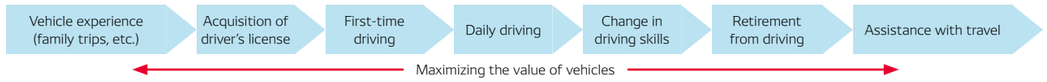
Special Feature: Connecting the Flow of Five Elements of Society

New Approach to Realizing a Cycle of Well-Being

Our approach of "connecting the flow of five elements of society" develops technologies and partnerships to create and maximize the value of green and peace of mind that will meet a broad range of needs going forward. Through this approach, we aim to ensure realization of the green and peace of mind strategies and the Long-term Policy for 2030, thereby supporting the continuation of society's activities and catering to diverse values and views of well-being. This special feature gives examples of our approach in relation to the flow of each type of element of society.

Vehicles That Offer the Value of Peace of Mind — DENSO strengths: Advanced driver assistance, automated driving, electric vehicle popularization, software, and quantum computing

1. Free movement of people: Eliminating the negative effects of vehicles (traffic accident fatalities) and realizing vehicles that cater to diverse values



Society's Needs

Following changes in behavior and values in the wake of the COVID-19 pandemic, needs and values with respect to driving and vehicles are diversifying in each generation and country.

Examples of Specific Initiatives

Providing New Experiential Value and Strengthening Our Electronic Platform and Software Development Capabilities

In providing vehicles that cater to diverse values, we will strengthen marketing globally. As part of this effort, we will identify the value that customers seek by acquiring direct feedback from them at experience-focused stores. DENSO will also identify the value sought by individuals through analysis of vehicle data. Based on our findings, we will update software to create electronic platforms that support the use of new features. To facilitate this software updating process, we will step up our software development efforts.

Commercialization Strategy

- Provide ADAS and promote the spread of these systems by reducing costs
- Market electrification systems for a wide range of applications

2. Flow of goods: Eliminating waste and loss to support the environmentally and people-friendly movement of goods

Society's Needs

While cargo volumes are increasing worldwide, future shortages of truck drivers due to population aging and the contraction of working-age populations are a cause for concern, particularly in developed countries.

Examples of Specific Initiatives

Developing Multi-Modal Automated Driving and Advanced Operation Systems

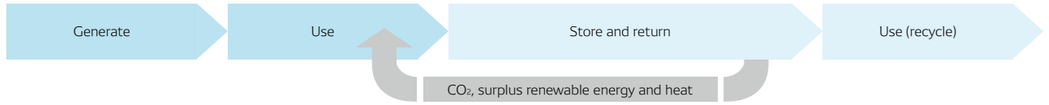
To achieve automated driving in "last one mile" transport and other transport modes and to seamlessly connect them, we will collaborate with Aurora Innovation Inc. and develop automated driving for compact vehicles. We are also accelerating the development of a shuttle line of communication (SLOC) operation system and conducting verification tests. For example, the realization of a SLOC operation system will enable trucks to exchange their containers at a relay point gateway between Tokyo and Osaka and then return to their respective departure points, thereby eliminating long operation times and cargoless return trips. Our other initiatives include utilizing quantum computing to comprehensively optimize and enhance the efficiency of logistics.

Commercialization Strategy

- Commercialize solutions that optimize flows of people and goods

Earth-Friendly *Monozukuri* — DENSO strengths: Technologies for electric vehicle popularization, internal combustion engine technologies, thermal technologies, robotics, and *Monozukuri*

3. Energy utilization: Spreading DENSO's carbon-neutral *Monozukuri* throughout society and realizing an energy recycling society



Society's Needs

Due to the global issue of climate change, the decarbonization trend is accelerating. In addition, given the tight energy supply–demand balance, the promotion of renewable energy and a hydrogen-based society is essential.

Examples of Specific Initiatives

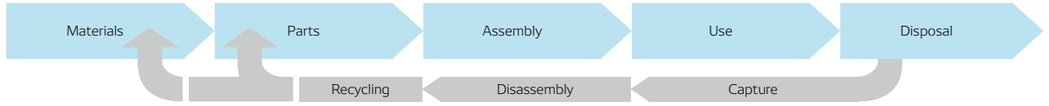
Realizing Carbon-Neutral Plants through the Effective Use of Renewable Energy

With the aim of realizing carbon-neutral *Monozukuri*, we are working on the effective use of renewable energy and the capture and reuse of CO_2. In 2021, we began verifying the capture of CO_2 and its conversion into methane for use as fuel in plants. In the following year, DENSO began verification of the utilization of vehicle-to-everything (V2X) communication that enables vehicle batteries to be used as batteries for energy recycling systems. Most recently, we have introduced solid oxide fuel cells and solid oxide electrolysis cells to our plants and commenced verification of hydrogen generation and utilization. Our other initiatives include efforts to convert waste heat into electricity. Moreover, with a view to creating materials that efficiently convert energy, we are conducting basic research on optimizing the structure of materials at the atomic level.

Commercialization Strategy

- Commercialize energy recycling systems for plants
- Extend systems to establish town-use compatibility and roll them out

4. Minimization of resource requirements: Achieving sustainable *Monozukuri* that curbs resource utilization to minimize environmental impact



Society's Needs

The amount of resources used for each vehicle must be reduced to comply with stricter requirements for the use of recycled materials in automotive manufacturing and to address such social issues as resource depletion.

Examples of Specific Initiatives

Building an Ecological System to Recycle Automotive Resources

We are developing methods, structures, and materials suited to disassembly and recycling by using reverse engineering that leverages our *Monozukuri* technologies. Through precision disassembly that is enabled by robotics and automated driving technologies, DENSO is developing car-to-car technologies that extract high-purity materials* from end-of-life vehicles and then transform them into environmentally friendly vehicles. We are also developing new, nature-friendly materials, including bio-derived materials and materials that do not contain rare earths.

* Materials such as plastics and metals that contain few impurities

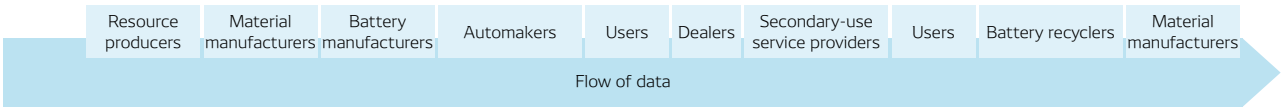
Commercialization Strategy

- Commercialize vehicle recycling through collaboration with recycling companies
- Launch external sales of automated systems for precision disassembly

Connection of the Flow of Elements of Society to Maximize Value	DENSO strengths: QR Code®, QR Code® readers, blockchain technology

5. Flow of data: Utilizing precise data to connect the flow of all elements of society and to connect people, vehicles, and society

Example of Battery Traceability



Society's Needs

The automotive industry has a very long supply chain. In Japan, for example, the supply chain comprises approximately 26,000 companies. To connect this supply chain and visualize the carbon footprint of automotive manufacturing, a standard data platform that anyone can use to securely share data is needed.

Examples of Specific Initiatives

Establishing a Traceability System That Maximizes the Value of Data

DENSO will meet demand for the visualization of manufacturing and distribution processes by combining the QR Code® and blockchain technology to develop traceability technology that provides secure data links and by using the technology to build a standard data platform. Going forward, we will develop technologies that facilitate the sharing of product information on electric vehicle batteries, data on Scope 3 CO_2 emissions, and other types of data across industry boundaries.

QRinQR*

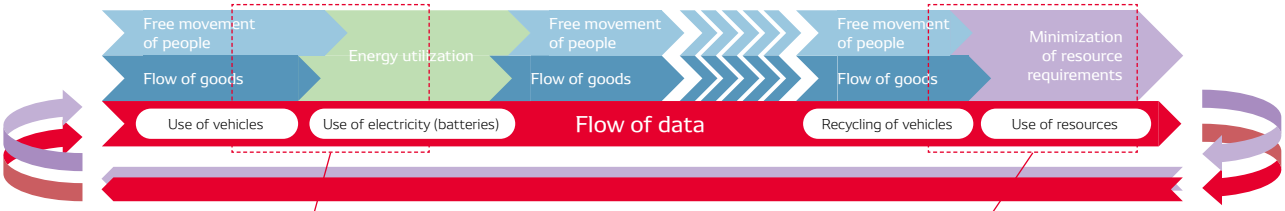
* This is a proprietary DENSO QR Code® that curbs increases in work and investment related to traceability management by displaying the data of two types of QR Code® in a single QR Code®.

Commercialization Strategy

• Commercialize cross-domain services that have a standard data platform at their core

Value Obtained by Connecting the Flow of Five Elements of Society

Using the Flow of Data to Connect All Other Elements of Society and Thereby Create a Cycle of Well-Being



Carbon-Neutral Town

Effectively utilizing vehicle batteries so that only renewable energy is used in daily life

Balance between mobility and electricity storage
Precise control of electricity charging and supply that reflects use of vehicles, without any loss in freedom of movement

Balance between electricity generation and storage
Control that reflects renewable electricity generation and which is realized through a large-scale distributed electricity network

Coordinated use of electricity and hydrogen (and other energy sources)
Resilient energy infrastructure through recycling of electricity, hydrogen, and other types of energy

Vehicles Recycled from Vehicles

Fully recycling vehicles to provide vehicles that can be used with peace of mind by the next generation

Material history
Assured material quality through precise recycling based on driving history

Driving history
Detailed recording of daily usage as well as repair and restoration histories to ensure the value of vehicles

Recycling history
Assured vehicle quality through vehicle recycling that uses optimal materials based on material history