9.Natural Resources and Energy

Energy Policy
エネルギー政策

PITD Solution 1180049

Target Countries: 10 participants

Sector : Natural Resources and Energy/Energy Supply

Sub-Sector :

Language : English

Appeal

To understand the energy policy and situation in the world and Japan, and to support policy making based on the supply and demand assumption and energy balance.

Objective / Output

【objective】A Policy plan contributing to the formulation of energy policy based on each country's characteristics and issues will be formulated, and then shared and studied in the participating organization.
【outputs】
(1) Energy situation and issues in each country are shared among the participants and priority issues are examined.
(2) Challenges in energy policy in each country are clarified through understanding and comparing changes and current status of energy situation/energy policies in Japan and the rest of the world.
(3) Concepts and methods of energy supply-demand forecasting, energy balance and energy best mix are understood and their applicability in each country is examined.
(4) A draft Policy Plan of specific countermeasures which contribute to solving challenges in each country is formulated.

Target Organization / Group

【Target Organizations】
Governmental agencies such as Ministry of Energy or Industry, which are engaged in energy policy formulation.
【Target Group】
(1) be a managerial level official or its equivalent of governmental agency such as Ministry of Energy or Industry, which is engaged in energy policy formulation,
(2) University graduate or its equivalent and more than 3(three) years of experience in the fields,
(3) have a competent command of spoken and written English.

Contents

【Preparatory phase in home country】
Prepare a Country Report describing the present situation of each country/organization and their problems.
【Core Phase in Japan】
Output(1): Country Report presentation
Output(2): Energy demand forecasting in the world, The latest trends of CDM projects, Changes in lifestyle and energy demand and supply in Japan,Energy Policy in Japan (Oil, electric power, gas, coal, Energy Conservation, renewable energy), Process to introduce Nuclear Power in Japan, Power plant site visit, etc.
Output(3): Energy Balance Table, Introduction of market principle in energy field, Survey technique for energy statistics data, Energy statistics system in Japan, etc.
Output(4): PCM work shop, Policy plan maiking, presentation
【Finalization Phase in home country】
The actions described in the Policy Plan should be reviewed, authorized and implemented, and are reported as a Final Report.

Program Period	2011 / 5/ 8 ～ 2011 / 5 / 28
Implementing Partner	The institute of Energy Economica, Japan
JICA Center	JICA Tokyo(Industrial Dev.&Finance)
Cooperation Period	2010～2012
Remarks and Website	This course will be implemented 3 times, as Energy Policy(A), Energy Policy (B)(from June 5 to June 25, 2011) and Energy Policy (C)(from July 3 to July 23, 2011).

Thermal Power Engineering Course for Gas Turbine & Coal Fired Steam Turbine -Improvement of Maintenance Skill for Stable Power Supply
ガスタービン・石炭火力発電～安定電力供給のためのメンテナンス技術向上～

PITD Trainers 1180578

Target Countries: Countries with thermal power plants — 12 participants

Sector : Natural Resources and Energy/Energy Supply

Sub-Sector :

Language : English

Appeal

This program is designed for mechanical engineer working at thermal power station to share and promote knowledge and skills for operations and maintenance.

Objective / Output

Course Objective:Knowledge and skills for operations, maintenance and environmental conservation are acquired and will be shared and promoted among his/her organization.
Expected Outputs:
1. To prepare a job report which describes problems, their causes, and measures taken as well as the area of interest (what participant would like to learn).
2. To analyze and assess similarities and/or differences between electric power industry in Japan and in their country.
3. To analyze knowledge and information on effective techniques of operation and control, maintenance and troubleshooting, advanced technologies for environmental conservation for thermal power plants, according to the prepared issue analysis.
4. To prepare an action plan on how to share and utilize the skills and knowledge learned in Japan.
5. The action plans made by the participants will be shared and utilized.
6. The action plans will be discussed and promoted in their organizations.

Target Organization / Group

[Target Organization]Operational management/maintenance section at Gas turbine/Coal fired steam turbine power plant
[Target Groups]
1. Senior mechanical engineers and currently involved in the operational management and maintenance of gas turbine power plants.
2. University/college graduates or with equivalent academic backgrounds.
3. Share the skills and knowledge with stakeholders and submit the progress report.
4. Being involved in JICA project (recommendable).

Contents

【Preliminary Phase】
Formulation and submission of Job/Country Report
【Core Phase in Japan】
1. Lecture about Outline of the Electric Power Industry in Japan
2. Lecture and practice on operation and management techeniques
3. Lecture and practice on maintenance techniques
4. Lecture and observation on manufacturing techniques
5. Lecture and observation on environmental conservation technology
6. Preparation and presentation of an action plan
【Finalization Phase】
1. Share and utilize the skills and knowledge acquired in Japan in their organizations
2. Implement the relevant activities based on the action plan and submit the progress report within 3 months after returning to the home country

Program Period	2011 / 5 / 17 ～ 2011 / 6 / 29
Implementing Partner	JEPIC and PET
JICA Center	JICA Chugoku
Cooperation Period	2010～2012
Remarks and Website	Some parts of the training program are devided into 2 courses, namely ″the gas turbine course″ and ″coal fired steam turbine course″. Participants are to choose one of them which is suitable for their current job.

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

PITD Trainers 1180730

Target Countries: IAEA and NPT affiliated country, Concluded country of CSA 9 participants

Sector : Natural Resources and Energy/Energy Supply

Sub-Sector :

Language : English

Appeal

This program is designed for countries planning to newly introduce nuclear power generation. The program objective is to acquire comprehensive knowledge for introduction of nuclear power generation and to share and diffuse among his/her organization about the knowledge which is acquired during the training course. As the result of diffusing the knowledge, public awareness for nuclear safety is to be promoted.

Objective / Output

【objective】
Comprehensive knowledge for introduction of nuclear power generation which is the output of this program will be shared and promoted among his/her organization. For the result of the promotion, his/her organization grapple with educational campaign of nuclear safety for public.
【outputs】
Output(1):To find the necessity of nuclear power generation related with electric power industry, energy security and environment. To present the problems that they are facing. To find the issue of nuclear safety and appropriate operation and maintenance.
Output(2):To find the consideration of social consideration in order to introduce a nuclear power generation.
Output(3):To draw up the action plan in order to introduce a nuclear power generation and to present its included the difference/issue about the other countries. To report the knowledge including the action plan obtained in Japan to the belonging organization, and discuss its applicability in the organization.

Target Organization / Group

[Target Organizations]
Competent Government Agencies for nuclear power policy or electric power companies
[Target Group]
(1) Be a manager class official/candidate of central government or manager class of electric power company with sufficient English conversation and English reading ability., who is in charge of formulation or planning of policy for nuclear power generation.
(2)30-45 yeas of age, and have a minimum of 3 years of experience in department or section engaging in policy for electric power or electric power development plan.

Contents

【Preparatory phase in home country】
Prepare a Country Report describing the present situation of each country/organization and their problems.
【Core Phase in Japan】
Output(1): Country report presentation and discussion, Lectures and site visit about the outline of electric power industry in Japan and energy policy in Japan
Output(2): Lectures and site visit about the operation/maintenance of nuclear power plant, Site visit to the factories of nuclear power generation, Lectures of the human resources and the nuclear power regulation. Lectures and site visit about the public acceptance, Site visit about Hiroshima Peace Memorial Museum and lead to consciousness of peace
Output(3): Drawing up a action plan and preparing for the presentation, Action plan presentation and discussion
【Finalization Phase in home country】
The actions described in the Action Plan should be reviewed, authorized and implemented, and are reported as a Final Report.

Program Period	2012 / 1/15 ～ 2012 / 2/10
Implementing Partner	Japan Electric Power Information Center, Inc.
JICA Center	JICA Tokyo(Industrial Dev.&Finance)
Cooperation Period	2010～2012
Remarks and Website	

The Improvement for Electric Power Distribution Grid
配電網整備

PITD Trainers 1180797

Target Countries: 16 participants

Sector : Natural Resources and Energy/Energy Supply

Sub-Sector :

Language : English

Appeal

Because of the world's top-level distribution system in Japan, participants can learn not only knowledge and technique but also how to operate distribution system by visiting service offices and construction sites. The participants can also build relationship with Japanese experts and other participants who are in a position of management/leadership or will be in the near future.

Objective / Output

<Objective>
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)To find issues and causes concerning the distribution grid in their countries and explaining them
(2)To understand the planning/design techniques to effectively establish low-loss electric power distribution grid in Japan and explaining the difference from their countries
(3)To understand the operation/maintenance techniques to maintain reliable electric power distribution grid in Japan and explaining the difference from their countries
(4)To making solutions for efficient stable electric supply in order of priority and explain their action plans

Target Organization / Group

<Target Organization>
Competent government agencies for electric power sector and electric pwer companies

<Target Group>
- Persons in charge of manager and/or leader position or expected in near future
- Electrical engineers belong to electric power companies or public organization in distribution area with five(5) years experience in this area
- Universtiy graduates or equivalent
- Age: Form 30 years to 40 years old

Contents

<Activities in Preliminary Phase in home country>
Formulation of the Country Report and the Issue Analysis Sheet
<Activities in Core Phase in Japan>
Lecture, exercise, site visit, discussion and etc. on following contents are provided for each output mentioned above:
(1)Outline of electric power industry in Japan, Outline of transmission/distribution systems
(2)Planning/designing of distribution systems, Electrification and correspondece to isolated island, Distribution equipment factories
(3)Outline of quality management in Japan, Operation/maintenance of distribution systems
(4)Drawing up an action plan and presentation
<Activities in Finalization Phase in home country>
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.

Program Period	2011 / 9 / 20 ～ 2011 / 10 / 29
Implementing Partner	Japan Electric Power Information Center, INC.
JICA Center	JICA Okinawa
Cooperation Period	2011～2013
Remarks and Website	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.

Power Sector Development in Central Asia
中央アジア地域 電力セクター開発

PRTD Int.Dialogue 1184008

Target Countries: Central Asia — 10 participants

Sector : Natural Resources and Energy/Energy Supply

Sub-Sector :

Language : Russian

Appeal

Participants will exchange information on challenges and efforts by electric power sectors policy in their countries, and share awareness of the issues with Japanese authorities concerned in electric power sector. Then participants and Japanese counterparts will develop an international network.

Objective / Output

【objective】
Participants will exchange information on challenges and efforts by electric power sectors in their countries, and share awareness of the issues with Japanese authorities concerned in electric power sector.
【outputs】
(1) Participants provide basic information on electlicity policies and share them with other participants
(2) Paricipants understand the Japanese effort for electricity demand-supply plan, electricity rate structure and efficiency improvement, and identify issues to solve power shotage.
(3) Paricipants discuss regional cooperation on electoric power interchange.
(4) With the Japanese electricity policy and the electoricity policy of other Central Asian countries as a reference, participants will specify the policy goals and propose the procedure to achieve them.

Target Organization / Group

【Target Organizations】
Ministries and agencies of Electricity orElectric power company

【Target Group】
(1) Managerial posts in charge of power development planning and its implementation in central government or electric power company,
(2)University/college graduates or equivalent and currently engaged in the field for more than 5 years,

Contents

(Lecture):
①Introduction to the Japanese electricity(including visits to hydro and thermal power plant)
②efficient power generation and transmission
③energy conservation, new energy policy
④electricity rate structure
(Observations):
Visits to Electric power substation, hydro, thermal and other power plants
(Practices):
Country Report Presentation
Discussion to develop a network among participants and Japanese counterparts

Program Period	2011/12/ 4 ～ 2011/12/17
Implementing Partner	International Development Center of Japan
JICA Center	JICA Tokyo(Industrial Dev.&Finance)
Cooperation Period	2010～2012
Remarks and Website	

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

PRTD　Trainers　1184267

Target Countries: Africa　　6 participants

Sector : Natural Resources and Energy/Energy Supply

Sub-Sector :

Language : English

Appeal

The project enhances the knowledge and skill of power system planning, operation and maintenance, which leads to effective power system oparation.

Objective / Output

【Objective】
・Technique on planning, operation, and maintenance of power system will be shared with technicians in goverment agencies and electric power companies.
・Knowledge on interconnected power system will be shared with technicians in goverment agencies and electric power companies.

【Expected Results】
1.Understand power industry and the system in Japan
2.Aquire the skills for analysis and planning on power system.
3.Aquire the skills for power system operation and interconnected power system.
4.Aquire the skills such as evaluation and review of power equipment maintainance.
5.Share the skills and knowledge aquired from this training in organizations, and report the result to JICA.

Target Organization / Group

Organization in charge of power system planning, operation and maintenance in electric power companies or goverment agencies in charge of electric power

Contents

The project enhances the knowledge and skill of power system planning, operation and maintenance, which leads to effective power system oparation.

1. power industry and power system in Japan
2.
(1)formulation of power system plan
(2)power system analysis
(3)site tour of power facilities
3.
(1)power system operation
(2)power system interconnection
4. maintenance of power facilies
5. Progress report writing on power system improvement within three months

Program Period	under planning
Implementing Partner	Chubu Electric Power Co., Inc.
JICA Center	JICA Chubu
Cooperation Period	2009～2011
Remarks and Website	

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

PRTD Solution 1184314

Target Countries: Southeast Africa 10 participants

Sector : Natural Resources and Energy/Energy Supply

Sub-Sector :

Language : English

Appeal

Plans for strengthening power generation and power supply are established in South-east Africa countries. At the same time, manegement technique including saving and security control is enhanced. This program is implemented as a part of promgrams for "broadband infrastructure" for the TICAD IV Follow-up initiative.

Objective / Output

【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.
【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.

Target Organization / Group

【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 in home country】
Prepare a Country Report describing the present situation and problem of each country/organization.
【Core Phase 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.
(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 and proposal.
【Finalization Phase in home country】
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.

Program Period	2011/ 9/19 ～ 2011/10/8
Implementing Partner	Japan Electric Power Information Center, Inc.
JICA Center	JICA Tokyo(Industrial Dev.&Finance)
Cooperation Period	2009～2011
Remarks and Website	

Policy Planning for Energy Efficiency & Conservation
省エネルギー政策立案

PITD Solution 1180315

Target Countries: 20 participants

Sector : Natural Resources and Energy/Energy Conservation

Sub-Sector :

Language : English

Appeal

The characteristics of this training is that trainees who have poor experiences to make policies of energy efficiency would make policy proposals through lectures for Japanese policies, basic knowledge about policy planning method and practical lectures for energy audit. After training, it's also the point that the trainees have to make reports along with the policy proposals and JICA will prepare the information exchange occation to each trainees from other countries to share the barriers.

Objective / Output

<Course Objective>
The trainees make policy proposals based on the situation of each countries and the knowledge from this training.Through the activities, trainees' abilities of policy making could improve.
<Objective for each unit>
(1)preparation for and presentation of the country report. And figure out the current energy situation and policy for energy efficiency, as a result, explain the problem in his country.
(2)Understand Japan's policies, law and the current situation of promotion of the energy efficiency. As a result, compare it to his country's policy and study the possible application of the Japanese policy.
(3)Figure out the actual situation of the specific action , efffect and benefit for energy efficiency. As a result, compare to his country's factory, and study the difference and possible application.
(4)study for problem on policy planning through group working and understanding the effectiveness of it. And develop into the setting of the problem and group discussion on the process of the policy plannning
(5)Make an appropriate and feasible policy proposal along with the energy situation.

Target Organization / Group

<Target Organization>governmental organization in charge of energy efficiency & conservation policy plannning and its implementation
<Expected Job Title>responsible for policy plannning of energy efficiency & conservation(e.g. director-general, director, deputy director)
<Expected Job Experience>more than 3 years
<Other Qualifications>the person who will be countinually in charge of the policy planning for a certain period

Contents

Understand the energy situation and policy for energy efficiency and conservation in own country through making country report and share above information with other trainees and teachers.
The contents include 3 parts, "Japan's policies and law for energy efficiency", "promotion activities by implementation organization" and "energy efficiency for industry, building and residential". Trainees could understand the systematic promotion by administration officials and expertise
Aquire the practical knowledge and understand the current situation of energy efficiency promotion by visiting the factories and office buildings whose the owner companies got a prize on energy efficiency.
sum up and the discussion of the contents and methods to solve the given policy problem through the group working and do the presentation.
Make the policy proposal which will be practiced by trainees and the organization after training.
Improve the perfection level of the contents and make the contents to be viable by the discussion of the trainees and the comments of the japanese experts

Program Period	2011 / 5 / 8 ～ 2011 / 6 / 4
Implementing Partner	ECCJ/KITA
JICA Center	JICA Tokyo (Industrial Dev.&Finance), JICA Kyushu
Cooperation Period	2011～2013
Remarks and Website	

Energy Conservation Technique for MERCOSUR region
メルコスール地域 省エネルギー技術

PRTD Leaders 1184269

Target Countries: MERCOSUR Region 8 participants

Sector : Natural Resources and Energy/Energy Conservation

Sub-Sector :

Language : Spanish

Appeal

This program is designed to provide participants from governmental oraganization related to conservation of energy or the organization related to audit energy conservation with the knowledge and technique about energy conservation activities in Japan, aiming to strengthen their capability to introduce appropriate energy conservation activities in the member countries of MERCOSUR.

Objective / Output

【Objective】
Participants ' capabilityies to introduce appropriate energy conservation activities in the member countries of MERCOSUR are strengthened.

【Expected Results】
(1)Underestand and can explain energy conservation administration policy of Japan
(2)Underestand and can explain versatile energy conservation technique
(3)Participants are able to formulate and propose Action Plan for introducing energy conservation technique

Target Organization / Group

【Target Organization】
Governmental oraganization related to energy conservation, Organizaton related to audit energy conservation

Contents

(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)Dicussion about energy conservation ・Formulation of Action Plan
・Presentation of Action Plan

Program Period	2012 / 2/19 ～ 2012 / 3/10
Implementing Partner	KITA
JICA Center	JICA Kyushu
Cooperation Period	2009～2011
Remarks and Website	This training program is offered to those who are in charge of energy conservation policy. Follow-up seminar was conducted in Argentina in JFY 2009.

Fuel-reduced Operation By Economical Load Distribution of Multiple Diesel Generators
複数台ディーゼル発電機における経済的負荷配分による省燃料運用

PRTD Trainers 1184270

Target Countries: There are electric plants which manage plural diesel generators — 8 participants

Sector : Natural Resources and Energy/Energy Conservation

Sub-Sector :

Language : English

Appeal

For reducing fuel consumption, this training will contribute the department of generator operation of electric power company for dissemiantion of methodology of economical load distribution among multiple diesel generators in small electrical grid.

Objective / Output

【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.

【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.

Target Organization / Group

【Target Organizations】
Electric power companies and the local government which engage in use and management of diesel generation.

【Target Group】
-Electric power operation manager, electric facility manager and operater
-Having over 3 years experiences of diesel electric power operataion and management.

Contents

<Activities in Preliminary Phase in home country>
Inception report describing present job activities and current situation of diesel generators in respective countries is developed.
<Activities in Core Phase in Japan>
(1)Training in theory and structure of diesel generator.
(2)Practical construction of economic load distribution list in Excel sheet based on real sample data.
(3)Training based on basics data of fuel consumption rate in economic load distribution calculation with a small diesel generator.
(4)Based on the knowledge from the training, study through a report of improvement method and introduction plan.
<Activities in Finalization Phase in home country>
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

Program Period	2011/ 5/17 ～ 2011/ 6/16
Implementing Partner	Okinawa Enetech Co., Inc
JICA Center	JICA Okinawa
Cooperation Period	2009～2011
Remarks and Website	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

Energy Conservation in Public and Private Sector
省エネに関する企業と行政の取り組み

PRTD Solution 1184317

Target Countries: Asian countries which conduct energy conservation activity — 10 participants

Sector : Natural Resources and Energy/Energy Conservation

Sub-Sector :

Language : English

Appeal

Based on Japanese SMEs' experience of energy saving activities in accordance with productivity improvement, this course introduces merits for SMEs to conduct energy saving activities, governmental policies and regulations, Public-Private-Partnership in regard with energy saving activities. Under cooperation with Kansai Economic Federation, visits and lectures from SMEs which hold environmental technology and products will also be conducted.

Objective / Output

<Course Objective>
Based on bottom-up approach, such as energy saving activities conducted in Japanese SMEs, participants both from puclic and private sector will implement the action plan in their organizations.

<Criteria for the Course Objective>
1. Trial plan and its issues/progress are confirmed through participants' action plan, discussion and presentation.
2. Report of action plan implementation will be fedback within 6 months.

Target Organization / Group

<Expected Job Title>1) Officer responsible for environmental technology promotion in government and public agencies in the field of economic and industy
2) Private sector: manufacturing association
<Expected Job Experience>At least 3 years experience in the field of environmental technology promotion
<Other Qualifications>Two participants (government officer and person from industry) from one country

Contents

<Objective for each unit and contents>
1. Understanding environmental policy, its background of participants' country and energy saving activity in the companies (Submission of report about each country's current situation and issues)
2. Grasping idea of measures taken in Japan and participants' countries for environmental protection, energy saving both in public sector and private sector (information sharing among participants, understanding Japanese laws and regulations, sharing experience of Japanese industry)
3. Understanding the relationship between productivity improvement and energy saving, and understanding situation of Japanese business management utilizing environmental friendly technology (productivity improvement and energy saving activities in Japanese SMEs, lectures and visits regarding environmental technology)
4. Setting an action plan for environmental protection and energy saving based on Japanese cases and participants' countries' experience (Disscussion and formulation of action plan)
5. Applying the action plan to the feasible plan in participants' own countries (Report submission of implementation progress of action plan)

Program Period	2011/11/ 1 ～ 2011/11/30
Implementing Partner	Under Planning
JICA Center	JICA Osaka
Cooperation Period	2011～2013
Remarks and Website	Technology and Products in the Environmentall and Energy Sector, Kansai Economic Federation http://www.kankeiren.or.jp/kankyou/en/

Energy Conservation Technology & Machine Condition Diagnosis Technique – for Productivity Enhancement and Cleaner Production –
省エネルギー技術と設備診断 ―生産性向上とクリーナプロダクションのために―

PRTD Solution 1184319

Target Countries: Asian, Middle Eastern, Southeast European Countries 14 participants

Sector : Natural Resources and Energy/Energy Conservation

Sub-Sector :

Language : English

Appeal

This program is designed for practical engineers such as energy auditor, energy manager and plant engineer to develop their technical capacity. Participants will enhance practical ability by lectures, practices and site visits. Learning Machine Condition Diagnosis Technique (MCDT) and measures for maintenance engineering provides them necessary technology for efficiency promotion by combination of energy saving technology and maintenance.

Objective / Output

<Course Objective>
Participant's capacity on energy conservation technology and MCDT is improved, and practical action plan for solving problems on energy conservation is formulated in their organization.
<Objective for each unit>
1. To understand energy policy in Japan and methods of energy conservation audit, and to propose a solution on energy conservation activities in home country by acquiring basis for module 2, 3 and 4
2. To be able to apply theory of energy-intensive equipment and energy conservation technology to energy conservation audit and energy management
3. To be able to apply MCDT and maintenance techniques to energy conservation activities and maintenance
4. Action plan is presented by participants by applying acquired energy conservation technology and MCDT.
5. Action plan for energy conservation is considered in participant's organization.

Target Organization / Group

<Target Organization>Governmental organization, public or private company engaging in energy audit and energy conservation activities
<Expected Job Title>Engineers and technical officials in charge of energy audit, energy management and maintenance for energy conservation
<Expected Job Experience>Over 5 years experiences
<Other Qualifications>Under 50 years old and be competent in spoken and written English

Contents

1. "Methods of Energy Conservation Audit & Activities, and Energy Policy in Japan": Practice of Energy Audit,Standard of Energy Management, Daily Activities on production site, Seven Tools as facility improvement, Energy Law System, Outline of Energy Policy, Policy for small sized enterprise
2. "Basic Technologies of Energy Conservation Audit": Energy Conservation Technology in Thermal Utilities, pump, blower, air conditioning, lighting and steam. Energy Conservation by Inverter. Calculation of combustion. Practice of Inverter, Pump, Compressor and Furnace. Fluid Mechnics.
3. "Machine Condition Diagnosis Technique for Energy Conservation and plant maintenance management":Diagnosis by Vibration (Vibration Theory, Rotating Machine, Bearing, Gear). Others (Thermography, Tripology, Electric Machinery). Practice of MCDT (Rotating M, Bearing, Gear). Maintenance.
4. "Action Plan and Introduction of Energy Conservation Activities": Action Plan & Job Report Presentation. Examples of Energy Conservation Activities in Plant & Building. Tour of Plant Visit in Tokyo, Kyoto & Nagasaki (Kyushu Electric Power, Nissan Motor, TOTO, LNG Plant etc.)
5. Action Plan is considered in participant's organization, and progress report is submitted.

Program Period	2011 / 9 / 19 ～ 2011 / 12 / 23
Implementing Partner	Under Planning
JICA Center	JICA Kyushu
Cooperation Period	2011～2013
Remarks and Website	

Planning Support for Introduction of Solar Power Generation
太陽光発電導入計画支援

PITD Solution 1180008

Target Countries: 13 participants

Sector : Natural Resources and Energy/Renewable Energy

Sub-Sector :

Language : English

Appeal

For government ministries in charge of renewable energy to understand characteristics of PV generation for its appropriate introduction/maintenance.

Objective / Output	Target Organization / Group
Plan/ Policy in regard with installed and mainteining PV system will be settled in three years. [1: Pre-activities] PV development plan and PV current situation will be organized [2: Activities in Japan] PV development plan and PV current situation of Japan and participating countries are recognized, and own efforts will be reconsidered [3: Activities in Japan] Trial plan for appropriate introduction/maintenance of PV will be proposed refer to the Japan and participating countries' experiences and lessons [4: Subsequent Activities] Trial plans for appropriate introduction/maintenance of PV will be reported, discussed, and practiced after the end of training programs	Officials/ Engineers working for government ministry in charge of energy conservation, Promoting PV system and PV industry (Participants from same organization as last year is recommended as for A & B course held in Osaka.)

Contents		
(Pre-departure activity) 1)Report on current situation and issues of participants' country (Training course in Japan) 2)Renewable energy in Japanese electrical power master plan 3)Technology of manufacturers, Management of power company 4)Case of central and local government, business enterprises 5)Cooperation scheme of JICA and institutions concerned 6)Discussions 7)Preparation of the presentation 8)Presentation of the plan (Post-training activity) 9)Report about participants' activity in their own countries	Program Period	2011/ 9/11 ～ 2011/10/15
	Implementing Partner	PREX Okinawa Enetech Co., Inc
	JICA Center	JICA Osaka, JICA Okinawa
	Cooperation Period	2010～2012
	Remarks and Website	This program is organized 3 times within FY 2011. 2nd implementation: 2012/01～2012/02(Osaka) 3rd implementation: 2012/01/24～2012/02/17 (JICAOkinawa)

Solar Power Generation Technology
太陽光発電エネルギー技術

PITD Trainers 1180236

Target Countries: Countries with the vision of introducing SHS 9 participants

Sector : Natural Resources and Energy/Renewable Energy

Sub-Sector :

Language : English

Appeal

Appropriate operation and maintenance (O&M) is an mportant issue when introducing Photovoltaic (PV) system, and engineers with PV technology exspertise will be needed to effectiveness and sustainability of the PV projects. The course will create sustainablility on SHS by teaching O&M methodology to the engineers in the country with the vision of introducing SHS for rural electrification.

Objective / Output

【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 Organization / Group

【Target Organizations】
Governmental organization of energy development

【Target Group】
Engineers working for energy-related government ministry, electric power public corporation, and other public organization with more than 3 years of experiences in the field

Contents

(1)Japanese energy policy, needs, economic efficiency and future aspect 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, types 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	2011/ 6/27 ～ 2011/ 9/7
Implementing Partner	Under Planning
JICA Center	JICA Osaka, JICA Kyushu
Cooperation Period	2011～2013
Remarks and Website	Engineers with the background of SHS for rural electrification is highly recommended.

Promotion of Hydropower Development
水力開発の促進

PITD Trainers 1180939

Target Countries: 16 participants

Sector : Natural Resources and Energy/Renewable Energy

Sub-Sector :

Language : English

Appeal

This program is designed for countries, with a problem about stable electricity supply in the future, which have sufficient resources of hydro power generation but do not have capacity to utilize resources effectively. With frowing concern of prevention of global warming, the hydro power generation is revaluated in recent years. In order to promote hydro power development steadily, this program provides Japanese technical knowledge to participants who are in charge of hydropower engineering.

Objective / Output

【objective】To familiarize the inclusive knowledge related to hydropower development obtained in Japan to the home country / organization.
【outputs】
(1)To recognize the issues related to hydropower development in the home country / organization.
(2)To understand about hydropower development procedures including schemes of IPP Project and CDM in the power sector, and consider these applicability to the home country.
(3)To understand differences of required hydropower development technology (planning, design, financial analysis, O&M, rehabilitation, etc.) between the home country and Japan.
(4)To develop an final report to familiarize the knowledge obtained in Japan to the home country / organization.
(5)To report the progress of action plan as a Follow-up report.

Target Organization / Group

[Target Organizations]
Government agencies or electric power utilities which are in charged of the development of hydropower generation.
[Target Group]
(1) be responsible for hydropower development and those currently (or expected to be in the near future) posted to the managerial position.
(2) 30-50 years of age, and have a minimum of 5 yeas practical experience in the field of hydropower development.
(3) have an comptetent command of spoken and written English.

Contents

【Preparatory phase in home country】
Prepare a Job Report describing the present situation of each country/organization and their problems.
【Core Phase in Japan】
Output(1):Presentation and discussion on the job report, Outline of Electric Power Industry in Japan
Output(2): Execution procedure of hydropower development, Environmental impact assessment of hydropower projects, Global warming measures(CDM) and environmental problems of hydropower projects, Hydropower projects by IPP, etc.
Output(3): Introduction of demand forecast in Japan, decision software for electric power development plan, etc.
Output(4): Action plan presentation by the participants
【Finalization Phase in home country】
The actions described in the Action Plan should be reviewed, authorized and implemented, and are reported as a Follow-up Report.

Program Period	2011 / 6 / 7 ～ 2011 / 7 / 7
Implementing Partner	Japan Electric Power Information Center, Inc.
JICA Center	JICA Tokyo(Industrial Dev.&Finance)
Cooperation Period	2010～2012
Remarks and Website	

Rural Electrification Promotion Utilizing Renewable Energies
再生可能エネルギーによる持続的な地方電化の推進

PRTD Solution 1184028

Target Countries: Africa Region 11 participants

Sector : Natural Resources and Energy/Renewable Energy

Sub-Sector :

Language : English

Appeal

This program is designed for officials who are in charge of rural electrification planning and promotion using renewable energies in oreder to enhance their capabilities of mapping out relevant plans and strategies for electrification. The program includes an observation term in the third country, Philippines. Participants will observe project sites in rural areas where have been electrified by renewable energies and discuss with government and administrating officials to increase awareness among them.

Objective / Output

【objective】The program enables an official in charge to draft a strategy/plan for rural electrification using renewable energies, and the drafts will be reflect to thire organization activities in the countires.
【outputs】
(1) Basic data and existing issues for rural electrification promotion using renewable energies will be shared.
(2) Renewable energy's technologies such as photovoltaic, small hydro and wind will be introduced.
(3) Barriers and solutions for rural electrification promotion using renewable energies will be discussed.
(4) A strategy/plan for rural electrification promotion using renewable energies will be drafted and improved.
(5) Results of the program will be fed back to the organization where trainee are belonging to.

Target Organization / Group

【Target Organizations】
Authorities which are promoting rural electrification, like a Rural Electrification Agency.

【Target Group】
(1) Officials in charge of romoting rural electrification,
(2)University/college graduates or equivalent and currently engaged in the field for more than 5 years,

Contents

【Preparatory phase in home country】
Prepare a Country Report describing the present situation of each country/organization and their problems.
【Core Phase in Japan】
・ introduction of relevant technologies and key issues (policy, fund, human resources, industries/business etc.) for rural electrification promotion, site visit
・ introduction of a relation between government and business
・ introduction of practices in other countries
・ introduction of challenges of international organizations and donors
・ drafting a strategy/plan for rural electrification promotion using renewable energies
・ exchange opinions to improve drafted strategy/plan
【Finalization Phase in home country】
・the results will be fed back to the organization where participants are belonging to
・the results of the feedback will be reported to Japanese side

Program Period	2011/11/ 1 ～ 2011/12/3
Implementing Partner	New Energy Foundation
JICA Center	JICA Tokyo(Industrial Dev.&Finance)
Cooperation Period	2010～2012
Remarks and Website	

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

PRTD Trainers 1184268

Target Countries: Oceania countries and Islands coutries in Southeast Asia — 8 participants

Sector : Natural Resources and Energy/Renewable Energy

Sub-Sector :

Language : English

Appeal

This training program contributes installation of a small-size hydraulic power generator and a wind-generator into rural area, which are easy to produce and repair, for a department of rural electrification and/or fuel breakaway in an electric power company.

Objective / Output

【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.

【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.

Target Organization / Group

【Target Organizations】
Person in charge of local electrification of electric power ministry, electric power public corporation or regional development charge ministry, NGO, university.

【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

Contents

<Activities in Preliminary Phase in home country>
Inception report describing present job activities and current situation of diesel generators in respective countries is developed.
<Activities in Core Phase in Japan>
(1)Training on basic mechanisms, which are structure and principle of operation of Hydro-power and Wind-power.
(2)Training on the influence and the feature when Hydro-power and Wind-power are introduced into a small-grid.
(3)Training on small Hydro-power and Wind-power introduction technique.
(4)Each group produce small Wind-power.
(5)Based on the knowledge from the training, study through a report of improvement method and introduction plan.
<Activities in Finalization Phase in home country>
Within 6months 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

Program Period	2011 / 7 / 19 ～ 2011 / 8 / 23
Implementing Partner	Okinawa Enetech Co., Inc
JICA Center	JICA Okinawa
Cooperation Period	2009～2011
Remarks and Website	

Enhancement of Planning Capacity for Geothermal Energy Development in African Countries / TICAD IV Follow-up
アフリカ地域　地熱エネルギー開発計画策定能力向上／TICAD Ⅳフォローアップ

PRTD　Leaders　1184283

Target Countries: Countries with geothermal energy resources　8 participants

Sector : Natural Resources and Energy/Renewable Energy

Sub-Sector :

Language : English

Appeal

This program is designed for administrators and technical officials in governmental organizations dealing with energy policy making or geothermal energy development, to help them understand policy to introduce geothermal energy and necessary techniques in each developement phase of geothermal power generation, and to enhance their planning capacity in home countires. Site visits on production sites of power generation facilities are included.

Objective / Output

〈Course Objective〉
Participants will understand policy to introduce geothermal energy and necessary techniques in each developement phase of geothermal power generation, and to enhance their planning capacity for geothermal energy development in their own countires.
〈Objective for each unit〉
1. To be able to explain necessity of geothermal energy development in national energy strategy and method for development promotion and policy making.
2. To be able to explain technical aspects of development approach for geothermal resources
3. To be able to explain economic and environmental aspects of development approach for geothermal resources
4. To be able to explain multipurpose utilization of geothermal enegy for social development
5. To prepare Action Plan for geothermal energy development on the basis of policy and technical aspects.

Target Organization / Group

〈Target Organization〉Governmental organizations dealing with energy policy making or geothermal energy development
〈Expected Job Title〉Manager, Department head or decision-maker in governmental organization dealing with energy policy making or geothermal energy development
〈Expected Job Experience〉Over 5 years experiences

Contents

1. General framework and current situation of energy and renewable resources in Afcian countries, Schemes for geothermal survey and role of private sector, Appropriate governmental policy for geothermal development
2. Risk management in geothermal development, Geothermal surface survey, Geothermal well drilling and evaluation of geothermal resources, Uses of geothermal energy, Site visits on geothermal power station and production site of power generation facilities in Japan
3. Economic aspects of geothermal development project, Fund procurement, international assistance and environmental value for geothermal development, Clean development mechanism(CDM)
4. Lecture and Site visit on project for multipurpose utilization of geothermal energy
5. Discussion, guidance and private-study for preparing Action Plan

Program Period	2011 / 6 / 29 ～ 2011 / 7 / 16
Implementing Partner	Under Planning
JICA Center	JICA Kyushu
Cooperation Period	2011～2013
Remarks and Website	

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

PITD Trainers 1180882

Target Countries: 13 participants

Sector : Natural Resources and Energy/Mining

Sub-Sector :

Language : English

Appeal

Achieve effient and environment-friendly method for mining that is strongly expected in developing countries to help live their own economic activities.

Objective / Output

【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.

【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

Target Organization / Group

【Target organization】
Officials working for goverment or governmental organization, engaging on mining policies including mining development, prevention mining pollution and recycling comprehensively
【Target Group】
(1)Officers belonging to target organs (2)Univ. graduates or equivalent (3)Individuals with a good command of PC and English (4)Indiv. engaging in mining policy with at least 3 Yrs (5)Indiv. in good health, both physically and mentally, to undergo this training (6)Must not be serving any form of military service

Contents

〈Preliminary Phase in a participant's home country〉
・Country Report on mining sector
〈Core Phase in Japan〉
(1) ・Lecture on history which is that natural resources development like minerals
・Presentation and discussion on participants' country report
(2)・ Lecture on how to extract minerals from ore efficiently
(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.
(4) ・Lecture and excercise 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.
〈Finalization Phase in a participant's home country〉
・Implementaion on action plan

Program Period	2011/ 9/25 ～ 2011/12/3
Implementing Partner	International Institute for Mining Technology
JICA Center	JICA Tohoku
Cooperation Period	2009～2011
Remarks and Website	・Participants are expected to participate in discussions, and formulation of Action Plan(AP). ・APs are to be open to public. Intra-net will be used to monitor progress of APs and to provide advices for participants.

Basic Techniques of Remote Sensing in Mineral Exploration PRTD Trainers 1184289
アフリカ地域別研修「リモートセンシング技術を活用した資源探査の基礎」

Target Countries: Malawi, Namibia, Tanzania, Zambia, Botswana 11 participants

Sector : Natural Resources and Energy/Mining

Sub-Sector :

Language : English

Appeal

This program is designed for geologist to enhance his/her knowledge and techniques for mineral resources exploration with building up giological information.

Objective / Output

【Objective】
Draft of the materials to disseminate the skills to estimating potential of natural resources with remote sensing technique is formulated.

【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.

Target Organization / Group

【Target organizations】
Ministry of Mines / Natural Resources, Geological Survey, and Universities
【Targt group】
(1)Geologist, Senior Geologist who belong to target organizations (2)Have Bachelor of Science or Engneering in Geology and/or Mining field (3)Individuals with a good command of PC and English (4) Have morking experience inGeological field (5) Individuals in good health, both physically and mentally, to undergo this course (6)Must not be serving any form of military service.

Contents

〈Preliminary Phase in a participant's home country〉
・Country Report on mineral resources exploration.
〈Core Phase in Japan〉
(1)・Variety and features of satellite image data.
(2)・Variety and features of airborne geophysics data.
(3)・Structure of Geographical Information System (GIS)
・How to develop GIS database are understood, and appropriately developed for mineral resouces exploration.
(4)・How to estimate geologic tectonics and mineral resources potential by remote sensing data analysis.
(5)・To formulate action plan to disseminate the skills to estimating potential of natural resources with remote sensing technique
〈Finalization Phase in a participant's home country〉
・Implementtaion on action plan

Program Period	2012 / 2 / 5 ～ 2012 / 3 / 15
Implementing Partner	International Institute for Mining Technology
JICA Center	JICA Tohoku
Cooperation Period	2009～2011
Remarks and Website	・Participants are expected to participate in discussions, formulation Action Plan(AP). ・APs are to be open to public. Intra-net will be used to monitor progress of APs and to provide advices for participants