


9. Natural Resources and Energy


Research on Biomass Technology バイオマス有効利用技術		GROUP	0980034
		Natural Resources and Energy—Energy Supply Private Sector Development—Industrial Technology 4 participants / English	
OBJECTIVE	TARGET ORGANIZATION / GROUP		
【Objective】 Acquiring information and skills on Biomass Technologies, participant will be enhanced and developed his/her fundamental skills of research as a researcher who can work efficiently to plan and execute research project that contributes to solve problems concerned participant's home country even under restricted circumstances. 【Expected Results】 1) To deepen new technology and knowledge on Biomass Technology and be able to explain the international trends of the research and some cases of technological applications in the private sector. 2) To improve accuracy fundamental analysis ability and be able to plan and execute research activity by his/herself. 3) To make a Technical Report as a result of the technical training in Japan. 4) To make a Research Proposal in their countries fully-considered current situation of 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	PROGRAM PERIOD	Oct.13.2009 ~ Sep.04.2010	
【Preparatory phase】 Participants are requested to make their own research proposals under the consultations of the host researchers. 【Program in Japan】 1) 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 2) Study tour and site observation(1-3 weeks) Related industrial plant in the private sector, other institution or lab. 3) Individual research (about 10 months) 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 technical report. *reference web site : http://www.aist.go.jp/index_en.html	IMPLEMENTING PARTNER	National Institute of Advanced Industrial Science(AIST)	
	JICA CENTER	JICA Tsukuba	
	COOPERATION PERIOD	2006~2010	
	REMARKS	<u>Subjects to be offered in relation with the following fields (sample):</u> Biodegradable plastics, biomass energy, ethanol production technology, application of biodiesel fuel to automobiles, life cycle assessment of biomass usage.	

Energy Policy エネルギー政策		GROUP	0980049
Target Countries : all countries		Natural Resources and Energy—Energy Supply 10 participants ★ / English	
OBJECTIVE	TARGET ORGANIZATION / GROUP		
【objective】 Participants will be capable of drawing up policy plans to implement energy policy formulation based on energy supply-demand forecasting and energy balance after learning energy situation in the world, energy policy in Japan, energy balance, etc. 【outputs】 1. To understand importance of energy policy and energy situation in the world. 2. To understand changes in energy policy and the current energy policy in Japan. 3. To be examined the applicability of energy supply-demand, energy balance, promotion of energy conservation, energy statistics and energy best mix. 4. To prepare the draft policy plan to implement energy control based on the above lectures.	【Target Organizations】 Ministries and energy agencies 【Target Group】 (1)Managerial level or its equivalent in organization for Energy Policy, (2)Individuals currently engaged in work in the field for more 3 years, (3)University/college graduates or equivalent, (4)Individuals with sufficient English conversation and reading ability.		
CONTENTS	PROGRAM PERIOD	Apr.5.2009 ~ Apr.25.2009	
【Preparatory phase】 Prepare a Country Report describing the present situation and problem of each country/organization 【Program in Japan】 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】 Policy Plan should be completed.	IMPLEMENTING PARTNER	IEEJ	
	JICA CENTER	JICA Tokyo	
	COOPERATION PERIOD	2007~2009	
	REMARKS	This seminar will be implemented two times for JFY 2009 in the same content. The second one is scheduled from 10th May, 2009 to 30th May, 2009 (10 participants).	

Hydro-Electric Power Engineering for Stable and Sustainable Supply (for Electric / Mechanical Engineers) 安定供給型水力発電		GROUP	0980939
Target Countries: Countries with organizations dedicated to Hydro-Electric Power		10 participants	English
Natural Resources and Energy—Energy Supply			
OBJECTIVE	TARGET ORGANIZATION / GROUP		
<p>[objective] To promote the development, operation, and maintenance of effective and environment-friendly hydro-electric power facilities.</p> <p>[outputs] 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)</p>	<p>[Target Organizations] Government agencies or electric power utilities which are charged with the development of hydropower generation</p> <p>[Target Group] (1) University/college graduates or equivalent (2) minimum of 5 years of practical experience (3) electric/mechanical 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,</p>		
CONTENTS	PROGRAM PERIOD	May.31.2009 ~ Jul.9.2009	
<p>[Preparatory phase] Prepare a Country Report describing the present situation of each of the countries/organizations and their problems.</p> <p>[Program in Japan] Draw up a action plan for the issues of the participant's country/office, through understanding of the hydropower generation technology in Japan and the comparison.</p> <p>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</p>	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 electric/mechanical engineers for 2009.	

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	0980983
Natural Resources and Energy—Energy Supply		7 participants	English
OBJECTIVE	TARGET ORGANIZATION / GROUP		
<p>[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.</p> <p>Upon successful completion of the course, the participants will:</p> <ol style="list-style-type: none"> 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. 	<p>*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</p>		
CONTENTS	PROGRAM PERIOD	Sep.28.2009 ~ Nov.25.2009	
<ol style="list-style-type: none"> (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 	IMPLEMENTING PARTNER	AICHI INDUSTRIAL RESEARCH ASSOCIATION	
	JICA CENTER	JICA Chubu	
	COOPERATION PERIOD	2005~2009	
	REMARKS	http://www.airi.aichi-iic.or.jp/oshirase/koukennyokai.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		0984008
Target Countries: Central Asia and Caucasasia		10 participants /		Russian
OBJECTIVE	TARGET ORGANIZATION / GROUP			
<p>【Objective】 Formulate an Action Plan appropriate for their country's electric policy, and organization activities based on the Action Plan is introduced.</p> <p>【Outputs】 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 the electric power development planning with electricity interchange within the regions. 4. To examine electricity policies which are suitable for their home country and can announce the Action Plan for enforcement.</p>	<p>【Target Organizations】 Government agencies or electric power utilities, which are charged with electric policy.</p> <p>【Target Group】 (1) Individuals engaged in the drafting of electricity policy, (Above the level of division chief in a government authority) (2) Individuals with over 5 years practical experience, (3) University/college graduates or equivalent, (4) Individuals with sufficient Russian conversation and reading ability.</p>			
CONTENTS	PROGRAM PERIOD	Nov.29.2009 ~ Dec.12.2009		
<p>【Preparatory phase】 Prepare a Country Report describing present situation of each countries/ organizations and their problems in power sector.</p> <p>【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</p> <p>Observation: Thermal power plant, Transformer substation, etc.</p> <p>Discussion: Country Report Presentation, Action Plan Presentation, etc.</p>	IMPLEMENTING PARTNER	International Development Center of Japan		
	JICA CENTER	JICA Tokyo		
	COOPERATION PERIOD	2005~2009		
	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		0984069
Target Countries: Middle East Area		6 participants /		English
OBJECTIVE	TARGET ORGANIZATION / GROUP			
<p>【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.</p> <p>【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</p>	<p>【Target Organizations】 Governmental organization of energy development</p> <p>【Target Group】 Engineers working for energy-related government ministry, electric power public corporation, and other public organization</p>			
CONTENTS	PROGRAM PERIOD	May.25.2009 ~ Aug.12.2009		
<p>(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</p>	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		0984075
Target Countries: "Plan Puebla Panama" participation countries		10 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	PROGRAM PERIOD	Oct.26.2009 ~ Nov.14.2009		
(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 Electric 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	IMPLEMENTING PARTNER	West Japan Engineering Consultants Inc.		
	JICA CENTER	JICA Kyushu		
	COOPERATION PERIOD	2008~2010		
	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-		0984240
Target Countries: Asia		13 participants /		English
OBJECTIVE	TARGET ORGANIZATION / GROUP			
Participants will acquire the following knowledge and techniques regarding machine diagnosis techniques for energy conservation. Sub-course A, "Energy Conservation Technology for Energy Managers or Auditors" (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, "Integrated Energy Conservation Technology involving MCDT" (1) Outline of energy management and audit technology for energy conservation (2) Energy conservation diagnosis (pumps, rotating machine, fans and blowers) (3) Machine condition diagnosis techniques (lubricants, thermograph) (4) Operation and maintenance for energy conservation	Sub-course A 【Target Group】 Energy auditor or energy manager Sub-course B 【Target Group】 Operation and maintenance engineer			
CONTENTS	PROGRAM PERIOD	Jan.11.2010 ~ Apr.10.2010		
Sub-course A (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 (5) Plant visit Sub-course B (1) Outline of energy management and audit technology for energy conservation (2) Energy conservation diagnosis (pumps, rotating machine, fans and blowers) (3) Machine condition diagnosis techniques (lubricants, thermograph) (4) Operation and maintenance for energy conservation (5) Plant visit	IMPLEMENTING PARTNER	Kitakyushu International Techno-cooperative Association (KITA)		
	JICA CENTER	JICA Kyushu		
	COOPERATION PERIOD	2007~2009		
	REMARKS			


Energy Conservation Technique for MERCOSUR region メルコスール地域 省エネルギー技術		R/F	0984269
Target Countries: member countries of MERCOSUR		8 participants	Spanish
OBJECTIVE	TARGET ORGANIZATION / GROUP		
<p>【Objective】 Participants' capabilities to introduce appropriate energy conservation activities in the member countries of MERCOSUR are strengthened.</p> <p>【Expected Results】 (1)Understand and can explain energy conservation administration policy of Japan (2)Understand and can explain versatile energy conservation technique (3)Participants are able to formulate Action Plan for introducing energy conservation technique</p>	<p>【Target Organization】 Governmental organization related to energy conservation, Organization related to audit energy conservation</p>		
CONTENTS	PROGRAM PERIOD	Oct.4.2009 ~ Oct.24.2009	
<p>(1)Energy conservation law of Japan • Energy conservation policy of Japan • Energy conservation policy of local government • Plant visit (2)Energy technological outline • Conservation of energy of power plant • Conservation of energy of proof equipment • Conservation of energy of steam equipment • Conservation of energy by inverter • Equipment diagnosis technology for conservation of energy • Electric equipment diagnosis technology • Comportement and measurement • Rotation machine equipment diagnosis technology • Rotation machine equipment diagnosis technology practice (3)Discussion about energy conservation • Formulation of Action Plan • Presentation of Action Plan</p>	IMPLEMENTING PARTNER	KITAKYUSHU INTERNATIONAL TECHNO-COOPERATIVE ASSOCIATION	
	JICA CENTER	JICA Kyushu	
	COOPERATION PERIOD	2009~2011	
	REMARKS		


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  0980578
Target Countries: Countries operating gas turbine or coal-fired steam turbine power plants		Natural Resources and Energy—Energy Supply 8 participants / English
OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p><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.</p> <p><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.</p>	<p>[Target Organizations] Gas turbine or coal-fired steam turbine power plants</p> <p>[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 JICA's loan project(s) and/or technical project(s) are appreciated</p>	
CONTENTS	PROGRAM PERIOD	May.12.2009 ~ Jul.5.2009
<p><Preparatory phase (Before coming to Japan)> Drawing up a Job Report, a Country Report and Issue Analysis Sheet</p> <p><Program in Japan> (1) Program Orientation (2) Presentation of Country Reports (3) Outline of the Electric Power Industry in Japan (lecture) (4) Acquisition of operation and management techniques for thermal power plants (lecture and observation) (5) Acquisition of maintenance techniques for thermal power plants (lecture, observation and practical works) (6) Acquisition of manufacturing techniques for thermal power plants (lecture and observation) (7) Acquisition of environmental conservation technologies for thermal power plants (lecture and observation) (8) Preparation and Presentation of Dissemination Plans</p> <p><Post-Program activities (After participants' return)> 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.</p>	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 like to take the course for gas turbine or coal fired generation.

The Improvement for Electric Power Distribution Grid 配電網整備		GROUP  0980797
		Natural Resources and Energy—Energy Supply
		9 participants / English
OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【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.</p> <p>【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.</p>	<p>【Target Organizations】 Competent government agencies for electric power sector and electric power companies</p> <p>【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.</p>	
CONTENTS	PROGRAM PERIOD	Sep.1.2009 ~ Oct.10.2009
<p><Preparatory phase(Before coming to Japan)> Country report describing present job activities and current situation of electric power distribution facilities is developed.</p> <p><Program in Japan> 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 plan and preparing for the presentation - Action plan presentation and discussion</p> <p><Post-program activities(After participants' return)> Within 6 months of the end of the course in Japan, participants are expected to implement the plan proposed in the Action plan and report the progress as a final report.</p>	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.

Electric system engineering (except distribution) 電力系統技術		GROUP  0980827
Target Countries: Countries which have or are developing electric systems		Natural Resources and Energy—Energy Supply 8 participants / English
OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【Objectives】 Knowledge and skills for the plans and operation of reliable electric power system which are the outputs of this program will be shared and promoted among his/her organization.</p> <p>【Outputs】</p> <p>(1) <Unit target 1> - To understand the outline on electric power industry and to clarify the issue regarding development and operation on power systems in their country.</p> <p>(2) <Unit target 2> - To obtain knowledge and techniques on electric system in Japan</p> <p>(3) <Unit target 3> - Preparation and Presentation of Dissemination Plan.</p> <p>(4) <Unit target 4> - To implement a dissemination plan (progress report)</p>	<p>【Target Organizations】 Ministries and government offices or electric power companies which are in charge of electric system field.</p> <p>【Target Group】</p> <p>(1) Officers who belong to target organizations and are expected to play a leading role in the field</p> <p>(2) Individuals engaging in electric system engineering with at least 5 years of work experience and not more than 20 years experience</p> <p>(3) University graduates or equivalent</p> <p>(4) Age: 27-40 years old</p> <p>(5) Individuals with a good command of English</p> <p>(6) Individuals in good health, both physically and mentally, to undergo the course of rigorous training</p> <p>(7) Must not be serving any form of military service</p>	
CONTENTS	PROGRAM PERIOD	Aug.13.2009 ~ Sep.18.2009
<p>(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</p> <p>(2) <Training contents 2> (In Japan)</p> <p>(1) Overview of electric industry and energy saving in Japan (2) Overview of electric system and electric system planning (3) Analysis and evaluation on electric system and electric system planning (4) Construction and maintenance on transmission, new technology concerning transmission (5) Construction, maintenance and operation on transformation, new technology concerning transformation (6) Transformation facilities (7) Plants for transformation facilities (8) Techniques on the operation on electric system (9) Simulation on electric system protection (10) Load dispatching center (11) Plants for protection facilities</p> <p>(3) <Training contents 3> (In Japan)</p> <p>(1) Preparation of Action plan (2) Presentation of Action Plan</p> <p>(4) <Training contents 4> (In participants countries) Participants are to implement the dissemination activities based on the action plan which was made during the program. Also, participants must submit the progress report to JICA within 3 months.</p>	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	

Efficient and Environment-Friendly Mining and Recycling for Metal Resources 環境に配慮した効率的資源開発・利用に関する研修		GROUP  0980882
Target Countries : Developing Countries possessing metallic mineral resources		Natural Resources and Energy—Mining 20 participants / English
OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【Objective】 Officers of metal resources sector in th government of developing countries understand and obtain technologies and tools to promote efficient and environment-friendly mining and recycling. The knowledge and skills obtained in Japan will be shared with their colleagues in their countries.</p> <p>【Expected Results】 (1) Understanding and recognizing the importance of natural resources (2) Aquiring the knowledge and technologies of efficient mining development (3) Aquiring the technologies and laws for environment protection and recycling (4) Enhancing the knowledge and skills to promote adequate mining and recycling (5) Formulating action plan how to share knowledge and skills obtained in the training</p>	<p>【Target organization】 Officials working for government or governmental organization, engaging on mining policies including mining development, prevention mining pollution and recycling comprehensively,</p> <p>【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) Individuals with a good command of PC (4) Individuals with a good command of English (5) Individuals engaging in mining policy with at least 3 years (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</p>	
CONTENTS	PROGRAM PERIOD	Sep.2009 ~ Nov.2009
<p>Efficient and environment-friendly method for mining is highly expected in developing countries to promote their economic development.</p> <p>(1) •Lecture on history which is that natural resources development like minerals contributes to modernization of the developed countries in the 19th and 20th centuries. •Presentation and discussion on participants' country report on the situation and problems of mining sector in their countries.</p> <p>(2) • Lecture on how to extract minerals from ore efficiently. Here rare metals are supposed as many countries pay attention to it. •Site visits to see the sites to help understand the theories and ideas which participants obtained from lectures.</p> <p>(3) • Lectures on history and experiences on the mining pollution from mining activities and how Japan overcome it. •Method for recovery of metals including rare metals from waste like e-waste that is called Urban Mines nowadays.</p> <p>(4) •Lecture and exercercise on how to evaluate the mining project. •Presentation on their action plans on how to share knowledge and skills obtained in the training with their own section in their organization.</p>	IMPLEMENTING PARTNER	International Institute for Mining Technology : MINETEC
	JICA CENTER	JICA Tohoku
	COOPERATION PERIOD	2009~2011
	REMARKS	<p>•Participants are highly expected to participate in discussions, formulation action plan actively. •Action plans formulated are to be open to public. Intra-net set by MINETEC will be used to monitor the progress of action plans, and to provide advices with participants.</p>

Power System Engineering for Planning, Operation and Maintenance in Africa アフリカ地域 電力系統の計画・運用および保守技術		R/F  0984267
Target Countries: Countries in West Africa need support in power system and interconnection		Natural Resources and Energy—Energy Supply 6 participants / English
OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【Objective】</p> <ul style="list-style-type: none"> •Technique on planning, operation, and maintenance of power system will be shared with technicians in government agencies and electric power companies. •Knowledge on interconnected power system will be shared with technicians in government agencies and electric power companies. <p>【Expected Results】</p> <ol style="list-style-type: none"> 1.Understand power industry and the system in Japan 2. <ol style="list-style-type: none"> (1)Set the course objectives for next year through acquired knowledge and technique on evaluation and review of power system planning based on system analysis. (First year) (2)Acquire the skills for analysis and planning on power system.(Second and third years) 3. <ol style="list-style-type: none"> (1)Set the course objectives for next year through acquiring the skills such as power system operation, and evaluation and review of interconnected power system.(First year) (2)Acquire the skills for power system operation and interconnected power system.(Second and third years) 4. <ol style="list-style-type: none"> (1)Set the course objectives for next year through acquiring the skills such as evaluation and review of power equipment maintainance.(First year) (2)Acquire the skills for power equipment maintainance.(Second and third years) 5.Share the skills and knowledge acquired from this training in organizations, and report the result to JICA.(All years) 	Organization in charge of power system planning, operation and maintenance in electric power companies or goverment agencies in charge of electric power	
CONTENTS	PROGRAM PERIOD	Jan.7.2010 ~ Jan.30.2010
<p>The project enhances the knowledge and skill of power system planning, operation and maintenance, which leads to effective power system operation.</p> <ol style="list-style-type: none"> 1. power industry and power system in Japan 2. <ol style="list-style-type: none"> (1)formulation of power system plan (2)power system analysis (3)site tour of power facilities 3. <ol style="list-style-type: none"> (1)power system operation (2)power system interconnection 4. maintenance of power facillies 5. Progress report writing on power system improvement within three months 	IMPLEMENTING PARTNER	Chubu Electric Power Co., Inc.
	JICA CENTER	JICA Chubu
	COOPERATION PERIOD	2009~2011
	REMARKS	

Installation method of small-scale hydro-power generation and wind power generation in rural area 地方における小規模水力発電・風力発電の導入手法		R/F  0984268
Target Countries: Oceania countries and Small islands in Southeast Asia		Natural Resources and Energy—Renewable Energy 6 participants / English
OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【Objective】 Installation method of a small-scale hydro-power generation and a wind power generation will be disseminated into local electrification of electric power ministry, electric power public corporation or regional development charge ministry.</p> <p>【Expected Results】 (1) To explain principle of Hydro-power and Wind-power. (2) To explain influence on small-grid when Hydro-power and Wind-power are introduced. (3) To explain installation method and production technique of small Hydro-power and Wind-power. (4) To master production of small wind-power machine. (5) To formulate an action plan for dissemination into participant's organization and shared in participant's organization.</p>	<p>【Target Organizations】 Person in charge of local electrification of electric power ministry, electric power public corporation or regional development charge ministry, NGO, university.</p> <p>【Target Group】 - Officer in charge of local electrification of electric power ministry, electric power public corporation or regional development charge ministry - Having over 3 years experiences of recyclable energy and electrification</p>	
CONTENTS	PROGRAM PERIOD	Jan.26.2010 ~ Mar.2.2010
<p><Preparatory phase(Before coming to Japan)> Inception report describing present job activities and current situation of diesel generators in respective countries is developed.</p> <p><Program in Japan> (1) • It lectures on basic mechanisms, which are structure and principle of operation of Hydro-power and Wind-power, difference with other generator and understanding of performance curve etc. (2) • It lectures on the influence and the feature when Hydro-power and Wind-power are introduced into a small-grid. • It visits Hydro-power and Wind-power of in the Okinawa main island and solitary island (Tonaki and Aguni, etc.). (3) • It lectures on small Hydro-power and Wind-power introduction technique (quantity/ methodology of Feasibility study/ choice / connection). • It lectures on the structure(including material strength) and the production technique and Installation method of a small Hydro-power and wind-power as a concept in the misappropriation of the car useless article mainly. (4) • While confirming a standard blueprint, the content of the lecture and the sample, each group actually misappropriates the car useless article and produce small Wind-power. • It start produced machine and measure quantity of generation. (5) • Training on a spread method in home country about acquired knowledge / technology. • Evaluation test over general training contents done by writing article. • Based on the knowledge from the training, study through a report of improvement method and introduction plan. • Implementaion of the action plan is examined in participant's organization.</p> <p><Post-program activities(After paticipants' return)> Within 6 months of the end of the course in Japan, participants are expected to implement the plan prosed in the Action plan and report the progress as a final report.</p>	IMPLEMENTING PARTNER	Okiden Sekkei Co., Inc
	JICA CENTER	JICA Okinawa
	COOPERATION PERIOD	2009~2011
	REMARKS	

Target Countries: There are electric power plants which manage plural diesel generators


8 participants / English

OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【Objective】 The methodology of economical load distribution among multiple diesel generators will be disseminated in the electric power company or local government which conduct the improvement of the power generation efficiency.</p> <p>【Expected Results】 (1)To explain mechanism of a diesel generator. (2)To explain theory and methodology of economic load distribution. (3)To use of economic load distribution. (4)To formulate an action plan for dissemination into participant's organization and shared in participant's organization.</p>	<p>【Target Organizations】 Electric power companies and the local government which engage in use and management of diesel generation.</p> <p>【Target Group】 -electric power operation manager, electric facility manager and operator -Having over 3 years experiences of diesel electric power operation and management.</p>	
<p style="text-align: center;">CONTENTS</p>	<p style="text-align: center;">PROGRAM PERIOD</p>	<p>Jun.16.2009 ~ Jul.16.2009</p>
<p><Preparatory phase(Before coming to Japan)> Inception report describing present job activities and current situation of diesel generators in respective countries is developed. <Program in Japan> (1) •Training in theory and structure of diesel generator, engine characteristic and difference with others generators, fundamental mechanism of a diesel generator such as understanding of a performance curve. (2) •Training in characteristic of general efficiency(real example), condition when several diesel generators are running and learning training about increment in use fuel cost rate. •Practical construction of economic load distribution list in Excel sheet based on real sample data. If it possible using real generator data from the home country. (3) •Visit to the remote island around Okinawa and observe the real condition in the use of economic load distribution. •Training based on basics data of fuel consumption rate in economic load distribution calculation with a small diesel generator. •Training on an appropriate maintenance method of generator. (4) •Training on a spread method in home country about acquired knowledge / technology. •Evaluation test over general training contents done by writing article. •Based on the knowledge from the training, study through a report of improvement method and introduction plan. •Implementaion of the action plan is examined in participant's organization. <Post-program activities(After participants' return)> Within 6 months of the end of the course in Japan, participants are expected to implement the plan propsed in the Action plan and report the progress as a final report.</p>	<p>IMPLEMENTING PARTNER</p>	<p>Okiden Sekkei Co.,Inc</p>
	<p>JICA CENTER</p>	<p>JICA Okinawa</p>
	<p>COOPERATION PERIOD</p>	<p>2009~2011</p>
	<p>REMARKS</p>	<p>It is recommended to prepare the basic information/data of your country, such as follows; the control method for diesel power facilities; the fuel consumption rates for each diesel generator of a model power station—the consumption rates for 50% energy output, 75% energy output, and 100% energy output—</p>

Target Countries: The countries which have mining resources

7 participants / English

OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【Objective】 Draft of the materials to disseminate the skills to estimating potential of natural resources with remote sensing technique is formulated.</p> <p>【Expected Results】 (1) Satellite image data are appropriately processed with full understanding of variety and features of image data. (2) Airborne geophysics data are appropriately processed with full understanding of variety and features of data. (3) Structure of Geographical Information System (GIS) and how to develop GIS database are understood, and appropriately developed. (4) Geologic tectonics and mineral resources potential are estimated by remote sensing data analysis. (5) Estimated potentials are investigated by ground truth.</p>	<p>【Target organizations】 Ministry of Mines / Natural Resources, Geological Survey, and Universities</p> <p>【Target group】 (1) Geologist, Senior Geologist who belong to target organizations and are expected to play a leading role in the field (2) Have Bachelor of Science or Engineering in Geology and/or Mining field. (3) Individuals with a good command of PC (4) Individuals with a good command of English (5) Have working experience in Geological field (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</p>	
<p style="text-align: center;">CONTENTS</p>	<p style="text-align: center;">PROGRAM PERIOD</p>	<p>Feb.11.2010 ~ Mar.13.2010</p>
<p>This program is designed for geologist to enhance his/her knowledge and techniques for mineral resources exploration.</p> <p>(1) • Variety and features of satellite image data. • Method of processing satellite image data.</p> <p>(2) • Variety and features of airborne geophysics data. • Method of processing airborne geophysics data.</p> <p>(3) • Structure of Geographical Information System (GIS) • How to develop GIS database are understood, and appropriately developed for mineral resources exploration.</p> <p>(4) • How to estimate geologic tectonics and mineral resources potential by remote sensing data analysis. • Investigation by ground truth.</p> <p>(5) • To formulate the draft materials to disseminate the skills to estimating potential of natural resources with remote sensing technique</p>	<p>IMPLEMENTING PARTNER</p>	<p>International Institute for Mining Technology : MINETEC</p>
	<p>JICA CENTER</p>	<p>JICA Tohoku</p>
	<p>COOPERATION PERIOD</p>	<p>2009~2011</p>
	<p>REMARKS</p>	


Energy Efficiency and Conservation 省エネルギー		GROUP  0980315
Target Countries: Countries with organizations dedicated to saving energy		Natural Resources and Energy—Energy Conservation 21 participants / English
OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【objective】 A policy proposal for better Energy Efficiency and Conservation (EE&C) promotion in the field of policymaking and institution building in participating countries will be formulated by the EE&C organization which each participant belongs to, through participation to the program in Japan and ex-post activities by the participants after returning home country.</p> <p>【outputs】 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.</p> <p>2. A policy proposal which leads to the energy conservation policy and the promotion of system construction of their own country is created.</p> <p>3. Draw up a Final Report which includes the result of sharing and discussion within the organization each participant belongs to, after the return.</p>	<p>[Target Organizations] The organization for Energy Conservation Promotion</p> <p>[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.</p>	
CONTENTS	PROGRAM PERIOD	May.11.2009 ~ Jun.27.2009
<p>【Preparatory phase】 Prepare a Country Report describing the present situation of each country/organization and their problems</p> <p>【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.</p> <p>Observation: Excellent Cases of Energy Conservation and Energy Management (Buildings, Factories, Power Plants, etc.)</p> <p>Practice: Measurement of Energy Consumption and analysis (Furnace, Fun, Steam traps, etc.)</p> <p>【Post-program activities】 The actions described in the Policy Proposal should be reviewed, authorized and implemented, and are reported as a Final Report.</p>	IMPLEMENTING PARTNER	THE ENERGY CONSERVATION CENTER JAPAN
	JICA CENTER	JICA Tokyo
	COOPERATION PERIOD	2006~2010
	REMARKS	


OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【objective】 Feasible Action Plan for introduction of nuclear power generation will be formulated at the participating organization.</p> <p>【outputs】 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 nuclear 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.</p>	<p>[Target Organizations] Government agencies/electricity authorities which command nuclear power generation</p> <p>[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.</p>	
CONTENTS	PROGRAM PERIOD	May.31.2009 ~ Jun.24.2009
<p>【Preparatory phase】 To prepare a Country Report describing the present situation of respective country/organization, its problems and the plan for nuclear power generation.</p> <p>【Program in Japan】 To formulate an action plan on the introduction of nuclear power generation in respective countries.</p> <p>Lectures: Outline of Japanese nuclear power generation, international framework for nuclear non-proliferation, security, environmental impact assessment, authorization processes, etc.</p> <p>Observation: Nuclear Power Plants in Japan, etc.</p> <p>Practice: BWR/PWR Operation Simulators</p> <p>【Post-program activities】 The actions described in the action plan should be reviewed, authorized and implemented. The results of the actions are reported as a Final Report.</p>	<p>IMPLEMENTING PARTNER</p> <p>JICA CENTER</p> <p>COOPERATION PERIOD</p>	<p>METI, JEPIC, JAPC</p> <p>JICA Tokyo</p> <p>2007~2009</p> <p>REMARKS</p> <p>1. Fix countries through a cooperation term(2007-2009). 2. Repeated participation of the same person acceptable.</p>

Target Countries: Mekong Region Countries

10 participants / English

OBJECTIVE	TARGET ORGANIZATION / GROUP	
<p>【Objective】 A report which includes the electric power development planning with electricity interchange within the Mekong regions is formulated and it will be shared and discussed within organizations.</p> <p>【Outputs】 1. To share the efforts for power development planning by participating countries, relevant basic data and standards of each country, together with issues which includes the electric power development planning with electricity interchange. 2. To acquire pragmatic information on power development planning. 3. To understand the points to consider at the planning stage of power transmission and transformer station facility based on the newly acquired knowledge of system planning, while also to understand the perspective of system operation such as supply & demand operation and power interchange. 4. To understand characteristics, system operation method and equipment outline of each power generation method through site visits. 5. To prioritize issues to be tackled in each country and identify countermeasures that contain electricity interchange within the Mekong regions based on what you learn during the training. To make an final report. 6. To make a follow-up report.</p>	<p>【Target Organizations】 Electric power planning bodies (e.g. Ministry of energy, Electric power company)</p> <p>【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)University/college graduates or equivalent, (4)Individuals with sufficient English conversation and reading ability.</p>	
CONTENTS	PROGRAM PERIOD	Oct.12.2009 ~ Oct.31.2009
<p>【Preparatory phase】 Prepare a Country Report describing the present situation and problem of each country/organization .</p> <p>【Program in Japan】 Lecture: An approach to energy source best-mix, power system operation 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.</p> <p>Observation: Load Dispatching Office, Thermal Power Plant(Gas/Coal/Oil-fired), Water PP(Conventional/Pumping storage), Nuclear PP, New-energy PP, etc.</p> <p>Practice: Presentation and discussion of country reports in each country. Summary of the training program (Training report and countermeasures in each country)</p> <p>【Post-program activities】 The actions described in the final report should be reviewed, authorized and implemented. The results of the actions are reported as a Follow-up Report</p>	<p>IMPLEMENTING PARTNER</p> <p>JICA CENTER</p> <p>COOPERATION PERIOD</p>	<p>JAPAN ELECTRIC POWER INFORMATION CENTER INC.</p> <p>JICA Tokyo</p> <p>2008~2010</p> <p>REMARKS</p>

Strengthening Capacity of Electric Pool in Eastern and Southern Africa 東南部アフリカ電力プール機能増強		R/F 	0984314
Target Countries: East & Southern African Countries		8 participants /	English
OBJECTIVE	TARGET ORGANIZATION / GROUP		
<p>【objective】 Policy proposal for the promotion of the electric power facilities reinforcement plan in the southeast part Africa nations is examined, shared and discussed within organizations.</p> <p>【outputs】 (1) To share the status of power development planning by participating countries, relevant basic data and standards of each country, together with issues which includes the electric power development planning with electricity interchange. (2) The status of the power supply in Japan, the reinforcement plan of power generation and transmission, the methodology of the financing, the approaches on the energy efficiency improvement, and the reliability securing are understood, and the problem for the electricity shortage solution of each country is examined. (3) To examine the approaches on the personnel training, environmental measures, the security precaution, and dynamos processing technology in Japan. Then the possible application to each country is examined. (4) A concrete Policy proposal to contribute to the solution of the problem in each country will be made.</p>	<p>【Target Organizations】 Ministries and agencies of Electricity</p> <p>【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</p>		
CONTENTS	PROGRAM PERIOD	Nov.1.2009 ~ Nov.21.2009	
<p>【Preparatory phase】 Prepare a Country Report describing the present situation and problem of each country/organization.</p> <p>【Program in Japan】 Plans for strengthening power generation and power supply are established , at the same time management technique including saving and security control is enhanced.</p> <p>Lecture: An approach to energy source best-mix, power system operation 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.</p> <p>Observation: Load Dispatching Office, Thermal Power Plant(Gas/Coal/Oil-fired), Water PP(Conventional/Pumping storage), Nuclear PP, New-energy PP, etc.</p> <p>Practice: Presentation and discussion of country reports in each country. Summary of the training program (Training report and countermeasures in each country)</p> <p>【Post-program activities】 The actions described in the policy proposal should be reviewed, authorized and implemented. The results of the actions are reported as a Follow-up Report.</p>	IMPLEMENTING PARTNER	JAPAN ELECTRIC POWER INFORMATION CENTER INC.	
	JICA CENTER	JICA Tokyo	
	COOPERATION PERIOD	2009~2011	
	REMARKS	Semi-high rank is targeted in this course.	

Electric Power Forum for Asia アジア電力フォーラム		R/F 	0984198
Target Countries: ASEAN Region		6 participants /	English
OBJECTIVE		TARGET ORGANIZATION / GROUP	
<p>【Program objective】 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.</p> <p>【Outputs】 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.</p>		<p>【Target Organizations】 Ministries and agencies of Electricity</p> <p>【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</p>	
CONTENTS		PROGRAM PERIOD	Mar.8.2010 ~ Mar.14.2010
<p>【Preparatory phase】 Prepare a Country Report describing present situation of each countries/ organizations and their problems in power sector.</p> <p>【Program in Japan】 (1)Lectures (2)Country Report presentation (3)Open seminar (4)Observations</p>		<p>IMPLEMENTING PARTNER</p> <p>Japan Electric Power Information Center Inc.</p>	
		<p>JICA CENTER</p> <p>JICA Tokyo</p>	
		<p>COOPERATION PERIOD</p> <p>2007~2009</p>	
		<p>REMARKS</p> <p>Semi-high rank is targeted in this course.</p>	