



TRAINING AND DIALOGUE PROGRAMS

GENERAL INFORMATION ON

ALTERNATIVE POWER GENERATION TECHNOLOGY FOR LOW
CARBON SOCIETY (A)

集团研修「低炭素化社会実現のための発電技術(A)」
JFY 2013

<Type: Solution Creation / 類型: 課題解決促進型>

NO. J1300681 / ID. 1380252

From March 2013 to September 2013

Phases in Japan: From 8 May 2013 to 13 June 2013

This information pertains to one of the Training and Dialogue Programs of the Japan International Cooperation Agency (JICA), which shall be implemented as part of the Official Development Assistance of the Government of Japan based on bilateral agreement between both Governments.

I. Concept

Background

A strong Low Carbon Society portfolio could contribute to a country's energy security, emissions reduction and access to energy.

Low Carbon Society (LCS) is a society that has a minimal output of carbon dioxide emissions into the environment. The aim of a low carbon society is to integrate all aspects of society to produce energy and materials with little carbon emissions. It is a significant concept for all nations of various levels of development to pursue economic development in a sustainable manner.

In order for a nation to pursue LCS, one must opt a suitable energy solution. Some countries are highly dependent on imported fossil fuels and hydro power generation that are prone to market fluctuations and bad weather. Some countries face high energy costs, while some still suffer from low electrification rate.

This program covers a range of energy generation technologies ubiquitous in Kyushu region of Japan that range from thermal power generation to wind, geothermal and photovoltaic power generation. A focus will also be given to *High-Efficient Coal (or Gas)-Fired Power Generation* that will provide hints in replacing conventional operation of thermal power generation.

Program participants will receive an up-to-date and comprehensive overview on renewable energy, covering technological aspects, recent trends and projections, best corporate practices, and issues surrounding each technology, and solutions to overcome them. After attending the course, participants will be able to make informed choices on energy and climate policy and to structure strategies for accelerating the deployment of alternative energy in their country in a cost-efficient way.

For what?

To realize a low carbon society by opting the best suitable energy policy.

For whom?

Governmental organization in charge of energy policy and promotion of renewable energy, and electric power corporation

How?

This program will provide government officials and engineers in electric power corporations a platform to explore a range of power generation technologies and identify the one that will best suit one's country. Participants will also formulate an action plan describing what the participant will do after they go back to home country putting the knowledge and ideas acquired and discussed in Japan into their on-going activities.

II. Description

- 1. Title (J-No.): Alternative Power Generation Technology for Low Carbon Society (A) (J1300681)**
- 2. Period of program**

Duration of whole program:	March 2013 to September 2013
Preliminary Phase: (in a participant's home country)	March 2013 to May 2013
Core Phase in Japan:	8 May 2013 to 13 June 2013
Finalization Phase: (in a participant's home country)	June 2013 to September 2013
- 3. Target Regions or Countries**
Bangladesh, Bosnia and Herzegovina, India, Kazakhstan, Laos, Nigeria, Pakistan, Philippines, Serbia, Thailand
- 4. Eligible / Target Organization**
This program is designed for a governmental organization in the field of energy policy and/or climate policy
- 5. Total Number of Participants**
14 participants
- 6. Language to be used in this program:** English
- 7. Program Objective:**
Action plan is prepared to introduce alternative power generation technologies for achieving a low carbon society
- 8. Overall Goal**
To enhance energy policy and/or climate policy by introducing alternative power generation technology and to achieve a low carbon society.

9. Expected Module Output and Contents:

This program consists of the following components. Details on each component are given below:

(1) Preliminary Phase in a participant's home country (March 2013 to May 2013) <i>Participating organizations make required preparation for the Program in the respective country.</i>	
Expected Module Output	Activities
Job Report is formulated	All applicants are asked to fill out ANNEX I. Job report should describe your tasks and assignments at work.
Issue Analysis Sheet (IAS)	All applicants are asked to fill out ANNEX II. IAS will help you relate the knowledge you obtain in the training to the situation back in your country

(2) Core Phase in Japan (8 May 2013 to 13 June 2013) <i>Participants dispatched by the organizations attend the Program implemented in Japan.</i>			
Expected Module Output		Subjects/Agendas	Methodology
To understand the reason why we should aim a low carbon society	1	Global problems to be solved jointly	Lecture
	2	International efforts towards a low carbon society	Lecture
	3	Efforts made by local governments towards a low carbon society	Lecture
	4	Climate change mitigation measures of Kitakyushu City	Lecture
	5	Japan's renewable energy policy	Lecture
To understand the high efficient coal (or gas) fired thermal power generation technology	6	Introduction to clean and high efficient thermal power generation	Lecture
	7	Study tour to coal(and/or gas) fired thermal power plant	Field study
	8	Low-carbon efforts by electric power company	Lecture
To understand renewable energy generation technology and its problems for promotion	9	Introduction to concentrated solar power generation technology	Lecture
	10	Study tour to concentrated solar power station	Field study
	11	Introduction to photovoltaic power generation technology	Lecture
	12	Study tour to photovoltaic power station	Field study
	13	Introduction to wind power generation technology	Lecture
	14	New wind power generation technology	Lecture
	15	Study tour to wind power station	Field study
	16	Introduction to geothermal power generation technology	Lecture

	17	Study tour to geothermal power station	Field study
	18	Introduction to small hydropower technology	Lecture
	19	Small hydropower promoted by local governments	Lecture
	20	Regional development efforts by small hydropower technology	Field study
	21	Waste management and biomass energy technology	Lecture
	22	Study tour to biomass power station	Field study
	23	Introduction to tidal power generation technology	Lecture
	24	World's trend in renewable energy usage and its promotional measures	Lecture
To learn energy saving technology	25	Introduction to energy saving technology	Lecture
	26	Effective measures for promoting energy saving	Lecture
	27	Maintenance point for small renewable Energy	Lecture
To prepare action plan for introducing alternative power generation technologies in achievement of low carbon society	28	Issue analysis discussion	Discussion
	29	Facilitation	Discussion
	30	Guidance on Job Report presentation	Lecture
	31	Job report presentation	Presentation
To obtain useful information to improve economical & environmental situation of local community	32	3R (reduce, reuse, recycle) activities in local government	Lecture
	33	Approach to vitalize works in small/medium companies	Lecture/Field study
	34	Local community activation using geothermal energy	Field study
	35	Historical background for development of electric appliance	Field study

(3)Finalization Phase in a participant's home country

Participating organizations produce final outputs by making use of results brought back by participants. This phase marks the end of the Program.

Expected Module Output	Activities
To implement action plan	Application and implementation of the action plan back in the participant's country and submission of its final report by 13 September 2013.

10. Follow-up Cooperation by JICA:

In this workshop, JICA might extend follow-up support to participating organizations that intend to develop the result of the project further. Please note that the support shall be extended selectively based on proposals from the participating organizations.

III. Conditions and Procedures for Application

1. Expectations for the Participating Organizations:

- (1) This program is designed primarily for organizations that intend to address specific issues or problems identified in their operation. Participating organizations are expected to use the project for those specific purposes.
- (2) This program is enriched with contents and facilitation schemes specially developed in collaboration with relevant prominent organizations in Japan. These special features enable the project to meet specific requirements of applying organizations and effectively facilitate them toward solutions for the issues and problems.
- (3) As this program is designed to facilitate organizations to come up with concrete solutions for their issues, participating organizations are expected to make due preparation before dispatching their participants to Japan by carrying out the activities of the Preliminary Phase described in section II -9 .
- (4) Participating organizations are also expected to make the best use of the results achieved by their participants in Japan by carrying out the activities of the Finalization Phase described in section II -9.

2. Nominee Qualifications:

Applying Organizations are expected to select nominees who meet the following qualifications.

(1) Essential Qualifications

- 1) Current Duties: be in charge of energy policy and promotion of renewable energy
- 2) Experience in the relevant field: have more than 5 years experience
- 3) Educational Background: be a graduate of university
- 4) Language: have a competent command of spoken and written English which is equal to TOEFL CBT 250 or more (This program includes active participation in discussions, action plan development, thus requires high competence of English ability. Please attach an official certificate for English ability such as TOEFL, TOEIC etc, if possible)
- 5) Health: must be in good health, both physically and mentally, to participate in the Program in Japan.
- 6) Must not be serving any form of military service.

(2) Recommendable Qualifications

Age: be between the ages of thirty (30) and fifty (50) years

3. Required Documents for Application

- (1) **Application Form:** The Application Form is available at the respective country's

JICA office or the Embassy of Japan.

***Pregnancy**

Pregnant participants are strictly requested to attach the following documents in order to minimize the risk for their health.

- (1) letter of the participant's consent to bear economic and physical risks
- (2) letter of consent from the participant's supervisor
- (3) doctor's letter with agreement of her training participation.

Please ask national staffs in JICA office for the details.

- (2) **Nominee's English Score Sheet (if any)**: to be submitted with the application form. If you have any official documentation of English ability (e.g., TOEFL, TOEIC, IELTS), please attach it (or a copy) to the application form.
- (3) **Job report (Annex I)**: to be submitted with the application form. Fill in Attachment-3 of this General Information, and submit it along with the Application Form.
- (4) **Issue Analysis Sheet (IAS: Annex II)**: to be submitted together with the application form.

4. Procedure for Application and Selection :

(1) Submitting the Application Documents:

Closing date for application to the JICA Center in JAPAN: **22 March 2013.**

Note: Please confirm the closing date set by the respective country's JICA office or Embassy of Japan of your country to meet the final date in Japan.

(2) Selection:

After receiving the document(s) through due administrative procedures in the respective government, the respective country's JICA office (or Japanese Embassy) shall conduct screenings, and send the documents to the JICA Center in charge in Japan, which organizes this project. Selection shall be made by the JICA Center in consultation with the organizations concerned in Japan based on submitted documents according to qualifications. *The organization with intention to utilize the opportunity of this program will be highly valued in the selection.*

(3) Notice of Acceptance

Notification of results shall be made by the respective country's JICA office (or Embassy of Japan) to the respective Government by **not later than 5 April 2013.**

5. Conditions for Attendance:

- (1) to follow the schedule of the program.
- (2) not to change the program subjects or extend the period of stay in Japan.
- (3) not to bring any members of their family.
- (4) to return to their home countries at the end of the program in accordance with the travel schedule designated by JICA.
- (5) to refrain from engaging in political activities, or any form of employment for profit or gain.
- (6) to observe Japanese laws and ordinances. If there is any violation of said laws and ordinances participants may be required to return part or all of the training expenditure depending on the severity of said violation.
- (7) to observe the rules and regulations of their place of accommodation and not to change the accommodation designated by JICA.
- (8) to participate in the whole program including a preparatory phase prior to arrival in Japan. Nominees are expected to carry out the actions described in section II -9 and section III-3 (3)(4).

IV. Administrative Arrangements

1. Organizer:

- (1) **Name:** JICA Kyushu
(2) **Contact:** kictp@jica.go.jp

2. Travel to Japan:

- (1) **Air Ticket:** The cost of a round-trip ticket between an international airport designated by JICA and Japan will be borne by JICA.
(2) **Travel Insurance:** Term of Insurance: From arrival to departure in Japan. The traveling time outside Japan shall not be covered.

3. Accommodation in Japan:

JICA will arrange the following accommodations for the participants in Japan:

<p>JICA Kyushu International Center (JICA KYUSHU) Address: 2-2-1, Hirano, Yahata-Higashiku, Kitakyushu-shi, Fukuoka 805-8505, JAPAN TEL: 81-93-671-6311 FAX: 81-93-671-0979 (where “81” is the country code for Japan, and “93” is the local area code)</p>

If there is no vacancy at JICA KYUSHU, JICA will arrange alternative accommodations for the participants. Please refer to facility guide of KIC at its URL, <http://www.jica.go.jp/english/contact/domestic/>

4. Expenses:

The following expenses will be provided for the participants by JICA:

- (1) Allowances for accommodation, living expenses, outfit, and shipping
 - (2) Expenses for study tours, basically in the form of train tickets.
 - (3) Free medical care for participants who become ill after arriving in Japan (costs related to pre-existing illness, pregnancy, or dental treatment are not included)
 - (4) Expenses for program implementation, including materials
- For more details, please see p. 9-16 of the brochure for participants titled “KENSU-IN GUIDE BOOK,” which will be given to the selected participants before (or at the time of) the pre-departure orientation.

5. Pre-departure Orientation:

A pre-departure orientation will be held at the respective country’s JICA office (or Japanese Embassy), to provide participants with details on travel to Japan, conditions of the workshop, and other matters.

V. Other Information

The participants are kindly requested to bring their laptop computer for making reports, if they have one. There will also be computers available for usage at JICA Kyushu Center (KIC).

VI. ANNEX:

- I. Job report
- II. Issue Analysis Sheet
- III. Training Schedule 2012
- IV. Photo Scenes from Training 2012

VI. ANNEX I: Job Report

Name of Training Course	Alternative Power Generation Technology for Low Carbon Society (A)
Name of Applicant	
Name of Country	

Job Report

Remarks 1: The Report should be typewritten in English (12-point font, A4 size paper), and total pages of the report should be limited to 3 pages (not including organization chart).

Remarks 2: Each participant will have a meeting with course leader based on this Job Report and IAS at the early stage of the training in order to make training more effective and fruitful by comprehending each participant's situations and problems.

Remarks 3: Please itemize your answer and make them specific.

1. Organization and main tasks (up to 1 page)

(1) Main tasks of the organization

(2) Organization chart:

Please draw a chart of your organization including the department (section) names with the number of staffs in it and mark where you are positioned.

(The chart should be attached and not be counted in this page limit.)

Please describe a duty of each department (section) briefly.

(3) Brief description of your assignments.

(4) Problems in your job

2) Composition of electric power supply by type of fuel

Type of fuel		Electric power supply (unit: kwh)	Ratio
1	Coal		
2	Petroleum		
3	Natural gas		
4	Nuclear power		
5	Hydro power		
6	Small hydro power		
7	Wind power		
8	Geothermal		
9	Photovoltaic		
10	Concentrated solar power		
		Total	100%

VI. ANNEX II: Issue Analysis Sheet (IAS)

		Name:			
A: Problems that you/your organization want to solve. (or target that you want to achieve.)	B: What kind of information is necessary to solve these problems ? (Please explain as specifically as possible)	C: What Subjects /Agendas do you most expect to get the information you need ? And if you have any request for this subject, please describe it.		D: Relation to Action plan (Not necessary before participating training course)	
		Subject No ^{*)}	Your request to this subject		
1					
2					
3					
<p>[Note] ① ^{*)} Please refer to the numbers in the list of Subjects/Agendas shown in page 4 and 5 of this General Information</p> <p>② If the space is not enough, please expand (increase a line) as you need.</p>					

VI. ANNEX III: Training Schedule of 2012 (as reference)

Schedule for Alternative Power Generation for Low Carbon Society (A) , 2012.8.1(Wed.)~9.1 (Sat.)

Date	Day	AM(9:30~12:30)		PM(13:30~16:30)	
		Subject		Subject	
8/1	Wed.	Arrival in Japan			
8/2	Thur.	JICA Orientation	L	JICA Orientation	L
8/3	Fri.	IAS guidance	L	KITA Orientation	L
8/4	Sat.				
8/5	Sun.				L
8/6	Mon.	JRe. guidance	L	Challenge facing humanity	L
8/7	Tue.	Efforts toward a low-carbon society in Japan	L	JRe. presentation	P
8/8	Wed.	Introduction to solar photovoltaic technology	L	Introduction to energy saving technology	L
8/9	Thur.	Environmental policies of Kitakyusyu City	L	Introduction to wind power generation	L
8/10	Fri.	Renewable energy policy of Japan	L	New technology of wind power generation	L
8/11	Sat.				
8/12	Sun.	Travel (KIC to Oita)	F	Local revitalization by geothermal utilization	F
8/13	Mon.	Small hydroelectric generation promoted by local governments	L	Study tour : Small hydroelectric generation	F
8/14	Tue.	Study tour : Combined cycle generating plant	F	Study tour : Geothermal plant	F
8/15	Wed.	Local revitalization and environmental improvement by local production for local consumption movement	L	Effective measures for promoting energy saving	L
8/16	Thur.	Revitalization of company promoted by a medium-sized firm (3S activities in overseas factories)	F	Effective utilization of renewable energy (inverter)	F
8/17	Fri.	Facilitation	L	Low-carbon thermal power generation technology	L
8/18	Sat.				
8/19	Sun.	Travel (KIC to Tokyo)	F	Tokyo Afternoon (Bus tour)	F
8/20	Mon.	Travel (Tokyo to Fukushima)	F	Introduction to Small hydroelectric generation technology / Travel (Fukushima to Tokyo)	F

VI. ANNEX III: Training Schedule of 2012 (as reference)

8/21	Tue.	Introduction to geothermal power generation	L	Introduction to Solar thermal power generation technology / Study tour : Solar Techno Park	F
8/22	Wed.	Policies to promote renewable energy	L	Travel (Tokyo to KIC)	
8/23	Thur.	AP development guidance	L	AP development guidance	L
8/24	Fri.	Efforts made by local governments towards a low carbon society	L	Coal gasification technology / Study tour : Solar photovoltaic technology	F
8/25	Sat.				
8/26	Sun.				
8/27	Mon.	Low-carbon efforts by Kyusyu Electric Power	L	Micro hydroelectric generating unit	L
8/28	Tue.	Recycling waste (Use of biomass etc.)	L	System and history of energy saving in Japan	L
8/29	A	Waste reduction measures , 3R activity promotion	L	Recycling waste	F
8/30	Thur.	AP development guidance	L	Study tour : DHC at Seaside Momochi area	F
8/31	Fri.	Evaluation meeting	L	AP presentation / Closing ceremony	P
9/1	Sat.	Departure from Japan			

Notes : JICA: Japan International Cooperation Agency KIC: JICA Kyushu International Center
 KITA: Kitakyushu International Techno-Cooperative Association JRe.: Job Report AP: Action Plan
 L/P/F : L=Lectures or discussions in seminar room
 P=Practical exercises, or workshop studies
 F=Field practices, plant visits or study tours

VI. ANNEX IV: Photo Scenes from Training 2012 (as reference)



250MW CGCC(Coal Gasification Combined Cycle)
Thermal Generation Plant



Geothermal Power Plant



Mega Solar Power Plant



Small hydropower machine at assembling firm in field
work



Lecture scene

For Your Reference

JICA and Capacity Development

The key concept underpinning JICA operations since its establishment in 1974 has been the conviction that “capacity development” is central to the socioeconomic development of any country, regardless of the specific operational scheme one may be undertaking, i.e. expert assignments, development projects, development study projects, training programs, JOCV programs, etc.

Within this wide range of programs, Training Programs have long occupied an important place in JICA operations. Conducted in Japan, they provide partner countries with opportunities to acquire practical knowledge accumulated in Japanese society. Participants dispatched by partner countries might find useful knowledge and re-create their own knowledge for enhancement of their own capacity or that of the organization and society to which they belong.

About 460 pre-organized programs cover a wide range of professional fields, ranging from education, health, infrastructure, energy, trade and finance, to agriculture, rural development, gender mainstreaming, and environmental protection. A variety of programs are being customized to address the specific needs of different target organizations, such as policy-making organizations, service provision organizations, as well as research and academic institutions. Some programs are organized to target a certain group of countries with similar developmental challenges.

Japanese Development Experience

Japan was the first non-Western country to successfully modernize its society and industrialize its economy. At the core of this process, which started more than 140 years ago, was the “*adopt and adapt*” concept by which a wide range of appropriate skills and knowledge have been imported from developed countries; these skills and knowledge have been adapted and/or improved using local skills, knowledge and initiatives. They finally became internalized in Japanese society to suit its local needs and conditions.

From engineering technology to production management methods, most of the know-how that has enabled Japan to become what it is today has emanated from this “*adoption and adaptation*” process, which, of course, has been accompanied by countless failures and errors behind the success stories. We presume that such experiences, both successful and unsuccessful, will be useful to our partners who are trying to address the challenges currently faced by developing countries.

However, it is rather challenging to share with our partners this whole body of Japan’s developmental experience. This difficulty has to do, in part, with the challenge of explaining a body of “tacit knowledge,” a type of knowledge that cannot fully be expressed in words or numbers. Adding to this difficulty are the social and cultural systems of Japan that vastly differ from those of other Western industrialized countries, and hence still remain unfamiliar to many partner countries. Simply stated, coming to Japan might be one way of overcoming such a cultural gap.

JICA, therefore, would like to invite as many leaders of partner countries as possible to come and visit us, to mingle with the Japanese people, and witness the advantages as well as the disadvantages of Japanese systems, so that integration of their findings might help them reach their developmental objectives.



CORRESPONDENCE

For enquiries and further information, please contact the JICA office or the Embassy of Japan. Further, address correspondence to:

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