



SPOTLIGHT Quantifying GHG Emission Reductions by J-MRV

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As GREEN operations launched in April 2010, JBIC developed J-MRV as a method to evaluate the greenhouse gas (GHG) emission reductions in the projects which JBIC finances, based on J-MRV Guideline. The principle of J-MRV is to be “Simple and Practical,” to ensure its smooth operation. JBIC hopes that J-MRV be a quantification tool for enhancing understanding among a wide range of countries on climate change mitigation projects.

Quantifying GHG emissions reductions

Sugimoto: MRV, which stands for Measurement, Reporting, and Verification, is a globally-used method to calculate GHG emission reductions. “J-MRV” was developed by JBIC as its own method to quantify the GHG emissions reduction in order to consider whether each project financed under GREEN operation contributes to the environmental preservation. The J-MRV Guidelines outline its concept and procedures.

Along with the basic concept and procedures of quantifying the reductions, the J-MRV Guidelines includes individual methodologies for each sector of the project and/or technology which vary from renewable energy even to transport.

At the point when GREEN operation just had started, J-MRV had only three methodologies for projects which were most in demand, including renewable energy and installation of energy-efficient industrial equipment. We then gradually developed new methodologies, and today the guidelines are equipped with as many as ten methodologies.

With the methodologies, JBIC hopes to stimulate Japanese companies’ involvement in environ-

mental preservation projects indirectly, focusing on project and/or technology field where Japanese firms have deep interests, conducted interviews with the authorities like trade associations and then developed and revised related methodologies.

Okamoto: In 2015, for example, we added a methodology for the Energy Management System (EMS), an advanced efficient system towards a reduction of GHG emissions, holistically controlling the energy consumption from a project. At the same time, it is a relatively new service where the Japan’s advanced energy-efficient technologies can be applied to its output controlling system.

JBIC develops the methodologies on sectors where Japanese firms could contribute to global mitigation goal with their advanced environmental technologies and will continuously oversee and revise the J-MRV Guidelines to meet the progress of technologies, as well as global trends.

Applying J-MRV’s quantification to Japanese overseas investment

Okamoto: Some of the formulas and concepts in the J-MRV and its methodologies are highly techni-

cal, so it may sometimes burden related parties, such as the borrowers. This is why we ensure to operate the J-MRV in line with the principle of “Simple and Practical.” We try the best to summarize the details in a way that is easier to understand, to simplify the procedures and to reduce any operational burden on the parties involved.

On the other hand, we also take care of J-MRV itself not to lose its credibility by over-simplifying the procedures, reviewing them in accordance with international trends and technological advancement, as well as advice from external experts.

Sugimoto: The J-MRV has been originally developed as a tool to calculate how much GHG emission reductions is from GREEN projects. Recently, however, it has been applied not only to GREEN projects but also projects where JBIC supports overseas businesses of Japanese companies through investment loans. The latter case will quantify how much contribution the Japanese projects make to the GHG emission reductions, making their environmental technologies more appealing. We look forward to hearing from Japanese companies that are considering carrying out projects abroad which contribute to the environmental preservation.

Confirmed GHG emissions reductions based on J-MRV Guidelines

(As of end-March 2016)

Project Outlines						Total amount of reduced emissions (CO ₂ /year)	
Signing date of Agreement	Country / Region	Borrower / Investee	Use of Loans	Amount of loan / equity participation	Total no. of verified sub-loans	Conformity	Of limited conformity
March 2011	Brazil	BNDES	Renewable energy projects in Brazil	USD 180 million (loan) ¹	7	113,568	—
March 2011	Latin America	CAF	Renewable energy projects in Latin American and Caribbean countries	USD 180 million (loan) ¹	1	416,521	—
March 2011	India	ICICI Bank	Renewable energy and energy efficiency projects in India	USD 120 million (loan) ¹	8	801,898	—
October 2011	Mexico	BANCOMEXT	Renewable energy projects, such as solar and wind power projects, in Mexico	USD 60 million (loan) ¹	1	15,403	—
December 2011	South Asia	South Asia Clean Energy Fund, L.P.	Renewable energy and energy conservation businesses in South Asia	USD 20 million (investment) ²	3	36,892	50,000
February 2012	India	ICICI Bank	Renewable energy and energy efficiency projects in India	USD 180 million (loan) ¹	4	206,869	—

¹ Guarantees provided by JBIC for other portions ² Amount of equity participation by JBIC

Cover photo : Westernmost Rough Offshore Wind Power Project (England)



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Special Feature

Japan’s Role towards Global Climate Change Resolution

Our Global Challenges Saraya Co., Ltd. (Osaka, Osaka Prefecture)

Improving the sanitation, environment and health of the world through environmentally conscious products

Making unique efforts in social action and environmental conservation initiatives

News in Depth

Supporting Japanese Participation in a Dutch Offshore Wind Power Project

SPOTLIGHT

Quantifying GHG Emission Reductions by J-MRV



JAPAN BANK FOR INTERNATIONAL COOPERATION

日本の力を、世界のために。

Supporting Your Global Challenges

Japan's Role towards Global Climate Change Resolution

Climate change is a grave threat to the economic and social sustainability of the global community. To tackle this issue, countries across the world are now working together to reduce the emissions of greenhouse gas such as CO₂. The key outcome of the COP 21 in Paris was the adoption of a global framework for mitigation, adaptation and support for 2020 and beyond, and the world community has reoriented itself toward a new target – to keep the average global air temperature rise below 2 degrees Celsius. Japan committed to scale up its contribution by not only carrying out domestic actions against climate change, but also promoting its advanced environmental technologies and providing funds to renewable energy and energy efficiency projects across the world.



IPCC's projections

Before announcing their noteworthy projections of future climate changes, the Intergovernmental Panel on Climate Change (IPCC) pointed out in the Fifth Assessment Report that most of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas (GHG) concentrations.

The IPCC projections estimated that if additional climate initiatives are not taken (a scenario in which GHG emissions are very high), the average surface air temperature is likely to rise by 2.6 to 4.8 degrees Celsius by the end of the 21st century compared to the 1986-2005 average. It will rise by 0.3 to 1.7 degrees Celsius if necessary initiatives are taken (a scenario in which GHG atmospheric concentrations will be about 450ppm in the year 2100) (see Figure on P.3). The projections

also indicated that: 1) cumulative emissions of CO₂ largely determine global mean surface warming by the late 21st century and beyond; and 2) global warming will increase the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.

Every issue of the IPCC assessment report receives a great deal of attention from the world community due to the strong impact it has on international politics, as well as on each country's policy directions.

Global actions against climate change

The IPCC was established in 1988 as an intergovernmental organization which provides scientific evaluation standards on the climate change issue. They have been working since the 1990s to build the global framework for climate change issues based on the IPCC's scientific knowledge.

The starting point of this global framework was the United Nations Framework Convention on Climate Change (UNFCCC), which came into effect in 1994. The objective of UNFCCC is to stabilize the GHG concentration level and preserve the current as well as future climate. The UNFCCC's supreme decision-making body is the Conference of the Parties (COP), held every year since 1995.

At the COP 3 in 1997, the Kyoto Protocol was adopted and came into effect in 2005. It established obligations for developed signatory countries to set numerical targets for GHG emission reduction to achieve between 2008 and 2012.

At the COP 15 held in 2009, the target for climate finance (see N.B.1) was proposed and officially agreed upon in Cancún in the following year. Under the agreement, "Industrialized countries committed to provide funds rising to USD100 billion per year by 2020 to support concrete mitigation actions by developing countries that are implemented in a transparent way. These funds would be raised from a mix of public and private sources." (Quoted from the UNFCCC official website.)

Then finally at the COP21 held in 2015, the Paris Agreement was adopted, opening a whole new stage for climate change actions. This is praised as an epoch-making international agreement which set a common cause among all of the 196 participating nations and regions toward a shared goal to establish a system and enhance the ambition of mitigation and adaptation efforts from 2020 and onwards.

Japan's funds and technologies: supporting developing countries' countermeasures for climate change

While the world is actively taking steps to address climate change, the Japanese government is also carrying out various initiatives.

First, at the COP 15 in 2009, the Japanese government announced its intention to provide developing countries with financial support totaling JPY1.75 trillion (approx. USD15 billion) over a period of three years from 2009 to 2012. Then in 2013, it set forth the Actions for Cool Earth: ACE, in which the Japanese government would support totaling JPY1.6 trillion (approx. USD16 billion) over a period of three years from 2013 to 2015.

In 2015, alongside the COP 21, the government announced ACE2.0, proclaiming a two-pillar of contribution. The first pillar pledged to support developing countries by providing, in 2020, approximately JPY1.3 trillion (approx. 1.3 times the previous ACE level) of Japanese public and private climate finance to developing countries. The second pillar of innovation set forth the "Energy and Environment Innovation Strategy" towards enhanced development of innovative energy and environmental technologies.

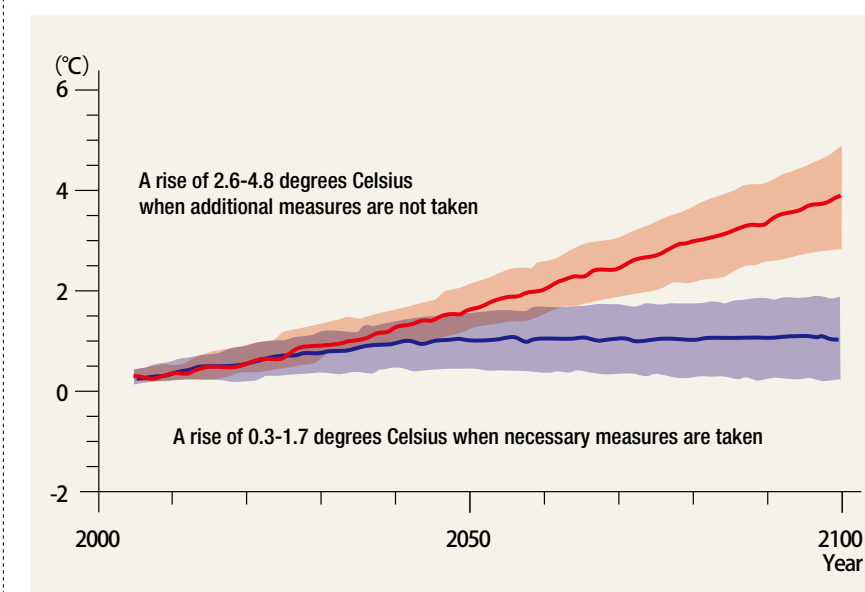
JBIC's commitment to preservation of the global environment

JBIC, a policy-based financial institution of Japan, is moving forward with financial support for individual projects on the basis of the above initiatives of the Japanese government. In April 2010, for example, JBIC newly assumed the "Global action for Reconciling Economic growth and ENvironmental preservation" (GREEN) (see N.B.2) as a new operation, and has actively supported projects in developing countries. These projects, such as renewable energy and energy efficient projects utilizing advanced environmental technologies, are expected to have a reducing effect on GHG emissions. The GREEN operations have already supported 29 projects, amounting to approx. USD4.5 billion (as of end-July 2016). Furthermore, in addition to GREEN, JBIC also supports expansion of various overseas businesses by Japanese companies which own excellent low-carbon technologies (see P.4 & 5).

NB1: Climate finance: a local, national or transnational financing to support mitigation and adaptation projects towards developing countries.

NB2: GREEN (abbreviation of Global action for Reconciling Economic growth and ENvironmental preservation): an operation in which JBIC provides loans, equity participation, and guarantees, while mobilizing private financing, to projects in emerging-market countries that entail significant environmental preservation effects by, for example, developing solar power and energy-efficient power plants, or by introducing energy efficient equipment that utilizes advanced environmental technologies.

Global average surface temperature change (relative to 1986-2005)



Source: created by JBIC from IPCC's "Climate Change 2014 Synthesis Report Summary for Policymakers"

Leading Environmental Technologies Beyond Borders

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-And-
Director for Global Environment Division



Diffusing Japan's advanced energy-efficient technologies across the world

The Japanese government sets forth in the ACE in 2013, as well as in the succeeding ACE2.0 (see P3), the goal of contributing to the worldwide initiative to reduce GHG emissions by disseminating the excellent environ-

mental technologies of Japan across the world. JBIC also vigorously engages in activities that contribute to achieve this goal.

The Japanese environmental industry has a distinct competitive edge in not only renewable energy, such as geothermal power generation, but also in wide-ranging energy-efficient technologies, including waste energy recovery facilities, waste incinerators, and

water recirculation systems at steelworks and other plants. While the majority of climate change mitigation projects which have support from international financial institutions are concentrated in the renewable energy sector, JBIC proactively focused on the progressive energy-efficient technologies of Japanese companies and on supporting related projects to widely disseminate them.

Working at the forefront of global environmental preservation

There are three schemes – export loans, overseas investment loans, and untied loans (under which the GREEN operations are conducted) – through which JBIC primarily supports the climate change mitigation projects.

Of these schemes, GREEN started in 2010 with the aim of preserving the environment, following the amendment of its statutory law. In recent years, climate change has become such a serious issue for the global community that a number of international financial institutions, such as the World Bank,

the European Bank for Reconstruction and Development (EBRD), and the Asian Development Bank (ADB), have newly positioned climate change measures as the key agenda. Back in 2010, however, there were only a few public financial institutions which were committed to environmental preservation as one of their primary operations, and JBIC's GREEN was undoubtedly a path-breaking initiative. Furthermore, corresponding to the launch of GREEN, JBIC established the "J-MRV Guidelines," a unique quantification technique to measure the reduction effects of GHG emissions. The projects to which we have adopted the J-MRV Guidelines are esti-

imated to reduce a cumulative total of approximately 1.6 million tons (as of the end of March 2016) of GHG emissions (which is equivalent to the amount of GHG absorbed by about 114 million fully-grown cedar trees) (please see the "SPOTLIGHT" on the back cover for further details on J-MRV).

In the present days, efforts to combat climate change are being intensified all the more by international financial institutions and governmental agencies across the world, on the basis of the previous year's Paris Agreement. JBIC will continue to take further steps forward in preserving the global environment, while cooperating with fellow organizations.

JBIC's track record of environmental activities (FY2012-15)

Number of loans, guarantees, and equity participation	44
Estimated reduction of GHG emissions	60.73 million tons

*N.B. These figures depend on the operation evaluation report between FY2012 and FY2015.

1 Iceland

- ▶ Theistareykir Geothermal Power Project

2 England

- ▶ Westernmost Rough Offshore Wind Power Project
- ▶ Fund of funds managed by a UK fund and other entities, investing in renewable energy and environmental projects

3 Denmark

- ▶ Equity participation in MHI Holding Denmark ApS, a Danish company operating an offshore wind turbine joint venture

4 Netherlands

- ▶ Luchterduinen (Q10) Offshore Wind Power Project

Key Examples of JBIC's Financing for

Environmental Preservation (FY2012-2015)



5 Turkey

- ▶ Loan for a Turkish company to purchase Japanese-made geothermal equipment through Isbank
- ▶ Loan to renewable energy projects through Türkiye Sınai Kalkınma Bankası
- ▶ Loan to renewable energy projects through Türkiye Kalkınma Bankası (2nd credit line)
- ▶ Loan for Turkish companies to purchase Japanese-made geothermal power facilities through Yapi ve Kredi Bankası
- ▶ Loan for renewable energy projects through Denizbank (2nd credit line)

6 Jordan

- ▶ Shams Ma'an photovoltaic power project

7 South Africa

- ▶ Loan to renewable energy businesses through Standard Bank of South Africa

8 Southern Africa

- ▶ Loan to renewable energy projects through Development Bank of Southern Africa

9 India

- ▶ Loans to renewable energy projects through ICICI Bank (3rd and 4th credit lines)
- ▶ Loan to renewable energy projects through IDFC Limited
- ▶ Loan to renewable energy projects through State Bank of India
- ▶ Loan for a company in India to purchase Japanese renewable energy equipment through ICICI Bank

10 China

- ▶ Fund for energy efficiency and environmental projects

11 Laos

- ▶ Nam Ngiep 1 Hydro Power Project

12 Malaysia

- ▶ Loan to renewable energy businesses through RHB Bank Berhad

13 Indonesia

- ▶ Rajamandala Hydro Power Project
- ▶ Sarulla Geothermal Power Project

14 Canada

- ▶ C2C Wind and Solar Power Project

15 USA

- ▶ CO₂-EOR (Enhanced Oil Recovery) Project

16 Mexico

- ▶ Loans to renewable energy projects through BANCOMEXT (2nd and 3rd credit lines)
- ▶ Fund investing in renewable energy and energy efficiency projects

17 Colombia

- ▶ Loan to renewable energy projects through Banco de Bogotá

18 Brazil

- ▶ Loans to renewable energy projects through BNDES (2nd to 4th credit lines)
- ▶ GHG emission reduction project by PETROBRAS



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How JBIC operates in climate finance

Addressing Environmental Challenges through a Diverse Menu of Financial Instruments

JBIC supports environmental projects by utilizing three of its various financial instruments: overseas investment loans, export loans, and GREEN operations. Here we present a few examples of JBIC's past activities.

Overseas investment loans are a form of financing provided when Japanese companies are involved in overseas projects as investors. The loans are provided to: Japanese companies (investors), local subsidiaries of Japanese companies (including joint companies), or foreign banks or governments which provide loans to or invest in such companies. To give an example of overseas investment loans, there was an offshore wind power generation project in Great Britain that JBIC agreed to finance in August 2014. The loan agreement was signed between JBIC and WMR JV Investco Limited (WMR), a British company, in which Marubeni Corporation invests (overall co-financing amount: GBP369.5 million), to provide the loan in project financing to the offshore wind power project. WMR as an investor participates in this project carried out by a Danish company, DONG Energy A/S (DONG), 8km off the coast of East Riding of Yorkshire in Great Britain, and together with DONG constructs and operates the power plant and later sells the generated electricity. The long-term loan which JBIC provided in pounds sterling miti-

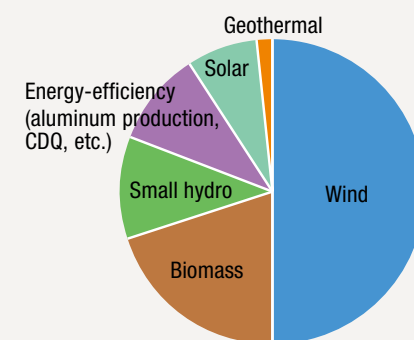
gates the foreign exchange risk entailed on the project operator's loans.

Export loans provide financing for exports of machinery, facilities, and technologies of Japanese companies, and are extended to foreign importers or financial institutions. As an example, JBIC signed a loan agreement in December 2015 to support the export of geothermal power generation facilities for Iceland. The loan was provided to Landsvirkjun, Iceland's national power company, for its purchase of the geothermal power generation equipment from FUJI ELECTRIC CO., LTD. The equipment is utilized for its geothermal power plant (90MW) in Theistareykir in the northeastern part of the country (overall co-financing amount: approx. USD68 million).

Japanese companies possess some of the world's most advanced geothermal power technologies and dominate about 70% of the global market share of geothermal power generation turbines. Securing stable supplies of electricity while curbing GHG emissions, geothermal power generation is expected to be increasingly utilized in emerging countries as well. This will open up business opportunities for Japanese companies.

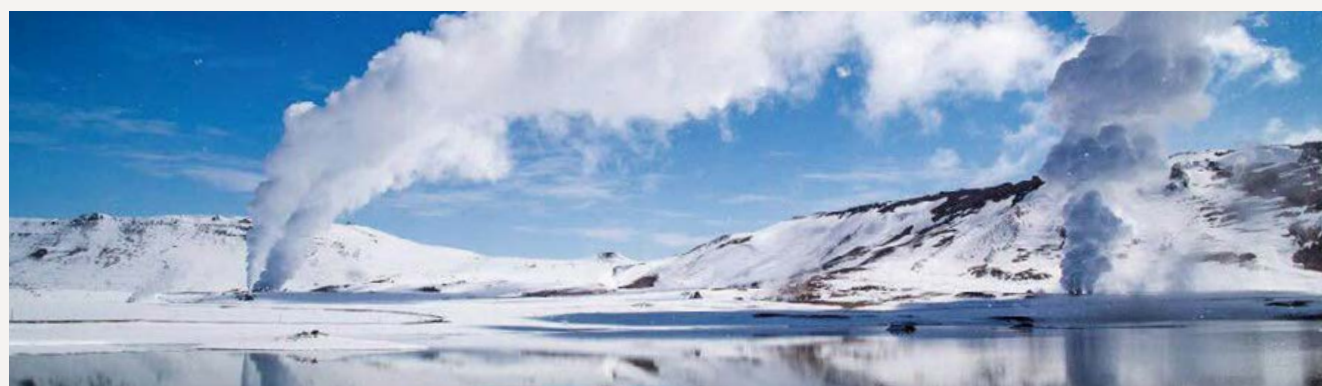
On the other hand, GREEN operations are not necessarily applied only to projects where the operators or exporters are Japanese companies, but its primary focus is to provide loans and guarantees, as well as equity participation financing, to projects which lead to prevention of global warming. For example, JBIC es-

■ Cumulative total of GREEN projects by sub-project sectors (As of end-June 2015)



tablished a credit line based on untied loans totaling USD100 million with the Development Bank of Latin America (CAF) in April 2016. This credit line was intended to finance through CAF the necessary funds for renewable energy and energy efficiency projects in CAF shareholding countries in the Latin American and Caribbean region.

Cooperation with each country's government and governmental financial institutions helps us realize support for projects which cannot be covered by JBIC alone. We hope to achieve an even stronger partnership with such organizations, as well as cooperation with the host countries from the initial stage of the project formation, to expand our support for renewable energy and other projects which contribute to environment preservation.



Theistareykir Geothermal Power Project, Iceland

INTERVIEW



Bolli Thoroddsen,
Chairman of the Icelandic Chamber of
Commerce in Japan

The Continuing Growth of Iceland's Geothermal Power Industry in Synergy with Japanese Companies

In Iceland, almost all generated electricity comes from renewable energy sources, and the geothermal power, along with hydropower, has been widely utilized for decades.

In December 2015, JBIC signed an agreement to finance up to USD34 millions for assisting the export of geothermal power generating equipment made by FUJI ELECTRIC CO., LTD. to Landsvirkjun, Iceland's leading national power company which produces the largest domestic market share.

Japan and Iceland celebrate the 60th anniversary of their diplomatic ties in 2016, and it is anticipated that the advanced Japanese geothermal power generation technologies will continue to be applied in Iceland. Mr. Bolli Thoroddsen, the Chairman of the Icelandic Chamber of Commerce in Japan, speaks in the following interview as a key promoter of the cooperative relationship between Iceland's power utilities and Japanese companies.

The electricity in present-day Iceland is produced and supplied mostly from renewable energy sources (75.5% from water and 24.5% from geothermal power (as of 2014; based on data from Iceland's National Energy Authority). This is at least partly a result of the severe airpollution from which the country suffered in the 1920s due to heavy dependence on coal, as well as of the oil price hike in the 1930s. These circumstances triggered the government to take the initiative to switch incrementally to local renewable energy sources. There was some initial opposition from the general public, but we continued with perseverance to make gradual changes leading to renewable energy, starting from energy production like district heating, and this eventually persuaded many people to understand the possibility and value of geothermal power generation plants.

The history of technological cooperation between Iceland and Japan in the field of geothermal power generation dates back to 1977. These long-lasting bonds began when a Japanese company shared its geothermal power technologies with engineers in Iceland. The Japanese engineers not only delivered and set up the facility, but also taught Icelanders the know-how of operation and maintenance. The geothermal power facility set up by engineers of Mitsubishi Heavy Industries at Krafla power station is high-quality and of advanced technology, and is operating smoothly to this day.

Over the past 40 years, Japanese companies have played an important role in the development of geothermal power generation in Iceland. The majority of the power generation equipment used at Icelandic plants (total generated power: 665MW (2015); based on data from Iceland's National Energy Authority) is made in Japan. You could say that Iceland is a showroom of Japanese geothermal power technologies. The technological cooperation was further enhanced especially after the Japan-Iceland Foreign Ministers' Meeting in 2010. Through active cooperation, geothermal power generation continues to be developed to an even higher level of technology and efficiency, such as enabling power generation from a stratum with high salinity. Such power generating technology will also be useful in projects in other countries, such as developing countries. In Iceland,

the hot water, steam, and products which are created by the geothermal power generation are used in other domestic industries (including hotbaths, hospitals, laboratories, and gyms), and the cumulative amount of CO₂ emissions reduction by the use of geothermal energy has reached approximately 140 million tons (as of 2014; based on data from Iceland's National Energy Authority). With this commitment to environmental preservation, the geothermal power generation facilities have attracted increasing numbers of visitors, contributing to the tourism industry in Iceland which has been booming in recent years. In such ways, geothermal power generation has grown to become a major industry supporting the whole of Iceland. I believe we have many examples which can be used as reference for replication when developing geothermal power in Japan.

The loan agreement signed between JBIC and Landsvirkjun marked the first-ever loan JBIC has granted to an Icelandic company, and the first loan from a Japanese financial institution for Iceland, since the financial crisis in 2008. It was also the first time that JBIC provides an officially-supported export credit for a renewable energy project in a developed country. It therefore attracted a lot of attention from the media, and was even recognized as the "Deal of the Year" by The Trade Finance Review, a financial magazine. Japanese financial entities are known to have strong due-diligence processes for financing, and the fact that the Icelandic public company Landsvirkjun acquired this loan helps to increase the international credibility of Icelandic companies in general, and hence is very significant for us. This year, we celebrate the 60th anniversary of diplomatic relations between Iceland and Japan. I am very pleased that this project was realized, thanks to JBIC's support, at such an appropriate time. And it provided a great opportunity to strengthen our bilateral relations even more and our friendship. Iceland has not only geothermal but other renewable energy power projects in the pipeline, so we have high expectations for continued cooperation and support, from JBIC in future projects. I would also be very honored if the experiences gained in projects in Iceland would become useful for Japanese companies. Experience they might use when taking part in projects in other countries.



Improving the sanitation, environment and health of the world through environmentally conscious products

Making unique efforts in social action and environmental conservation initiatives

Founded in 1959, Saraya Co. Ltd. (SARAYA) is a small and medium-sized enterprise (SME) engaged in the production and sales of sanitation products. Since its establishment, it has pursued product development and management that are grounded on environmentally conscious innovations, and has evolved into a company which is committed to improving the sanitation, the environment and health across the world. The company has actively expanded overseas with the concept of “connecting with the world through the global supply chains.” Not only does it provide products and services across the globe, but SARAYA also engages itself in unique commitment to the society, such as social action businesses aimed at raising sanitation awareness in developing countries, as well as environmental preservation activities in Borneo Island to achieve harmony between the environment and industries.



Commitment to environmentally conscious products

“Our business first started during a dysentery epidemic in post-war Japan when we created antibacterial liquid soap made from palm oil and distributed it along with dispensers. The business field then diversified naturally into food and public sanitation, as well as the environment and health,” Mr. Saraya, the president, looks back at his company’s growth.

As proven by the fact that the business started with palm oil soap, SARAYA commits to “environmentally conscious products.” One such symbolic product is the “Yashinomi Detergent,” a botanical kitchen detergent launched in 1971. It was the first ever botanical detergent when water con-

tamination by petroleum-based synthetic detergents had been a growing social concern at the time. It has been one of the longest selling products, and has become SARAYA’s flagship product. “The coconut and palm-oil based cleansing ingredients are purely botanical. The detergent contains no added fragrance or colors which are unrelated to its cleansing effect. So it is mild on skin, and the wastewater can be quickly biodegraded by microbes, reducing the damage on the environment.”

The company’s environmental considerations also extend to the source of the ingredients themselves. The production of palm oil, one of the product’s botanical ingredients, continues to escalate due to the world’s growing demand for food. The response to this demand has led to disordered expansions of plantations, cutting down the

rainforests and aggravating various environmental and social problems in regions including Borneo Island, Malaysia. Taking an initiative to “start with what we can do for a better environment,” SARAYA began collaborating in 2004 with a number of organizations to work on rainforest restoration and biodiversity conservation in the Sabah state of Borneo Island, which is one of the source areas of the detergent’s ingredient, while inviting consumers to participate in the “Borneo Explorers,” an initiative aimed at raising consumers’ environmental awareness.

As the motivation for his goal to achieve a harmony between business and the environment, Mr. Saraya explains: “our company’s supply chain system is connected across the world, so I need to be responsible for all steps of the supply chain process, from the backyard to our customers.”

Connecting with the world through the global supply chains

The passion to connect with the world through the supply chains can be seen in SARAYA’s active overseas business expansion. Since the establishment of its U.S. sales office in 1995, as well as production bases in China, Thailand, and U.S. in the 2000s, the global network of the SARAYA Group has now expanded to 25 offices in 15 countries/regions across the world (6 factories and 19 sales offices).

One of its commitments to the society is the social action business aimed at improving sanitation in developing countries. In Uganda, for example, the company launched the “Wash A Million Hands” project in 2010 to promote communities’ awareness for hand washing. Then in 2011, SARAYA established a local subsidiary in Uganda with the aim of improving the poor sanitation environment of local medical facilities. In 2014, the company began the local manufacturing of alcohol hand disinfectants and started delivering the products to Kenya the following year, in pursuit of a sustainable business which addresses Africa’s social issues, while creating local employment.

Besides Africa, SARAYA has also been carrying out the “Happy Handwash Project” in Cambodia since 2013, a social action business which promotes education on proper hand sanitation, as well as the use of antibacterial liquid hand soap and alcohol hand disinfectant.

Relationship with JBIC

In July 2015, JBIC signed a loan agreement amounting to THB25 million with Saraya MFG. (Thailand) Co., Ltd. (SMT), a Thai subsidiary of Saraya Co., Ltd. The loan is cofinanced with Mizuho Bank, Ltd., with the overall cofinancing reaching THB40 million. It is intended to finance necessary funds in local currency for SMT to expand production facilities of hygiene products.



Thailand factory where the products are being produced.

Increasing the production capacity for improving the sanitation, environment and health of the world

Demand for sanitation products such as liquid soap, detergent, and hand disinfectant has recently been soaring with the economic growth of Thailand and surrounding countries in Asia. SARAYA responded to this demand by expanding the facilities of its factory in Thailand, the main manufacturing base for detergent products, and utilized the funds financed by JBIC. Mr. Saraya expresses his praise for JBIC, “we are grateful for being able to procure the funds denominated and in local currency mitigate currency risks,” and added: “JBIC provides medium to long-term funds based on the Japanese government policy, without being affected by the changing economic environment. In addition to its financial function, we would also like to rely on JBIC as one of our vital information sources for regions such as Africa, where Japanese private banks have not yet expanded to.”

“Supplies from our factories in Japan cannot catch up with the surging demand. We would have to consider building a new factory in a few years.” With commitment to improving the sanitation, environment, and health of the world through its wide-ranging products and services, SARAYA strides forward with firm, unwavering steps.



Yusuke Saraya

President
Saraya Co., Ltd.



Company Profile

Name	Saraya Co., Ltd.
Established	1959
Capital	45 million yen
President	Yusuke Saraya
Business lines	Development, manufacturing, and sales of health and sanitation products and services Consultation of food and environmental sanitation Development, manufacturing and sales of food products
Headquarters address	2-2-8 Yuzato, Higashisumiyoshi-ku, Osaka 546-0013, Japan
Factories	Osaka and Iga (domestic); China, Thailand, U.S., and Malaysia (overseas)



Supporting Japanese Participation in a Dutch Offshore Wind Power Project

Renewable energy power projects continue to attract high expectations from the world, along with ever-fiercer competition for the projects' concession contracts. Amid such trends, Mitsubishi Corporation's first full-fledged participation in the offshore wind power generation project is a significant first step towards the future of Japanese companies' overseas renewable energy businesses. The Japanese government positions renewable energy projects as one of the new frontiers for public support and advocates the advancement of low-carbon technologies in the "Action for Cool Earth: ACE 2.0" (see p.3). We interviewed JBIC's staff in charge for an insight into the present state of offshore wind power and about the challenges they faced in providing the project finance (PF) for this new business domain that is in line with the Japanese policy.

An article related to this project was published in the morning edition of The Nikkei on March 11, 2016.

—What are some of the main features of this project?

►**Miyaguchi** First and foremost, it is that this project supports a Japanese company's overseas business expansion in the field of renewable energy. The EU has set forth its policy target to make the best use of renewable energy, and the member states are promoting a number of renewable energy projects under each country's own initiative. Given the active development of wind power generation projects, including offshore companies, foreign companies are facing fierce competition for projects' concession contracts, not to mention the challenge for Japanese companies to participate in such projects. I believe that JBIC's support amid such an environment for an offshore wind power project, one of the new fields of renewable energy for Japanese corporates to participate, has a great value.

Mitsubishi Corporation (MC) is putting a lot of effort into renewable energy, such as solar and onshore wind power in the power generation investment in Europe, and this is their first-time ever to invest in an offshore wind power project. It will prove to be a significant move for MC's future renewable energy business expansion to develop a business together with Eneco Holding N.V., a national energy supplier of the Netherlands.

►**Kuramoto** The second distinctive feature is that, unlike usual projects,

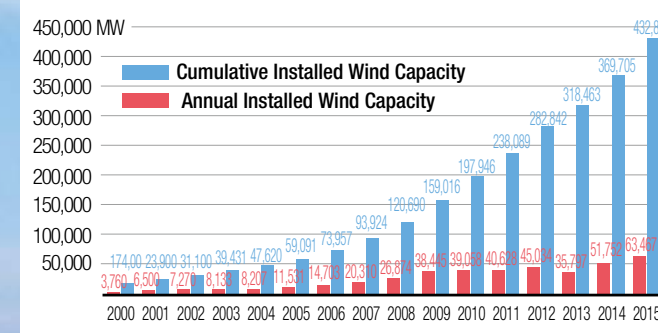
the loan is provided in PF after the completion of the power plant. In usual cases of providing PF before the project completion, the lenders (financial institution(s)) would have to assume due construction risks, but as the sponsors themselves requested for a post-completion PF for this project, the risks on the lenders' side are reduced.

—What difficulties did you face in the post-completion project financing?

►**Kuramoto** We first started from researching the legal and administrative framework for renewable energy projects in the Netherlands, because it varies among European countries. The Dutch government subsidies for renewable energy applicable to this project are partly exposed to market risks, so we spent a long time evaluating how to handle such market risks during the process of building a security package which involves project proponents with various aspects.

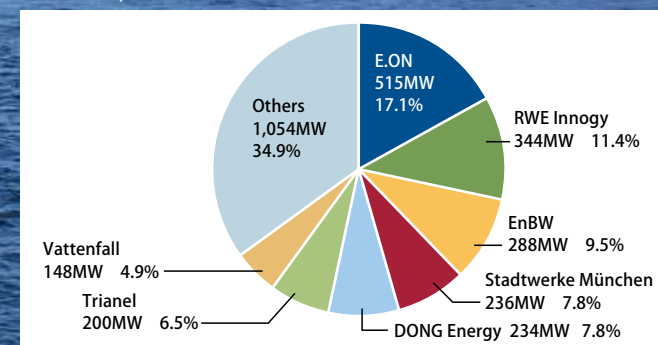
As JBIC began to consider financing for the project before the co-financing banks were selected, we made our way to the actual project site a number of times and negotiated with the project company, as well as the Dutch government. The most crucial stage of the due diligence process was the documentation (contract negotiation), challenging us to find the best way to coordinate the interests among nearly ten stakeholders, but because JBIC's loan accounted for the largest proportion and its stance as a governmental financial institution would

■ Global installed wind capacity 2000-2015



Source: GLOBAL WIND ENERGY COUNCIL Global Wind Report 2015

■ Developers' share of 2015 annual instalation



Source: The European offshore wind industry - key trends and statistics 2015

Project Financing for Offshore Wind Power Generation Project in The Netherlands

Supporting Participation of Japanese Company in Offshore Wind Power Generation Project

The Japan Bank for International Cooperation (JBIC; Governor, CEO: Hiroshi Watanabe) signed on March 9 a loan agreement totaling up to approximately EUR244 million (JBIC portion) with Clusius C.V. (CLUSIUS), a limited partnership in the Netherlands invested in by Mitsubishi Corporation (MC). This loan is provided in project financing for an offshore wind power generation project in the Netherlands. The loan is cofinanced with private financial institutions, bringing the total cofinancing amount to approximately EUR443 million.

The loan is intended to provide the long-term financing that is necessary for CLUSIUS, jointly established by MC and Eneco Holding N.V. (Eneco), one of the largest Dutch power and energy company, to operate the Luchterduinen (Q10) offshore wind farm and sell the generated electricity to Eneco Energy Trade B.V. (a wholly-owned subsidiary of Eneco) over a period of 20 years.

MC is committed to the development of renewable energy sources which create sustainable environmental value, and has set out a policy to aggressively work on wind power generation projects, particularly in Europe where the introduction of renewable energy sources is actively promoted. These projects include onshore wind power generation projects, in addition to the offshore projects which enable large-scale development. With offshore wind power generation being one of the new frontiers of renewable energy, Japanese companies have not yet managed to build a track record in such projects overseas. JBIC's support for Japanese companies to participate in such projects through long-term financing will contribute to maintaining and strengthening the international competitiveness of Japanese industries.

Renewable energy projects are positioned as part of the new frontiers in infrastructure that are subject to support in the Japanese government's strategy, which aims at promotion of Japanese involvement in projects including the design, construction, operation, and management of infrastructure. Such projects are also in line with an initiative announced by the government in December 2015, "Actions for Cool Earth: ACE 2.0", which promotes the advancement of low-carbon technologies.

As Japan's policy-based financial institution, JBIC will continue to support the development of overseas infrastructure projects by Japanese companies, by drawing on its various financial facilities and schemes for structuring projects, and performing its risk-assuming function.

* Press release of JBIC, March 11, 2016

be given much weight, we tackled the negotiations while paying consideration to how we can best support the future business expansions of MC and Japanese financial institutions.

—Does JBIC plan to continue to support offshore wind power projects in which Japanese companies participate?

►**Miyaguchi** There has recently been advancement in the technological innovation of offshore wind power turbines, and each unit is generating more power. Each of the 43 windmills used in this project produces 3MW (megawatt), so the total capacity amounts to 129MW. Meanwhile, windmills with a capacity of 8MW per unit are being commercialized in recent days, substantially increasing the scale of offshore wind power projects, whose total capacities sometimes exceed 500MW.

The offshore wind power industry is full of promise. Compared to onshore wind farms, the offshore benefits from better wind conditions. The offshore also benefits from having no restriction of land use or road, as its expansion becomes relatively easier and also with the upsizing made relatively easy. After all, its market scale is expected to reach 66GW (gigawatt: 1GW=1,000MW) by 2030 in Europe alone, and there are plans for projects exceeding 1,000MW per plant.

With such trends of upsizing scale and costs of wind farm projects, as well as the positive attitude shown by Japanese companies towards

participating in the offshore wind power generation projects, I believe public financial institutions like JBIC will see growing opportunities to extend financial support.

Project finance (PF): a financing scheme in which repayments are made solely from the cash flows generated by the project and secured only on the project assets.

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