9.Natural Resources and Energy

Tropical Biomass Utilization
熱帯バイオマス利用

GROUP 0880032

Natural Resources and Energy－Renewable Energy

Target Countries：Tropical/sub-tropical countries

4 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
To enable participants to learn methods of measuring the endowment of biomass and the possible amount of utilization, and designing effective ways of using it. To reach the objective, participants are expected to achieve the following: (1) To understand approaches to create a re-cycling oriented society, referring to the concepts of Biomass Nippon and the Biomass Asia Programs. (2) To understand methods of estimating unused biomass resources, planning of utilization systems and their evaluation. (3) To understand individual technologies; e.g. biomass production, collection, transportation, conversion, and monitoring, to formulate a biomass utilization plan.	[Target Organizations] Engaged in the planning, promotion and utilization of biomass [Target Group] (1) Individuals with at least 3 years of experience in the field of above mentioned (2) University graduates in the field of science (3) Individuals 25-35 years of age

CONTENTS		
<Preparatory phase> Formulationg a coutry report describing the present situation of Biomass utilization in the participant's country and the role of their rganization. <Program in Japan> This program consists of lectures, practical exercises, report-making, presentation, and observation tours. (1) Acquire methods for designing a recycling society and biomass utilization system and approaches for designing recycling societies which utilize biomass (such as 'Biomass Nippon', 'Concept of Biomass Town'), estimating the amount of endowment and production of biomass, designing a biomass utilization system and evaluating the impact of biomass utilization. (2) Acquire methods for measuring the biomass resources, a planning technique for a biomass utilization system and techniques for evaluating the effect of biomass. (3) Acquire specific techniques related to the design of biomass utilization systems, biomass production and collection methods for unused biomass resources, biomass energy conversion, utilization of biomass transforming materials, and the measurement, monitoring and evaluation of biomass utilization.	PROGRAM PERIOD	Sep.30.2008～Dec.6.2008
	IMPLEMENTING PARTNER	FACULTY OF AGRICULTURE, UNIVERSITY OF THE RYUKYUS
	JICA CENTER	JICA Okinawa
	COOPERATION PERIOD	2005～2009
	REMARKS	

Small-Scale Hydro Power and Clean Energy Power Engineering
小水力及びクリーンエネルギー発電技術

GROUP 0880860

Natural Resources and Energy－Energy Supply
Private Sector Development－Industrial Technology

10 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
The objective of this program is to improve knowledge and skills on electric power facilities management, from the stages of planning, designing, maintenance, up to operation, in the field of hydroelectric power generation, to make a concrete improvement plan. Expected Results: (1) To learn the procedure for planning hydroelectric power generation (2) To acquire management techniques for the maintenance and operation of small hydropower generation facilities (3) To understand the environmental impacts and effects of renewable energy in general (4) To make a business improvement plan for the participant's organization, based on the above-mentioned experience and knowledge	[Target Organizations] (1) Government agencies in charge of electric power, electric power corporations, electric power generation corporations, and other related organizations (2) Particularly organizations in charge of the planning, maintenance, and operation of small hydropower stations [Target Group] Those in charge of small-scale hydro generation and civil, electrical, or mechanical engineers with at least 5 years of experience. To be university graduates in an engineering discipline or the equivalent, and proficient in English.

CONTENTS		
1. Pre-training program (1)Creation of country and job reports 2. Training program in Japan (1) Historical background of the electricity business and hydroelectric power generation in Japan (2)Research, planning and design of small hydropower plants (3)Operation and maintenance of small hydropower plants (4)Introduction to planning for renewable energy (solar power and wind power) (5)Framework of Clean Development Mechanism (6) Observation (a) Small hydropower sites (b) Manufacturer of generating sets (c) Observation travel	PROGRAM PERIOD	Sep.1.2008～Oct.4.2008
	IMPLEMENTING PARTNER	CHUBU ELECTRIC POWER CO., INC.
	JICA CENTER	JICA Chubu
	COOPERATION PERIOD	2004～2008
	REMARKS	Countries working on regional electrification/ renewable energy (hydroelectric power) and which have or plan to build small hydroelectric power stations (around 30 MW) are preferable.

Sustainable Development of Mining
鉱山開発と持続可能な成長

GROUP 0880882
Natural Resources and Energy－Mining
18 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
The group training program in the Sustainable Development of Mining is designed for engineers and technicians, in order to upgrade their knowledge and skills in the sustainable development of mining, and thus contribute to the prevention of mining-related pollution problems and sustainable mineral development in developing countries. Through the program, participants are expected : 1) To gain an understanding of the present circumstances of the mining industry and mine pollution control activities, 2) To deepen and broaden their knowledge of exploration/mining/mineral processing, metallurgy/recycling, and 3) To obtain knowledge and technology for the prevention of mining-related pollution problems and sustainable mineral development in the future rather than at present.	(1) Individuals having majored in Engineering or equivalent, (2) Engineers or Technicians in mining geology, mining, mineral processing or metallurgy in the field of mining development and with more than 5 years of practical experience, (3) Individuals under approx. 40 years old, (4) Individuals proficient in English, especially reading comprehension, (5) Individuals in good health. Pregnant women are inappropriate.

CONTENTS		
1. Lectures related to: ● Issues for Sustainable Development of Mine ● Mine exploration and Environmental issues ● Exploration and Environmental Prevention Technology ● Mineral Processing, Metallurgy and Recycling of Metals 2. Field trips ● Mine Drainage Neutralization Plant ● Smelter and Refinery ● Mines ● Recycling Plants 3. Country Report presentation ● Statistics of Each Economy and Mining Production ● Mining Policy	PROGRAM PERIOD	Aug.13.2008～Nov.16.2008
	IMPLEMENTING PARTNER	INTERNATIONAL INSTITUTE FOR MINING TECHNOLOGY
	JICA CENTER	JICA Tohoku
	COOPERATION PERIOD	2004～2008
	REMARKS	The course is inappropriate for those who handle coal mining and/or iron ore, because its contents are specially arranged for a metal field.

Plant Engineering and Technical Standard for Refineries, Chemical and Thermal Power Plants (Pressure Vessels, Storage Tanks, and Others)
石油、化学及び火力発電プラントの設備管理と技術基準

GROUP 0880983
Natural Resources and Energy－Energy Supply
6 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
[Objective] To obtain comprehensive knowledge of setting standards and inspection techniques/application for the safe operation of refineries, chemical, and thermal power plants in developing countries, in order to appropriately set standards for plant management. Upon successful completion of the course, the participants will: 1. understand laws/regulations and design/fabrication standards for refineries, chemical and thermal power plants in Japan and other countries; 2. acquire design and fabrication techniques by understanding the strength and design of pressure facilities; 3. acquire inspection techniques by understanding an annual and daily maintenance criteria on the installed pressure facilities and others; 4. understand safety measures and security systems for pressure vessels; and 5. make an operational improvement plan (tentative) for their workplaces, based on techniques, knowledge, and experience obtained from the training.	*Government officers who are in charge of plant regulations for government-affiliated agencies, private companies, or others *Persons who are in charge of plant engineering, technical standard, design, fabrication, or maintenance of pressure vessels, storage tanks, and others

CONTENTS		
(1) Outline of Japanese Law (2) Design and fabrication standards for pressure vessels, etc. (3) Strength design (4) Material design (5) Fabrication control (6) Maintenance (7) Accident examples (8) Factory tour (9) Job Report presentation (10) Action Plan presentation	PROGRAM PERIOD	Sep.29.2008～Nov.22.2008
	IMPLEMENTING PARTNER	AICHI INDUSTRIAL RESEARCH ASSOCIATION
	JICA CENTER	JICA Chubu
	COOPERATION PERIOD	2005～2009
	REMARKS	http://www.airi.aichi-iic.or.jp/oshirase/koukennkyokai.html

Power Sector Development for Central Asia and Caucasus Region
中央アジア･コーカサス地域　電力セクター開発

R/F ! 0884008

Natural Resources and Energy－Energy Supply

Target Countries：Central Asia

9 participants ／ Russian

OBJECTIVE	TARGET ORGANIZATION / GROUP
Formulate an Action Plan appropriate for their country's electric policy, and organization activities based on the Action Plan is introduced. To reach the above outcome, participants are required: 1. To explain the contents of electric policies, supply structure and electric sectorial structure (bundling or unbundling of power generation, distribution and retail operations). 2. To illustrate problems of electricity policies of their own country. 3. To examine electricity policies which are suitable for their home country and can announce the Action Plan for enforcement.	(Target Organizations) Government agencies or electric power utilities, which are charged with electric policy. (Target Group) 1. University/college graduates or equivalent 2. Individuals with over 5 years practical experience. 3. Individuals engaged in the drafting of electricity policy. (Above the level of division chief in a government authority) 4.Individuals with sufficient Russian conversation and reading ability.

CONTENTS		
Preparatory phase: Prepare a Country Report describing present situation of each countries/ organizations and their problems in power sector. Program in Japan: (Lecture) Outline of Japanese electric policy, Outline of Japanese electricity business, Technical aspect of power supply, The various sides of an electricity policy, Development status of an oil alternative fuel, Anti-global warming measures (Observation) Thermal power plant, Transformer substation, etc. (Discussion) Country Report Presentation, Action Plan Presentation, etc.	PROGRAM PERIOD	Jan.25.2009～Feb.7.2009
	IMPLEMENTING PARTNER	International Development Center of Japan
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2005～2009
	REMARKS	

Electric Power Development Planning in Mekong Region Countries
東南アジア地域　メコン地域における電力開発計画

R/F ! 0884058

Natural Resources and Energy－Energy Supply

Target Countries：Mekong Region Countries

8 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
【Objectives】 Capacity development for electric power planning in consideration of power interchanges in Mekong region countries. 【Outputs】 (1)Trainees can own jointly the electric power development planning information including latest plan, basic data and standards in each country. (2)Trainees can explain the general knowledge of electric power development planning. (3)Trainees can explain the characteristic of each power source, transmission system and power plant. (4)Trainees can explain the considerable issue and point of Planning surveys of power facilities, Permissions, Plannings and Locations. (5)Trainees can extract priority issues and examine the necessary countermeasures in each country as a result of this training program.	【Target Organizations】 Electric power planning bodies (e.g. Ministry of energy, Electric power company) 【Target Group】 (1)Working in the organization for electric power development planning (2)Individuals currently engaged in the field for more than 3 years (3)Indivisuals with sufficient English conversation and reading ability

CONTENTS		
Preparatory phase: Prepare a Country Report describing the present situation and problem of each country/organization Program inJapan: (Lecture)An approach to energy source best-mix, power system operaion and electric power development in consideration of cost, stability/energy-security and environment. Outline of Planning surveys of power plant and transmission system, Permissions, Plannings and Locations, etc. (Observation)Load Dispatching Office, Thermal Power Plant(Gas/Coal/Oil-fired), Water PP(Conventional/Pumping storage), Nuclear PP, New-energy PP, etc. (Practice)Presentation and discussion of country reports in each country. Summary of the training program (Training report and countermeasures in each country)	PROGRAM PERIOD	Oct.19.2008～Nov.6.2008
	IMPLEMENTING PARTNER	JAPAN ELECTRIC POWER INFORMATION CENTER INC.
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2008～2010
	REMARKS	

Solar Power Generation Technology for Middle East Area
中東地域 太陽光エネルギー発電技術

R/F 0884069

Natural Resources and Energy－Renewable Energy

Target Countries：Middle East Area

6 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
【Objectives】 To gain the fundamental knowledge and practical examples that is able to use to introduce of system, promotion of utilization, and maintenance management of solar power generation. 【Outputs】 (1) To understand the place of solar power generation in Japanese energy policy and its actual cases of generation applies. (2) To know and gain the techniques of principal of solar power generation (semiconductor material, solar battery) and its structure and production method (3) To learn the techniques of PV facilities, set up of equipments, maintenance and management (4) To learn the technology of cost evaluation, environmental assessment (5) To make an action plan to solve the problem of the organization which participants belong to	【Target Organizations】 Governmental organization of energy development 【Target Group】 Engineers working for energy-related government ministry, electric power public corporation, and other public organization

CONTENTS		
(1) Japanese energy policy, needs, economic efficiency and future aspect of solar power generation of solar power generation (lectures) (2) General information of solar power generation, semiconductor material, solar battery, accumulator, electronic circuit, process of solar battery and module making, observation of information transmission/ relay station (lectures, practices and observations) (3) Constitution, design and assembling of PV, system constitution according to the purpose of use, constitution and set up cases of system for home and industrial type, cases of middle scale PV system, observation of solar house and solar office (lectures, practices and observations) (4) Regional characteristics of PV, solar irradiation and amount of insolation, energy effective utilization, kind of the solar battery and an evaluation method, structure of the solar battery and those characteristic evaluation, environmental assessment (lectures, practices and observations) (5) Action plan making	PROGRAM PERIOD	Jun.16.2008～Sep.3.2008
	IMPLEMENTING PARTNER	Graduate School of Engineering, Osaka City University
	JICA CENTER	JICA Osaka
	COOPERATION PERIOD	2008～2010
	REMARKS	

Enhancement of Capabilities for Geothermal Energy Development for Plan Puebla Panama Countries
中米・カリブ地域 プエブラ・パナマ計画地熱開発事業計画策定能力向上

R/F 0884075

Natural Resources and Energy－Renewable Energy

Target Countries："Plan Puebla Panama" participation countries

11 participants ／ Spanish

OBJECTIVE	TARGET ORGANIZATION / GROUP
【Objectives】 Participants will enhance their ability to utilize geothermal energy development by the understanding of the policy making addressed to geothermal energy, and the necessary process of development. 【Outputs】 (1) Capacity building to promote national awareness and determination in utilizing geothermal resources (2) Capacity building in the basics to explore and exploit the utilization of geothermal resources (Technical aspects) (3) Capacity building in the basics to explore and exploit utilizing geothermal resources (Economy and environmental aspects) (4) Understanding about geothermal powerplant operation and multipurpose utilization of geothermal energy (Field trip)	【Target Organizations】 Governmental institutions dealing with policy design and with finance of energy, and geothermal energy development 【Target Group】 (1) Individuals from above-mentioned governmental institutions (2) Individuals with more than 5 years occupational experience in this field

CONTENTS		
(1) Setting of the general framework with respect of the energy situation of the PPP region and renewable resources, Schemes for development / exploitation (including private sector), Direction to be given by governments to promote development and exploitation of geothermal resources (2) Geothermal risk and its mitigation, Exploration of geothermal resources by surface studies and surveys, Evaluation of the geothermal resources using well data, Utilization of the geothermal resources, Otake-Hatchobaru Geothermal Power Station, Takigami Geothermal Power Station (Kyushu Ekectric Power Co., Inc), (3) Economy of the geothermal development project, Financial support and international support / environmental values - Clean Development Mechanism (4) Facilities of multipurpose geothermal utilization projects	PROGRAM PERIOD	Nov.17.2008～Dec.13.2008
	IMPLEMENTING PARTNER	West Japan Engineering Consultants Inc.
	JICA CENTER	JICA Kyushu
	COOPERATION PERIOD	2008～2010
	REMARKS	

Geological Mapping and Mineral Information Management for Africa
アフリカ地域地質・鉱物資源情報整備

R/F 0884187

Natural Resources and Energy－Mining

Target Countries：Africa

6 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
The purpose of this training course is to enhance the capability of policy planning to promote mining investment. In order to achieve the main purpose, there are 3 objectives: (1) To understand the current problems of the mining sector. (2) To understand the current situation of mining investment. (3) To understand the outline of geological and mineral information management.	【Target Organizations/Group】 Government officials in charge of the policy and planning of mining resource development

CONTENTS		
The following subjects will be covered in this course: 1) Training of skills to analyse problems －To learn the basic concept of problem analysis and make a plan to resolve problems in mineral policy making. At the end of this course, participants shall present an action plan as the final report. 2) Mineral commodities and mineral flows in industries －To learn how to use major mineral commodities in the industries of developed and developing countries for recognizing the importance of mineral resources. 3) Mining history and environmental issues 4) Mineral policy and the strategy of Japanese enterprises 5) Mineral laws of various countries 6) Governmental administration and information technology －Introduction of a case study of JOGMEC (Japan Oil, Gas and Metals National Corporation) for the implementation of mineral policy. 7) Remote sensing and GIS	PROGRAM PERIOD	Feb.12.2009～Mar.14.2009
	IMPLEMENTING PARTNER	INTERNATIONAL INSTITUTE FOR MINING TECHNOLOGY
	JICA CENTER	JICA Tohoku
	COOPERATION PERIOD	2006～2008
	REMARKS	

Energy Conservation Technology and Machine Condition Diagnosis Techniques for Asian Countries
アジア地域 省エネルギー技術と設備診断

REGION- 0884240

Natural Resources and Energy－Energy Conservation

Target Countries：Asia

14 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
Sub-course A, "Audit Technology for Energy Conservation" Participants will acquire the following knowledge and techniques regarding audit technology for energy conservation. (1) Outline of energy management and audit technology for energy conservation (2) Combustion train (mainly boiler, fired heaters) (3) Rotating machines (mainly blower, pump) (4) Electric power systems, vapor systems Sub-course B, " Machine Diagnosis Techniques for Energy Conservation" Participants will acquire the following knowledge and techniques regarding machine diagnosis techniques for energy conservation. (1) Outline of energy management and audit technology for energy conservation (2) Energy conservation diagnosis (pumps, rotating machine, funs and blowers) (3) Machine condition diagnosis techniques (lubricants, thermograph) (4) Operation and maintenance for energy conservation	Sub-course A, "Audit Technology for Energy Conservation" 【Target Group】 Energy auditor or energy manager Sub-course B, "Machine Diagnosis Techniques for Energy Conservation" 【Target Group】 Operation and maintenance engineer in a plant

CONTENTS		
【Lecture, Exercise, Hands-on training in plant, Case study】 Sub-course A, "Audit Technology for Energy Conservation" (1) Outline of energy management and audit technology for energy conservation (2) Combustion train (mainly boiler, fired heaters) (3) Rotating machines (mainly blower, pump) (4) Electric power systems, vapor systems Sub-course B, " Machine Diagnosis Techniques for Energy Conservation" (1) Outline of energy management and audit technology for energy conservation (2) Energy conservation diagnosis (pumps, rotating machine, funs and blowers) (3) Machine condition diagnosis techniques (lubricants, thermograph) (4) Operation and maintenance for energy conservation	PROGRAM PERIOD	Jan.12.2009～Apr.11.2009
	IMPLEMENTING PARTNER	Kitakyushu International Techno-cooperative Association (KITA)
	JICA CENTER	JICA Kyushu
	COOPERATION PERIOD	2007～2009
	REMARKS	This course has two sub-courses "Audit Technology for Energy Conservation", " Machine Diagnosis Techniques for Energy Conservation". (Each sub-course : 8 participants) Expected number of participants per country: 1-2

Research on Biomass Technology
バイオマス有効利用技術

GROUP 0880034

Natural Resources and Energy－Energy Supply
Private Sector Development－Industrial Technology
3participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
[Objective] - The objective of this course is to master appropriate technologies and skills in the biomass field and to suggest methods of applying the scientific knowledge acquired for the effective usage of biomass. To reach the objective, participants are expected to achieve the following: 1) To master methods to carry out research activities by themselves 2) To deepen knowledge on the use of biomass 3) To build a broad network with other researchers 4) To make a presentation at academic conferences 5) To make a final report as a result of the research activities in Japan 6) To make a suggestion paper on the efficient use of biomass in their countries	[Target Organizations] - Public research institutes, universities [Target Group] 1) Researchers in the field of biomass in the above-mentioned organizations 2) Individuals with a master's degree or equivalent qualification 3) Individuals with at least 3 years of research experience

CONTENTS		
Preparatory phase: - Participants are requested to make their own research proposals according to the topic of the research subject determined before their coming to Japan. During this process it is essential to contact the host researchers and engage in consultations. Program in Japan: - Lectures on the effective use of biomass (2 weeks): Technology of biomass recovery system, bio-refinery technology, Biomass energy technology (gasifying/BDF production, etc.), sugar platform technology - Individual research (about 10 months): According to the subject determined before coming to Japan, participants will be assigned as a member of the laboratory of the host researcher, conduct research under the supervision of the host researcher, and write up the results in a final report. By the end of the program, the participants will make a draft of the suggestion paper concerning the effective usage of biomass from a scientific viewpoint. - Subjects to be offered in relation with the following fields: Biodegradable plastics, biomass energy, ethanol production technology, application of biodiesel fuel to automobiles, life cycle assessment of biomass usage, etc. Development phase: - The draft of the suggestion paper will be shared with the respective organizations of the participants, based on which feasible activities will be determined. At both 6 months and 12 months after the end of the program in Japan, the participants will make a progress report of their activities and submit it to Japan.	PROGRAM PERIOD	Oct.7.2008～Aug.29.2009
	IMPLEMENTING PARTNER	National Institute of Advanced Industrial Science
	JICA CENTER	JICA Tsukuba
	COOPERATION PERIOD	2006～2010
	REMARKS	- The course includes intensive Japanese language lessons (25 hours). - Related website: National Institute of Advanced Industrial Science and Technology http://www.aist.go.jp/index_en.html

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

Thermal Power Engineering Course for Gas Turbine and Coal Fired Steam Turbine
ガスタービン・蒸気タービン(石炭)火力発電

GROUP 0880578

Natural Resources and Energy－Energy Supply

Target Countries：Countries operating gas turbine or coal-fired steam turbine power plants

7participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
<Outcome> Knowledge and skills for management, operations, maintenance and environmental conservation which are the outputs of this program will be shared and promoted among his/her organizations. <Outputs> (1)Participants will make a job report and issue analysis sheet of their organizations by the end of preparatory phase. (2) Participants will be able to analyze and assess similarities and/or differences between electric power industry in Japan and in their country. (3) Participants will be able to analyze knowledge and information on effective techniques of operation and control, effective maintenance and troubleshooting, advanced technologies for environmental conservation by thermal power plants which are gained in Japan, according to the prepared issue analysis. (4) Participants will make an action plan on dissemination activities of skills and knowledge gained from the training program in Japan. (5) The dissemination plans made by the participants will be shared in their organizations. (6) The dissemination plans will be discussed and promoted in their organizations.	[Target Organizations] Gas turbine or coal-fired steam turbine power plants [Target Group] (1) Engineers principally specialized in mechanical areas (2) Those who are taking leading roles in the operational management/ maintenance section (3) Those with over three years' experience in (1) and (2) above. (4) Those sharing outputs from this program inside their power plants after the program in Japan. (5) Those involved in recipient power plants of ongoing or prospective JBIC's ODA loan project(s) and/or in power plants related to JICA's technical project(s) are appreciated.

CONTENTS		
<Preparatory Program> Drawing up a Job Report, a Country Report and Issue Analysis Sheet <Program in Japan> (1) Program Orientation (2) Presentation of Country Reports (3) Outline of the Electric Power Industry in Japan (4) Acquisition of operation and management techniques for thermal power plants (5) Acquisition of maintenance techniques for thermal power plants (6) Acquisition of manufacturing techniques for thermal power plants (7) Acquisition of environmental conservation technologies for thermal power plants (8) Preparation and Presentation of Dissemination Plans <Post-Program activities> Participants are to implement the dissemination activities, based on the final Report which was made during the program. Also, participants must submit a progress report to JICA within 3 months.	PROGRAM PERIOD	May.13.2008～Jul.6.2008
	IMPLEMENTING PARTNER	JAPAN ELECTRIC POWER INFORMATION CENTER, INC
	JICA CENTER	JICA Chugoku
	COOPERATION PERIOD	2007～2009
	REMARKS	Details of the Program are under consideration and part of the contents is subject to change. Upon submitting the application, participants must choose whether they would like to take the course for gas turbine or coal fired generation.

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

The Improvement for Electric Power Distribution Grid
配電網整備

GROUP 0880797

Natural Resources and Energy—Energy Supply

9 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
【Objectives】 After this training end, participants grasp issues of their home country and be able to work for the solution as well as acquire comprehensive knowledge for efficient development of distribution systems. 【Outputs】 (1) Being able to find by themselves the difference about the electric power industry and facilities formation between participant's country and Japan. - Being able to make a presentation of the difference after their understanding it's backgrounds and etc. (2) Acquiring the techniques for appropriate operation and maintenance, for blackout accident prevention and for early blackout recovery, which lead to reduction of distribution loss and improvement of supply reliability. (3) Acquiring the techniques for planning and designing in order to develop efficient and reliable distribution grid. (4) Being able to formulate behavior guideline after returning home based on acquired knowledge and etc.	【Target Organizations】 Competent government agencies for electric power sector and electric power companies 【Target Group】 - Persons in charge of manager and/or leader position or expected to be in charge of following position. - Electrical engineers belong to power company or public organization in distribution area with five years experience of this area. - University graduates or equivalent. - Age: From 30 years to 40 years old.

CONTENTS		
Following contents are provided for each output mentioned above: (1) - Country report presentation and discussion - Lectures about the outline of electric power industry in Japan - Lectures and site visit about the outline of transmission/distribution systems (2) - Lectures and site visit about the operation/maintenance of distribution systems - Site visit to the distribution equipment factories - Lectures and site visit about the outline of quality management in Japan (3) - Lectures and site visit about the planning/designing of distribution systems - Lectures and site visit about the electrification and the correspondence to isolated island (4) - Drawing up an action plant and preparing for the presentation - Action plan presentation and discussion	PROGRAM PERIOD	Aug.26.2008～Oct.4.2008
	IMPLEMENTING PARTNER	Japan Electric Power Information Center, Inc. (JEPIC)
	JICA CENTER	JICA Okinawa
	COOPERATION PERIOD	2008～2010
	REMARKS	Based on the training contents of all outputs, participants will make action plan about enlightenment of technical knowledge and skills during Core Phase in Japan.

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

Electric system engineering (except distribution)
電力系統技術

GROUP 0880827

Natural Resources and Energy—Energy Supply

Target Countries：Countries which built or are developing electric systems (which include

8 participants ／

OBJECTIVE	TARGET ORGANIZATION / GROUP
【Objectives】After this training, participants who are core engineers engaged in electric system section of the participating nation get possible to devise basic strategies solving problems in each workshop or improving system planning and operation effectively. 【Outputs】 (1)- Being able to explain the outlines of the electric power industry in their own countries - Understanding the present conditions in their own countries while comparing with the Japanese present conditions and grasping both good points and problems. (2)＜Unit target 2＞ - Acquiring basic knowledge of the constitution, analysis and planning of the electric system and effective technologies of analysis and planning with lectures including computer demonstration observe. (3)＜Unit target 3＞ - Acquiring basic knowledge for construction, operation and maintenance of transmission line and substation, and new techniques for cost reduction and promotion of efficiency. And deepening understanding by observing examples of facilities applying the new techniques. (4)＜Unit target 4＞ - Acquiring basic knowledge for construction, operation and maintenance of electric system, deepening understanding by visiting facilities and learning practical techniques in simulation training. (5)＜Unit target 5＞ - Being able to devise an action plan (basic strategies to solve problems in each workshop etc.) based on techniques which they learned.	【Target Organizations】 Ministries and government offices or electric power companies which are in charge of electric system field. 【Target Group】 (1) Officers who belong to target organizations and are expected to play a leading role in the field (2) University graduates or equivalent (3) Age: 27-40 years old (4)Individuals with a good command of English (5) Individuals engaging in electric system engineering with at least 5 years of work experience and not more than 20 years experience (6) Individuals in good health, both physically and mentally, to undergo the course of rigorous training (7)Must not be serving any form of military service

CONTENTS		
(1)＜Training contents 1＞ (Before training) Drawing up a country report (In Japan) Country report presentation and discussion Lectures and discussion of outline of the electric power industry in Japan etc. Lectures and practical training of quality control (2)＜Training contents 2＞ (In Japan) Lectures of outline of electric system and electric system planning Technical study requirement for electric system planning and power system Analysis (3)＜Training contents 3＞ (In Japan) Lectures of construction, maintenance, Operation and new technique of Transmission Line and Substation Visiting a factory of power transmission facilities and substations applying new technique (4)＜Training contents 4＞ (In Japan) Lectures of electric system protection scheme Practical training of simulator for protective Relay etc. Visiting central load dispatching center etc. (5)＜Training contents 5＞ (In Japan) Drawing up an action plan report and preparation for the presentation Action plan report presentation and discussion	PROGRAM PERIOD	Aug.24.2008～Oct.1.2008
	IMPLEMENTING PARTNER	Japan Electric Power Information Center, Inc. (JEPIC), Tohoku Electric Power Co., Inc. (Tohoku EPCO)
	JICA CENTER	JICA Tohoku
	COOPERATION PERIOD	2008～2010
	REMARKS	

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

Hydro-Electric Power for Stable and Sustainable supply (for Civil Engineers)
安定供給型水力発電

GROUP 0880939

Natural Resources and Energy－Energy Supply

Target Countries：Countries with organizations dedicated to Hydro-Electric Power

8participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
To promote the development, operation, and maintenance of effective and environment-friendly hydro-electric power facilities. Participants are expected to achieve the following results: 1. To be able to point out problems of the participant's country/office through understanding of the hydropower generation technology in Japan and the comparison. 2. To be able to draw up a action plan for the issues of the participant's country/office, clarified through the country reports and training (at the end of the Core Phase) 3. To draw up a follow-up report.	[Target Organizations] Government agencies or electric power utilities which are charged with the development of hydropower generation [Target Group] (1)University/college graduates or equivalent (2)minimum of 5 years of practical experience (3)Civil engineers in charge of the planning, construction and maintenance of the hydro-power sector, and individuals currently in or expected to be, in the near future, posted to a managerial position, (4) Age: 30-50 years of age,

CONTENTS		
Preparatory phase: Prepare a Country Report describing the present situation of each of the countries/organizations and their problems. Program in Japan: (Lectures)Design standard for power generation facilities, Hydro-electric power facilities in Japan, etc. (Observation)Okinawa Yanbaru Seawater Pumped Storage Power Plant in Okinawa, Okukiyotsu Hydropower plant, etc (Practice)Dam Operation Simulator Training Post-program activities: The actions described in the action plan should be reviewed, authorized and implemented. The results of the actions are reported as the Final Report.	PROGRAM PERIOD	Jun.3.2008～Jul.12.2008
	IMPLEMENTING PARTNER	JAPAN ELECTRIC POWER INFORMATION CENTER, INC
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2005～2009
	REMARKS	Target to be civil engineers or electric/mechanical engineers alternately each year, and civil engineers for 2008. Applicant from a non-governmental institution to be confirmed that his/her duty is the same as those of nominees from the governmental institutions.

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

Energy Policy
エネルギー政策

GROUP 0880049

Natural Resources and Energy－Energy Supply

Target Countries：all countries

10participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
Recently, most countries have become suffering from the rising cost of crude oil, as the demand for oil has increased with economic development. This program is offered to energy policy makers to enhance their capacities to create the long and medium term comprehensive energy policies in respective countries. At the end of the program, the participants are expected to achieve the following, (1)understand energy situation in the world and the importance of energy policy, current energy policy in Japan, energy balance, etc. (2)draw up policy proposal to implement energy control and energy policy formulation based on energy demand forecasting and energy balance.	【Target Organizations】 Ministries and energy agencies 【Target Group】 (1)Executive officials or candidates for executive officials in organization for Energy Policy (2)Individuals currently engaged in work in the field for more 3 years (3)Individuals with sufficient English conversation and reading ability

CONTENTS		
Participants will be capable of drawing up policy proposals to implement energy policy formulation based on energy demand forecasting and energy balance after learning energy situation in the world, energy policy in Japan, energy balance, etc Preparatory phase: Prepare a Country Report describing the present situation and problem of each country/organization Program inJapan: (Lecture)Energy demand forecasting of the world, Energy policy in Japan, Energy statistics system in Japan, etc. (Observation)Power plant, Oil factory, Bio-fuel plant, Energy Conservation Center (Practice)Project Cycle Management (Participatory Planning) Post-program activities： The actions described in the Policy Proposal should be reviewed, authorized and implemented. The results of the actions are reported as the Final Report.	PROGRAM PERIOD	Jun.29.2008～Jul.12.2008
	IMPLEMENTING PARTNER	IEEJ
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2007～2009
	REMARKS	

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

Energy Efficiency and Conservation
省エネルギー

GROUP 0880315

Natural Resources and Energy－Energy Conservation

Target Countries：Countries with organizations dedicated to saving energy

17participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
Energy Efficiency and Conservation Activities in the field of politics and institution building in participating countries will be strengthened. To reach the objective, participants are expected to achieve the following results: 1. To understand the outline of the energy situation of Japan, an energy conservation policy, and energy-saving technologies, and the point which leads to the energy conservation policy and promotion of system construction of their own country is arranged. 2. A policy proposal which leads to the energy conservation policy and the promotion of system construction of their own country is created. 3. Draw up a Final Report which includes the result of sharing and discussion within the organization each participant belongs to, after the return.	[Target Organizations] The organization for Energy Conservation Promotion [Target Group] (1) Officials working in the organization for Energy Conservation Promotion, (2) Individuals currently engaged in work in the energy conservation field for more than 3 years, (3) University/college graduates or equivalent, (4) Individuals under 45years old, (5) Individuals with sufficient English conversation and English reading ability.

CONTENTS		
Preparatory phase: Prepare a Country Report describing the present situation of each country/organization and their problems Program in Japan Formulate a Policy Proposal describing issues in their own organizations/department, and tentative analysis for solving the issues identified Lectures: Energy Policy and Energy Conservation Policy in Japan, Promotion Measures and Activities, Energy Conservation Technology, Energy Audit, Outline of ESCO Projects in Japan, etc. Observation: Excellent Cases of Energy Conservation and Energy Management (Buildings, Factories, Power Plants, etc.) Practice: Measurement of Energy Consumption and analysis (Furnace, Fun, Steam traps, etc.) Post-program activities: The actions described in the Policy Proposal should be reviewed, authorized and implemented, and are reported as the Final Report.	PROGRAM PERIOD	Jun.8.2008～Jul.26.2008
	IMPLEMENTING PARTNER	THE ENERGY CONSERVATION CENTER JAPAN
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2006～2010
	REMARKS	

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

Nuclear Power Generation Infrastructure Course
原子力発電基盤整備計画

0880730

Natural Resources and Energy－Energy Supply

Target Countries：NPT/IAEA member nations, also have Safeguarded Nuclear Mt'l & Facilities

8 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
Drafting of an Action Plan for introduction of nuclear power generation At the end of the program, the participants are expected to achieve the following, 1. To understand the importance of nuclear power generation in energy supply and power industry. 2. To recognize safety aspects (the importance of public acceptance, safety consideration) on atomic energy introduction, environmental and social considerations, and issues on nuke puke processing. 3. To share awareness of the issues on atomic energy, among participating nations. 4. To formulate an Action Plan. 5. To share an Action Plan among organizations, and formulate a Final Report.	[Target Organizations] Government agencies/electricity authorities which command nuclear power generation [Target Group] (1)Those who are engaged in planning of a nuclear power generation policy. (Management, such as a section chief of the central ministries, or the administrator of an electric power company) (2)Those who have 5 years or more of experience at the staff of an electric power policy or an electric power development project. (3)University graduate or equivalent.

CONTENTS		
Preparatory phase: To prepare a Country Report describing the present situation of respective country/organization, its problems and the plan for nuclear power generation. Program in Japan: To formulate an action plan on the introduction of nuclear power generation in respective countries. (Lectures) Outline of Japanese nuclear power generation, international framework for nuclear non-proliferation, security, environmental impact assessment, authorization processes, etc. (Observation) Nuclear Power Plants in Japan, etc. (Practice) BWR/PWR Operation Simulators Post-program activities: The actions described in the action plan should be reviewed, authorized and implemented. The results of the actions are reported as the Final Report.	PROGRAM PERIOD	Jan.18.2009～Feb.7.2009
	IMPLEMENTING PARTNER	METI, JEPIC, JAPC
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2007～2009
	REMARKS	1. Fix countries through a cooperation term(2007-2009). 2. Repeated participation of the same person acceptable.

: Learning Program, : Diffusion Program, : Solution Program, : International Dialogue Program

Electric Power Forum for Asia
アジア電力フォーラム

R/F 0884198

Natural Resources and Energy－Energy Supply

Target Countries：Asia Region

4 participants ／ English

OBJECTIVE	TARGET ORGANIZATION / GROUP
Participants will exchange information on challenges and efforts by electric power sectors, and share awareness of the issues with Japanese authorities concerned in electric power sector. Participants and Japanese authorities will develop an international network throughout the Forum. At the end of the program, the participants are expected to achieve the following, (1)exchange information on challenges and efforts by power sectors in participating countries, and share awareness of the issue, (2)understand Japanese challenges and efforts for responding increasing power demand during high economic growth period, (3)learn about the analysis of present power sectors in Asian region and the Japanese government assistance policy directions, and (4)develop a network among participants and Japanese counterparts through an open seminar.	【Target Organizations】 Ministries and agencies of Electricity 【Target Group】 (1)Executive officials at bureau's director generals level who are responsible for power sector in the Ministry of Power or Ministry of Energy (2)Individuals with sufficient English conversation and reading ability

CONTENTS		
Preparatory phase: Prepare a Country Report describing present situation of each countries/ organizations and their problems in power sector. Program in Japan: (1)Lectures (2)Country Report presentation (3)Open seminar (4)Observations	PROGRAM PERIOD	Under planning
	IMPLEMENTING PARTNER	Japan Electric Power Information Center Inc.
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2007～2009
	REMARKS	