



Environmental Management

Positioning environmental preservation as an important challenge in management, the Tokai Rika Group establishes an Environmental Action Plan that constitutes our mid-term action plan every five years, and we are developing activities to achieve compatibility between Monozukuri and environmental preservation, based on the environmental policy.

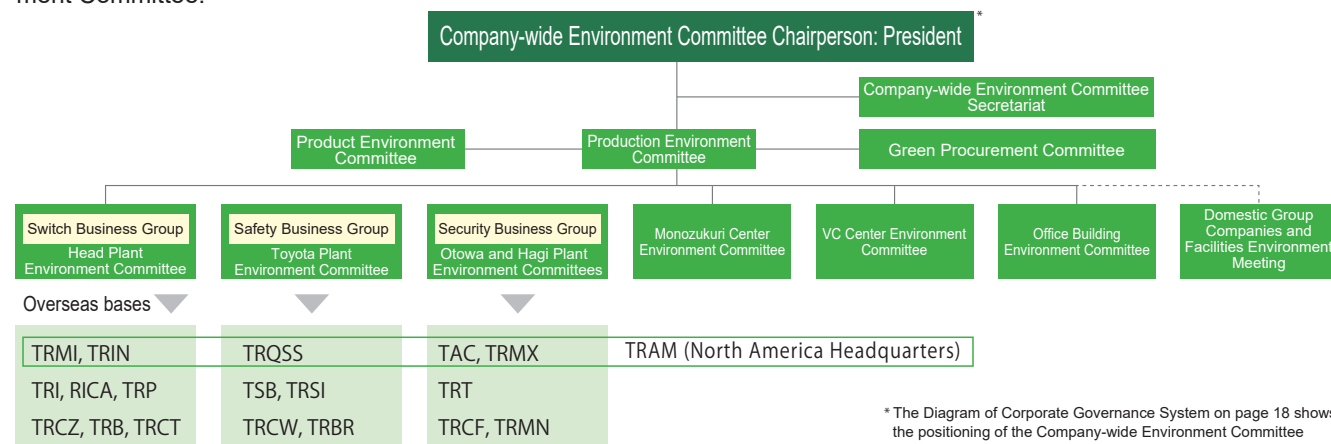
Enhancing and promoting consolidated environmental management

As a response toward global environmental challenges, we recognize “risks” and “opportunities” including climate change and promote consolidated environmental management under organizational structures built in cooperation with our group companies and suppliers in Japan and overseas.

Promotion system

Policy related to the environment, mid-to-long-term targets, and actions toward important challenges are discussed and decided by the Company-wide Environment Committee which is chaired by the President. There are three committees that act as lower-level organizations: the Production Environment Committee, the Product Environment Committee, and the Green Procurement Committee. They are promoting initiatives in each field on the basis of matters decided by the Company-wide Environment Committee.

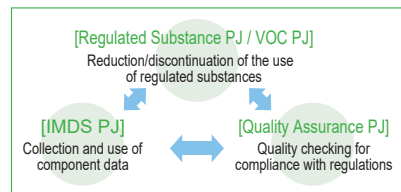
There are regional environmental committees that are lower-level organizations of the Product Environment Committee. With regard to overseas bases, the Plant Environment Committee of the mother plant in each business group supports their initiatives. In addition, we have established the Facilities Environment Meeting as a place to share information with domestic group companies.



* The Diagram of Corporate Governance System on page 18 shows the positioning of the Company-wide Environment Committee

Product Environment Committee

With regard to chemical substances contained in the products, the Product Environment Committee decides on compliance policies and reflects them in the product design in a planned manner after understanding the regulatory trends and customer requirements in each country. In order to decide on policies to respond to, conduct planned reduction / discontinuation of the use of regulated substances, the collection and use of component data, and quality checking for compliance with regulations, the committee carries out activities in four projects: the regulated substance project, the VOC project, the IMDS project and the quality assurance project. In the Product Environment Committee, we confirm the progress of each project, respond to it correctly, and see that it is reflected in product design.



Production Environment Committee

We promote initiatives in production such as the reduction of CO₂ and wastes, and comply with environmental regulations. Plant generalization director, center general director, and managing officer are chairpersons of regional environmental committees, who are conducting initiatives toward achieving targets and deliberating direction as committee members. Also, we have established the Energy Saving Subcommittee and Logistics Streamlining Subcommittee from a more professional point of view. Initiatives of each plant are horizontally deployed and they are contributing to performance improvement as a whole. Activity results are deployed to our group companies and suppliers in Japan and overseas.



Production Environment Committee

Establishment and implementation of an environmental management system

In order to continuously improve environmental performance in each region, we are setting up environmental management systems in each base and acquiring external certifications. In FY 2018, TRMX (Mexico) newly acquired the ISO14001 certification. Furthermore, our domestic group companies have acquired the Eco Action 21 certification in addition to the ISO14001, and all production bases of the Tokai Rika Group have acquired external certifications for environmental management systems.

Environmental risk management

Response to emergencies

We evaluate environmental risks regarding production equipment and work done on our premises. We are promoting measures for equipment such as automatic detection of an abnormality, emergency stops, and switching to emergency tanks in order to respond to emergencies such as leakage and outflow of abnormal waste water. In order to respond promptly if an emergency occurs, we maintain procedures, a communication network, necessary fixtures, and are periodically conducting practical drills.



Batch type final effluent tank



Conducting night drill

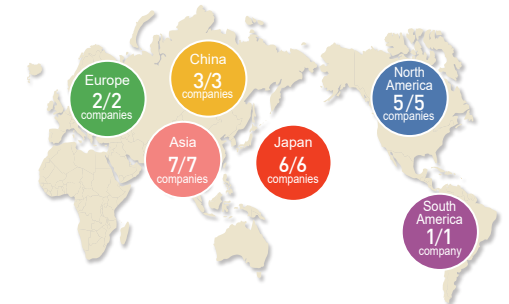
Countermeasures against soil and underground water contamination

We are working on remediation of soil and underground water contamination caused by harmful substances such as trichloroethylene that were used in the past. At the former Nishibiwajima Plant, the soil was contaminated by hexavalent chromium and fluorine, and the soil and underground water were contaminated by trichloroethylene and its decomposition products. We have completed countermeasures in 2016, and, after monitoring for two years, we completed remediation of contaminated soil and underground water, except for fluorine contamination, in March 2019. There is no risk of propagation in soil contamination of fluorine because the surface has been covered, but we are following that up by periodically monitoring underground water.

Soil contamination countermeasures at each plant

Name of business office	Status of countermeasures
Head Plant	There is no soil / underground water contamination.
Toyota Plant	Soil: There is contamination by fluorine, boron and hexavalent chromium. We are conducting scattering prevention using covers and periodic checks of underground water. Underground water: There is contamination by trichloroethylene and its decomposition products, and remediation pumping is ongoing.
Otowa Plant	Underground water: There is contamination by trichloroethylene and its decomposition products, and remediation pumping is ongoing.
Hagi Plant	There is no soil / underground water contamination.

Situation regarding acquisition of EMS external certification at production bases



Storage and processing of PCB (polychlorobiphenyl) waste

At present, production of PCB (polychlorobiphenyl) is prohibited, but it is still used in some old capacitors, transformers, and fluorescent lighting ballasts. It is mandatory to process PCB waste no later than 2027, so we are conducting planned processing. In FY 2018, we processed large-sized transformers. In addition, we sorted stored ballasts, separated capacitors, and processed remaining materials.

Storage status regarding PCB waste (Qty)

Name of business office	Capacitors	Ballasts	Transformers	Surge absorber
Head Plant	0	0	0	0
Toyota Plant	0	0	0	0
Otowa Plant	0	496	0	6
Hagi Plant	0	0	0	0

Topics

Changing the zinc plating activation method

Toyota Plant Waste water is subject to regulation for the total amount of nitrogen. There was a concern that as production volume increased, the nitrogen amount would exceed the total regulatory standard value per day. Nitric acid is a chemical used to activate the plating process and this was common knowledge to the industry. We changed nitric acid to sulfuric acid, which had not been used before. With this, we could considerably reduce nitrogen emissions.

Nitrogen emissions
26% reduction

Changing chemicals used in the plating process

Before improvement: Nitric acid ▶ After improvement: Sulfuric acid



Voice

We had difficulty setting conditions for a good product, but as we received advice from many people, we were able to reduce nitrogen emissions. We are happy that we could contribute not only to environment, but also to cost reduction.



SAF Prod. Engineering Div.
Daisuke Yamauchi

▶ Environmental Management

● Domestic Group Companies and Facilities Environment Meeting

We regularly hold meetings for the purpose of mutual improvement of the seven domestic group companies. We take up a wide range of themes including not only those related to the environment, but also maintenance and management of power facilities. Introducing examples of quality improvement with Genchi-Genbutsu (“actual place and actual thing”), conducting energy-saving patrols, rolling out examples of defects, and study sessions with persons in charge of practical work are a few examples.



Facilities Environment Meeting



Power receiving / transforming maintenance and management study session

Promotion of environmental activities in cooperation with business partners

We are promoting environmental activities in cooperation with suppliers to strengthen environmental management that includes supply chains, such as the reduction of environmental loads throughout a whole life cycle and the reduction of environmental risks.

● Green Procurement Guidelines

The Green Procurement Committee has established Green Procurement Guidelines and is working on environmental management including suppliers while cooperating with relevant divisions. We added items such as the enhancement of environmental management through a life cycle as a whole including supply chains, response to risks on water, and understanding and striving for a society that coexists with nature. In FY 2016, we revised the guidelines

and stipulated them as the “Tokai Rika Group Green Purchasing Guideline” to enforce initiatives. Furthermore, in FY 2018, we published an English version of the Green Procurement Guidelines and are promoting cooperation with overseas suppliers.



Green Purchasing Guideline

● Cooperation with suppliers

We are rolling out cooperative environmental activities with member companies of Kyouryoku-kai organized by suppliers. At the bimonthly executive meeting we share information, such as revisions to environment-related laws, examples of energy-saving improvements, environmental problems, and near-miss incidents. In order to improve the levels of both the Tokai Rika Group and our suppliers, we have been conducting study activities with Genchi-Genbutsu on a continuous basis since FY 2015. In FY 2018, we visited 14 suppliers and used the Genchi-Genbutsu method to check and study about things like compliance with environment-related laws, sup-

port for appropriate waste management and ways to make energy-saving improvements, and were able to successfully link this to reduction of environmental risks.

We have deployed the Green Purchasing Guideline to overseas suppliers and suppliers at our overseas bases, as well. We are grasping actual situations through questionnaire surveys on situations such as the establishment of an environmental management system. We will continue to conduct self-development activities to deepen the understanding of the Tokai Rika Group’s initiatives and to enhance initiatives as we continue surveys.

Improvement of the urban air environment in each country and region

In order to reduce VOC emissions in painting processes and reduce the impact of automobile gas emissions to the air, which is the main cause of urban air pollution, we are proceeding with a changeover to low-emission company cars.

Introduction status of low-emission vehicles

Name of business office	Total number of company cars (vehicles)	Number of introduced HVs and FCVs (vehicles)	Low-emission vehicle introduction rate (%)
Head Plant	127	64	50.4
Toyota Plant	16	10	62.5
Otowa and Hagi Plants	40	8	20.0
Others	6	2	33.3
Total	189	84	44.4

Actual result for FY 2018

44.4%

Enhancing global employee education / enlightenment activities

We are expanding training curriculum and are enforcing enlightenment activities. We have established an education system to not only acquire expert skills, but also to create a culture where each and every one of our employees works on environmental preservation as “their own problem.”

● Enhancement of environmental education

We conduct human resources development by implementing systematic environmental education programs. These programs include training by job grade for new employees and promoted employees, training by job function in which specialized knowledge, skills, and more are acquired, such as ISO14001 internal auditor training, environment laws education, and energy-saving dojo. Systematic training by workplace in accordance with the characteristics of each workplace is being carried out.



Education for new employees



Energy-saving dojo

● Initiatives during Environment Month

During the Environment Month of June every year, we carry out a variety of events, in order to create a good opportunity for employees to deepen their understanding and interest toward the environment so that employees feel encouraged to act on their own. In addition to our usual practice, such as holding environment lectures, issuing an Environment Month Magazine, and creating green walls, in FY 2018, we asked for the submission of environment posters as a new event and received many submissions from employees and their families.



The 1st Environment Poster Award

Voice

I am very happy to be selected for the Award this year. In accordance with the theme, I designed the poster to make sure everyone understood that it represented global warming at first sight. I would like for more people to see this poster and think that countermeasures need to be taken against global warming.



General Administration Division
Sayaka Ishida

Proactive disclosure of environment information and enhancement of communication

In response to increasing interest toward non-financial information such as environmental initiatives, we are promoting proactive disclosure of information and activities aiming to further enhance communication with our stakeholders.

● Disclosure of environment information

In addition to the Tokai Rika Report, we are issuing the Eco Data File and disclosing environmental information (through the Eco Data File comparison sheet) with the GRI Standard as reference. Since 2018, we have disclosed answers regarding the CDP’ Climate Change Questionnaire and its scores. We have disclosed information on the Tokai Rika Group’s activity policy and way of thinking, such

as greenhouse gas emissions, risks and opportunities of climate change, and reduction targets to institutional investors among others. We will further disclose environmental information and enhance communication while strengthening initiatives with the CDP score as reference.

* An NGO that requests disclosure of environmental strategy and green house gas emissions of CDP companies.

Topics

Holding the 3rd Environment Lecture

In line with Environment Month in June, we are holding environment lectures. In FY 2018, which was the third year for the lectures to be held, we invited Mr. Keisuke Takegahara from Development Bank of Japan Inc. and held a lecture with the theme “Expansion of ESG investment and the response required from a corporation.” Many of the employees, including the management, have learned actual situations where institutional investors are shifting to ESG investment which focuses on non-financial information such as corporate environmental activities. They have also learned that enhancing the disclosure of ESG information and activities will lead to the improvement of corporate values. We were both able to recognize the need for the enforcement of these activities.



The 3rd Environment Lecture

▶ Environmental Management

▶ Environmental accounting

At Tokai Rika, we ascertain the investments/expenses involved in environmental preservation and their effects, and use them as guidelines to advance environmental preservation activities more practically. The cost for environmental preservation in FY 2018 was an investment of 248 million yen, an expense of 1,586 million yen, and had an economic effect of 1,378 million yen.

Way of thinking with regard to environmental accounting

We ascertain and add up environment costs on a payment basis. Therefore, we understand capital investments as investment amounts, and do not record depreciation costs. With regard to items that are implemented together for purposes other than the environment, we record the figures by means of proportional division. With regard to economic effects that accompany environmental preservation activities, we add up the figures under three items through which we are able to soundly understand the amount of the costs for each fiscal year.

■ Environmental preservation costs

Unit: million yen

Details of main activities		FY 2017		FY 2018	
		Investment	Expenses	Investment	Expenses
In-business-area costs	Costs for pollution prevention Costs for prevention of pollution (air, water, noise, etc.)	1	264	2	270
	Costs for global environmental preservation Costs required for global warming prevention	133	464	243	480
	Resource circulation costs Costs for disposal, reduction and recycling of waste materials	0	165	3	179
Up/downstream costs	Difference arising from purchasing products, fuels, materials, etc. with less environmental load	0	23	0	23
Management activity costs	Costs for construction/operation of an environmental management system, monitoring of environmental loads and nature preservation/greening accompanying business activities	0	177	0	189
Research and development costs	Costs required for the research and development for products, etc. that contribute to environmental preservation	0	424	0	385
Social activity costs	Costs for measures to improve environments such as nature preservation, greening and beautification, excluding with regard to offices	0	40	0	40
Environmental damage costs	Costs for remediation of environmental pollution, insurance premiums for environmental damage, etc.	0	18	0	20
Total		134	1,575	248	1,586
		1,709		1,834	

■ Economic effect

Unit: million yen

Items	FY 2017	FY 2018
Sales amount for recycled materials	1,193	1,296
Cost reduction from energy saving	96	80
Waste disposal cost reduction	0	2
Total	1,289	1,378

■ Effects in terms of quantities

Items	FY 2017	FY 2018
Energy saving effects (t-CO ₂)	2,533	1,639
Amount of recycled materials sold (t)	9,459	10,295
Waste disposal amount compared to the previous year (t)	-49	-31

◦ Input resources and emission to environment in business activities ◦

We are trying to reduce the environmental load by understanding the whole picture regarding the energy and resources that are used in business activities and the discharge from our business offices, such as CO₂ and wastes.

INPUT

Raw materials		Energy	
Resin materials	8,169 t	Purchased power	87,517 MWh
Urethane	229 t	City gas	4,652 m ³
Zinc	2,581 t	Butane gas	128 t
Aluminum	629 t		
Magnesium	1,792 t	Others	
Iron	6,770 t	Chemical substances (regulated by law)	211 t
Copper	2,953 t	Paper	15.52 million sheets
Nickel	25 t	Packing and packaging materials	1,409 t
Soldering materials	10 t		
Glass	2 t		
Silver	13 t		
Water			
City water	217,000 m ³		
Industrial water	119,000 m ³		
Underground water	197,000 m ³		

TOKAI RIKA

Products

OUTPUT

Wastes		Discharge water	
Waste for direct landfill	0.52 t	Sewage	110,000 m ³
Waste for intermediate treatment	723 t	Rivers	392,000 m ³
Discharge to the atmosphere			
CO ₂ (Originating from energy)	42,861 t-CO ₂		
CO ₂ (5 gases)	2,892 t-CO ₂		
CO ₂ (logistics)	2,936 t-CO ₂		

RECYCLE

Recycling	
Recycling (including recycling for a fee)	10,395 t

*For data details, see the "2019 Eco Data File (<http://www.tokai-rika.co.jp/society/report/2019/index.html>)" on our website.