



**REPORT ON THE PROGRESS OF  
THE TECHNICAL DIRECTORY FOR BUILDINGS  
AND INDUSTRIES  
PROMEEC WORK PROGRAMME 2006-2007**

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## **INTRODUCTION**

**TD is a tool for dissemination of technologies and best practices implemented in major industries and buildings in ASEAN.**

**TD is one activity under Phase 2 of PROMEEC, was agreed for further expansion and development during the Inception Workshop held in Kota Kinabalu in July 2006.**

**It provides guidance on enhancing energy conservation measures for buildings and industries.**

**It is user friendly and is available to all users at ACE website.**

**It is a “living document” and that will be updated, expanded and maintained in ACE website.**



## **CONTENTS OF TD**

- **Part 1 - Overview of Technology or Practice**
  - Name of Technology
  - Energy Source/Practical Use
  - Outline and Effects
- **Part 2 - Technical Description**
  - Principle
  - Features
  - Mechanism
- **Part 3 - Successful Cases**
  - Energy Saving and Cost
  - Companies/Organizations



## **STATUS OF COMPILATION**

- **Inception 2006-2007 (Kota Kinabalu, Sabah)**
  - 50 Technologies for Industries
  - 30 Technologies for Building
- **Post Workshop 2006-2007 (Seria, Brunei Darussalam)**
  - (+) 25 Technologies for Industries:
    - Machinery and equipment
    - Energy saving equipment
    - Cement (Compressed air system improvement)
    - Iron & Steel (Advance control in the blast furnace)
  - (+) 5 Technologies for Buildings
    - Process heating system
    - Achieve steam system
    - Maintaining pumping system effectively



## EXAMPLE OF SUCCESSFUL CASES

### Building

- 1 Automatic operation control for escalator - Don Chan palace Hotel & many other new Hotel
- 2 Control of number of Elevators operation during night - Don Chan palace Hotel
- 3 Daylight sensor for Building - BNI 46 Indonesia
- 4 AC equipped with heat pipe - University Catholic Indonesia ATMAJAYA

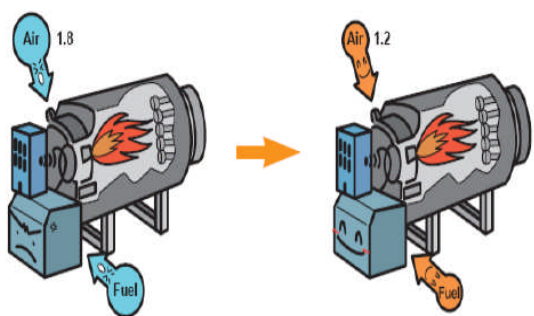
### Industry


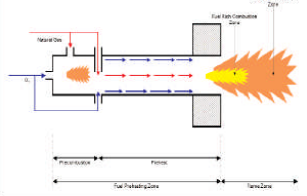



- 1 Introduction of clinker pre-grinding roll crusher - Panda Cement plant Indonesia
- 2 Continuous Digester control technology - Pulp and Paper Texas mill corp.
- 3 Heating furnace using regenerative burner - iron & steel industry Philippines
- 4 Capacitor - Major business Industries
- 5 Production process Brine electrolysis heat recovery line preheated - Coustic soda Major Business



### TECHNICAL DIRECTORY

## Building

Building - 2.26	<i>Adjustment of air ratio in Boiler</i>		Energy Source
Industry classification			Fuel
Building			Practical Use
Technology Classification			early 1995
Operation			
Outline	The air ratio in boilers will be adjusted following the "criterion of judgement" determined based on the standard values proposed in the Energy Saving Law, in order to economize in energy consumption, because the higher the air ratio in a boiler is, the more energy it consumes.		
Principle & Mechanism			
Description			
Structure explanation, shapes, and/or System diagram			
Energy Saving effect	This will reduce energy consumption by 35KL / year in crude oil, achieving a cost cut of 1.8 million yen / year.		
Economics			
Equipment Cost	No investment is required because any improvement to the equipment is not necessary.		
Remark	Reduction in CO2: 65 ton- CO2 /year)		
Example Sites	References	Inquiry	
Hotel and Building		ECCJ	

TECHNICAL DIRECTORY		
 Industry Industry classification Glass/Ceramic Technology Classification Operation	<b>High-Luminosity Low NOx Burner</b>	Energy Source Fuel
		Practical Use 2000
Outline	This burner increases luminosity and radiant heat transfer by modifying the fuel prior to combustion and then forming and burning soot in the flame. Increasing heat transfer rates while decreasing flame temperatures results in increased furnace production rates and thermal efficiency.	
Principle & Mechanism		
Description		
Structure explanation, shapes, and/or System diagram		
		
	The high-luminosity, low-NOx burner combines a preheating zone with two combustion zones. First, a small fraction of the natural gas is burned. The products of this combustion are mixed with the main supply of natural gas, resulting in hydrocarbon soot precursors generated in an oxygen-free heating environment. The preheated natural gas then enters the first, fuel-rich combustion zone in which soot forms in the flame. The majority of the combustion, however, occurs in the second, fuel-lean combustion zone. The burning soot particles create a highly luminous flame that is more thermally efficient and cooler than a typical oxyfuel flame.	
Saving	<ul style="list-style-type: none"> <li>Increased thermal efficiency 20%.</li> <li>Extended furnace life due to lower flame and exit temperature.</li> <li>Reduced NO<sub>x</sub> emissions (up to 50%).</li> <li>Reduced production costs, (the burner provides cost-effective compliance with emissions regulations).</li> </ul>	
Economics Equipment Cost		
Remark	This burner can be used in all existing and new oxyfuel glass melters. Although the largest demand currently exists in the container, fiber, and specialty glass sectors of the glass industry, applications may also exist in other energy-intensive industries.	
References	H. Wang and M. Franklich, "Detailed Reduction of Reaction Mechanisms for Flame Modeling," Combustion Flame 87, 365-370 (1991).	

## Industry Glass & Ceramic

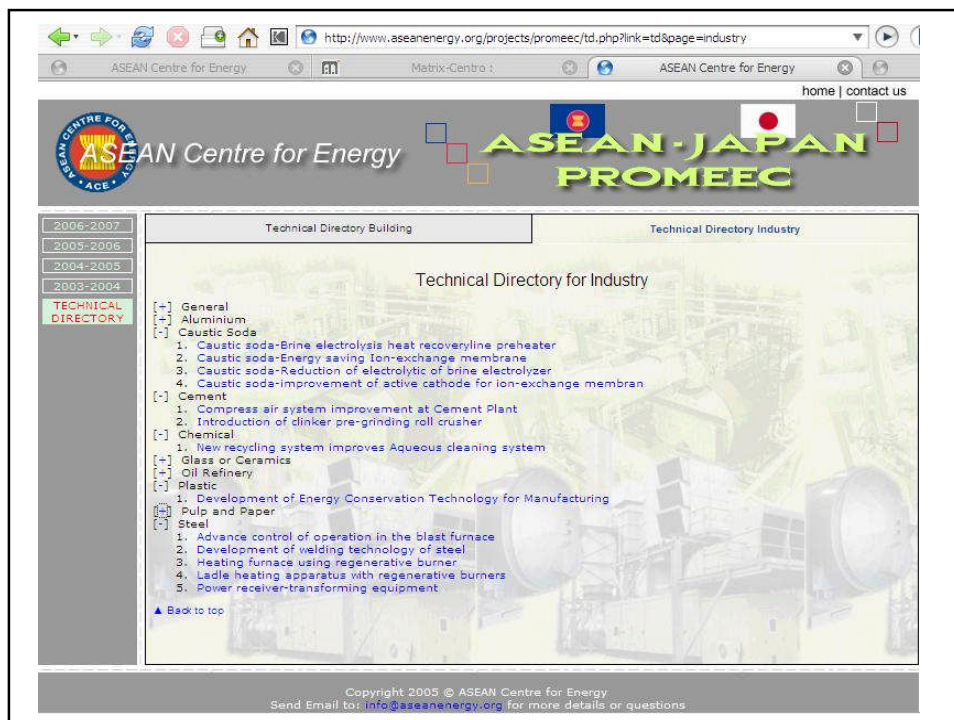
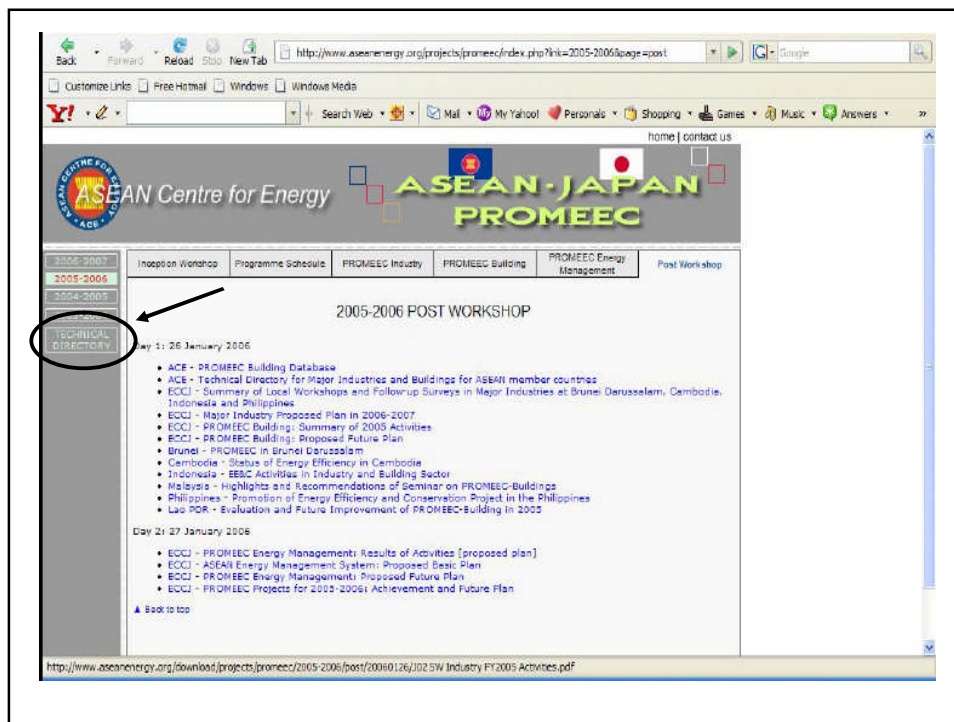


## HOW TO GET TD



The screenshot shows the ASEAN Energy website interface. On the right side, under the 'ASEAN JAPAN PROMEEC' section, the 'ASEAN JAPAN PROMEEC' link is circled in red. Below it, there are links for 'ASEAN JAPAN PROMEEC Database', 'COGEN 3', 'EC - ASEAN ENERGY FACILITY', and 'EneIPP-Net'.

<http://www.aseanenergy.org/projects/promeeec/td.php>







## **PRESENTATION OF TD IN VARIOUS PROMEEC BUILDING AND INDUSTRIES, AND ENERGY MANAGEMENT SEMINAR WORKSHOP**



**Seminar Workshop  
24 Nov 2006, Myanmar**

**Appreciated the efforts to prepare TD.**

**Recommended to prepare CD copies of TD due difficulty with internet access in Myanmar.**



## **PRESENTATION OF TD IN VARIOUS PROMEEC BUILDING AND INDUSTRIES, AND ENERGY MANAGEMENT SEMINAR WORKSHOP**



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

**Continue efforts to maintain TD in ACE website, free of charge for all users.**



**PRESENTATION OF TD IN VARIOUS PROMEEC  
BUILDING AND INDUSTRIES, AND ENERGY  
MANAGEMENT SEMINAR WORKSHOP**



Supported the development of TD, and recommended to further promote that TD is available to many industries to enhance energy conservation efforts.

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



**PRESENTATION OF TD IN VARIOUS PROMEEC  
BUILDING AND INDUSTRIES, AND ENERGY  
MANAGEMENT SEMINAR WORKSHOP**



**Congratulated ACE & ECCJ for putting up TD in the ACE website. Recommended that TD be updated to reflect best cases or energy conservation practices in ASEAN countries.**

**PROMEEC Building, Brunei Darussalam  
9 September 2006**



## **PRESENTATION OF TD IN VARIOUS PROMEEC BUILDING AND INDUSTRIES, AND ENERGY MANAGEMENT SEMINAR WORKSHOP**



**Recommended to  
organize  
workshops to  
explain the TD  
and to collect  
data from  
participants  
coming from  
buildings and  
industry sectors.**

**PROMEEC Energy Management, Cambodia  
11 September 2006**



## **PRESENTATION OF TD IN VARIOUS PROMEEC BUILDING AND INDUSTRIES, AND ENERGY MANAGEMENT SEMINAR WORKSHOP**



**Develop  
promotional  
materials to  
make known the  
availability or  
existence of TD.**

**PROMEEC Energy Management, Indonesia  
30 November 2006**





### **PRESENTATION OF TD IN VARIOUS PROMEEC BUILDING AND INDUSTRIES, AND ENERGY MANAGEMENT SEMINAR WORKSHOP**



**PROMEEC Energy Management, Vietnam  
18 September 2006**

**Recommended  
ACE to develop a  
mechanism to  
collect data from  
buildings and  
industries in  
ASEAN  
countries; and to  
validate the  
accuracy and  
reliability of  
information  
collected.**



### **PRESENTATION OF TD IN VARIOUS PROMEEC BUILDING AND INDUSTRIES, AND ENERGY MANAGEMENT SEMINAR WORKSHOP**



**PROMEEC Building, Philippines  
13 October 2006**

**Commented ACE  
and ECCJ for  
compiling  
successful cases  
of technologies  
and best practices  
in ASEAN  
countries.  
Suggested to  
establish database  
of buildings and  
factories to  
participate in  
updating and  
providing data in  
TD**



## **FUTURE IMPROVEMENTS**

- Further expansion and detailed descriptions of Part-1 and Part-3.
- Collection of successful cases from the entries and winners of ASEAN Energy Awards
- Visit to ASEAN capitals to collect more data on successful cases and best practices
- Continuation of PROMEEC seminars and workshops to get inputs and feedback from stakeholders.
- Input ECCJ expert.
- Develop interactive internet based TD such as search engine, Q&A, etc.

