of trade in ASEAN and other countries and propose measures to each country. (Through these efforts, we will realize cost reductions in trade procedures.)
- Improvement of the export environment: NEXI established the "SEED Scheme" to improve the export environment by using NEXI's loan insurance as a lever to require foreign companies seeking assistance to actively engage in the creation and expansion of future transactions with Japanese companies.
- Enhancement of earning power of SMEs: Promotion and strengthening of the 10,000 new exporters support program for inexperienced exporters and other companies.

【Overseas Investment and Expansion】

- Provide support for overseas expansion of Japanese companies, including start-ups, through JETRO schemes and ADX
- Strengthen support for new business exploration (support for cutting-edge companies, including start-ups; create matching opportunities with local companies; formulate regional strategies for the Global South, etc.; promote international rule formation and project formation support (subsidies, financing, etc.) in the green and digital fields, etc., in conjunction with IPEF and other economic partnership frameworks) (subsidies, financing, etc.) in conjunction with economic partnership frameworks such as IPEF, etc.
- Strengthen support for business entry and expansion in local markets (study ways to provide support that will help Japanese companies overcome challenges to speedily develop new businesses in overseas markets and expand the scale of their operations to become global leaders).
- Support for expansion of impact investments (direct and indirect support for VCs active overseas who act as "catalysts" for collaborations that are critical for effective market entry)
- Strengthen support for financing (through NEXI's loan insurance, etc., support for supply chain resilience, GX, and overseas expansion of startups)
- Formulate an external economic strategy and strengthen the support implementation system (organize what to produce/provide and how to obtain benefits in each region and field, based on the characteristics of each country's market, global technological trends and the strengths of Japanese industry, resource distribution, etc.). Also, consider strengthening the implementation system)
- Organic coordination of startup support measures of government-affiliated support organizations (to organically coordinate the startup support measures of government-affiliated support organizations to maximize the effectiveness of support activities for startup companies).

【Trade in Services Promotion, etc】

- (Platforms and services in the cyber-physical domain for the purpose of promoting the use of equipment and services as a set in healthcare and smart agriculture, supply chain management, etc.,

support for demonstration projects, as well as subsidies and financing for scaling up to global benchmarks. (Support)

- Creating inbound demand (inbound is the second largest means of acquiring foreign currency before the COVID-19. In Japan, where the domestic market is shrinking, the creation of inbound demand in the coming era will be strategically implemented based on the "Action Plan for Expanding Inbound Demand in the New Era" newly established for the entire government, etc. The creation of inbound demand in the coming era is a top-priority issue. In particular, it is important to pursue quality rather than quantity in order to improve productivity while avoiding overtourism, which could lead to excessive burden and exhaustion on local communities, and to achieve high added value through design and art investments that bring out the individuality of the region. Furthermore, from the viewpoint of equalizing inbound demand not only to famous tourist destinations but also to every corner of the country, it is important to focus on the needs of business travelers who can be attracted to Japan and stay longer even if there are no world-famous tourist resources, and to create a new business inbound market in cooperation with local governments across the country. (Aiming to create an unprecedented new business inbound market in cooperation with local governments across Japan.)
- Prevention of the spread of product accidents in the online market (Establish a system to ensure that measures are taken to prevent the spread of product accidents, mainly for products sold by overseas operators in the online market. In addition, the market for toys and other children's products will be expanded to ensure their safety and allow consumers to trade them with peace of mind).

【Foreign Direct Investment in Japan】

- Promotion of Acceptance of Highly Skilled Foreign Human Resources (Examine measures to promote acceptance of highly skilled foreign human resources, etc.)
- Promote investment in key areas and attract local communities (promote investment in key areas such as semiconductors, DX, GX, bio-healthcare, etc., and attract local communities to these areas)
- Support for business feasibility studies to attract foreign companies to Domestic investment, secondary investment in the region, and collaboration with Japanese companies (Support for business feasibility studies to attract foreign companies, including start-ups, to Domestic investment, secondary investment in the region, and collaboration with Japanese companies)
- Strengthen networking between domestic and international startup ecosystems (through pitch events and networking in domestic and international startup ecosystems, etc., strengthen networking with local ecosystem stakeholders, including overseas investors. Also, invite foreign corporate executives, etc.)
- Strengthen matching between foreign and Japanese companies (thereby encouraging foreign companies to enter the Japanese market, establish themselves in Japan, and promote secondary investment in the region).
- A case study book consisting of 20 case studies was prepared, along with the challenges faced by companies that have conducted M&A transactions with Japan, and the considerations and benefits, including Economic Security.
- Promote M&A with Japan and collaboration with foreign companies (analyze the effects of management improvement and reform through M&A with Japan and collaboration with foreign

companies, and disseminate the results)

- In order to improve the business environment in Japan, we will work to translate laws, regulations, and systems into English in cooperation with the G7 Liaison Conference of Chambers of Commerce and Industry in Japan (tentative name).
- JETRO will also implement measures such as setting up consultation services in local languages and disseminating information to foreign companies.

(5) Public administration: EBPM and data-driven administration

① Awareness of the problem and the significance of continuous efforts

(Policy management based on the assumption that a course correction could occur)

- New Direction of Economic and Industrial Policies" is based on the premise that the government must step forward and actively invest in the risk-taking necessary to solve unanswered social issues, rather than leaving such risk-taking to the private sector. While large-scale, long-term, and planned efforts are being made to increase the predictability of the private sector, there is a good possibility that future technological and other developments will lead to specific solutions to social issues that differ from current expectations.
- In order for policies to be effective, it is essential to learn from mistakes and change course when policy assumptions change or when measures are not having the desired effect.
- In order to realize this, it is necessary to establish appropriate concrete indicators of policy effects, and to implement EBPM and data-driven government initiatives that enable monitoring and verification of policy effects through data and other means.

② Medium-term goals for the foreseeable future

- Replacement of industry (challenge to new policies or abolition of existing policies) and upgrading of policies (including qualitative changes in policies and ensuring continuity in accordance with medium- and long-term objectives).

(Other target-related indicators)

- Number of appropriate missions, KPIs, and metrics set based on new policy evaluation policy
- Number of budget projects for which effectiveness verification, including causal inference, was conducted
- Number of participants in training courses on data, including the use of digital technology

③ Areas to be addressed in the medium to long term and policy direction

- For each of the pillars of the New Direction measures, appropriate targets and indicators will be set to enable monitoring of policy effects, and the EBPM initiatives that have been undertaken will be expanded, particularly for large-scale measures.
- At the same time, to enable the organization to effectively utilize data, the data infrastructure and other environments will be developed, and the data utilization capabilities of the staff will be enhanced.

④ Past and future measures

(●...measures implemented to date, ○...measures to be implemented in the future)

(Verification of policy effectiveness)

- Establishment of indicators for monitoring the effectiveness and progress of policies (Based on the new policy evaluation policy, indicators for monitoring the effectiveness and progress of policies implemented by the Ministry of Economic and Industrial Policies shall be established by summer, taking into account the indicators in each area of the New Direction.)
- Establishment of RIETI/EBPM Center
- Developing validation scenarios for large budget projects (Semiconductor and Green Innovation Fund)
- Expand the scope of effectiveness verification (e.g., biomanufacturing, budget projects with a large number of data, etc.)

(Maintenance of data)

- Simplify and accelerate the use of survey table information in official statistics.
- Development of a data infrastructure within the Ministry (establishment of a mechanism that enables data acquired through administrative procedures and private sector data with high needs to be used for policy planning, monitoring, and effectiveness verification across the Ministry).
- Establish a structure and system to automatically collect information on policy effectiveness and progress monitoring indicators.

(Digitalization in operations and procedures)

- Online access to administrative procedures at the Ministry of Economy, Trade and Industry (by the end of R7).
- Trial introduction of generative AI (to explore the possibility of improving operational efficiency and policy-making sophistication)

(Improve staff literacy)

- Implemented a training program for some staff to improve their literacy on data and EBPM.
- Training on AI and digital data utilization (Training programs are implemented after organizing the necessary literacy and the staff that should be targeted regarding digital data including AI.)