



2013

Environmental & Social Report



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About JGC

Name: JGC Corporation

Employees (approx.): 12,000 persons (as of March 2013)

JGC: 2,200 persons
 Domestic EPC Affiliates: 3,200 persons
 Overseas EPC Affiliates: 4,600 persons
 Catalyst, Fine Chemicals and Other Businesses 2,000 persons

Locations:

Yokohama World Operations Center
 2-3-1 Minato Mirai, Nishi-ku, Yokohama-shi, Kanagawa

Tokyo Corporate Office
 2-2-1 Otemachi, Chiyoda-ku, Tokyo

MM Park Building Office 3-6-3
 Minato Mirai, Nishi-ku, Yokohama-shi, Kanagawa

Kamiooka Office
 1-13-1 Saido, Konan-ku, Yokohama-shi, Kanagawa

Research and Development Center
 2205 Narita-cho, Oaraimachi, Higashi-ibaraki-gun, Ibaraki

Domestic Office
 Osaka

Overseas Offices
 Beijing, Jakarta, Hanoi, Perth, Almaty, Abu Dhabi, Paris and others

Overseas Affiliates
 Philippines, Vietnam, Saudi Arabia, Italy, U.S. and others

The JGC Group

As an engineering contractor, the JGC Group's core business is providing planning, design engineering, equipment procurement, construction (EPC), and commissioning services for various industrial plants and facilities. The JGC Group is also involved in enterprise investment businesses, management services, the manufacture and sale of catalysts and fine chemicals, and others.

The scope of this report mainly includes the JGC Group companies listed at right.

* JGC Plant Solutions Co., Ltd. and JGC PLANTECH Co., Ltd. merged with the name of the new company changed to JGC Plant Innovation Co., Ltd. effective July 1, 2013.

Total Engineering Business (EPC Business)

JGC
 JGC Plant Innovation Co., Ltd.*
 JGC Philippines
 JGC Gulf International and others

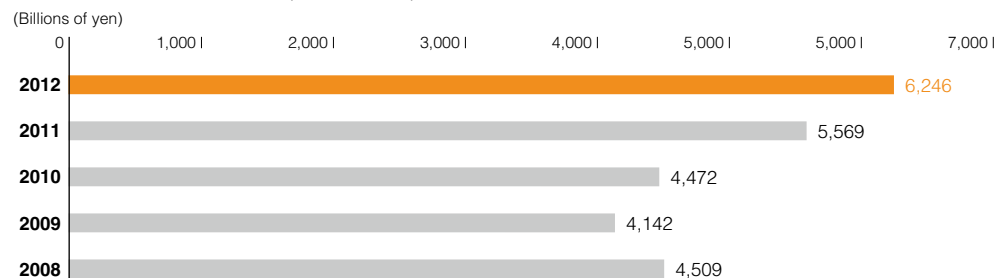
Catalyst and Fine Chemicals Business

JGC Catalysts & Chemicals
 Nikki-Universal
 Japan Fine Ceramic

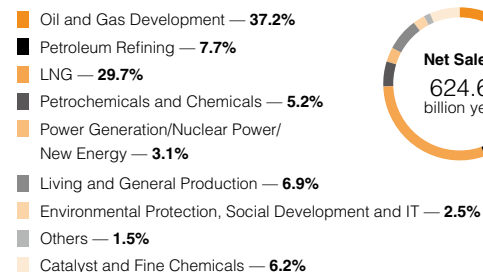
Other Businesses (IT and Consulting Businesses)

JGC Information Systems
 Japan NUS
 JGC Energy Development and others

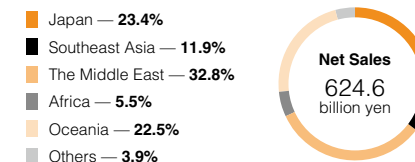
Consolidated Net Sales (2007~2012)



Net Sales by Industry (2012)



Net Sales by Region (2012)





Editorial Policy

The purpose of this report is to present to our stakeholders the CSR efforts of the JGC Group, with a focus on environmental conservation.

This year's feature article covers our "Initiatives Aimed at Realizing a Sustainable Society." In this context, we report on our efforts in the renewable energy business and energy management system field.

In addition, we provide details of the Group's endeavors as they relate to three pillars of our business: "HSE—Becoming the Leading Global Health, Safety, and the Environment Contractor;" "the Environment—the JGC Group's Environmental Technologies and Environmental Conservation Activities;" and "Social—Activities as a Corporate Citizen."

Reporting Period

This report is compiled principally on the basis of data for fiscal 2012 (from April 1, 2012 to March 31, 2013). Important matters (those regarded as highly significant) concerning activities outside the reporting period (up to July, 2012) are also included within the scope of this report.

Guidelines Used as a Reference in Connection with the Disclosure of Non-Financial Information

- ISO 26000, an international guidance standard for social responsibility issued by the International Organization for Standardization
- The Sustainability Reporting Guidelines Version 3.0 (G3), an international guideline concerning corporate sustainability reporting issued by the Global Reporting Initiative (GRI)
- The Environmental Reporting Guidelines 2007 issued by Japan's Ministry of the Environment

Scope of Reporting

In principle, this report covers consolidated subsidiaries and affiliates accounted for by the equity method. However, details of activities that fall outside the aforementioned scope of reporting are clearly identified in each case.

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Introduction —Relationships Between the JGC Group's Businesses, Society, and the Environment

Message from the Chairman

Through Engineering, JGC Contributes to Environmental Conservation, Industrial Development and the Prosperity of Society.

Before addressing our stakeholders, I would like to take a moment to reflect on the tragic incident of earlier this year. In January 2013, armed insurgents attacked JGC's plant construction site in Algeria, a terrorist act that ended with fatalities among the many people that worked there. We have received countless messages of condolence from people across the nation and from overseas, as well as offerings of flowers and cards of sympathy from the more than 10,000 people who came to pay their respects at a special memorial at our head office. In March, we held a memorial service to honor the dearly departed, with government officials and representatives from our business partners in attendance. I would like to express our deepest and most heartfelt gratitude to everyone for their sympathy and support.

Looking ahead, the JGC Group will make every effort to strengthen security measures with the cooperation of governments, relevant government agencies and our clients. All of the directors and employees of the JGC Group will honor the memories of the deceased by forging onward with pride in our engineering business.

Engineering that Fulfills a Diverse Range of Needs

Established in 1928 as the first engineering contractor in Japan, JGC has contributed to the industrialization of Japan and other countries, as well as to social infrastructure, leveraging its engineering expertise in the design and construction of energy production plants and industrial facilities the world over. The core philosophy of the JGC Group is to "contribute to the prosperity of the economy and society while protecting the global environment, and aim for sustainable development as a globally active company with its core business of engineering-based services."

Engineering is an industry that has played a vital role in the creation of social infrastructure on par with agriculture, manufacturing and commerce since the times of the British Empire.

It is through engineering that the JGC Group has contributed to the resolution of environmental issues, in addition to supporting the development of the energy industry and providing systems that underpin society. For example, engineering is an essential process in the construction of facilities for the production of liquefied natural gas (LNG), a form of clean energy, as well as other



Introduction —Relationships Between the JGC Group's Businesses, Society, and the Environment

facilities for renewable energy such as photovoltaic and solar thermal power plants, and systems for water and soil purification, air pollution prevention, and energy conservation. In order to transfer engineering skills to younger generations in emerging countries, we have set up local subsidiaries employing many young people eager to learn engineering technologies. In this way, JGC contributes to the creation of employment opportunities and to the diversification of industry in emerging countries.

Moreover, in emerging countries with fast-growing economies, needs have rapidly emerged for the creation of sustainable cities that minimize environment impacts through the deployment of renewable energy sources and highly efficient energy infrastructure. With engineering technologies and project management capabilities strongly needed in these fields, the JGC Group has taken a variety of measures to address such needs.

JGC's Accomplishments in Environment-Related Fields in Fiscal 2012

Under the five-year medium-term management plan, "New Horizon 2015," which began in fiscal 2011, the JGC Group is pushing the boundaries of its plant engineering, procurement and construction (EPC) business into new territory and over new horizons, transforming itself into a "Program Management Contractor & Investment Partner," a new business paradigm engaged in Enterprise Investment and Planning & Management services, while maintaining

as its core the plant EPC business that has been our mainstay throughout most of our history.

In fiscal 2012, the second year of "New Horizon 2015," JGC received orders in the EPC business for several noteworthy projects in various fields that called for expansion of the production of environmentally-friendly energy and contributions to realization of a low-carbon society. Among these orders was one received from Malaysia's state-owned oil company PETRONAS for an LNG plant expansion project, which emits less CO₂ than other types of fossil fuels; one received from Japan CCS Co., Ltd. for the construction of a Carbon Dioxide Capture and Storage (CCS) demonstration plant in Japan; and one received from Futtsu Solar, Inc., for the construction of a large-scale solar photovoltaic ("mega solar") power plant.

In the enterprise investment business, JGC completed its own mega solar power plant in Oita Prefecture on April 30, 2013, and began retail sales of electricity on May 1. (Please refer to our special feature for further details). This project is the company's first domestic solar power generation business venture, and with a capacity of 26,500kW the mega solar power plant is one of the largest in Japan in terms of electricity volume. In addition, JGC's own concentrating solar power plants (output capacity: 100,000kW) in Cordoba, Spain, launched commercial operations in March 2011. Leveraging the experience and insight it gained in these projects, JGC aims to further develop the renewable energy business in Japan and around the world.

In the core EPC business area, clients now expect engineering contractors such as JGC to take a comprehensive and fully committed approach to health, safety and the environment (HSE), while improving performance quality and scope along these parameters. JGC accordingly aims to be the worldwide No. 1 engineering contractor in the field of HSE. Based on our own basic policy for occupational health and safety, management is making concerted efforts to foster a culture of safety within the JGC Group.

Toward the Realization of a Sustainable Society

Today, Japan and the rest of the world are confronted with numerous issues related to energy and the environment. The JGC Group is committed to solving as many of these issues as possible, maximally drawing on its accumulated engineering expertise and project management capabilities in a broad range of fields. We will further advance our ongoing efforts to help realize a sustainable society.

Chairman and Representative Director
JGC Corporation

Keisuke Takeuchi

JGC Group's CSR Policy

JGC Group's CSR Policy and Guidelines have been created based on the concept of “contributing to the prosperity of the economy and society while protecting the global environment.” Our related activities are divided into six fields and implemented cross-functionally.

JGC Corporate Social Responsibility (CSR) Policy

JGC is committed to fulfilling its role as a member of society (Corporate Citizenship). We recognize that the foundation of our business activities is strengthened by contributing to the prosperity of the world economy and society; to the healthy preservation of the global environment; and to the sustainable development of society and the global environment.

To meet this commitment, JGC hereby establishes the following principles, which shall be applied, throughout its operations.

We shall conduct our business with a full understanding of the importance of quality, safety, and the environment.

1.

We shall provide our social contributions by drawing on the strengths of the JGC Group.

2.

We shall comply with legal requirements inside and outside the country, and conduct our business in a fair and sincere manner following a proper governance system.

3.

We shall disclose necessary information to our stakeholders in a timely and appropriate manner.

4.

We shall endeavor to maintain and further improve fair human resource management to develop the ability and vitality of our employees based on mutual trust and responsibility.

5.

We shall promote awareness of CSR and further develop our CSR activities reflecting the voices of stakeholders. JGC CORPORATION Environmental & Social Report 2012

6.

JGC Group's CSR Policy

CSR Guidelines

The JGC Group's CSR Guideline is "to contribute to the prosperity of the economy and society while protecting the global environment." Through our business and CSR activities, using these CSR Guidelines, the JGC Group aims to contribute to sustainable development of society as a whole. "Sustainable development" includes ensuring the longevity of our business prospects by helping to ensure the longevity of the larger society that supports them, by aiming for development that enables continuous growth.

The JGC Group holds a strong awareness of its role as a member of society, and aims to fulfill this role based on the six points listed below.

"Quality, Safety, and the Environment" are the fundamental watchwords which will guide the JGC Group's continued efforts to work toward the sustainable development of society. As we devote our maximum efforts to these concepts, we shall maintain awareness that providing safe, high quality, and environmentally friendly products and services contributes to ensuring our clients' satisfaction.

1.

The JGC Group's diverse global business activities range from comprehensive engineering services to catalysts and fine chemicals, and we aim to put the unique technologies and experiences we have gained through our involvement in such business fields to full use in our social contribution activities. Details of JGC's policy regarding our social contributions are described in the "JGC Social Contributions Policy." The four target areas for our social contributions are Environment, Education, Science and Technology, and Community.

2.

The JGC Group is profoundly conscious that the maintenance of compliance and an efficient internal governance system are essential for the sustained well-being of any organization. Hence, we shall continue to maintain these elements as we respond to the requirements from society and the trends of the times. All management and employees shall follow legal and social rules based on high ethical standards.

3.

The JGC Group is a listed company, and we take it as our duty to disclose information to the market in a timely and appropriate manner. We shall proactively provide important information in terms of the business environment and social situation, information that may have an impact on stakeholders, helpful information to deepen the understanding of the JGC Group as well as fulfilling our duty of information disclosure required by laws and regulations such as the Companies Act and the Financial Instruments and Exchange Law.

4.

The JGC Group's CSR Policy describes "fair human resource management to develop the ability and vitality of our employees." We shall be fully guided by the principle that the growth and development of the company occurs reciprocally with the growth and development of its employees. Based on this sense of mutual trust and responsibility, each employee shall contribute to the company as a professional, and the company shall provide opportunities for the empowerment of employees and for them to show their ability and vitality.

5.

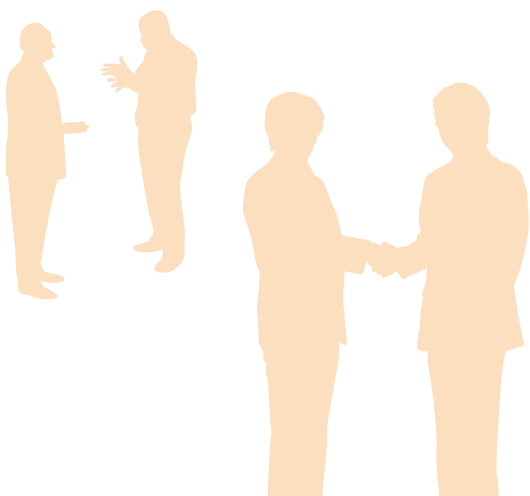
The JGC Group shall promote CSR awareness throughout its organization, from management to employees. We shall carefully listen to the voices of stakeholders and continue making optimal efforts to respond to social needs and trends in the business environment.

6.

Relationships with Major Stakeholders

The JGC Group engages in business while cooperating with a variety of stakeholders. Here, we introduce the major stakeholders of the JGC Group, and describe our relationship with them.

Major Stakeholder	Core Relationship
Suppliers and Business Partners	<p>JGC strives for open and fair transactions with its business partners, which include vendors that supply materials and equipment, as well as subcontractors involved in plant construction work.</p> <p>All companies that desire to work with the JGC Group are given an equal opportunity to join as business partners. Daily procurement activities are done on an in-house custom web-based system called the JGC e-Procurement Solution System (J-PLUS), which reduces the amount of paper used in transactions and provides quick and efficient communications.</p> <p>Information regarding procurement is also available on JGC's website.</p>
Customers	<p>The purpose of our business is to contribute to the development of our clients' businesses.</p> <p>Sales managers are the main point of contact for communicating with our clients.</p> <p>In countries and regions where JGC operates, we communicate with our clients with due respect for the cultures and traditions of the country involved, while aiming to contribute to business development.</p> <p>JGC contributes to continuing development in the countries in which it does business, establishing local companies and hiring and training local people.</p>
Shareholders and Investors	<p>In addition to disclosing information to shareholders and investors in accordance with statutory disclosure systems based on the Financial Instruments and Exchange Act, JGC discloses without delay important corporate information via its Public Relations & Investor Relations Department in accordance with rules for timely disclosure systems at financial instruments exchanges.</p> <p>JGC also provides opportunities for face-to-face discussion at shareholder meetings, results briefings and investor relations meetings.</p>
Local Communities / NGO and NPO	<p>As a corporate citizen, JGC aims to exist in harmony with local communities while being well aware of its social responsibilities.</p> <p>In business development, we value input from local communities where we plan to construct plants and invest in operations, and reflect this feedback in our projects.</p> <p>Our employees also engage in activities that give back to the community.</p>
Employees	<p>JGC provides employees with opportunities to enhance their skills to world-class levels as professionals in the engineering business.</p> <p>In our personnel evaluation system, we also create opportunities for dialogue between managers and their employees to clarify the expectations of both parties. The JGC Council, which represents employees, also periodically holds meetings with management.</p>



Corporate Governance

The basic policy of JGC's corporate governance is to continuously increase corporate value through efforts to enhance management efficiency and transparency.

Maintaining the trust of society and all our stakeholders, JGC will develop our business in line with societal needs, expectations, and norms.

Corporate Governance Framework Outline

JGC has adopted an Audit & Supervisory Board Member system. At the same time, we introduced an executive officer system, which clarifies the division of management decision-making and oversight functions from executive functions. This has further enhanced management efficiency and strengthened JGC's executive accountability system. In order to bolster the audit function of the Board of Directors and to further enhance management transparency, one outside director was appointed at the ordinary general meeting of shareholders held on June 27, 2013. Details of the current framework are presented as follows.

<Board of Directors>

- Headed by the Chairman of the Board of Directors, the Board of Directors consists of 15 directors (including one outside director) and four corporate auditors (two of whom are outside corporate auditors) and meets in principle twice a month.

<Board of Auditors>

- The Board of Auditors consists of four corporate auditors, of whom two are outside corporate auditors. It meets in principle once a month.

<Director and Executive Officer Committee>

- The Director and Executive Officer Committee meets once a month in principle for the purposes of sharing information regarding the status of management policies, and reporting/confirming the status of operations.

- Headed by the Chairman of the Board of Directors, it consists of directors, executive officers and corporate auditors.

<Management Strategy Committee>

- The Management Strategy Committee meets in principle once a week for the purposes of deliberating on important matters for the management strategy of JGC and the JGC Group.
- The Chairman Emeritus of the JGC Group heads this committee, which consists of directors, corporate auditors, and other members.

<Operations Steering Committee>

- The Operations Steering Committee meets in principle twice a month for the purpose of deliberating on matters related to the execution of business operations of JGC and the JGC Group.

- It is headed by the President and consists of corporate auditors and other members designated by the President.

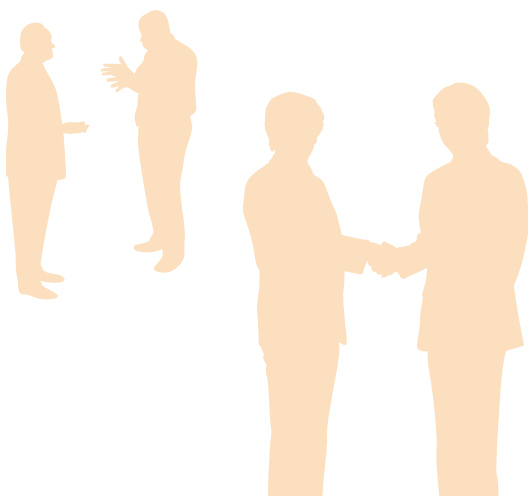
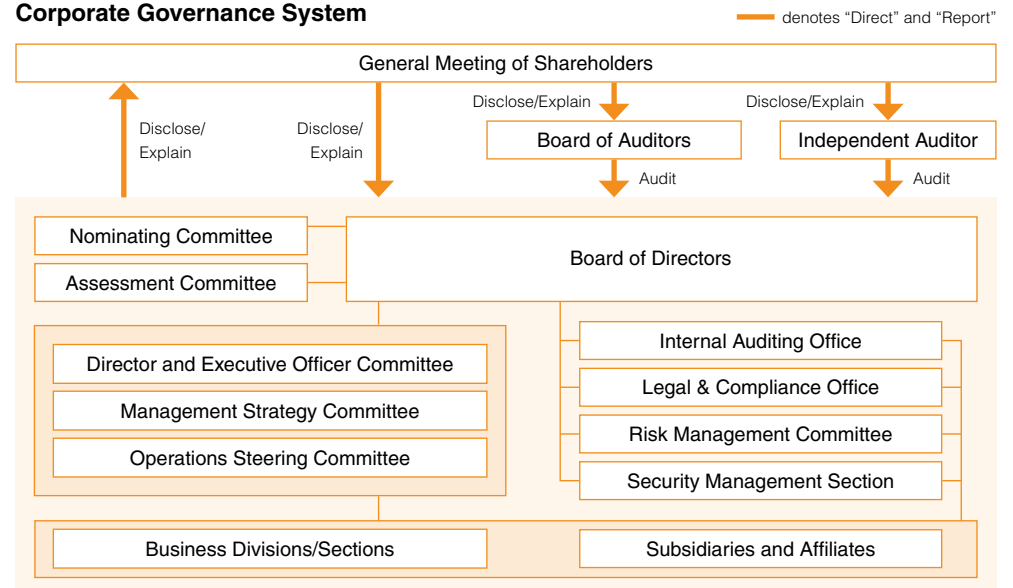
<Nominating Committee and Assessment Committee>

- These committees meet in principle once a year for the purpose of strengthening fairness and transparency regarding the appointment and compensation of executive personnel.

<Independent Auditor>

- The certified public accountants (CPAs) who have audited JGC's accounts are Kazutoshi Isogai, Yoshihisa Uchida, and Yoshinori Saito of KPMG AZSA LLC. Eight other CPAs and nine other individuals assist with these audits.

Corporate Governance System



Corporate Governance

Internal Control System -----

The basic policy concerning JGC's internal control system was determined at the Board of Directors' meeting held on March 27, 2006. In the ensuing period, this policy has been updated and revised as appropriate.

For its internal control, JGC has established an Internal Auditing Office that verifies, evaluates, and enhances the efficiency of the internal control systems of JGC and the JGC Group. The Internal Auditing Office also conducts individual audits when appropriate. In addition, JGC's management and executive accountability system has been clarified, with Job Authority Regulations set forth to define the duties and authorities of each position. Group Management Regulations instituted for Group companies are also applied.

Compliance -----

In order to conduct sustainable business development as a member of the international community, JGC believes that it is essential for each and every employee to conduct business in conformity with corporate ethical standards, as well as to observe local laws and regulations not only in Japan but also

overseas. To this end, JGC has formulated a Corporate Philosophy for the entire JGC Group, a document on Principles of Business Conduct, a Code of Conduct manual, regulations to prevent incidence of bribery, and related rules. JGC also educates and trains employees on various laws and regulations, as part of its efforts to raise employees' compliance awareness.

JGC recognizes that the bar is being raised even higher in terms of the level of compliance expected of global corporations. To respond to the demands of the international community, we have expanded our compliance division and strengthened our internal compliance system. To this end, we have put in place and continue to implement compliance programs which employ an ongoing monitoring and improvement process.

In addition, recognizing the importance of establishing a compliance system that encompasses Group companies inside and outside Japan, JGC maintains close coordination with the persons responsible for compliance in each company. Steps are taken to ensure Group-wide consistency and integrity by establishing and promoting compliance programs that continuously focus on monitoring and improvement

Disclosing Company Information -----

JGC discloses information in accordance with the statutory disclosure system, based on the Japanese Financial Instruments and Exchange Law. In addition, in accordance with the timely disclosure system at Japanese financial instruments exchanges, JGC promptly discloses important company information through its Public Relations & Investor Relations Department. JGC also proactively discloses corporate information falling outside the scope of such regulations and system through news organizations and other media, in cases where it determines that disclosure is desirable.

Business Continuity Plan (BCP) -----

JGC does not have production facilities such as manufacturing plants, and it conducts its business with employees, a sophisticated ICT infrastructure, and offices. Consequently, JGC's Business Continuity Plan (BCP) consists of three pillars: (1) Early confirmation of employee safety, (2) securing of ICT infrastructure, and (3) securing of office safety.

(1) Early confirmation of employee safety

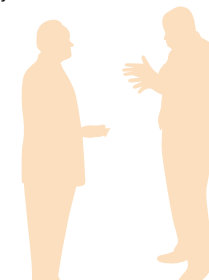
In 2004, in advance of many other companies, JGC introduced a Safety Confirmation System for its employees. At present, the scope of the system has been extended to include not only regular employees, but also temporary staff and contract employees who work at JGC. In addition, for a quick confirmation of employee safety, an emergency liaison network has been established as a backup in each department.

(2) Securing of ICT infrastructure

JGC was the first company in the Japanese engineering industry to obtain ISO certification (ISO 27001) in 2006 for its information security management systems. Server operation and management, user authentication management, Internet operation and management including e-mail, management of communications infrastructure such as LAN/WAN, and other components of our IT infrastructure are tested through emergency drills every year, and they benefit from feedback to constantly evolve while supporting our business.

(3) Securing of office safety

In 1997, JGC transferred its office to its current location, a new building located in the Minato Mirai district of Yokohama. Designed to meet earthquake-resistant specifications exceeding the new earthquake resistance standards under the revised Building Standards Act, the building suffered almost no damage from the tremors of the Great East Japan Earthquake. Stockpiles of food and supplies are also kept on hand at all times, to provide additional support and security for workers at the Yokohama office in the event of an emergency.



Risk Management

Security Management Section -----

JGC employees and executives make approximately 5,000 overseas business trips per year, and approximately 350 JGC personnel are stationed overseas at any one time, in 24 different countries. Therefore, JGC has established a Security Management Section available on a 24-7 basis to cope immediately with any risks employees stationed overseas might face, including natural disasters, terrorism, war, pandemics, crimes, riots, traffic accident, and sickness.

The Security Management Section has two operating patterns: Crisis Management Operations and Preventive Operations, details of which are presented at right.

(1) Crisis Management Operations

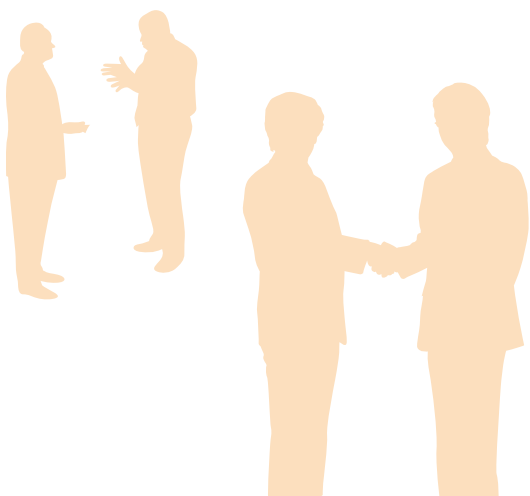
The Security Management Section takes the lead in implementing a range of measures based on the risk level in a given area, according to the Basic Rules for Risk Management.

* Examples: business trip cancellation, temporary evacuation, etc.

(2) Preventive Operations

- 1- Collect, analyze and communicate risk information: issue situation-specific reminders and warnings
- 2- Update standard documentation such as crisis response manuals and safety standards
- 3- Monitor implementation status and provide guidance to improve measures for each jurisdiction
- 4- Assess safety of individual projects and provide guidance to improve safety
- 5- Provide education and training on crisis management
- 6- Ensure a point of contact with related organizations (government agencies, outside consultants, etc.)

In the wake of the terrorist attack at our plant construction site in Algeria in January 2013, JGC elevated the Security Management Office to the highest level within its organization on April 1 with the aim of reinforcing and augmenting its security structure. We have redoubled efforts to strengthen the functions of the Security Management Office, with cooperation from related governments and government agencies to bolster our information gathering and analysis capabilities during times of peace, augment our crisis prevention measures, and enhance our responsiveness in an emergency situation.



Introduction —Relationships Between the JGC Group's Businesses, Society, and the Environment

Operations of the JGC Group

Through our engineering business, the JGC Group is involved in the construction of oil, natural gas and other energy-related plants, petrochemical plants, and infrastructure for pharmaceutical, medical and environmental-related facilities in more than 70 countries around the world.

In recent years, JGC has been developing enterprise investment and planning & management services businesses by leveraging our accumulated experience in plant construction.

In addition, mainly through our subsidiaries, JGC produces and sells catalysts used in fields related to oil refining, petrochemicals and the environment, as well as fine chemical products for use in the information and electronics materials fields.

The JGC Group is well aware of our responsibilities to society, and takes due consideration of these important responsibilities in our business development activities.

Below, we introduce the operations of the JGC Group and our relationship with society and the environment.

EPC Business



Oil, gas and resource development



Petroleum refining



LNG & GTL



Petrochemicals and gas chemicals



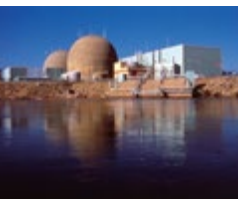
Pharmaceuticals and research facilities



Medical and welfare facilities



Non-ferrous metal refining



Nuclear energy and power generation

Enterprise Investment and Planning & Management Services



Power generation and water



Renewable energy



Environment



Resource development



Urban development
Regional development

Catalysts and Fine Products Business, etc.



Environmental catalysts



LCD materials

Operations of the JGC Group

Total Engineering Business (EPC)

Engineering is a process that creates deliverables through the rational and organic fusion of knowledge with technology.

Through the process of engineering, the JGC Group provides engineering, procurement and construction (EPC) services for industrial plants and social infrastructure commissioned by its clients. To date, the JGC Group has participated in more than 20,000 such plant engineering projects in over 70 countries.

After getting our start constructing oil refineries in Japan, JGC began to develop business overseas in the 1960s, and accumulated experience around the world in various fields ranging from the construction of oil refineries and petrochemical plants to natural gas processing plants and the more environmentally friendly liquefied natural gas (LNG) plants. In the field of LNG in particular, JGC has been involved in plant construction projects that account for 30% of global LNG production volume.

Using the know-how and experience we have accumulated through the construction of these plants, JGC has also branched out into the construction of pharmaceutical plants, hospitals and other large-scale facilities.

The JGC Group's engineering business helps to shore up the foundation of society and the economy through the construction of vital environmental and industrial facilities, including oil, gas and other energy-related plants, as well as plants for refining non-ferrous metals and producing chemical products and pharmaceuticals. Amid rising energy demand from a growing population and rapid economic development in emerging countries, we hope that the JGC Group will play an increasingly important role in society and the economy.

Enterprise Investment and Planning & Management Services

The JGC Group's enterprise investment business, which is currently focused on power generation, water and renewable energy operations, relies on the relationships of trust we have built with clients around the world, as well as the technologies and expertise we have gained through our work in the EPC business.

The purpose of our EPC business is to construct plants commissioned by companies planning and launching new businesses, whereas the purpose of our enterprise investment business is to invest in companies

that are owned or partially owned by JGC, and whose management we can direct on our own.

Take, for example, a business plan to construct a new renewable energy power plant. The JGC Group not only commits our own capital to the business plan, but also uses the expertise we have accumulated in the EPC business to manage the construction of the required facilities, and then takes total responsibility for operating and maintaining the business after construction is completed. Our involvement extends to feasibility studies and consulting services for tax, legal and financing issues.

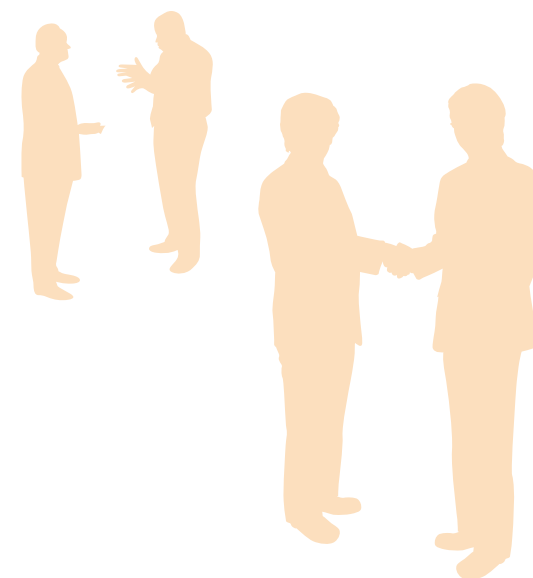
In the enterprise investment business, JGC does not necessarily construct our own plants, and instead chooses the best construction company based on our inside knowledge of the EPC business. JGC manages and advances construction as the business owner, and after construction finishes, takes full responsibility for the reliable supply of electricity in the required amount.

Going beyond pure business investment, the JGC Group takes control of all aspects of business administration, from the development and construction of businesses to plant maintenance and operations.

Catalysts and Fine Products Business

Mainly through our subsidiaries, the JGC Group produces and sells catalysts used in fields related to oil refining, petrochemicals and the environment, as well as fine products such as hard disk abrasives and positive electrodes for lithium-ion rechargeable batteries.

JGC also offers environmental consulting services that propose measures to maintain, manage and improve the environmental sustainability of business activities likely to have an impact on the environment.



Introduction —Relationships Between the JGC Group's Businesses, Society, and the Environment

The JGC Group's Environmental Measures

The JGC Group's Environmental Measures

With businesses that support the foundations of society, we at the JGC Group believe we have been charged with the social responsibility of addressing the needs of society as quickly as possible.

The JGC Group makes every effort to modernize social infrastructure by effectively deploying its engineering technologies, as well as to develop and promote clean energy, as steps toward resolving the many environmental issues that confront society across national borders, such as natural resource depletion, global warming, and pollution of the air, water and soil.

One example is the gas to liquids (GTL) process that uses natural gas as a raw material. GTL is a petroleum product made from crude oil that has attracted attention as a form of clean energy with only trace amounts of nitrogen oxide and sulfur oxide. In 1993, JGC constructed the world's first commercial GTL plant for Shell MDS (Malaysia) Sdn. Bhd. in Malaysia. In 2011, JGC completed one of the largest GTL plants in the world for Qatar Shell GTL Limited in Qatar.

The JGC Group engages in other activities to create clean energy by establishing

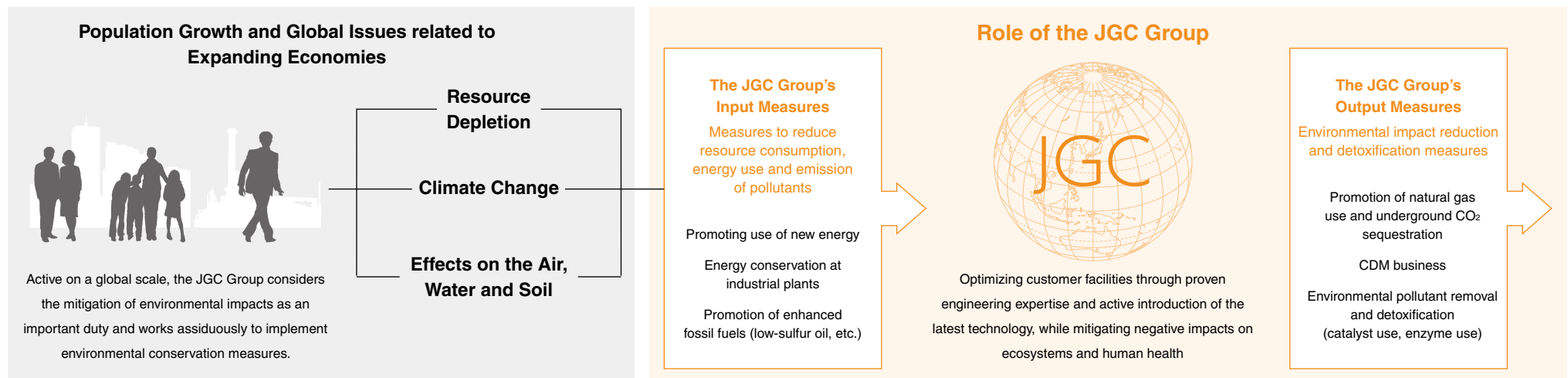
production process technologies for new energy and biomass ethanol made from vegetation, and for new energy from dimethyl ether (DME), which has zero emissions of soot and sulfur oxide.

The JGC Group is also involved in projects to capture carbon dioxide from the atmosphere and store it underground, projects to improve the quality of water in lakes and marshes, and projects to upgrade urban infrastructure, including smart city projects. Through these initiatives, JGC strives to create a society that is in harmony with the environment.



GTL plant

Engineering Technology Contributes Significantly to Mitigating Environmental Impacts



Initiatives at the JGC Group Aimed at
Realizing a Sustainable Society

15 Efforts to Promote Renewable Energy ▶

17 Our Efforts to Develop
Smart Communities ▶

The world population reached 7 billion people in 2011, and is projected to increase to 9 billion people by 2050.

Rapid growth in the populations of emerging countries alongside economic expansion will likely lead to a major increase in demand for food, water and energy. Meanwhile, global warming and environmental pollution as a result of the massive consumption of energy are becoming problems on a world-wide level. In order to address both growing demand for energy and the pressing need to reduce environmental impact, a variety of efforts have picked up momentum in countries around the world to promote the use of renewable energy and move toward a sustainable society.

The JGC Group has taken initiatives to build up renewable energy businesses and help realize a sustainable society by drawing on our engineering technology and the project management expertise we have garnered through our involvement in numerous plant EPC projects spanning many decades. In this special feature, we introduce some of these initiatives.

Special Feature

Initiatives at the JGC Group Aimed at Realizing a Sustainable Society

Special Feature —Initiatives at the JGC Group Aimed at Realizing a Sustainable Society

Efforts to Promote Renewable Energy

Oita Prefecture experiences among the longest daylight hours in Japan. In August 2012, JGC decided to develop a mega solar project in Oita Prefecture with a maximum output of 26,500kW, one of the largest in Japan.

Construction of the large-scale solar power plant was undertaken at a fast clip by a consortium involving subsidiary JGC Plant Solutions Co., Ltd. (which changed its name to JGC Plant Innovation Co., Ltd. on July 1, 2013) and Yonden Engineering Co., Inc. The solar power plant was completed on schedule by the end of April 2013, and commenced commercial operations on May 1, 2013. JGC will operate the power plant for the next 20 years.

The plant includes approximately 114,000 solar panels installed on 350,000 square meters of land. The plant's power generation capacity of 26,500kW is equivalent to the average power consumption of about 9,000 homes. All of the generated electricity is sold to Kyushu Electric Power Co., Inc., the local power company.

As a way to promote awareness of JGC's initiatives such as this, we offer tours of the facility to interested persons, and many local residents have paid a visit to the solar power plant.

In projects to develop renewable energy operations, JGC has proactively worked to commercialize renewable energy, as demonstrated by its launch of commercial operations at a solar thermal power plant (output capacity: 100,000kW) in Cordoba, Spain in March 2011.

Moreover, in April 2013, JGC received an order to construct a mega solar power station near Futtsu City, Chiba Prefecture from project leaders Mitsui Energy Co., Ltd. and Recycle One, Inc. Taking advantage of our reputation and expertise as a project operator, we will continue to aggressively pursue construction projects for renewable energy power plants and thereby contribute to the spread of renewable energy.

Special Feature —Initiatives at the JGC Group Aimed at Realizing a Sustainable Society



Assistant Manager
Power & Water Business Department
Business Promotion & Execution Division

Eiji Ootsu

I believe the most interesting and challenging aspect of the enterprise investment business is creating business models and specifications on our own.

Oita Mega Solar Project:

Building a Sustainable Business Model

I am a member of the management team that has been responsible for the Oita mega solar project from the start of business development to commercial operations of the plant, which commenced in May 2013.

Prior to working at the enterprise investment business, I was affiliated with the EPC business involved in nuclear power-related facilities.

I find the creation of business models and specifications on our own the most interesting and challenging aspect of working in the enterprise investment business. In my previous work at the EPC business, we worked closely with our clients on defining specifications; in other words, we did not simply receive complete detailed specifications from our clients. This experience defining specifications has been quite useful in my current position.

As the enterprise investment business has a time horizon of 20 or 30 years, we take special care in formulating realistic plans that are acceptable to all involved parties.

The Oita mega solar project owes its success to the involvement and cooperation of many parties, including the land owner, Nissan Motor Corporation, and local governments and residents in Oita Prefecture

that approved of the project's effective use of the land, capacity to help offset electricity shortages after the earthquake, and creation of local jobs.

To put this into perspective, construction of the solar power plant took about nine months to complete, whereas it took more than a year of meetings with affiliated companies, local governments and local residents to explain the project and gain their endorsement. At the enterprise investment business, we committed significant time and energy to plan and develop this project.

In the mega solar field, JGC has accumulated considerable insight over the past few years into creation of business models, project construction, and commercial operation for solar power plants.

Looking ahead, JGC has its eye on business development in the Middle East, where supply and demand conditions for electricity are projected to tighten.

Leveraging the capabilities that JGC has accumulated in the oil and natural gas fields, we hope to contribute to the creation of even greater prosperity for Middle Eastern countries—where the sun always shines—by developing renewable energy able to create the same value as petroleum.

Special Feature —Initiatives at the JGC Group Aimed at Realizing a Sustainable Society

Our Efforts to Develop Smart Communities

Technological demonstrations are being conducted around the world related to renewable energy and smart grids with the aim of creating a sustainable society. As a part of this movement, JGC and JGC Information Systems Co., Ltd. have been experimenting with energy management systems as participants in the Yokohama Smart City Project being undertaken by Yokohama City as a part of the Next-Generation Energy and Social Systems Demonstration project sponsored by the Ministry of Economy, Trade and Industry in four regions in Japan.

From fiscal 2011 to fiscal 2014, this demonstration project aims to improve energy efficiency by installing systems integrating solar power generation and storage facilities at the Ito-Yokado Yokohama Bessho Department Store in Yokohama City, and deploying an energy management system that proposes operation schedules based on predictions of demand for electricity at the department store. In addition, the demonstration project aims to develop and validate technologies needed to create smart communities of the future, such as testing

demand response techniques where users of energy at the community level (including commercial facilities and regular households) are encouraged to cut back on electricity consumption by sending them data on real-time energy supply and demand conditions from the energy management system.

Since the behavior of energy users is a critical component of energy management, JGC plans to develop and validate an advanced management system that encourages people to voluntarily modify their behavior to conserve more energy. By deploying such a system, it will be possible to smooth out demand for energy at the community level in addition to increasing energy efficiency at each facility. The key goals of this endeavor are to help resolve energy problems at the community level and to provide uninterrupted service that enhances the quality of life for electricity users. JGC believes it can play a vital role in the creation of smart communities through the development of energy management systems that take one step beyond energy management at the facility level and integrate seamlessly with local communities.



Special Feature —Initiatives at the JGC Group Aimed at Realizing a Sustainable Society



Senior Research Engineer
Technology Business Development Department
Technology Innovation Center

Kazutaka Hiraoka

I am endeavoring to expand the urban infrastructure business.

Building Energy Management System (BEMS) Demonstration Project: Aiming to Participate Fully in the Urban Infrastructure Business

JGC, whose main operation is the plant EPC business, began to get involved in the development of technologies for smart grids and smart communities around 2009.

At that time, I wanted to leverage the company's expertise to commercialize technologies that were needed by society but had not realized their full business potential yet. With this in mind, I focused on the development of smart grids and smart communities. This was also around the time the Obama administration in the U.S.A. had unveiled its smart grid strategy to much fanfare. We decided to launch a development project.

Using the Ito-Yokado Yokohama Bessho Department Store as a testing ground, we have been running a building energy management system (BEMS) demonstration project for four years now. With initial support provided by New Energy and Industrial Technology Development Organization (NEDO), we started on the development of an energy supply system based on batteries for storage, and this later became a part of the Yokohama Smart City Project.

The Yokohama Smart City Project entails experiments with region-based energy management with Yokohama City divided up into several areas. Our facility demonstration

project was integrated with the regional demonstration project. Through this experience, I believe we were able to contribute to the creation of smart communities in the future.

This year, we are considering a new experiment that would encourage users of energy to modify their behavior to conserve more electricity, in addition to managing the supply-demand balance of energy at stores.

During peak electricity demand hours (in the afternoon during the summer, for example), demand for electricity increases considerably in households. By distributing coupons that can be used at neighborhood stores during these peak hours, residents would be encouraged to leave their homes (turning off their air conditioners, etc.) and go shopping, thereby lowering power consumption. While helping to conserve electricity in the region, stores participating in this system should see an increase in customer foot traffic and sales. In this way, we aim to achieve energy management throughout local communities in addition to energy management at facilities.

Energy management systems are a key enabling technology in the development of smart communities, and we aim to deploy JGC's expertise in these systems in urban infrastructure projects.

Becoming the Leading Global Health, Safety, and the Environment Contractor

20 JGC Aims for Zero Incidents and Injuries ▶

22 Health, Safety, and Environmental Considerations Associated with Business Activities ▶

26 Occupational Health and Safety ▶

28 Safety and Environmental Consideration in Investment Projects and Research & Development ▶

JGC aims to be the No. 1 contractor in HSE. We aim to faithfully fulfill our social responsibility by considering HSE in every aspect of our business.

Aiming to Be a No. 1 HSE Contractor

In recent years, the interest of operators and society in HSE as it relates to the design, construction, and operation of large-scale facilities such as energy plants has risen. Requirements on contractors have become more stringent. JGC aims to maintain the trust of its clients and fulfill corporate social responsibility by becoming a No. 1 HSE contractor.

Combining Economic Efficiency with HSE at a Higher Level

In large-scale plants, factors such as operating stability and ease of maintenance significantly affect economic efficiency during operation. JGC constantly strives to provide plants that combine economic efficiency with consideration for HSE. With the understanding and cooperation of our clients, who are also operators, we provide plants that meet our own high HSE standards as well as legal requirements and the needs of the client.

Balance of Long-Term and Short-Term Perspectives

Energy and infrastructure facilities in operation around the world, even those which make full use of the latest technology, all have an impact on the environment over the long term. Parties responsible for the concepts, detail specifications, and construction of these facilities must make a prior assessment not only of short-term economic feasibility, but also long-term environmental impacts. By making sure all parties involved understand the essence of HSE and overall optimization, plants can be built that will meet with the approval of clients and society. JGC is keenly aware of the need for both short-term and long-term perspectives and aims to be a company that achieves a good balance between the two.

HSE

Becoming the Leading Global Health, Safety, and the Environment Contractor

Close-Up

JGC Aims for Zero Incidents and Injuries

As a part of our occupational health and safety endeavors at construction sites inside and outside Japan, JGC makes every effort to improve Health, Safety and Environment (HSE) levels through “Incident and Injury Free” (IIF) initiatives.

Through IIF activities to foster a culture of safety and educate employees about safety, JGC fulfills our social responsibility while contributing to local communities as an engineering company.

What are IIF activities?

IIF activities are based on the idea of workers watching out for each other and ensuring that everyone involved in a construction project is able to return home safely without incident. Safety is not something that is enforced, but a conscious decision made by each person involved in a project. By working to improve safety awareness, we foster a culture of safety throughout the whole corporate group. Everyone, from our managers in charge of a construction site to the workers at the site, play a vital role in ensuring the safety of all of those involved. IIF is not set in stone such as in a safety manual, but decided in accordance with conditions that vary from site to site, by the people working at the construction site. IIF also serves to increase the motivation of each individual worker, because constant communication is at the root of these initiatives.

In this close-up, we introduce some examples of IIF at JGC's construction sites in Japan and around the world.



HSE —Becoming the Leading Global Health, Safety, and the Environment Contractor

At construction sites overseas

Overseas construction sites can employ more than 10,000 workers during the peak of construction activity. Site managers from JGC make the rounds of the site every morning without fail and get to know the workers of various ethnicities and nationalities, to help lower the hurdle to creating warmer human relationships. Our managers cheerfully greet workers and ask how they are doing, shaking their hands to build trust and establish a friendly atmosphere.

If communication with words is difficult, our managers use pictures and diagrams to get their point across, improving everyone's awareness of safety and educating workers about safety issues.

At the Barzan project in Qatar, area managers and construction site workers from JGC and subcontractors begin with a self-introduction using a world map to show where they hail from. Then, area managers from JGC use a 3D model of the plant to explain the function of equipment the workers are building, giving them a sense of their own contribution to the project. In this way, we make sure the workers and everyone else is working together as partners toward the same objectives, building relationships of trust with each other and thereby improving awareness of safety.



At construction sites in Japan

At construction sites in Japan, JGC has promoted improvements in communications as a safety management priority each fiscal year. Better communication has led to measureable results as a means of preventing injuries and work-related mistakes. At JGC's construction sites in Japan, a common greeting among workers is "be safe." Aiming to foster an even better culture of safety, JGC has begun to introduce IIF activities at construction sites in Japan after witnessing their considerable benefits at overseas sites.

When introducing IIF activities at construction sites in Japan, IIF activities are nicknamed "good rapport campaign," and workers at the construction site are asked to think about how safety can be improved, while site supervisors make an extra effort to greet and talk with each and every worker at the site. The circle of IIF activities broadens out among construction site workers and extends to customers as well. Through these efforts, construction site supervisors and workers are able to communicate more freely across corporate boundaries and throughout the ranks. If unsafe behavior is seen at the construction site, workers speak up and collaborate with each other at the work site to come up with a safer way of accomplishing the task at hand. As a consequence, our safety record has improved substantially.



Health, Safety, and Environmental Considerations Associated with Business Activities

In this section, we report on specific examples of the JGC Group's consideration for the environment at every stage of plant construction and other EPC services.

In Marketing Activities -----

Ensuring a reliable supply of energy while preserving the environment is an issue shared by all of humanity.

The emergence of shale gas has changed the global landscape for energy in recent years.

A fundamental shift is underway, lessening our dependence on oil and coal as the use of natural gas, which is friendlier on the environment, expands. However, natural gas alone cannot fulfill all our energy needs amid growth in the global population. Oil and coal use is unavoidable. Fortunately, advances in technology have lessened the environmental impact of oil and coal.

As a company rooted in technology, the JGC Group is addressing these needs for various kinds of energy and the reduction of environmental impact.

Specifically, JGC's marketing activities have played a major role in the development and management of the electricity, water and renewable energy business as well as the urban development business, in addition to our traditional EPC business in gasoline and kerosene desulfurization systems, heavy oil countermeasures, LNG plants, gasification plants, and CCS plants.

In Feasibility Studies -----

We consider many matters at the feasibility study stage, including market analysis, potentially useful technology, systems capabilities, facilities configuration, construction and operation cost analysis and financial arrangement. When configuring facilities, we take environmental consideration into account, along with regional characteristics and safety. We also consider secondary environmental impacts, such as whether waste disposal facilities are available in the region, or whether any transportation-related problems exist.

In Basic Planning (FEED) -----

Basic engineering specifications of plant construction are decided at the Front-End Engineering Design (FEED) stage. At this stage, the JGC Group draws up specifications reflecting comprehensive consideration of plant construction costs, safety, operation costs, environmental impact, and other factors. In these specifications, the JGC Group makes use of its own technology for energy conservation and effective energy use.

During FEED, we measure the overall thermal balance of the plant and propose energy conservation and efficiency improvement measures, including "pinch technology" for optimization of heat recovery and use, aero-derivative gas turbines for power generation facilities, and combined cycle power generation. We also work to actively mitigate damaging environmental impact by reducing CO₂ emissions, and considering measures such as waste heat recovery maximization and flare gas emissions reduction.



LNG plant (Indonesia)

The Workflow of the JGC Group's EPC Services

EPC: Engineering, Procurement, Construction



HSE —Becoming the Leading Global Health, Safety, and the Environment Contractor

Health, Safety, and Environmental Considerations Associated with Business Activities

In Basic Engineering and Detailed Engineering -----

This is an essential stage of the engineering process, during which the basic design concept is optimized based on consideration of the life cycle of the plant. At this stage, we analyze realistic, practical measures for minimizing impacts on health, safety, and the environment that could arise during construction and operation. These measures are then reflected in the basic and detailed engineering (equipment specification) decided at this stage. For example, plants must be designed so that gas and liquid emissions will meet legal standards, but we also consider means to further minimize minor emissions. Every possible source of emissions is identified and the volume of discharge estimated. This includes not only stacks, vents etc., but also possible leaks from valves, flanges, or gases discharged during maintenance operations. We also review the basic engineering from the standpoint of either avoiding or reducing emissions, for example by making

the operation of the plant more efficient or reusing its exhaust heat and wastewater. In addition, we determine optimal engineering specifications for every source of emissions by selecting low-emission valves and other such equipment.

Consideration at Engineering Stages

Example: minimizing emissions of gas

Last year, JGC constructed a new gas plant in the Middle East designed to minimize emissions of gas. Since gas emissions are greater when operations start or enter emergency shutdown compared with normal operations, it is necessary to take a design approach that considers the operational cycle of the plant in order to reduce its total gas emissions. While envisioning various operating conditions at the plant, JGC reassessed systems from the standpoint of reducing gas emissions. We successfully delivered to our customer a plant that achieved minimal gas emissions.

Consideration during Engineering and Construction of Pharmaceutical Plants

Engineering System for Environmentally-Conscious Facilities

During the engineering and construction phases for large pharmaceutical plants, laboratories, or hospitals, one major issue is to control their huge energy consumption and mitigate the environmental impact of the facility while securing its necessary functions.

When designing and constructing buildings, air conditioning and electrical facilities, JGC uses optimization technology and assessment systems for low-carbon air conditioning and electrical systems, providing owners (operating companies) with facilities that can be operated in an environmentally-conscious manner.

In Equipment and Materials Procurement

The JGC Group also encourages the materials and equipment vendors with whom we do business to adopt a proactive stance on ensuring safety and environmental conservation, including the protection of biodiversity.

Though transactions with vendors previously required a large volume of paper documentation, we have now switched to digital documents with our in-house JGC e-Procurement Solution System (J-PLUS). This system is environmentally friendly and has improved work efficiency by reducing the use of paper forms. After purchase order finalization, interaction with vendors at the detailed engineering stage has been computerized using J-PLUS P for the same purpose, resulting in a virtually paper-free work environment.

For JGC, reinforcing the initiatives taken by vendors to improve safety practices is not only essential for human safety, but also for quality control and on-time delivery of equipment and materials. Consequently, JGC encourages vendors on a regular basis to

implement Safety Moments* and reinforce traffic safety initiatives.

* Safety Moments refer to the practice of discussing safety-related topics at the opening of business meetings before bringing up the main subject. The objective is to raise safety awareness among participants by giving them an opportunity to think about such topics in a group.

In Construction Planning -----

Meticulous concern for sustainability at plant construction sites is essential.

In many countries, construction of new plants requires submission of an environmental impact assessment (EIA) report for the purpose of understanding what impacts the construction has on the environment of the construction site and minimizing those impacts as much as possible. The EIA report describes in detail impacts that construction work will have on the air, water, soil, flora, fauna, and marine life, and it also details measures that can be taken to counter them.

JGC applies environmental management systems to construction work to ensure that we demonstrate environmental consideration in compliance with EIA reports, emphasizing the following points.

The Workflow of the JGC Group's EPC Services

EPC: Engineering, Procurement, Construction



HSE —Becoming the Leading Global Health, Safety, and the Environment Contractor

Health, Safety, and Environmental Considerations Associated with Business Activities

- 1- We practice strict legal compliance and environmental risk management by identifying environmental laws and regulations and environmental considerations that have bearing on construction work.
- 2- We endeavor to increase client satisfaction and reinforce communication with stakeholders.
- 3- We manage environmental risks and endeavor to minimize the possibility of incidents which may have a negative impact on the environment by anticipating, preparing for, and speedily responding to emergencies.

Before starting construction work, we consider the above matters and unflinchingly perform the following preliminary work:

- 1- Identifying environmental impacts of the construction work
- 2- Setting environmental objectives and targets for the construction work
- 3- Preparing a Construction Environmental Management Plan for the construction work
- 4- Providing new workers with environmental education and training

We incorporate the Zero Emissions Initiative 2015, a JGC Group independent environmental conservation initiative, into this preliminary work, and thoroughly confirm environmental conservation measures before starting construction.

In Construction

Construction work by JGC is preceded by thorough environmental consideration at the planning stage.

Matters laid out in the Construction Environmental Management Plan include project environmental policy, the organizations and persons responsible for environment-related work, environmental protection measures, environmental performance monitoring and measurement, regular testing of emergency prevention and relief procedures, monthly reporting, etc. Following the start of construction, a review of environmental aspects of the project (the relationship between construction work and the environment) is conducted to confirm whether the construction work differs from the plan. If any differences are found, the plan is revised to ensure that there are no omissions in environmental consideration in the environmental management framework.

In Maintenance

Rigorous HSE risk assessments by specialists are conducted in the engineering phase for various industrial plants, and risk mitigation measures determined to be necessary are borne out in the engineering and construction work.

However, over years of plant operation, facilities age and operating conditions or feedstock composition may change. In some cases, chemical substances not assessed as risks at the time of construction become recognized as health risks. In recent years, the necessity of the regular and timely reassessment of HSE risks that may potentially increase over the course of long-term plant operation has long been advocated and plant operators recognize the need for this as well.

Utilizing its ability to act as a third party with the latest technology, knowledge, and ability to supply needed resources to plant operators, the JGC Group actively supports plant operators in conducting HSE risk

assessments at operating plants, recognizing the importance of thorough maintenance operations. Accidents at energy industry facilities obviously carry an inherent risk of becoming worst-case scenarios. The JGC Group offers maintenance services with full consideration of these needs and risks.

Considerations for Maintenance

HSE Risk Assessment in Existing Plants

When plants have to undergo successive upgrades because of their age, environmental and health standards initially set as requirements when the plants were built become often difficult to maintain. Aiming at improving the environmental performance and safety of aging plants, JGC offers HSE risk assessments and support services. We conduct surveys during plant operation and identify problems through HSE-specific examinations. Taking advantage of the experience we have gained from numerous plant construction and maintenance service contracts, we offer realistic propositions that bring significant improvements.

The Workflow of the JGC Group's EPC Services

EPC: Engineering, Procurement, Construction



Health, Safety, and Environmental Considerations Associated with Business Activities

In Facilities Decommissioning -----

JGC also strives to minimize environmental impacts in dismantling work.

For example, in the course of several hospital construction projects and pharmaceutical laboratory renewal projects, we use construction drawings and sample analysis to confirm the presence or absence of harmful materials that include asbestos dust, PCBs, chlorofluorocarbons, mercury, lead, and other substances before dismantling facilities or existing buildings. We seek to minimize environmental impact by preventing asbestos contamination, as well as recovering and decomposing chlorofluorocarbons etc.

We measure asbestos particle concentration in the air before, during, and after construction and confirm that asbestos had not been dispersed outside the work area. In addition, we work on preventing occupational accidents and diseases by giving every consideration to the health and safety

of workers. Measures taken include risk assessments, special health checks, wearing of personal protective equipment such as fully protective masks, and use of adequate dust control in working environments.

When dismantling structures, we also strive to minimize the impact on nearby residents by using low-vibration and low-noise construction machinery, and constantly monitoring operations through vibration meters and noise meters.

In an effort to reduce the processing volume of industrial waste generated during decommissioning, we dismantle each type of waste separately and promote waste recycling and reuse. In this way, we have achieved a recycling rate of 100% for concrete and asphalt. We use industrial waste control manifests to ensure appropriate treatment for industrial waste at every stage up to final disposal.

Introducing “HSE Moments” -----

Since September 2010, JGC has introduced “HSE Moments,” five-minute lectures given by a participant officer at the opening of meetings of the Operations Steering Committee, which are attended by officers and executives. The purpose is for management to take the lead in addressing HSE matters, in consideration of JGC’s aim to be a No. 1 HSE contractor.

Various topics were covered in fiscal 2012, including “Countermeasures Aimed at Preventing Traffic Accidents during Ramadan,” “Environmental Impact of Shale Gas Development,” and “Legal Status of Bicycles and Penalties in Case of Accident.” A wide range of topics, such as issues closely

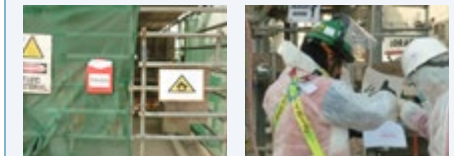


HSE Moments

related to work and subjects that arouse intellectual curiosity, are chosen to heighten HSE awareness at JGC.

Management and Control of Hazardous Chemical Substances

In overseas construction sites, we use the management system Control of Substances Hazardous to Health (COSHH) as part of our HSE efforts. COSHH is a framework of safety practices that include obtaining in advance the Material Safety Data Sheets (MSDS) of materials to be used, creating registers of harmful substances, and working to prevent the potential hazards posed by these substances. An MSDS contains safety guidelines for a given chemical substance, including information on hazards, storage methods, handling methods, which personal protective equipment should be worn when handling the substance, warnings regarding routine or non-routine use, recommended first aid measures in case of direct contact, emergency measures in case of soil contamination after accidental spillage, disposal of waste products after use, and so on. Before any operation, JGC conducts a special training session based on MSDS data for supervising staff and all workers involved, to ensure a comprehensive safety management system.



Hazardous substance storage area

Handling of chemical substances

The Workflow of the JGC Group’s EPC Services

EPC: Engineering, Procurement, Construction



Occupational Health and Safety

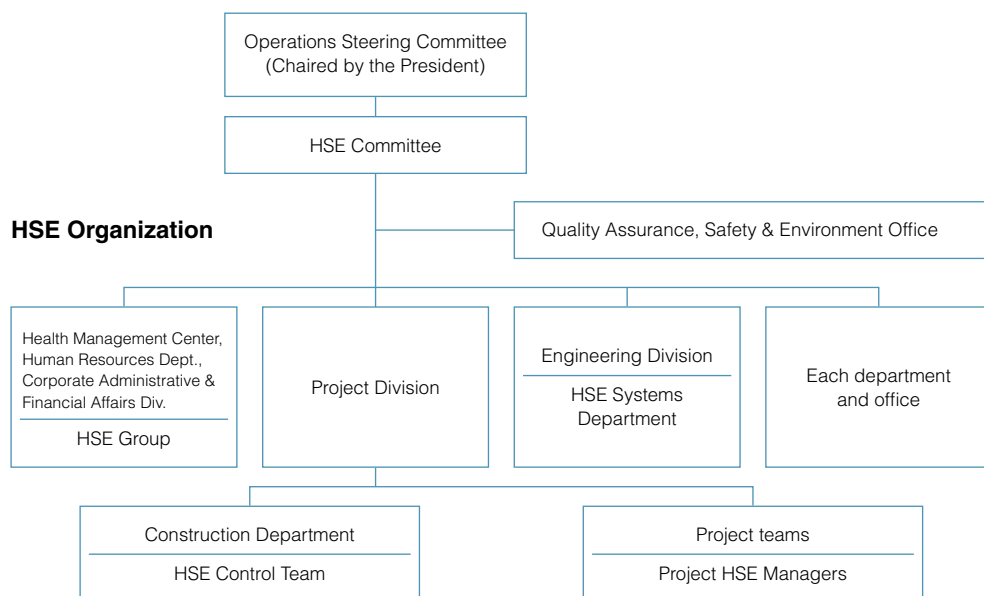
In accordance with our Health and Safety Policy, JGC conducts health and safety management covering the JGC Group companies and business partners.

Above all, we focus on the prevention of occupational accidents at construction sites.

HSE Organization

The HSE Committee deliberates on important safety matters for the entire group. It also reports to the Operations Steering Committee, which is chaired by the President. Matters decided by the HSE Committee are promptly acted upon by the various company divisions.

An audit group appointed by the chairman of the HSE Committee conducts health and safety audits at principal construction sites in Japan and overseas, and reports the audit results to the Operations Steering Committee.



Safety Performance

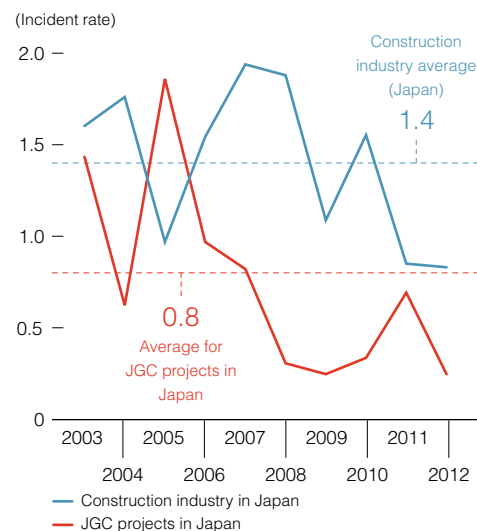
As a result of continuous implementation of group-wide health and safety improvement measures, our incident rate*¹ (ILO method) has remained at around 0.8 for the past ten years, a lower level than the average incident rate of 1.4 for the construction industry as a whole. In addition, specific internal annual Total Recordable Injury Rate*² (TRIR) targets have been set for domestic and overseas projects, with monthly status of achievement circulated within the company to raise the

awareness of safety. The TRIR is a workplace safety indicator that includes the number of cases of accidents without first aid cases. For fiscal 2012, JGC's TRIR for domestic projects was 0.59 against a target of 0.60 or below, and 0.13 for overseas projects against a target of 0.15 or below.

*1 The incident rate expresses the occupational accident frequency as the toll of occupational accidents that result in a fatality or time off work of more than one day per million hours worked.

*2 TRIR is a benchmark of the frequency of occupational injuries developed by OSHA in the United States. It is calculated as the number of recordable injuries, which includes injuries not requiring time away from work, per 200,000 work hours.

Comparison between the Incident Rate at JGC and in the Japanese Construction Industry (ILO Method)



Consideration for Worker Safety

Measures for Traffic Accident Prevention

JGC is strengthening its measures to prevent traffic accidents at overseas sites and bases.

In fiscal 2010, we introduced a thorough set of guidelines for management of vehicle operation, including the Seven Golden Rules for accident prevention, a traffic safety management system, and the In-Vehicle Monitoring System (IVMS). We also revised the guidelines for the prevention of traffic accidents overseas. In addition, to continuously monitoring the status of traffic safety measure implementation at overseas sites and bases, JGC's management conducts traffic safety audits and mandates the submission of Monthly Traffic Safety Reports and semiannual reports.

Occupational Health and Safety

HSE Conference Hosted by the President

Every year in July, JGC holds an HSE conference hosted by the President. Approximately 120 corporate officers, project division heads, project department heads, project managers, and construction managers participate in the conference. Following the President's opening speech and the Zero-Accident Award Ceremony, presentations are given on a variety of safety themes, and are followed by group discussions. Through the conference, JGC seeks to enhance the health and safety awareness of officers and employees and demonstrate the leadership of the top management in HSE matters.



The president's opening speech

HSE Patrols by the President



At JGC, the president performs HSE patrols of major business sites overseas once a year, and works to raise awareness of safety among all employees working at the site. The purpose of these patrols is to have the president visit the business sites in person, underscoring the importance of having a high awareness of HSE at JGC. During this campaign to foster a culture of safety and promote safety education, the president patrols the business sites in person, warmly greeting the workers at the site, after a discussion to raise safety awareness with customers and business partners.

In fiscal 2012, the president paid a visit to the construction site of the Donggi-Senoro LNG Project in Indonesia, held a discussion to raise awareness of HSE with management at its customers and business partners, and patrolled the site to directly communicate to workers the importance of HSE.

Safety and Environmental Consideration in Investment Projects and Research & Development

In this section, we report on the safety and environmental conservation measures we take regarding our investment projects, and regarding the research and development that supports our engineering business.

Enterprise Investment Business -----

The JGC Group, in addition to being involved in the EPC business, is also involved in numerous investment projects as a strategic equity partner. Investments include infrastructure projects (desalination and power generation), renewable energy projects (solar thermal and solar photovoltaic power generation), resource development projects (for oil, gas, and other resources), CDM projects, new energy development projects, environmental catalyst and fine chemicals manufacturing projects as well as urban development and other projects.



The IIF campaign at a solar photovoltaic power generation project in Oita

As a general rule, in the enterprise investment business, we keep the following objectives in mind:

- Development of social infrastructure
- Environmental improvement on a local or global scale
- Improvement in energy use efficiency
- CO₂ reduction and utilization of natural energy

In investment projects, from the feasibility study stage onward, we abide by the environmental regulations of the country or region, as well as the environmental guidelines set down by the World Bank Group. In our current desalination and power generation projects, we are performing detailed environmental impact assessments, and are working in compliance with the aforementioned environmental guidelines and regulations. Moreover, we are taking the lead in promoting safety management in collaboration with project partners including EPC contractors and operation maintenance companies.

The JGC Group has taken steps to promote an IIF campaign at a solar photovoltaic power generation project in Oita in similar fashion to its EPC activities. The group was successful in completing construction without incident or accident. In this manner, the JGC Group makes investments with the belief that safe and environmentally considerate projects increase corporate value for the JGC Group and for its business partners.

Research and Development -----

JGC conducts research and development, principally testing, at our Research and Development Center in Oarai, Ibaraki Prefecture.

At the Research and Development Center, we treat wastewater generated as a by-product of the tests we conduct by filtering, adsorption, and neutralization, in strict compliance with voluntary management criteria as well as relevant laws, ordinances and regulations. We dispose of treated water in accordance with environmental standards. In controlled areas where we use radioactive isotopes, we strive to reduce the amount of test waste liquid and hand washing wastewater generated. We treat these liquids and wastewater by ion exchange, filtering, adsorption, and concentration, and recycle them within the controlled area. Under no circumstances do we discharge this water outside the controlled area.

Furthermore, we release exhaust from the controlled area after filtering it through a high-performance HEPA filter, with continuous monitoring to confirm that it complies with emission control standards.

We aim to reduce the amount of industrial waste generated within the Research and Development Center, and we separate

and dispose of waste in compliance with industrial waste disposal standards.

In addition, to support safety management and help prevent accidents, the Research and Development Center's Safety Committee conducts monthly patrols to identify hazards and provide guidance for improvement of safety protocols. Moreover, written plans must be submitted to the committee before the beginning of new research operations. The committee then deliberates on the contents of the operations from the standpoint of safety, to provide sufficient accident prevention measures.



Research and Development Center
(Oarai, Ibaraki Prefecture)



In the context of growing interest in regulations, environmental issues, and sustainable development, JGC has set forth the following policy regarding its environmental performance.

Engineering is in Essence an Activity that Contributes to Environmental Conservation

JGC's engineering business, which involves providing engineering, procurement, and construction (EPC) services for oil, natural gas, and other energy-related production plants, is intrinsically related to environmental conservation.

Since the 1960's, JGC has been grappling with environmental issues in its capacity as an engineering company. We remain keenly aware that our business activities in and of themselves must contribute to environmental conservation, and we declare that awareness in the JGC corporate philosophy.

We have tested various innovations aimed at improving environmental efficiency over the course of the EPC process, and won accolades from clients for our efforts.

In enterprise investment, a new sector outside of the EPC business, JGC is further expanding the scope of our activities contributing to environmental conservation. We also continuously work to reduce environmental impacts, including CO₂ emissions, at our construction sites and at our head office.

The JGC Group's Environmental Technologies and Environmental Conservation Activities

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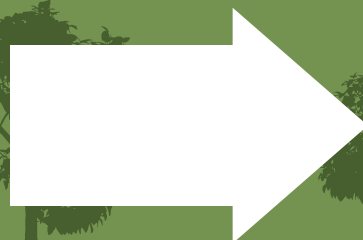
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The Environment



The JGC Group's Environmental Technologies and Environmental Conservation Activities

Close-Up

Development of NOx Removal Catalysts for Overseas Markets

Fifty years or so ago, Japan was in an advanced stage of economic growth, and industrial centers were spewing out pollution into the atmosphere and water. Plumes of various colors billowed out the smokestacks of factories, and were a symbol of economic progress at the time. However, Japan tackled the problem of pollution head-on and overcame the challenges

to successfully strike a balance between economic development and environmental preservation. With this history as a backdrop, the JGC Group company JGC Catalysts and Chemicals Ltd. introduced the world's first honeycomb-shaped flue gas denitration catalyst in 1975 and licensed out its production technologies to companies in Japan, Europe, the United States and South Korea.

Today, China's economy has been growing by leaps and bounds reminiscent of Japan's growth decades ago, but the country is plagued with environmental problems, including air and water pollution, as demonstrated by its high PM 2.5 (fine particulate matter) problem. Companies there are bidding almost daily to construct new coal-fired power generation plants and waste incinerators, and flue gas emissions from these facilities contain nitrogen oxides (NOx) that are a cause of acid rain and photochemical smog. JGC Catalysts and Chemicals Ltd. was quick to focus on latent demand for environmental conservation in China, and has contributed to preserving the environment there by offering to license out to local companies its manufacturing technologies for DeNOx (NOx removal) catalysts for coal-fired power plants. We have already licensed out our catalyst production technologies to two Chinese companies.

DeNOx catalysts for waste incinerators have different designs than those for coal-fired power plants, and thus no companies exist in China that can make these catalysts.



Selective catalytic reduction (SCR)

DeNOx catalysts are inside the reactors on the right of the picture. The volume of catalysts per reactor can reach several hundred cubic meters in total, depending on the size of the reactor.

Accordingly, JGC Catalysts and Chemicals Ltd. has turned its attention to catalysts for waste incinerators to develop the DeNOx catalyst business in China. NOx regulations were tightened in China at the start of 2012, and JGC Catalysts and Chemicals Ltd. won its first order to supply catalysts for a waste incinerator installed after the regulations were tightened. We aim to steadily expand the market for these catalysts in China.

As a leading company in the global business for DeNOx catalysts, JGC Catalysts and Chemicals Ltd. will aggressively develop the business overseas by initiating contact with major local companies in India, a market expected to see growth in demand for environmental-related equipment alongside economic expansion.



DeNOx catalyst

Pictured on the right is a DeNOx catalyst for coal-fired power plants, and on the left is one for gas-fired power plants.

Based on gas conditions, designs are optimized in terms of the number of cells, material composition and length.

The JGC Group's Environmental Management

Environmental Policy

JGC, as a professional engineering contractor, is committed to achieving environmental excellence in both its corporate operations and the services it renders its clients. To meet this commitment, JGC has hereby established the following principles, which shall be applied throughout its operations.

1. We shall endeavor to preserve the natural environment through the prevention of pollution and the conservation of energy and natural resources.
2. We shall provide our clients with technical solutions that conserve energy and natural resources, and reduce pollution and other adverse environmental impacts.
3. We shall fully comply with both environmental laws and regulations, and the environmental requirements of our clients.
4. We shall reduce the production of waste through measures that emphasize reuse and recycling.
5. We shall apply the following specific principles to the execution of our EPC projects:
 - **Engineering Phase:**
We shall reduce the adverse environmental impacts of completed plants by minimizing the energy and resource consumption of each plant, and minimizing emissions and waste production.
 - **Procurement Phase:**
We shall give preference to vendors that adopt environmentally-friendly manufacturing practices.
 - **Construction Phase:**
During construction, we shall endeavor to minimize emissions, adverse impacts on the surrounding environment, energy and resource consumption, and waste production. Furthermore, we shall ensure that our subcontractors adopt work practices consistent with this principle.

Koichi Kawana

President of JGC Corporation
1st July 2011

Continuous Improvement of Management Systems

In December 2003, JGC obtained the ISO 14001 certification from Lloyds Register Quality Assurance (LRQA). ISO 14001 is the international standard for environmental management systems.

Since then, the certification has been renewed three times, and the audit required for maintaining it in fiscal 2012 was completed in October 2012, including at overseas sites.

Environmental Improvement Activities in Line with Our Business -----

As environmental improvement activities at JGC's Headquarters tended to center on reducing waste, paper, and electricity consumption, our task was to shift this focus to activities that fall in line with our actual business. To accomplish this, with the participation of the heads of all divisions, we reviewed our methods for identifying opportunities for environmental conservation and our procedures for target setting. We reached a common recognition of the following points.

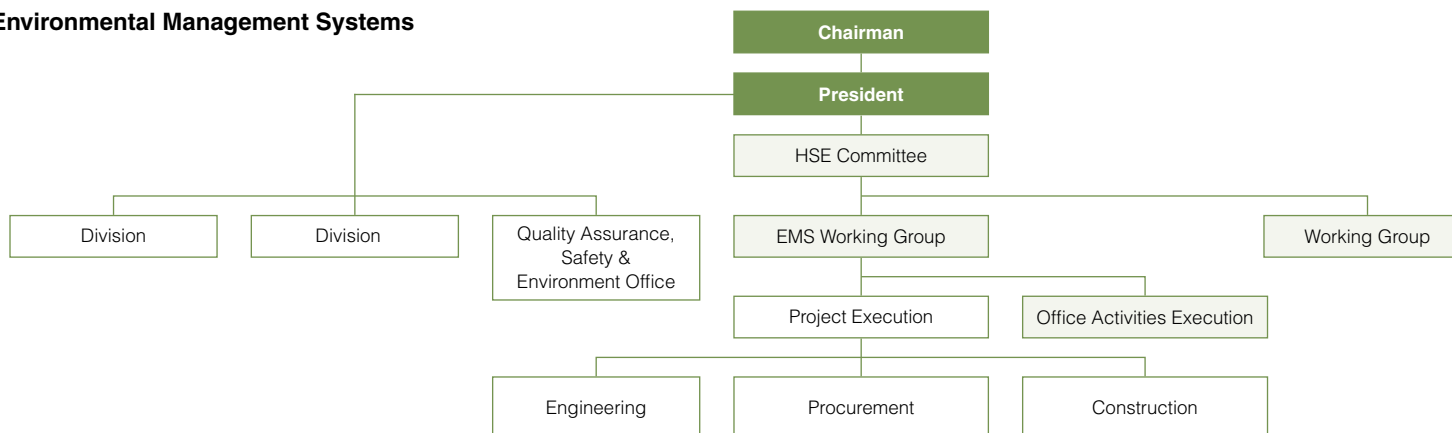
- While we solve environmental issues through our original business and aim for sustainable development in society, it is important to link these processes to the creation of corporate value and improvements in competitiveness.
- While concerns over environmental issues are rising worldwide, JGC is contributing directly and indirectly to solutions through its original core business. JGC recognizes sustainability as an issue it has to address in this particular business.
- Important points that JGC must consider to develop itself sustainably are as follows:
 1. Implementing adequate operation and maintenance to prevent environmental problems from arising in the future.
 2. Continuing to implement improvements to increase corporate profits, while giving consideration to environmental matters.

With this common recognition, JGC continuously makes a concrete review of the significance of environmental objectives and targets, and implements environmental management activities from the following perspectives.

- Environmental management activities conducted with environmental objectives and targets are not separate from business, they are business.
- The operational policies of divisions and departments are determined for substantial performance improvements of the organization and its operations.
- Environmental targets and quality targets can be matched together.

In this way, JGC conducts environmental improvement activities in line with its original business, by loosely linking its environmental management systems to its quality management systems.

Environmental Management Systems



Environmental Objectives, Targets, and Achievement

Promotion of the Zero Emissions Initiative 2015 -----

Since 2008, as part of its corporate social responsibility, the JGC Group has enacted environmental improvements through the Zero Emissions Initiative, which details strategies for reducing the harmful by-products of JGC's business activities to zero. In 2011, with new targets set for the mid- and long-term in consideration for the development of our environmental business, we have renewed the initiative under the new title, "Zero Emissions Initiative 2015."

The Zero Emissions Initiative 2015 covers the head office, the Research and Development Center, JGC construction sites in

Japan and overseas, JGC Group companies in Japan and overseas, and domestic and international sales bases.

– JGC Group Offices

Environmental improvements were promoted in offices by adopting an environmental target of a five-year average reduction of 1% or more in energy-related CO₂ emissions units.

– JGC Domestic Construction Sites

Environmental improvement targets were quantified in three areas: final disposal rate, number of leaks, and CO₂ emission units. Although the target (3%) for the final disposal rate was not reached (4.2%), a year-on-year reduction of 30% was successfully achieved, while targets for the number of leaks and CO₂ emission units were reached.

Recycling of Construction Waste -----

JGC aims at minimizing final waste through the rigorous implementation of the "Zero Emissions Initiative 2015."

In fiscal 2012, the final disposal rate of domestic construction projects was 4.2%.

On every site, before contracting disposal to a provider of intermediate waste treatment services, we confirm its recycling rate with our own industrial waste surveys.

In particular, because there are significant differences between contractors regarding the treatment methods and recycling rates of construction sludge, we carefully compare treatment methods and costs.

Before starting construction, we also establish an adequate waste separation plan based on the characteristics of waste to be generated.

In addition, through the rigorous separation of wastes in accordance with this plan, we seek to improve the recycling rate during construction.

– JGC Overseas Construction Sites

Compared with domestic sites, overseas sites have different conditions for each site, which make it challenging to quantify environmental improvement targets. In this difficult context, in an operating environment that tends to lack sufficient recycling mechanisms, efforts were made regarding the use of valuable resources, rigorous reuse of materials, and prevention, preparation of treatment, and handling of oil leaks. In addition, internal HSE audits are conducted at all sites.

– Efforts in Group Companies

Because these companies conduct extremely varied forms of business, they pursued independent efforts aiming at zero by-products, based on their respective business characteristics.

HSE 2015 and Environmental Improvement Activities

After the start of our five-year medium-term management plan "New Horizon 2015" in 2011, the JGC Group has been promoting a new initiative, "HSE 2015," with the objective of becoming a "HSE No. 1 Global Contractor."

In accordance with the expansion of our business fields, and emphasis on Health, Safety, and Environment (HSE) in our policies, we do not limit the environmental improvement activities of "HSE 2015" to reducing immediate by-products (wastes, leaks, greenhouse gases). Medium- and long-term targets (2020, 2050) are also set, while "Environmental Efforts through Business Activities" are promoted.

The JGC Group has now renamed its environmental improvement activity "Zero Emissions Initiative 2015." To grow toward its vision, the JGC Group will accelerate its activities: Proposing, planning and implementing projects to respond to the needs of global environment conservation, and operating businesses and investing in them when necessary.



Poster for Zero Emissions Initiative 2015



Environmental Objectives, Targets, and Achievement

In accordance with our Environmental Policy, JGC strives for continuous improvement of our environmental management systems by setting environmental objectives and targets, and measuring and assessing achievement as shown in the table below.

Notes:

- Office activities ... Regarding office activities, environmental performance has reached a satisfactory level that indicates saturation. Consequently, environmental improvements in offices are now implemented with environmental targets as operation and maintenance items.
- Project execution ... Divisional environmental targets for project execution are set for environmental improvements in the original business and are matched to quality targets. Consequently, targets cover a broad range of division-specific items, they are loosely linked to the quality management systems, and they produce steady results.
- Group companies ... Group companies also actively engaged in activities of the "Zero Emissions Initiative 2015" and obtained significant results in environmental improvement. However, because these companies conduct very diverse forms of business, summarized environmental targets are difficult to express, and for this reason they are not mentioned in this report.

Fiscal 2012 Results and Fiscal 2013 Improvement

Activity objective	Fiscal 2012 results	Assessment	Initiatives for fiscal 2013	Improvement
Implementation of the Zero Emissions Initiative 2015	<ul style="list-style-type: none"> CO₂ emissions reduced to the Kyoto Protocol level. Soil pollution from leaks reduced to almost zero. Reduced the final disposal of waste (reduction in the amount of final disposal without an improvement in the final disposal rate) Promoted environmental investment 	G	Continued implementation of the Zero Emissions Initiative 2015	→
Environmental targets	In departments that provide supervision/guidance, setting of environmental targets directly linked to original business, promoting of linkage with quality management systems.	G	Continuing promotion of environmental improvements directly linked to original business	→
Strengthening of internal auditing	Implemented at all overseas sites. (Currently implemented 14 times in total.) Score: 83.8 points (target: 80 points)	E	Planning for multiple implementation at all overseas sites (To be implemented 21 times in total.) Target: 85 points	↗
Strengthening initiatives for biodiversity	Initiatives for biodiversity directly linked to original business (expansion also at overseas sites and in Group companies.)	G	Continued the implementation of initiatives for biodiversity directly linked to original business	→

Assessment

E: Completely implemented G: Extensively implemented NG: Not yet implemented

Improvement:

↗ Substantial modification of environmental improvement measures

→ Continuation of environmental improvement measures

Zero Emissions Initiative 2015 Environmental Performance (JGC sites in Japan)

Environmental indicators	Unit	Fiscal 2008	Fiscal 2009	Fiscal 2010	Fiscal 2011	Fiscal 2012	
1. Final disposal rate of industrial waste	Result (Target)	%	5.3 (11)	3.7 (7)	4.1 (4)	3.3 (3)	4.2 (3)
2. Number of leaks	Result (Target)	Leaks	0 (0)	2 (0)	1 (0)	0 (0)	0 (0)
3. Energy-related CO ₂ emission units	Result (Target)	kg-CO ₂ /hour	1.05 (1)	0.94 (1)	0.75 (1)	0.46 (1)	0.36 (1)



Environmental Report on Office Activities

Efforts based on Minato Mirai 21 Urban Management

The Queen's Tower A building, which houses JGC's Yokohama World Operations Center, is located in Queen's Square Yokohama, a complex in the Minato Mirai 21 district in the Nishi Ward of Yokohama city. This area is being developed with consideration for a more efficient use of energy, the needs of a recycling-oriented society, urban disaster prevention, and environmental friendliness. Its urban management is based on the "Basic Agreement on Town Development under Minato Mirai 21."

The efforts made by JGC to mitigate the environmental impacts of our office activities are also based on this concept, and they include reducing electricity consumption, heating and cooling consumption, CO₂ emissions, and waste, and increasing the recycling rate.



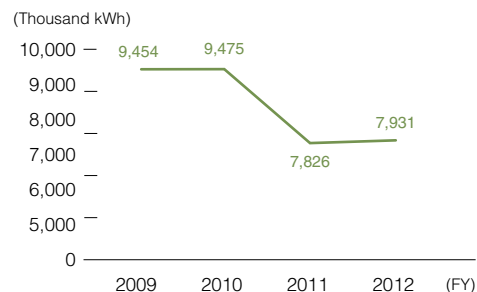
Minato Mirai 21 District

Efforts to Reduce Electricity Consumption

In fiscal 2012, JGC's consumption of electricity edged up 1.4% compared with the previous fiscal year.

JGC is undertaking a variety of activities to achieve power savings of 15%. These activities are being implemented by the Queen's Square Yokohama Management Association at the Company's Yokohama World Operations Center in line with a ministerial ordinance for the restriction of the use of electricity, based on article 27 of the Electricity Business Act, in the wake of the Great East Japan Earthquake. Concrete measures adopted to reduce consumption included significant cuts in the use of fluorescent lighting in office floors and elevators, and the replacement of conventional bulbs by LED bulbs in part of the lighting fixtures.

Electricity consumption by JGC Yokohama World Operations Center



Switching to LED Light Bulbs in Offices

At our Yokohama World Operations Center, we have taken various steps to conserve energy and reduce environmental impact, such as cutting down on the number of installed lights, operating fewer elevators during non-peak hours of the day, and other initiatives.

In fiscal 2012, we refitted all of our lighting with LED lamps after changing our plans to upgrade the lighting all at once instead of over a period of several years, as a project to update our office space partly out of the need to conserve energy in the wake of the Great East Japan Earthquake. We had initially considered upgrading to dimmable fluorescent lighting, but opted for the more energy efficient LED lighting in the end.

From January to March in fiscal 2012, electricity consumption was reduced by



A sticker distributed to call for power-saving efforts by all employees in using personal computers

5.5% (106,980 kWh) versus fiscal 2011, when restrictions on electricity use went into effect.

In addition, in late 2012 we completed an upgrade from fluorescent lighting to LED lighting at the Saido Annex of the Kamiooka Office, which resulted in a reduction of 11% in electricity consumption in January through March of fiscal 2012, compared with the previous fiscal year.



LED lighting in the office floors of the Company's Yokohama World Operations Center

Efforts to Reduce Heating and Cooling Consumption

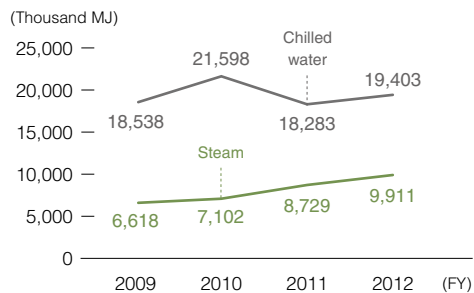
For cooling and heating, the Minato Mirai 21 District adopts a District Heating and Cooling System designed for the efficient use of energy, with centralized production, provision, and management of heat, cold, and steam for necessary uses such as cooling, heating, hot water, etc. The air conditioning of the Queen's Tower A building,

Environmental Report on Office Activities

where JGC's Yokohama World Operations Center is located, receives all its heating and cooling through this system.

In fiscal 2012, the volume of chilled water necessary for heating and cooling regulation increased by 6.1% year on year. Despite various energy saving measures implemented in offices, this was largely attributable to the high level of average temperatures during August and September 2012, requiring additional amounts of chilled water for cooling purposes. Because of low average temperatures during winter, the volume of steam necessary to heat the offices also increased by 1.5% year on year. As a result, the use of chilled water and steam for the year climbed 8.5% compared with the previous fiscal year.

Consumption of chilled water and steam by JGC Yokohama World Operations Center



Efforts to Reduce CO₂ Emissions

The JGC Yokohama World Operations Center is a Type 1 Designated Energy Management Facility under the Act on the Rational Use of Energy (Energy Saving Act), and as such, we are legally obligated to report our CO₂ emissions. In fiscal 2012, CO₂ emissions increased 4.3% year on year reflecting a change in the power consumption CO₂ conversion coefficient.

CO₂ emissions by JGC Yokohama World Operations Center



* The power consumption CO₂ conversion coefficients in 2009, 2010, 2011, and 2012 were 0.347, 0.384, 0.387, and 0.464, respectively. The chilled water and steam CO₂ conversion coefficient for each year was 0.057.

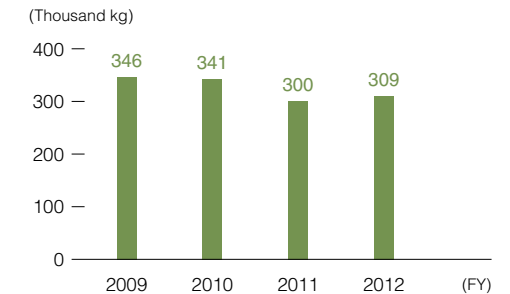
Efforts for Resource Saving, Waste Reduction, and Recycling

In the Minato Mirai 21 District, all companies recycle used paper, bottles, and cans under a joint program to reduce waste and save resources.

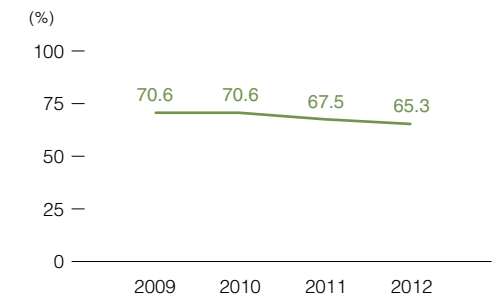
In fiscal 2012, JGC's total volume of waste disposal increased by 3.1% compared with the previous fiscal year. This was mainly due to an increase in the amount of recycled paper as well as the increase in fluorescent bulb waste following the changeover to LED bulbs.

In fiscal 2012, the recycling rate decreased by 2.2% compared with the previous fiscal year to 65%, which took into account the increase in general waste (for incineration).

Volume of waste disposal by JGC Yokohama World Operations Center



Rate of waste recycling by JGC Yokohama World Operations Center



Using JGC's Environmental Technology to Solve Difficult Issues

Promoting CDM Projects in China -----

Clean Development Mechanism (CDM) emission-reduction projects are conducted as cooperative efforts between developing countries and developed countries. Certified Emission Reduction (CER) credits issued for CO₂ emission control and/or CO₂ absorption enhancement achieved by a given project are divided among the project participants. This system makes it possible for developed countries to apply emission reductions made in investment recipient countries toward the achievement of their own CO₂ emission reduction targets. JGC is currently participating in several CDM projects in China.

37.5 Million-ton Greenhouse Gas Reduction from Chlorofluorocarbon Substitute Gas Recovery and Decomposition

JGC has been carrying out the first-ever Japan-China CDM project. The objective of the large-scale project is to acquire Certified Emission Reduction (CER) credits through the recovery and decomposition of the greenhouse gas HFC23 at a chlorofluorocarbon substitute production plant in China's Zhejiang Province. The plant is owned by Zhejiang Juhua Co., Ltd. The decomposition facilities began operation at the beginning

of August 2006, and greenhouse gas reductions of approximately 37.5 million tons were achieved by December 2012.

Acquisition of CER Credits of 80,000 Tons through Residual Heat Power Generation at Cement Plants

A second CDM project in which JGC is participating involves the use of residual heat from cement plants to generate electricity that can in turn be used to power the plants themselves. JGC has undertaken the project in partnership with Huaibei Mining (Group) Cement Co., Ltd., and the plants are located in China's Anhui Province. JGC obtained CER credits for the equivalent of approximately 80,000 tons of CO₂ from the project by March 2013.

Acquisition of CER Credits of 750,000 Tons through Cement Raw Material Substitution

As a third CDM project example, JGC, in partnership with Elion Jidong Cement Co., Ltd. of the Inner Mongolia Autonomous Region, is currently involved in a cement production CDM project that applies a new production method using carbide residue as a raw material substitute. Under this new method, the by-product generated through

clinker production is water vapor, not CO₂. Therefore, the new method enables a reduction in CO₂ emissions from production processes of more than 80%, as well as the effective use of carbide residue waste. JGC obtained CER credits for the equivalent of approximately 750,000 tons of CO₂ from the project by May 2013.

In this manner, JGC has contributed to the reduction of greenhouse gas emission through its participation in CDM projects through to 2012, the first commitment period of the Kyoto Protocol. While Japan is not a participant over the second commitment period from 2013 to 2020, JGC will leverage every opportunity to engage in reduction projects going forward.



Elion Jidong Cement Co., Ltd. Cement Plant

Promoting Medium- to Small-Scale LNG Plant Projects -----

As the demand for energy continues to rise globally, and the development and production of shale gas continues to advance, many observers consider that natural gas will play an important role as a comparatively environmentally-friendly energy source to bridge the gap toward a renewable-energy-based, low-carbon society. At the same time, the demand for liquefied natural gas (LNG) is expected to expand steadily in emerging countries such as China and India.

Recently, baseload LNG plants have tended to be large in scale because of investment efficiency considerations.

JGC has contributed to the construction of more than one-third of the world's LNG plants. Making full use of the technology and knowledge we have accumulated in this field, JGC has developed a design and construction concept for medium- to small scale LNG plants where demand is expected to increase. With production on the scale of about one million tons LNG per year, emphasis is being placed on ensuring sufficient economic efficiency.

Through the application of this design concept, JGC contributes to developing projects using as-yet undeveloped small- to

Using JGC's Environmental Technology to Solve Difficult Issues

<Keywords of JGC's design concept>

Low-cost	Standardized design for reduced engineering cost
Short delivery	Ordering of preselected equipment and repeated orders of the same equipment for a reduced delivery time
Compact	Modularization of plant equipment for minimized construction work on site



Image of a completed 1.0 MTPA LNG plant

medium-sized gas fields into successful LNG operations. By using this generic concept the time from front-end engineering design to plant start-up will be shortened to three and a half years, down from the corresponding six to eight years for conventional LNG project development. Furthermore, JGC has developed a Floating LNG (FLNG) standard design concept to accommodate annual production of between one million and two million tons in an effort to support offshore gas field development. In this manner, energies are being channeled toward addressing a broad range of client needs.

In addition, LNG is also gaining momentum in the U. S. and Europe as a clean fuel for the internal combustion engines of trucks

and vessels, while new business models are under study, such as the LNG production of thousands to tens of thousands of tons per year from pipeline gas and its retail in LNG stations. By further developing its medium-to small-scale LNG plant concept, JGC will support the creation of this new LNG-based business chain.

Development of an Efficient CO₂ Separation and Recovery Technology ---

JGC has developed the High Pressure Acid-gas Capture Technology (HiPACT) process in partnership with BASF of Germany. HiPACT is a technology for high-pressure recovery of the CO₂ in natural gas and synthesis gas. The technology makes it possible to

greatly reduce the energy use and cost of CO₂ underground storage, and could help promote widespread use of Carbon Dioxide Capture and Storage (CCS).

After the completion of basic technology pilot testing at our Research and Development Center, JGC conducted demonstration testing of CO₂ recovery (40,000 tons per year) using actual natural gas at the carbon dioxide gas removal facility of INPEX Corporation's Koshijihara Gas Plant (Nagaoka City, Niigata Prefecture) in 2010. Now that testing has confirmed that energy reduction targets can be achieved, commercial applications are possible. Because it reduces costs and operational energy, HiPACT could contribute to the early dissemination of CCS, which is viewed throughout the world as a promising technology for achieving large-scale reductions of CO₂ emissions.



Koshijihara Gas Plant of INPEX Corporation

Participation in Japan's first CCS Total System Demonstration Project ----

In Japan, the Ministry of Economy, Trade and Industry has entrusted Japan CCS Co., Ltd. with the planned execution of the nation's first demonstration project for a Carbon Dioxide Capture and Storage (CCS) system in Tomakomai, Hokkaido. JGC was awarded a contract for this project for the construction of CO₂ separation, capture and compression facilities. The construction is scheduled for completion in 2016.

In 2004, JGC built the In Salah natural gas processing plant with CCS facilities in Algeria, and is currently working on a project in Australia to construct the Gorgon LNG plant, which also features CCS facilities. In addition to experience from these projects, JGC has gained expertise from the development of related technologies, which it expects to lead to future orders.

JGC contributes to the prevention of global warming through initiatives such as CCS systems.

Biomass Power Generation Project Started for Greenhouse Gas Reduction

Since the Great East Japan Earthquake, dispersed electricity generation, especially from renewable energy sources, has been attracting attention. Because Japan is a

Using JGC's Environmental Technology to Solve Difficult Issues

heavily forested country, the efficient use of woody biomass has been a much studied topic. However, examples of commercialization have been limited, because of the challenge of efficiently collecting woody biomass, which is thinly spread over wide areas. In this context, Japan's Ministry of the Environment has invited proposals as part of its Regional Projects for Challenge 25 Campaign, with the objective of expanding new energy projects including those that use woody biomass. In the Shonai Region of Yamagata Prefecture, the Ministry has adopted a demonstration project using a Gasification Cogeneration System using woody biomass proposed by the JGC Group company Japan NUS Co., Ltd.

This system uses thinning residue from mountain forests, in addition to orchard pruning residue and driftwood, as a raw material that is plentiful and easy to collect efficiently. The raw residues are processed into wood chips, and used in a demonstration plant to generate power and heating for nearby welfare facilities. The demonstration plant supplies heat and power to nearby PVC greenhouses, as well. As such, the system is expected to be highly economically viable and to generate high returns. Plant installation and commissioning were completed during the first year, in fiscal 2011, and in fiscal 2012, the second year, the plant operated at full capacity for approximate-

ly 300 days demonstrating its CO₂ reduction effects. In its third and final year of operation, fiscal 2013, the demonstration plant will draw on its achievements throughout fiscal 2012, to again demonstrate its CO₂ reduction effects, commercial viability and profitability, as well as the stability of its raw material supplies.

Consulting for Marine Waste Problems

A part of the JGC Group, Japan NUS Co., Ltd. has provided consulting services for many years, including the problems related to the marine environment. One such problem is waste floating in the ocean, including plastic bottles and other debris that have flowed down rivers into the ocean. This debris drifts around on ocean currents, washes back ashore, or sinks down to the seabed.

The marine waste has had an adverse impact on biodiversity, because debris wraps around the bodies of marine life or is mistaken as food and eaten. It has also caused problems in other areas, such as degrading the beauty of shorelines and damaging fishing



Local residents help experiment in ways to efficiently remove waste

gear. This problem came to the forefront of people's awareness after the Great East Japan Earthquake struck and the resulting tsunami washed entire buildings out to sea, creating massive amounts of flotsam.

Japan NUS Co., Ltd. has provided consulting services for many years concerning this issue, and embarked on a full-fledged investigation of the problem in cooperation with the Ministry of the Environment as well as local governments in 2007. As a result, actual conditions are becoming clearer about the marine waste, such as seasonal changes in its volume, a factor that had not been well understood. We are also helping local communities deal with this issue, with local residents participating in the investigation by experimenting with ways to efficiently capture and dispose of the marine waste in accordance with local conditions.

In addition to investigative research, in fiscal 2012 we participated in International Coastal Cleanup, an international campaign to clean up shorelines. We will continue our efforts to pass down a pristine marine environment to the next generation.

Green Curtain -----

As a part of efforts to conserve the environment, PT. JGC Indonesia has undertaken the Green Curtain initiative, where plant vegetation is used to cover a portion of the new office building

completed in 2010 that was designed from the ground up to be environmentally friendly. The office building is located in Jakarta, Indonesia in the southern hemisphere near the equator, so it is bathed in strong sunlight. Many office buildings built in Indonesia have all-glass walls that were chosen for their beauty in design.

JGC, however, designed its office building with fewer windows on the eastern and western side where the sun shines the most, and installed a Green Curtain on the northern wall. This Green Curtain absorbs CO₂ through photosynthesis, and helps block the strong sunshine from entering the office through windows, thereby reducing load on the air conditioning system.

Moreover, windows are positioned to take in external light, while the Green Curtain covers glass windows on the front of the office building where it can be seen from the nearby highway and neighboring areas. This keeps office temperatures from rising by shutting out strong sunlight and utilizing the transpiration from the leaves of the plants.



Green Curtain on the side of the office building

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Establishing Client Satisfaction and Earnings Society's Trust, Developing Our Business through Coexistence with Society

The above words are taken from the "Principles of Business Conduct of the JGC Group," which was formulated to guide JGC on the path to being an enduring company achieving consistent innovation. Recognizing that our business development is inextricably linked with social prosperity, we always give consideration to our coexistence with society.

The Four Priorities of Social Contribution Activities

JGC, as a professional engineering contractor, has established the following principles in an effort to contribute to the preservation of the global environment.

1. **Environment:** To actively contribute to environmental conservation
2. **Education:** To support the education of the next generation of qualified professionals
3. **Science and Technology:** To support science and technology that will form the foundation of sustainable development
4. **Community:** To contribute to the sustainable development of the areas where we do business

In this section, we cover specific examples of our education, science and technology and community activities.

Social prosperity and the development of our business are inextricably linked. Always giving consideration to our coexistence with society, the JGC Group engages in diverse activities to fulfill our social responsibility.



Society

Activities as a Corporate Citizen



Society —Activities as a Corporate Citizen



Close-Up



Sustainable Development for Both Energy-Consuming Countries and Resource-Producing Countries



Saudi Arabia



Establishment of Engineering Companies and Business Development with Local Human Capital

Through our EPC business, the JGC Group has participated in more than 20,000 projects in over 70 countries. Understanding the importance of getting along well with the people that reside in these countries, we engage in a broad assortment of activities that give back to local communities.

JGC has established engineering companies in the Philippines, Singapore, Indonesia, Vietnam, Algeria and Saudi Arabia.

Transferring the know-how of the JGC Group to the employees of these local companies, JGC supports the independent development of engineering business at the local engineering companies. At the same time, we create a framework that is beneficial to the operations of the JGC Group. We have taken this grass-roots approach to business development for a long period of time.

While respecting differences in cultures and traditions, we work together as a group to create frameworks that lead to sustainable development in resource-rich countries.

Here, we introduce our efforts in Saudi Arabia as a recent example of our commitment to sustainable development.



Society —Activities as a Corporate Citizen

JGC Gulf International Co., Ltd.

Established amid Emerging Social Issues in Saudi Arabia



JGC Group representative Mr. Shigeshiba with Mr. Abdallah S. Jum'ah, former president of Saudi Aramco at the inauguration ceremony for JGC Gulf International Co., Ltd.

Saudi Arabia has been blessed with abundant oil resources since ancient times.

Recently, however, Saudi Arabia has been fostering industries other than the petroleum industry to address the pressing issue of creating more employment opportunities.

Against this backdrop, JGC has jointly established an engineering company in Saudi Arabia with the state-owned oil company Saudi Aramco, and impressed on young Saudi Arabians the hard-working, team-oriented nature of Japanese people. In 2008, JGC also established in Saudi Arabia a

wholly owned engineering company, JGC Gulf International Co., Ltd., in response to strong interest in having JGC contribute to the diversification of industry and the creation of employment opportunities.

Orders Won Independently from Various Plants in the Second Year after Establishment

JGC Gulf International Co., Ltd. employs engineers with a diverse range of nationalities, primarily young Saudi Arabians. The JGC Group put in place a support system to keep business on track with so many people from different cultures and traditions working together.

In 2009, the second year after its founding, JGC Gulf International Co., Ltd. won an order on its own for a water treatment facility construction project that aims to increase crude oil production from a joint venture between Saudi Arabia and Kuwait.

In 2010, JGC Gulf International Co., Ltd. received an order for a gas compression facility construction project from the Bahrain state-owned oil company, and in 2012, it acquired an order from the Saudi Arabian state-owned oil company for a project to expand aromatic production facilities and ethylene facilities.

With project managers mostly consisting non-Japanese local employees, JGC Gulf International Co., Ltd. independently took the initiative from winning the order to project execution, and has begun to steadily build up its project execution capabilities.



Project team members at JGC Gulf International Co., Ltd.



Contributing to the Further Development of Resource-Rich Countries

When it was first established, JGC Gulf International Co., Ltd. had less than a hundred employees, but has grown remarkably to approximately 750 employees today.

Initially, the projects it accepted were relatively small in scale compared with the projects undertaken by JGC. Building on its experience with each of these projects, it gained a strong reputation for cost competitiveness with prompt and precise services based on close customer relationships that were only possible through the connections developed by local employees. The scale of its projects expanded considerably as a result.

JGC is dedicated to taking a grass-roots approach to business development in resource-producing countries by establishing engineering bases with local human capital and transferring its engineering technologies to these companies.

With nearly 40 years of operations in resource-rich countries, the JGC Group believes we are uniquely positioned to directly contribute to the diversification and development of industry in these countries.

JGC will continue to proactively deploy our engineering capabilities for the betterment of society and the global economy.

Personnel Development and Communication with Employees

As an engineering company, JGC's sustained growth depends upon our people.

Therefore, the JGC Group focuses on personnel development and communication with our employees.

Personnel Systems -----

JGC's fundamental policy for personnel systems is "autonomous development and creation of new value." In 2001, we introduced a personnel system to enable employees to autonomously develop their professional skills, while sharing the strategic direction of the company, and offering new value and contributions to customers and society.

Improving our systems when appropriate, we strive to develop the abilities of our employees.

Personnel Development at JGC Techno College -----

In 2001, JGC founded the JGC Techno College as a place where motivated personnel can voluntarily participate in continuing education courses. Senior staff members with long-term technical experience act as instructors at the college and organize and run the sessions, to help pass on their skills and experiences to younger employees. In addition to offering conventional in-house technical courses, the college holds lectures inviting prominent experts in various fields from Japan and foreign countries. In fiscal 2012, JGC held approximately 170 lectures and attracted more than 5,000 officers and employees.

Educating Future Engineers (Piping Layout Training Center) -----

Expecting a shortage of technicians skilled in plant piping layout, the JGC Group company, JGC Plant Innovation Co., Ltd., has opened a Piping School in April 2007 to train students for this field.

Located in Morioka City, Iwate Prefecture, the school hires high school graduates from the area with an interest in

mathematics and design. After one year of intensive training in basic design techniques at the school, they refine their skills through on-the-job training (OJT) in the Yokohama area. Fifty-five students that graduated by 2013 are already accumulating experience through this OJT system.

Plant Engineering Morioka Co., Ltd., established in Morioka City by JGC Plant Innovation Co., Ltd., has taken on the responsibility of education and training as a piping layout training center from fiscal 2013.

Plant Engineering Morioka Co., Ltd. is taking charge of plant designing in some portions of projects in which the JGC Group is working on worldwide. This initiative is attracting local interest within Morioka City as a measure that is helping to provide young people with the stable jobs.



On-the-job training

JGC Family Day (Bring-Your-Child-To-Work Day) -----

On August 1, 2012 JGC held JGC Family Day, to allow children from primary school grades four through six to observe their parents' workplaces. Eighteen children of JGC employees participated in the event, the purpose of which is to develop children's social awareness and foster the concept of work and occupation. They exchanged handmade business cards with the Chairman and employees, in addition to observing work and meetings in the actual company office. We plan to hold this event every year to raise employee awareness toward the importance of a healthy work-life balance.



Employees and their children participating in the JGC Family Day

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Our Contributions to Society

Chemistry Classes for Children -----

With the aim of interacting with and contributing to local communities, JGC Catalysts and Chemicals Ltd. holds chemistry experiment classes every year for elementary school students at its Kita-Kyushu business site in Fukuoka Prefecture.

Since it is a chemicals maker, JGC hopes to pique the curiosity of children in chemistry through these classes and get them interested in becoming a researcher in the future. Every year, the classes are so popular that they are filled to capacity a day after registration opens.

In 2012, with 25 students from neighboring elementary schools, we demonstrated four experiments called chemical garden (metal salt is melted into liquid glass), slime production (polyvinyl alcohol is mixed with borax to create a gel), liquid nitrogen (everyday items are frozen to -196°C , the most popular experiment), and magic cards (a demonstration of the

refractive index of water and plastic). The experiments were of great interest to the children, who could not tear their eyes away as they tried to imagine how the experiments worked.

JGC Catalysts and Chemicals Ltd. believes that getting children interested in chemistry is a worthwhile endeavor and will continue contributing to society by maintaining strong relationships with local communities.



A chemistry experiment class with children

Donations for People Affected by Typhoon Pablo -----

In the Philippines where JGC Philippines, Inc. is located, typhoons strike on average 20 times a year, causing loss of life and massive damage to homes and other buildings. On December 4, 2012, Typhoon Pablo, the strongest typhoon to hit the Philippines in two decades, made landfall on the island of Mindanao, forcing 7,011 island residents (1,303 households) to evacuate. Typhoon Pablo claimed more than 600 lives, led to 827 missing persons, and injured 1,088 people.

The Philippine Red Cross has constantly provided assistance, emergency food and medical care in regions damaged by typhoons and other natural disasters with support from companies and citizens. To support the Philippine Red Cross, JGC Philippines, Inc. has decided to donate money to the cause, and enlisted its employees to collect donations. The donations collected by the company and its employees were immediately handed over to the Philippine Red Cross to help those in need.

In the Philippines, natural disasters occur every year, and the efforts of the government and the Philippine Red Cross are not always enough to help everyone affected. JGC Philippines, Inc. believes helping to aid people affected by natural disasters is an important part of its CSR activities. Whenever a natural disaster occurs, the company and its employees will continue to work together to provide assistance.



Donations collected for the Philippine Red Cross

Society —Activities as a Corporate Citizen

Our Contributions to Society

Opportunities for On-the-Job Training for Students of Nanyang Technological University -----

Our local affiliate in Singapore, JGC Singapore PTE LTD accepts a few college students every year through an industry placement program promoted by Nanyang Technological University, an elite national university established in 1991 in Singapore by the National University of Singapore.

In fiscal 2012, during the six-month period from January to June, JGC Singapore PTE LTD took in a total of three college students, one each in the process engineering division, civil engineering division, and plumbing engineering division, and offered them on-the-job training with its top-class engineers working on the front line. In addition to being exposed to expert knowledge, the students experienced the intricacies of the EPC business. In this way, we support the development of next-generation personnel.



Engineers and college students at the civil engineering division of JGC Singapore PTE LTD

JGC Singapore PTE LTD believes it is fulfilling its social responsibility as a member of the local community by participating in activities such as this.

Sales of Bread Hand-Made in Facilities for the Disabled -----

In January 2012, JGC started using the lunchtime period to support sales of bread baked by physically or developmentally challenged people at facilities for the disabled in Yokohama City. The initiative is meant to support the local community near JGC's head office, and to provide employees with the opportunity to make a social contribution in a simple way. Aimed at helping Yokohama residents with disabilities participate in society, this project became possible through the cooperation between Yokohama City, which supports efforts to address such issues as finding sales opportunities and channels for products made in these facilities, and JGC,



The area where the bread is sold is crowded with employees

which was considering contribution activities aimed at benefitting the area.

Vendors were selected through food tasting sessions and test sales organized by members of related divisions of JGC, and six facilities were eventually chosen for vending on a day-by-day rotating basis (including two facilities on alternating weeks).

The bread is moderately priced and tastes good, and is very popular with JGC staff.

The bread is sold at the Bento lunchbox vending space, on the sixth floor of the JGC Yokohama World Operations Center. Workers from other nearby offices are also welcome to purchase their lunch here, as the space is open to the public (from shortly before noon, for about one hour, on business days only).

Sponsorship of the “Fureai Concert—Fostering the Heart” in Yokohama City --

Since fiscal 2011, JGC has been a sponsor of the Fureai Concert Series “Fostering the Heart” organized by the Board of Education of Yokohama City. This initiative pertains to Education and Community, two of the four major CSR priorities set forth by JGC.

The Fureai Concert Series “Fostering the Heart” has been organized since fiscal 1998 for upper grade pupils of municipal

elementary schools, and the elementary departments of schools for the blind, deaf, or physically or mentally handicapped. The concert is meant to cultivate participants and enrich the students' sensibilities through music appreciation. The concert series is attended by about 33,000 pupils in total (approximately 3,300 pupils per day.)

Every year, the concert series includes performances by the Kanagawa Philharmonic Orchestra, as well as organ performances. The conductor, who also acts as the master of ceremony, provides the audience with playful, easy-to-understand explanations of the pieces performed, allowing not only children, but also parents and other adult participants to develop their cultural knowledge while enjoying the music.

Donating Foreign Coins and Used Stamps -----

At JGC, permanent donation boxes have been installed to collect foreign coins that employees have left over from business trips abroad, as well as used stamps from postal items employees have received. This is intended as a social contribution activity that employees can participate in during the course of day-to-day work.

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Our Contributions to Society

These boxes are filled with coins from a large number of countries and reflect the broad geographic spectrum of the Company's activities. Collected coins are donated to UNICEF. A donation was made to the Japan Committee for UNICEF in November 2012, following which JGC received comments of appreciation.

At the same time, stamps of various designs from all over the world are donated to the Make-A-Wish Foundation, an international volunteer organization, to help its support activities for children who fight serious illnesses.



Donations to UNICEF

Support to NPO Activities through the Donation of Used Books, CDs and DVDs (Thank You Books) -----

Since July 2012, JGC has been participating in a donation program called Thank You Books, which is organized by the Shinrai Zaidan foundation.

This is intended as another social contribution activity that employees can participate in during the course of day-to-

day work. Through this program, used books, magazines, CDs, DVDs, and game software are sent to the company Value-Books, which purchases them, with payments donated to designated organizations via the Shinrai Zaidan foundation. In this way, used books and CDs collected from JGC employees help support the Post-Tsunami Monitoring Project run by the NGO Earthwatch Japan, to help restore the Tohoku area.

Participation in the Post-Tsunami Monitoring Project -----

JGC has begun cooperating with NGOs to offer more efficient contributions in line with its four pillars of social responsibility: Environment, Education, Science and Technology, and Community. As part of these activities, the NGO Earthwatch Japan, of which JGC is a corporate partner, has begun its Post-Tsunami Monitoring Project to take care of the natural environment and nurture biodiversity in the Tohoku area, which suffered significant damage from the Great East Japan Earthquake of March 2011.

This project is undertaken through cooperation between a university (Tohoku University), NPOs, private companies, and citizens, to monitor ecosystems in areas damaged by the tsunami. The objective is to sustainably rehabilitate these areas, focusing

on the ecosystems that will support the local agriculture, forestry and fisheries industries in years to come.

Continuing from fiscal 2011, JGC approved of these activities again in fiscal 2012, and one employee participated in a survey of living organisms on mud flats damaged by the natural disaster, which was conducted in Sabusawajima near Ishinomaki City and Shiogama City in Miyagi Prefecture in August 2012. In the survey, the employee looked for living organisms on the surface and in the soil of the mud flats, and made a record of the findings. By comparing it to data prior to the natural disaster, this data is useful in formulating assessments of the impact of the tsunami on the region, as well as in identifying the level of diversity and scarcity of living organisms, which will help with their conservation. The employee participating in the survey said that it was an extremely beneficial experience, as it deepened their understanding of the importance of ecological systems, and taught the necessity of having revitalization measures that take into account biodiversity and a variety of other perspectives over the long term, instead of focusing only on short-term efficiency.

This project will continue over a long time horizon of ten years, and JGC intends to continue cooperating for the lifetime of the project.

Forest Conservation in the Watershed Forests of Kanagawa Prefecture -----

In August 2008, to commemorate its 80th anniversary, JGC became a watershed forest partner in Kanagawa Prefecture's Water Source Conservation Project, and launched an ongoing environmental conservation project in the forest. Through the project, employees of the JGC Group assist with watershed forest conservation while deepening their understanding of the role of watershed forests and the importance of coexisting with nature. Activities are carried out once a month, and in fiscal 2012, approximately 100 employees participated in various events, including forest walking tours and aquatic wildlife observation tours, which gave them the opportunity to enjoy contact with nature in different seasons.



Many employees participated along with President Kawana

Society —Activities as a Corporate Citizen

Our Contributions to Society

In September 2012, a large bus was hired for an event attended by about 50 persons, including the President, as well as various employees and their families. During the trip to the forest, participants received explanations of the meaning of watershed forest conservation, and once on the site, with the guidance of forest instructors, they were divided into three groups—Tree Thinning, Craftwork, and Forest Walking Tour—, learning about the importance of forest conservation while enjoying exchanges bridging nationality and age.

From fiscal 2012, forest activities have been incorporated into new employee training with plans in place to continue focusing on environmental activities.

JGC-S Scholarship Foundation: Support for the Next Generation -----

Through the JGC-S Scholarship Foundation, JGC contributes to the cultivation of scientists and the advancement of science and technology in Japan and overseas. The foundation was established in March 1968 with an endowment by JGC founder Masao Saneyoshi. Its principal undertakings include the provision of educational loans to Japanese university and graduate students majoring in scientific and technical fields, grants to foreign students studying in Japan, and research funding assistance for young researchers.



Fiscal 2012 grant students

As of fiscal 2012, the foundation has provided assistance to a total of 19,611 persons, through educational loans to 13,656 students and educational grants to 5,955 students (898 Japanese and 5,057 foreigners studying in Japan at their own expense). The foundation has also provided research funding assistance to a total of 2,072 young researchers. Annual disbursements have reached 326 million and 400 thousand yen. The foundation is supporting students affected by the Great East Japan Earthquake by extending to fiscal 2012 the special framework established in fiscal 2011 after the disaster, and by adding three universities to the four already designated in disaster-stricken areas.

Social Welfare Grants by the JGC Social Welfare Foundation -----

The JGC Social Welfare Foundation develops and provides welfare equipment for persons with physical disabilities, as well as providing funding for support groups and volunteer organizations for senior citizens and persons with disabilities in Kanagawa Prefecture. Since its establishment in March 1994, the foundation has made 591 contributions to support groups, 386 contributions to volunteer organizations, and thirteen contributions to other groups. In fiscal 2012, the foundation made 41 contributions to support groups, 30 contributions to volunteer organizations, and five contributions to other groups.



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