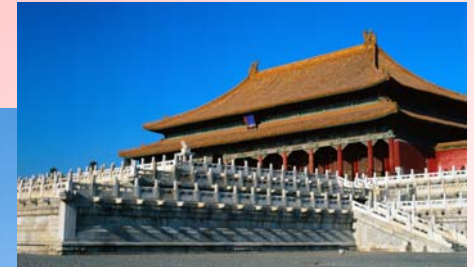
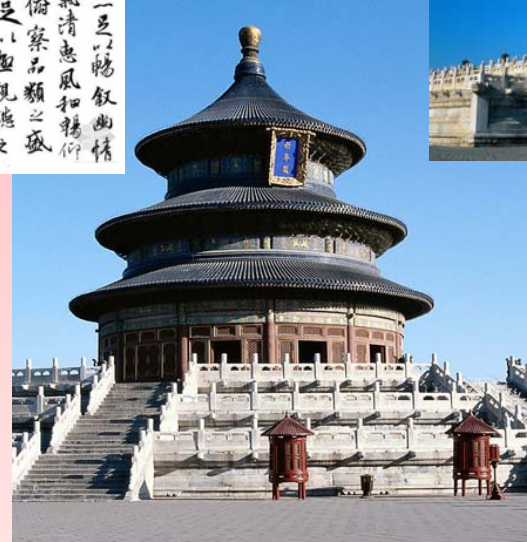
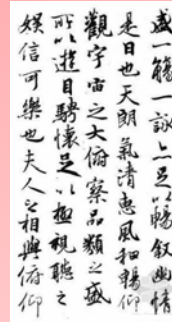


# Sharing Knowledge and Experience on Climate Change and CDM in Asia

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**This presentation will cover the following points:**

- [1]. 3E/INET, Tsinghua at a Glance**
- [2]. Development of CDM Methodologies**
- [3]. Publication of CDM and Climate Change Series**
- [4]. CDM and Climate Change Consulting Service**
- [5]. Studies on China's Energy System and Development Strategy**
- [6]. Evolving to Status as a Climate Change Knowledge Hub**
- [7]. Educational and Training Programs for Climate Change and CDM**





# Tsinghua at a Glance

Tsinghua University is one of the most prestigious institutions of higher learning and academic research in China, with a 95-year history of educational development and a good promise of evolving into the status of world-class university in the near future.



# *Tsinghua University*

## *Beijing, China*

### *Since 1911*

**School Motto: Self-discipline  
and Social Commitment**





## **[1]. 3E/INET, Tsinghua at a Glance**

**Tsinghua boasts several academic bodies (departments/ institutes/school/center/lab) engaging in scientific researches and educational programs in the field of energy and climate change, covering such concentrations as:**

- ① thermal energy**
- ② hydro power**
- ③ nuclear energy**
- ④ new and renewable energy**
- ⑤ electrical engineering and automation**
- ⑥ environmental sciences**

**Energy-Economy-Environment  
program/division, Tsinghua University, short for  
3E, is an interdisciplinary platform affiliated to the  
Institute of Nuclear & New Energy Technology  
(INET), was established in 1980 to consolidate the  
university-wide academic resources and research  
teams related to energy and climate change  
studies, and facilitate cross-departmental  
exchanges and multi-subject project  
implementation in such concentrations.**

**3E/INET has wider and closer links to many stakeholders including the governmental agencies, and some international organizations or academic institutions**

**① Domestic: CNSF, MOST, SEPA, NDPC, MOA, MOE, etc.**

**② International: UNDP, UNFAO, UNESCO, EU, ADB, APDC, WB, GEF, Japanese government, IDRC, CIDA (two Canadian donors), USDOE, and some other agencies (ANL, LBL, EWC).**

**Some project studies related to climate change and CDM are briefly listed as follows:**

- ◆ **ADB-aided Climate Change and China's National Response Strategy**
- ◆ **USDOE-sponsored Country Study on Global Climate Change**
- ◆ **CIDA-funded Canada-China Climate Change Cooperation(C5)**
- ◆ **GEF and ADB-supported Asian Least-cost Greenhouse Gas Abatement Strategies (ALGAS)**
- ◆ **ADB-financed Opportunities for Clean Development Mechanism in the Energy Sector, P. R. China (Small-Scale CDM Project Development and Capacity Building)**
- ◆ **National Key Projects sponsored by the MOST: Response Strategies for GHG Mitigation and Action Plans**
- ◆ **GEF and UNIDO-supported: Energy Efficiency and GHG Abatement in Village and Township Enterprises**
- ◆ **EU-supported: Energy-Efficient Fuels and Application in China**
- ◆ **WB-aided Clean Mechanism Development in china**

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**Some modeling exercises include:**

- ♦ **Markal model**
- ♦ **3E/INET model**
- ♦ **System Dynamics (SD) model**
- ♦ **TU-CEG model**
- ♦ **Human Complex System Simulation model**
- ♦ **GIS-based CCS analysis model**
- ♦ **LEAP model**
- ♦ **IAM model**

## [1]. Development of CDM Methodologies

### 1). Methodology for power generation from MSW incineration

Proposed methodology	<b>"MSW Incineration Project in Guanzhuang, Tianjin City"</b>
Developer	◆ 3E/INET, Tsinghua University ◆ Tianjin Taida Environmental Protection Co. Ltd. China
Approval manner	The proposed methodology is integrated into the approved methodology AM0025, entitled <b>"Avoided emissions from organic waste through alternative waste treatment processes"</b> (version 7)
Approval date	At EB-31 (May 2-4, 2007)

**Applicable conditions**

- ◆ It is expanded to including incineration of fresh waste for energy generation, electricity and/or heat.
- ◆ The thermal energy generated is either consumed on-site and/or exported to a nearby facility.
- ◆ Electricity generated is either consumed on-site, exported to the grid or exported to a nearby facility.
- ◆ The incinerator is rotating fluidized bed of hearth or grate type.

## 2). Methodology for grid connected high-efficiency coal-fired electricity

New methodology proposed	<b>" Baseline and Monitoring Methodology for Grid Connected High-efficiency Coal-fired Electricity Generation in Countries, Where Different Power Expansion Plans are Formulated for Broadly Different Power Technologies and Where These Plans are Restrictive "</b>
Developer	<b>◆ 3E/INET, Tsinghua University ◆ Huaneng Power International, Inc. China ◆ CDM Office of CWEME, China</b>

Approval manner	<p>◆ The proposed methodology becomes a consolidated baseline methodology combined with “Grid-connected supercritical coal-fired power generation” submitted by NTPC Ltd, India.</p> <p>◆ Entitled “Consolidated baseline and monitoring methodology for new grid connected fossil fuel fired power plants using a less GHG intensive technology”</p> <p>(ACM0013, version 1)</p>
Approval date	At EB-34 (Sept. 12-14, 2007)



**Applicable conditions**

- ◆ The project activity is not a co-generation power plant;
- ◆ Data on fuel consumption and electricity generation of recently constructed power plants is available.
- ◆ The identified baseline fuel is used in more than 50% of total generation by utilities in the geographical area, as defined later in the methodology, within a country or country. To demonstrate this applicability condition data for latest three year shall be used. Maximum value of same fossil fuel generation estimated for three years should be greater than 50%.
- ◆ It is only applicable to new electricity generation plants.

### 3). Methodology for improving energy efficiency in iron making

<b>Proposed methodology</b>	Emission reduction in iron production in Baosteel Pudong Iron and Steel Co. Ltd, China
<b>Developer</b>	<ul style="list-style-type: none"><li>◆ 3E/INET, Tsinghua University</li><li>◆ Baosteel Pudong Iron and Steel Co. Ltd. China</li><li>◆ World Bank</li></ul>
<b>Brief description</b>	<ul style="list-style-type: none"><li>◆ Conventional blast-furnace is substituted by Corex process for smelting-reduction operations.</li><li>◆ Substituting coke, a wide range of coals can be directly used in the Corex process.</li><li>◆ Top gas from the Corex plant is used a combined-cycle electrical power station and also for heating purposes.</li><li>◆ Considerably reducing raw-material costs and environmental emissions.</li></ul>
<b>Progress status</b>	Under development

## 4). Methodology for coalfield fire extinguishing

Proposed methodology	Coalfield Fire Extinguishing Project
Developer	<ul style="list-style-type: none"><li>◆ Xinjiang Coalfield Fire Extinguishing Department, China</li><li>◆ Coal Chemical Branch, China Coal Research Institute (CCRI)</li><li>◆ 3E/INET, Tsinghua University</li><li>◆ GTZ of Germany</li></ul>
Brief description	<ul style="list-style-type: none"><li>◆Anthropogenic coal fire disaster is the spontaneous combustion of coal-seams resulted from artificially mining seams heads on the ground or seams in shallow mine.</li><li>◆The project activity will employ integrated coal fire extinguishing technology consisted of drilling, water and mud injection, and covering with loess for extinguishing the burning coal seams in the coalfield to reach the goal of CO2 emission reduction.</li><li>◆To protect coal resources and other precious natural resources</li><li>◆To improve living environment for the local poverty herders and promote pastoral development</li></ul>
Progress status	Under development

## 5). Revision of the Methodology for use of non-carbonated calcium sources in the raw mix for cement processing

Requested revisions	<ul style="list-style-type: none"><li>◆ To expands the applicability to project activities that switch part or all of the raw material used for clinker production to calcium carbide residue (CCR), a non-carbonated calcium source.</li><li>◆ GHG emissions intensity from energy use for clinker production cannot increase with the implementation of the project activity</li></ul>
Requested by	3E/INET, Tsinghua University
Accepted status	Agreed and reflected in <b>AM0033</b> (version 2)
Approval date	At EB-33 (July 25-27, 2007)

**Applicable  
conditions**

- CO<sub>2</sub> emissions reductions relate to CO<sub>2</sub> generated from decarbonisation of raw materials (typically CaCO<sub>3</sub> and MgCO<sub>3</sub>) and are unrelated to the CO<sub>2</sub> emissions generated from fossil fuel burning.
- Raw materials (limestone and clay) used for clinker production are partially or completely replaced by non-carbonated calcium sources type and quality of produced clinker remain the same in both baseline.
- Non-carbonated raw materials are available in the region or country is such that leakages due to displacement of other uses of these non-carbonated raw materials will not occur.



## 6). Methodology for Using Geothermal Resources for Space Heating

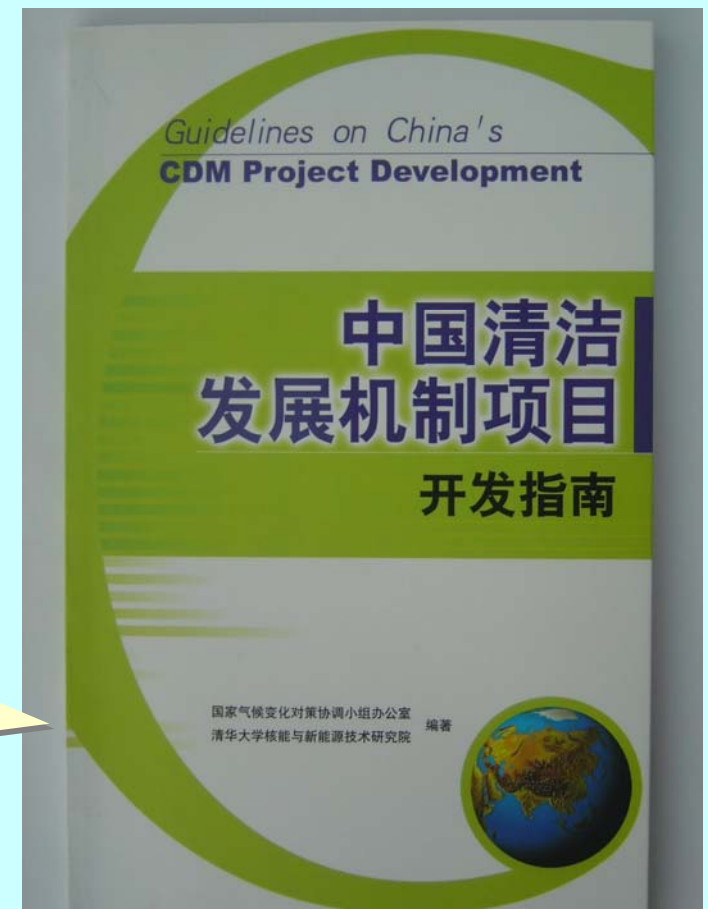
<b>Proposed methodology</b>	<b>Fossil Fuel Displacement by Geothermal Resources for Space Heating</b>
<b>Developer</b>	<ul style="list-style-type: none"><li>◆ CMI Team RSDD, ADB</li><li>◆ Xiong County Green Spring Geothermal Co., China</li><li>◆ 3E/INET, Tsinghua University</li></ul>
<b>Brief description</b>	<ul style="list-style-type: none"><li>◆ The new methodology is similar in scope as AMS I.C except that the proposed project exceeds the capacity limit for type I small-scale projects of 45MW-th.</li><li>◆ Project will use geothermal resources for space heating of residential areas, commercial areas and/or industrial areas.</li><li>◆ Fossil fuel(s) used for space heating are partially or completely replaced by heat drawn from geothermal water.</li><li>◆ Re-injection wells will be used for the sustainability of geothermal resources.</li></ul>
<b>Progress status</b>	Under development





This is China's national guide for small-scale CDM project development, compiled by INET/3E, Tsinghua with the TA assistance and project funding by the ADB

This is China's national guide for CDM project development, jointly compiled by both China's National Leading Group on Climate Change and INET/3E, Tsinghua



Supported by the Department of Energy of the United States and  
the State Science & Technology Commission of China

## China Climate Change Country Study

Research Team of China Climate Change  
Country Study



Tsinghua University Press

This is the publication based on the Sino-US project study of the same subject, and providing a more comprehensive assessment on climate change impacts and summary of China's possible response strategies.

This is supposed to be a more complete and in-depth WB-funded study to explore the opportunities of China's CDM projects, boasting the largest downloads and a wider influence.

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2<sup>ND</sup> EDITION

## CLEAN DEVELOPMENT MECHANISM IN CHINA

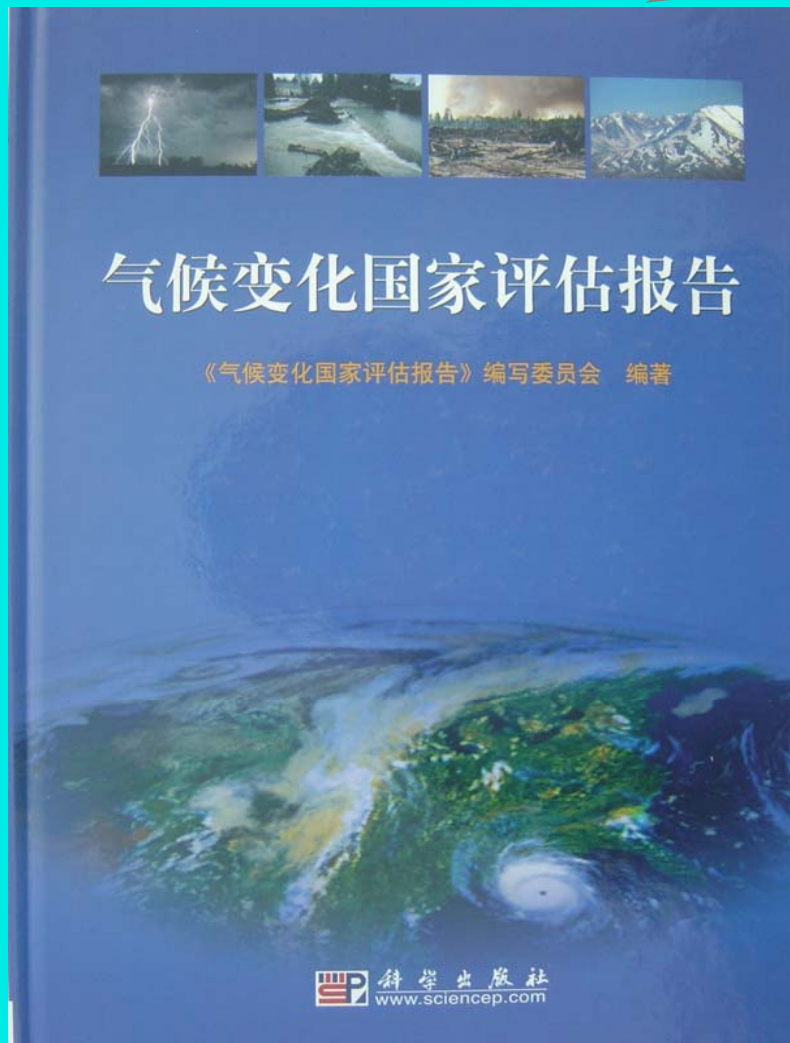
TAKING A PROACTIVE AND SUSTAINABLE APPROACH



<http://go.worldbank.org/F2BVBVY8GR0>



**This is the first publication of China's National Assessment Report on Climate Change, with significant inputs and contributions by the 3E/INET staff based on the research outcomes.**



**These publications are part of the research outcomes and project studies related to energy system and climate change, highlighting the contributions and capability of the 3E/INET, Tsinghua University in providing the knowledge and pathway for clean energy products and best practices.**



## **[4]. CDM and Climate Change Consulting Service**

**With its important role and status of a top think tank for the central government, 3E/INET is providing technical consultations for:**

- ① China's National Leading Group on Climate Change**
- ② China's State Council Energy Leading Group**
- ③ the Chinese delegation in the international negotiation on climate change**
- ④ China's DNA on CDM project development**

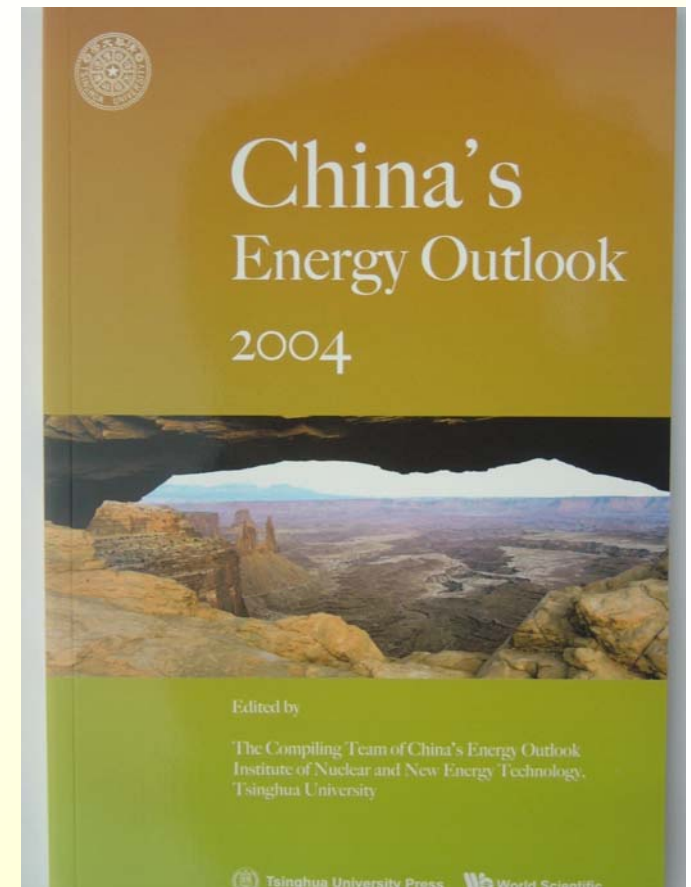


## **[5]. Studies on China's Energy System and Development Strategy**

**3E/INET, Tsinghua is also an institution engaging in the energy system analysis, and development strategy and policy studies, an important interdisciplinary subject that covers such hot topics as China's energy demand and supply, energy mix and energy security, and environmental impacts and GHG emissions, etc.**

**Based on our project studies, the series of China's Energy Outlook featuring useful information and insightful analysis have been published with positive feedbacks.**

**Now the version 2007 of this series is being edited for press.**



## **[6]. Evolving to Status as a Climate Change Knowledge Hub**



**To further build up climate change knowledge and facilitate the dissemination through the internet or other effective means, we are now implementing this ADB-funded project starting from August this year, with the objective to enable 3E/INET to act as an important and useful knowledge hub, based on our existing information system.**

**① to update and reconstruct a more powerful web system with user-friendly interfaces and informative contents, so as to share the knowledge in an effective and efficient manner.**

**② to build direct links to some governmental portals and even closer ties with potential stakeholders.**

③ to implement the training program in the selected province for building local capacity in addressing climate change and developing CDM projects.

The new website will be well designed to look concise, easy-to-browse, informative, useful, interactive and functional from a knowledge-sharing perspective.

New website at a glance



## [7]. Educational and Training Programs for Climate Change and CDM

As a top seat of academic institution, 3E/INET, Tsinghua has done a lot of work in promoting the educational and training programs as well, particularly for disseminating the knowledge of climate change and CDM projects.







**① 3E/INET, Tsinghua has participated in most of those training activates for promoting the development of China's CDM projects, covering almost all the provinces in the countries.**

**② Close ties or collaborative partnerships have been built up with a host of potential stakeholders through the training sessions and learning process.**





**③ At present, 3E/INET, Tsinghua is active in raising the awareness of younger generations through international educational programs.**

**④ Students have been exchanged to share the mutual experiences in developing energy system and addressing climate change**





# Thank you for attention !

