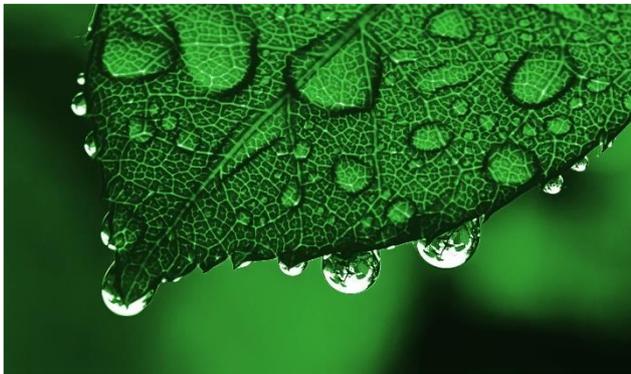


Renesas Electronics Group  
Environmental Report 2020



Renesas Electronics Corporation



## Contents

- Top Message
- Company Profile
- About this report
- Renesas' Environmental Activities
- Environmental Topics
- Eco-Management [Environmental management activities]
- Eco-Factories [Environmental load reduction activities at factories]
- Eco-Products [Environmentally friendly product development activities]
- Eco-Communication [Environmental education and information transmission activities]
- Environmental activities at each business site
- Biodiversity conservation activities
- External evaluation
- Various environmental data
- Contact information



## Top Message

### **We will contribute to a sustainable society by supplying energy efficient, environmentally friendly products.**



Executive Vice President, Environmental Officer

**Masahiko Nozaki**

In 2020, the world faced an unprecedented threat of COVID-19. We learned that the threat of a new virus could spread all over the world in no time in the society where cross-border movements of people had increased significantly due to globalization. In order to combat the threat of COVID-19, it is essential to prevent the further spread of COVID-19 and enrich the medical system. Fortunately, however, the most advanced devices have made electronic and communications equipment available for telework to prevent the spread of COVID-19. Moreover, the most advanced devices are also indispensable for cutting-edge medical equipment, such as CT scanners and artificial respirators, that is essential for the improvement of the medical system.

In the midst of such a social context, while giving utmost consideration to the safety of and the deterrence of the spread of COVID-19 among employees and customers, the Renesas Electronics Group has been implementing the following various measures to minimize the impact of COVID-19 on our business: delivering medical devices for medical equipment to customers as soon as possible by shortening the turnaround time (TAT) of those devices and maintaining our factory operations to protect the supply chains essential for the maintenance of social infrastructure while preventing employees' exposure to coronavirus. We believe that we have contributed to the realization of a sustainable society with stable supply chains by delivering products and solutions that cater to the needs of customers and society in a timely manner.

In order to prepare for the threat of a new virus and promote global environmental conservation efforts in the future, we are required to further advance and disseminate cutting-edge technologies, such as AI, 5G, and IoT, and build a society where people can live safely. In an effort to build an environmentally friendly smart society that supports safe and sound living, our company will continue ongoing efforts to develop many semiconductor products and provide solutions for various fields, including the medical field.

We provide high-performance devices that are environmentally friendly throughout their lifecycles from design to disposal and that customers can feel safe to use. On the other hand, when producing semiconductor products, a large amount of energy is consumed due to the use of high-tech equipment to form fine elements in the clean room where dust is eliminated almost completely. Moreover, since we also use many chemical substances, our production process places a relatively heavy load on the environment. Therefore, we aim to achieve smart manufacturing by using AI to enhance production efficiency and reduce abnormal happenings, produce high-quality green products in clean and highly efficient factories, and deliver them to customers.

This report summarizes the Group's environmental activities and its future outlook. The information provided herein includes the objectives and outcomes of all environmental activities throughout the processes of development, manufacturing, and sales, as well as the use and disposal of our products by the customer. We hope this report will help you understand our environmental activities and establish a better line of communication with you in order to garner more effective environmental activities.



## Company Profile

|                           |   |
|---------------------------|---|
| ■ Company Name            | Renesas Electronics Corporation   |
| ■ Headquarters            | TOYOSU FORESIA, 3-2-24 Toyosu, Koto-ku, Tokyo 135-0061, Japan                             |
| ■ Capital Stock           | 22,213 million yen  |
| ■ Established             | November 1, 2002(Starting Operations on April 1, 2010)                                    |
| ■ Major Operations        | Research, development, design, manufacture, sale, and servicing of semiconductor products |
| ■ Employees               | 18,958(Consolidated, as of December 31, 2019)   |
| ■ Representative Director | Chairman Tetsuya Tsurumaru<br>President and CEO Hidetoshi Shibata                         |
| ■ Stock Listing           | Tokyo Stock Exchange, First Section (Securities Code: 6723)                               |



## About this report

### Editorial Policy and the Relationship between our websites and PDF files

This Environmental Report is intended for the many stakeholders of the Renesas Electronics Group, including employees, customers, members of the local communities where we conduct business, suppliers, partners, shareholders and investors. With the aim of promoting two-way communication between the Company and these stakeholders, this report explains our approach to the environment and illustrates our specific activities in an easy-to-understand manner. Basically, the contents of our official website are identical to the contents of the downloadable PDF file (except environmental data).

### Guidelines Used

Environmental Reporting Guidelines 2018 (Ministry of the Environment, Japan)  
 Environmental Accounting Guidelines 2005 (Ministry of the Environment, Japan)  
 ISO 26000: 2010 Guidance on Social Responsibility (Japanese Standards Association)

### Reporting Scope

The Report covers three domestic companies (including Renesas Electronics Corporation) and four overseas companies of the Renesas Electronics Group.

\*As of the end of December 2019

### Reporting Period

Mainly from January 1 to December 31, 2019 while also including activities after this period.

### Publication Date

July 2020(Next issue: Scheduled in July 2021)

# Renesas' Environmental Activities

## Renesas Electronics Group Environmental Measures

Recently, the environmental activities of companies vary from pollution prevention and reductions in greenhouse gases and waste material to compliance with the regulations of chemical substances and hazardous substances contained in products. The Renesas Electronics Group is working to reduce the environmental load from production activities as guided by the common objective of the industry association. We develop and supply environmentally friendly products that help to increase the environmental performance of our customers' products. The annual policies and objectives of these environmental activities are discussed by the Environmental Promotion Committee, which is chaired by the director in charge of environmental operations, and will be announced to the whole group.

### Environmental Policy

**We will contribute to the harmonization of society and the environment in the course of our business activities.**

### Action Guidelines

1. We will incorporate environmental considerations into all stages of the product life cycle, including research & development, design, procurement, production, sales, logistics, use and disposal.
2. We will strive to prevent pollution as well as to minimize the environmental loads. When environmental problems arise, we will take appropriate steps to minimize the environmental loads and disclose accurate information.
3. Our environmental management efforts will involve compliance with all environmental laws, regulations and agreements, and we will promote compliance activities.
4. We will disclose environmental information to stakeholders and encourage communication with society for the purpose of promoting mutual understanding.
5. We will educate all employees in environmental conservation to create a company culture that promotes harmony between the environment and business activities.

## Three Environmental Cornerstones of Renesas Electronics

Some of the key issues for our environmental measures are 1) legal compliance, 2) reduction of our environmental loads, 3) the development of ecofriendly products and 4) maintaining good relations with stakeholders.

We are tackling these issues through environmental management, in which all employees participate. Such management is based on an Eco-Management system, built on the cornerstones of our Eco-Factories, Eco-Products and Eco-Communication Initiatives.

### ● Eco-Factories Initiative [Environmental Load

#### Reducing Activities at Factories]

Aimed at reducing the environmental loads of manufacturing sites through the reduction of greenhouse gases(GHG) and the appropriate management of chemical substances in manufacturing processes

### ● Eco-Products Initiative [Environmentally Friendly Product Development Activities]

Aimed at supplying eco-friendly semiconductors produced with environmental considerations in mind throughout their lifecycles, including the control of chemical substances contained in products and the development of products with excellent energy-saving performance



**Environmental Management System**

**●Eco-Communication Initiative [Environmental Education and Information Transmission Activities**

Aimed at strengthening employee awareness through environmental education and disseminating the Group’s environmental information to society.

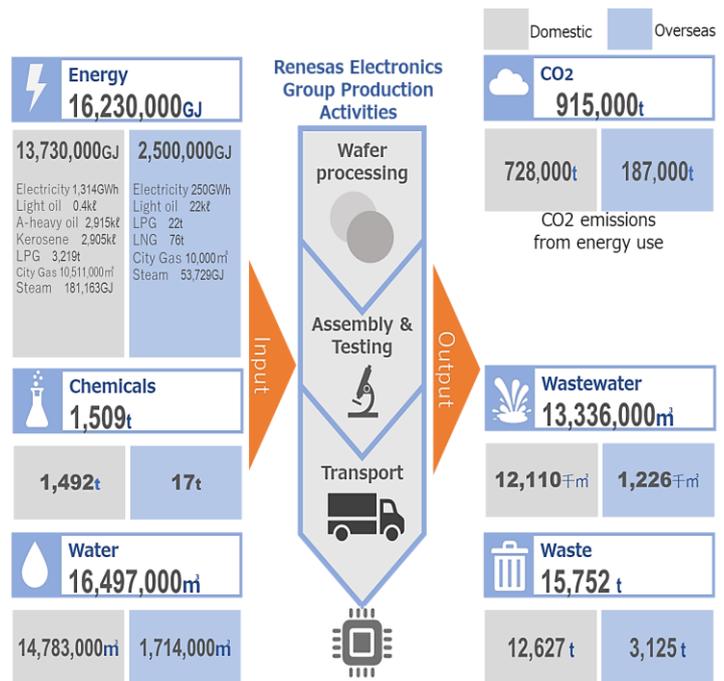
Aimed at supplying eco-friendly semiconductors produced with environmental considerations in mind throughout their lifecycles, including the control of chemical substances contained in products and the development of products with excellent energy-saving performance.

## The Group's Business Activities and Environmental Footprint

The semiconductor products and solutions offered by the Renesas Electronics Group help our customers make their own products and systems smaller and more energy efficient. This boosts protection of the global environment by helping to prevent global warming and use resources effectively.

On the other hand, it is true that production activities place a large environmental loads. They consume energy (electric power, fuel, etc.) and resources (chemicals, water, etc.) while producing waste in solid, liquid, and gaseous forms.

We are attempting to reduce our environmental loads by conducting detailed measurements of our volume of input and output from production to distribution, and making planned reductions. Moreover, we continue delivering environmentally friendly products that are manufactured in an efficient manner by making effective use of limited resources and energy.



2 Overview of Environmental Load Reduction for fiscal 2019 (January 2019 to December 2019)

## Achievements of FY 2019 and targets for FY 2020

| Item                                | Targets for FY 2018  | Results of FY 2018   | Internal Evaluation | Targets for FY 2019   |
|-------------------------------------|--|--|---------------------|---|
| <b>Eco-Management Initiative</b>    | Strengthening of the environmental management system and maintenance of ISO 14001 certification  | <ul style="list-style-type: none"> <li>● Information sharing process, making the group's environmental compliance items conform to the details (items) of environmental compliance evaluation</li> <li>● Revised the EMS guidelines</li> <li>● Renewed ISO 14001:2015 certification</li> </ul> | Well done           | Strengthening of the environmental management system and maintenance of ISO 14001 certification   |
| <b>Eco-Factories Initiative</b>     | Reduce 7% or more from benchmark year (Energy consumption per sales)   | Reduced 42% from benchmark year (Energy consumption per sales)   | Well done           | Reduce 7.76% or more from benchmark year (Energy consumption per sales)   |
|                                     | Reduce PFC* <sup>1</sup> emissions from the results of 2015 (unit per wafer area)  | Reduced the PFC emissions by 0.024 points from the 2015 emissions (units per wafer area)   | Well done           | Reduce PFC emissions from the results of 2015 (unit per wafer area)   |
| <b>Eco-Products Initiative</b>      | Address the various domestic and foreign regulations appropriately<br>Improve the green device ratio in the new mass production products | Responded to regulatory revisions appropriately<br>Improved the green device certification rate by 8.9 points from the previous year.<br>FY2017 : 75.9%<br>FY2018 : 84.8%  | Well done           | Respond appropriately to various overseas and domestic regulations and customer demands<br>Improve the green device ratio in new mass production products |
| <b>Eco-Communication Initiative</b> | Publish an electronic version of the Environmental Report  | Posted the environmental report (HTML version) on the official website   | Well done           | Update and issue the environmental report   |
|                                     | Enrich materials for position-specific education<br>Implement the environment e-learning program   | Updated education materials for fiscal 2019 and implemented education programs   | Well done           | Improve and implement education materials for position-specific education and environment e-learning  |
|                                     | Continue environmental CSR activities  | Conducted activities with local residents  | Well done           | Continue environmental CSR activities   |

\*1 PFC : Perfluoro Compounds : (The semiconductor industry has specified CHF<sub>3</sub>、CF<sub>4</sub>、C<sub>2</sub>F<sub>6</sub>、C<sub>3</sub>F<sub>8</sub>、C<sub>4</sub>F<sub>8</sub>、SF<sub>6</sub> and NF<sub>3</sub> as PFCs for emissions reduction targets.)

# Environmental Topics

## SDGs and Environmental Measures of Renesas

### What are SDGs ?

SDGs stand for Sustainable Development Goals, which were adopted by the world leaders at the United Nations Sustainable Development Summit 2015. The SDGs are long-term goals common to the global society that should be achieved by 2030 to realize a sustainable world. The SDGs, which are set out as universal goals that do not leave anyone behind, comprise 17 goals and 169 targets. The SDGs call all nations including emerging and advanced countries to action. They also call for active involvement not only of large frameworks, such as the United Nations and states, but also of small frameworks, such as companies and NGOs.



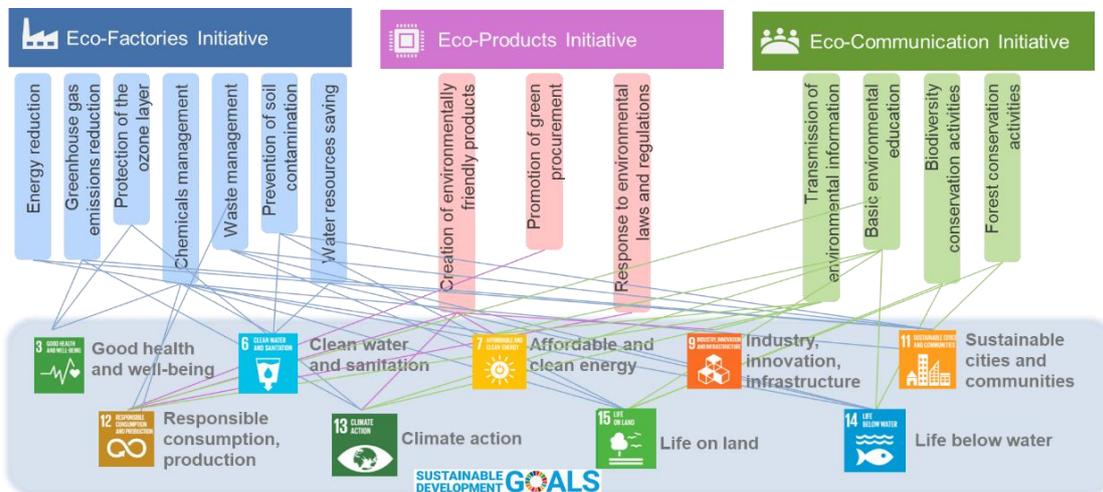
17 Goals of SDGs

### SDGs and Corporate Activities

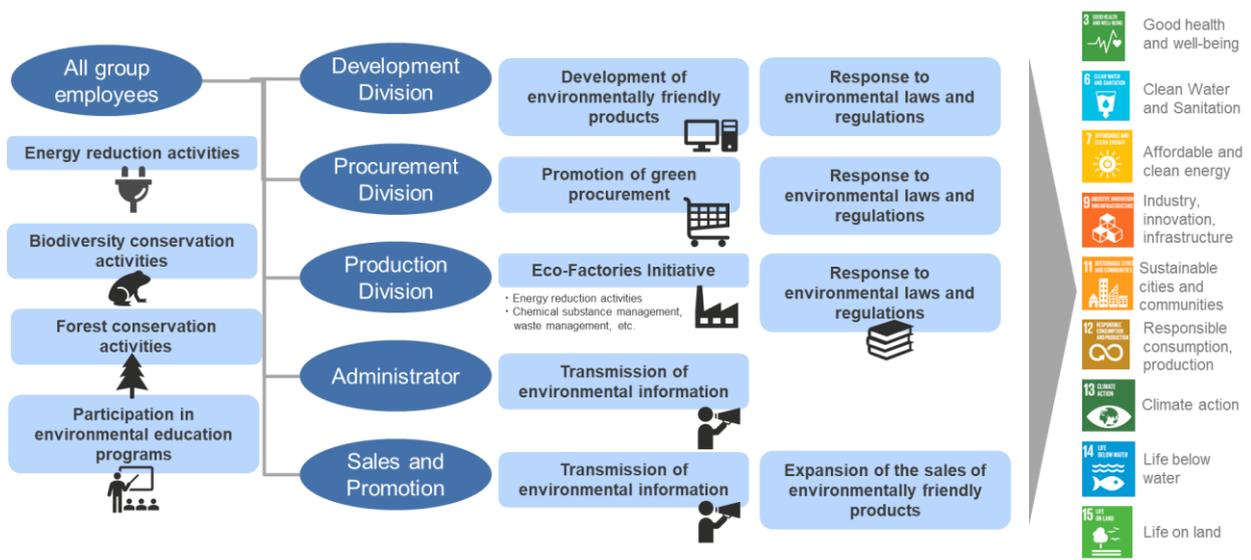
The activities, investment, and innovation of private companies are the key to productive and inclusive economic development and job creation. The SDGs require companies to actively involved in the cause and use their creativity and innovation in resolving issues related to sustainable development. Moreover, the SDGs that focus on sustainability assume that companies incorporate the approach of SDGs into their primary business activities.

### Renesas Contribution to SDGs

Renesas promotes environmental activities that contribute to the achievement of nine out of 17 SDGs. These contribution activities are not meant for social contribution, but are incorporated in the development, production, and sales of semiconductor products, that is, the company's core business. Thus, the company can contribute to the achievement of the SDGs by performing its primary business. Moreover, the company makes educational materials on SDGs available in the company so that all departments and employees can contribute to the achievement of the SDGs.



Renesas Environmental Activities and 9 SDGs' Goals



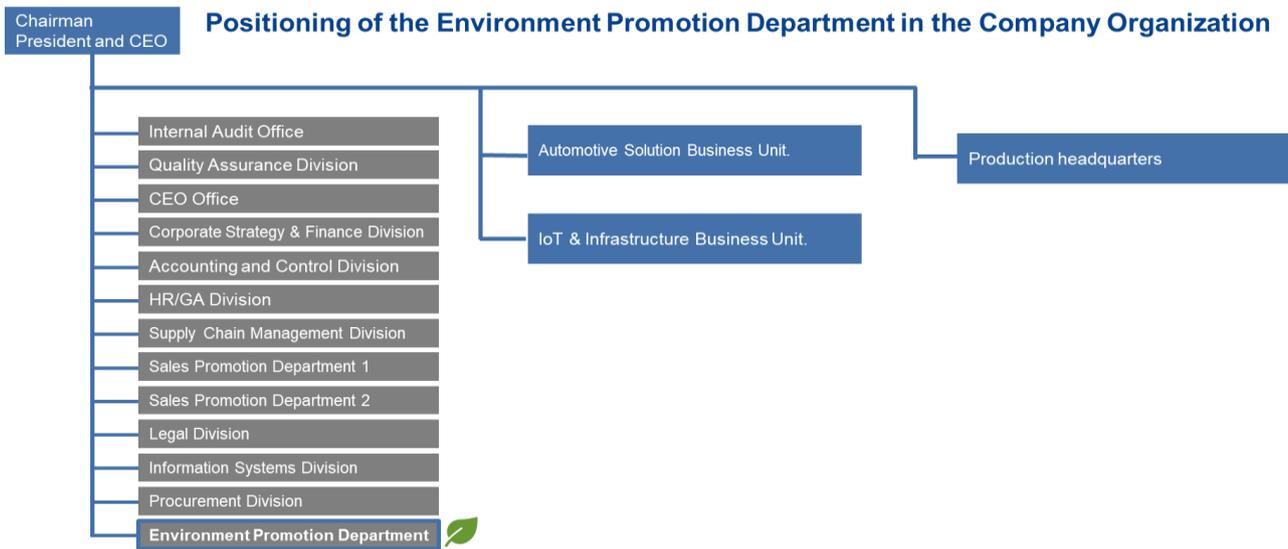
Activities that contribute to the achievement of SDGs (by division)

# Eco-Management

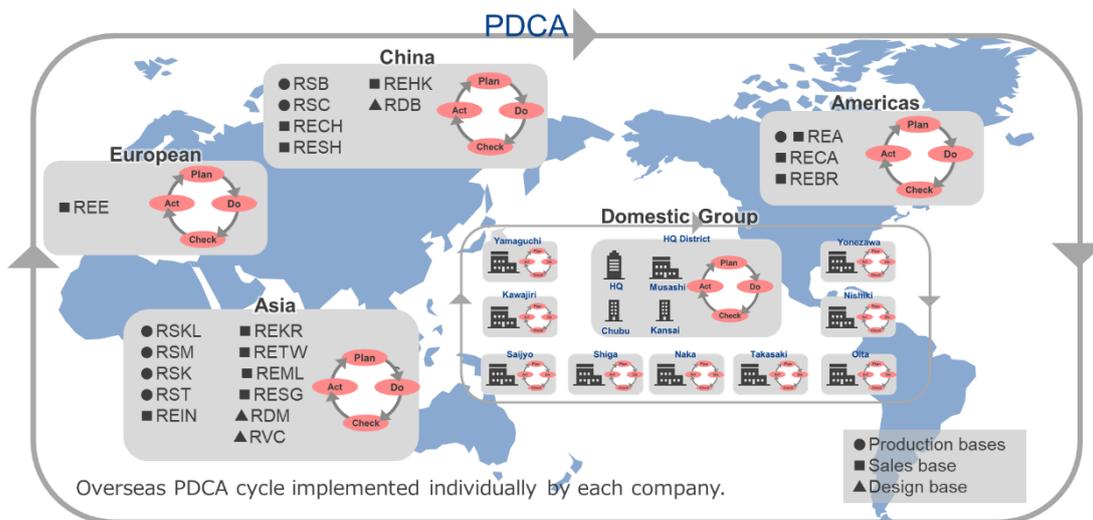
## Environmental Management Activities

### Environmental Management System

The Environmental Policy and the Basic Rules of Environmental Management are provided for in the Renesas Electronics Group's Basic Rules of Management. All of our bases, including affiliated companies, have their own environmental management system in place, through which they promote environmental management activities. The Environment Promotion Department in the head office coordinates the environmental activities of those bases. The Environment Promotion Department reports the performance of environmental activities and related issues and problems to top management and makes recommendations.



**Organization Diagram for the Renesas Group Environmental Activities**



## Compliance system for environment related laws and internal audits of the environmental management system

Each year, we perform an environmental audit at each base to check the environmental management system for its performance and for continuous improvement. In fiscal 2019, we conducted an environmental audit at 11 domestic bases, where we extracted 89 recommendations, including 30 requests for improvement, and took corrective action. We aim to implement audits in a reliable manner by using auditors qualified as environmental management system auditors by JRCA\*1. Moreover, in response to environment-related laws and regulations that become stricter every year, we have built a system to share information among bases and check the compliance system and status.

\*1 JRCA : Japanese Registration of Certified Auditors

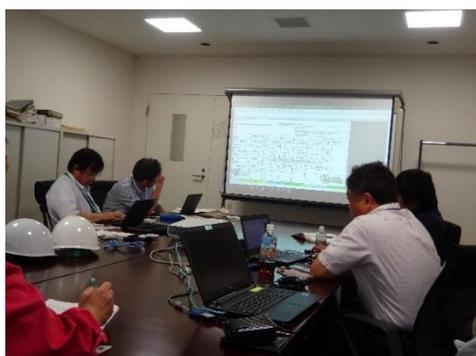


Photo of the system audit



Audit for production line

## ISO 14001 Certified

All domestic sites and overseas manufacturing sites have been certified under ISO 14001, which is the international standard for environmental management systems. The Renesas Electronics Group will continue to maintain and deploy ISO 14001 certification effectively and efficiently.

[Link to ISO14001 certification related page >](#)

### Domestic

| Company Name   | Examining body | Registration Number | Validity Period | Certificate |
|--|----------------|---------------------|-----------------|-------------|
| Renesas Electronics Corporation<br>Headquarters (Toyosu)/Chubu Branch/Kansai Branch /<br>Musashi Factory / Takasaki Factory/Naka Factory /Yonezawa Factory/Oita<br>Factory / Nishiki Factory | JQA            | JQA-EM3490          | 2021/10         | Link        |
| Renesas Semiconductor Manufacturing<br>Naka Factory/Takasaki Factory/Shiga Factory/ Saijo Factory<br>Yamaguchi Factory /Kawashiri Factory  |                |                     |                 |             |
| Renesas Engineering Services Co., Ltd<br>Headquarters Musashi / Takasaki Site  |                |                     |                 |             |

## Overseas

| Company Name  | Examining body | Registration Number               | Validity Period | Certificate          |
|---|----------------|-----------------------------------|-----------------|----------------------|
| Renesas Electronics America Inc. (Palm Bay)   | DNV GL         | CERT-03115-2004-AE-HOU-ANAB       | 2022/8          | <a href="#">Link</a> |
| Renesas Semiconductor KL Sdn.Bhd.   | SIRIM          | EMS 00113                         | 2022/4          | <a href="#">Link</a> |
| Renesas Semiconductor (Beijing) Co., Ltd.   | CCCI           | 02120E10488R6M<br>U006620E0111R6M | 2023/5          | <a href="#">Link</a> |
| Renesas Semiconductor (Suzhou) Co., Ltd.  | CCCI           | 02119E10390R6M<br>U006619E0096R6M | 2022/6          | <a href="#">Link</a> |
| Renesas Semiconductor (Malaysia) Sdn. Bhd.<br>Renesas Semiconductor (Kedah) SDN. BHD.<br>Renesas Semiconductor Technology (M) | SIRIM          | EMS 00105                         | 2021/8          | <a href="#">Link</a> |

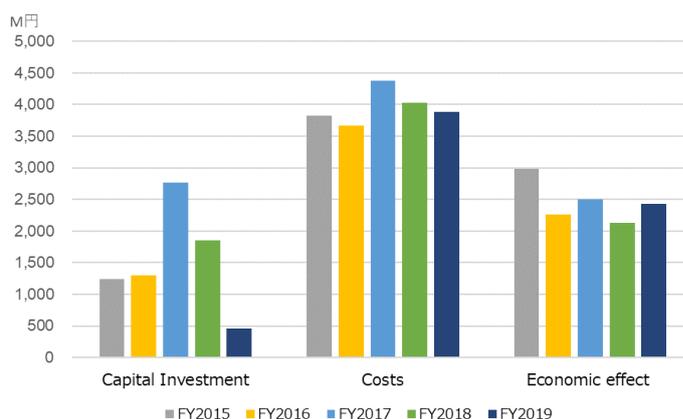
## List of Renesas Group Companies

| Abbreviated | Function             | Country of location | Official Name                                     |
|-------------|----------------------|---------------------|---|
| <b>RSB</b>  | Manufacturing        | China               | Renesas Semiconductor (Beijing)                   |
| <b>RSC</b>  | Manufacturing        | China               | Renesas Semiconductor (Suzhou)                    |
| <b>RSKL</b> | Manufacturing        | Malaysia            | Renesas Semiconductor KL                          |
| <b>RSM</b>  | Manufacturing        | Malaysia            | Renesas Semiconductor (Malaysia)                  |
| <b>RSK</b>  | Manufacturing        | Malaysia            | Renesas Semiconductor (Kedah)                     |
| <b>RST</b>  | Manufacturing        | Malaysia            | Renesas Semiconductor Technology (M)              |
| <b>RDM</b>  | Design               | Malaysia            | Renesas Semiconductor Design (Malaysia) Sdn. Bhd. |
| <b>REA</b>  | Manufacturing, Sales | USA                 | Renesas Electronics America Inc.                  |
| <b>REBR</b> | Sales                | Brazil              | Renesas Electronics Brasil-Servicos Ltda.         |
| <b>RECA</b> | Sales                | Canada              | Renesas Electronics Canada Limited                |
| <b>RECH</b> | Sales                | China               | Renesas Electronics (China) Co., Ltd.             |
| <b>RESH</b> | Sales                | China               | Renesas Electronics (Shanghai) Co., Ltd.          |
| <b>REHK</b> | Sales                | China               | Renesas Electronics Hong Kong Limited             |
| <b>RETW</b> | Sales                | Taiwan              | Renesas Electronics Taiwan Co., Ltd.              |
| <b>REKR</b> | Sales                | Korea               | Renesas Electronics Korea Co., Ltd.               |
| <b>RESG</b> | Sales                | Singapore           | Renesas Electronics Singapore Pte. Ltd            |
| <b>REML</b> | Sales                | Malaysia            | Renesas Electronics Malaysia Sdn.Bhd.             |
| <b>REIN</b> | Sales                | India               | Renesas Electronics India Pvt. Ltd.               |
| <b>REE</b>  | Sales, Design        | Germany             | Renesas Electronics Europe GmbH                   |
| <b>RDB</b>  | Design               | China               | Renesas Semiconductor Design (Beijing) Co., Lt    |
| <b>RVC</b>  | Design               | Vietnam             | Renesas Design Vietnam Co., Ltd.                  |

## Environmental Accounting

In fiscal 2019, while we were forced to reduce capital investment due to economic reasons, we introduced energy-efficient equipment as one of energy-saving measures and replaced equipment to those that do not use ozone-depleting compounds as refrigerants. The equipment introduced includes equipment for the upgrading of refrigerating machines, compressors, and dry pumps, equipment for the optimizing control by inverters, equipment for the reuse of winter chill and waste heat, and equipment for the efficient use of vaporization heat.

For the expenditures not listed in the spreadsheet, we posted 495 million yen for the prevention of air pollution, 1,661 million yen for the prevention of both soil and water contamination, and 433 million yen for waste disposal. Among the economic effects, the gain on the sale of waste was 553 million yen, which does not include estimated economic effects obtained from hypothetical calculations.



Environmental Accounting Trend

## Results for fiscal 2019 (from January 1, 2019 to December 31, 2019)

| Item                  | Description  | Cost of environmental protection |                     | Effectiveness               |                              |
|-----------------------|--|----------------------------------|---------------------|-----------------------------|------------------------------|
|                       |  | Capital Investment (million ¥)   | Expense (million ¥) | Economic effect (million ¥) | Environmental load reduction |
| Within business sites | Pollution prevention (air, water, etc.)  | 5                                | 1,740               | 29                          | Energy saving 98.0GWh        |
|                       | Global environmental conservation  | 440                              | 1,285               | 1,712                       |                              |
|                       | Resource circulation   | 16                               | 495                 | 690                         |                              |
| Upstream/Downstream   | Green procurement, Product assessments, Collection and recycling of packing material                     | 0                                | 9                   | -                           |                              |
| Management activities | Maintenance, operation, education, etc. of environmental management                                      | 0                                | 334                 | -                           |                              |
| R&D                   | R&D for reducing the environmental load of products and production process                               | 0                                | 6                   | -                           |                              |
| Social activities     | Donation and support for local community volunteer activity and environmental protection group           | 0                                | 8                   | -                           |                              |
| Environmental damage  | Cost for compensation concerning soil and groundwater pollution recovery and environmental conservation. | 0                                | 3                   | -                           |                              |
| Total                 |  | 461                              | 3,880               | 2,431                       |                              |

# Eco-Factories

## Environmental load reduction activities at factories

### Global Warming Prevention through Energy Conservation

To prevent global warming, the Renesas Electronics group in Japan actively takes part in the energy saving activities of the semiconductor industry. To achieve the target of the electric appliance and electronics industry and the reduction target of the Energy Conservation Act, the group continuously promotes energy conservation activities.

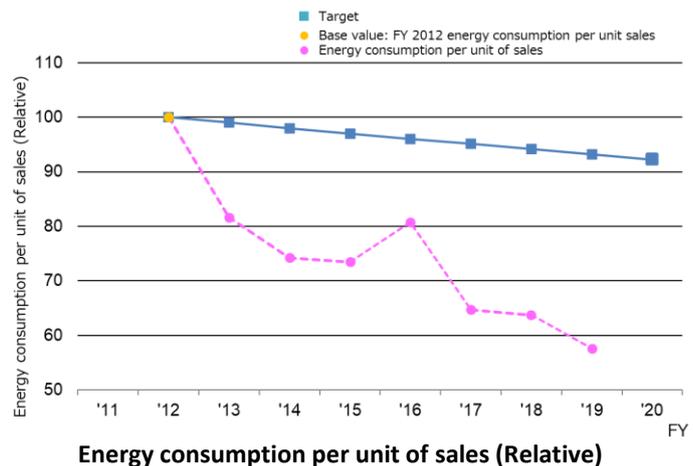
#### Reducing Energy

The Renesas Domestic Group has been participating in the Commitment to a Low Carbon Society that has been promoted by the electrical and electronics industries since fiscal 2013. The Commitment to a Low Carbon Society sets fiscal 2012 level as the baseline and aims to achieve 92.27% or below of the baseline in fiscal 2020 by reducing energy consumption per unit of sales by 1% each year.

#### Results of FY 2019 Reductions

For performance for fiscal 2019, we reduced energy consumption by 42% compared to the base year and by six points compared to fiscal 2018. This was achieved not only by the concentration of factories via consolidation, but also by energy-saving measures and careful energy management that were implemented by each factory.

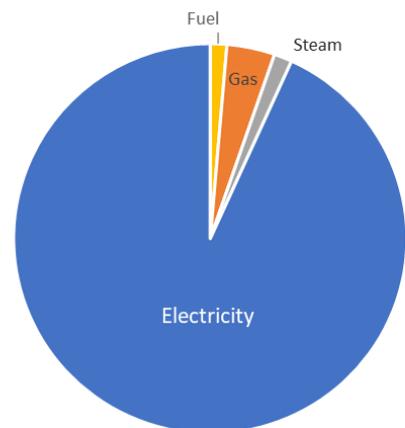
In fiscal 2019, we intend to continue promoting energy saving measures, to focus on the efficient use of energy that is appropriate for our business activities, and to promote efforts to further reduce energy consumption and prevent global warming.



#### Amount of energy consumed



Changes in the amount of energy used

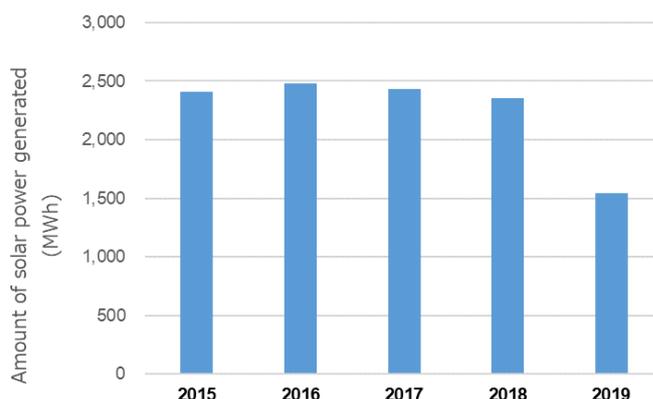


Composition Ratio of Energy Use for fiscal 2019

## Renewable energy power generation

At our group factories where a large amount of power is consumed, the percentage of renewable energy to the total energy used is kept low in light of economic rationality. However, we installed solar panels on the roofs of some factories to provide part of power required for production.

In fiscal 2019, 1,542 MWh was generated by solar panels, which was a reduction by about 35% from the previous year due to the stopping of some production lines for which solar panels were installed.



Changes in renewable energy power generation

## Main measures to reduce energy consumption

On the production lines, we are implementing activities that aim to reduce specific energy consumption by an average of more than 1% per year over the five-year period in line with the energy consumption reduction goals specified in the Energy Saving Act.

Specifically, we will implement measures to make equipment more efficient and achieve better inverter control and measures related to natural energy and the heat of vaporization in a systematic manner while giving due consideration to the effects of energy saving and investment. Moreover, we will optimize the operation of facilities according to changes in production volume.

|   | Item   | Details   |
|---|--|---|
| 1 | Enhancement of equipment efficiency                            | Refrigerator replacement, optimal control<br>Compressor replacement, machine number control<br>Boiler replacement<br>Dry pump replacement |
| 2 | Motor inverter control (rotation control)                      | Air-conditioner fan, various pumps  |
| 3 | Natural energy<br>Reuse of energy<br>Vaporization energy, etc. | Winter-free cooling<br>Waste heat recovery and reuse<br>Water spray humidification  |

Examples of the introduction of energy-saving

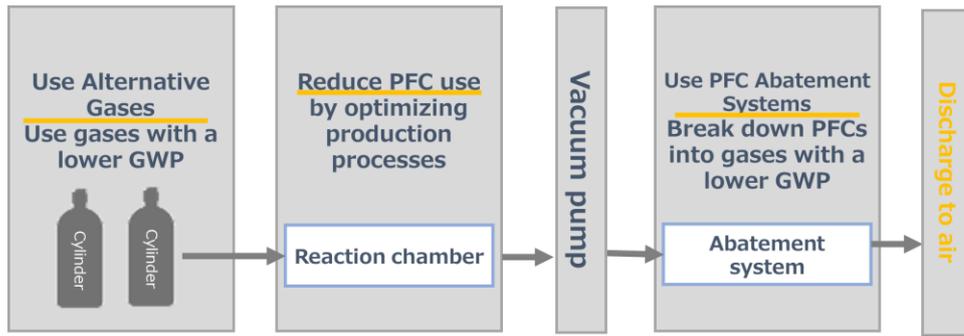
## Reducing GHG Emissions

The Renesas Electronics Group uses PFC\*<sup>1</sup> gas, which is a greenhouse gas, primarily as a reaction chamber cleaning gas for semiconductor production processes. These gases do not readily decompose, and since their global warming potential (GWP\*<sup>2</sup>) is between 7,000-20,000 or even higher, it is critical to reduce these emissions. The Group has therefore set PFC gas emission reduction targets and is actively working to help prevent global warming. Methods of reducing the greenhouse effect of PFC gases include 1) switching to gases with a lower GWP, 2) optimizing processes to reduce the volume of PFC gases used, and 3) installing abatement systems that remove PFC gases to break them down. The Group has been developing technology to cut emissions to 90% or lower in 2010 as compared to 1995, using a combination of these three techniques.

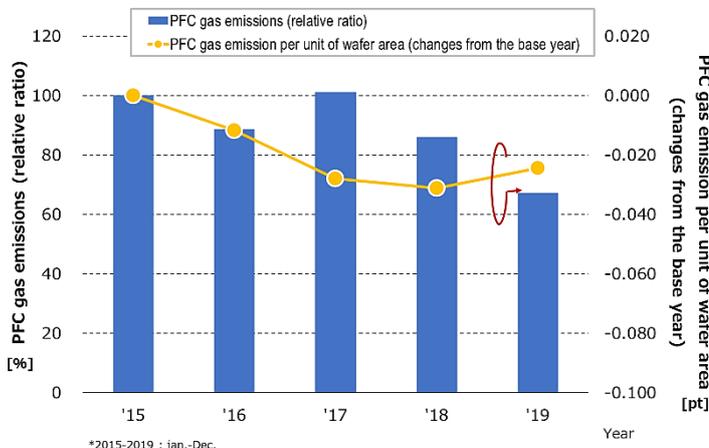
In fiscal 2019, compared to in fiscal 2015, the volume of PFC gas emissions per unit of wafer area was reduced by 0.024 points and the total amount of emissions was reduced by about 33%. We plan to further reduce emissions in fiscal 2020 and beyond.

\*1 PFC : Perfluoro Compounds : (The semiconductor industry has specified CHF<sub>3</sub>, CF<sub>4</sub>, C<sub>2</sub>F<sub>6</sub>, C<sub>3</sub>F<sub>8</sub>, C<sub>4</sub>F<sub>8</sub>, SF<sub>6</sub> and NF<sub>3</sub> for emissions reduction.)

\*2 GWP : Global Warming Potential : a coefficient indicating how much a given mass of greenhouse gas is estimated to contribute to global warming (CO<sub>2</sub>=1)



GHG Emissions Reduction Image



Changes in PFC gas emissions and PFC gas emission per unit of wafer area

| PFC gas                    |      | GWP    |
|----------------------------|------|--------|
| PFC (perfluorocarbon)      | CF4  | 7,390  |
|                            | C2F6 | 12,200 |
|                            | C3F8 | 8,830  |
|                            | C4F8 | 10,300 |
| HFC (hydrofluorocarbon)    | CHF3 | 14,800 |
| SF6 (sulfur hexafluoride)  |      | 22,800 |
| NF3 (nitrogen trifluoride) |      | 17,200 |

Seven PFC gases subject to reduction in the semiconductor industry and Global Warming Potential (GWP)\*1

\*1 2006 IPCC Guidelines (IPCC: Intergovernmental Panel on Climate Change)

### Protecting the Ozone Layer

The Montreal Protocol on Substances That Deplete the Ozone Layer classifies ODSs\*1 into Class I (CFCs\*2, etc.) and Class II (HCFCs\*3). The Group has completely eliminated the use of all of these (ODS\*4) from our production processes.

Furthermore, we are systematically reducing the use of CFCs used as refrigerants in chillers, refrigerators, air conditioners and other equipment and replacing them with alternative substances in line with Montreal Protocol program. We are also recovering ODSs when affected equipment is scrapped and making sure these substances are destroyed.

\*2 CFC : Chlorofluorocarbons \*3 HCFC : Hydrochlorofluorocarbons \*4 ODS : Ozone-depleting substances

### Environmental Measures in Logistics Operations

The Renesas Electronics group in Japan implemented a variety of different environmental measures for its logistics operations. These included energy reduction for the transport of products and waste, reduction of packing materials for products, reuse of packing materials, and the switching of company vehicles to fuel-efficient cars.

Pursuant to the Act on the Rational Use of Energy, which stipulates specified consignor obligations, we promoted the reduction of CO<sub>2</sub> emissions in our logistics operations. In fiscal 2019, our CO<sub>2</sub> emissions was 6.81 million ton-kilometers, a reduction of 430,000 ton-kilometers from the previous year. In fiscal 2020, we will continue our efforts to reduce transportation energy consumption.

| Fiscal Year | Transport Volume (10,000 ton-kilometers) |  |
|-------------|--|--|
|             | Renesas Electronics                      | Group companies other than Renesas Electronics |
| 2017        | 472                                      | 365  |
| 2018        | 391                                      | 333  |
| 2019*5      | 487                                      | 194  |

### Domestic transport volume

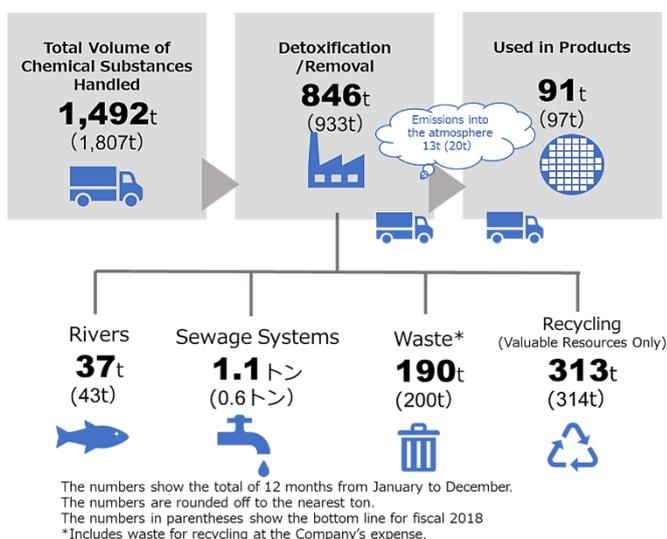
\*5 Since we integrated group companies in charge of post-processing into Renesas Electronics Corporation in fiscal 2019, the domestic transport volume has increased by 960,000 ton-kilometers from the previous year.

## Chemical Substance Management

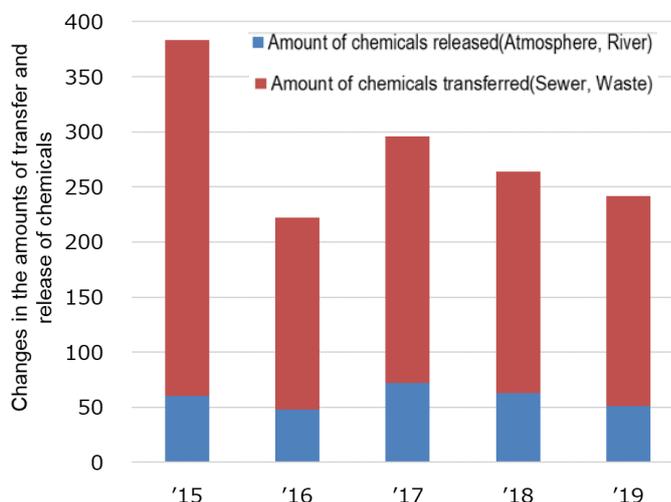
The Group conducts various assessments of the chemical substances it uses, based on its chemical substance database compiled through green procurement activities and the acquisition of information about related laws and regulations. The Group strives to accurately understand and reduce the total volume of chemical substances used and manages the volume of hazardous chemical substances used and their emissions. In this manner, we are pursuing research and development for green products and eco-factories. With regard to substances subject to the PRTR\*<sup>1</sup> Law and VOCs\*<sup>2</sup>, high balance management is accurately carried out even with trace amounts, not only balance results are reported to the government, but activities for substitution of chemical substances and reduce emissions are analyzed.

\*1 Pollutant Release and Transfer Register Law:(A law concerning the monitoring of emissions of specified chemical substances into the environment and their management)

\*2 VOCs : Volatile Organic Compounds



### Input and output of PRTR-regulated Chemical Substances in FY 2019

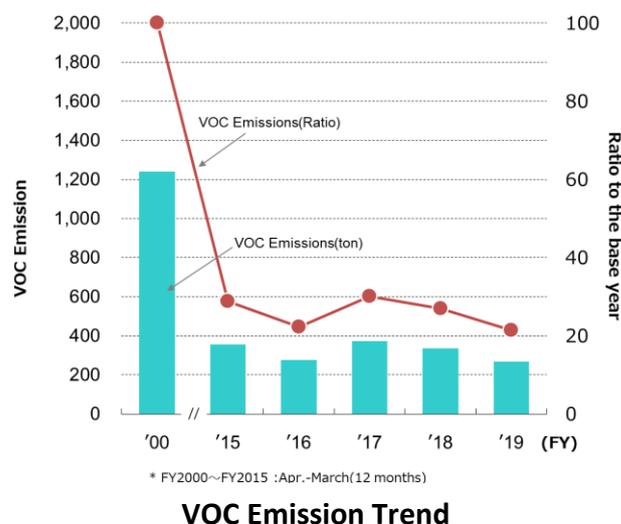


### Changes in the amounts of transfer and release of chemicals (PRTR Law)

FY2000-FY2015 : Apr.-Mar.(12 months)  
 FY2016 : Apr.-Dec.(9 months)  
 FY2017-FY2019 : Jan.-Dec.(12 months)

### Reducing VOC Emissions

In the Renesas Electronics Group, VOCs such as isopropyl alcohol and xylene are released from factories only after they have been rendered as harmless as possible by equipment that processes organic gas emissions. Along with this, we optimize production processes and use production equipment effectively as we endeavor constantly to lower VOC emissions.



### Handling of organic fluorine compounds

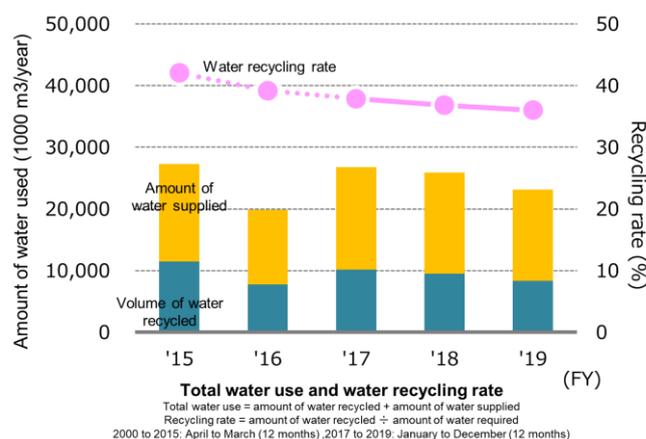
The Renesas Group uses materials that contain organic fluorine compounds as surfactants in the semiconductor manufacturing process. In recent years, concerns have been growing about the properties of organic fluorine compounds, such as persistence in the environment, bioaccumulation potential, and long distance mobility, and regulations concerning organic fluorine compounds have been tightened internationally through the POPs Convention\*1. In response to such a social context, the Group has been gradually shifting to materials that have less of an impact on the environment in collaboration with the Technology Department.

\*1 POPs Convention: Stockholm Convention on Persistent Organic Pollutants

### Conserving Water Resources

The Renesas Electronics group in Japan promoted water conservation by recycling and reusing water.

For domestic performance for fiscal 2019, the total amount of water consumption was 23,113,000 m<sup>3</sup>, the amount of water supplied annually was 14,783,000 m<sup>3</sup>, and the recycling rate was 36.0%.

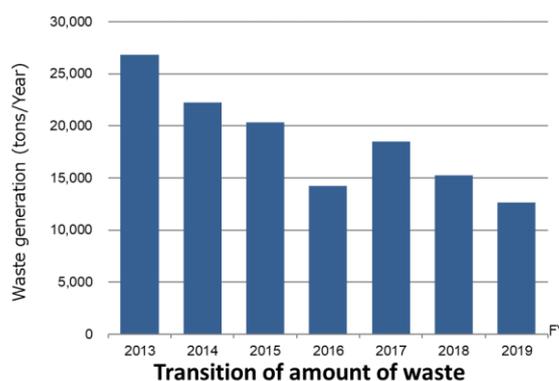


### Waste Management

The Renesas Electronics Group in Japan promoted not only the recycling of waste but also the suppression of waste emissions. The emissions in FY 2019 were 12,627 t.

Additionally, we practiced strict legal compliance and continued to periodically visit our industrial waste processing contractors to ensure that they were processing waste appropriately.

The Group practices strict storage, management and reporting of equipment that uses PCB\*2, in accordance with



the law. We promote the systematic disposal of waste that ensures the completion of safe and secure disposal by the deadline designated by the basic policy of the Japanese government by outsourcing the disposal of high concentration PCB waste to the Japan Environmental Storage & Safety Corporation (JESCO) and the disposal of waste containing low concentrations of PCB to accredited detoxification facilities.

\*2 PCB : Polychlorinated Biphenyl

### Preventing Soil Pollution

If hazardous chemicals penetrate into the soil, they can accumulate in the soil and impact human health, crops, and the ecosystem.

In an effort to prevent the penetration of hazardous chemicals into the soil, the Group systematically implements measures to reduce the risk of the leakage of chemicals and prevent their penetration into the soil in the event of leakage. These measures, some of which are given below, are implemented as environmental investment.

Moreover, through the environmental audit we conduct annually at each base, we check the management of chemicals, including storage for chemicals, facilities management status, and response procedures in the event of leakage, and actively make recommendations as to risk reduction measures.

- Construction work to prevent leakage from waste liquid collection facilities (Kawashiri factory and Saijo factory)
- Construction work to prevent the leakage of medical solutions (Saijo factory)
- Construction work to prevent underground seepage (Naka factory, Musashi site)

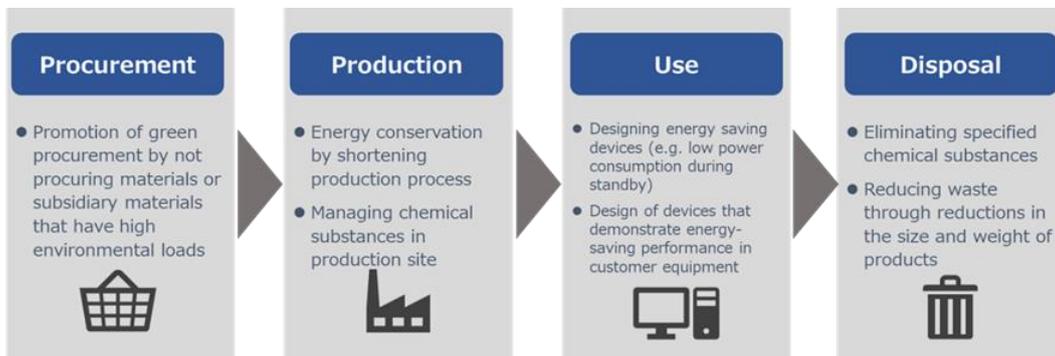
# Eco-Products

## Environmentally friendly product development activities

### Eco-Products Initiative

Customers’ environmental requirements for our semiconductor products are growing stricter every year. The Renesas Electronics Group is proceeding with its Eco-Products Initiative to meet these requirements. To turn a product into an eco-product, it is important to build in a variety of innovations at the development and design stages to reduce environmental loads at all life cycle stages, including procurement, production, usage and disposal.

Our eco-products are made possible through product environmental assessments, which are comprehensive evaluations of the product environmental loads reduction measures. Product environmental assessments are divided into two stages: At the time of development and prior to mass production.



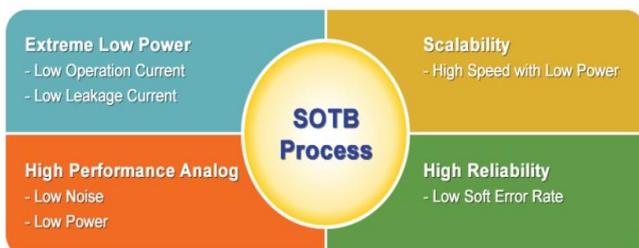
Eco-Products Initiative at Each Stage

### Energy-saving Devices

We deliver devices that help customers make their electronic equipment and systems energy efficient. There are two types of such devices: one is those that are energy efficient in themselves and the other is those that help customers' systems become energy efficient by being embedded in the systems. We contribute to the realization of an energy-efficient society by developing those devices.

#### ● RE Family, a built-in controller with SOTB™ process technology

The RE Family, an embedded controller based on Renesas' unique, groundbreaking SOTB™ process technology, realizes both low operating current and low standby current and enables operation through energy harvesting power sources by realizing high-speed operation at low voltage, both of which have been impossible to achieve in the past. Moreover, we successfully developed intelligent and battery maintenance-free IoT devices by adding an energy harvesting control circuit and using a 32-bit CPU.



**Ultra-low operating power and ultra-low leakage power**  
SOTB™ has achieved battery-free, energy harvesting-based products that require only about 1/10 of power compared to conventional low power consumption MCU devices. It can also be used in products with extended battery life that require maintenance.

● **Motor-generator Control System**

A motor-generator control system for HEV/EV mainly performs motor control to provide motive power and controls regeneration by the motor acting as a generator. Advances aimed at lower fuel consumption and reduced CO2 emissions are being made constantly in motor and regeneration control, and they require high-performance MCUs with advanced functions. In response to these demands, Renesas offers an extensive lineup of MCUs incorporating high-performance CPUs, timers and ADC functions ideal for motor and regeneration control, and microcontrollers with RDCs that enables a further reduction in system cost. We also provide analog and power devices.



● **Motor Control Solution**

Renesas motor control solutions aim to make systems more energy efficient by reducing the power consumption of motors. There are a number of motor control methods to accommodate various product applications, and each poses its own difficulties during development. Renesas motor control solutions include sample programs and documentation for 120 degree Conduction Control and vector control, as well as development support tools to provide total support to customers' development efforts.

**Induction Motor Control Solution**

This is a solution for three-phase induction motor inverter control (V/F control) using a microcontroller.



RL78/G14 CPU Card

**Brushless DC Motor Control Solution**

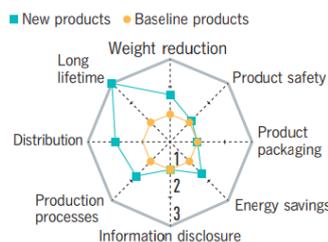
This is a solution for three-phase brushless DC motor inverter control (vector control, 120-degree energization control) using a microcontroller.



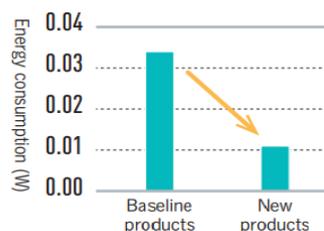
RX24T CPU Card

**Creation of Eco-Friendly Products**

As a way to create eco-friendly products, we include a product environmental assessment, a way of evaluating how much a project mitigates environmental loads, into our development and design flow. The evaluation compares new products against old ones in eight categories, including volume reduction, product safety, and energy savings. The process yields quantifiable results that can be visualized, for example with charts. This helps improve the performance of our semiconductor product itself, and when used in our customers' products, helps make them smaller and more energy-efficient. This ultimately decreases the environmental loads of the customers who use those products.



Product environmental assessment result chart (example)



Energy Consumption Comparison (example)



Flowchart of Development and Design of General Semiconductor Device

## Renesas Green Device

The Renesas Green Device is internally certified as a product with an assessed environmental performance above the set criterion level. Products with higher environmental performance are selected and certified as Renesas Super Green Devices. The Renesas Green Devices and Renesas Super Green Devices selected from hundreds of newly developed products every year are registered in our database. Some of these products are presented on our website with an environmental performance index.

## Renesas Super Green Device (products developed in 2019)

| Product name  | Type  | Application   | Environmental performance | Feature  |
|---|---|---|---------------------------|--|
| RH850/F1KH  | 32Bit MCU                                   | Controller for automobile electrical components                     | ★★★                       | Equipped with two G3KH cores, low power consumption, high processing capacity  |
| R9A06G064MGBG   | Communication LSI                           | Network controller  | ★★★★                      | Equipped with gigabit-compatible Ethernet PHY  |
| R9A06G064SGBG   | Communication LSI                           | Network controller  | ★★★★                      | The latest TSN communication is enabled by only one chip   |
| RMWV6416AGBG-5S2<br>RMWV6416AGSA-5S2<br>RMWV6416AGSD-5S2  | Low power consumption 64MB-SRAM             | For general and general industrial purposes                         | ★★★★                      | Power supply voltage of 3 V, high soft error tolerance, latch-up free, high reliability  |
| R7S921040VCBG<br>R7S921045VCBG<br>R7S921041VCBG<br>R7S921051VCBG<br>R7S921046VCBG<br>R7S921056VCBG<br>(RZ/A2M series) | High-performance, low power consumption MPU | For equipment applied to GUI display devices, printers, and cameras | ★★★★                      | Equipped with a dynamically reconfigurable processor (DRP) whose speed is ten times faster than that of conventional products. Requires no external DRAM because it has a large capacity, 4MB-RAM DRAM-IF for mobile |

### Environmental performance indicator (according to our internal standard)

★~★★:Renesas Green Device , ★★★~★★★★:Renesas Super Green Device

## Product Environmental Quality

To customers, we provide information on substances contained in our products and analysis data on the substances prohibited by the Restriction of Hazardous Substances RoHS\*1 at the request of customers to ensure that our products can be used safely. Moreover, we offer opportunities to check our chemical substances control system and actual environmental protection activities. We think that chemical substances used in all processes from selection of materials at development and design phases to pollution prevention in the manufacturing processes must be controlled by the whole supply chain. To suppliers, we ask them to submit a certificate and analysis data to ensure that the prohibited substances are not used. Additionally, we perform supplier audits to check their control systems. To distributors and special agents, we request them to control chemical substances contained in packaging materials.

\*1 RoHS Directive : EU directive for restrictions on the use of certain hazardous substances (lead, mercury, cadmium, hexavalent chromium, bromine-based flame retardants (PBB and PBDE), and phthalic acid esters (DEHP, BBP, DBP, and DIBP)) in electrical equipment.



### Product Chemical Content Control throughout the Supply Chain

Provision of the information on substances contained in our products and the analysis data on the substances prohibited by the RoHS

## Promoting Green Procurement

Renesas Electronics is promoting green procurement. Specifically, the Company prioritizes the procurement of ecofriendly products free of hazardous substances from suppliers who are proactively promoting environmental protection. These guidelines are disclosed to all suppliers and the Company conducts periodic investigations on the environmental measures implemented by suppliers. In addition, the Company advances its procurement initiatives with the understanding and cooperation of our suppliers in relation to testing of purchased items for hazardous substances, compliance with the European Union's RoHS directive and other laws and regulations.

### Guidelines and Standards → Links to related document sites

In Japanese

| タイトル             | 容量    |
|------------------|-------|
| グリーン調達ガイドライン 第2版 | 108KB |
| グリーン調達基準書* 第2版   | 404KB |
| 管理化学物質リスト 第8版    | 690KB |

In English

| Title   | Size  |
|---|-------|
| Green Procurement Guidelines Ver.2                        | 43KB  |
| Green Procurement Standard Ver.2                          | 186kb |
| Management of Chemical Substances List<br>Revision:Ver. 8 | 658KB |

\*A password is required to view Green Procurement Standard (Japanese and English). For confirmation of the password, please contact the Investigation Request Office or the contact destinations listed at the bottom of this page.

### Reference: Green Procurement Answer Format

In Japanese

| タイトル           | 容量   |
|----------------|------|
| グリーン調達調査票 A, B | 78KB |
| グ含有化学物質調査シート   | 70KB |
| 購入単位情報シート      | 60KB |

In English

| Title  | Size  |
|--|-------|
| Green Procurement Questionnaire A, B                 | 75KB  |
| Investigation Sheet for Chemical Substances Included | 100kb |
| Data Sheet for Purchase Unit                         | 69KB  |

- For environmentally hazardous substances analysis data, please submit a report (answers) using a free format (refer to the Green Procurement Standard).
- When answering, please attach an electronic file (Excel) to e-mail

## Compliance with Environmental Laws and Regulations

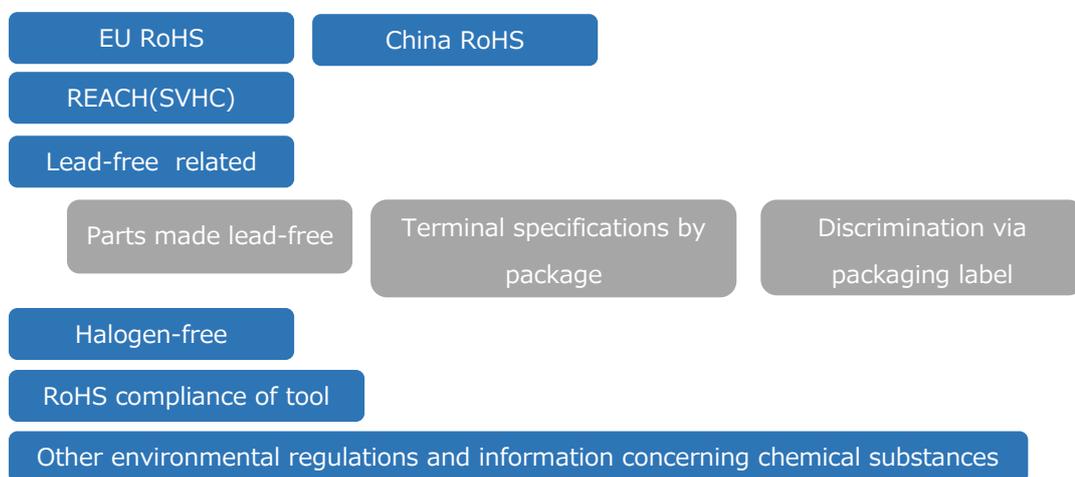
Embedded in a wide range of finished products, Renesas Electronics’ semiconductors are being used worldwide. In order to ensure compliance with environmental laws and regulations related to its products Renesas Electronics is working to obtain information regarding such laws and regulations in major countries immediately after its publication.

### Major Environmental Laws Overseas and Our Response

The RoHS Directive and the ELV Directive\*1 of the European Union have defined threshold values for chemical substances contained in certain products. In response to these and similar directives, Renesas Electronics makes sure that it receives product analysis data from suppliers of semiconductor device components as well as reports certifying that their products are free of banned substances. In addition, we conduct voluntary analysis of these components to confirm that sub-threshold values are observed.

\*1 ELV Directive : :EU directive on End-of-Life Vehicles. Limits content of lead, mercury, cadmium and hexavalent chromium.

#### Compliance with our laws and regulations (click to open a description of the response)



### Initiatives in China

China's Administrative Measures for Restrictions on the Use of Hazardous Substances in Electrical and Electronic Products, also known as Amendment China RoHS, requires an indication of the hazardous substance used and the product Environment Friendly Use Period (EFUP) for end products that contain specified toxic and hazardous substances. Semiconductor products are not electrical and electronic end products, so information related to each chemical substance contained in products and product Environment Friendly Use Period (EFUP) values is provided through sales companies and authorized dealers without directly marking the products.



### Initiatives in Europe

Renesas Electronics is not required to register its semiconductor devices under the EU’s REACH Regulation\*2, since they are articles (finished products) that do not intentionally emit chemical substances. However, we obtain the products containment information related to substances of very high concern (SVHCs\*3) from the supply chain and provide it to customers. The Group will continue to closely monitor movements of environmental laws and regulations overseas and implement appropriate measures.

\*2 REACH Regulation: This is a regulation that requires registration, evaluation, authorization, and restriction when producing/importing chemicals in/into the EU.

\*3 SVHC : Substances of Very High Concern (because they harm or may harm health and safety.)

# Eco-Communication

## Environmental Education and Information Transmission Activities

### Environmental Basic Education

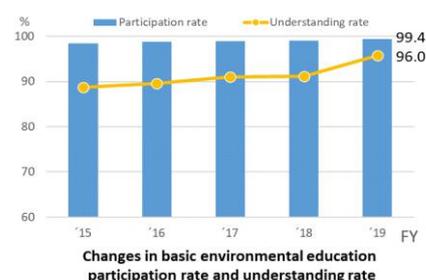
The environmental education program of the Group (for domestic employees) is conducted by separating it into general education and specialized education.

In the general environmental education program, the Group provides basic environmental education to help all our Group executives and employees acquire necessary environmental knowledge mainly through online sessions. Meanwhile, the specialized, operation-specific environmental education program has been designed to allow employees to gain the environmental knowledge required for their respective operations. This program offers education and training specific to the individual fields of development, design, sales and manufacturing. Finally, the ISO 14001 and ISO 19011 education programs help employees understand the certification systems and help internal auditors develop their auditing skills.

| Program Name   | Purpose   | Targets for fiscal 2020  |
|--|---|--|
| <b>General Environmental Education</b>                       | Enhancement of environmental awareness and knowledge  | <ul style="list-style-type: none"> <li>●Basic environmental education (targeting all employees of our domestic group companies)</li> <li>●Position-specific education (new employees, newly appointed officials)</li> </ul>  |
| <b>Specialized Environmental Education ISO14001 ISO19011</b> | Acquisition of environmental knowledge required for one's job   | <ul style="list-style-type: none"> <li>●Environmental education for persons in the development, design, and sales departments</li> <li>●Environmental education for sales practitioners</li> <li>●Environmental education for persons in the manufacturing department</li> </ul> |
|  | <ul style="list-style-type: none"> <li>●Understanding of the mechanism of ISO 14001 and ISO 19011</li> <li>●Development of internal auditors</li> </ul> | <ul style="list-style-type: none"> <li>●ISO14001 basic training</li> <li>●ISO19011 training</li> <li>●Internal auditors training</li> </ul>  |

### FY 2019 Achievement

As we experience abnormal weather and an extreme summer heat each year due to climate change over the past several decades, I think that we should lose no time in addressing this issue. Through this program, I realized anew that we should make efforts to stop global warming. While each individual may not be able to make a difference in environmental conservation, we should join forces with one another within our company to contribute to conserving the environment.



### Comments from Environmental Education Participants

- I think that high-quality, regular environmental education is effective and functional in promoting environmental learning in local communities. This program enables us to learn remotely and at our own pace. I think that this education program is very beneficial.
- Through this program, I realized that abnormal weather brought by global warming is a real threat and that the current situation is very serious. I also realized that environmental conservation is an important issue that not only individuals, but also companies should address seriously.
- As we experience abnormal weather and an extreme summer heat each year due to climate change over the past several decades, I think that we should lose no time in addressing this issue. Through this program, I realized anew that we should make efforts to stop global warming. While each individual may not be able to make a difference in environmental conservation, we should join forces with one another within our company to contribute to conserving the environment.

## Transmission of environmental information

### Participation in the Environmental Reporting Platform Development Pilot Project

The Environmental Reporting Platform Development Pilot Project is a project designed by the Ministry of the Environment in response to the increasing demands for disclosure of information on Environment, Society and Governance (ESG). It provides a framework for dialogue between participating companies and stakeholders. Through participation in the project since 2015, we have been promoting efforts to disclose environmental information properly.

### Transmission of environmental information to ESG rating agencies

Investment with a focus on Environment (E), Society (S), and Governance (G), which is called ESG investment, has been increasing rapidly. Investors believe that if companies address the ESG issue, it will lead to the improvement of long-term corporate value and sustainable growth and ultimately to greater return on their investments. These investors need not only financial information, but also ESG information of companies. Therefore, ESG rating agencies collect ESG information from companies for their investment-grade ratings. Upon request for ESG information from these agencies, we actively provide our environmental information.

ecovadis



Member of SNAM  
Sustainability Index



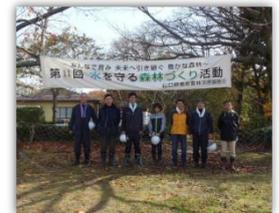


## Environmental Activities at Each Site

### Communication with Local Residents

#### Yamaguchi Factory: Development of forests that protect water resources

Yamaguchi Prefecture promotes the development of sound and diverse forests to harness the multi-faceted functions of forests, such as the cultivation of water sources, the prevention of forest disasters, and the prevention of global warming, in a sustainable manner. In an effort to support forests as the asset of residents of Yamaguchi through the collective efforts of the prefecture as a whole, the 12th Activity to Develop Water-protecting Forests was conducted in November 2019 with the aim of promoting voluntary activities of companies. A total of 199 people that included employees of local companies and people from the local government joined the activity, where eight employees of Yamaguchi Factory also participated. Through this activity, maintenance work was conducted for the forests around Akiyoshidai Kazokuryoko Village, which are located in the north of the factory and which are the water sources of Koto River from which Yamaguchi Factory takes water for its use.



### Award

#### The Takasaki Site received the Grand Prize from the chairperson of the Kanto Area Efficient Use of Electricity Committee !

The Takasaki site of Renesas Electronics Corporation received the Grand Prize on February 5, 2019, from the chairperson of the 2018 Kanto Area Efficient Use of Electricity Committee. This prize is granted to factories, business establishments, and individuals that have contributed significantly to the effective use of electric power, the promotion of energy saving, and the improvement of the load factor. In the future, the Renesas Group will continue implementing energy-saving promotion activities.



#### Kawajiri Factory received the Kumamoto Excellence Award for the Business with Outstanding Performance in Reducing Greenhouse Gas Emissions!

Kawajiri Factory received the Kumamoto Excellence Award for the Business with Outstanding Performance in Reducing Greenhouse Gas Emissions for its efforts to reduce greenhouse gas emissions produced through business activities. On Tuesday, July 23, 2019, the awarding ceremony was held at the prefectural office, where Kawajiri Factory received a certificate of commendation made of Ogunisugi.



<Kumamoto Excellence Award for the Business with Outstanding Performance in Reducing Greenhouse Gas Emissions>

This is a system to commend businesses for their outstanding performance in reducing greenhouse gas emissions produced through their business activities (Kuma Eco Award for Measures against Global Warming).



## Environmental Efforts by Each Site

### Musashi Site



The Musashi Site engages in the development, design, and inspection of semiconductor products. It also handles the development and design of microcontroller, SoC, SiP, SRAM, and MSIG; the development of common technologies, such as product, production, and IT technologies; prototype screening, and quality inspections.

5-20-1, Josuihoncho, Kodaira, Tokyo 187-8588  
Tel: +81-42-320-7300 Fax: +81-42-327-8656 Map

### Takasaki Site



The Takasaki Site engages in the development, design, and chip production (front-end process) mainly of analog ICs and power semiconductor products.

[Environmental policy and activities of Takasaki Site](#) >  
(Japanese site only )

111, Nishiyokotemachi, Takasaki, Gunma 370-0021  
Tel: +81-27-352-2111 Fax: +81-27-360-2009 Map

### Naka Site



The Naka Site takes charge of the chip manufacturing part in the semiconductor LSI manufacturing flow. The main type of chips manufactured is system LSI. In an effort to meet the increased LSI demand, the Naka Site has enhanced its production efficiency by operating the manufacturing line for 300 mm diameter wafers in addition to the manufacturing line for 200 mm diameter wafers.

[Environmental policy and activities of Naka Site](#) >  
(Japanese site only )

751, Horiguchi, Hitachinaka, Ibaraki 312-8504  
Tel: +81-29-272-3111 Fax: +81-29-270-1826 Map

## Biodiversity Conservation Activities

### Biodiversity Conservation Activities of the Renesas Group

#### Approach

- I. We act with the appreciation for natural blessings and an awareness that biodiversity is indispensable for supporting a sound and affluent society.
- II. Toward the coexistence with nature, we contribute to the conservation of biodiversity through our business activities.

#### Activity Details

1. We create environmentally friendly products whose risks of disposal are low and which have high performance in resource and energy saving.
2. For materials and components, we note that they are made from naturally-derived raw materials and promote biodiversity-friendly green procurement. Moreover, we make sure that suppliers also understand and follow our approach to biodiversity.
3. We make ongoing efforts to conserve biodiversity by preventing pollution due to effluent and emissions from factories and business establishments.
4. We make the significance of biodiversity known among employees and promote voluntary activities to live in harmony with nature.
5. We promote communication with local communities and conduct CSR activities that lead to the conservation of biodiversity in collaboration with them.

#### Activity Examples

##### Cultivation of *Rosa multiflora* var. *adenochaeta*, a vulnerable species

As part of efforts to conserve biodiversity, the Nishiki factory of Renesas Electronics Corporation grows *Rosa multiflora* var. *adenochaeta*, which is the town flower of Nishikimachi and designated a vulnerable species, on its premises.

At the 10th conference of the Convention on Biological Diversity (COP10), the Aichi Target (2020 target) was adopted. We registered the biological diversity protection project, Nijumaru Project\*, as a member and declared contribution to the biological diversity protection (Nijumaru Declaration).

\* Nijumaru Project performed by Japan committee for IUCN (IUCN-J). ( "Nijumaru" means "excellent").



### Creation of a biotope

Yamaguchi Factory of Renesas Semiconductor Manufacturing Co., Ltd. created a biotope on the premises in 2012.

A biotope is the smallest unit of a natural environment where a diversity of animals and plants live. Today where nature in our own backyard is being lost, we aim to conserve biodiversity by creating and maintaining a biotope for small animals, birds, and plants. Killifish that were stocked when the biotope was created still live now after successive generations.



### Keeping goldfish in effluent

Saijo Factory of Renesas Semiconductor Manufacturing Co., Ltd. conducts water quality preservation activities. In order to check the quality of purified factory effluent, the factory keeps goldfish in the water tank (left photo) where purified effluent is kept before discharge. Since 37 years ago when the factory was built, the factory has kept goldfish to check water quality and there are ten goldfishes now after successive generations.



### Forest Preservation Activities

The Group conducts forest conservation activities in various places.

In FY 2019, the Kawashiri factory in Kumamoto obtained CO<sub>2</sub> sink certification for 44.08 tons.



## ★ External Evaluation

### ESG Evaluation

#### SNAM Sustainability Index

The REL Group was selected as one of the brands for the 2019 SNAM Sustainability Index established by Sompo Japan Nipponkoa Asset Management Co., Ltd. (SNAM), which allowed the Group to display the logomark of the Index. The SNAM Sustainable Operation whose operation started in August 2012 is a responsible investment product for pension funds and institutional investors that make investments in a variety of companies with a high ESG (environment, society and governance) reputation.

The brands for the Index are reviewed annually based on the results of the Bunanomori Environment Questionnaire conducted by Sompo Health Support Inc. and the Integrex Survey conducted by Integrex Inc.。



### Third-party Opinions

#### Third Party's Opinion on Our Environmental Report 2020

Opinions from third parties have been received on this environmental report 2020. Comments from Associate Professor Ueda, who is researching "Environmental Integrated Production System" at Tokyo University of Agriculture. The Renesas Group will continue to promote environmental activities based on the opinions received.

This environmental report arranges the company's activities around SDGs to present the social significance of each activity in an easy-to-understand manner. Moreover, it clearly shows the production activities that cover the entire process up to disposal and the results of such activities, demonstrating that the company's activities deserve certain acclaim. That being said, I would like to propose some areas of improvement by activity (1. Eco-Factories Activities, 2. Eco-Products Activities, and 3. Eco-Communication Activities) in expectation of the company's further commitment to active environmental activities.



**Tomohisa Ueda**

Professor (Ph.D. in Business  
Administration, Department of Business,  
Natural Resource and Economic  
Development, Faculty of Bioindustry,  
Tokyo University of Agriculture

#### 1. Eco-Factories Activities

For the next fiscal year, I expect that you create an environmental report that focuses on the outsourced waste management and that you reconsider your approach to production activities. In order to realize a true sustainable society, you need to set the end of production activities not at disposal, but at recycle.

You should build a recycling production system that enables the waste generated by Renesas Electronics Corporation to be processed properly and then injected back into the production activities.

#### 2. Eco-Products Activities

Active R&D efforts toward the creation of eco-friendly products were very hard to understand. As specified in this environmental report, environmental considerations in business decision making are becoming more demanding each day. In the midst of such a social context, one of the indexes to evaluate eco-friendly products is the research and development (R&D) expense. The R&D expense of Renesas Electronics Corporation related to environmental

efforts for 2019 (January 1 to December 31, 2019) on page 12 is 6 million yen. The total R&D expense in the securities report created for the same period, however, is 127.094 billion yen. Simply put, the expense to reduce environmental load accounts for about 0.005% of the total. I think that you should re-examine whether this percentage is justifiable in the industry.

### 3. Eco-Communication Activities

I would like you to show the views of stockholders concerning the environmental efforts by Renesas Electronics Corporation in areas other than environmental awareness-raising via internal training and social contribution activities for biodiversity. The provision of stockholder evaluations not only further enhances stockholders' awareness of social investment but also serves as an important message to new stockholders.

## Various environmental data

### Environmental performance data

| Item 1                   | Item 2                                    | Item 3                 | Unit            | Domestic Performance |           |           | Overseas Performance |         |         | WW Performance |           |           |
|--------------------------|---|------------------------|-----------------|----------------------|-----------|-----------|----------------------|---------|---------|----------------|-----------|-----------|
|                          |   |                        |                 | 2017                 | 2018      | 2019      | 2017                 | 2018    | 2019    | 2017           | 2018      | 2019      |
| Energy Consumption       | Amount consumed                           | Total amount consumed  | MWh             | 1,899,711            | 1,777,783 | 1,603,327 | 319,456              | 302,723 | 268,857 | 2,219,167      | 2,080,506 | 1,872,184 |
|                          |   | Electricity            | MWh             | 1,585,000            | 1,474,000 | 1,313,912 | 295,000              | 278,000 | 250,262 | 1,880,000      | 1,752,000 | 1,564,174 |
|                          |   | Steam                  | MWh             | 57,558               | 56,335    | 51,329    | 19,759               | 20,174  | 15,223  | 77,317         | 76,509    | 66,552    |
|                          |   | Gas                    | MWh             | 187,306              | 181,672   | 176,811   | 1,879                | 1,908   | 1,600   | 189,185        | 183,580   | 178,411   |
|                          |   | Fuel                   | MWh             | 69,847               | 65,776    | 61,275    | 388                  | 283     | 230     | 70,235         | 66,059    | 61,505    |
|                          |   | Renewable energy       | MWh             | 0                    | 0         | 0         | 2,430                | 2,358   | 1,542   | 2,430          | 2,358     | 1,542     |
|                          | Revenue                                   | B Yen                  | (7,802)         | (7,573)              | (7,182)   | (7,802)   | (7,573)              | (7,182) | 7,802   | 7,573          | 7,182     |           |
|                          | Energy consumption per unit of sales      |                        | MWh/B Yen       | 243                  | 235       | 223       | 41                   | 40      | 37      | 284            | 275       | 261       |
| Greenhouse gas emissions | CO2 emissions                             | Total amount consumed  | t-CO2           | 1,072,930            | 981,328   | 856,609   | 236,303              | 205,998 | 186,514 | 1,302,628      | 1,181,568 | 1,043,123 |
|                          |   | Scope1                 | t-CO2           | 52                   | 50        | 48        | 1                    | 1       | 0       | 53             | 51        | 48        |
|                          |   | Scope2                 | t-CO2           | 879,448              | 816,645   | 727,948   | 229,697              | 200,239 | 186,514 | 1,109,145      | 1,016,884 | 914,462   |
|                          | PFS emissions                             | (IPCC2006 Tier2a)      | t-CO2           | 193,430              | 164,633   | 128,613   | -                    | -       | -       | 193,430        | 164,633   | 128,613   |
| Water                    | Amount of water withdrawn                 |                        | Km <sup>3</sup> | 16,641               | 16,371    | 14,783    | 1,881                | 1,823   | 1,714   | 18,522         | 18,194    | 16,497    |
|                          | Amount of water used                      |                        | Km <sup>3</sup> | 26,791               | 25,912    | 23,113    | 2,093                | 2,007   | 1,906   | 28,884         | 27,919    | 25,019    |
|                          | Amount of water discharged                |                        | Km <sup>3</sup> | 14,873               | 13,834    | 12,110    | 914                  | 1,472   | 1,226   | 15,787         | 15,306    | 13,336    |
|                          | Recycling rate                            |                        | %               | 38                   | 37        | 36        | 10                   | 9       | 10      | 36             | 35        | 34        |
| Chemical substances      | Chemical substances (subject to PRTR Law) | Transaction volume     | t               | 1,774                | 1,607     | 1,492     | 35                   | 17      | 17      | 1,809          | 1,624     | 1,509     |
|                          | VOC                                       | Emissions (atmosphere) | t               | 374                  | 335       | 267       | -                    | -       | -       | 374            | 335       | 267       |
| Waste                    | Amount of waste                           |                        | t               | 18,525               | 12,705    | 12,627    | 3,612                | 3,400   | 3,125   | 22,137         | 16,105    | 15,752    |

## Contact Us

### Environmental Activity Inquiries

Please use the form below to request materials or for inquiries related to environmental activities at Renesas Electronics.

\*If you have any questions concerning our products, please go here.

**Note:**

We will handle personal information provided by you through the form below in strict accordance with our Privacy Policy.

We will also handle personal information provided by you only for the following purposes:

- To respond to your inquiries
- To make proposals and sell better products and services
- To conduct investigations and analyses to develop and deliver better products and services

Please be advised that we may share your inquiries with our dealerships and group companies for customer support purposes. If your inquiries are about our group companies' products, we may transfer (provide) your inquiries to relevant companies.

- For substances contained in individual products, please contact the stores where you bought the products.
- Please be advised that we may not be able to respond to your inquiries depending on the content.

### Link to Contact Us

|   |   |
|---|---|
| Given Name / First Name <span style="color: red; font-size: small;">Required</span> | <input type="text"/>                                    |
| Family Name / Last Name <span style="color: red; font-size: small;">Required</span> | <input type="text"/>                                    |
| Email address <span style="color: red; font-size: small;">Required</span>           | <input type="text"/>                                    |
| Company/Organization  | <input type="text"/>                                    |
| Department/Division   | <input type="text"/>                                    |
| Postal Code <span style="color: red; font-size: small;">Required</span>             | <input type="text"/>                                    |
| Address 1 <span style="color: red; font-size: small;">Required</span>               | <input type="text"/>                                    |
| Address 2   | <input type="text"/>                                    |
| City <span style="color: red; font-size: small;">Required</span>                    | <input type="text"/>                                    |
| State <span style="color: red; font-size: small;">Required</span>                   | <input type="text"/>                                    |
| Country / Region <span style="color: red; font-size: small;">Required</span>        | <input type="text"/>                                    |
| Inquiry   | <input style="width: 100%; height: 100%;" type="text"/> |

Memo

Date of creation: Aug. 06, 2020 (v5.1e)  
Renesas Electronics Corporation  
Environment Promotion Department

