



Innovation for the Earth



CSR Report 2015



Japan's Minister of the Environment has recognized the REMATEC Group as an environmental leader in its industry.



REMATEC supports Fun to Share—a climate change campaign designed to realize a low-carbon society through resource recycling.

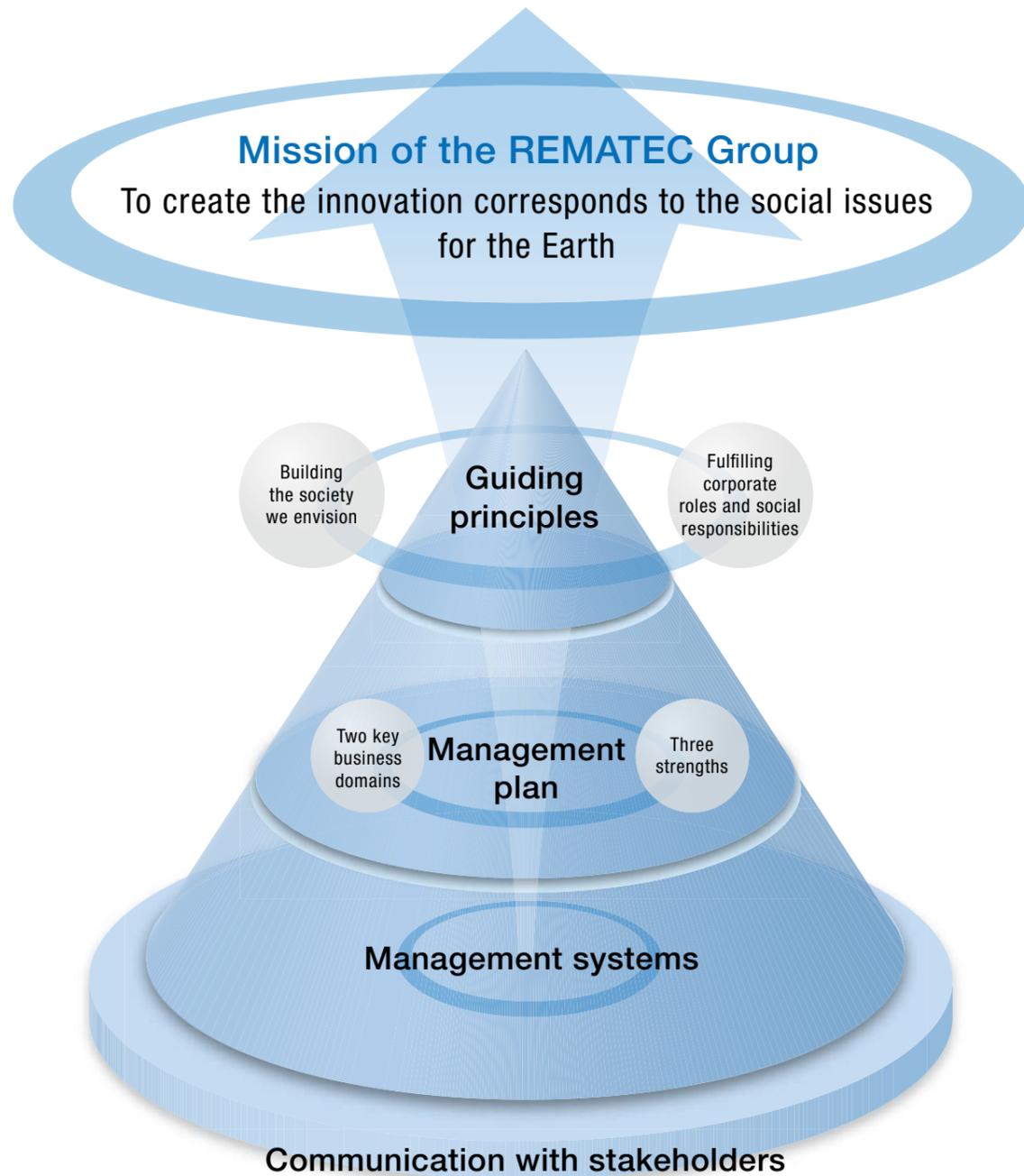


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Our jobs epitomize the REMATEC Group's CSR activities.

Corporate slogan and concept for CSR commitment

Innovation for the Earth



Group management philosophy

Our goal is to contribute to the establishment of a sustainable society by utilizing REMATEC Group's technology to recycle various materials.

Building the society we envision

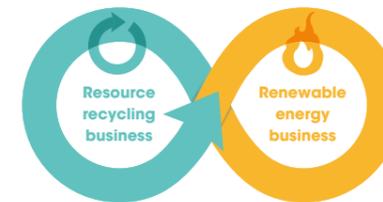
- A society where people can live safely and comfortably
- A sustainable society where both "environment" and "economy" coexist
- A recycling society that can harmonize with the principles of nature

Fulfilling corporate roles and social responsibilities

- Pursuing value creation
- Taking responsibility for the effects of organizations on society
- Contributing to solutions to social challenges

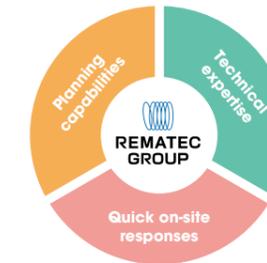
Focusing on two key business domains where the REMATEC Group helps solve regional challenges and creates a bright future

The backgrounds and causes of environmental problems vary greatly from one country or territory to another. In order to help solve environmental problems, the REMATEC Group focuses on two businesses: resource recycling and renewable energy. It works flexibly to meet challenges based on a hard look at what local communities will be like in the future.



Advancing business by bringing the Group's three unique strengths together

The REMATEC Group will contribute to solving the challenges each local community is facing by bringing together the planning capabilities, technical expertise, and quick on-site responses it has developed through long years of experience and know-how while keeping close ties with the community, listening to its opinions, and garnering its cooperation.



The Group's management systems integrate CSR initiatives with business operations

The REMATEC Group has combined three management systems (business, environmental, and occupational safety and health) with the aim of promoting CSR initiatives and business operations in an integrated manner. It is working on daily business operations and problem-solving from these three perspectives.



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Editorial policy

The REMATEC Group discloses information on its CSR activities in order to report them to all stakeholders. This CSR Report 2015 presents examples of the Group's CSR activities focusing on its three strengths (planning capabilities, technical expertise, and quick on-site responses) to fulfill its mission "Innovation for the Earth." It also allocates pages to each group company to cover its business and most recent CSR initiatives. We would be more than happy if you would read this report and understand the REMATEC Group's CSR activities.

- Organization covered by the report : REMATEC Group
- Date of publication : December 1, 2015
- Information disclosure system : This report covers the REMATEC Group's CSR programs and initiatives. Meanwhile, the Group's website presents each Group company's business and renews information on its daily operations in real time. We hope that you will visit it at <http://www.rematec.co.jp>.
- Reference guidelines : Sustainability Reporting Guidelines, published by GRI The Environmental Reporting Guidelines 2012, published by Ministry of the Environment The Planning Guidelines for Regional Countermeasures against Global Warming, published by Ministry of the Environment

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The path to solving social challenges in the environmental field

We at the REMATEC Group attempt to address various social challenges in the environmental field and take on the challenge of creating innovation using our experience, know-how and three strengths: planning capabilities, technical expertise, and quick on-site responses.

1997 Nakhodka project: Spill of about 50,000 drums of heavy oil

Collection of heavy oil spilled from the Nakhodka

The Russian tanker Nakhodka broke and drifted into the Sea of Japan off Japan's Honshu Island, and the REMATEC Group collected, treated, and disposed of the spilled heavy oil. The oil covered the Sea of Japan, and the amount of material collected totaled approximately 59,000 tons, including seawater, garbage, and oily mud and sand. In seven cases including ship transport, the Group responded to this accident at ten locations nationwide. The treatment and disposal work done by the Group included restoring the sea to its original state and recycling the collected oil and other materials.

1996 South Korea project



In Ulsan Metropolitan City, South Korea, the REMATEC Group built RF plants for a major petroleum refining plant, transferred its technology to the company, and supported it in operating the plants.

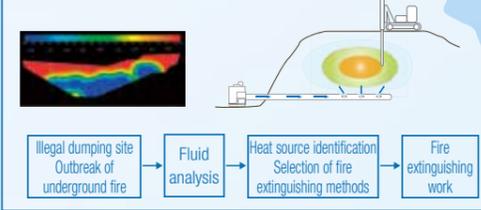
2012 Kingdom of Thailand

RF testing project
Refer to pages 12 to 13 and 26 to 27.

2010 Gifu illegal dumping project

Underground fire extinguishing work at an illegal dumping site in Gifu City

The REMATEC Group succeeded in extinguishing the fire by repeating landfill analysis based on thermal fluid analysis and testing and independently designing and producing a measuring instrument capable of measuring the concentration of oxygen at difficult-to-measure locations.



2007 Kitakyushu City

Operation and management of PCB-contaminated soil treatment facilities

2009 NaK project

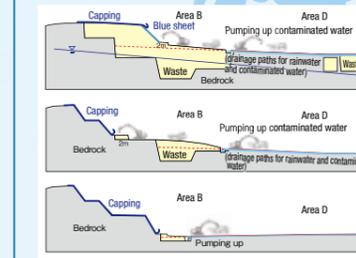
Dismantling of nuclear facilities and appropriate treatment of NaK

Disposal of NaK, which had been studied as a cooling agent for reactors, became an issue to be addressed, and the REMATEC Group proposed a disposal method. Based on safety measures and disaster-prevention drills, it conducted simulations of the disposal work. It created a low-oxygen workroom on its own and installed it on the spot, achieving safe collection of NaK.



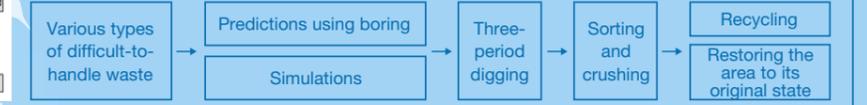
※NaK refers to an alloy of sodium (Na) and potassium (K). This substance is difficult to handle because it reacts explosively and ignites when exposed to air and water.

2002 Iwate-Aomori boundary project: Illegal dumping of about 820,000 m³ of waste



Iwate-Aomori boundary illegal dumping: Construction work supervision and design and building of sorting and water treatment plants in the project to restore the area to its original state

The REMATEC Group predicted the types of waste dumped and buried using 3,497 matrix simulations with 0/10/100 - 10/100 - 100/100 new roads to be built. The Group predicted the types of waste dumped and buried using 3,497 matrix simulations with 0/10/100 - 10/100 - 100/100 new roads to be built. It restored the area to its original state while minimizing the risks involved in the work and for the neighborhood. It took about 11 years to complete the project.

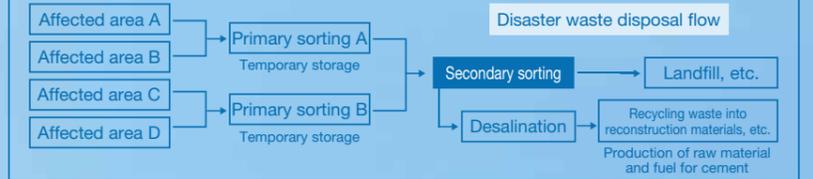


2011 Secondary sorting plant

The amount of waste disposed of was approximately 840,000 tons for Ofunato City and 1.19 million tons for Rikuzentakata City.

Disaster waste secondary sorting project

The REMATEC Group gave top priority to safety and designed a flow plan to achieve both swift disposal and a high recycling rate. It selected the optimal transport routes taking damage to roads, congestion, and other conditions into consideration, planned a disposal scheme from the determination of the optimal number of temporary storages to secondary sorting to disposal at final disposal sites, and worked with local businesses to manage the project in an integrated manner. Considering safety as most important and making the quick on-site responses of the Group and staff members in the affected areas, it made all-out efforts to sort and crush waste manually and using heavy machinery, thus achieving highly efficient waste disposal. It installed one secondary sorting station each in the Nagahama area of Ofunato and the Numata area of Rikuzentakata. These stations started operation in the summer of 2011, boasting the fastest disposal speed in Iwate Prefecture, and realized a recycling scheme based on a desalination plant.



2015 Hiroshima

Disposal of disaster waste generated by landslides in Hiroshima
Refer to pages 10 to 11.

2011 Desalination plant project: The amount of waste desalinated was about 935,000 tons.

Desalination of disaster waste project

It was necessary to remove salt from disaster waste covered with seawater, and the REMATEC Group repeated desalination experiments by trial and error, eventually designing and constructing a unique desalination plant that works like a large washing machine. Removal of salt enabled the waste to be used as raw material and fuel for cement. All processes from design to construction to operation were completed in only three months. This plant allowed affected areas to dispose of large amounts of disaster waste at once. The amount of waste disposed of would have taken 12 years to process, but this plant handled it in just three years, contributing to swift recovery from the disaster.



※The plant received waste from Ofunato, Rikuzentakata, and Miyako Cities and Yamada and Otsuchi Towns.

2011 Soil classification plant project: The amount of soil classified was about 830,000 tons.

Classification of tsunami deposits project

In Rikuzentakata City, the amount of disaster waste, which was estimated at about 800,000 tons immediately after the earthquake, actually ballooned to about 2.02 million tons. In 2013, when each affected area was confident that it would be able to dispose of the disaster waste, Rikuzentakata was still faced with the challenge of disposing of about 830,000 tons of tsunami deposits, an amount that exceeded the total amount of waste in all the other cities combined. The REMATEC Group completed all processes from site selection to construction in only eight months, starting a wet/dry classification project that operated for 24 hours a day. It worked with the city's administrative agency to put through quality control in place, and after classification, it returned sand and earth to the foundation and surface of agricultural land and had sorted debris recycled at cement factories.



※RMG: REMATEC Group
※RF: Reclaimed fuel (RF) business: Production of auxiliary fuel for cement pyroprocessing

1960s: Period of rapid economic growth

1973: Damage caused by rumors about marine pollution. Mass media gave extensive coverage to the PCB contamination of fish and shellfish in Tokyo Bay, and the rumor spread that it was dangerous to eat fish. Marine products from Osaka Bay were also affected, and their sales declined sharply.

1974: Establishment of Kinki Environmental Industry Co., Ltd. Kinki Environmental Industry Co., Ltd. (later renamed REMATEC Corporation) was established to treat waste oil and liquid, the principal cause of marine pollution.

1983: Launch of RF business. An RF plant was constructed at the Osaka Plant.

1988: Construction of an RF plant at the Kyushu Plant

1993: Replacement of the Osaka Plant

2006: Construction of a subcritical water treatment plant. Funded by the Ministry of the Environment's "eco-town subsidies," the company built a new Sakai SC Plant that consisted mainly of a subcritical water treatment plant in Sakai City, Osaka Prefecture.

2010: Change of the company name to REMATEC Corporation

2011: Great East Japan Earthquake

2013: Establishment of an overseas subsidiary. Based on the experience gained in implementing environmental projects in the Kingdom of Thailand, the company established a new subsidiary to enter the environmental business in the country in earnest.

2014: Shift to the holding company system under the name "REMATEC Group"

2014: Reconstruction of an RF plant at the Kyushu Plant. In December 2013, a fire broke out at REMATEC Corporation's Kyushu Plant. The Group took the accident very seriously, identified the cause, and took measures to prevent the recurrence of similar accidents. In December 2014, it started the operation of a new plant with the cooperation of related administrative agencies and local communities.

2015: Launch of biogas power generation business with the start of operation of MF Power-1



Planning capabilities × Technical expertise × Quick on-site responses = Aiming at fulfilling the Group's mission by bringing all its strengths together

Back to basics

In order to realize CSV* management to pursue both social and economic value, it is necessary to meet the needs of business and local communities more swiftly and flexibly. In an effort to ensure such swiftness and flexibility, we shifted to the holding company system in April 2014, and this is the second year of operation under the new system.

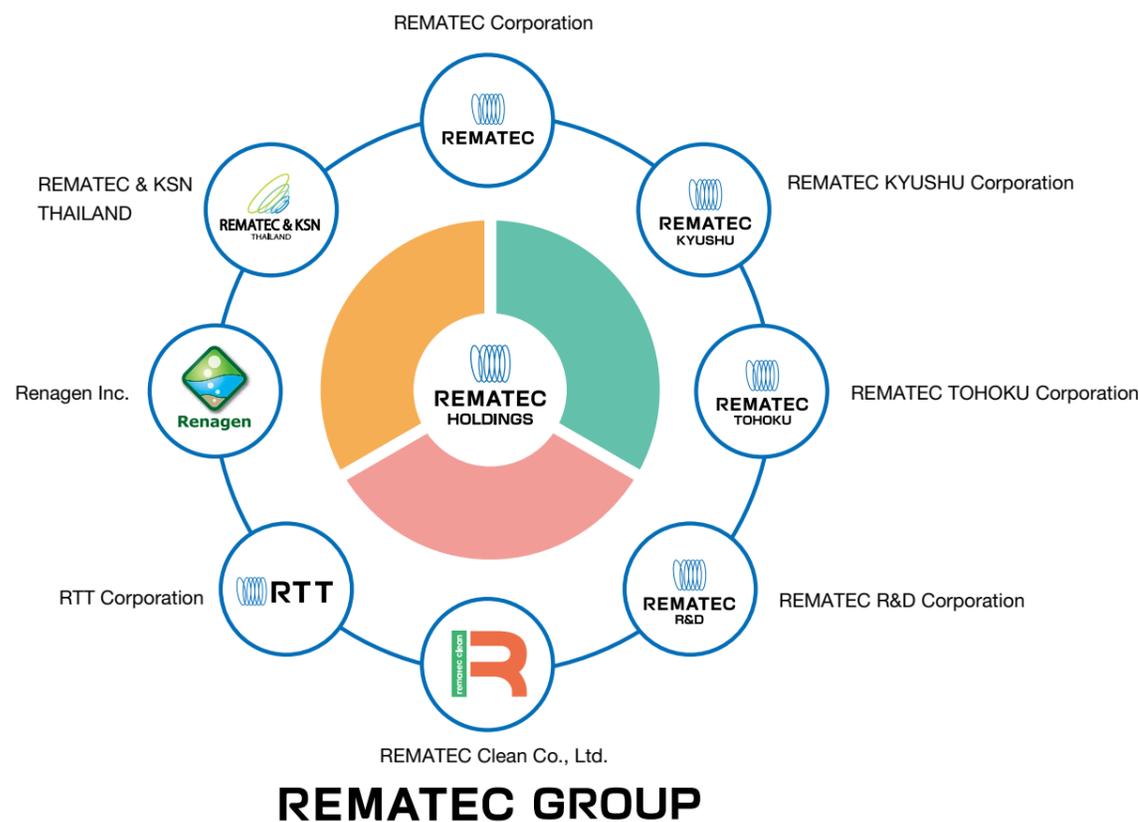
While the shift to the holding company system has expanded the potential for open innovation, enabling the REMATEC Group to implement its business strategy in a more dynamic way, a sense of discomfort toward sudden changes in governance arose in the Group, giving us the feeling that the awareness of personnel toward social needs, compliance, safety, and quick on-site responses that it has considered important was becoming weak.

Therefore, this year, with "back to basics" as our slogan, we refresh our awareness of the origin and guiding principles of

the Group as well as the three strengths we have long valued—planning capabilities, technical expertise, and quick on-site responses—and are working to maximize the benefits of the holding company system, which allows Group companies to fulfill their respective functions and brings their strengths together.

The REMATEC Group was established 41 years ago based on the wish of its founder, who was engaged in the fishing business, to regain a beautiful sea. During the period of rapid economic growth in the 1970s, marine pollution with PCB and other substances became increasingly serious in Osaka Bay, and fishermen were faced with the problem that landed fishes did not sell because of the damage caused by rumors due to marine pollution. The founder started a new business to treat oil because oil was the main culprit polluting the sea. This was the origin of what we are today, and it is also the starting point

*CSV stands for "Creating Shared Value," a concept that aims at both social and economic value in business activities.



of the RF business, which is one of the Group's key businesses even today.

In retrospect, it can be said that the history of the Group is indeed an accumulation of efforts to solve challenges in the environmental field—efforts driven by the changes of the times. We have worked with local communities to tackle social challenges in the environmental field such as collecting heavy oil spilled as a result of a maritime accident, restoring illegal dumping sites to their original states, and disposing of waste generated by the Great East Japan Earthquake and other natural disasters and striven with all our resources to solve them.

Through such a history, we have considered it our mission to create innovation to address social challenges in the environmental field and valued as our intangible assets social values such as coexistence and co-prosperity with local communities; safety and compliance, the basis of our continued existence; and planning capabilities, technical expertise, and quick on-site responses, which all ensure well-grounded problem-solving. In the future, we will continue to embrace these values to fulfill our mission.

waste disposal, including those who are forced to make a living by extracting valuables such as plastics from piles of garbage, can perform their job in a safe, hygienic manner is also a form of innovation we aim at creating. In the future, as an enterprise that supports society's resource recycling infrastructure, we will continue to develop various creative ideas and propose them to local communities, and by doing so, we will strive to become a corporate group that is trusted by local communities while pursuing coexistence and co-prosperity with them. We look forward to your continued support in the future.

Yasunori Tanaka
President and CEO
REMATEC Holdings Corporation

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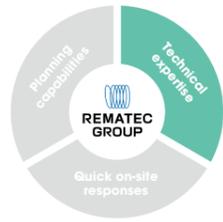
Aiming at becoming a company that supports society's resource recycling infrastructure

The medium- to long-term management vision of the REMATEC Group is to aim at becoming a company that supports society's resource recycling infrastructure. In addition to the resource recycling business, our key business, we view renewable energy business as our new business domain and strive to establish business models that flexibly combine resource recycling with renewable energy.

The Group's first biogas power station, which it built in Kishiwada City, Osaka Prefecture in March 2015, has started to generate electricity and is operating in a stable manner. This power station uses food residue from the local community for raw materials, and in the future, we intend to propose this to various other local communities as a local-production-for-local-consumption business model that combines resource recycling with renewable energy.

In November 2015, we established a joint-venture firm with the Siam Cement Group in the Kingdom of Thailand, launching a business intended to raise the waste recycling rate using high-level sorting technology and making the most of recycled waste as raw fuel for cement. Many countries of the world are faced with serious problems related to waste disposal. Establishing an environment in which many people engaged in





MF Power-1 biogas power plant

To a new era of creating electricity from waste

The REMATEC Group carries out research on waste recycling with "utilization of unused waste" as its goal. In 2015, we built a biogas power plant founded on our research results to date. We are taking on the new field of renewable energy business.



Panorama of the fermentation tank. Power generation began in March 2015.

The REMATEC Group has been focusing its efforts on biogas that is a next-generation energy source since 2001 and has been studying and developing methods for recycling food waste and other types of organic waste.

In 2006, the world's first commercial recycling plant that uses subcritical water treatment technologies* was designed and built in Eco-Town, Sakai City, Osaka Prefecture. We went on to carry out research on subcritical water treatment technologies as methane fermentation pretreatment technologies aimed at shrinking both size and fermentation time. During this time, the Great East Japan Earthquake struck on March 11, 2011, and

Japan was forced to rethink its energy strategies.

The REMATEC Group rushed to the area immediately after the earthquake and, in addition to assisting in disaster waste treatment in Ofunato City, Iwate Prefecture, we also built a plant in 2013 to demonstrate production of biogas from sewage sludge that uses subcritical water treatment technologies in its pretreatment process at the Ofunato sanitization center. Through these activities, we established Renagen Inc. as a company dedicated to biogas power generation business in 2014.

In October 2014, we struck a partnership with a top

Timeline leading to construction of biogas power generation facilities



1 Sakai SC Plant (2006)

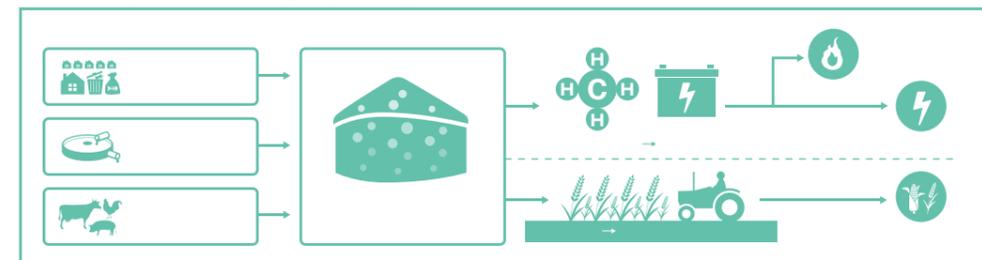


2 Ofunato sewage sludge biogasification demonstration facility (2013)

*1 : Japan Science and Technology Agency

*2 : New Energy and Industrial Technology Development Organization

General process of biogas power generation

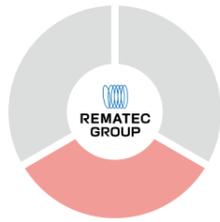


manufacturer in Germany that is an advanced country for biogas power. We built the MF Power-1 biogas power plant that uses methane fermentation tanks (see p. 23) that can be built flexibly in a size to suit the application and location. We then launched our power generation business with this power plant as Osaka Prefecture's first feed-in tariff (FIT) biogas power generation facility.

The REMATEC Group began with a corporate philosophy "Our goal is to contribute to the establishment of a sustainable society by utilizing REMATEC Group's technology to recycle various materials" to make the sea beautiful, and we have

continued valuing this philosophy for 40 years to the present day. We will combine our technical expertise, planning capabilities, and quick on-site responses as our three strengths and continue striving to resolve various problems faced by society.

*Subcritical water treatment technologies are technologies that use subcritical water—which is liquid water kept at a temperature and pressure slightly below the critical points (374°C, 22 MPa)—to produce a variety of useful materials from waste that cannot easily be recycled through normal processes.



Hiroshima sediment disaster environmental restoration project

Bringing memorabilia back to its owners

Massive amounts of disaster waste created by disasters. Schemes and expertise for safely and speedily processing this waste are our strengths. We respond flexibly and quickly with our quick on-site responses to unexpected situations and problems occurring in the field.



Separating disaster waste



Inside the intermediate processing plant



REIMATEC staff of the consortium and locally-hired staff

On August 20, 2014, the northern part of Hiroshima City that was locally hit by heavy rainfall in a short period of time caused serious disasters due to mudslides. Many precious lives were lost and it became a major disaster.

It was estimated that 580,000 tons of disaster waste was produced in this disaster. To aid in the quick processing of this waste and recovery/reconstruction efforts, a consortium comprising seven companies that included two from the REIMATEC Group (REIMATEC Corporation and RTT Corporation) launched a disaster waste treatment project in Hiroshima. Each company maximally exploits its unique technologies and strengths with the aim of processing all the waste as soon as possible.

Disaster waste collected at nine primary temporary dumping sites in the city is roughly sorted by hand and with hydraulic shovels. After separation of dirt and debris, the waste is transported to an intermediate processing facility and processed appropriately after more sorting and crushing. With a target recycling rate of 98.9%, almost all of the processed disaster waste is being recycled, for example by turning dirt into landfill material, crushed stone into roadbed material, wood into biomass, and other processed materials into refuse-derived fuel.

In addition to utilizing the REIMATEC Group's integrated processing scheme that includes each step from waste transport to analysis, precision sorting, and recycling, our other role is to safely and smoothly carry out activities with on-site staff hired from local areas. The experience and expertise of the REIMATEC Group that has attempted many activities to resolve all sorts of environmental problems, such as the disaster waste treatment project in Ofunato City and Rikuzentakata City, Iwate Prefecture carried out from 2011 to 2014, are used as quick

on-site responses enabling flexible approaches to unexpected problems.

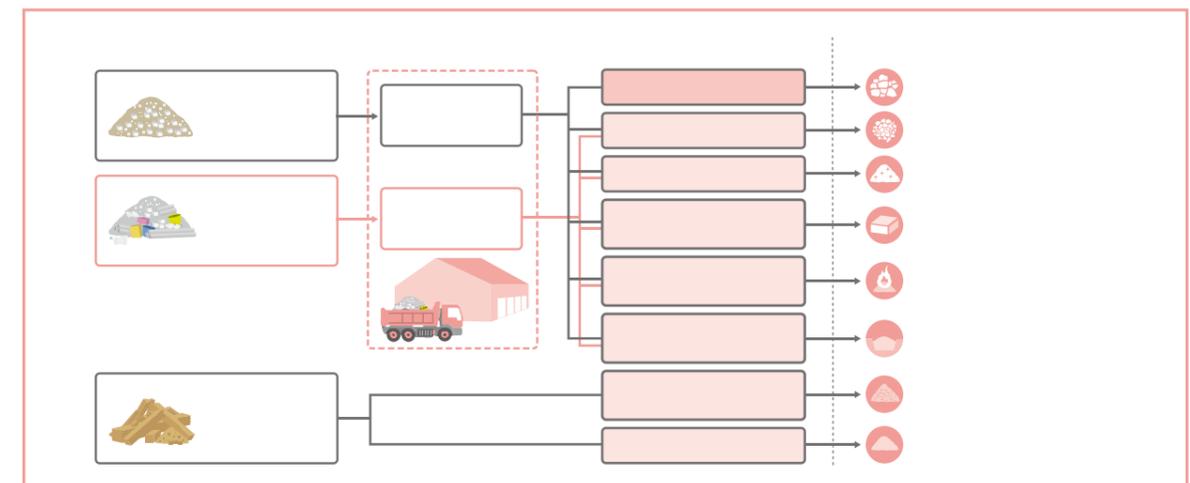
At the disaster site in Hiroshima, management of memorabilia is considered one major part of cleanup activities. This involves returning memorabilia collected from among the disaster waste being processed to their respectful owners, and items recovered are cleaned and washed and carefully stored in the memorabilia lost and found set up inside the intermediate processing facility. Memorabilia that is found can be accessed at the memorabilia lost and found and information about items is also published on the Hiroshima City website.

We wish to not only speed up disaster waste processing and assist in recovery/reconstruction efforts, but also take good care of the many memories in their midst. Our ability to do both of these at once is also part of our quick on-site responses, of which we are very proud.



Memorabilia lost and found

Disaster waste treatment process





Embarking on a new chapter; establishment of a joint venture company with a Thai corporation

Bringing expertise developed in Japan to other countries

The REMATEC Group has continued seeking to resolve waste disposal and other environmental problems since its founding. We established a joint venture with a Thai company with the hope of utilizing our expertise and experience in Thailand that is facing growing waste problems.



RF demonstration facility in Thailand



Waste composition analysis



Grounds for project plans that are being steadily pursued

The REMATEC Group was established in the 1970s, a time of rapid economic growth when environmental contamination was also becoming a problem. Since then, we have pursued various types of innovations to resolve issues in the environmental arena.

It started in 1983 when we launched our RF business (technologies for making fossil fuel substitutes), and continued to collection of spilled heavy oils from marine accidents, disposal of contaminated soil and other types of waste that is not easy to dispose of, cleaning of illegal dumping sites, creation of raw material and fuel from disaster waste used for making cement, and more. We consider it our task to use these technologies and experience that we developed in business in Japan and apply them to the resolution of waste problems becoming apparent with economic growth in countries in southeast Asia. We therefore launched research in 2007 to investigate the waste circumstances overseas, including the possibility for development of business in Thailand and other countries.

Thailand depends on fossil fuels for over 80% of its primary energy supply (oil equivalent conversion). As industry advances, municipal solid waste (MSW) is often being put in landfills without proper sorting or disposal or openly incinerated, and the damage to the environment is becoming a social issue.

Construction of a system that uses waste as fuel could reduce environmental damage from waste, cut usage of fossil fuels, and create local employment opportunities. With great confidence in this belief, we devised a new MSW treatment process. Siam Cement Group (SCG) that is a leading

corporation in Thailand and REMATEC & KSN THAILAND (RKT) established a joint venture in November 2015 called Green Conservation Solutions (GCS).

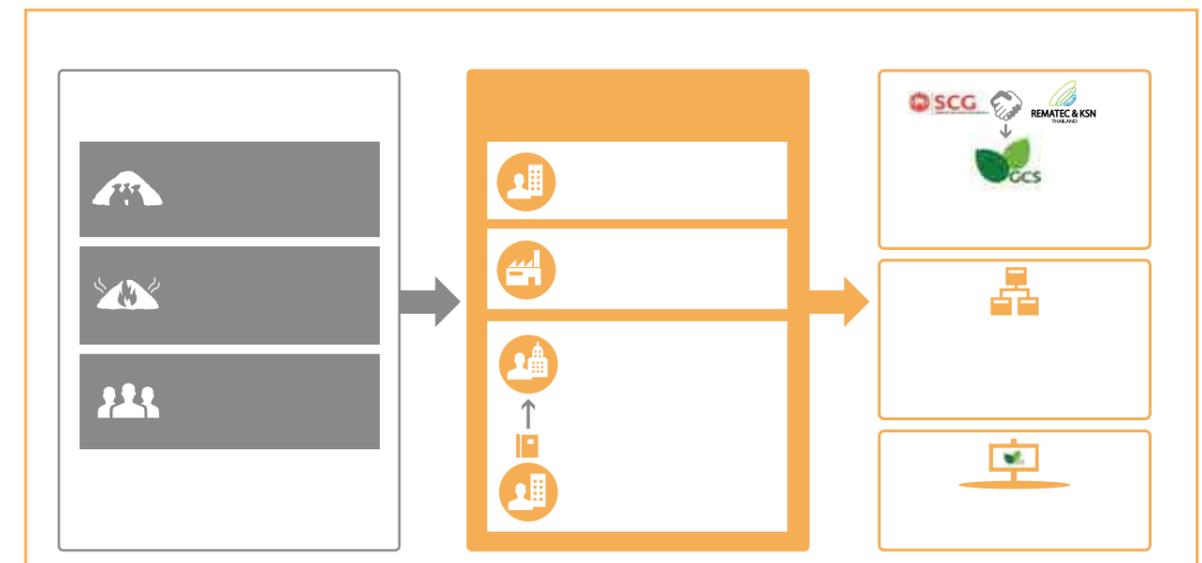
Although each component technology, such as waste sorting and crushing, is relatively simple, we, the REMATEC Group, are concentrating our expertise to combine all these elements into an integrated system and optimize that system to match local circumstances. This embodies the planning capabilities of our Group and what we consider one of our prime strengths.

Having taken on the challenge of resolving issues in the environmental arena for over 40 years, activities to address environmental problems in Japan are our Group's history. Using everything we have developed to date, and combining our strengths with those of the people in Thailand, we hope to help build the future of Thailand.



Establishment of GCS joint venture by RKT and SCG in November 2015

Role of the REMATEC Group



Group leader based on results and experience

REMATEC Corporation

Business activities

- Industrial waste treatment business
- Reclaimed Fuel (RF) production business
- Environmental restoration business



Aiming for even higher productivity and quality

After using our unique expertise to adjust the kneading and calorific value of industrial waste such as waste oil, oil mud, sludge, and dust, it is recycled into Reclaimed Fuel (RF) for cement plants. It is then efficiently used as energy and partly as raw cement material without causing secondary pollution.

Our role in the REMATEC Group is to consistently lead the group-wide mission of creating innovations to address social issues in the environmental arena. In particular, we consider REMATEC KYUSHU our great rival that pushes us to improve.

Foul odors and other problems are becoming more diverse and complex in recent years with changes in waste composition. Applying a mindset that this is not a problem that cannot be resolved, we strive to not only improve the deodorizing equipment, but also increase productivity and quality. With an eye to replacement with stronger systems for environmental management in the future, we will continue pursuing enhancement and improvement of production facilities.

Cycle time
35 sec/t reduction

Improvement of production facilities aimed at higher RF fuel quality

In order to improve RF fuel quality, it is essential to not only adjust the composition ratio and order of waste that is the raw material, but also reliably remove the solids contained in RF fuel. In addition, reducing the grain size of large solids contained in RF fuel improves its thixotropicity*. That said, reducing the grain size of solids to be removed results in a longer cycle time on the solid removal line.

We therefore upgraded our equipment to improve the quality and reduce the cycle time by making the solid removal method more meticulous, as one part of our FY 2014 maintenance plan. By upgrading the sieve equipment of our solid removal lines, we were able to revise the method from removing 3 mm or larger solids to removing 1 mm or larger solids. Moreover, the cycle time that was a concern was successfully reduced to 35 seconds per one ton transfer of RF fuel. We will continue carrying out activities that lead to better quality and productivity and producing RF fuel that pleases all our customers.

*Thixotropicity: The property of fluids that causes viscosity to lower when a force is consistently applied and return to its original state when the force is removed



Before upgrading sieve equipment



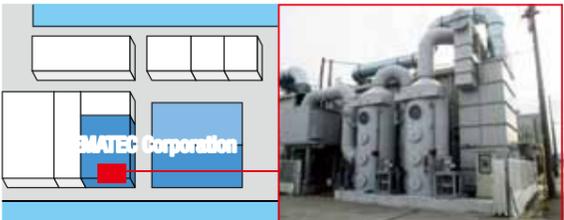
After upgrading sieve equipment

Odor index
28 → 20 improvement

Improvement of production facilities aimed at higher environmental management performance

The Osaka plant has been manufacturing RF fuel since its construction in 1992. As the types and shapes of waste that is used as raw materials become more diverse with changes in industrial structure and other aspects of society, the volume of ammonia and other malodorous specified substances in collected waste has been increasing, and the need has arisen to reduce the impact of these odors on the surrounding environment.

For this reason, we have greatly revamped our deodorizing facilities. We have made many types of improvements, such as installing newly designed deodorizing equipment, changing the pipes for tanks to prevent odor leakage, and installing new models of shutters to block the leakage of combustible gas. By upgrading our deodorizing equipment, we successfully reduced the odor index that was a maximum of 28 before equipment upgrading to a maximum of 20 after upgrading, according to our measurements.



	Before upgrading deodorizing equipment				After upgrading deodorizing equipment				
Measurement date	11/28	12/27	1/30	2/27	4/13	5/21	6/13	7/9	8/12
Measurement results	25	25	24	28	18	19	18	20	18

Local/environmental activities

Extirpation of invasive ŷsh by ŷshing volunteers

On Saturday, September 5, 2015, REMATEC Corporation and other companies in the REMATEC Group joined nine accredited Eco-First companies based in the Kansai area (Kubota, Super Hotel, Daikin Industries, Noritz, Sanyo Syoji, Shiga Bank, Sumitomo Rubber Industries, Sekisui House, and Kawashima Selkon Textiles) to carry out the 3rd Lake Biwa Invasive Fish Extirpation Fishing Volunteer event.

As the third time this event was held, 239 volunteers including employees from those companies and their family members (of which 75 were children) participated. Enjoying a little friendly competition, we caught 1,036 invasive fish (42 kg), creating a new record.

For lunch we had venison curry and had the opportunity to think about the damage to park vegetation, forests, and crops by deer that are taking over.



Port cleanup campaign

In 2015, we again participated in the annual port cleanup campaign cosponsored by Kishiwada City, where the REMATEC Osaka plant is located, and the Kishiwada Port Association.

This program is held one Sunday in late June every year, and involves cleaning the area that extends from Hamakogyo Park to the Hannan District 1 quay. This year, 500 to 600 people including members of community groups and employees from nearby companies participated. We collected as much as 3 to 4 tons of trash. This trash contained a large volume of illegally dumped items. This day re-instilled in us the necessity of not only picking up litter, but also education to keep people from littering in the first place.



Employee comments



Toshio Nakao,
Sales Department,
REMATEC Corporation

In the fire that broke out at the Kyushu plant (now REMATEC KYUSHU Corporation) in December 2013, we caused significant inconvenience and concern to our customers at the Osaka plant that also conducts RF fuel manufacturing business.

Immediately after this incident, we also made numerous improvements to the Osaka plant to ensure our customers could safely rely on us to create RF fuel. To achieve a greater understanding of these activities to customers, we held tours of the Osaka plant in 2015.

Customers who visited the Osaka plant were again given an explanation of the events surrounding the fire, using last year's CSR report, and were allowed to see the plant after its improvements. Although we still receive some tough criticism, we have been highly praised for our efforts to publish the cause of the fire and our measures taken in the CSR report, and we are grateful for this praise.

To increase consciousness towards the health and safety of REMATEC employees, the sales department where I work encourages employees from all departments to visit plants at other companies similarly processing industrial waste. This enables employees in departments where working outside the company is not common practice to see the activities carried out at other companies, and may lead to improvements in health and safety and other aspects of work.

Core Reclaimed Fuel (RF) production site with the latest equipment



REMATEC KYUSHU Corporation

- Business activities
- Industrial waste treatment business
 - Reclaimed fuel (RF) production business
 - Environmental restoration business
 - Equipment maintenance business

Reconstruction after the fire and resumption of RF fuel manufacturing operations

REMATEC KYUSHU Corporation focuses primarily on Reclaimed Fuel (RF) business that involves adjusting the kneading and calorific value of industrial waste with its distinctive expertise and then recycling it into RF fuel for cement plants.

A fire broke out at the plant in December 2013, and we committed ourselves to reconstructing the plant for about a year after that. After reflecting on the events surrounding the accident, we completed construction of a new plant equipped with the same level of safety equipment as chemical plants, and resumed full-scale RF production from December 2014.

Although we experienced some initial difficulties in the beginning, all our staff speedily responded with a rallying cry of striving for vertical startup, and we successfully got production back on track in about four months. We also achieved 85% waste collection volume in March 2015 compared to the level prior to the accident, thanks to the help and understanding of waste generators.

However, we have not yet reached 100%. We will continue carrying out stable operation with a motto of safety, reliability, and trust to meet the expectations of all our stakeholders.

Recovery of RF fuel production volume in **4 months**

Vertical startup to overcome issues

Immediately after launching operation of the new plant in December 2014, our production volume dropped far below targets, owing to initial troubles at the new plant and low waste collection volumes. However, we responded promptly to these difficulties, and worked to overcome each hurdle one by one, for example by improving equipment to be more safe and efficient, gradually restoring the production level. Through these activities, we employees were able to improve our work skills and caught up to last year's level in four months. With respect to waste collection, we are slowly increasing our collection volume with the understanding of waste generators.

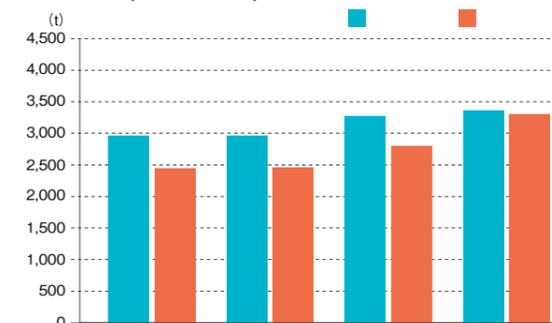
117.5 polio vaccines in 6 years

Contribution to welfare by collecting plastic bottle caps and aluminum cans

About 4,000 children a day around the world are said to die because they cannot receive vaccines. To help relieve this vaccine shortage as much as possible, we have been collecting plastic bottle caps since 2008.

In FY 2014, we collected a total of 43 kg, including bottle caps from not only vending machines at our company, but also from employees' homes. As one vaccine is produced with 4 kg of bottle caps, we collected enough for about 10.7 vaccines. We have collected 470 kg of bottle caps altogether since starting this program. That converts to 117.5 vaccines. We will continue carrying out this program.

RF fuel production plan and results



Plastic bottle caps (4 kg makes 1 vaccine)	
FY 2014 total	43.1 kg
Cumulative total	470.3 kg
Vaccines	117.5 vaccines

Aluminum cans (800 kg = one wheelchair)	
FY 2014 total	110.0 kg
Cumulative total	542.6 kg



Local/environmental activities

Flowerbed planting and management

Twice a year, employees from REMATEC KYUSHU work together with people from the area to plant flowers and flower beds along National Route 502, as a project to make the route more beautiful. In FY 2014, we planted marigolds in June as summer flowers. In November, we planted 280 dianthus and China pink flowers, 1,200 tulip bulbs, and 25 ginkgo saplings that blossom from winter to spring. In addition, to combat continued problems with damage from deer, we sprayed pesticides with a main component of bamboo vinegar that is not hazardous to the environment, taking this measure to keep deer away from the flowerbeds. We will continue striving the best we can to make the national route more beautiful.



Participation in upkeep of Tonosama Road and a walking event

On March 7, 2015, as one part of the joint 10th anniversary project between Usuki City and the former Nozu Town in Oita Prefecture, the Usuki City Board of Education hosted a Tonosama Road walking event. We participated from the planning stages onwards, and helped clean up the road and plant 50 maples and cherry trees on the roadside encampment ruins.

This road that extends 4 km to the east and west along our plant site is part of the Okajo Road connecting the Usuki Castle and Takeda Castle areas, and contains the ruins of the native samurai warriors, earning it the name, "Tonosama Road." On the day of the event, 20 of our employees actually walked along this road, and spent the day experiencing the local history close-up. We will continue developing this road together with local residents and cherishing it as a local treasure.



Employee comments



Hidenori Takahashi,
General Affairs Department,
REMATEC KYUSHU Corporation

In December 2014, a year after the fire that erupted on December 2, 2013, thanks to support from many individuals, we completed construction of a plant with the same level of safety equipment as a chemical plant that has never before been seen in our industry (for example, with a nitrogen sealing machine and cooling equipment) and excellent production performance. I would like to take this opportunity to express my deepest gratitude for the wonderful support we received from all our stakeholders that enabled us to return to our place of work once again.

After the plant resumed operation, I was involved in production and maintenance and repair work alongside my regular duties, with the goal of vertical startup so that production could proceed as intended. The way that all company employees cooperated together through trial and error to acquire chemistry knowledge and learn how to operate the new equipment has become my personal asset.

The plant is now equipped with the latest safety equipment and we have switched to a round-the-clock system to reliably confirm the safety of operations. However, the driving force for operations is people. To ensure we never forget this, we will continue to further raise our knowledge and technological level and carry out thorough management and supervision. As a member of the Business Department, I will fully support daily stable operations based on the knowledge and skills I acquired in the past year, to repay our debt to all our stakeholders.

Creating new business and value to revitalize communities



REMATEC TOHOKU Corporation

- Business activities
- Business related to local renewable energy system construction
 - Contracting work related to resource recycling
 - Coordination of waste recycling

Towards the creation of business and value shared with the community

REMATEC TOHOKU Corporation is located in the Kesen region of Iwate Prefecture where construction work has been ongoing since the Great East Japan Earthquake. The company was originally involved in disaster waste disposal and other recovery/reconstruction activities as the Tohoku branch of REMATEC, but became a separate company in 2014. We now carry out business activities utilizing Group expertise developed in resource recycling business and earthquake recovery efforts, with the goal of creating new business and value together with

local people (companies).

From April 2015, we launched new activities to use renewable energy that is a local untapped resource and recycle resources. Based on the REMATEC Group mission of introducing innovations that will address society's environmental challenges, we build local production for local consumption energy schemes and carry out preprocessing work to use stumps (tree roots) that appear in hill development and road works as raw material and fuel at cement plants.

Adopting an energy system of local production for local consumption

Ofunato Project that links the sea, mountains, and people

This project was chosen as a New Tohoku Leader Model Project in FY 2014 by the Reconstruction Agency, and a council was established and activities carried out.

The aim of the project was to build a local production for local consumption community-based energy scheme called the Tohoku Model that uses methane fermentation-based food residue and other local untapped resources as a raw material for not only electricity, but also thermal energy, in a city with a population of 50,000 people.

From our group, REMATEC TOHOKU and Renagen joined this council and assisted in business feasibility assessment, assessment of local potential and the effects on the local area, and deliberation on the business model. On March 1, 2015, a symposium to consider the "Kesen of tomorrow from the unique characteristics of the environment and local region" was held at the Ofunato Chamber of Commerce & Industry, to review the activities.



Symposium

Utilizing experience and expertise developed after past earthquakes

Contracting work related to resource recycling

We carry out part of the work to create raw material and fuel for cement from stumps (tree roots) appearing during hill construction and road works for disaster recovery. Through these activities, we will utilize the experience and expertise we developed in recovery from the earthquake to contribute to resource recycling.



Local/environmental activities

Participation in citywide cleanup campaign

On September 28, 2015, upon invitation from the Ofunato City Group for the Promotion of Environmental Conservation, we participated in a citywide cleanup campaign.

This event was held as a component of the educational activities carried



out around Japan for Environmental Health Week. We were requested to join the events by the Ofunato Group for the Promotion of Civic Movements, and had nine employees participate. Those employees pick up litter and helped clean up the streets along the prefectural highway.



Employee comments



Rie Sasaki,
General Affairs Department,
REMATEC TOHOKU
Corporation

Almost one year has passed since I joined REMATEC TOHOKU. Ofunato City in Iwate Prefecture where I live was greatly damaged in the Great East Japan Earthquake. It was REMATEC that started waste disposal activities. The volume of disaster waste that was continuously transported to the sorting center was massive. However, we could check daily progress from waste weighing data and could complete treatment according to future treatment plans and predetermined schedules. Watching the area slowly recover from the front line was a valuable experience for me.

After our company became a separate entity, I began gradually taking on duties in general affairs and accounting where I had no previous experience, and it has been a chance for me to learn all types of new things each day. REMATEC TOHOKU focuses efforts on certifying employees and having them participate in training. I do not think many companies actively support my personal interests as REMATEC TOHOKU has, and I am grateful for these opportunities.

The plant created at the time of disaster waste treatment still carries out tree stump disposal, but also takes on new projects that utilize renewable energy. I look forward to the development of REMATEC TOHOKU that contributes to the community in this way and creates an easy environment for employees to work in, and I am committed to supporting the company as one of its members.

Supporting technological development and the pursuit of new business



REMATEC R&D Corporation

Business activities ● Development of new business and technology

Various projects underway inside and outside Japan

REMATEC R&D Corporation uses the technologies and expertise developed by the REMATEC Group in Japan for resource recycling business and renewable energy business to resolve various diverse and complex environmental issues inside and outside Japan, with innovations achieved through consulting and business development.

It has two offices, head office in Tokyo and a Sakai office

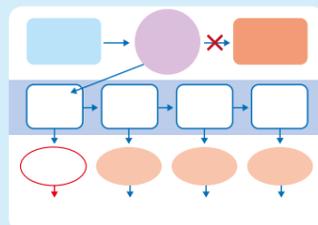
in Eco-Town in Osaka Prefecture, and comprises Planning Department, Engineering Department and Technological Development Department. Based on the concept of, "creating positive value from resources containing only negative value," we take on the role of linking our groups planning capabilities, technical expertise, and quick on-site responses to Innovations for the Earth in Japan and around the world.

Local/environmental activities

Energy-saving business based on production and use of fossil fuel alternatives (Thailand)

In Thailand, municipal solid waste (MSW) is often buried in landfills without being sorted, and foul odors and fires from the resulting methane gas are becoming serious social issues. REMATEC R&D built a plant that combines Japan's recycling technologies (such as waste classification, creation of fossil fuel alternatives, and biogas creation) and works with local companies in Thailand to create fuel from this MSW.

Our company's activities were selected for FY 2014 Demonstration Project of Technology/System for International Energy Consumption Efficiency etc., Investigation prior to demonstration by NEDO. Ahead of the investigation, we have been developing concrete business plans, carrying out feasibility studies, and collecting information about legal systems, relevant regulations, and the potential for use of support measures in Thailand.



Development of technology to recover rare metals from waste

Renewable energy such as solar power and wind power generation show promise as means for achieving a low carbon society. However, one major challenge for spreading its use is the adjustment of supply and demand to remove fluctuation in power generation and consumption peaks. This may potentially be achieved by developing an inexpensive battery.

We rely on imports for the substances that comprise the main raw materials of the battery, and major issues exist in both cost and supply volume.

Currently, REMATEC R&D is carrying out development of battery-related materials using waste recycling technologies. This initiative will lead to inexpensive production and stable supply of batteries.



Raw materials collected from waste

Bringing REMATEC Group innovations overseas

The challenges that the REMATEC Group has taken on to date in Japan, including business to recover waste oil and waste liquid (for later use in fuel recycling business) that was a major cause of marine pollution in Osaka Bay during the rapid growth years and caused serious damage to the fishing industry, collection of spilled oil following the Nakhodka accident that caused serious damage to the coasts of the Sea of Japan, cleanup of an illegal dumping site near the border of Iwate and Aomori Prefectures that was said at the time to be Japan's largest such incident, and disaster waste treatment business following major disasters such as the Great Hanshin Earthquake and the Great East Japan Earthquake, are not simple waste problems, but actual national crises.

The mission of REMATEC R&D is to utilize the expertise and experience developed by the Group to date as well as its technologies (such as RF technology, biogas power generation technology, and waste sorting technology) to provide innovations to emerging nations facing major national crises such as waste problems and environmental issues caused by rapid economic growth.



Our business fields are not limited to consulting and plant design and construction, but also include feasibility studies and other on-site plant operations. We believe that innovation requires providing systems rather than products. We are currently carrying out various projects in countries such as Thailand and Malaysia aimed at using waste as raw fuel at cement plants through alliances with local companies in those countries.

We also actively encourage people from overseas to visit our company. Those who visit can actually see how the REMATEC Group's technologies operate in Japan, which we feel is the best way to understand our technologies and the high level of environmental standards in Japan. In FY 2014, we provided tours to groups from countries around the world, including the Ministry of Energy of the Kingdom of Thailand and the Tsinghua University Environmental CEO Japan Training Team.



Employee comments



Mayo Tada,
Technological Development Group, Business Development Department, REMATEC R&D Corporation

REMATEC R&D where I work is an incubator for new business in the Group. It is a gathering of capabilities of employees' experiences in a variety of specialized fields and strives to launch new waste recycling business.

As a member of the technological development group, I currently work in development to utilize valuable substances taken from waste. This project that enables us to create value from waste that is generally treated as garbage is very motivating.

That said, one challenge in creating business from technologies is ensuring economic efficiency. For example, some people say it would be cheaper to treat and dispose of waste rather than recycle it. Also, the utility of waste increases with the advancement of recycling technologies, and the provision of waste raw materials is not necessarily easy. We pour our efforts into development every day to try and overcome these challenges.

Problems such as the depletion of resources and environmental pollution are serious issues that cannot be dissociated from human society and must be resolved. I hope to help create new ideas to clear each of the hurdles facing us.

Making biogas power generation the norm in the future



Renagen Inc.

- Business activities**
- Biogas plant planning, design, and construction, operation and management support
 - Planning and demonstration for entering agricultural business

Aiming to spread use of biogas power generation in Japan

Renagen Inc. was established in 2014 with the aim of contributing to a society based on local production for local consumption through the creation of renewable energy and new agricultural systems.

Biogas power generation that our company pursues as one form of renewable energy is one effective measure for achieving a local production for local consumption energy scheme. However, careful consideration is required when selecting land for construction and operation and procuring raw materials.

Renagen has its own experimental laboratory, and can

offer proposals based on actual tests starting from the plant construction discussion stage. We also partnered with EnviTec Biogas in Germany, which is an advanced country for biogas power generation, enabling us to build a biogas plant that incorporates leading technology and can easily be implemented in Japan.

We want to create a future where biogas power generation is the norm in Japan. For this purpose we are building our base of knowledge, experience, and technology every day.

Local/environmental activities

The children who bear our future

In September 2015, we held a class on biogas power generation and resource recycling at Ohka Senior High School in Taki Town, Mie Prefecture.

Ohka Senior High School actively pursues various activities, such as running the Grandchild's Shop (restaurant run by the students, commonly known as the "high school student restaurant") and growing Ise potatoes that are a local specialty, and the students were very eager participants in our class.

Students who attended the class gave such comments as, "I was surprised to hear that the self-sufficiency rate for energy in Japan is only 6%, which is very low," "I learned that it is extremely important to recycle within the local region without relying on other countries, and I want us all to work together to achieve that," "Wet refuse can make not only energy, but also fertilizer, so I do not think of it as garbage," and "I think that even a high school student like me can do the 3Rs, so I want to do them actively."



Aiming to spread use of resource recycling models

Renagen pursues local resource recycling with the use of methane fermentation digestate, and carries out tests with the National Agriculture and Food Research Organization to determine the effects on energy crop planting in actual farms and of digestate as liquid fertilizer.

This fiscal year, we conducted demonstration tests in abandoned fields in Sumita Town, Iwate Prefecture that had not been used for about three years. We changed the volume of digestate sprayed in each zone on May 13, 2015 and sowed sorghum seeds on May 18. As a result, by the beginning of September, some zones had plants towering over 4 m high, and landowners and nearby residents became interested, seeing the effectiveness of the digestate. It seems that the quick-acting effects of digestate work even in the cold Tohoku region, greatly contributing to the crops' growth.

The use of digestate is one extremely critical challenge in biogas power generation business, and we will continue actively striving to overcome this challenge.



Powering the equivalent to
493 homes a year from MF Power-1 based on our calculations

The MF Power-1 biogas power generation system that Renagen helped develop can produce 1.77 million kWh (kilowatt hours) of energy, assuming operation at full capacity (250 kW) 24 hours a day, 300 days a year. Converting to mean usage of a regular household (about 3,600 kWh per year), this is enough to power 493 homes.

Precast concrete panels are used in the methane fermentation tanks. These tanks can be built to a size to match the application and conditions of the location, and can achieve both stable quality and a quick delivery time.

In addition, we are incorporating the expertise of EnviTec Biogas, such as a pre-mixing process that achieves stable fermentation by mixing raw materials with part of the digestate returned through the recirculation pit to adjust the composition.

*Information about MF Power-1 can also be seen on p. 9.

Expanding yield of view with training and communication

Renagen holds company-wide training seminars twice a year.

In the seminar held in June 2015, employees toured the Kansai Saisigen Network facilities and MF Power No. 1 plant, followed by group work carried out at a training facility. Employees from EnviTec Biogas who were visiting Japan also participated in the seminar, and were able to interact with all of our employees for two days, including discussion of their expectations of Renagen.

In the November training, our employees participated as volunteer staff in the Oinai Festival Otakosu event held by the Commerce and Industry Association in Taki Town, Mie Prefecture that is currently deeply involved in our activities. This was a big costume event aimed at revitalizing the community, and it was an opportunity for us to spend time with local residents and visitors who we do not usually see, and think about development of the community.



Recirculation pit



Agitator in the methane fermentation tank



Assembling a methane fermentation tank



Training in June. Together with employees from EnviTec Biogas



Training in November. Together with members of the Commerce and Industry Association in Taki Town

Employee comments



Shigefumi Tadokoro,
Assistant Manager,
Technology Division,
Technology Department,
Renagen Inc.

Renagen is a company that offers consulting and business planning services related to the use of biomass, and is focusing particular effort on biogas power generation (methane fermentation).

One key point in biogas power generation business is the extent to which biogas that is the fuel for power generators can be recovered from raw materials that are collected. In the Technology Division (Laboratory Testing Team) where I work, we use batch testing to determine how much biogas can be recovered from the customer's raw material candidates for methane fermentation. Based on those results, we determine the rough volume of biogas that can be collected, and calculate the sales of electricity. In addition, we sometimes carry out batch fermentation tests as needed in an environment that is more similar to that of the actual machine being used, to more accurately calculate factors such as the biogas collection volume, treatment volume, and size of methane fermentation tanks needed for treatment.

Our engineers then design plants based on laboratory test data, and our planning and sales staff propose business plans that match customer needs. The capacity for a single company to cover all the steps in that sequence is a major strength of Renagen.

We will continue to bring all our strengths together as a team.

Handling diverse modern distribution operations



RTT Corporation

Business activities

- Industrial waste collection and transportation
- Transport of general cargo
- Purchasing of reclaimed heavy oil, waste food oil, and fireproof materials

Transport specialist that knows everything about waste

The main job of the RTT Corporation is collection and transportation of liquid industrial waste and sludge and other solid waste. We are expanding our collection and transportation network to each area of Japan with our own company's vehicles in the Kansai, Kyushu, and Tohoku regions and with partner company vehicles in the Kanto, Chubu, Chugoku, and Shikoku regions. We also transport Reclaimed Fuel (RF) for cement plants produced and delivered by REMATEC by ship. Each ship can carry 600 tonnes that is equal to the volume that

can be carried by about 60 land vehicles, helping cut CO₂ emissions.

Our company employs drivers full of "craftsmanship" comprising individuality and rigorous pursuit of work duties. "The products are carried by people, so we must raise the quality of the people"—this is one idea we strive for at RTT. We carry out transport safely and reliably, following laws and regulations and holding a strong sense of ambition and pride.

Carrying out land and marine transport

RTT focuses efforts on not only land transport, but also marine transport. We transport RF fuel produced by REMATEC Group by ship and also siphon out fuel and oily water from fuel tanks of ocean-going vessels.

Priority for anchoring at the quay is given to cargo ships, so when the ship cannot be berthed for the siphoning, we use a waste oil collection barge*1 and complete our work on offshore anchorage. We also frequently receive requests to clean tanks after siphoning and fulfill these requests. Tanks on large ocean-going vessels can exceed 3,000 kl, and we have sometimes operated barges alongside ships for over two weeks siphoning tank contents and cleaning the tank.

Fuel and oily water siphoning on the anchorage is not yet common practice, and our company is pioneering such activities, offering prompt services. We are proud that the experience and technology of the REMATEC Group that has worked on collecting waste oil from ships after marine accidents are also unrivaled strengths of RTT. We hope to



continue using the Group's strengths to further improve our skills in marine transport, ship waste fuel siphoning, ship tank cleaning, and treatment of sludge*2.

*1 Barge: Flat-bottomed boat used for carrying heavy cargo on water.
*2 Sludge: Highly viscous mud caked on the inside of engines and other combustion chambers. Contains components such as carbon and metal cinders from fuel.



Local/environmental activities

Valuables from industrial waste RTT initiatives

RTT endeavors to create valuable materials from waste generated by customers. It is wasteful to dispose of items that were once created as products using raw materials and money simply because those items have been used and are no longer needed. We work together with customers to consider how to put products to use in a different form than what was originally intended.

For example, we turn the engine oil from old vehicles into reclaimed heavy oil. Used tempura oil is transformed into livestock feed and industrial fuel. We reclaim discarded fireproof bricks as valuable components for recycling into raw materials for new fireproof bricks. And there are many more waste products we use that are usually disposed of, such as waste products for biogas power generation that is a major business of the REMATEC Group, waste water, waste plastic, rubber tires, and more. We will continue striving to efficiently utilize resources by creating valuable materials from waste.



Participating in various community activities

As a member of the southern region branch of the Oita Prefecture Trucking Association, the RTT Kyushu branch participates in street-level educational activities on the 20th of each month (Zero Accident Day) by standing at the National Route 10 Hinata intersection that receives heavy traffic and calling for traffic safety to passing vehicles.

We also work together with REMATEC KYUSHU to carry out local and environmental activities. In the summer, we cut the undergrowth in the Forest of Symbiosis managed by REMATEC KYUSHU, and throughout the year, we help clean up the roadside along National Route 502 and maintain its flowerbeds. In August 2015, we held a joint summer festival with local neighborhoods. RTT contributed with its transport capabilities to shop for barbecue sets and many other items, to the delight of local residents. This was our first attempt at such an activity, and we were pleased to be able to offer support with not only manpower, but also by exploiting our characteristics as a transport company.



Kyushu branch staff

Employee comments



Masashi Nakano,
Dispatch Team, Operations
Department, Osaka Branch,
RTT Corporation

The dispatch team where I work is responsible for managing not only RTT transport vehicles, but also vehicles brought in by other companies. The work must be done safely, so a high level of skill is required. I adjust the schedule for transport orders that fluctuates daily and drivers and dispatch vehicles while both ensuring the safety of the drivers and taking meticulous care to prevent leakage of transport materials and property damage accidents.

Vehicle dispatching work is not limited to procuring manpower, but also requires keeping an eye out for many details and ensuring safety and reliability. I sense every day how accumulating this experience leads to greater trust in the company.

It is very important to cooperate closely with waste generators, REMATEC that is a group company, other waste treatment companies, and transport companies to ensure smooth operations. I will continue actively communicating with everyone, and keeping alert in my duties while also sharing a few laughs now and then.

Next-generation energy production business in Thailand that achieves both economic growth and a healthy environment



REMATEC & KSN THAILAND

Business activities ● Planning, development, and investment in resource recycling business in Thailand and throughout Asia

Resolving issues in municipal solid waste treatment in emerging nations with REMATEC Group expertise

The main business of REMATEC & KSN THAILAND is planning of waste recycling business in Thailand, development of business to utilize untapped resources in Asia, and investment in those activities.

Degradation of the environment from burying and open incineration of municipal solid waste (MSW) has become a social issue in Thailand. To reduce this degradation, we

propose treatment processes using waste products as fuel that utilize the technologies and expertise developed in the REMATEC Group. In November 2015, we established a joint venture with the Siam Cement Group, and launched full-scale business activities. We will strive with the elite trilingual staff to make our company the center for development of REMATEC Group operations in Asia.

Local/environmental activities

Valuing dialogue with the local community

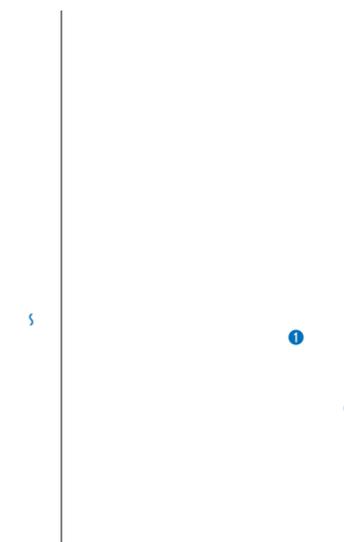
REMATEC & KSN THAILAND as a corporation participated in a waste sorting event held in the local area. Using these opportunities where many people from young to old gather to interact with people in the local community is essential for ensuring the community understands and accepts



our business activities in Thailand. We hope to continue participating in such interactions while learning from people working to improve waste treatment in the local area and employees from partner companies.



Timeline for Thailand Project



*1 : Kansai Asia Environmental and Energy Saving Business Promotion Forum
*2 : Refuse Derived Fuel

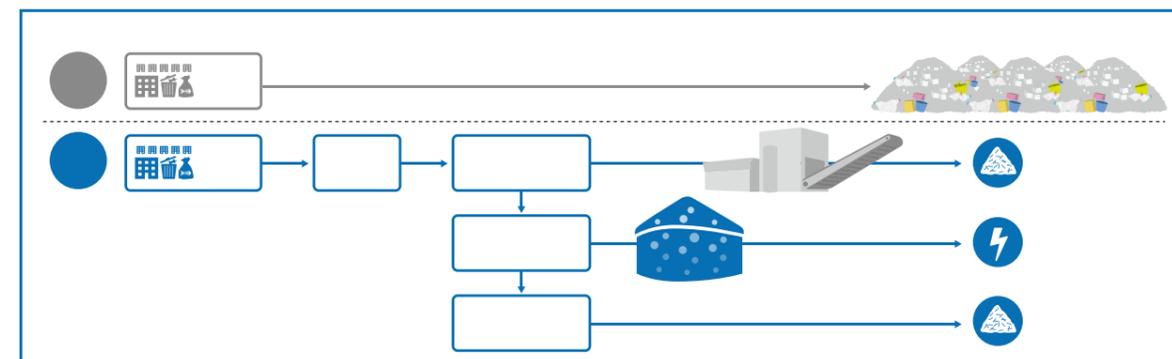


① RDF demonstration equipment that uses wet classification equipment



② MoU signing ceremony with the Siam Cement Group in 2014

Municipal solid waste treatment process



Employee comments



Mr. Kajornkieat Kitikunpairoj
REMATEC & KSN THAILAND
Project & Sales
Engineering Manager

My name is Kajornkieat. My nickname at the company is Bom.
As a project manager and sales engineering manager at REMATEC & KSN THAILAND (RKT), I am mainly responsible for progress management of projects and procuring equipment.
The RKT Head Office is located in an area not far from the Bangkok city center and is both comfortable and extremely convenient for commuting. I have only been at the company for half a year, but I have been able to build great relationships with my wonderful colleagues including employees dispatched from Japan, and enjoy a fulfilling life.
Waste measures in Thailand are still very new and we have many of the environmental issues that Japan experienced in the past. RKT has both the human resources and the knowledge required for tackling those issues and I am proud to have this opportunity to participate in that growth as we resolve problems.

Communication with stakeholders is one of the indispensable elements of CSR activities. It is an essential driving force behind our growth since this business objective epitomizes the REMATEC Group's commitment to CSR. We believe that establishing relationships of deeper trust with stakeholders will lead us to fulfill our mission of addressing society's environmental challenges in future business activities.

Who are our stakeholders?

A company's stakeholders refer to any individuals or organizations directly or indirectly affected by its activities. They include shareholders, managers, business partners, customers, and employees as well as members of the local community.



I am surprised by the content of the REMATEC Group's CSR Report and the fast progress the Group has made.

Mr. Shinro Urabe
Special Technical Advisor
EX Research Institute Ltd.

When I was a Director and Chairman of the Japan Waste Management Consultant Association, the interest of consulting firms was focused on ISO14000, Eco-Action 21, and environmental reports. Since nearly ten years ago, however, the major theme of the Association's ethics committee has shifted to CSR. The terms "CSR" and "compliance" were difficult to understand and unfamiliar, and many felt that they could not be absorbed easily. It was doubtful whether Japanese businesses could understand these concepts, assimilate their essence, and use them to achieve growth.

Twenty-six years have already passed since I first visited REMATEC. It was the first year of my career when I stopped being a university researcher and joined a consulting firm called "Ursin." I wanted to learn about the actual conditions of industrial waste disposal and recycling with which I had been almost unfamiliar up to that time and asked a friend of mine to introduce a company in the field, and he recommended that I visit an oil recycling plant in Kishiwada. Chairman of the Board Masatoshi Tanaka of REMATEC Holdings (then Representative Director of Kinki Environmental Industry) guided me through the plant and explained the plant operation to me, and I remember that I was impressed by the company's remarkable technical expertise and exceptional points of view. Incidentally, this visit made the news as it was broadcast in the "A Scholar's Job Change" section of the TV program "MBS Now" in 1990.

Later, REMATEC helped me on various occasions as I worked as a consultant, and every time it did, I was amazed by the progress it had made in its business operations.

After reading REMATEC's CSR Report 2015 from cover to cover, I realized the evolution of the company again. First, the Group's basic philosophy of creating innovation by combining planning capabilities, technical expertise, and quick on-site responses remains the same as 26 years ago, and the Group steadfastly maintains this spirit, or firm belief, even today.

Second is the progress the Group has made in the environmental business. The REMATEC Group is certified by the Ministry of the Environment as an Eco First company, and in addition, it has recently expanded its environmental business to overseas. Subsidized by the Ministry of Economy, Trade and Industry and the Ministry of the Environment, the

Group has started to take firm steps to achieve its objectives in cooperation with local enterprises and governments.

What drives the evolution of the Group most is cooperation with stakeholders, or in other words, its commitment to CSR. As is often said, the concept of CSR has something in common with the traditional spirit of satisfying all three parties: the seller, the buyer, and society. Satisfying society is a spirit of contributing to the development of the local community and promotion of people's welfare through business activities. It could be interpreted as taking a sympathetic attitude when dealing with not only employees and customers but also many other stakeholders.

When responding to the explosion and fire at its Kyushu Plant in December 2013, the Group regained the trust of the local community by taking one full year to start its operation again. In addition, the plant has achieved even greater results than before. The successful handling of this accident could only be made possible by long-standing efforts to utilize waste data sheets, formulate and implement business continuity plans, and take other measures, and furthermore, by the guiding principle of satisfying society, which has become an integral part of the Group's CSR activities.

The REMATEC Group's CSR Report unmistakably reflects these backgrounds and circumstances and is highly unique compared to other CSR reports even if differences in business operation and business scale are taken into account. Moreover, the content of the report is mature and fully developed.

REMATEC Holdings currently controls eight companies. They consist of enterprises backed up by the holding company. I sometimes hear, however, that these member companies have not been able to fully display their respective uniqueness as is often seen in many corporate groups. I hope that REMATEC Holdings and its subsidiaries will prosper even further by recognizing their respective functions and continuing CSR activities while enhancing their CSR commitment.



A broad perspective, decisions based on a hard look at the trends of the times, and new ways of thinking

Mr. Ryohei Nishimura
Head of the Environmental Engineering Division
Civil Engineering Headquarters
Konoike Construction Co., Ltd.

I have had business relationships with the REMATEC Group in environmental operations for more than ten years, and from such a standpoint, I would like to comment on the subject of the feature article of this year's REMATEC CSR Report: 'Ok'mmhn'ahkshd'wSdbgmhb'kwodqshrd'Pthbj'nm,rhsd responses = Innovation.'

Planning capabilities

The REMATEC Group recycles waste oil, waste liquid, and sludge and will change its business focus onto recycling fish and shellfish waste as well as dispose of material that is difficult to get rid of. In terms of environmental protection, it takes measures to cope with maritime pollution and illegal dumping and to dispose of disaster waste. In order to promote renewable energy, it is engaged in power generation using solar energy and garbage-based biogas. Thus, in response to social challenges, the Group makes free use of subsidy systems to draw up plans for business development more quickly than any other company in the industry. I envy the dynamism of the Group.

Technical expertise

In the project to restore the illegal dumping site in the northern part of Gifu City to its original state, the REMATEC Group proposed to fight the fire in the buried, heat-generating waste through steam injection and extinguished the underground fire applying the work flow of idea development -> thermal fluid analysis -> model-based testing -> execution design -> on-site testing -> fire extinction. Based

on the knowledge that combustion cannot continue if the concentration of oxygen in the air is lowered to below 15%, it put forward the novel idea of injecting steam to accomplish this. It repeated theoretical analysis and testing, and furthermore, it designed and manufactured a measuring instrument to gauge the concentration of oxygen in the underground openings, which is usually difficult to measure, on its own initiative. Such thorough efforts indicate the amazing technical expertise of the REMATEC Group.

Quick on-site responses

In Hiroshima City, as part of the joint venture between Konoike Construction and the REMATEC Group, we are currently disposing of approximately 580,000 tons of disaster waste generated by the torrential rains in August 2014. In the intermediate waste disposal process, we employ residents of the city who have no field experience and have them learn a disposal job. They are proving to be effective against a project of such an immense scale. The REMATEC Group has developed the ability to employ local residents and train them from scratch through its intermediate waste disposal operations and has refined that ability in Ofunato and Rikuzentakata Cities after the Great East Japan Earthquake so that locally hired employees are able to sort out waste so accurately that it can even be recycled into material for cement production. This know-how is the kind of quick on-site responses we general contractors can only hope for.

Innovation

The REMATEC Group makes the most of these strengths to put quality before quantity, seek high added value, and create innovations in niche markets where no other company can enter. This requires a lot of work and courage. Management is urged to work harder because they see things from a broad perspective and make decisions based on a hard look at the trends of the times, and so are engineers because they use new ways of thinking and subsidy systems (save development costs and undergo public evaluations) effectively. But I hope that as a general environmental business group, REMATEC will continue to create innovations and develop further without fearing business risks and sparing no time or effort.



Pursue further development based on coexistence and co-prosperity with local communities

Mr. Isao Someya
President
Miyakomatsu Area Promotion Council
Usuki City, Oita Prefecture

The Miyakomatsu Area Promotion Council was established in March 2015 to revive and enliven the local community, and in that process, we received both material and moral support from the REMATEC Group, including sending representatives to the council and donating money for its operation. Thanks to the strong wishes of local residents for rejuvenation and the yakiniku (grilled meat) provided by REMATEC KYUSHU Corporation, the first Furusato Festival in August attracted over 300 participants, resulting in a great success. Furthermore, the REMATEC KYUSHU extended full support to the Tonosama Kaido Arukokai (Let's walk on the lord's way) event held last

year; for example, it helped cut the grass on the historic way, plant trees along it, and ran the event on the day it was held. We are very grateful to REMATEC KYUSHU for its united efforts to cooperate in regional growth.

Unfortunately, an explosion occurred at the Kyushu Plant in December 2013, but I felt the company's strong desire to regain public trust and their determination not to allow a similar accident to happen again as I saw the company sincerely explain what happened to the local community after the accident and take disaster-prevention measures for the newly built plant.

The REMATEC Group's technical expertise and social contribution were demonstrated after the Great East Japan Earthquake too, and the Group has been certified by the Ministry of the Environment as an Eco First company. Moreover, it has concluded a comprehensive management agreement with Usuki City on disaster waste disposal, and as shown by this and other examples, stakeholders place great expectations on REMATEC KYUSHU as an environmentally advanced enterprise.

I sincerely hope that in the future, REMATEC KYUSHU will develop further in accordance with its basic policy for coexistence and co-prosperity with local communities.



Environmental burden reduction activities through renewable energy

Based on our belief that "our business activities epitomize our CSR activities," REMATEC Group is engaged in various activities to reduce environmental burden. Among them, renewable energy business such as solar power generation and biogas power generation has just been fully implemented.

We have put together data regarding REMATEC Group's efforts in the renewable energy business.

Solar power generation



Makurazaki power plant

- Location: Makurazaki-shi, Kagoshima
- Rated output: 1,990 kW
- Operation start date: November 2014

■ Annual power generation (planned) **2.24 million kWh**
 ■ Annual CO₂ reduction **1,131 -CO₂**
 For **622** households

Solar power generation



Kasaoka power plant

- Location: Kasaoka-shi, Okayama
- Rated output: 1,990 kW
- Operation start date: March 2015

■ Annual power generation (planned) **2.25 million kWh**
 ■ Annual CO₂ reduction **1,286 -CO₂**
 For **707** households

Solar power generation



Yamaga power plant

- Location: Yamaga-shi, Kumamoto
- Rated output: 490 kW
- Operation start date: August 2014

■ Annual power generation (planned) **0.64 million kWh**
 ■ Annual CO₂ reduction **325 -CO₂**
 For **178** households

Solar power generation



Power generation facility within REMATEC KYUSHU Corporation

- Location: Usuki-shi, Oita
- Rated output: 15.5 kW
- Operation start date: November 2013

■ Annual power generation (planned) **16,000 kWh**
 ■ Annual CO₂ reduction **8 -CO₂**
 For **4** households

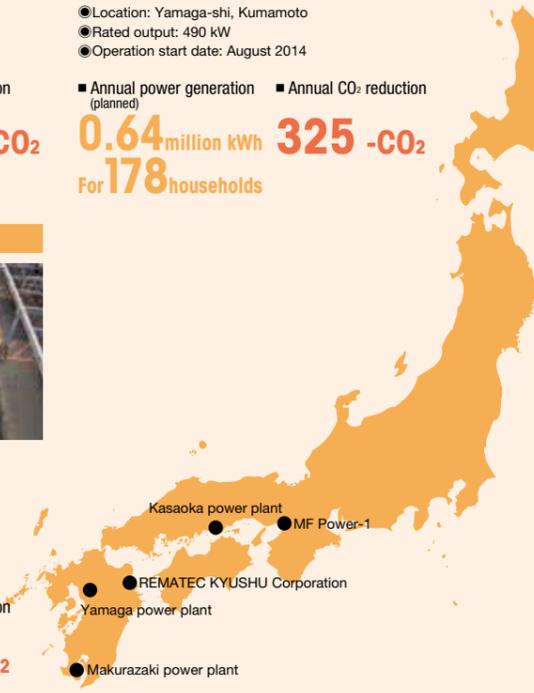
Biogas power generation



MF Power-1

- Location: Kishiwada-shi, Osaka
- Organic waste treatment capacity: 17.3 t/day
- Rated output: 250 kW
- Operation start date: March 2015

■ Annual power generation (planned) **1.77 million kWh**
 ■ Annual CO₂ reduction **977 -CO₂**
 For **493** households



■ Total annual power generation (planned)

7.21 million kWh For **2,003** households



■ Total annual CO₂ reduction

3,727 -CO₂



* CO₂ reduction by solar power generation was calculated based on the Japan Photovoltaic Energy Association's (JPEA) Labeling Guidelines (2015).
 * CO₂ reduction by biogas power generation was calculated using the CO₂ emission coefficient by operator of electric utility (alternative value) based on the Greenhouse Gas Emissions Accounting, Reporting, and Disclosure System.
 * To convert power generation into number of households, calculations were made on the assumption that the annual power consumption per general household is 3,600 kWh, based on the Graphical Flip-chart of Nuclear & Energy Related Topics in 2015 by The Federation of Electric Power Companies of Japan as a reference.
 * The power plants above have been accredited by the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities (Act No. 108 of 2011).



■ Reporting period: April 1, 2014 to March 31, 2015
 ■ Target organizations: REMATEC Corporation, REMATEC KYUSHU Corporation and RTT Corporation

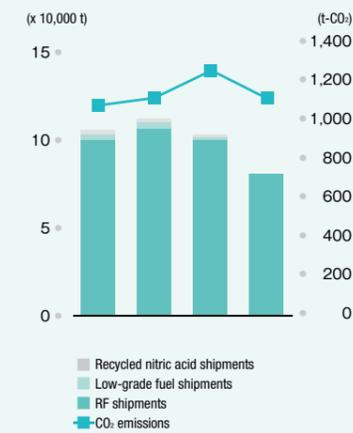
Environmental performance data from RF business



Resources		Total	REMATEC	REMATEC KYUSHU
Gasoline (kℓ)		16		
Light oil (kℓ)		18		
Heating oil (kℓ)		0		
Electricity (kWh)		1,847,400		
Industrial water (m)		17,468		

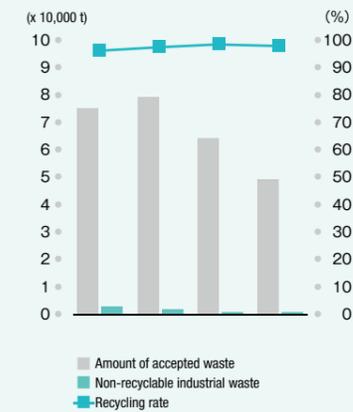
Materials for RF production		Total	REMATEC	REMATEC KYUSHU
① Industrial waste (t) 49,267				
Waste oil		28,964		
Sludge		11,333		
Waste acids		2,927		
Waste alkalis		4,938		
Soot and dust		259		
Waste plastics		767		
Animal and plant residues		67		
Cinders		12		
Scrap metal		0		
② Waste oil from ships (t) 0				
③ Raw materials (t) 32,560				
Recycled fuel		32,560		
C heavy oil		0		
Hydrated lime		0		
Heating oil		0		
Caustic soda		0		
Recycled hydrochloric acid		0		
Sulfuric acid		0		

Recycled materials and CO₂ emissions



Breakdown	Total	REMATEC	REMATEC KYUSHU
CO ₂ emissions (t-CO ₂)	1,128		
Recycled material shipments (t)	82,546		
RF shipments	82,546		
Low-grade fuel shipments	0		
Non-recyclable industrial waste (t)	727		
Recycling residues	682		
Empty containers	45		
Waste plastics	33		
Scrap Metal	0		
Wood waste	8		
Paper waste	0		
Debris	0		
Fiber waste	0		
Glass waste	4		
Valuable scrap metal (t)	1,318		

Amount of waste and recycling rate



Breakdown	Total	REMATEC	REMATEC KYUSHU
Recycling rate (%)	98.6		

Recycling rate **98.6%**

Recycling rate formula

$$\text{Recycling rate (\%)} = \frac{\text{Amount of accepted materials} - \text{Amount of residues}}{\text{Amount of accepted materials}} \times 100$$

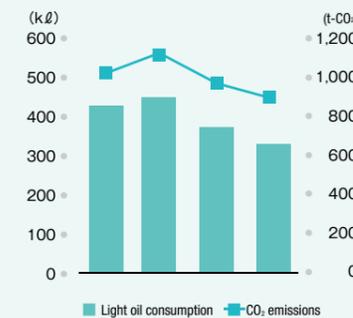
$$= \frac{\text{Amount of accepted waste} - \text{Amount of empty containers} - \text{Amount of recycling residues}}{\text{Amount of accepted waste} - \text{Amount of empty containers}} \times 100$$

Environmental performance data from collection and transportation

Light oil consumption (kℓ)		326.2
RTT	Osaka Branch	
	Kyushu Branch	
	Tohoku Branch	
Total		326.2

Gasoline consumption (kℓ)		3.4
RTT	Osaka Branch	
	Kyushu Branch	
	Tohoku Branch	
Total		3.4

Light oil consumption for collection and transportation and CO₂ emissions



CO ₂ emissions (t-CO ₂)		849.6
RTT	Osaka Branch	
	Kyushu Branch	
	Tohoku Branch	
Total		849.6



■ Reporting period: April 1, 2014 to March 31, 2015
 ■ Target organizations: REMATEC Corporation, REMATEC KYUSHU Corporation, and REMATEC R&D Corporation

FY2014 environmental management activities

	Goal/target	Social issues addressed	Specific activities	Results	Status	FY2015 challenges and targets
REMATEC Corporation	Promote volunteer activities		Participation in local volunteer activities	<ul style="list-style-type: none"> Port cleanup campaign Volunteer activity to get rid of invasive fish 	○	Encourage further participation
	Increase RF shipments		<ul style="list-style-type: none"> Acceptance of industrial waste Stable plant operation 	RF shipments: 70,497t	○	<ul style="list-style-type: none"> Achieve a stable supply of RF Ensure safe operations through effective equipment management
	Develop procedure manuals and a standard operating procedure		<ul style="list-style-type: none"> Review and revision of procedure manuals Training on procedure manuals 	<ul style="list-style-type: none"> Manufacture Section: 5 Operation Section: 8 Training sessions on procedures: 6 (A total of 122 participants) 	○	<ul style="list-style-type: none"> Review standard procedures in a strategic manner Confirm procedures and provide robust training on them
	Amount of industrial waste accepted		<ul style="list-style-type: none"> Research on existing customers and increase in amount of waste accepted Increase new customers 	<ul style="list-style-type: none"> Amount accepted: 41,655t Achievement: 98.7% 	○	<ul style="list-style-type: none"> Increase amounts of waste accepted from existing customers Attract new customers
	Reduce power consumption		Reduction in specific power consumption	<ul style="list-style-type: none"> Consumption: 21.79kWh/t Reduction: 35% 	○	<ul style="list-style-type: none"> Conserve energy by turning off lights Reduce power consumption by monitoring demand
REMATEC KYUSHU Corporation	Amount of industrial waste accepted: 10,050t		<ul style="list-style-type: none"> Increase in number of visits to existing customers 	Amount accepted: 7,612t Achievement: 75%	×	<ul style="list-style-type: none"> Amount of industrial waste accepted: 28,600 t Do all in our power to regain the trust of each waste generator
	For stable RF supply, No. of supply problems at business partners: 0		<ul style="list-style-type: none"> Planned equipment inspections Examination of pump wear Checking pH, etc. when supplying RF products 	No. of supply problems: 1 * RF stored in a tank inside the customer's plant leaked from the top of the tank (August 2014).	×	<ul style="list-style-type: none"> Conserve resources through stable RF supply Zero supply problems at our business partners Conducting planned equipment inspections Examination of pump wear Ensure monitoring of properties (checking pH, etc.) when supplying RF products When supplying other products, conduct reaction tests with product residue in the tank
	Prevent leaks at our business partners and REMATEC plant No. of leaks: 0		<ul style="list-style-type: none"> Review of the standard operating procedure and conducting training Regular inspections of storage tanks Increase patrols by managers 	No. of plant leaks: 0	○	<ul style="list-style-type: none"> Prevent leaks at our business partners and the REMATEC plant No. of leaks: 0 Enforce the ABC movement (A – "Atarimae no koto", B – "Bonyari sezuni" and C – "Chanto yaru": Do the obvious properly) Strictly observe the standard operating procedure, conditions, and workplace prohibitions Managers and supervisors patrol the site daily and provide strict guidance. Improve areas of concern for new equipment or operation
	Prevent the release of contaminated wastewater No. of water quality problems after wastewater treatment: 0		<ul style="list-style-type: none"> Regular pH checks and transparency monitoring Regular maintenance of rainwater treatment equipment 	No. of water quality problems after rainwater treatment: 0 * Standard: Transparency – 500 mm or higher pH – 5.8 or more to 8.6 or less	○	<ul style="list-style-type: none"> Prevent release of dirty rainwater No. of water quality problems after rainwater treatment: 0 Continue to conduct regular pH/transparency measurements and regular maintenance
	Prevent odors from affecting local communities No. of complaints about odor: 0		<ul style="list-style-type: none"> Closing shutters, etc. where odors are generated Conducting local patrols 	No. of complaints about odor: 1 * Odor of solvents from coating work (May 2014)	×	<ul style="list-style-type: none"> Prevent odors No. of complaints about odor: 0 Conduct regular maintenance of the new deodorizing equipment to maintain capacities Ensure doors, shutters are closed at the plant when they are not needed
Prevent noise No. of complaints about noise: 0		<ul style="list-style-type: none"> Conducting sound source research by measuring noise at night Make maximum efforts to not make noise at the site * Particularly during night-time work 	No. of complaints about noise: 0	○	<ul style="list-style-type: none"> Prevent noise No. of complaints about noise: 0 Continue to measure noise at night Brainstorm and devise ways to prevent noise from the site. * Particularly during night-time work 	
REMATEC R&D Corporation	Actively accept plant visitors		Posting on website after conducting tours (as needed)	Visitors accepted: 303	○	<ul style="list-style-type: none"> Actively accept plant visitors (continue) Increase demonstration of our technology internally and externally

Environmental challenges facing society	Prevention of climate change (global warming)	Reduction in the amount of waste	Prevention of soil and water contamination	Reduction in the environmental burden of transportation
Prevention of environmental pollution caused by chemical substances, etc.	Wider application of new energy sources	Preservation of ecosystems and biodiversity	Harmonious relationship with the local community	Increase awareness of environmental technology
Reduction in the environmental burden of products and services	Promotion of resource recycling	Energy conservation		

Environmental principles

REMATEC Group recognizes that the protection of environment is the most important task for the better future and the prosperity for all the human being. Therefore, we are committed to reducing of the environmental loads, energy/resources conservation to keep the environment and the recycling businesses balanced with contribution of the recycle and the construction of better and sustainable society.



Our Eco-First commitment

Working to conserve the global environment as an environmental leader

The REMATEC Group has been accredited by Japan's Minister of the Environment as an Eco-First company in light of our commitment to environmental conservation initiatives (which we renewed in June 2014). In addition to submitting reports to the Ministry of the Environment, we will monitor the progress of our initiatives and periodically announce their outcomes.



1 Initiatives for forging a recycling-oriented society

- Consistently recycle 97% or more of the industrial waste we accept from waste generators.
- Advance our research into the production of fuel by recycling as many kinds of industrial waste as possible to realize a recycling-oriented society.
- Carry out initiatives to forge a recycling-oriented society.

2 Initiatives for curbing global warming

Increase Reclaimed Fuel (RF) shipments to cement manufacturing plants and elsewhere by 5% compared to the current level by 2019. Leverage our proprietary technology to recycle a wide range of industrial waste from various plants, including waste that is usually incinerated or disposed of in landfills. Reduced use of coal and other fossil fuels at factories translates into reduced greenhouse gas emissions, which ultimately assists efforts to realize a low-carbon society.

* One ton of RF generates the same amount of thermal energy as 0.7 tons of standard coal and curbs CO₂ emissions by roughly 1.65 tons.

What is the Eco-First Program?

Under this program, a company publicly commits in the presence of Japan's Minister of the Environment to pursuing measures to address issues such as environmental conservation (e.g., to tackle global warming, waste handling, and waste recycling). The Minister of the Environment accredits the company as an environmental leader that is carrying out advanced, pioneering business activities to address environmental challenges.

3 Initiatives for making effective use of waste that contaminates soil and water and reducing the environmental burden

Focus on developing technologies to recover energy from biomass contained in waste.

4 Initiatives for raising environmental awareness both inside and outside our group

- Develop human resources that can address society's environmental challenges by organizing our own environmental awareness initiatives, including REMATEC Future Academy.
- Plan and organize guided tours of our plants to increase the public's understanding of waste recycling.

Achievements as an Eco-First company in FY2014

Commitment	Item	Target	Achievements in FY2014
Assist in the pursuit of a recycling-oriented society	Recycling rate of industrial waste	Maintain at 97%	REMATEC Osaka Plant 98.7% REMATEC KYUSHU Kyushu Plant 98.4% Group total 98.6%
	Research into the production of fuel by recycling as many kinds of industrial waste as possible	—	Conducted R&D regarding waste recycling
Tackle global warming	Reclaimed Fuel (RF) shipments	Increase 5% compared to the current level by 2019	REMATEC Osaka Plant 70,497 t REMATEC KYUSHU Kyushu Plant 12,049 t Group total 82,546t
Effective use of waste	Develop technologies to recover energy from biomass	—	Built biogas power generation facility using food waste, etc. (see pp. 08 – 09, p. 12)
Environmental awareness initiatives	Organize our own environmental awareness initiatives	—	Organized our own environmental awareness initiatives, including the "Third Future Academy" (ended in March 2014)
	Plan and organize guided tours of our plants on a regular basis	—	Factories/plants of each company supported domestic and overseas visitors. Sponsored the "Eco-meguri with Motto and Kitto" hosted by Osaka Prefecture and accepted visitors.

ISO 14004 certification status

Scope of certification	Date of certification	Certification No.	Scope of certification	Date of certification	Certification No.
REMATEC Corporation Headquarters Osaka Plant/ Sakai SC Plant	March 26, 1999	JMAQA-EO36	REMATEC KYUSHU Corporation (excluding Sales Section II)	July 18, 2000	JMAQA-E115
RTT Corporation Headquarters/Osaka Branch			RTT Corporation Kyushu Branch		



Data

Occupational Safety and Health Management System

- Reporting period: April 1, 2014 to March 31, 2015
- Target organizations: REMATEC Corporation, REMATEC KYUSHU Corporation, REMATEC TOHOKU Corporation, REMATEC R&D Corporation, and RTT Corporation

* REMATEC TOHOKU Corporation's activities in FY2014 were performed as REMATEC Corporation's Tohoku Branch

FY2014 safety and health activities

Item	Goal/target	Specific activities	Results	Status	FY2015 challenges and targets	
REMATEC Corporation	Safety	Accidents resulting in worker absence: 0 Industrial accidents due to repetitive tasks: 0 Accidents not resulting in worker absence: 0	Review of procedure manual and thorough training on rules Patrols by managers	Accidents resulting in worker absence: 0 Similar accidents: 0	○	Achieve zero accidents Consolidate procedure manuals and on-site training
	Health	Health target achievement level: 85%	Specification of individual health targets Activities to promote mental health	Health target achievement level: 100% Health consultations: 13	○	Have industrial doctors or other counselors provide guidance to individuals with medical conditions Encourage private visits for diagnosis and health checks
	Disaster prevention	Emergency response drills: 100% completion	Drills for earthquakes and tsunami	Emergency drills	○	Conduct emergency drills (for earthquakes and tsunami)
	Transportation	Property damage/minor accidents: 0 Injuries/deaths: 0	Traffic hazard prediction drills Safety measures for operating forklifts	Accidents with property damage (on-site): 0 Injuries/deaths: 0 Traffic violations: 0	○	Prevent accidents by encouraging workers to pay attention to one another Effectively apply traffic hazard prediction to prevent accidents
REMATEC KYUSHU Corporation	Safety	Refer to the measures below. [Content] Accident involving contact with worker during forklift operation (February 2015) [Cause] Work methods/rules were not followed.	Accidents resulting in worker absence: 1 Accidents not resulting in worker absence: 0	×	Enforce the ABC movement (A - "Atarimae no koto", B - "Bonyari sezuni" and C - "Chanto yaru": Do the obvious properly) Strictly observe the standard operating procedure, conditions and workplace prohibitions Managers and supervisors patrol the site daily and provide strict guidance. Improve areas of concern for new equipment or operation	
			Risk assessments: 380	○	Conduct risk assessments and establish a standard operating procedure prior to conducting robust training	
	Safety	Accidents: 0	Visit the site to conduct risk assessments	Number of findings: 96 Corrective actions: 66 (correction rate: 86.8%)	○	Achieve a correction rate of 100% for problems identified during patrols Thorough follow-up of findings
			Patrols by the President and senior managers	4S inadequacies identified in patrols by the President decreased compared to FY2013, but remain frequent. FY2013 → 77/144 FY2014 → 32/96 (4S findings/Total findings)	△	Ensure 4S is conducted (ideas to maintaining cleanliness and cleaning after operating hours) Define the My Area for cleaning and perform the activity Implement the one job, one cleanup policy as well as after-hours 4S activities Make it a habit to keep areas clean, and clean immediately when dirty 10-minute cleanup prior to beginning of work day
Health	Health target achievement level: 85%	4S activities to maintain the new equipment arrangement My Area activities at each site to define the area where 4S is performed	Invited a lecturer from the Japan Industrial Safety and Health Association for training regarding chemical reactions, etc. Conducted tests after chemistry training to check level of learning	○	Conduct plant office training in association with revision of the law (stress check, control banding, etc.) Establish a plant office training system that is in line with the on-site system Conduct in-house training for managers and supervisors	
		Organize training to improve the level of knowledge of chemistry company-wide	Specification of individual health targets Wear protective equipment properly Provide health management guidance to workers who handle late-night operations in line with the new round-the-clock operating system	Health target achievement level: 95% Ratio of individuals with medical conditions decreased from 37.2% to 35.6%	○	Achieve a health target achievement level of 85% or more Check the health status of the section members during morning meetings, and allocate appropriately Utilize the results from the health check to specify and implement individual health targets
Disaster prevention	Implementation of disaster drills	Confirm that foam fire extinguishers function properly, and organize training on the operation procedure Conduct practical drills by clarifying the organizations involved and their roles Provide comprehensive training for responding to a major fire Confirm that employees understand and can carry out the steps required to respond to an abnormal event Improvement of and thorough training using the crisis management manual	Leak drill and comprehensive fire drill were conducted in December Invited a lecturer from Usuki Fire Bureau for an AED workshop (attendees: 16) Organized training on the new emergency response manual Checked handling and operation of tank cooling system Conducted water-discharge exercise, extinguisher exercise, etc.	○	Conduct training on the foam fire extinguisher Comprehensive training taking into account emergency communication with the fire department and local communities Check handling and operation of tank cooling system Conduct water-discharge exercise, extinguisher exercise, etc.	
Transportation	Traffic accidents/violations: 0 or less	Commute to work in plenty of time and drive calmly Ensure that workers check their vehicles before getting in and to always follow other basic rules	Accidents with property damage: 2 Violations: 1 Property damage caused by crashing into a guardrail on a public road. (March 2015) Property damage caused by contact with a parked vehicle. (January 2015) Speeding on a public road. (Three evils of traffic) (April 2014)	×	Plan extra time when driving and strictly follow the speed limit Keep a safe distance from the car ahead when driving (especially in rain) When starting the car, check around the vehicle Prevent the three evils of traffic (Driving under the influence, speeding, driving without a license)	

Safety and health principles

REMATEC Group recognizes the responsibilities and tasks required to contribute to society and to secure precise safety/health standards for all employees through the recycling business; therefore, under the basic principles of human rights, we pursue safety and health activities that establish "Safety first" and a "Pleasant work environment."

Item	Goal/target	Specific activities	Results	Status	FY2015 challenges and targets	
REMATEC TOHOKU Corporation	Safety	Accidents resulting in worker absence: 0	Development a procedure manual and thorough training Organize accident case training, equipment/machinery safety training Patrols by managers Develop improvement initiatives by encouraging ideas Conduct My Area, My Machine activities, regular implementation of 5S activities	Accidents resulting in worker absence: 0	○	Development and review of a procedure manual and thorough training Organize accident case training, equipment/machinery safety training Patrols by managers Develop improvement initiatives by encouraging ideas Conduct My Area, My Machine activities, regular implementation of 5S activities
	Health	Specification of individual health target: One per person Regular health check performed: 100%	Specify individual health targets and manage own health Prevent dust by cleaning inside the plant with sanitation vehicles and sprinkler vehicles Implement heat stroke prevention measures Receive regular health checks	34 people in the first half and 28 people in the second half all specified health targets and are working on them. Regular health check performed: 100%	○	Specify individual health targets and manage own health Organize daily workplace cleanup activity Implement heat stroke prevention measures, prevention measures for influenza and other epidemic disease Receive regular health checks
	Disaster prevention	Emergency response drills for earthquakes	Conduct earthquake/tsunami emergency drills Implement proper storage and temperature control in waste storage areas Regular operation and ensuring employees' understanding of the handling of portable fire pumps	March 11 Conducted earthquake/tsunami emergency drills	○	Conduct drills (fire/earthquake) Implement proper storage and temperature control in waste storage areas Regular operation and ensuring employees' understanding of the handling of portable fire pumps
	Transportation	Traffic accidents/violations: 0 Accidents with property damage due to heavy machinery/vehicles: 0	Conduct safety training for vehicle-type construction machines Improve operation skills for heavy machinery, vehicles, etc. through appointment of employee Conduct daily alcohol checks Never (let others) engage in "It'll be fine" driving	Accidents with property damage due to vehicles: 2 Accidents with property damage due to heavy machinery: 11 When scooping up processed products in the storage area with a wheel loader, processed products fell down from the top, hitting and deforming the fender. Processed products were piled high and should have been scraped down with a backhoe. When transporting the wood chips ejected from the crusher, a mirror on the heavy machinery came in contact with the conveyor and was damaged. In addition to coming too close to the conveyor, the visual check specified in the rules was neglected.	×	Conduct safety training for vehicle-type construction machines Improve operation skills for heavy machinery, vehicles, etc. through appointment of employee Conduct daily alcohol checks Ensure restricted-area measures are implemented in the workplace Measures against heavy machinery accidents with property damage are a priority area for implementation.
REMATEC R&D Corporation	Safety	Accidents: 0 Accidents not resulting in worker absence: 3 or less	Understanding of basic regulations and the standard operating procedure Reliable management of equipment, personnel, and items Regular implementation of 4S activities	Accidents resulting in worker absence: 0 Accidents not resulting in worker absence: 0 However, there was one accident with property damage caused by a forklift.	○	Establish a safe construction cycle Establish control banding Establish risk assessments
	Health	Health target achievement level: 85% or more	Specification and implementation of individual health targets Health guidance provided by industrial doctors	Overall achievement level: 92%	○	Manage health through individual health targets (continue) Provide mental healthcare
	Disaster prevention	Preparedness for earthquakes/other disasters	Early firefighting drills Training on earthquakes and tsunami Emergency drills	Confirmed evacuation route and evacuation destination through drills Checked expiration of emergency non-perishable foods (replaced)	○	Response to emergency situations - Training for responding to fires - Training for responding to accidents - Training for responding to the Nankai Trough earthquake
	Transportation	Traffic accidents/violations: 0	Traffic hazard prediction drills Rollout of findings on transport safety	Traffic accidents/violations: 0	○	Grasp individual qualities based on safe driving aptitude tests
Announcement						
RTT Corporation	Safety	Prevention of environmental pollution No. of leaks: 0	Develop procedure manuals and a standard operating procedure (keep updated)	No. of leaks at the customer's site: 2 When hanging a hose from the hatch at the top of the tank for transfer operation, a sudden flow of air occurred inside the hose, causing the hose which was secured at the top of the tank to flail around wildly, resulting in leaks at the customer's site. Residual liquid inside the piping flowed backwards from the unloading tank piping outlet and leaked at the customer's site.	×	Create standards for basic operation Conduct training and establish basic operation
	Transportation	No. of traffic accidents/violations: 0	Collect near misses Traffic hazard prediction drills Obtain the G-Mark	No. of traffic accidents/violations: 0	○	Achieve 0 traffic accidents for commercial vehicles

JISHA method-eligible OSHMS certification* status

Certified business location	Date of certification	Certification No.	Certified business location	Date of certification	Certification No.
REMATEC Corporation Osaka Plant	October 19, 2009	KHK09-27-17	REMATEC KYUSHU Corporation	October 19, 2009	KHK09-44-3

*Business locations are certified by the Japan Industrial Safety and Health Association (JISHA) for their implementation status of the Occupational Safety and Health Management System (OSHMS)



Konoe Fujimura
Co-President
Japan Association of Environment and
Society for the 21st Century

The CSR Report 2015 is the third CSR Report since I started to write an external adviser feedback for the publication. This year's report is different in structure and content from the previous ones, and I read it with much interest.

The statement "Our jobs epitomize the REMATEC Group's CSR commitment" at the beginning of the report has a strong impact, and a look at the history of the company indicates that the REMATEC Group's business activities since its establishment were indeed a history of attempts to solve social challenges in the environmental field. And as shown in this year's topics, the experiences gained throughout this history all led to the "quick on-site responses" demonstrated in the project to recover from the disaster in Hiroshima, the "technical expertise" found in MF Power 1, and the "planning capabilities" displayed in the Thai project. They also suggest that "Innovation for the Earth" is not a mere slogan but one that prompts the Group to make visible progress.

The president's message sincerely states that as the social awareness and quick on-site responses it has considered important weakened while it made progress in other aspects, the Group launched new initiatives with "back to basics" as their key phrase while recognizing anew the three strengths it has long valued. I myself also consider "going back to basics when I do not know what to do" important and believe that that is the foundation of consistent management. If, along with such a sincere attitude, the Group steadfastly maintains the clear vision based on social trends and needs, "aiming at becoming a company that supports society's resource recycling infrastructure," we can place great expectations on the progress it will make in the future.

Overall, the report clearly describes the business of each subsidiary and what the Group pays particular attention to after its split-up, and staff members' messages also convey the attitudes they have as they perform their daily jobs, and this made

a favorable impression on me.

As far as the data section is concerned, on the other hand, environmental burden data on not only RF production, but also the Group as a whole, including the administrative unit such as the offices of each company are desired. In particular, in order to cope with climate change as it becomes increasingly serious, substantial reductions in CO₂ emissions are required in the future, and in the REMATEC Group as well, it will be indispensable to take more proactive actions, including facility and equipment changes, but the basic principle is energy conservation. To that end, it is necessary to accurately grasp the present situation and take necessary measures by clarifying what units in the Group emit CO₂ and how much, not to mention production units. Since one year has passed since the division of the Group, I sincerely hope that next year's report will include such detailed data.

Meanwhile, there are several disasters, traffic accidents and violations, leaks, and other irregularities in the area of industrial safety. No matter how excellent its business activities and social contributions are, a company will lose the social trust it has made efforts to gain if its safety principles are shaken. I simply hope that no employees ever forget the lessons they learned from the accident at the Kyushu Plant.

The style of the report has changed considerably due to the expansion of business and the split-up of the Group. While it has become more sophisticated in some aspects, its appeal is somewhat waning in others because it seems to be lacking the feeling of being compiled by the employees themselves. I hope that the Group will try to retain what works even as it takes on new challenges in the compilation of CSR Reports too.

I also hope that the REMATEC Group will remember that the two requirements for a sustainable company are handing its tradition down and taking on new challenges to move forward.



Daisuke Ito
Head of the Management Planning Department
REMATEC Holdings Corporation

Thank you for the comments that imply a lot for the company whose medium- to long-term management vision is to aim at becoming a company that supports society's resource recycling infrastructure.

We are very proud that Ms. Fujimura recognized the REMATEC Group's past attempts at environmental challenges and their relationships with the three initiatives taken up as a feature article in this year's report as "visible progress." None of these attempts would have been possible without the technical expertise and planning capabilities that were brought together by the Group, not to mention the quick on-site responses of the employees involved, and we are proud that those attempts were an indication of the corporate culture we should hand down to future generations, namely, continuing to take on new challenges flexibly.

On the other hand, Ms. Fujimura's comments on industrial safety reference some of the most regrettable events in our history. We included a post-accident photo of the plant in last year's report to show our determination not to allow a similar accident to occur again, but we were unable to eliminate accidents entirely this year. We will revisit our original intention, make sure that all personnel are fully aware that "Safety is more important than anything else," and step up our efforts to ensure safety.

In future reports, we will use her valuable comments on the style of the report, the content of data disclosed, and the scope of the data laid out. We aim at compiling a CSR Report that is easy for all stakeholders to read and understand and will continue to try creating shared value with local communities and realizing a sustainable society.

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