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# Awareness of the Business Environment

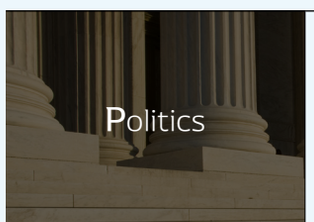
Amid the ever-increasing global population, aging societies, and advancing urbanization, the progression of global warming and the increase in traffic accidents are becoming serious social issues. In addition, people's values are diversifying and these issues are becoming more complex as a result of the digitalization of society and intelligent technologies in society, as well as rising geopolitical risks. In addressing these emerging social issues, as in realizing a recycling-oriented society and an optimal energy balance, easing traffic congestion, and achieving decarbonization, there is a growing need to implement new mobility solutions in coordination with social infrastructure, including the evolution of IoT and AI technologies, vehicle electrification, automated driving, and connected driving, while also extending and applying these technologies, which have been cultivated in the mobility domain, to domains other than mobility.

Going forward, we will continue to pursue the resolution of social issues while accurately assessing and responding to risks that may have an impact on society and our business activities, as well as opportunities related to these various developments in society.

## Social Changes toward 2030 and DENSO's Key Initiatives

We are narrowing down our forecasts of future society, revising them through PEST (political, economic, social, and technological) analysis, using social changes as of 2030 as a key theme. In accordance with this theme, we have analyzed risks and opportunities and identified key initiatives for DENSO moving forward. We will work to gain an accurate understanding of developments related to CASE and changes in the mobility society, and thoroughly examine whether or not these changes will have an impact on the key initiatives of DENSO.

### Forecasts of Future Society




- Tightening supply–demand situation for energy across the globe and the shift from low carbon to carbon free
  - Need for international cooperation to mitigate climate change in light of the urgent need to address global warming ①
  - Necessity of promoting renewable energy and hydrogen usage ①
  - Restrictions on power generated from fossil fuels and internal combustion engines ①
- Establishment and expansion of laws to control adverse impacts on the environment and human rights throughout the entire supply chain ①③
- Acceleration of economic security policies against a backdrop of intensifying political confrontation and heightened geopolitical risk (strengthening supply chains, protecting industries and technologies, etc.) ①②③

- Slowing economies in advanced countries, rise in prominence of Global South, and global multipolarization ②
- Rise in nationalism due to growing regional disparities ②
- Establishment of economic blocs advantageous to individual countries and ongoing regional optimization ②
- Productivity enhancements accompanying accelerated AI investment and implementation ②③

- Threat to the sustainability of society due to an increase in population, with the global population exceeding 8.5 billion people ①②③
- Aging populations around the world, declining workforces, growth in life expectancies ①
- Urbanization in emerging countries, urban regeneration due to the shift to smarter, more compact cities, and an increase in logistics volumes ①②
- Expansion of ESG investment and acceleration of rulemaking for ESG information disclosure ①②
- Consumption behavior becoming more ethical and experience-based with a shift to the sharing economy ①③
- Growing automation of work through AI and robotics, and changes in work ethic and available free time ③

- Integration of digital and physical domains due to the proliferation of IoT-related technologies (communications and other devices) ②③
- Productivity enhancement and value chain integration through the use of big data ②
- Transition to the use phase of AI and quantum computer utilization and the versatile implementation of AI in manufacturing, finance, and services ②③
- Accelerating shift to non-contact technology and full automation in various industries ①③

### Keywords for Social Changes toward 2030

**1 Escalation of Social Issues**

Decarbonization　Traffic accidents
Aging population　Uneven population distribution
Traffic congestion

**2 Multipolarization and Diversification of the World**

Borderless flow of information and technologies

**3 Diversification of People's Values**

Use of AI
Changing workstyles　Automation

## Awareness of the Business Environment

| | Risks and Opportunities | Response Measures to Risks and Opportunities |
|---|---|---|
| ❶ Increasingly serious social issues | **Risks**<br>• Tightening and acceleration of environmental regulations on the automotive industry<br>• Introduction and expansion of environmental taxation by the governments in each country and region<br>• Expanding and intensifying demands for environmental responses in product production processes (carbon neutrality, resource recycling, water resource conservation, pollution prevention, etc.)<br>• Delays in developing and commercializing technologies in response to increasingly complex and intricate social issues and demands<br>• Increased risk of production suspensions and similar disruptions as climate change makes damage from weather-related disasters and abnormal weather more widespread and severe<br>**Opportunities**<br>• Increasing need for systems to respond to electrification and alternative fuels (e-fuel, hydrogen fuel, and biofuel)<br>• Heightened expectations for new technologies that contribute to carbon neutrality and resource recycling (generation and use of hydrogen, traceability, etc.)<br>• Growing demand for highly efficient production technologies that achieve solid energy-saving effects<br>• Expansion of businesses that contribute to the resolution of social issues (growing needs for automated driving, the prevention of traffic accidents, food safety, automation to address labor shortages, etc.) | We believe that social issues, such as climate change countermeasures, resource recycling, safety and security, and labor shortages, will grow even more complex and serious in the future. In response to these changes, we will further advance the technologies DENSO has refined to date, including electrification, energy-saving, thermal management, active safety, and automation, and accelerate their implementation in society. We will also advance the development of new technologies, such as responses to hydrogen and alternative fuels and traceability that contributes to resource recycling, while working to upgrade highly efficient production technologies that achieve greater energy-saving effects. Furthermore, because DENSO's business activities depend heavily on natural capital, we aim to minimize our impact on natural capital and will pursue the recycling and effective use of resources, the reduction of waste, the prevention of pollution of the global environment, and the conservation of water resources. |
| ❷ Multipolarization and diversification of the world | **Risks**<br>• Rising threats toward DENSO's business management (military strikes, cyberattacks, etc.)<br>• Revisions to business models (regulation response and supply chains) due to divisions between countries and regions<br>**Opportunities**<br>• Progressing expansion of new markets and business partnerships with the aim of resolving social and environmental issues<br>• Avoidance of production stoppages at customers by establishing a stable supply structure through more resilient supply chains, earning even greater credibility | We expect uncertainty in the business environment to increase further due to differences in regulations and standards among countries and regions, heightened geopolitical risks and the fragmentation of supply chains. In response, DENSO will strengthen governance, risk management, and compliance so that we can respond flexibly to changes in the environment in each region, while also enhancing the resilience of our procurement, production, and supply structures. We will also build optimal development, production, and sales structures suited to the market characteristics of each region, steadily capturing business opportunities in growth markets, including emerging countries. |
| ❸ Diversification of people's values | **Risks**<br>• Reduction in transportation as digital technologies proliferate and consumption patterns change<br>• Intensifying competition due to the increasing entry of IT companies able to address diversifying values<br>**Opportunities**<br>• Heightened awareness of "peace of mind," leading to the diversification of technologies related to peace of mind and expansion in value systems (safety awareness, pursuit of comfort, privacy, disaster alerts, etc.)<br>• Rising need for added value due to the accelerating shift to digital technologies, IT, and AI implementation<br>• Growing affinity for companies that contribute to the resolution of social issues (product selection, investment selection, employment, etc.) | We believe that, as digital technologies and AI proliferate and lifestyles change, the value people seek from mobility and products will expand beyond the function of transportation to encompass peace of mind, comfort, experience, and individuality. In response to these changes, DENSO will expand new growth opportunities by responding quickly to diversifying needs, such as automated driving and the provision of car cabin spaces that offer peace of mind and comfort. In light of the heightened awareness of peace of mind, we will also advance the development of technologies that expand value in areas such as safety, comfort, privacy, and disaster alerts. Furthermore, with the acceleration of digitalization, IT adoption and AI implementation as a tailwind, we will create new added value by combining DENSO's unique technological capabilities and *Monozukuri* capabilities with collaboration with other companies, while keeping an eye on changes in the roles of people and in workstyles. |

**Reinforcement of Our Management Foundation**

To steadily advance the measures addressing the risks and opportunities previously described, respond flexibly to increasingly complex and diverse social issues and enhance corporate value, we believe it is essential that every employee takes pride in their work and continues to work with high motivation and vitality. We will achieve new value creation by practicing human capital management through such efforts as creating an environment where employees can work with peace of mind and creating opportunities for human resources with diverse individual qualities to learn on their own initiative, take on challenges, and grow.

At the same time, we will remain steadfast amid changes in society and continue to deliver value centered on quality first, the foundation of credibility. We will also reinforce our relationships with the stakeholders who support DENSO's businesses and expand into new markets, businesses and collaborative partnerships, thereby delivering value sustainably even in a changing world.

# Sustainability Management in Practice

The DENSO Creed, which calls on us to “provide quality products and services,” is a reflection of sustainability management at DENSO, where its business activities aim to solve social issues and contribute to the well-being of people. Today, it is DENSO’s mission to pass along the aspirations of its predecessors rooted in its creed when passing the baton to the next generation.

To continue in the spirit of our creed and to keep practicing sustainability management even as times change, at DENSO, we have established the DENSO Group Sustainability Policy and selected our material issues for inclusion in our management strategy (Materiality, P29–32). We are currently tackling these social issues through our business activities. This section provides an overview of our structure for promoting sustainability management implementation.

## Promotion Structure for Sustainability Management

With the executive in charge of the Corporate Management Center serving as overall leader, the Corporate Management Division oversees Companywide sustainability management functions. We have established the Sustainability Meeting as a forum for Companywide discussion on the direction of activities for the DENSO Group. This meeting is responsible for advancing sustainability management by identifying opportunities and risks, deliberating on proposed Materiality, and monitoring and adjusting activities. The matters discussed are then submitted to the Board of Directors.

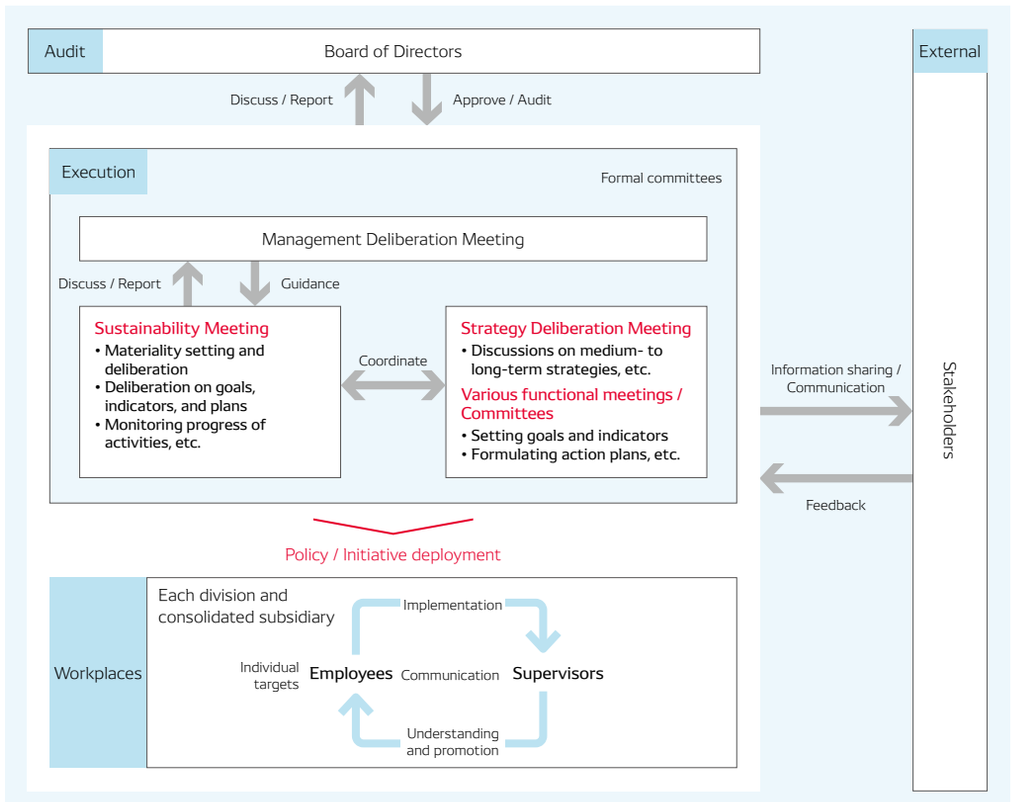
To foster awareness among employees, who are key players in advancing these activities, DENSO incorporates into annual individual goals a process that visualizes how each employee’s work is connected to addressing social issues.

Also, to promote understanding and entrench a culture of sustainability as well as to disseminate related information, each DENSO CORPORATION division, domestic Group company, and overseas regional headquarters appoints one sustainability leader, who is tasked with ensuring the penetration of a culture of sustainability throughout all workplaces.

### Overview of the Sustainability Meeting

| | | | |
|---|---|---|---|
| **Chairperson** | Executive Vice President | **Purpose** | • Setting and deliberation on Materiality proposals<br>• Progress follow-up<br>• Sharing trends related to social issues, etc. |
| **Composition** | Each Materiality promotion officer (executive level)<br>Note: Heads of business groups and regional CEOs also attend when coordination across businesses or regions is required. | **Meeting frequency** | Twice a year |
| **Fiscal 2026 results** | • Set fiscal 2031 targets for each material issue (Materiality) and formulated activity plans and promotion structures<br>• Formulated targets for fiscal 2027<br>• Discussed initiatives toward achieving carbon neutrality along with results and issues | | |

### Promotion Structure for Sustainability Management



# Materiality

In recent years, the social issues involving companies have become increasingly diverse and complex, and their effects now extend across the entirety of corporate activity. Amid these changes in the business environment, companies must enhance corporate value while addressing a broad range of issues. At the same time, to create value on a sustained basis, a company must not address every issue equally. Instead, it is important to focus on areas in which a greater contribution to resolving social issues and enhancing customer value can be made, taking into account a company's own strengths and business characteristics.

Based on this approach, DENSO identifies the issues of particularly high importance as its Materiality, taking into account the magnitude of their impact on society and on the Company itself. Materiality serves as the foundation for achieving both sustained growth and the resolution of social issues, by clarifying the material issues the Company should address as a priority and linking them to management strategies and business activities.

## Process for Determining Materiality

In formulating the Mid-Term Management Plan CORE 2030, we updated the Materiality that underpins it.

After comprehensively identifying and disclosing social issues of high concern to stakeholders and the greater international community, we evaluated opportunities and risks from the perspectives of both the impact of DENSO's business activities on society and their importance to DENSO, and conducted a quantitative assessment with the time horizon in mind.

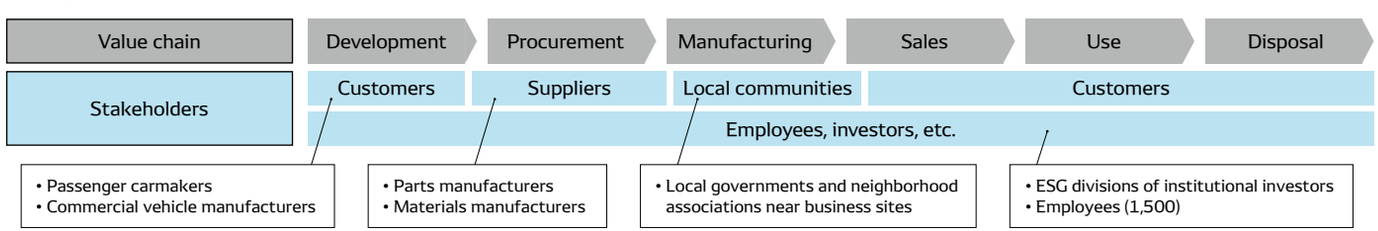
In considering proposed Materiality, we reflected key stakeholders' views and expectations of DENSO obtained through dialogue with them as representatives of the value chain, including customers, suppliers, investors, employees, and local communities, before finalizing the Materiality. Subsequently, following deliberation by management, the Board of Directors approved the Materiality. For the Materiality we have identified, we set specific targets and then translated these targets into action plans in each division and region. In this way, rather than leaving Materiality as a mere policy, we incorporate it into our day-to-day business activities and manage progress quantitatively, thereby steadily achieving our targets.

Going forward, we will review our Materiality annually in light of changes in the sustainability landscape, and at the Sustainability Meeting held twice a year, we will monitor the progress of activities toward achieving each material issue and make course corrections as necessary.

### Process for Reviewing Materiality

| | |
|---|---|
| Prepare a long list | **Comprehensive Identification of Social Issues**<br>We identified social issues while referring to the SDGs, the Global Risks Report produced by the World Economic Forum (Davos conference), sustainability disclosure frameworks and regulations, and evaluation items from ESG rating agencies. A total of 116 areas were selected for assessment. |
| Reflect DENSO's uniqueness | **Identification of Key Strategies and Issues for DENSO**<br>In light of the increasing complexity in the business environment, we listed initiatives that DENSO should pursue Companywide and areas where its crisis response capabilities should be enhanced. A total of 22 areas were added as candidates for assessment. |
| Evaluate | **Quantitative Assessment**<br>For the assessment areas, we screened out opportunities and risks for DENSO and established evaluation criteria from the perspectives of impact on society and importance to DENSO. The impact on society was scored by severity (scale, scope, recoverability) and likelihood of occurrence, while corporate importance was scored by monetary impact and likelihood of occurrence, in the formulation of proposed material issues (Materiality). |
| Confirm expectations from society | **Dialogue with Internal and External Stakeholders**<br>We engaged in dialogue with representatives of stakeholders across the value chain to gather opinions on the proposed material issues (Materiality) and their expectations of DENSO. As a result of these exchanges, we revised the quantitative assessment of three areas. |
| Finalize | **Discussion and Approval at Management Level**<br>The proposed material issues (Materiality), revised to reflect stakeholder feedback, were discussed and approved by the Management Deliberation Meeting and the Board of Directors. |

### Dialogue with Internal and External Stakeholders




Dialogue with Representatives from Each Stakeholder Group

## KPIs and Measures

We establish KPIs for each material issue (Materiality), incorporate them into Company targets, and follow up on and discuss their status at the Sustainability Meeting, the Management Deliberation Meeting, and the Board of Directors' meeting. In addition, for some KPIs, we use the evaluation of their level of achievement as an indicator for calculating executive compensation (Corporate Governance, P.87–96). Our targets for fiscal 2031 and the fiscal 2027 targets adopted to achieve them are as follows.

| Materiality | | Policy | KPIs (for the DENSO Group) | | Fiscal 2027 targets | Fiscal 2031 targets | Related SDGs |
|---|---|---|---|---|---|---|---|
| Green | Response to climate change | To realize a carbon-neutral society, we work across the entire value chain to reduce $CO_2$ emissions through energy conservation, energy creation, the shift to renewable energy, and the electrification of mobility. | $CO_2$ emissions | Scope 1 and 2 | Carbon neutrality with credits | Carbon neutrality with credits | |
| | | | | Scope 3, suppliers/product use (compared with fiscal 2021) | –15% | –25% | |
| | | | Revenue from electrification products | | ¥1.1 trillion | ¥1.9 trillion | |
| | | We prepare for worst-case risks and contingencies, such as natural disasters caused by climate change, and strive to minimize damage and maintain business continuity. | Loss of human life due to natural disasters | | 0 | 0 | |
| | Prevention of pollution of the global environment | We reduce hazardous chemical substances contained in products, auxiliary materials, and packaging materials, and we thoroughly manage the various pollutants emitted from production processes to keep them below natural purification levels. | Serious exceedances of regulatory limits | | 0 | 0 | |
| | Conservation of water resources | To sustain water resources in the regions where we operate, we work to reduce water intake in line with the uneven distribution of regional water resources, that is, in line with water risk. | Water intake (compared with fiscal 2021) | | –6% | –10% | |
| | Recycling of resources | To reduce $CO_2$ emissions in Scope 3, we promote efforts to lower the volume of new raw materials used and to make maximum use of the residual value of products and services. | Under consideration | | | | |
| Peace of Mind | Provision of safe and flexible mobility | Beginning with the elimination of traffic accident fatalities, we work to develop and promote the uptake of safety products and systems in order to realize a society where all people can freely move around with peace of mind. | Accident scenario coverage ratio | | 56% | 80% | |
| | | | ADAS product revenue | | ¥710 billion | ¥1.0 trillion | |
| | Improvement of labor productivity in industry | Aiming to enhance the added value of everyone involved in *Monozukuri*, we create solutions that allow manufacturer customers to continue their *Monozukuri* with peace of mind, acting as a line builder that innovates *Monozukuri* across industries. | Resolution of labor shortages | | 6,000 people | 19,000 people | |
| | | | Revenue in the factory automation (FA) business | | ¥62 billion | ¥300 billion | |
| | Peace of mind and stable supply of food | To achieve the "anytime," "anywhere," and "for anyone" provision of food that is safe, delicious and easy on the environment, we introduce industrial technologies into agriculture and provide solutions that enable stable and calculable food production. | Improvement in the productivity of agricultural producers (compared with fiscal 2025) | | Set from fiscal 2028 | +75% | |
| | | | Revenue in the food value chain (FVC) business | | ¥36 billion | ¥100 billion | |
| | Improvement in the safety of products and services | Aiming to eradicate quality issues, we promote quality control as one united company through a steadfast commitment to quality first, quality assurance at the upstream stage, and the promotion of quality control with the participation of all employees. | Quality issues involving human life | | 0 | 0 | |

| Materiality | | Policy | KPIs (for the DENSO Group) | Fiscal 2027 targets | Fiscal 2031 targets | Related SDGs |
|---|---|---|---|---|---|---|
| Corporate Foundation | Creation of workplaces with no work-related accidents | To protect the lives and health of the people who work for us, we bring together the ingenuity and creativity of every individual at every workplace and promote the creation of safe, comfortable workplaces with the participation of all. | Serious accidents involving loss of life | 0 | 0 | |
| | Compliance | To remain a trusted company, we comply with laws and regulations in Japan and overseas as well as their underlying spirit, and we engage in sound and fair business activities with high ethical standards. | Serious compliance violations | 0 | 0 | |
| | Information security | To deliver safe, highly reliable products to our customers and to protect the information assets entrusted to us by customers from a range of risks, such as cyberattacks and leaks of confidential information, we work as one company to further strengthen information security. | Serious incidents and accidents | 0 | 0 | |
| | Promotion of sustainable supply chain management (delivery) | Aiming to achieve a sustainable supply chain, we work to build production and supply systems that are resilient to the external environment. | Shutdowns of customer plant operations | 0 | 0 | |
| | Promotion of sustainable supply chain management (human rights) | By seeking to minimize the impact of risks arising from human rights and other social issues across the supply chain, we carry out sustainable procurement activities that earn the trust of our stakeholders and society. | Percentage of suppliers that have a human rights policy | 100% | 100% | |
| | Promotion of DE&I | Aiming to achieve both the well-being of all employees who work at DENSO and the realization of the Company's philosophy, we practice human capital management that enables the creation of new value by building an environment where employees can work with peace of mind and by creating opportunities for human resources with diverse individual qualities to learn on their own initiative, take on challenges, and grow. | Ratio of women in management positions | 8.8% | 10% | |
| | Human development to lead the creation of new value | | Ratio of non-Japanese employees promoted to leadership roles at overseas bases | 36% | 50% | |
| | Work–life balance | | Training hours | 23 hours per person | 25 hours per person | |
| | | | Percentage of positive responses on work–life balance engagement | Europe: 72%<br>Asia: 76%, etc. | Under consideration | |

Please visit the following URL for more information on material issues and our progress on related initiatives through fiscal 2026.

DENSO's SDGs

https://www.denso.com/global/en/sustainability/sdgs/

## Awareness Activities for Putting Sustainability Management into Practice

To make sustainability management effective, DENSO places importance on having all employees understand the connection between resolving social issues and its business activities and translate that understanding into action.

Accordingly, in the process of formulating annual plans, each division organizes the relationships between its organizational role and priority themes and Materiality. In addition, at DENSO CORPORATION, each individual employee clarifies the connection with their own work targets.

Through this approach, we have built a system in which employees not only recognize Materiality as a management issue but also put it into practice in their daily work.

TOPIC

### Visualizing Materiality

We created icons symbolizing each Materiality theme so that every employee can take Materiality as a personal matter and act accordingly. We use these icons in internal documents and other daily work, promoting their establishment as a shared internal language that connects management strategies with action on the front lines.

Materiality PR poster

COLUMN

## Dialogue on Sustainability Management

In light of social issues and changes in the environment facing our businesses, we hold regular dialogues with a wide range of stakeholders in order to review our Materiality and further enhance DENSO's management.

### Key Opinions about Our Activities in Fiscal 2026

Positive feedback

- In setting its Materiality, DENSO incorporates not only social issues but also its key strategies, conveying a clear intent to synchronize business strategy with non-financial strategy.
- DENSO incorporates Companywide key strategies into its Materiality deliberations and is mindful of the connection to its business strategies and to DENSO's uniqueness.
- In addition to the value chain, DENSO engages in dialogue with employees, corporate officers and investors, and reflects the results in adjustments to its Materiality assessment.
- DENSO sets KPIs for each material issue (Materiality), clarifies the department in charge, and then communicates the expected role to each organization. It also links the work of each individual employee to Materiality, seeking to clarify its related importance at the individual level.
- DENSO applies ingenuity to its awareness-raising activities, such as creating Materiality icons for use in internal awareness-raising initiatives.
- DENSO adopts human rights as a key theme of the Sustainability Meeting. This is also important from the perspective of effective risk management as a global company. Etc.

### Expectations for Further Enhancement

- DENSO should further enhance the explanation of its thinking behind the selection of KPIs for each Materiality item and of the connection between the vision DENSO aspires to and corporate value.
- Disclosing priorities and the thinking behind the rollout of measures in line with the characteristics of each region and each business would make their effectiveness clearer on a global basis.
- DENSO should further deepen initiatives to embed Materiality in daily operations and decision-making through the sharing and implementation of good practices from each workplace.
- In order to enhance the effectiveness of governance, DENSO should show how the Board of Directors incorporates knowledge relating to sustainability and raises the quality of its discussions.
- The Integrated Report should indicate more clearly the connections between, on the one hand, management's intent and the sources of value creation (such as corporate culture, human resources, and the supply chain) and, on the other, Materiality and financial performance.
- Going forward, disclosures on the operational status of human rights due diligence and on corrective and remedial processes should be enhanced in stages.
- Respect for human rights across the entire supply chain is growing in importance and is becoming a business risk. DENSO should raise the priority of this issue and pursue activities aimed at minimizing the risk.
- The themes selected as Materiality are compelling. DENSO should clarify and communicate how Materiality connects to the enhancement of corporate value, as well as its medium- to long-term targets. Etc.

We take to heart the opinions and expectations received through these dialogues and reflect them in concrete initiatives, such as clarifying the connection between KPIs and corporate value and deploying measures globally. In this way, we will further advance Sustainability Management with Materiality as the starting point, thereby creating social value and enhancing corporate value.

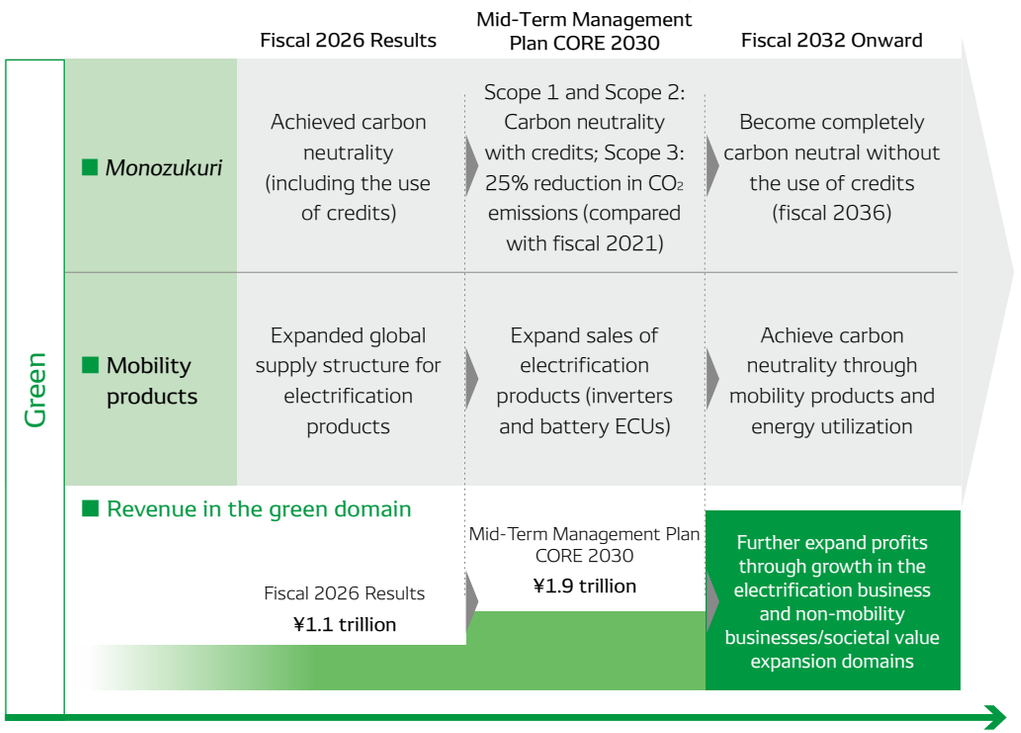
# Green Strategy

## Striving toward Carbon Neutrality throughout the Value Chain

As the world accelerates decarbonization efforts, DENSO has been boldly tackling environmental issues through initiatives for environmentally friendly *Monozukuri*. Specifically, we have been developing mobility products with excellent fuel and energy-saving technologies, which have been areas of strength since our founding. In fiscal 2022, we declared that our goal was to achieve complete carbon neutrality in *Monozukuri* activities by fiscal 2036 and contribute to carbon neutrality across all of society. Since then, we have been increasing the pace of efforts to achieve carbon neutrality throughout the entire value chain. For details on this goal, please see "Efforts to Maximize the Value of 'Green' (TCFD)," P.78–81.

### Vision for Our Green Strategy

**Lead the World as a Carbon-Neutral Manufacturer While Contributing to the Advancement of Society**



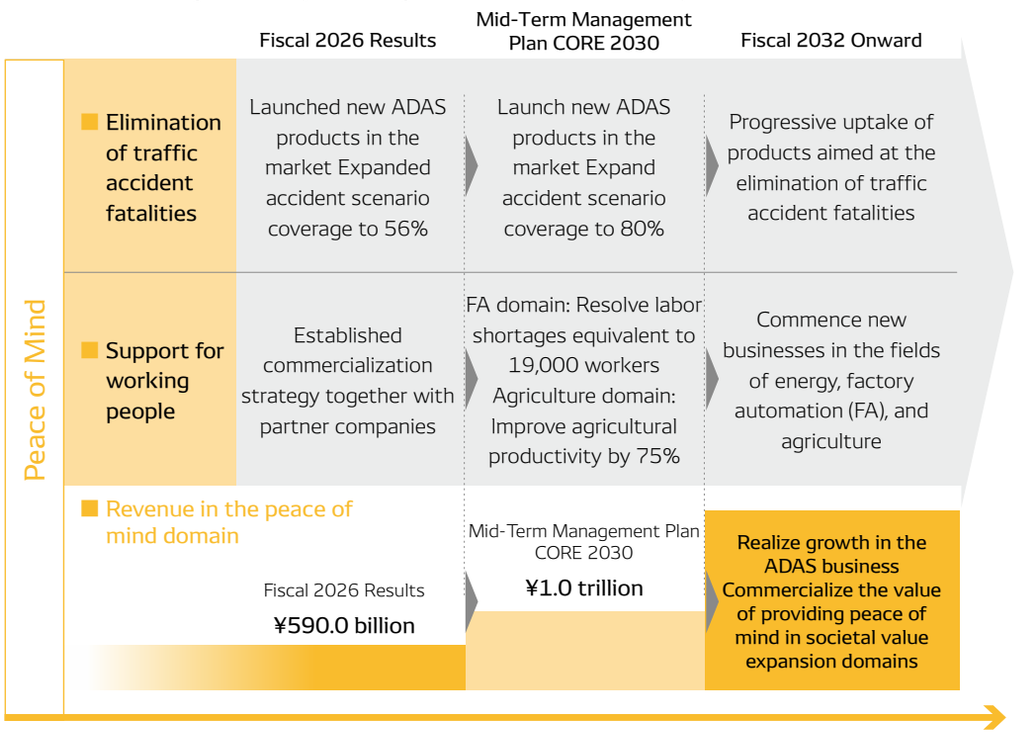

# Peace of Mind Strategy

## Approach to Peace of Mind Strategy

DENSO aims for the elimination of traffic accident fatalities through a two-pronged approach involving the development of cutting-edge technologies that further evolve its safety products and the continued rollout of safety products. By integrating the expertise in product evaluation and design gained from our long track record in the mass production of safety products, which ensures that products operate without defects and with advanced, data-driven development technologies, we deliver safety performance that users around the world can rely on with peace of mind.

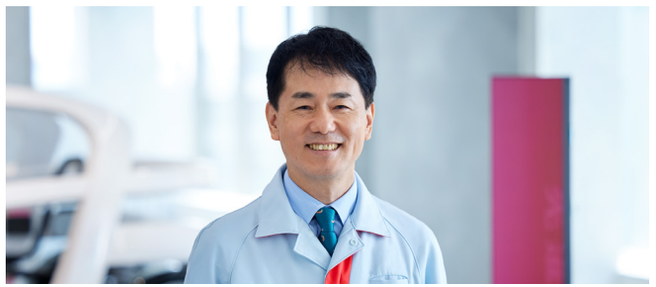
### Vision for Our Peace of Mind Strategy

**Become a Leading Company Offering Peace of Mind to Society**



# Technology Strategy

Message from the Chief Technology Officer and Chief Digital Officer



## Tackling the Ever-Changing Social Issues and Striving for Sustainable Growth as We Continue to Pursue Challenges through Technology Management


### Hirotsugu Takeuchi

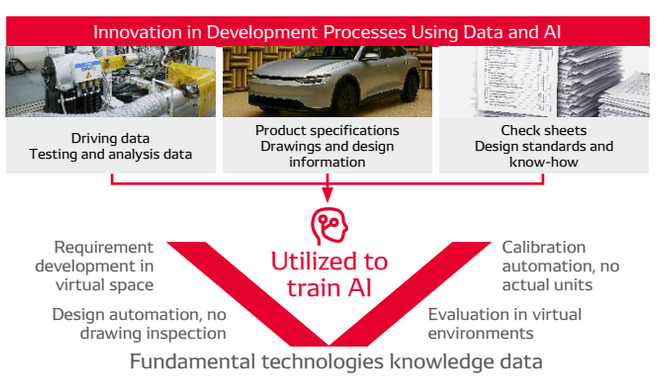
Senior Executive Officer, Chief Technology Officer (CTO)/Chief Digital Officer (CDO)

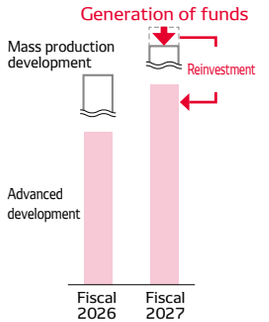

DENSO's technology development is the source of its competitiveness. As stated in the DENSO Creed, "Be pioneering, innovative, and creative," it is my mission as the chief technology officer (CTO) and chief digital officer (CDO) to develop and refine talent and organizations that relentlessly pursue knowledge to remain at the vanguard of technological development. To ensure that we continue to evolve as "DENSO, the technology company," I have set out three principles: do not develop for the sake of development; because our products are components, possess the capability to integrate systems; and conceive ideas like an amateur, execute like a professional. These principles embody an approach designed to create a cycle in which engineers work passionately and with a sense of purpose, valuable ideas and products emerge from that work, customers choose those products and thereby generate businesses, and those businesses lead to the growth of DENSO. I believe that maintaining this order is the very essence of our competitiveness.

The business environment facing the Company is at a major turning point where social issues and technological innovation are accelerating simultaneously, driven by progress in electrification and intelligence as well as by the movement toward carbon neutrality and addressing energy constraints. Under these conditions, our mission is to both create social value and achieve business growth through technology. In fiscal 2027, we will advance approximately 70 research and development themes and build a portfolio that spans everything from fundamental technologies to commercialization, centered on intelligence and electrification.

The source of our competitiveness lies in our ability to integrate a diverse range of fundamental technologies and optimize them as systems. We will fuse technologies, such as power electronics, thermal management, semiconductors and software, to create solutions that go beyond the motor vehicle and contribute to enhancing value across society as a whole. Moreover, we are currently transforming the very nature of development by evolving toward concurrent engineering that unifies research and development with *Monozukuri*. By incorporating a *Monozukuri* perspective that bears in mind mass production starting from the planning stage, and by uniting functional divisions from upstream to downstream, we are raising both development speed and quality at the same time.

Digital transformation (DX) is at the core of this technology strategy. DENSO's DX is a management foundation for achieving overwhelming development speed and quality by fusing practical on-site knowledge with AI and innovating the entire *Monozukuri* process, including development, engineering, and production. To accelerate value creation through collaboration between people and AI, we established the Human–AI Co-Evolution Department, and we are advancing AI-based operations and development together with the evolution of our people as a single initiative. We are also pursuing lightning-fast development, which simultaneously reduces development man-hours, shortens lead times, and lowers defects by using AI and data to advance the automation and integration of the development process. DX is not merely a foundation. It is the core that enables development process innovation and reinvestment funded by efficiency gains, and it is the driving force that advances our technological competitiveness.




By reinvesting the funds generated through these efforts into advanced development over the medium to long term, we are strengthening competitiveness in the short term while also expanding our technological foundation for the future. To translate our technology strategy reliably into results, innovation in the design and development processes themselves is indispensable, even as development speed accelerates globally. In a development environment that is growing ever larger and more complex, AI and DX are no longer options but essential foundations. DENSO is dramatically improving development efficiency and quality through the use of digital technologies, and we seek to maximize our technological competitiveness.

As the CDO, I am instilling the power of digital technology throughout the Company and driving transformation in both management and the front lines. By advancing the sophistication and automation of the entire development process, including design, verification and testing, we prevent inconsistencies in information and defects before they occur, reuse accumulated knowledge, and link these gains to sustained improvement in competitiveness. We will further differentiate ourselves from other companies by leveraging the vast volumes of data and digital knowledge we have accumulated to date on a Companywide basis.

At the same time, strengthening information security is indispensable to the adoption of DX and AI. We regard cyber risk as a management risk, and we are advancing Companywide security measures and strengthening governance. Against increasingly sophisticated cyberattacks as well, we will take multilayered measures across our global operations to protect business continuity, safety, and peace of mind.

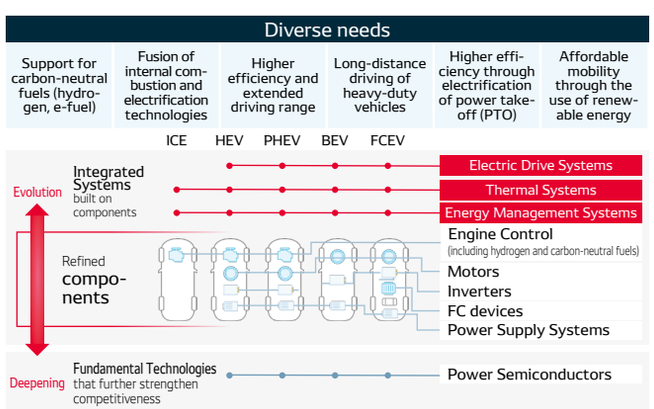
Going forward, the Company will continue to advance its technology strategy by combining five elements—the ability to generate ideas, fundamental technologies, system integration capabilities, development process innovation, and reinvestment funded by efficiency gains—and by keeping that cycle in motion. Through this, we will create value that directly addresses social issues and contribute to the realization of a sustainable society.

DENSO will continue to evolve as a company that fuses technology with digital capabilities and consistently creates value that society cannot do without.

## Green Electrification and Energy Management Domains

**Value provided:** We deliver optimal solutions for a wide range of powertrains (ICE,* HEV, PHEV, BEV, and FCEV) with the aim of moving toward carbon neutrality while responding to the differing needs of each region and application. In addition to increasing efficiency and extending driving range, we support sustainable mobility through lower energy costs and coordination with social systems.
**Technological approach:** We deepen fundamental technologies, such as internal combustion engines, motors, inverters, power supplies, thermal systems and energy management, and at the same time, evolve them into integrated electric drive, thermal and energy systems, thereby achieving overall vehicle optimization.
**DENSO's strength:** In addition to the depth of our fundamental technologies, which extend all the way to semiconductors and materials, our three-pronged solutions for systems, which fuse together mechanics, electronics and software, allow us to contribute to customer competitiveness through system value rather than just individual components.
**Implementation scenario:** We advance both the deepening that refines fundamental technologies as a source of competitiveness and the evolution achieved through system integration, and by deploying electrification solutions optimally suited to increasingly diverse needs heading into 2030, we contribute to the realization of a carbon-neutral society. Furthermore, we promote the development of a dynamic wireless power transfer system that enables unlimited driving with zero charging time.

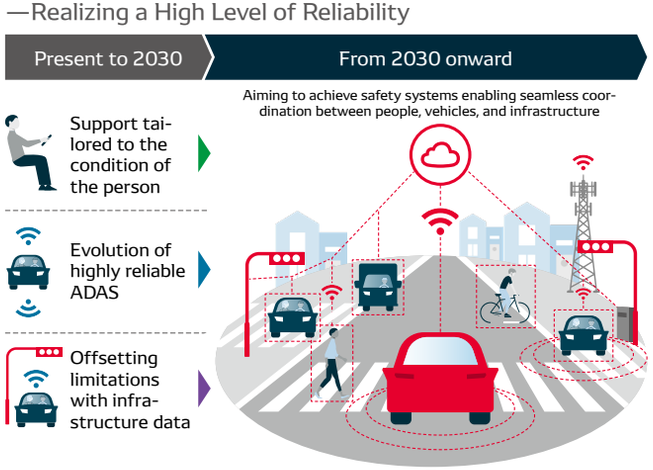
* ICE: Internal combustion engine




## Peace of Mind ADAS and Intelligent Systems Domain

**Value provided:** Toward the elimination of traffic accident fatalities, we provide highly safe advanced driver assistance systems (ADAS) that earn trust in real-world usage environments. In addition to advancing functionality, we broaden our scope to coordination with people and infrastructure, and by providing the value of peace of mind and reliability that does not invite overconfidence, we raise the level of safety across society as a whole.
**Technological approach:** We combine technologies, such as sensing, ADAS algorithms, cabin interior detection, communications, AI and software, to expand out from the vehicle level to coordination with people and infrastructure, and we advance these technologies under a design philosophy that expands functionality only after ensuring real-world safety.
**DENSO's strength:** Our strength lies in achieving real-world safety (reliability) and the expansion of functions and scope of application at a high level simultaneously, although the two are normally a trade-off. Drawing on many years of mass production experience and highly reliable design, we will continue to provide society with ADAS that minimize unintended operations.
**Implementation scenario:** Building on the highly reliable performance we have refined through ADAS, we expand functions and the scope of application in stages. While remaining committed to real-world safety, we will develop these systems toward coordination with people and infrastructure, ultimately aiming for the elimination of traffic accident fatalities.

### Peace of Mind / Evolution of Intelligent Systems —Realizing a High Level of Reliability




## Fundamental Technologies Semiconductor and Software Domains

### Semiconductors

**Technical approach and strengths:** Through our proprietary, innovative power semiconductor production technology known as the gas method, we are able to produce SiC semiconductors at more than 10 times conventional speeds, together with post-SiC semiconductor performance that surpasses consumer products.
**Implementation scenario:** Collaboration with partners from the perspective of geopolitical risks, among other issues, and establishment of supply structure capable of responding to fluctuations in semiconductor demand

### Software

**Technical approach and strengths:** Automotive software development drawing on more than 40 years of DENSO Group expertise, combined with the latest AI technologies, thereby achieving groundbreaking efficiency and significant cost reductions while handling increasingly complex, large-scale projects and maintaining quality necessary for in-vehicle products
**Implementation scenario:** Securing and strengthening human resources specialized in software development through measures such as the human resource development system based on the SOMRIE® certification system and better recruitment

COLUMN

### Taking on the Challenge of Realizing a Hydrogen Society

Under a multi-pathway strategy toward achieving carbon neutrality, DENSO develops and supplies system products for hydrogen mobility, such as fuel-cell electric vehicles (FCEVs) and hydrogen internal combustion engines. At the same time, we are working to commercialize solid oxide electrolysis cells (SOECs), which produce hydrogen with high efficiency. With SOECs, we leverage the thermal management technologies and ceramic technologies we have cultivated over many years in our mobility business to make effective use of waste heat, aiming to achieve world-leading electrolysis efficiency and thereby reduce hydrogen costs. In September 2025, together with JERA Co., Inc., we launched Japan's first demonstration of hydrogen production using a 200 kW-class SOEC at a thermal power plant. In February 2026, the project was also selected for the New Energy and Industrial Technology Development Organization (NEDO)'s Green Innovation Fund program, and we are accelerating the scale-up and cost reduction of SOECs with a view to social implementation in the 2030s.

# Technology Strategy: R&D Structure

Our R&D Structure That Supports the Building of a Common Global Foundation and Region-Optimized Development

In global markets, differences in customer needs and the competitive environment are widening from region to region, while standardization and greater efficiency are becoming more important in common technology domains such as software and AI. To address these factors, we are building a development structure that combines strategic joint development, commercialization suited to regional characteristics, and the establishment of a common foundation. We will also strengthen governance from the perspective of overall optimization and seek to achieve both higher added value and cost competitiveness.

## Europe

### Strengthening System Development with Customers

In Europe, dependence on existing businesses is high, yet we must shift toward new growth domains such as electrification. In addition, customers place importance on proposals made from a system perspective premised on the optimization of the vehicle as a whole. We will therefore accelerate our expansion into new domains while building on our existing technologies, and we will strengthen our development and proposal capabilities at the system level by participating from the advanced development stage. Through these efforts, we seek to advance the sophistication of our business structure.

## North America

### Strengthening AI and Advanced Technologies

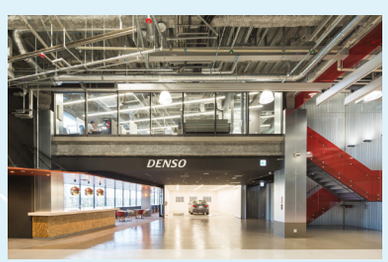
In North America, as customers advance in-house development, involvement from the initial stages of development and the ability to make technical proposals are becoming even more important. In addition, with advances in the software and AI domains, advanced technologies are now a principal driver of competitiveness. We will therefore strengthen our advanced technology development functions and deepen collaboration with external partners. Through these efforts, we will promote joint development from the upstream processes and aim to enhance our ability to create high-value-added systems.

## China

### Balancing Ultra-Rapid Technological Evolution with Price Competitiveness

In China, the market environment changes extremely rapidly, and we must respond simultaneously to sophisticated functional requirements and severe price competition. We will therefore expand local development authority and strengthen collaboration with external partners to build a development structure suited to regional characteristics. Through these efforts, we will enhance our business presence in China, a market of enormous scale.

## Japan



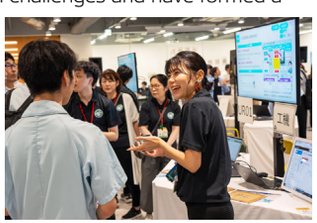

### An R&D Hub for Basic Research and Development and Global Development

Japan brings together the Advanced Research and Innovation Center, which serves as the core of DENSO's R&D, the head office R&D divisions, and Global R&D Tokyo, Haneda, and here we create fundamental and advanced technologies relating to electrification, semiconductors, heat management, control, and AI. These are core technologies that will determine our future business competitiveness, and we advance state-of-the-art research and development in collaboration with our overseas bases. In addition, our bases in Japan serve as the hub for global development and lead collaboration with the technical centers we operate in North America, Europe, China, India, and other regions. While integrating the technologies and insights gained in each region, we lead the standardization of development policies and common platforms and the advancement of system design.

# Technology Strategy: Utilization of AI

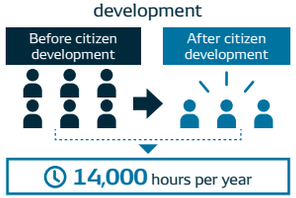
## Promoting Citizen Development Based on Our DX Strategy

Against a backdrop of intensifying global competition, technological progress, labor shortages and workstyle reform, improving operational efficiency and productivity has become a key issue for companies. Organization-wide use of digital technologies through DX is essential not only for strengthening competitiveness but also for easing workloads and creating new value. At the same time, a shortage of IT human resources stands in the way, and the Ministry of Economy, Trade and Industry points out that Japan will face a shortfall of up to approximately 790,000 workers in 2030. Citizen development, where non-technical employees build business applications, is drawing attention as a way to address this issue. No-code and low-code tools enable employees on the front lines to develop applications themselves without specialized knowledge, allowing them to resolve issues and make improvements quickly while also fostering human resource development and higher digital literacy. At DENSO, we position citizen development at the core of our DX promotion and advance continuous transformation of our operations. To promote the use of digital technologies, we must not only improve skills but also foster an organizational climate and culture that supports them. Through events, the sharing of case studies, and hands-on sessions, we encourage employees to take on challenges and have formed a community of approximately 10,000 people. Going forward, we will accelerate the development of citizen developers and aim to create an environment in which each employee can take on challenges and grow on their own initiative.



Scene from an in-house exhibition

Man-hour reductions achieved at departments leading in citizen development




Examples of citizen development

- An app that checks the health condition of team members every morning reduced 8,000 hours per year.
- An app that sends notifications and manages equipment maintenance reduced man-hours by 90%.
- An app for sharing information when defects occur reduced man-hours by 90% and prevents omissions in information sharing.

Target number of citizen developers to be achieved by fiscal 2031

**30%** of all employees

## Innovating Manufacturing by Integrating Practical Know-How on the Front Lines with AI

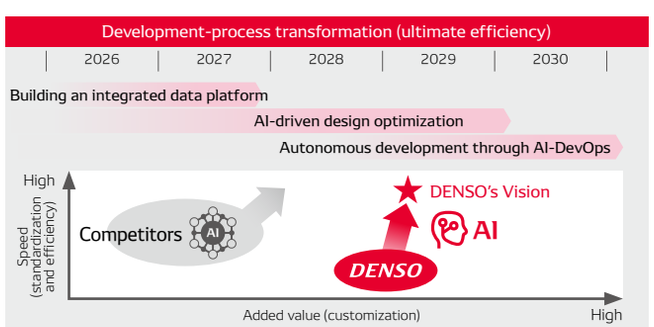
Our front lines have the advantage of highly efficient, high-quality *Monozukuri*. This practical know-how is precisely the asset we should leverage in the age of AI. By developing AI that can be used on-site, we will significantly change the way people work, shift to high-added-value operations, and further enhance the value we provide to our customers. By leveraging AI to raise the *Monozukuri* capabilities honed on the front lines to an overwhelming level, we aim to achieve the best in quality, cost, and delivery (QCD).

## From Innovation in Development Processes Using AI to the Ultimate in Efficiency

We established a structure to promote the ultimate in efficiency by fusing practical know-how from the front lines with the latest technologies such as AI and by transforming the entire *Monozukuri* process, including development, design and production. Through a framework in which people and AI collaborate across the entire process, we aim to improve quality and productivity at the same time.

As one concrete example, in software development we leveraged agentic AI to independently develop the Knowledge Graph Agent, which enhances every stage from requirements definition through to design, implementation, and verification in an integrated manner. By structuring and applying design knowledge, we detect omissions in requirements and enhance reviews, shifting to development that builds in quality from the earliest stages. As a result, we reduced rework and shortened development lead times.

Rather than limiting these efforts to individual applications, we will steadily expand the scope of application across the entire organization and establish it as a common platform, thereby continuously strengthening our competitiveness.




## Strengthening Information Security Activities and AI Governance

As automated driving and the IoT advance, cyber risks have become a critical issue that directly affects the safety and peace of mind of users as well as business continuity. To ensure vehicles can be used safely and securely, we are developing and reliably integrating technologies to protect in-vehicle products, such as ADAS and automated driving systems, from cyberattacks while establishing internal rules, processes, and other frameworks in compliance with laws and regulations in each country, and training core human resources responsible for product security. At our plants and across the supply chain, we implement multilayered defenses using the latest IT technologies and help suppliers improve their security standards, advancing the construction of a framework that ensures uninterrupted production and supply. In addition, to objectively evaluate and validate these activities, we are working to obtain international security certifications, including Trusted Information Security Assessment Exchange (TISAX), which is administered by the German Association of the Automotive Industry (VDA), and the automotive cybersecurity standard ISO/SAE 21434.

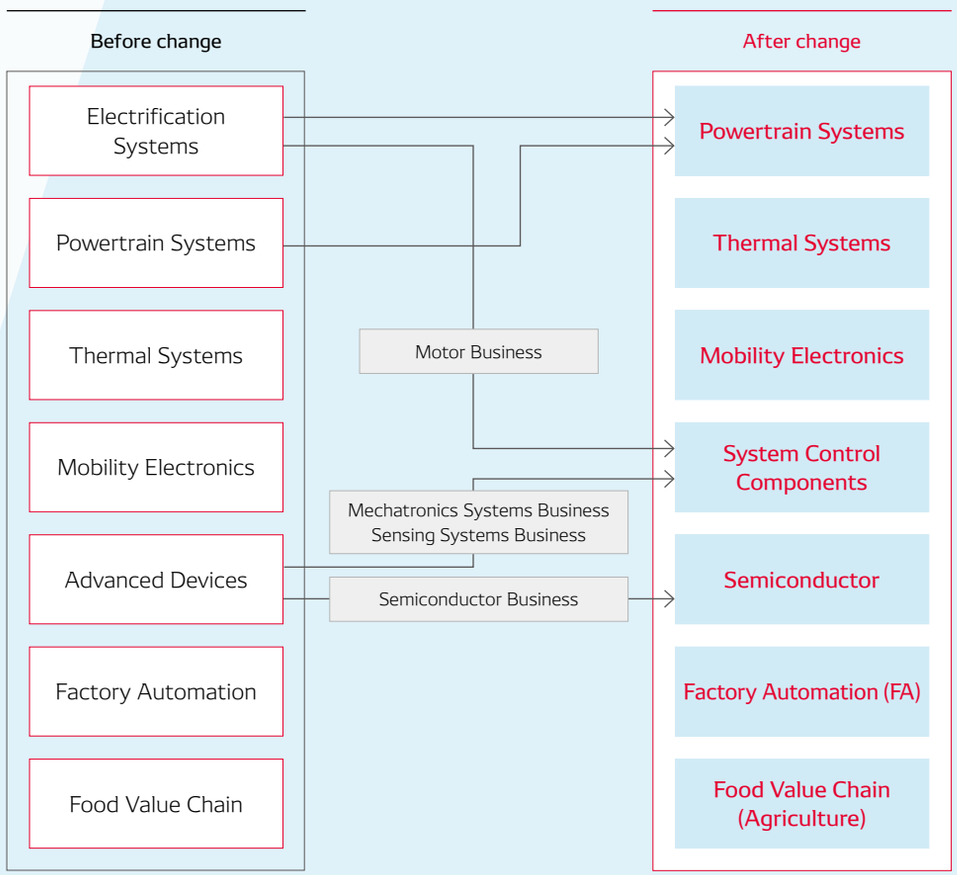
Recent advances in AI are powering automation in cyber vulnerability searches and attacks, and cyber risks are materializing at an accelerating pace as the interval between the disclosure of a vulnerability and its exploitation grows shorter. In light of these changes, we are strengthening our structures and frameworks around two pillars: vulnerability countermeasures in normal times and rapid detection and recovery in the event of an incident. At the same time, as the use of generative AI and agentic AI expands, new risks are also growing, including unauthorized operations and unintended external transmissions caused by AI autonomously linking to and executing tasks with external services and internal systems, in addition to conventional risks such as disinformation and misinformation, legal violations, infringement of rights, and information leaks. At DENSO, through safety reviews and monitoring for the use of AI and the cloud as well as the development of guidelines and education, we continue to raise literacy regarding AI risks, including an understanding of information security and of the risks and scope of responsibility associated with autonomous processing.

The accurate and secure information obtained through these activities represents important value and forms the foundation that protects credibility across the entire supply chain. To raise the level of the three elements of information quality: information security; privacy governance; and data protection and confidentiality management, we have established an information quality policy, and all employees are working as one to strengthen efforts to protect customer information and continue delivering peace of mind.

# Overview by Product

## Changes in Business Segments following Organizational Restructuring

The mobility market is rapidly diversifying, driven by the growing adoption of SDVs and ADAS, varying powertrain demands across regions, advancements in thermal management for BEVs, among other factors. These trends require more sophisticated and complex responses. To enhance overall vehicle value under these circumstances, it is essential to strengthen Companywide strategic capabilities, refine core technologies, and reinforce our ability to propose and develop integrated systems. Against this background, DENSO has implemented organizational changes to build a structure with strong strategic agility and execution capabilities that can quickly adapt to change. Through our technological and manufacturing expertise, we aim to deliver valuable products and systems that contribute to better vehicle development for our customers. From fiscal 2027, we are disclosing information based on classifications that reflect these organizational changes.




Aims of Reorganization

### Strengthening Systems to Respond to Needs in the Powertrain Market through Integration of Electrification and Internal Combustion

To respond swiftly and proactively to diverse powertrain market needs and accelerate carbon neutrality, we integrated the existing Powertrain Systems Business Group and the Electrification Systems Business Group into a new Powertrain Systems Business Group. This integration will enable the flexible allocation of resources between electrification and internal combustion and maximize synergies through technology and talent integration. At the same time, it will significantly enhance collaboration between powertrain and thermal management system development to deliver solutions that balance energy efficiency and comfort.

### Reinforcing ADAS Business for Safer and More Comfortable Mobility

As market demand for vehicle safety and convenience grows, ADAS development is becoming increasingly advanced and large scale. To address this trend, we reorganized the Mobility Electronics Business Group to strengthen our ADAS development structure. Specifically, we shifted existing ECU products with a strong track record in terms of development and supply to the Electronics Business Unit, while the Safety Systems Business Unit now focuses on ADAS and HMI systems, which are expected to see significant market expansion. By doing so, we will enable faster business decision-making, enhance system-level project execution, and accelerate both system proposals and development while evolving our technological capabilities for each product.

### Enhancing Core Technologies That Support the Value of Green and Peace of Mind

To accelerate development of products that meet customer needs by providing the value of green and peace of mind, we need to thoroughly reinforce our core technologies. To that end, we established the new System Control Components Business Group, under which we consolidated the existing Motor Business Unit, Mechatronics Systems Business Unit, and Sensing Systems Business Unit. By bringing together key products such as sensors and actuators that enhance environmental performance, including fuel efficiency improvement and extended EV range, and offer safety and peace of mind by enabling precise vehicle control, we will strengthen product competitiveness and maximize synergies.

### Strengthening Semiconductor Business

As vehicle electrification and intelligence advance, semiconductors are becoming increasingly critical as foundational technologies for safety, comfort, and environmental performance. In light of these circumstances, we established a new Semiconductor Business Group, specializing in semiconductors, through the integration of the Semiconductor Business Unit from the Advanced Devices Business Group along with related strategic and technical functions. Through this new business group, we will accelerate decision-making and enable rapid strategy formulation and execution, thereby refining our core technologies and achieving further business expansion.

# Powertrain Systems

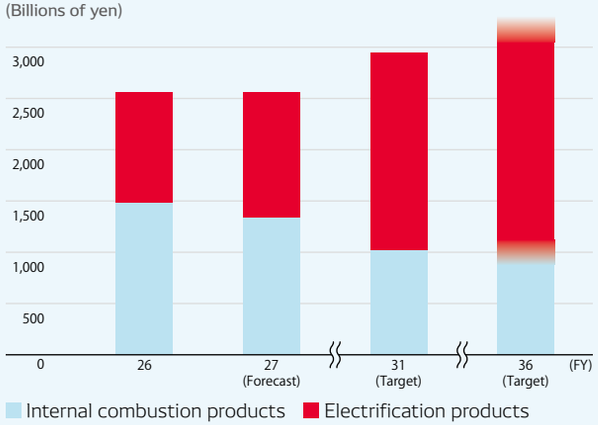
Tsuneo Maebara
Head of Business Group

**In collaboration with our customers, we integrate internal combustion and electrification with components and systems to create new value and contribute to the realization of a carbon-neutral society.**

We are a Tier 1 supplier that possesses both internal combustion and electrification technologies and product lines within a single business group. As such a supplier operating in a rapidly changing mobility market, we are integrating these technologies and product lines to deliver value that directly enhances vehicle competitiveness across every powertrain system configuration. By doing so, we aim to be a one-of-a-kind business partner that delivers the best possible value to the environment and the end-user.

### Revenue by Product Type

(Billions of yen)




## Business Strengths

- Ability to support multi-pathway to maximize energy efficiency from a vehicle-based perspective across all powertrain systems
- Creation of new value by further advancing internal combustion and electrification technologies and integrating these technologies from a vehicle-based perspective
- *Monozukuri* (manufacturing) capabilities rooted in each region around the world that achieves high reliability, advanced productivity, and continued stable supply from a vehicle-based perspective

## Changes in the Operating Environment and Awareness of Issues

- Differing powertrain system configurations by region due to differences in demographics, energy situations, regulations, and policies
- Realization of value enhancement from the user's perspective in the powertrain systems field amid growing user expectations for autonomous driving and SDVs
- Emergence of threats to profitability and market position of existing suppliers amid intensifying competition driven by the rise of Chinese suppliers

## Vision for 2030

In January 2026, we established the new Powertrain Systems Business Group, thereby unifying the internal combustion and electrification domains. Under this new organization, we are pursuing value creation through the further evolution of components by bringing together and integrating the technical expertise and knowledge cultivated in both the internal combustion and electrification domains. In addition, going beyond simply the pursuit of component optimization, we will create new value from a vehicle-based perspective in response to this era of diversification of powertrain systems.

Specifically, we will expand our integrated development scope through the unification of the internal combustion and electrification domains, while leveraging our in-house, vertically integrated development structure spanning integrated systems, elemental technologies, and core components. By doing so, we will be able to design combustion control, thermal management, power conversion, and drive systems in an integrated and optimized manner, thus significantly improving the energy efficiency of the entire vehicle system.

We will deliver value that directly contributes to competitiveness from both the perspective of the user and the vehicle across all powertrain configurations, from engine-powered vehicles (gasoline and diesel) to hybrid vehicles (HEVs and PHEVs) and electric vehicles (BEVs and FCEVs). To achieve carbon neutrality by 2035, we will establish and further strengthen our position as a trustworthy, reliable, and irreplaceable business partner. Through this position, we will aim for roughly ¥3 trillion in revenue by fiscal 2031 through the steady enhancement of the internal combustion domain, the pursuit of innovation in the electrification domain, and the integration of technologies in both these domains.

### Strengthening Product Development

In the internal combustion domain, we will enhance the applicability of internal combustion engines by improving their heat efficiency and leading the response to carbon-neutral fuel.

In the electrification domain, we will further strengthen vertically integrated materials development, including motor magnets and electrical steel, inverter power semiconductors, power relay contact materials, and battery materials, to differentiate our components. At the same time, we will increase system efficiency by advancing and integrating motor control and energy management, thereby delivering longer driving range, shorter charging times, and greater reliability.

### Innovating Manufacturing

We will optimize our production and supply system across six global regions, realizing a stable supply of internal combustion products and enhancing our ability to meet diversifying electrification needs. To respond swiftly to multi-pathway demand in each region, we are developing flexible production lines capable of handling both HEV and BEV systems. In fiscal 2027, we will begin demonstration tests for a highly efficient production line, automated through to logistics, that reduces dependence on human labor. We are also actively advancing the digitalization of production and enhancing our *Monozukuri* capabilities, including by utilizing AI to pass on our technical expertise and conduct preventive BCP management.

### Developing People, Co-Creating with Partners

For *Hitozukuri* (human resource development), we will focus on cultivating systems engineers with component-level knowledge and expertise who can pursue optimization from a vehicle-based perspective and engage in co-creation activities with customers. We will also visualize the expertise and skills of our engineers as well as strengthen human resource development and optimize personnel allocation to ensure that our talent can meet the needs of the market and our customers.

For co-creation with partners, we will capture demand in the diversifying and expanding powertrain systems market by collaborating with the Toyota Group to strengthen our development capabilities and competitiveness. In particular, in electrification, we will collaborate strategically as needed to co-create future-oriented technologies, expand our product lineup, and promote joint manufacturing. In these ways, we will aim to rapidly enter the market and expand our business.

# Powertrain Systems

## Core Products

Green Peace of Mind

**Inverters**
Convert direct current from battery into alternating current at the frequency and voltage optimal for driving the motor

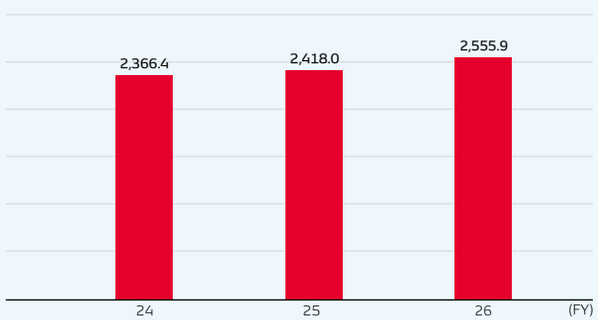
**Battery ECU**
Monitors the voltage and temperature of multiple battery cells to control high-voltage batteries required for EVs

**Diesel common rail systems and gasoline direct injectors**
Realize stable combustion through optimally controlled fuel injection

**Exhaust systems (including exhaust sensors)**
Detect oxygen concentration and adjust the opening and closing of intake and exhaust valves, etc.

## Revenue

(Billions of yen)




## Initiatives for Fiscal 2027

In anticipation of changes in the mobility market, we have flexibly restructured our internal combustion and electrification business portfolio while balancing the development of new technologies and products with stable supply.

Taking into account the multi-pathway trend in which the optimal powertrain system differs by region, we have positioned the internal combustion domain as a "deepening domain" in which we have focused technologically on responding to tightening emissions regulations and carbon-neutral fuels. With regard to production, we aim to strengthen our supply capability for the Global South market, where demand for internal combustion products remains solid. To that end, we are progressively consolidating production in India and the ASEAN region and upgrading our *Monozukuri* activities by leveraging economies of scale.

For technology and product proposals that enhance vehicle competitiveness, we have established plans for compact, high-performance electric drive systems and will sequentially launch new components from fiscal 2029 onward that halve both power loss and size compared to competitors. On the manufacturing front, we have worked to expand production capacity and mitigate supply risks, including by expanding our inverter production structure in India, Thailand, and Kyushu in fiscal 2026.

While our current businesses center on component sales, we will seek to create new value that goes beyond the internal combustion and electrical components businesses by integrating technologies from both domains. We will also propose to OEMs integrated systems from vehicle-based perspectives. We reorganized our business group in January 2026 to establish an integrated structure spanning both internal combustion and electrification.

With this reorganization, we are striving to provide the best possible products and services for the environment and the end-user. To that end, we are steadily enhancing the internal combustion domain and pursuing innovation in the electrification domain. While assessing the current competitive position of each internal combustion and electrification product lineup, we will consistently work to develop and propose differentiated technologies; expand our product lineups and cultivate markets through alliances; achieve overwhelming cost competitiveness; and ensure BCP readiness and stable supply in collaboration with OEMs and suppliers. Through these initiatives, we will bolster our foundation for sustainable growth through 2030 and beyond.

### Differentiated Technologies

- Systems: Creation of synergies between internal combustion and electrification (powertrain systems and energy management optimized from a vehicle-based perspective)
- Internal combustion: Enhancement of engine heat efficiency, increased robustness to support fuel diversification, and response to tightening emissions regulations
- Electrification: Compact and high-efficiency electric drive and power systems leveraging the strengths of vertical integration (in-house development from the material and semiconductor level)

### Product Lineup Expansion and Market Development

- Electrification product lineup covering not only four-wheeled vehicles but also two-wheeled vehicles, commercial vehicles, and agricultural and construction machinery
- Alliances with local partners in the Global South market, which is expected to see further growth

### Cost Competitiveness

- Acquisition of capabilities to offer multiple cost-tier options according to application and market needs

### BCP Readiness and Stable Supply

- Maintenance and upgrade of existing production lines to cater to needs of each OEM
- Establishment of a resilient supply chain centered on global bridging (procurement from multiple suppliers)
- Development of materials (such as magnets) and products that do not rely on heavy rare earth elements (rare earths) subject to supply constraints

COLUMN

### Response to Climate Change at Our Plants

In the Powertrain Systems Business Group, we pursue carbon neutrality not only in our products but also at our plants. We will roll out effective initiatives implemented at individual plants to other locations in Japan and overseas and promote energy-saving activities and fuel conversion. By doing so, we will achieve both decarbonization and an improved environmental performance at our plants, thereby contributing to our material issue of responding to climate change.

**Anjo Plant, Japan:** By optimizing air-conditioning for production areas and implementing heat mitigation measures for outdoor units using evaporative cooling, we reduced air-conditioning electricity consumption and cut $CO_2$ emissions by 24% compared with fiscal 2025.

**Nishio Plant, Japan:** By utilizing a portable energy visualization system to monitor energy use for each piece of equipment in real time and thoroughly identify waste, we reduced $CO_2$ emissions by 27% compared with fiscal 2025. We have also started to roll out this initiative at our suppliers, thus promoting energy conservation across the entire supply chain.

**Haryana Plant, India:** In the manufacturing process for high-precision aluminum die-cast parts for power electronics and motors that directly affect the performance of electrified vehicles, we are conducting demonstration tests* for an aluminum melting technology using hydrogen fuel. Through this technology, we expect to reduce $CO_2$ emissions by 48%.

* Carbon-Neutral Component Processing Demonstration Project, implemented under the FY2023 Supplementary Subsidy for the Global South Future-Oriented Co-Creation Project of the Ministry of Economy, Trade and Industry (METI)

# Thermal Systems

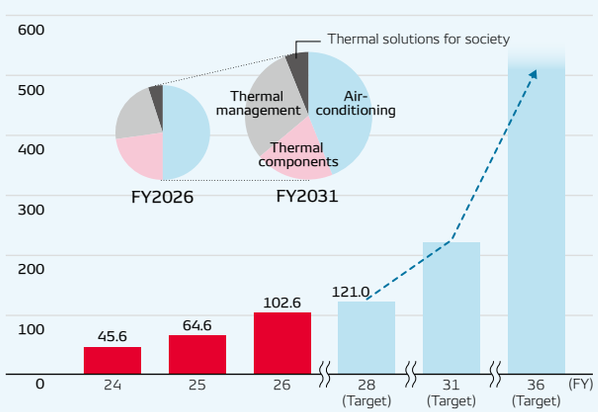
Hidemasa Takahashi
Head of Business Group

**As a company that supports the future of mobility, we will accelerate the evolution of electrification and intelligent technologies with world-class thermal technologies.**

Precise temperature control is required for the fast charging of EVs as well as for advanced semiconductors and computers. At DENSO, we have supported the evolution of vehicles through our automotive air-conditioning and cooling technologies. In the CASE era, issues related to heat are becoming increasingly more complex. As the world's leading thermal professionals, we will provide the world with optimal solutions to heat-related issues through our thermal management systems.

### Revenue from Environmental Technology Products

(Billions of yen)




## Business Strengths

- Global No. 1 share in in-vehicle thermal products; business and trust-based relationships with 130 diverse business partners around the world
- Highly unique and effective environmental technology capabilities backed by more than 2,500 patents
- *Monozukuri* capabilities spanning 59 locations globally, enabling the ongoing creation of world-first products
- Supply chain underpinned by locally rooted global talent and strong partnerships

## Changes in the Operating Environment and Awareness of Issues

- Growing environmental awareness, sense of urgency, and demand driven by extreme weather events that have become the norm across the globe
- Growing demand for diversity of options sought by countries and customers amid changes in economic policy driven by the global economic downturn and rise of nationalism, as well as amid the reassessment of environmental regulations
- Shakeouts in Chinese market driving Chinese rivals overseas, fueling fierce global competition through hyper-fast development and rollout

## Vision for 2030

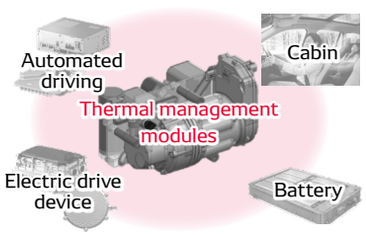
Vehicles that operate for extended periods across diverse environments around the world require thermal management that provides a passenger-friendly cabin environment that offers peace of mind and comfort. DENSO offers cutting-edge air-conditioning systems that combine the world's smallest, most efficient car air conditioners and unique, world-first radiant heaters to create a quiet, spacious cabin under both hot and cold conditions. By doing so, we help advance the value of mobility.

As carbon neutrality becomes a global priority, vehicles are expected to evolve through electrification, which changes power sources to help reduce $CO_2$ emissions, and through intelligence, which improves safety, reduces driver workload, and dramatically enhances environmental performance by optimizing energy efficiency. With heat pump systems that pursue the world's highest levels of efficiency, we resolve thermal issues in batteries, inverters, and electronic components. We also extend driving range and improve energy efficiency. In these ways, we contribute to enhancing the value of vehicles. By 2030, we will also halve vehicle temperature-control energy consumption.

We will also utilize AI in the robotic processes at our global plants, leveraging data accumulated across design, quality, and manufacturing activities to rapidly identify early signs of irregularities and potential solutions that would be difficult for humans to detect. By combining our high level of reliability with our competitive speed, we will further reinforce our operating foundation.

We will strengthen our business portfolio by expanding into the social infrastructure domain, where heat-related issues are becoming more common, such as data centers. To do so, we will leverage the environmental technology products we have refined through the automotive business, our *Monozukuri* activities rooted in regions around the world, and our co-creation relationships with business partners around the globe.

By providing specific methods for addressing global warming, we will continue to be a business that values the trust and happiness of our customers.




### Strengthening Product Development

In terms of comfort solutions, we will build on the technologies developed through our heating, ventilation, and air-conditioning (HVAC) products, where we hold a global market share of over 30%. Under a global strategy that pairs globally standardized core technologies with customization options tailored to regional and customer needs, we will roll out new compact and optimized HVAC units starting in 2027. We will continue to introduce technologies, starting with radiant heaters, that directly heat and cool occupants. Furthermore, we will accelerate the development of thermal management systems that integrate heat pumps, refrigerant circuits, heat exchangers, and control technologies, thereby expanding our lineup of products that meet diverse needs. Through these efforts, we will engage in co-creation with our customers aimed at realizing quiet, spacious, and passenger-centric cabin environments and offering comfortable, energy-efficient mobility experiences.

### Innovating Manufacturing

By 2029, we will double the speed from product development to market launch compared to current levels, achieving one of the fastest development to launch operations in the world. We will also leverage DX and AI to automate and enhance product development, quality assurance, and production readiness. Furthermore, for MPW needs, we will optimize products and services through locally led initiatives to respond swiftly to market changes. We will also transition from high-volume assembly lines to flexible, high-efficiency lines powered by robotics and high-speed processing equipment. Alongside the reorganization of our production structure, this transition will establish a resilient supply structure that improves asset efficiency by 20%.

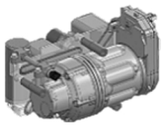
### Developing People, Co-Creating with Partners

The lifeblood of DENSO's competitiveness comes from the technologies, *Monozukuri* activities, and quality that the Company has cultivated since its founding. By utilizing AI to standardize and visualize our long-cultivated insights, we will accelerate borderless talent development, enhance the ability of local offices to solve problems autonomously, and dramatically speed up region-led value creation. In addition, through co-creation with partners, we will combine our technological strength with the ability to adapt to each market, aiming to maintain a competitive advantage and achieve sustainable growth even in a rapidly changing world. Furthermore, by rolling out the insights gained through these co-creation activities in other domains, we will set in motion a virtuous cycle between *Hitozukuri* and business growth and promote a shift toward more creative work.

## Thermal Systems

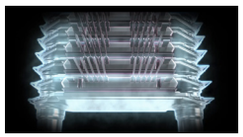
### Core Products

Green Peace of Mind



**Thermal management systems**

Our thermal management systems leverage the world's highest-efficiency heat pump technology to help improve electricity efficiency and extend the driving range of EVs. In addition, through an integrated module, these systems conserve space via the integration of key components and are compatible with next-generation refrigerants such as the natural refrigerant R290. Moving forward, we will continue to lead the way with technological development for management systems in which all parts are thermally connected.



**Inverter cooling systems**

Using our proprietary dual-side cooling technology, our inverter cooling systems enclose a card-type power module (power card), which contains power semiconductor devices, to cool and dissipate heat from both sides. By doing so, these systems help realize a compact, high-performance electric drive system, making them the overwhelmingly top product worldwide in HEVs by market share. These systems also meet the diverse needs of various electric drive configurations, thus contributing to the expansion of electrification.

**HVAC**

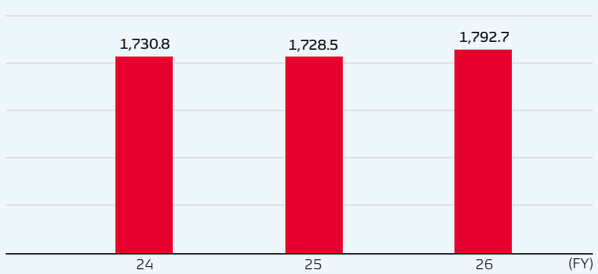
Through blower technology, which we cultivated through the combination of fluid analysis and extensive real-world testing, and our proprietary resin molding technology, we have achieved a high-efficiency turbo fan. Applying this technology, we offer an extensive lineup of the world's most compact, high-performance HVAC units. These units help us meet diversifying vehicle requirements while securing a No. 1 global market share, contributing to the realization of attractive interior designs and extended driving range.

**Bus air conditioner**

By combining a heat pump system optimized for bus air-conditioning with a compact, highly efficient electric compressor and motor, we have successfully mass-produced a one-package electric bus air conditioner that achieves the world's highest level of energy consumption reductions of 30% alongside a 30% reduction in size and weight. Moving forward, we will evolve this technology into a thermal management system that recovers and utilizes vehicle waste heat, which will contribute to extending the driving range of electric buses.

### Revenue

(Billions of yen)




## Initiatives for Fiscal 2027

### Strengthening Product Development

As for the thermal management domain, in fiscal 2026 we promoted cross-organizational collaboration to increase the in-house production of system products. We also promoted advanced development activities and secured new orders. In these ways, we sought to strengthen our business foundation. Meanwhile, taking into account diversifying needs and intensifying competition, we are faced with the challenge of further evolving our product development and proposal capabilities. In fiscal 2027, we will expand our product lineup and strengthen our supply network so that we will continue to be our customers' first choice across the globe. With a focus on next-generation HVAC systems and heat management systems for integrated modules that support multi-pathway and natural refrigerants, we will promote commercialization of various products through co-creation with our customers. In China and Europe, in particular, we will promote advanced development and *Monozukuri* activities, and by 2030, we will aim to create a world in which every component is thermally connected and integrated into energy management systems, turning such technology into a new business pillar. We will also accelerate the demonstration tests of our proprietary cooling systems to address the growing power demand and heat load of data centers, helping to optimize energy through thermal control and realize an energy-neutral future.

### Innovating Manufacturing

Amid growing uncertainty in the operating environment, in fiscal 2026 we sought to dramatically reform our cost structure, engaging in improvement activities led by frontline personnel and strengthening our earnings base. In addition, we reorganized HVAC production sites and optimized our workforce in North America, Europe, and China. At the same time, we commenced efforts to introduce production lines capable of flexibly responding to fluctuations in production volume demand and formulated a product strategy to support MPW approaches.

In fiscal 2027, we will step up global collaboration within our *Monozukuri* activities so that we can flexibly respond to diversifying market needs. We will also gradually roll out production lines that can accommodate changes in the product mix, starting in Europe, to strengthen our global supply capacity and response capabilities. Through these efforts, we will establish a supply structure that can deliver high-value-added products to customers in a timely manner.

Further, with a view toward practical application in the market in fiscal 2031, we are developing environmentally friendly products that utilize recycled materials as well as preparing and developing production technologies for these products.

### Developing People and Co-Creating with Partners

To establish links between the growth of our talent and the growth of our business, we are working to cultivate personnel who continue to take on challenges autonomously and to build work environments that enable them to do so. In fiscal 2026, we launched an initiative to embed our accumulated knowledge into AI systems, allowing employees to devote more time to pursuing new challenges. In fiscal 2027, we will accelerate the automation of a broader range of tasks by having AI learn from our tacit knowledge. In tandem with these efforts, we will define our ideal type of talent and career paths for each job category and better visualize the development process. To provide hands-on work experience, we launched a human resource development program focused on new value creation and a transformation project aimed at strengthening our engineering culture. Through these efforts, we provide opportunities for our employees to acquire customer-centric planning and proposal capabilities, as well as the networks and practical skills needed to create new markets. By doing so, we will continue to nurture a passion for engineering.

In addition, to address increasingly diverse and complex regional needs, intensifying competition from other industries, and rapid market changes, we will deepen collaboration with regional partners through joint development, joint procurement, and mutual supply arrangements, drawing on the trust-based relationships we have cultivated with them over many years. Furthermore, through product lineups tailored to each region, we will deepen our connections with customers and suppliers so that we can continue to capitalize on growth opportunities in China's rapidly changing market and India's fast-growing market.

COLUMN

### Recycling of Resources

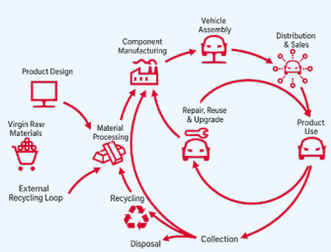
DENSO cherishes the earth's finite resources and therefore contributes to the realization of a recycling-oriented society by promoting product development and *Monozukuri* activities based on the use of recycled materials and resource circulation.

For HVAC resins, we will begin using PCR* materials (recyclable plastic raw materials derived from household PET bottles and similar items that have been collected and processed through recycling) in Japan from 2027, ahead of the enactment of ELV (end-of-life vehicle) regulations in Europe, and will achieve full deployment by 2031 by shifting to product structures that better facilitate recycling.

Furthermore, by implementing manufacturing processes that do not require grease (lubricating oil) and making use of easily removable gaskets, we will make it easier to disassemble components and separate materials at a vehicle's end of life, enabling reuse and contributing to the expansion of resource recycling.

We are also developing heat exchangers that utilize recycled aluminum with the aim of contributing to a sustainable planet.

* PCR: Post-consumer recycled



# Mobility Electronics

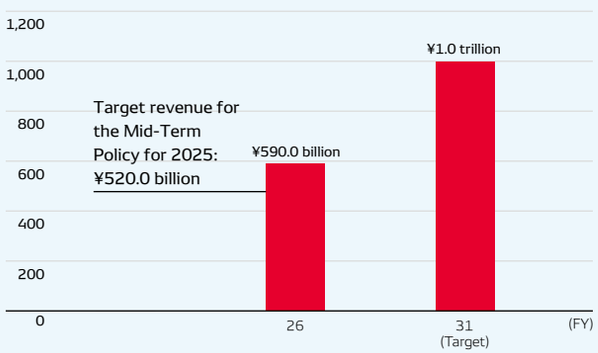
**Hisashi Iida**
Head of Business Group

**We will contribute to the creation of a society where all people can access mobility conveniently and with peace of mind, enhancing the quality of mobility.**

Due to the progression of CASE, mobility is entering into a new phase in which various technologies are becoming integrated. Drawing on the trust we have built together with automakers, we will evolve our electronics and software while accurately assessing market trends and user needs. By continuously introducing products that provide value and can be used safely and with peace of mind amid the shift to increasingly large-scale and software-defined mobility systems, we aim to achieve carbon neutrality and zero fatalities from traffic accidents.

### Growth of the ADAS Business toward 2030

(Billions of yen)




Note: We have achieved solid results in the ADAS business, which we have continued to strengthen to date. Looking ahead to 2030, we will further reinforce intelligent technologies as a core area as we strive to become a leading player in mobility electronics.

## Business Strengths

- Broad technological expertise and implementation capabilities across all vehicle domains, enhancing efforts to create new user experiences
- Provision of compelling products that combine reliability and advanced features cultivated through in-vehicle applications
- Partnerships with global automakers, semiconductor manufacturers, and software vendors

## Changes in the Operating Environment and Awareness of Issues

- Advances in AI that will dramatically transform the future of mobility
- Large-scale integrated systems that coordinate mobility functions and enhance added value
- Reinforcement of response to advanced technology development and development speed, areas in which leading tech companies currently hold an advantage
- Increasing investment in technology development to keep pace with functional advances and growing complexity

## Vision for 2030

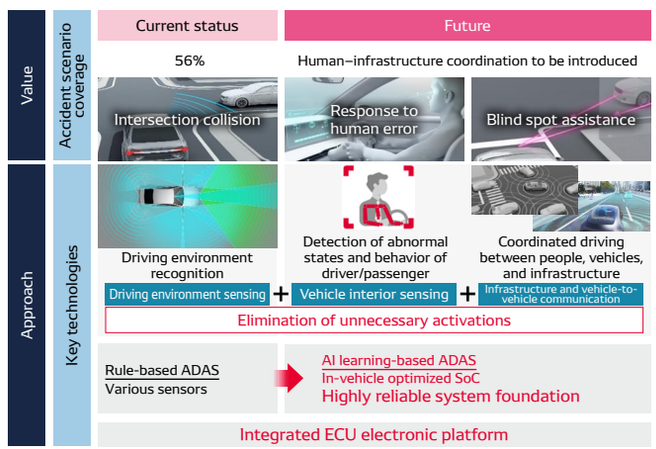
### Resolution of Social Issues

Through the advancement and widespread adoption of ADAS systems, we aim to achieve zero fatalities from traffic accidents and enable safe and open mobility. To date, we have expanded accident scenario coverage to 56%, and building on this success going forward, we will work toward the next generation of mobility in which there is seamless coordination between people, vehicles, and infrastructure. As mobility continues to diversify, we will pursue co-creation with automakers and partners to realize a platform that serves as the core of vehicle electronic systems and optimally integrates and controls the entire vehicle to meet a wide range of customer needs.

Furthermore, through highly efficient *Monozukuri* activities and the promotion of energy management, we will minimize energy consumption across the entire vehicle and contribute to the realization of a sustainable society.

### Well-being and Growth of Our People

We are tackling new challenges such as ADAS systems designed to achieve zero fatalities from traffic accidents and next-generation factories incorporating physical AI, including the new Zenmyo South Plant. Through these challenges, we will create environments where people can truly feel satisfied in working at DENSO and in the Mobility Electronics Business. By doing so, we will foster an organization where every individual can grow, engage in meaningful work, and continue taking on challenges with pride.




## Strengthening Product Development

We aim to provide highly reliable ADAS systems to all automakers.

As automated driving gradually becomes more sophisticated, we will evolve toward highly practical, safe systems that thoroughly minimize unnecessary activations, achieving both expanded functionality and reliability—which are typically in a trade-off relationship—at a high level, in order to maintain the high reliability we have built together with automakers. Leveraging this strength, we will combine various sensors, optimized in-vehicle SoCs, and redundant architecture to develop and expand sales of reliable system foundations that enable AI model updates in accordance with the needs of automakers.

## Innovating Manufacturing

We will transform our work environments through AI, including not only the data and explicit knowledge we have accumulated on the front lines but also tacit knowledge. Specifically, we will further accelerate development speed by automating and optimizing development processes under AI-driven approaches, aiming to deliver high-added-value solutions at unprecedented speed. Furthermore, at our plants, we will codify the expertise underpinning our skilled craftsmanship and continuous improvement activities in an effort to expand automation into processes that could previously only be done by people. We will carry out demonstration tests for this AI technology at the new Zenmyo South Plant, starting in fiscal 2028.

By changing how our employees work and shifting that work toward more high-value-added tasks, we will further enhance the value we provide.

## Developing People, Co-Creating with Partners

We are working to increase the number of expert personnel to respond to advanced technologies. In addition to enhancing the recruitment and development of niche experts in fields such as AI, we are cultivating systems engineers with expertise across multiple disciplines. We are also standardizing and visualizing skill requirements across all software domains in a bid to optimize talent allocation and promote systematic talent development. To address the increasingly diverse mobility needs, we will promote co-creation activities through cross-industrial alliances, including with tech companies to lead advanced technological development.

## Core Products

Green Peace of Mind

### Advanced driver assistance systems (ADAS)

ADAS support driving by using image sensors, millimeter-wave radar, and other technologies to recognize and assess the surrounding environment. By boosting the recognition and assessment performance of these systems, we will gradually expand their accident scenario coverage, thus contributing to a safer mobility society. In recent years, we have expanded the capabilities of ADAS to include not only environmental sensing but also driver monitoring, providing more advanced driver assistance.

### Integrated HMI systems

Integrated HMI systems are cross-domain control systems that connect multiple vehicle domains and control and display driving, navigation, and ADAS information in an integrated manner, enabling drivers to access optimized information through a unified interface. By enabling continuous value enhancement through software updates, these systems deliver more comfortable in-vehicle experiences.

### Powertrain control ECUs

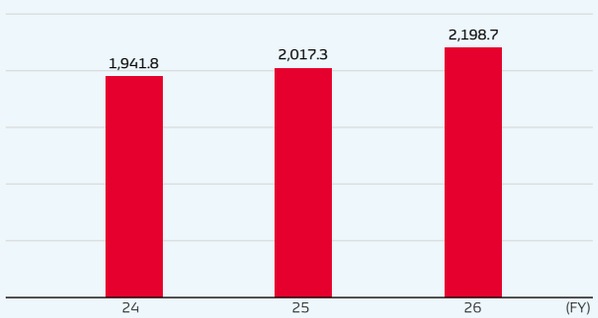
Powertrain control ECUs support a wide range of powertrains, including gasoline vehicles, HEVs, and BEVs, and provide integrated control of propulsion systems such as engines, motors, and batteries. By optimizing control based on data from multiple sensors, these ECUs improve fuel efficiency, energy efficiency, and driving performance while helping reduce environmental impact through lower emissions.

### Software

Installed in various systems, ECUs, and sensors, software is a core technology that enables vehicle control. By processing sensor data in real time, it optimizes driving performance and safety functions. In addition, through OTA (over-the-air) updates, the software is able to make continuous functional enhancements, helping ensure mobility quality and safety.

## Revenue

(Billions of yen)




## Initiatives for Fiscal 2027

### Review of Fiscal 2026

The Mobility Electronics Business as a whole achieved record-high revenue of ¥2.2 trillion through the proactive expansion of ADAS sales and the introduction of the latest HMI systems. Sales of ADAS alone reached ¥590.0 billion, exceeding the target of ¥520.0 billion under the Mid-Term Policy for 2025. Furthermore, to accelerate the shift to intelligent vehicles, we entered into new partnerships to incorporate the latest technologies from each region and business domain. In Japan, we invested in Turing Inc. to support the practical application of AI and autonomous driving technologies in the automotive industry. In China, we have partnered with Horizon Robotics, Inc. to begin the joint development of ADAS.

### Initiatives for Fiscal 2027

Key Initiative: Further Reinforcement of ADAS Business

We aim to achieve zero fatalities from traffic accidents through advanced environmental sensing, vehicle interior sensing capable of detecting abnormal conditions and driver and passenger behavior, and driver assistance enabled by coordination between people, vehicles, and infrastructure.

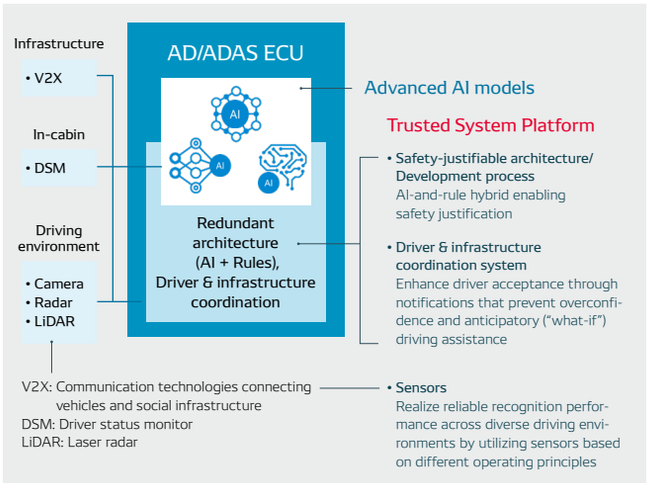
As the level of automated driving (safety functions) becomes more advanced, expectations are increasing for even higher, real-world safety performance with minimal unnecessary activations. However, these two objectives are generally considered to involve trade-offs. To that end, we are developing a reliable system foundation to provide ADAS products that achieve both advanced safety functions and a high level of real-world safety.

To enhance safety functions, we expect to utilize and continuously update advanced AI models, including the latest AI models and the proprietary AI models of automakers. Our strengths lie in our dedication to ensuring the high reliability we have built together with automakers, backed by a mass production track record of 53 million vehicles across 144 countries and regions worldwide.

Our reliable system foundation spans three key development domains.

1. We aim to establish redundant architectures and development processes that enable us to verify that AI systems do not deviate from safety standards.
2. We aim to develop systems for coordination between people and infrastructure designed with drivers' perspectives in mind, including notifications that provide drivers with reassurance while preventing over reliance, as well as "anticipatory driver assistance" functions.
3. We aim to achieve highly reliable recognition performance across diverse driving environments by combining sensors based on different operating principles.

By achieving these aims, we will contribute to the realization of autonomous driving systems that users can continue to use with peace of mind, targeting a market launch in fiscal 2031, 80% coverage of accident scenarios, and a false-activation rate far lower than those of competing systems.




COLUMN

### Recycling of Resources

**Enhancing Resource Efficiency by Reducing Vehicle Power Consumption**

As software-defined vehicles (SDVs) continue to evolve, vehicle architectures are shifting from conventional configurations built around individual ECUs to architectures centered on integrated ECUs and electronic platforms. By integrating and optimizing previously separated control, computing, and communications functions, we will reduce standby power consumption, computing power consumption, and communication loads, thereby lowering overall vehicle energy consumption. In this way, we will reduce battery capacity requirements and the use of wiring and electronic components while also extending product lifespan, helping to reduce environmental burden across the entire vehicle life cycle.

**Optimizing Resource Use and Realizing Recycling-based *Monozukuri* through Compact, Lightweight, and High-Efficiency Design**

As vehicles become increasingly electrified and intelligent, we will promote compact, lightweight, and high-efficiency ECU designs through innovations in high-density packaging, thermal management, and power control. Through such efforts, we will reduce the use of materials and rare resources as well as the number of components, while extending product lifespan through enhanced durability and reliability. Furthermore, by reducing transportation loads and adopting designs that facilitate reuse and recycling, we will reduce the environmental burden and enhance resource recycling across the entire vehicle life cycle.

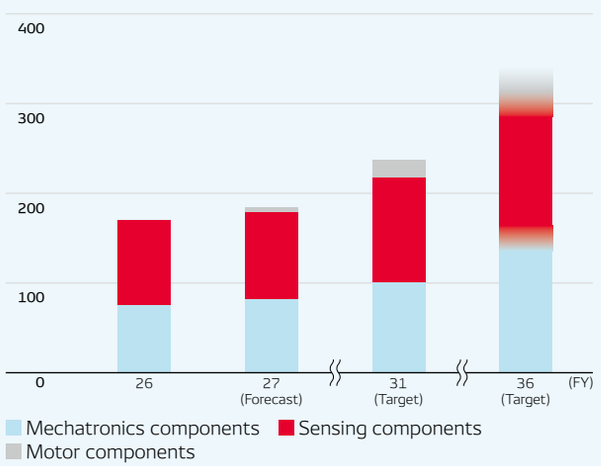
# System Control Components

**Eiji Inoue**
Head of Business Group

**We enhance the value of our customers' systems through advanced sensing and actuation technologies, helping to evolve mobility and resolve broader social issues stemming from mobility.**

In this era of rapid digital technology and AI evolution, sensing and mechatronics are becoming increasingly important for realizing physical products and functions. We aim to be the world's leading components manufacturer by refining the miniaturization, precision, and performance technologies we have cultivated over the years and continuing to provide components that enhance the competitiveness of our customers' systems.

Revenue from Products in Growth Domains
(Billions of yen)




## Business Strengths

- Creation of new value and provision of solutions by combining our strengths in mechatronics, sensing, and motors
- Advanced production technologies capable of handling product variety and volume, supported by robust frontline capabilities
- Global production and supply system underpinning stable supply in each region

## Changes in the Operating Environment and Awareness of Issues

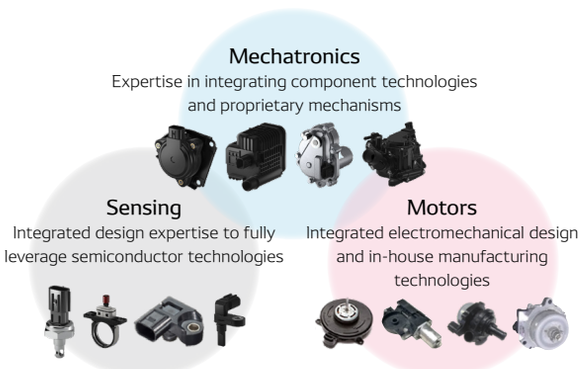
- Diversifying product needs, including BEVs, PHEVs, HEVs, and ICEs
- Increased opportunities to make proposals as systems rapidly become more integrated and intelligent
- Intensifying competition due to emerging manufacturers

## Vision for 2030

The System Control Components Business Group is a new organization bringing together three business divisions: mechatronics, sensing, and motors. To meet the needs of increasingly advanced and complex car manufacturing, we will enhance synergies among these three divisions and strengthen our competitiveness through smaller, more precise, higher-performance components that cost less, thereby contributing to customers worldwide. In this era of rapid digital technology and AI evolution, mechanical technologies that bring things into the physical world are becoming more important than ever. Our mission is to listen carefully to the true needs of customers so that we can resolve their challenges through the creation of new value that combines our strengths in mechatronics, sensing, and motors.

In addition to meeting diverse needs for BEVs, PHEVs, HEVs, ICE vehicles and more, we aim to earn trust across all aspects of quality, cost, and delivery (QCD). By strengthening our ability to make proposals from both vehicle- and system-based perspectives and accelerating product development through collaboration with partners from both inside and outside the Group, we will expand our electrification and ADAS businesses. By achieving sound business growth under a business structure that meets the needs of the market and our customers, we will become a business group that contributes to customers and society in a sustainable manner.

In the future, we will further refine our technological and *Monozukuri* capabilities by promoting collaboration among all business groups toward the resolution of social issues (industrial productivity enhancement, stable food supply, etc.), based on the component technologies we have cultivated in the mobility domain. By reflecting our refined strengths into our product development activities, we aim to create a virtuous cycle that contributes to the creation of even better vehicles.




### Strengthening Product Development

To further refine the core technologies of the three business divisions and appropriately meet diversifying needs, we will bolster our product lineups in a highly efficient manner by separating product development into two areas: core components for key functions and customizable components to flexibly meet customer needs. Additionally, we forecast growth in the market for small automotive motors as electrification advances. To that end, we will further promote the development of products that extend vehicle driving range and reduce vehicle costs, thereby enhancing overall vehicle value. At the same time, we will combine the strengths of the three divisions to develop versatile actuators for applications that extend beyond the automotive domain.

### Innovating Manufacturing

Furthermore, we will establish production lines that can flexibly handle product variety and volume and develop highly advanced automation technologies covering the entire flow of materials and products from receiving through to shipment. We will also centrally manage plants from control centers, including the use of predictive management. Through these efforts, we will achieve uninterrupted production lines. By swiftly adapting to changes in the operating environment and strengthening our cost competitiveness over emerging manufacturers, we will contribute to our customers' competitiveness from the perspective of *Monozukuri*.

We will also optimize our global production and supply system to ensure stable supply to customers amid changes across industries and greater society.

### Developing People, Co-Creating with Partners

To overcome rapid changes in the business environment and achieve growth, we must support individual growth and establish a dynamic organization where all employees are eager to take on challenges. To that end, we will continue our *Hitozukuri* activities by ensuring employees feel a sense of growth through their pursuits and creation, as well as by actively promoting mutual learning and development on a global scale. We will also expand new product development with partners inside and outside the Group to achieve efficient, waste-free development and production readiness. By creating capacity while accelerating product development, we will build a truly dynamic organization where people can take on challenges with ease.

## System Control Components

### Core Products

● Green ● Peace of Mind

**● Coolant flow control valves**

Our coolant flow control valves control coolant connecting the battery, electric drive components, and air-conditioning system in EVs in a precise and optimized manner, enabling efficient thermal management and significantly improving energy efficiency and driving range.

**● Battery current sensors**

Our battery current sensors measure current during battery charging and discharging with high precision, enabling advanced battery control and contributing to battery safety, improved energy efficiency, and extended driving range.

**● Power window motors (BF23 motor)**

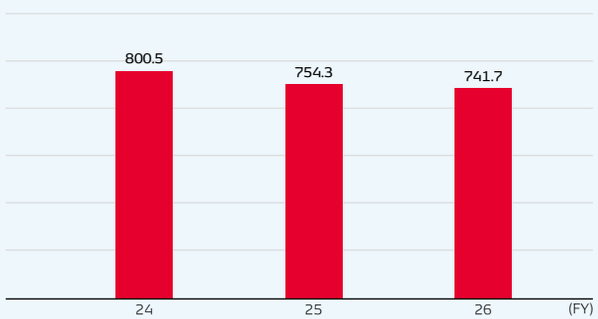
Our power window motors make use of a proprietary clutch mechanism that prevents window glass from slipping down while enabling a more compact design. Combined with control features to prevent fingers from being caught when the window is lowered, it helps ensure customer safety.

**● ● Soil sensors**

Our soil sensors precisely visualize soil conditions, helping to ensure stable food production. By enabling the optimized use of water and fertilizers, these sensors help reduce environmental burden and support sustainable agricultural production.

### Revenue

(Billions of yen)




## Initiatives for Fiscal 2027

We view fiscal 2027 as a year in which we will take a major step forward toward realizing our vision for 2030. While strengthening our operating foundation to generate capacity for future investment, we will strengthen our competitiveness and new product development by leveraging synergies among the three business divisions.

First, with regard to strengthening our operating foundation, we will improve work processes by promoting DX to ensure quality, which represents the foundation of our business, and introduce predictive quality assurance systems for more stable *Monozukuri* activities. By visualizing and combining the strengths of the three business divisions, we will strengthen the entire operational process from development and manufacturing through to after-sales, meeting customer expectations with the best possible quality. In addition to enhancing productivity by standardizing our *Monozukuri* activities and promoting mutual learning on a global scale, we will pursue cost improvements by transforming our workstyles through the utilization of DX and other technologies. In these ways, we will enhance profitability while creating capacity for further growth.

For new product development geared toward future growth, we will act swiftly to strengthen our product lineups so that we can meet the diversifying needs of customers. At the same time, we will accurately assess needs in the electrification and ADAS domains and push forward with development technologies and products to prepare for future opportunities. Specifically, for battery current sensors, we have developed an optimal lineup for their respective applications in HEVs, PHEVs, and BEVs.

We will also enhance the development efficiency of our customers and bolster their cost competitiveness. For our coolant flow control valves (HEAT-PRO), we are expanding our lineup to enable the switching of control between multiple flow paths, further enhancing BEV value through improved energy management. At DENSO, we have continuously pursued magnet development and magnetic circuit technology. As an example of the success we have had in the small motor domain, we have already commercialized a motor that combines a high-remanence magnet using SmFeN, which does not use neodymium, with magnetic rectification technology. Going forward, we will continue efforts to commercialize motors that do not use heavy rare earth elements to adapt to further changes in the global environment. By doing so, we will continue to ensure a stable supply, enhance performance, and reduce environmental burden.

Finally, we will leverage our long-cultivated strengths in sensing and actuation to expand beyond the automotive market. For example, we have commenced sales of a multi-function soil sensor to help create environments for efficient and stable food production. Leveraging DENSO's sensing technology, this one sensor can detect not only soil temperature but also soil tension, the percentage of water, and electrical conductivity, helping stabilize crop yields and conserve water through efficient irrigation. Amid a declining farming population and the impacts of climate change, we expect that this sensor will help build an agricultural production system capable of stable food production and supply. We are also pursuing applications such as autonomous transport of finished vehicles at automakers using "high-precision LiDAR," in an effort to expand the ways in which we can contribute to customers.

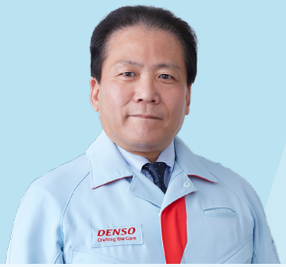
With this effort, we will take a major step forward in fiscal 2027 toward realizing our vision for 2030. The common theme among all of our business activities is that we listen to the real needs of customers in order to thoroughly understand their challenges and work to resolve them with our technologies and highly refined products. Looking ahead, the System Control Components Business Group will continue to pursue new challenges and evolve, aiming to be the world's leading component maker and a trusted partner to customers who can resolve the real issues they face with components that no other company can match.

COLUMN

### Response to Climate Change

In addition to expanding our electrification products, we will help prevent further global warming by reducing the energy consumption of our *Monozukuri* activities. At the Mechatronics Components Manufacturing Department of the Daian Plant, we are working to reduce $CO_2$ emissions by using DX to visualize and analyze electricity and energy consumption for each piece of equipment and production line. For example, focusing on an air-cleaning process that consumes large volumes of compressed air, we developed a cleaning technology that uses a single electric blower equipped with a newly developed ejector capable of operating even with low-pressure airflow, enabling simultaneous blowing and suction. This cleaning technology reduced $CO_2$ emissions by 90% compared with the conventional method. We have introduced this technology in other processes within our department, thus achieving annual energy savings equivalent to 3.9 kiloliters of crude oil (this initiative received the Minister of Economy, Trade and Industry Award in the Industrial Energy Conservation Case Studies category at the Energy Conservation Grand Prize Awards). We also conduct hands-on tours for our suppliers, allowing them to see, experience, and learn firsthand about these initiatives and their benefits and to take back such improvement methods to their own work sites for implementation. We also support suppliers in reducing $CO_2$ emissions by proposing cost-saving measures aligned with their budgets, including process simplification initiatives. We will continue to pursue energy conservation activities driven by the participation of all employees through our frontline capabilities and technology development, as we work toward achieving carbon neutrality.

# Semiconductor



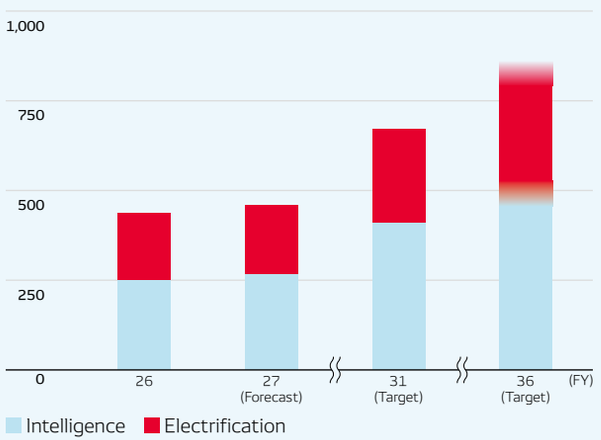
Naoki Matsuoka
Head of Business Group

**We have positioned 2026 as the beginning of "the second founding era of DENSO's semiconductor business" in which we will strive to create new value.**

As a new business group formed through the restructuring of the semiconductor business, we will dramatically strengthen the competitive advantages that underpin our electrification and intelligent technologies by melding in-house technologies with our co-creation efforts with partners. With a view toward 2030, we will continue to serve as a bridge between the automotive and semiconductor industries as we strive to create new customer value in a broad range of fields and resolve social issues.

### Shipment Volume by Product Type

(Millions of units)




## Business Strengths

- Ability to create optimal specifications that enhance system value
- Electrification: Power semiconductors created through vertically integrated in-house production of wafers, epitaxial layers, and devices
- Intelligence: Robust analog semiconductor control driving advances in automotive performance
- Solid foundation of semiconductor supply combining in-house production, outsourced production, and partner collaboration

## Changes in the Operating Environment and Awareness of Issues

- Growing demand for products for diverse EVs (BEVs, PHEVs, and HEVs)
- Market entry of semiconductor suppliers with low-cost/standardized products leveraging repurposed commercial technologies and economies of scale
- Intensifying competition with semiconductor suppliers that leverage government subsidies
- Transition from stand-alone semiconductors to module-based offerings

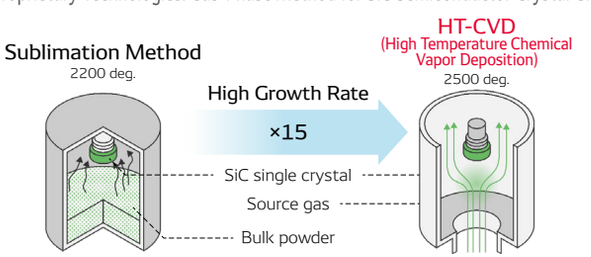
## Vision for 2030

Our story begins with the establishment of the IC Research Center in 1968. Since then, we have cultivated semiconductor expertise and technologies for more than half a century, centered on custom ICs for internal combustion engines. Today, with the rapid advancement of electrification and intelligent technologies, semiconductors are becoming increasingly important as a foundational technology that supports safety, comfort, and environmental performance. We have positioned 2026 as the beginning of "the second founding era of DENSO's semiconductor business." During the year, we have established the independent Semiconductor Business Group, putting in place a structure for meeting customer expectations through the swift formulation and execution of business strategies.

As a new business group, we will combine power semiconductors that support electrification, analog semiconductors that support intelligent technologies, and module technologies that connect these two semiconductors. By doing so, we will strengthen our competitiveness and enhance customer value. Specifically, in addition to promoting differentiation through proprietary technologies and *Monozukuri* transformation, we will contribute to Japan's semiconductor industry by acquiring advanced technologies and products and expanding our scale through partnerships. We will bolster our competitiveness by incorporating these advanced technologies into our business activities and product development in a swift and timely manner. At the same time, we will provide a broad range of products to customers who wish to purchase semiconductors directly. In addition, with the advancements in semiconductors that leverage automotive-grade performance and quality, we are seeing a growing number of markets emerge that are highly compatible with our technological capabilities, particularly for power semiconductors, including robotics and data centers. By accurately identifying customer issues and providing products that enhance value, we aim to be a business that contributes extensively to the resolution of social issues, including achieving carbon neutrality.

By 2030, through these co-creation activities, we will continue to deliver semiconductors that enhance customer value, serving as a bridge between the automotive and semiconductor industries.

### Proprietary Technologies: Gas-Phase Method for SiC Semiconductor Crystal Growth




### Strengthening Product Development

As electrification and intelligent technologies drive technological advances, customers now have greater expectations for proposals that enhance overall system value.

In response to these expectations, we are focusing our attention on integrating in-house production, covering everything from wafers to packages, in order to strengthen the cost and quality competitiveness of our power and analog semiconductors while enhancing our technological and *Monozukuri* capabilities to develop module products beyond stand-alone semiconductors. We will provide solutions that meet customer needs, primarily by improving the energy efficiency of electrification technologies and delivering highly robust control for intelligent technologies.

### Innovating Manufacturing

From both the perspectives of the automotive and semiconductor industries, we will pursue innovative, differentiated production technologies as we work to take our *Monozukuri* activities to the next level. To strengthen the competitiveness of our SiC power semiconductors, we are advancing the establishment of the world's first wafer manufacturing technology using the gas-phase method. In addition, we are working with domestic partners to mass-produce epitaxial wafers (stacked epitaxial layers) and power devices, thereby promoting vertically integrated production. The initiative has been recognized for its contribution to strengthening the domestic supply chain and has been approved for subsidies under the Ministry of Economy, Trade and Industry (METI)'s "Semiconductor Supply Security Plan."

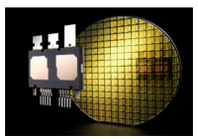
### Developing People, Co-Creating with Partners

To resolve the issues facing our customers, we will accelerate business growth through the two pillars of *Hitozukuri* and co-creating with partners, without being bound by a go-it-alone approach. For *Hitozukuri*, we will cultivate semiconductor talent by providing practical learning opportunities inside and outside the Company, introducing specialized education activities, and utilizing AI to improve the productivity of our development activities. In terms of co-creating with partners, in addition to collaborating with domestic partners in the ways mentioned above, we will leverage the 300mm-wafer IGBT (insulated gate bipolar transistor) production line that we jointly established with the Japanese subsidiary of a major Taiwan-based foundry in 2023. For analog semiconductors, we have established a strategic partnership with a specialist manufacturer.

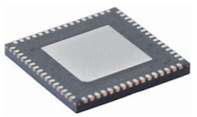
## Semiconductor

### Core Products

Green Peace of Mind



**Power semiconductors**
Our power semiconductors handle high-current, high-voltage switching in inverters.



**ASIC (application-specific integrated circuit)**
Our ASIC consolidates diverse and complex mobility control functions into a single semiconductor.

## Initiatives for Fiscal 2027

With the shift toward electrification and intelligent technologies in the mobility domain, customers have extremely high expectations for semiconductors, a foundational technology supporting this shift.

As regulations to address global warming continue to diversify, demand is expected to grow not only for BEVs but also for PHEVs and HEVs, increasing the need for a more diverse product lineup. Across all EV types, technologies that significantly reduce power loss and contribute to smaller, lighter inverters are increasingly critical, and competition with global semiconductor suppliers is intensifying. Against this backdrop, we will meet customer expectations for quality and cost competitiveness through our mass production technology for SiC power semiconductor wafers utilizing the gas-phase method.

In the intelligence domain, as integration with ECUs and SoCs becomes increasingly important, we will enhance customer value by leveraging our in-house Tier 1 business division to accurately identify the issues facing automakers and deliver technologies that outperform competitors through robust control circuit and packaging technologies. The difficulty in achieving differentiation is increasing as a growing number of dedicated semiconductor manufacturers are entering the intelligence domain. Accordingly, we will enhance our competitiveness against our competitors' large-scale, standardized products and optimize our semiconductor products to meet customer requirements. Where we determine that in-house development alone cannot deliver the required speed, we will further deepen collaboration with partners in Japan and overseas.

As our semiconductor business continues to evolve, we are seeing a growing number of direct inquiries for our semiconductor products from automakers seeking to bring inverter and module production in-house, alongside our traditional supply of products to vehicle manufacturers through our in-house Tier 1 business divisions. We are a business committed to resolving social issues, and as such, we are transforming our business model to provide value more flexibly in line with the business characteristics of our customers. In addition, as power demand from generative AI servers and data centers continues to grow, we are seeing a greater number of customers from outside the automotive sector take interest in our semiconductor and *Monozukuri* technologies that form the foundation of our automotive applications.

In some cases, product value is shifting from stand-alone semiconductors to module products that integrate multiple functions, and we are therefore accelerating the commercialization of module products leveraging our comprehensive capabilities. Amid a period of rapidly changing industry trends and with a view toward 2030, a key management challenge for us is to determine which technologies and products to provide to maximize customer value, and we are reformulating various strategies with this in mind.

To realize products with an even greater competitive edge, we must level up our *Monozukuri* activities. To that end, we are reviewing the strategic balance between in-house and outsourced production with a commitment to providing added value through in-house production. This strategy applies to both power and analog semiconductors. Based on our strong partnerships, we will optimize the division of roles with external partners handling back-end processes. At the same time, we will pursue differentiation through proprietary technologies at our in-house production sites, thereby strengthening our competitiveness on both fronts.

Specifically, we will expand the floor area of our main plant in Malaysia, which handles semiconductor packaging, and maximize the use of equipment, components, and materials sourced from local companies. We will also pursue the development and adoption of innovative manufacturing technologies. In these ways, we will bolster our cost competitiveness.

As a core ECU hub in Asia, the Malaysia plant will deepen in-house production and collaboration across DENSO's electronics manufacturing network and expand global supply as a key export base for semiconductor products, thereby maximizing consolidated profits.

Through these efforts, we will pursue the rapid development of new products and DENSO-style *Monozukuri* excellence, while working to strengthen our teamwork and talent and foster a culture that enables sustainable growth.

DENSO's main plant in Malaysia

COLUMN

### Contribution to the Resolution of Material Issues

As a result of technological advances, such as the shift to electrified and intelligent vehicles, as well as growing demand and rising geopolitical risks, it is essential to ensure a stable supply of semiconductors across the entire supply chain. The semiconductor business involves long lead times and requires the maintenance of an extensive supply network, spanning wafer substrate materials, front-end process materials used in circuit fabrication, and back-end packaging and assembly materials through to delivery of the final product.

In particular, following the severe supply disruptions that occurred during the COVID-19 pandemic, industries worldwide have been working to strengthen supply chain resilience. To that extent, we have secured stable supply through long-term agreements with our suppliers. Furthermore, because only a limited number of suppliers worldwide are capable of providing advanced SiC wafers, we invested US$500 million in Silicon Carbide LLC, the SiC business of Coherent Corp. established in April 2023, and acquired a 12.5% equity stake. Silicon Carbide has a robust track record in SiC wafer quality and mass production capabilities.

Through the stable procurement of SiC wafers enabled by this partnership, we are strengthening the business foundation required for medium- to long-term growth. By ensuring the stable supply of semiconductors, we will contribute to the realization of a carbon-neutral society and a world with zero fatalities from traffic accidents.

# Factory Automation (FA)

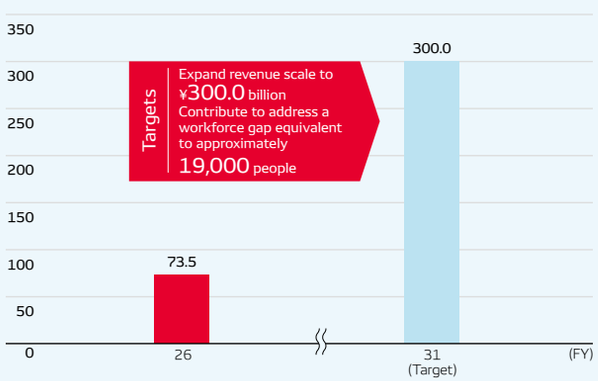
Yasushi Mukai
Executive Officer

**By co-creating with partners, we will bolster our competitiveness as a comprehensive production line builder and help customers resolve their issues by providing added value that is uniquely DENSO.**

By combining our long-cultivated *Monozukuri* know-how with the strengths possessed by our diverse business partners, we will broadly create value that encompasses the entirety of factory operations, from production equipment to logistics and IT systems. Through solutions that enable our customers in the manufacturing industry to continuously engage in *Monozukuri* activities with peace of mind, we will help enhance productivity for the entire industry on an ongoing basis.

### Revenue Forecast

(Billions of yen)




## Business Strengths

- *Monozukuri* expertise cultivated over 75 years across a wide range of fields
- Expertise spanning the entire engineering chain, from conceptual design to maintenance
- In-house production capabilities for equipment and robots, refined for optimized production across 130-plus global sites

## Changes in the Operating Environment and Awareness of Issues

- Declining labor population and shortages of production technology personnel in terms of both quantity and quality
- Growing demand for standardization technologies, DX utilization, and automation enabling production that can flexibly respond to product variety and volume; manufacturing advances driven by widespread AI adoption
- Increasing needs to enhance customer engineering capabilities and develop talent

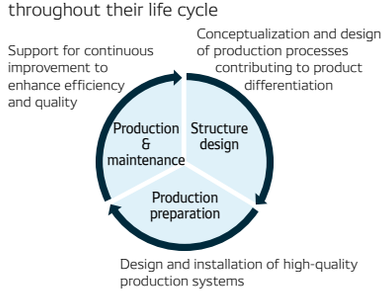
## Vision for 2030

The manufacturing landscape is changing significantly against the backdrop of rapid technological innovation and an evolving social environment. In addition to leveraging advanced technologies such as AI, addressing labor shortages is a critical management issue across the manufacturing industry, regardless of sector. In the automotive industry, the conventional model of executing large investments to build mass production lines and rebuilding them with each new generation is no longer viable.

With limited production preparation time and investment, going forward it will be essential to standardize the mixed production of internal combustion engine vehicles, HEVs, and BEVs, and to repurpose lines across multiple generations. Moreover, manufacturers must oversee the entire factory, encompassing not only individual equipment but also the logistics and IT systems that are integral to production lines, while responding quickly and flexibly to productivity improvements and layout changes. To achieve this, manufacturers need advanced expertise in process design, quality assurance, and frontline improvement to transform every stage of the manufacturing process, from conceptual design and production preparation through to mass production and maintenance. DENSO has accumulated extensive practical manufacturing expertise over many years. By applying our Lean Automation philosophy—which systematically organizes this expertise into an approach to automation that eliminates waste and continues to improve after the commencement of operations—in a manner that caters to the manufacturing sites of our customers, we believe we can deliver value that is uniquely DENSO. We aim to become a comprehensive production line builder that supports customers in building their ideal factories throughout the entire product life cycle. To that end, while promoting co-creation with our partners, we will draw on our *Monozukuri* expertise to contribute to the sustainable growth of our customers by designing, integrating, and managing the entire factory, from equipment and logistics to IT, and by building factories that continue to evolve through ongoing improvement.

### Comprehensive Production Line Builder

Supporting the creation of ideal factories throughout their life cycle




**DENSO BRAIN**

Turning *Monozukuri* Accomplishments into Knowledge

- Process design / Proprietary technologies
- Quality assurance
- Equipment development
- Track record of frontline improvements

## Strengthening Product Development

As a comprehensive production line builder, we aim to strengthen three areas: production, logistics, and IT systems. The foundation of line building is production and in-plant logistics. By viewing "creating" and "transporting" as an integrated process, we work to optimize the flow of materials and products throughout the factory, from receiving to shipping. Additionally, our IT systems connect data from manufacturing sites with management systems, linking on-site improvements directly to improvement in management KPIs. This in turn accelerates decision-making and enables flexible factory operations. In the areas of production, logistics, and IT systems, we will enhance the competitiveness of our products by combining the strengths of our business partners with the in-depth manufacturing knowledge we possess. At the same time, by working to integrate all three of these areas, we will create high-value-added products and services that provide support for end-to-end factory operations.

## Developing People, Co-Creating with Partners

As a comprehensive production line builder, we will rapidly pursue collaborations, business partnerships, and alliances with a diverse range of partners across industries in order to acquire and strengthen a broad range of capabilities spanning from technology development to on-site implementation. By doing so, we will innovate the factories of our customers from both digital and physical perspectives.

**Digital Technologies**
- AI and digital twins
- IT–OT* integration
- Cloud

* OT: Operational technology

**Equipment and Robotics**
- Dedicated equipment
- Peripheral equipment
- FA components

**Production × Logistics × IT × Manufacturing Expertise**

DENSO

**System Integration and Consulting**
- Industrial system integration
- Regional system integration
- Consulting

**Industries**
- Industrial associations
- Standardization
- Industry–academia–government collaboration

**Personnel Sourcing**
- Production technologies and maintenance
- IT and IoT
- Development

# Factory Automation (FA)

## Core Products

Green Peace of Mind

**Tools for improving productivity**

Utilizing the IoT tool Loss Tracker, we help our customers enhance productivity and establish improvements on the front lines.

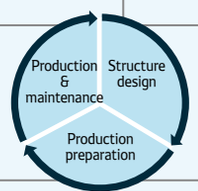
**Lean Automation school**

We offer educational programs based on Lean Automation (LA), which systematically organizes processes related to DENSO's production technologies.

**Production line engineering**

We design automated production lines based on our LA philosophy. We also define requirements for meeting customer needs.

One-Stop Solutions



**Collaborative robots**

We offer robots that collaborate with people to improve productivity and safety.

**Automated production lines**

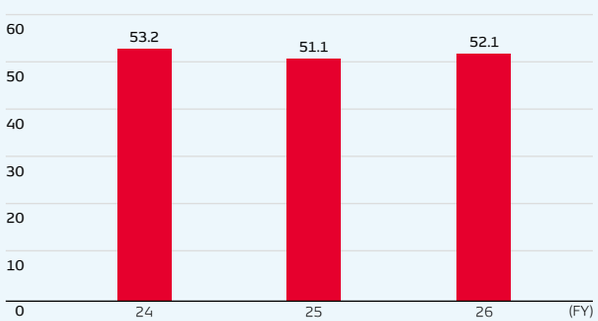
We realize optimized automated production lines tailored to customer needs.

**Production and logistics solutions**

We combine people, goods, and processes to streamline everything from delivery to shipment.

## Revenue

(Billions of yen)




Note: Figures are based on consolidated revenue.

## Initiatives for Fiscal 2027

In fiscal 2026, we worked to demonstrate the value of our one-stop solutions covering everything from conceptual design to maintenance, primarily for customers in the automotive industry. By gaining a deep understanding of the issues facing our customers and providing one-stop support from production line conceptualization and process design through to equipment start-up, maintenance, and ongoing improvements, we have proven our ability to deliver value that is uniquely DENSO. In addition, through dialogue with customers, we also clarified the capabilities that we should acquire and strengthen through external partnerships and the capabilities that we should enhance internally in order to further increase added value.

In fiscal 2027, we will establish a solid foundation as a comprehensive production line builder that drives *Monozukuri* innovation across industries. At the same time, we will accelerate co-creation with partners and strengthen the Group's unique capabilities with a view toward expanding our service offerings and enhancing added value.

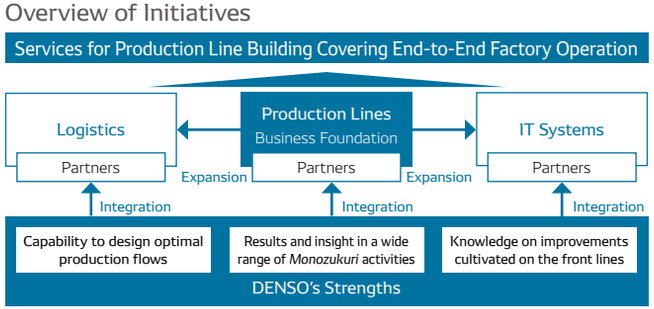
For co-creating with partners, we will first pursue alliances with partners in production lines, the foundation of our production line building business, under which we will accelerate the standardization and modularization of production equipment and improve production line quality, cost, and delivery (QCD). We will also expand collaboration in logistics and IT systems with partners that possess core technologies and high-added-value services that can augment our own capabilities.

For logistics, drawing on our deep understanding of end-to-end factory operations, we will formulate a vision for waste-free logistics and optimize operations across the entire factory with partners skilled in the integrated control of logistics equipment.

For IT, we will strengthen collaboration with system integration partners that connect on-site data with management systems, making it possible to reflect the productivity improvement and inventory reduction expertise cultivated on the front lines in management KPIs.

Through co-creating with partners, we will enhance added value not only in production lines but also in logistics and IT, establishing a structure capable of providing services for production line building that covers end-to-end factory operations.

### Overview of Initiatives




Furthermore, strengthening our own core capabilities is extremely important for co-creating with partners and maximizing synergies. Accordingly, we will accelerate efforts to turn the Group's *Monozukuri* know-how and practical frontline expertise into explicit knowledge, making them more accessible and usable across the Group.

By combining AI technologies with our expertise in advanced process design, proprietary technologies, and equipment development, we will further strengthen our ability to deliver optimal solutions with speed and precision.

In addition, we will strengthen the competitiveness of the three companies comprising the FA Group. By combining the strengths of DENSO FA Yamagata Co., Ltd., which excels in developing equipment tailored to customer production sites and needs; DENSO SI Corporation, which implements the principles of the Toyota Production System in logistics systems; and DENSO WAVE Incorporated, which possesses advanced mechatronics design capabilities, we will further enhance the Group's comprehensive *Monozukuri* capabilities.

Through the synergy between co-creating with partners in the production, logistics, and IT domains and enhancing the Group's unique capabilities, we will provide customers with a broader range of line-building services and contribute to improving industrial productivity by delivering added value that is uniquely DENSO.

### COLUMN

**Enhancing Industrial Labor Productivity Together with Our Customers**

By working closely with our customers on their front lines, we will create added value at a high level and in a sustainable manner. Specifically, by providing support from the early stages of concept design for equipment, logistics, and specification review, we will launch high-quality production lines without the need for costly rework. In addition, we will provide support for improvement activities after lines commence operations, helping to realize factories that continue to evolve together with our customers. For our upstream engineering services, customers have provided the following feedback on our concept proposals and process designs:

"We would not have been able to envision the overall picture on our own, from identifying the necessary technologies and selecting materials to choosing the right equipment manufacturers," and "We had never considered redesigning the process itself. This is a perspective unique to DENSO, which has in-depth knowledge of product function and structure."

In our production improvement services, we work closely with customers in their frontline operations to steadily implement improvements. As a result of these efforts, we have seen an increase in the number of productivity improvements at our customers. By expanding these initiatives across a wider range of industries and continuing to support customers in building their ideal factories, we aim to realize improvements in labor productivity across various industries at a level equivalent to 19,000 workers by fiscal 2031.

| Cases of Productivity Improvements | | |
|---|---|---|
| Electrical components factories | Food products factories | Consumer goods factories |
| Operation ratio increased **39%** | Production volume increased **52%** | Holiday working days (per month) **4 days → 1 day** |

# Food Value Chain (Agriculture)

Yasushi Mukai
Executive Officer

**Through a two-pronged approach focusing on "co-creating with partners" and "mobility technologies," we will work to address social issues such as stabilizing agricultural production and improving food self-sufficiency.**

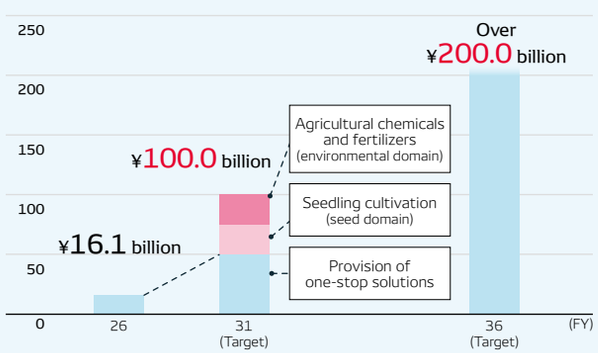
To provide solutions worldwide that enable everyone, everywhere, to enjoy safe, delicious, and environmentally friendly food anytime, we will create new value through technology and new ideas, contributing to a society where people can live with peace of mind and security.

## Business Scale

¥100.0 billion by FY2031
Improvement in agricultural production of 75%

Continuous promotion of M&As → Building of one-stop solutions → Development of digital cultivation platform

(Billions of yen)




## Business Strengths

- Ability to apply sensing and automation technologies developed in the mobility domain to agriculture, enabling stable and systematic production through the industrialization of protected horticulture
- Provision of one-stop solutions to customers spanning everything from business planning to production and sales through the integration of greenhouses (Certhon), seedlings (Axia), and cultivation and operations (FoodVentures)

## Changes in the Operating Environment and Awareness of Issues

- Concerns over food shortages following unstable agricultural production caused by global climate change
- Growing demand for stable yields from new entrants to farming—such as government and large-company initiatives to raise national food self-sufficiency—that lack farming expertise

## Vision for 2030

The Food Value Chain (FVC) business is growing in a sustainable manner while bolstering collaboration with partners with a view toward resolving social issues such as climate change and the declining agricultural workforce. In addition to seedlings, facilities, cultivation, and operations, we integrated technologies cultivated in the mobility domain, such as sensing technologies and AI agents, to provide comprehensive one-stop solutions spanning everything from planning and operations to after-sales support.

With these solutions, we realize stable and systematic production through yield forecasting and early detection of disease risks, offering growers greater confidence and peace of mind. Building on the autonomous growth of each business, we will promote global collaboration and enhance integrated value to establish a business model that combines scalability and profitability, contributing to a secure and abundant future for food.

## Value Creation Model

One-stop solutions from cultivation planning to stable production

Cultivation Digital Platform
**DENSO BRAIN**

| | | | | |
|---|---|---|---|---|
| Seedlings | × | Environment | → | Development of varieties suitable for automation |
| Cultivation technology | × | Digital | → | Feedback control |
| Seedlings | × | AI | → | World-class variety development |

Mobility Technology
System integration, automation, sensing, digitalization, process engineering

## Developing People, Co-Creating with Partners

The FVC division is pursuing *Hitozukuri* and co-creating with partners to accelerate business growth and create social value.

For co-creating with partners, we have expanded our business foundation through the acquisitions of Certhon Build B.V., Axia Vegetable Seeds B.V., and FoodVentures B.V. Going forward, we will continue to pursue strategic, continuous M&As to build one-stop solutions and strengthen an ecosystem that connects the entire value chain. We will also advance the development of a digital cultivation platform by melding internal and external knowledge with technologies to further enhance cultivation capabilities.

With regard to *Hitozukuri*, we will promote collaboration among talented employees from the companies that have joined the Group through these M&As, encouraging them to combine their respective strengths and expertise. Under this approach, we will continuously create new value and synergies. By fostering an environment where people from diverse backgrounds work together and inspire one another, we aim to spur innovation on an ongoing basis.

To further accelerate these initiatives, we have relocated our FVC division's headquarters to Europe, enabling us to stay closer to our partners and customers, respond more effectively to market trends, and make business decisions and conduct business management in a more expedient manner. Looking ahead, the FVC division will bring together the strengths of its people and partners to contribute to a globally competitive and sustainable food system.

## Organizational Structure

Consolidation of organization and talent

Formation of teams of next-generation leaders
↓
Fostering of culture that creates new value

Transfer of agriculture business headquarters to the Netherlands, where advanced technologies and information converge (April 2026)
↓
Acceleration of business development

## Food Value Chain (Agriculture)

### Core Products

Green Peace of Mind

**Greenhouses**

We offer large-scale, high-tech greenhouses tailored to the needs of growers. By precisely controlling growing conditions such as temperature, irrigation, light, and $CO_2$, these greenhouses enable the stable and efficient production of high-quality crops. We design our greenhouses based on regional characteristics, climate conditions, and crop requirements, realizing growing environments optimized for the needs of growers.

**Tomato seeds**

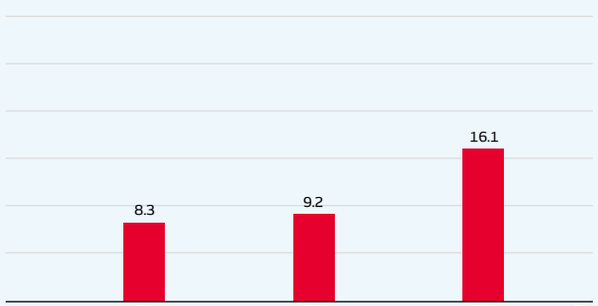
We offer tomato seeds for greenhouse cultivation that support stable and systematic production. Leveraging expertise in genetics, we develop seed varieties offering high disease resistance, superior flavor, consistent quality, and high yields. By applying digital and automation technologies to the breeding process and shortening development cycles, we support the swift market launch and stable supply of high-added-value tomato varieties.

**Farm management consulting**

We deliver solutions for sustainable greenhouse operations on a global scale. Specifically, we provide Right-Tech solutions that enable sustainable and cost-efficient vegetable production. Drawing on our extensive operational know-how and experience in protected horticulture under various climate conditions, we aim to accelerate the development of the greenhouse industry worldwide.

### Revenue

(Billions of yen)




## Initiatives for Fiscal 2027

### Greenhouse Business

In fiscal 2026, we expanded our presence in North America and the Middle East with a view toward increasing sales and pursued project development initiatives in accordance with changing market conditions. In fiscal 2027, in Europe we will promote integrated greenhouse proposals for customers with needs related to soaring energy costs, offering energy-saving solutions such as temperature control and artificial lighting. In addition, in areas outside Europe, we will work with FoodVentures, which joined the Group in 2026, to bring large-scale projects to fruition through one-stop solution proposals that include cultivation technology.

### Seedling Business

In fiscal 2026, we welcomed the Netherlands-based company Axia, which possesses advanced tomato seed and seedling technologies into the Group. With this acquisition, we are now able to establish a system for rapidly developing and delivering safe, high-quality seeds and seedlings by combining DENSO's digital and automation technologies with Axia's breeding expertise. In fiscal 2027, we will accelerate new business alliances to expand our seed varieties beyond tomatoes and provide solutions in regions beyond Europe.

### Development of Data-Driven Cultivation and Farm Management Technologies

In fiscal 2026, we collaborated with DELPHY GROEP B.V. to integrate our cultivation know-how with the sensing and digital technologies we have developed to date, taking a new step toward realizing innovative cultivation solutions that enable systematic production.

In fiscal 2027, we will work to build the foundation for a cultivation management AI agent that forecasts yields and predicts the onset of pests and diseases. To that end, we will refine our sensing technologies that use mobility-derived image recognition to capture plant data and combine them with the cultivation expertise of our Group companies.

### One-Stop Solutions

Customers: New market entrants and agricultural corporations (investors, governments, large corporations, etc.)

Farm Management Consulting FoodVentures

**Data-Driven Cultivation and Farm Management Technologies**

| Cultivation | | | Agriculture |
|---|---|---|---|
| Cultivation technology | Green technology | Seedlings | Growers |
| FoodVentures | Certhon | Axia | Automation |

**DENSO**

- Support for growth of individual companies utilizing management resources
- Provision of stable, systematic production through the combination of Group company synergies and data-driven cultivation technologies

COLUMN

### Initiatives to Enhance Productivity of Agricultural Producers

In the FVC division, we have been working to enhance the productivity of agricultural producers through the development of automated harvesting robots. However, we have come to recognize that establishing mechanisms to ensure stable yields and quality and enable systematic production is becoming even more important. Based on this understanding, we will focus our development resources on promoting data-driven cultivation and farm management.

Specifically, we are building a technological foundation that forecasts yields, predicts the onset of pests and diseases, and enables advanced environmental control by integrating the sensing, AI, and automation technologies we have cultivated in the mobility field with the expertise in seeds, cultivation, facilities, and operations possessed by our Group companies.

Through this foundation, we will enhance production consistency and decision-making accuracy while contributing to stable profits and sustainable agricultural management that goes beyond just labor savings. In these ways, we will work to address our material issue of enhancing productivity of agricultural producers.