

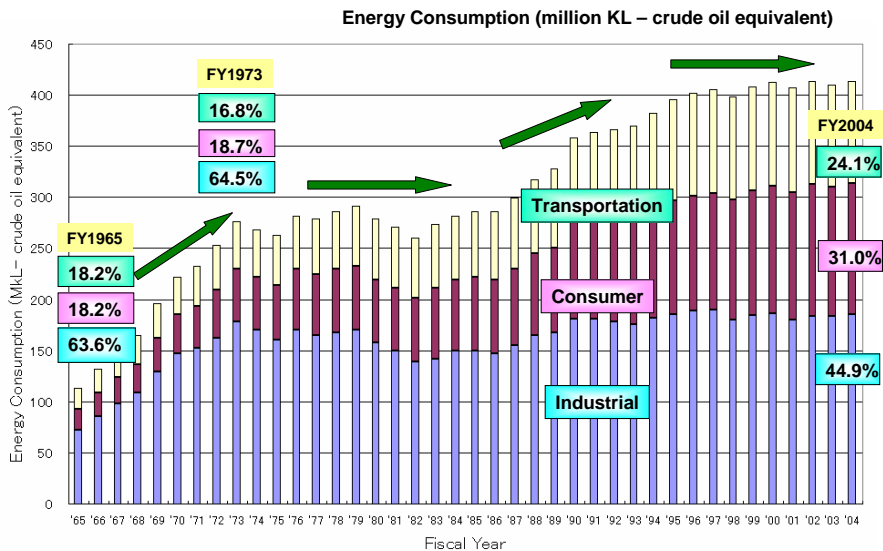
Japan's International Cooperation for Energy Efficiency & Conservation in Asian Region

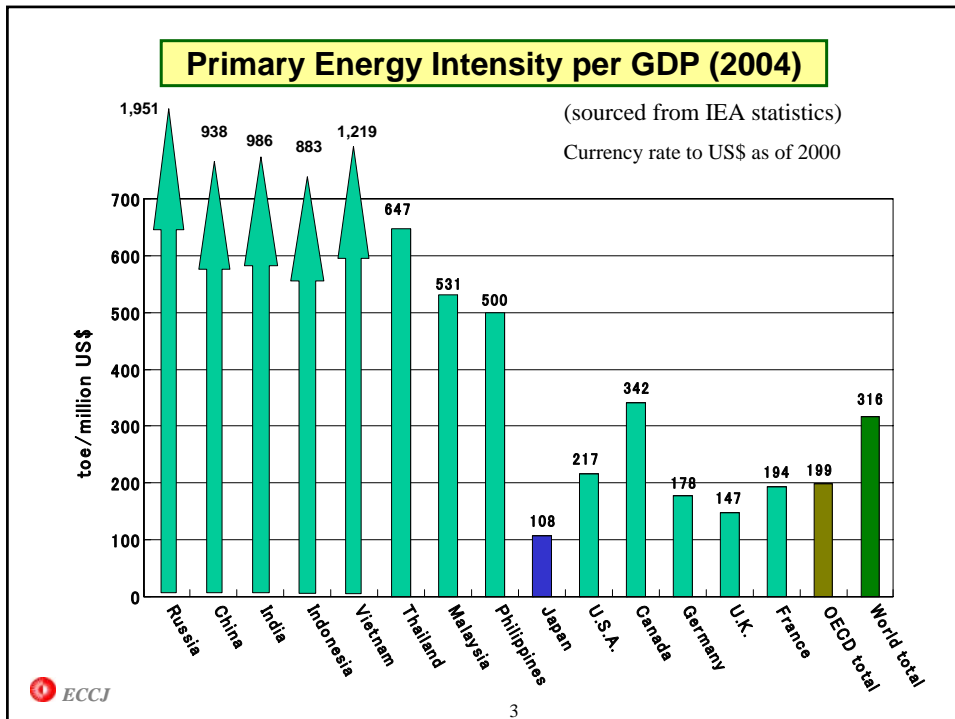
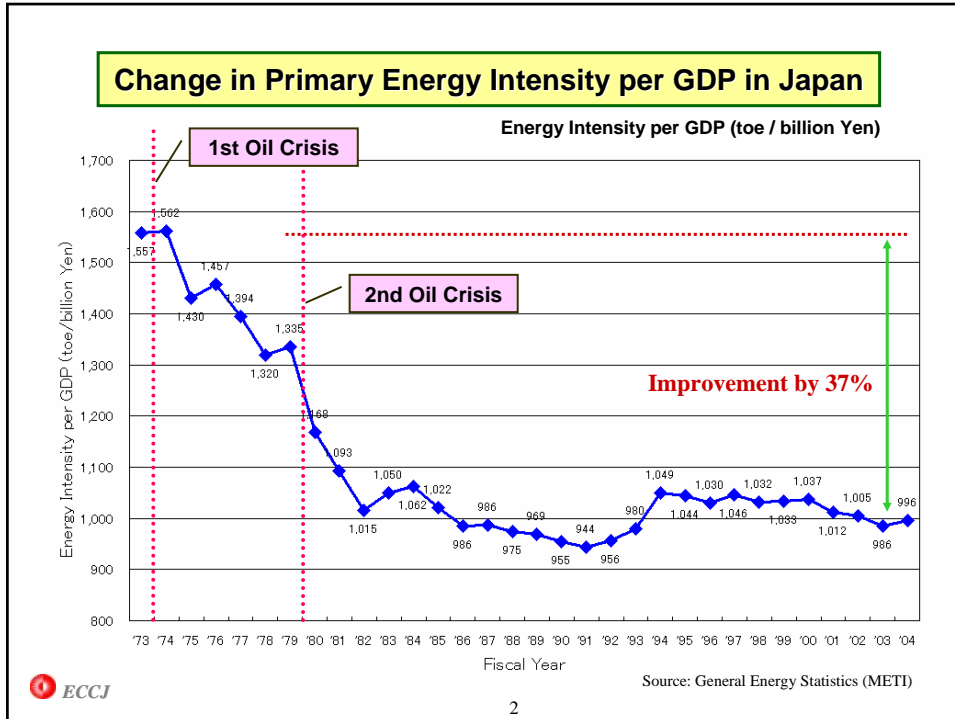
2008 Northeast Asia International Conference
for Economic Development in Niigata
January 22nd 2008

Takeshi Sekiyama
The Energy Conservation Center, Japan
(ECCJ)



Change in Final Energy Consumption in Japan





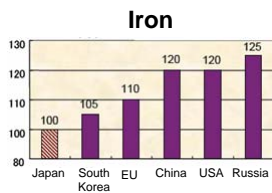
Effect of Measures and Dissemination Rate of Typical Equipment for Energy Conservation in Japan

Industry	Improved Energy Intensity (94/73)	Typical Energy Conservation Equipment	Dissemination Rate as of 1998
Iron & Steel	81 %	Continuous Caster (CC)	100 %
		Top gas pressure Recovery Turbine of blast furnace (TRT)	100 %
		Coke Dry Quenching (CDQ)	91 %
Petrochemical	58 %	High-efficiency naphtha cracking reactor	100 %
		High efficiency compressor	100 %
		Gas turbine	100 %
Cement	65 %	SP, NSP kiln (Heat recovery)	100 %
Paper & Pulp	61 %	Continuous digester	100 %

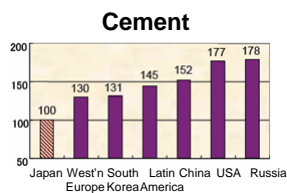
ECCJ

Source: ECCJ

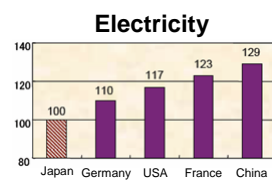
Energy Efficiency Comparison by Sector



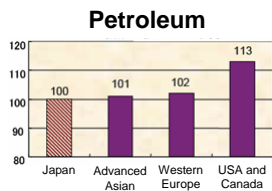
Comparison of the index of energy needed to produce 1 ton of iron (FY2003)
(Source: Japan Iron and Steel Federation)



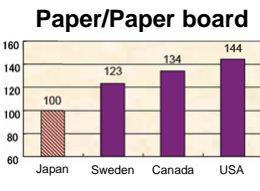
Comparison of the index of energy needed to produce 1 ton of intermediate cement product (clinker) (FY2003)
(Source: Battelle Memorial Institute)



Comparison of the index of energy needed to produce 1 kWh of electricity by thermal power plants (FY2003)
(Source: ECOFYS BV, the Netherlands)



Comparison of the index of energy needed to produce 1 t.kL of petroleum product (FY2002)
(Source: Japan Iron and Steel Federation)



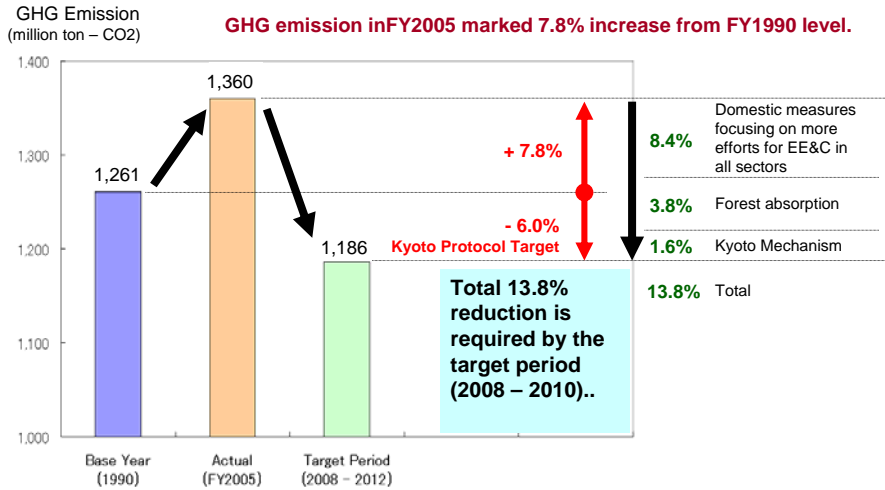
Comparison of the index of energy needed to produce 1 ton of paper/paper board (FY2003)
(Source: Agency for Natural Resources and Energy, Statistics Report (Great Britain), Environmental Report (Canada), etc.)

ECCJ

Source:
Extract from the Summary of the Results of a follow-up for FY2006, December 14, 2006, under the Keidanren Voluntary Action Plan on the Environment to cope with Global Warming, Japan Business Federation
(<http://www.meti.go.jp/committee/materials/downloadfiles/g70216a04j.pdf>)

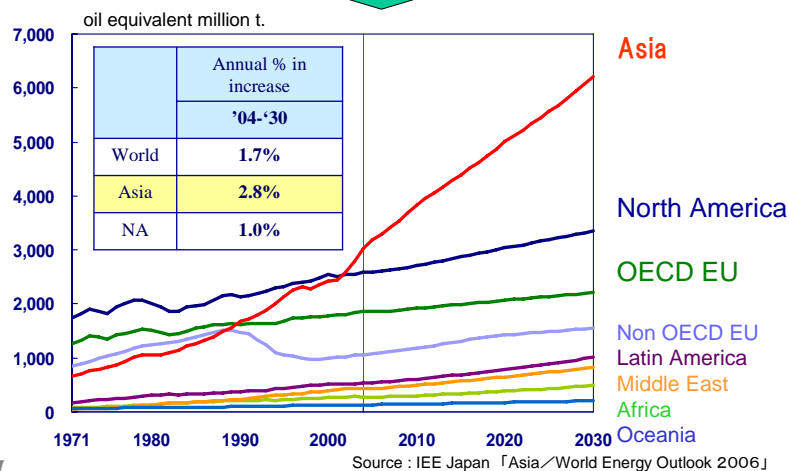
Measures to Reduce GHG in Japan (Kyoto Protocol)

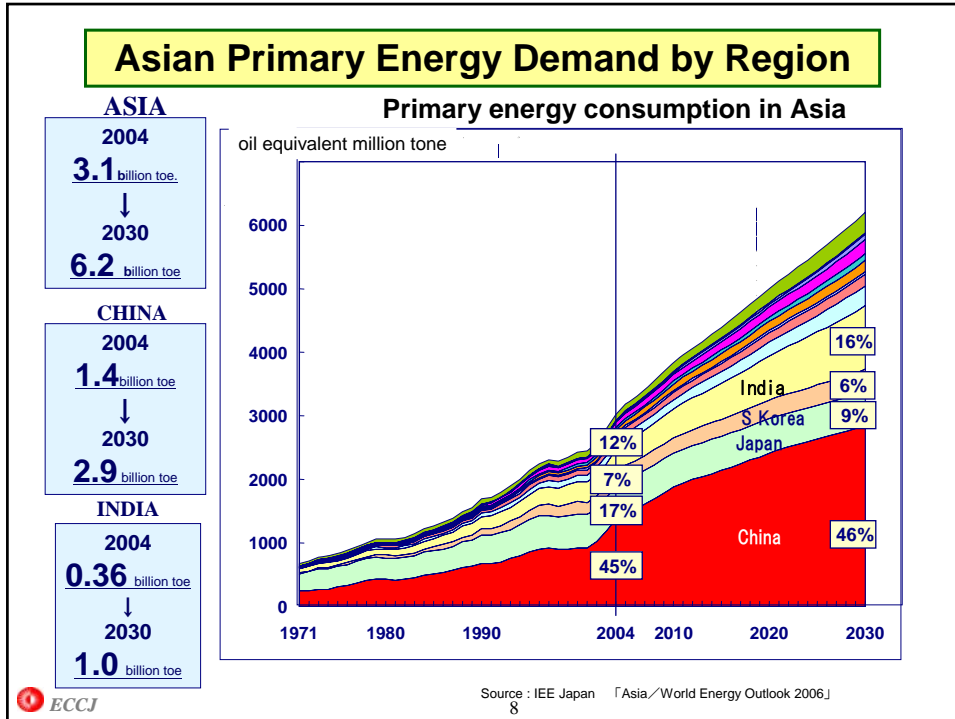
Japan is responsible for reducing Greenhouse Gases (GHG) by 6% from FY1990 level by the target period (2008 - 2010).



World's structural Change in Energy Consumption

The World energy demand is rapidly expanding, mainly in Asia.
Energy demand in Asia will double in 2030 compared to current level.





"New National Energy Strategy" Asian Energy Efficiency & Conservation Programs

Significance of cooperation in energy conservation

- ① Improvement of energy demand and supply structure
- ② Measures to cope with global environmental issues
- ③ International contribution

<Cooperation in energy conservation>

China (China-Japan Energy Conservation and Environment Forum)

India ("Inauguration of cooperation in energy conservation")

Vietnam ("Reinforcement of support to establish energy conservation systems")

Thailand

Indonesia

Other ASEAN Countries

1. To support the establishment of energy Conservation systems.

2. To help Japanese companies promote the businesses involving energy-saving equipment and facilities.

1. Energy conservation experts were sent to the Indian government

2. Japan-India Energy Forum" was held in New Delhi

3. Japan accepts trainees from India's central and local governments

1. Japan provided training for energy conservation

2. Japan-Vietnam Energy Forum" focusing on energy conservation

1. Japan sent experts and provided training to ASEAN countries to develop human resources for energy conservation.

East Asia Summit

The 2nd East Summit was convened in Cebu, the Philippines on January 15, 2007.

The Leaders signed the **Cebu Declaration** on East Asian Energy Security, where they agreed to set individual goals and formulate action plans voluntarily for improving energy efficiency, and take concrete action toward improving efficiency and conservation.

Besides they welcomed **Japan's Energy Cooperation Initiative** proposed by Prime Minister Abe.

Japan's Energy Cooperation Initiative:

- Promotion of energy efficiency & conservation
- Promotion of bioenergy
- Clean use of coal
- Energy for Poverty Eradication

Promotion of energy efficiency & conservation:

- (1) Receive 1,000 trainees from EAS countries and dispatch 500 experts to EAS countries in 5 years.
- (2) Set up the Asia Energy Conservation Collaboration Center as a one-stop window for information on energy conservation.
- (3) Positively use yen loans and the JBIC's investment financing.



Status of Implementation (ECCJ) :

- (1)-a: 346 trainees have been received. (as of December 2007)
- (1)-b: 91 experts have been dispatched. (as of December 2007)
- (2) The Asia Energy Conservation Collaboration Center has already been set up within ECCJ and started its operation in April 2007.

Website:
<http://www.asiaeec-col.eccj.or.jp>


10


Recent Movement of Japan-China Cooperation on Energy Conservation and Environment

May 2006 in Tokyo: Japan-China Energy Conservation and Environment Forum was held by the government and private sectors, 850 (550 Japanese & 300 Chinese)



April 2007 in Tokyo: First Policy Dialogue between Minister Akira Amari of METI and Chief Ma Kai of Chinese NDRC

• Japan-China Energy Conservation and Environmental Business Promotion Model Project

• To provide energy conservation policy education and training program to train about 300 trainees from government agencies over the next three years




Japanese Economy, Trade and Industry Minister Akira Amari and Chinese National Development and Reform Commission Chairman Ma Kai

A scene of 1st policy dialogue between Japanese and Chinese energy ministers

Sep. 2007 in Beijing : The 2nd China-Japan Comprehensive Energy Conservation and Environment Forum was hold.


11

2nd Japan-China Energy Conservation and Environment Forum

- Sep. 2007 2nd Forum was held at BEJIN
- Japanese Minister Amari and Chinese Bi-Prime Minister SO Bien, Ma Gwi NDRP chief and about 1000 personnel from business attended.
- 10 Projects were identified to proceed



Minister AMARI speaks at 2nd Japan China Forum

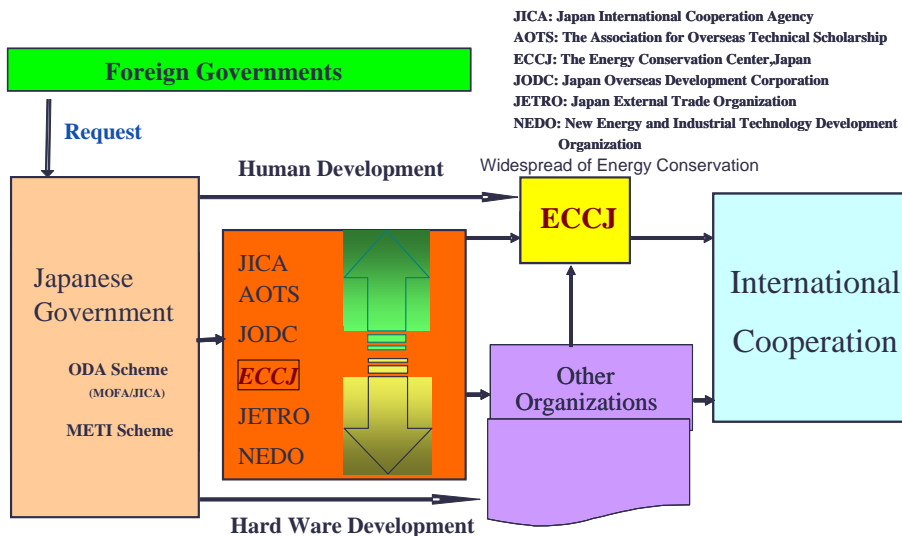
(1) Japan-China Energy- Environment Promotion Model Project

- ① Technical Improvement on Energy Conservation and Environment Assessment for Coal Fire Power Station. (Japan Coal Center and JBIC)
- ② Improvement Project on Energy Conservation for Textile Factory (Kyusyu Electric Power Corp. etc.)
- ③ Sewage Disposal, City Waist, and Bio-mass Utilization as Energy (Nikki Corp. etc.)
- ④ Model project for Energy Conservation of electrical system and Utilization of Excess Heat and pressure at YUEN Steel and Chemical Industry. (Hitachi Corp., Hitachi China, etc.)
- ⑤ Research of facility net work for energy conservation and environment and its application trial. (Matsushita)

(2) Other Cooperation Agreement

- ① Promotion of cooperation on Japanese and Chinese Sustainable City (Japan: Kitakyushu city)
- ② Establishment of joint company to make power generator by exhaust heat (Japan : Kawasaki Plant System)
- ③ Financial system for energy conservation and environmental improvement (Japan : JBIC, Mizuho Corp., China bank)
- ④ Promotion of cooperation on Japan Chemical Industry Association and China Petroleum Chemical Industry Association (Japan: Japan Chemical Industry Association)
- ⑤ Agreement on Cooperation Between Japanese ESCO Promotion Association and China ESCO Association (Japanese : ESCO Promotion Association)

Cooperation Scheme through ECCJ



Fundamental Framework of ECCJ's Activities for International Cooperation

<Policy Proposal>

- *Investigation of policy regarding energy and energy conservation.
- *Potential survey and feasibility study on energy conservation and reduction of GHG emission.

<Capacity-Building>

- *Training course in Japan and abroad.
- *Dispatching experts to overseas for seminars, workshops, etc.

<Technical Cooperation>

- *Factory audit and improving advise through field activities including plant survey, energy conservation audit, etc.
- *Cooperation and support for establishment and operation of EE&C Centers or such organizations.

<Asia EE&C Collaboration Center> ---- New !!

- *One-stop answering service for inquiries related to EE&C.
- *Information service concerning EE&C activities.



ECCJ's Training Programs for EE&C in Japan



Program Participants



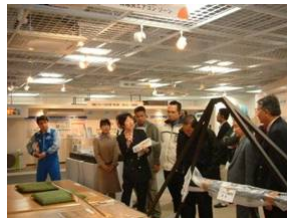
Lecture and Discussion



Trainees' Presentations of their country reports



On-site Training at energy-efficient Factory



On-site Training at energy-efficient Building



On-site Training at awarded Store of appliances



Overview of ECCJ's Activities for International Cooperation

Dispatch of Experts for Energy Audit and Policy Planning

China Rep.		Korea	
India		Taiwan	
Thailand		Mongolia	
Malaysia		Turkey	
Indonesia		Iran	
Vietnam		Pakistan	
Philippine		Egypt	
Myanmar		Kenya	
Cambodia		Russia	
Laos		Uzbekistan	
Singapore		Bulgaria	
Brunei		Romania	
Bangladesh		Hungary	
Sri Lanka		Poland	
Nigeria		Argentina	

Training Program in Japan

China Rep.		Korea		Hungary	
India		Taiwan		Bulgaria	
Thailand		Turkey		Czech	
Malaysia		Iran		Venezuela	
Indonesia		Pakistan		Guatemala	
Vietnam		Saudi Arabia		Romania	
Philippine		Bahrain		Poland	
Myanmar		Egypt		Slovakia	
Cambodia		Kenya		Mexico	
Laos		Tunisia		Cuba	
Singapore		Tanzania		Peru	
Brunei		Russia		Argentina	
Bangladesh		Jordan		Brazil	
Sri Lanka		Croatia		Chili	

International Conference | IEA (Working Party), APEC (Expert Group), Seminar by World bank, ESCAP, AOTS, JETRO, etc.

ASEAN's Plan of ACTION for Energy Cooperation in 2004 - 2009

Six Energy Program Areas in ASEAN

- Trans-ASEAN Gas Pipeline
- ASEAN Power Grid
- Coal
- Energy Efficiency and Conservation**
- New & Renewable Sources of Energy
- Regional Energy Policy and Planning

Promotion of Energy Efficiency and Conservation (PROMEEC)

Started in the year 2000
Three sub-projects namely:

- PROMEEC – Major Industries
- PROMEEC – Buildings
- PROMEEC – Energy Management (launched 2004)

Projects are jointly implemented by Japanese Government through ECCJ and ASEAN through EE&C-SSN (Sub-sector Network) under coordination of ACE (ASEAN Center for Energy)

PROMEEC (Promotion for Energy Efficiency and Conservation)

- Project developed based on programmed approach for EE&C in ASEAN -

Japanese government's (METI's) scheme to provide financial supports and dispatch experts to ASEAN 10 countries for Energy Audit and Seminar/Workshop, which are jointly organized by EE&C-SSN, ACE and ECCJ.

Promotion of EE&C in Industry & Building

1. Follow-up investigation for awareness enhancement and dissemination of realised recommendations including consultation for further improvement
2. Development of Database/Benchmark/Guideline of EE&C
3. Development of Directory of EE&C Technologies
(Including introduction of the successful cases)

Energy Management

Activities to establish Energy Management System for ASEAN through co-work of ASEAN Working Team and Japanese Experts

1. Analyzing recommendations (Industry / Building) related to the Energy Management
2. Information Exchange and Identification of Barriers / Countermeasures in each Country
3. Building Concept of ASEAN Energy Management System for ASEAN countries
4. Development of programs and tools of the ASEAN Energy Management System (including utilizing the existing facilities in ASEAN)



**PROMEEC- Industry:
Seminar & Workshops and On-the-Job-Training**



**Seminar & Workshop
24 Nov 2006, Myanmar**



**Energy Audit – Cement
Industry, Myanmar**



**Energy Audit – Oil
Refinery, Myanmar**



**Energy Audit – Iron &
Steel Industry, Thailand**



**Energy Audit – Cement
Industry, Lao PDR**



PROMEEC- Building: Seminar & Workshops and On-the-Job-Training



Seminar & Workshop
13 October 2006
Makati Philippines



Energy Audit
Department of Electrical Services



Energy Audit
Land Bank of the Philippines



Energy Audit
Hung Vuong Hospital
HCMC




Seminar & Workshop
10 November 2006
HCMC Vietnam



20

JICA-project type International Cooperation Establishment of Energy Conservation Center


ECCJ




Master Plan



Dispatch of experts



Training in Japan




Provision of equipment

CHINA : ECTC (1992.7~99.1)
ARGENTINA : CIPURE (1995.7~00.6)
BULGARIA : EEC (1995.11~00.10)
TURKEY : NECC (2000.8~05.7)
THAILAND : ECCT (2002.4~05.4)
IRAN : NTCEM (2003.4~07.3)
POLAND : ECTC (2004.7~08.6)

ECC : The Energy Conservation Center
ECTC : Dalian China Energy Conservation Training Center
CIPURE : The Rational Use of Energy Center
NECC : The National Energy Conservation Center
ECCT : The Energy Conservation Center ,Thailand
NTCEM : The National Training Center for Energy Management

In progress



JICA Scheme

**Energy Efficiency & Conservation Training Courses in Japan
Number of Trainees (From 1986-2005)**

Asia::141

America: 66

Africa: 38

Others: 9

No.	Country	No. of Part'nts	No.	Country	No. of Part'nts		Country	No. of Part'nts
1	Argentina	13	18	Honduras	2	35	rbia and Monteneg	2
2	Bahrain	1	19	India	12	36	Soudi Arabia	2
3	Bangladesh	7	20	Indonesia	17	37	South Africa	1
4	Brazil	16	21	Iran	8	38	Sri Lanka	12
5	Bulgaria	1	22	Jordan	2	39	Syrian	2
6	Cambodia	1	23	Kenya	13	40	Tanzania	2
7	Chile	2	24	Korea	2	41	Thailand	13
8	China	16	25	Lithuania	2	42	Tunisia	3
9	Colombia	1	26	Malaysia	4	43	Turkey	9
10	Cote d'Ivoire	1	27	Mexico	15	44	Uruguay	1
11	Croatia	1	28	Mongolia	3	45	Vanuatu	1
12	Cuba	3	29	Oman	1	46	Venezuela	4
13	Dominica	1	30	Pakistan	9	47	Viet Nam	5
14	Egypt	16	31	Palestine	1	48	Moldoba	1
15	Ethiopia	2	32	Paraguay	1	49	Suwaraji	1
16	Fiji	1	33	Peru	4			
17	Guatemala	2	34	Philippines	14			
							Total : 254	



Thank You



More information is available by accessing the following internet home pages at:

ECCJ's HP ---- http://www.eccj.or.jp/index_e.html

AEEC's HP ---- <http://www.asiaeec-col.eccj.or.jp>

*The Energy Conservation Center, Japan
(ECCJ)*

