

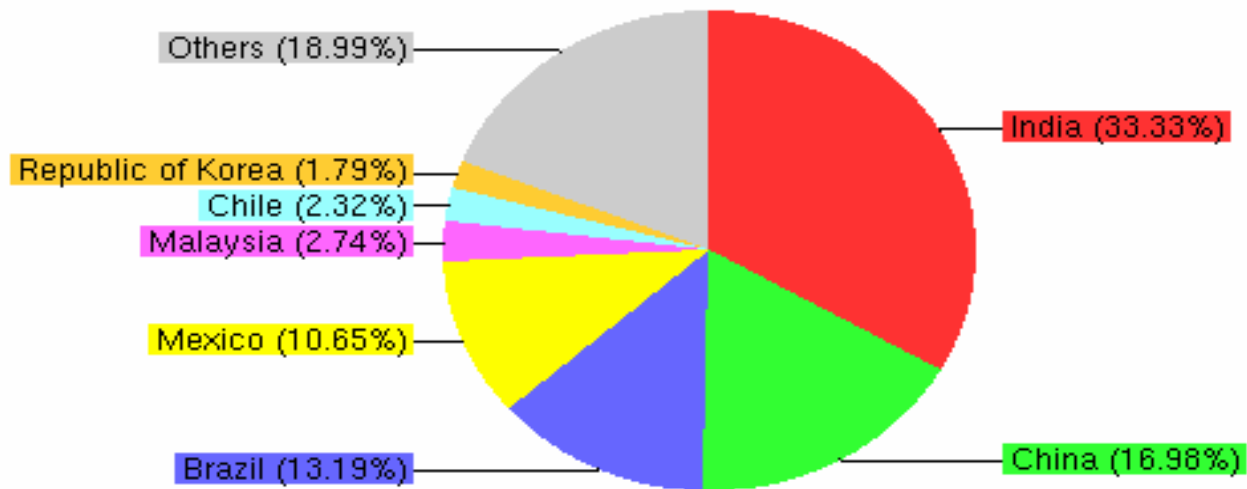


# The CDM /Sustainable Energy Market in China and India

Vilhjálmur Nielsen  
Presenting from  
GIEC, China and TERI India

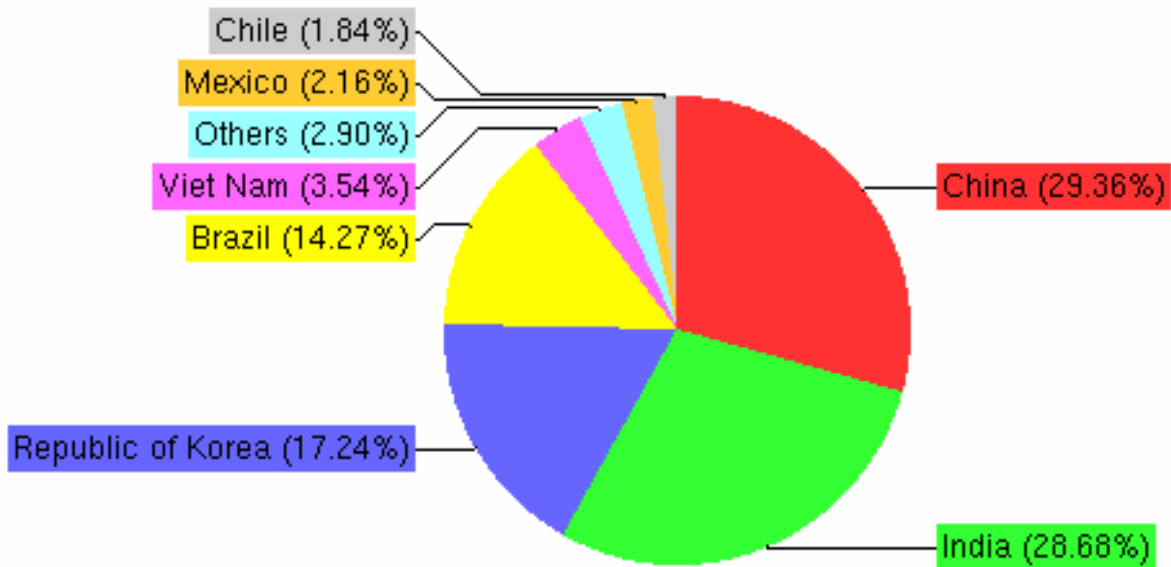


# Registered projects

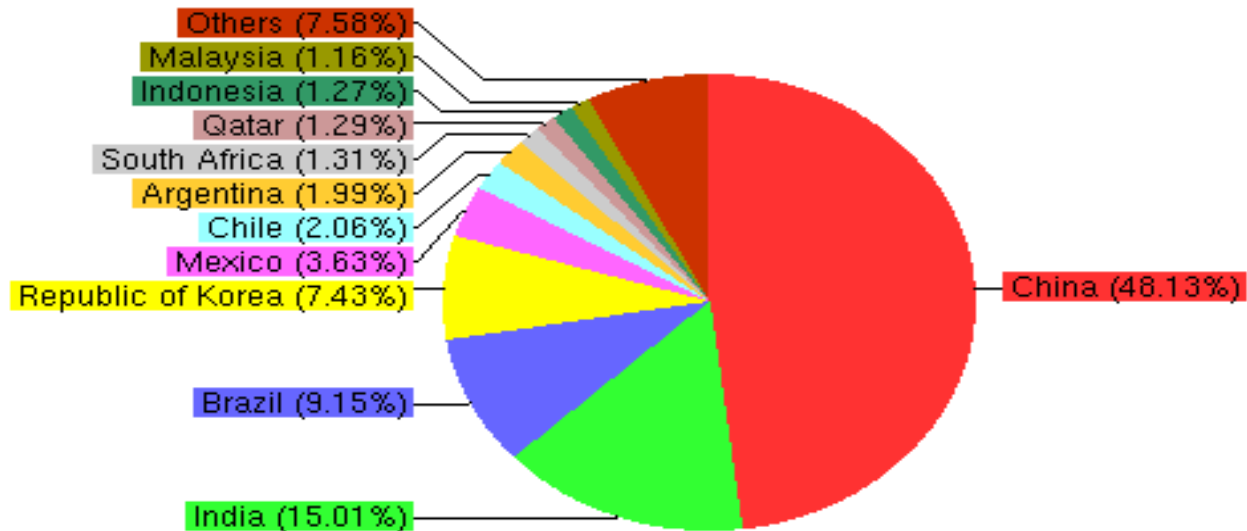




# CERS Issued by Host Party



# Expected Average Annual CERS from Registered Projects till 2012





# China

## Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences(GIEC)





# China's CDM Rules

**DNA established:** Office of National Coordination Committee on Climate Change, National Development and Reform Commission. The board will review

- ◆ Participation requirements
- ◆ PDD
- ◆ CERs price
- ◆ Issues related to funds and technology transfer
- ◆ Sustainable development effects of the project



# China's CDM Rules

- ◆ **General Rules:** Measures for Operation and Management of Clean Development Mechanism Projects in China, Oct, 2005.
- ◆ **CDM Priorities:** energy efficiency improvement, new and renewable energy, recovery and utilization of methane and coal bed methane
- ◆ **Project developer:** shall be wholly China-owned or China controlled enterprises
- ◆ **Benefits from the transfer of CERs as management fees:**
  - ◆ HFC23: 65%, N<sub>2</sub>O: 30%, Others: 2%



## CDM Projects List identified by GIEC

Foshan City (**boiler efficiency** improvement for Ceramic, ironless industry )

Meizhou City (**Hydropower** Project 10MW )

Jieyang City (**Mini-hydropower**, rural biogas project)

Shaoguan city (**steel plant** CDQ, TRT project)

Guangzhou city (**cogeneration power** projects)

Taishan city (**Wind power** feasibility under preparations)

Xinhui city (2\*150MW smoke **waste heat recovery** project)

Jiangmen city (replacement of **grid transformer** of higher efficiency)

Huidong (120MW **Wind Power** Project, feasibility preparations)

Boluo (**Landfill Projects**)

**Energy conservation Project** (Zhujiang Steel Plant, cement plant)



## CDM Projects identified by GIEC- Landfill

**Project Name:** MSW treatment Project of Water Sorting and comprehensive utilization in the Boluo City of Guangdong

**Technology employed:** automatic water sorting, comprehensive resource recycling, Landfill composting ,RDF gasification and electricity generation technologies

**Expected Annual CER:** 36,027 tons

**First version of PDD:** available

**CER buyer:** To be matched.



## **CDM Projects identified by GIEC- Hydropower**

**Project Type:** Run-of-river, 10MW, Small-scale

**Annual electricity output:** 33,030 MWh

**Expected Annual CER:** 26,091 tons

**First version of PDD:** available



## CDM Projects identified by GIEC- CDQ projects

**Project Location:** Shaoguan

**Project Type:** Waste heat/gas recovery power generation

**Installed capacity:** 15MW

**Electricity output:** 79,094 MWh

**Annual CER:** 54,071 tons

**PIN developed:** Hope to find CER buyer





## CDM Projects identified by GIEC- Wind project

**Project Location:** Zhanjiang

**Project Type:** Grid renewable energy power

**Installed capacity:** 49.5MW

**Annual CER:** 70,662 tons





## **CDM Projects identified by GIEC**

### **- Transformer project**

**Project Location:** Southern Power Grid

**Project Type:** energy efficiency

**Energy Conservation:** 60 thousand tce

**Methodology:** NM0243, to be approved

**CDM project type:** Programmatic CDM

**CER Buyer** to be decided





## 4 EU-China technology transfer potential

- ◆ Bali conference: four wheels including mitigation, adaptation, financing and technology transfer
- ◆ MOST and NDRC issued international science and technology cooperation programme on RE and EE on 27th, Nov 2007
- ◆ EU: [Limiting Global Climate Change to 2 degrees Celsius: the way ahead for 2020 and beyond](#) , calls for more cooperation with developing countries
- ◆ China's [national plan on climate change](#) released in June 2007
- ◆ Chinese government target for energy conservation by 2010
- ◆ Chinese renewable energy share expansion



## EU-China technology transfer potential

- ◆ **Renewable energy:** MW solar power, MW wind, biomass utilization/wood pellet, landfill disposal, sludge utilization, waste water disposal.
- ◆ **Energy efficiency:** efficiency improvement for small-medium boiler, frequency-changing motors, power distribution loss, integrated building energy conservation, low-medium temperature waste gas/heat utilization



## EU-China technology transfer identified

- ◆ Paper mill hopes to utilize the waste, need to transfer know-how
- ◆ One electric company hopes to transfer technology of conversion of landfill gas to natural gas, which can be used for transportation
- ◆ One biomass company hopes to import the wood pellet technology for rural household
- ◆ One government agency hopes to import the sludge disposal technology



# India

## The Energy and Resource Institute - TERI





## Focus of renewable energy activities in India

- Grid-interactive renewable electricity generation systems
- Off-Grid / Distributed Renewable
- Renewable Energy for Rural Applications
- Renewable Energy for Urban, Industrial & Commercial Applications
- Research, Design & Development in New & Renewable Energy Generation and Applications



## Projects approved

Sectors	No. of Projects
Energy Efficiency	262
Fuel Switching	51
Industrial Process	44
MSW	14
Renewable	242
Renewable (Biomass)	241
Forestry	4
<b>Total</b>	<b>858</b>



## Challenges in CDM in India

- Projects small in size
- Large CDM projects need to be conceived
- Programmatic CDM still to pick up
- Afforestation and Bio-diesel offer opportunities for Community CDM Projects
- Active Financial institutions participation with innovative financing models required in CDM market
- **Unilateral projects** – technology collaboration to be promoted



# Thank you