Promoting Investments for Renewable Energy and Biogas through Carbon Financing in China

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Dr. Markus Schwegler - Senior Advisor Climate Protection

The Administrative Centre for China's Agenda 21 (ACCA21)

Ministry of Science and Technology (MOST)

Climate change is the most critical global challenge of the 21st century

- Asian countries are facing impacts in the form of extreme weather events (droughts, floods, cyclones, heat waves).
- Asian countries are vulnerable (dependence on climate-sensitive sectors such as agriculture, forestry, fisheries, and tourism).
- Serious consequences for Asia's citizens (food, water, health).
- Asian policy-makers cannot afford to ignore climate change risks.
- Appropriate climate change policies across Asia are essential.
- Mitigation of and adaptation require substantial changes in technological and energy infrastructure, human behaviour and lifestyles throughout the world.

Clean Development Mechanism - a win-win mechanism

The CDM's aims are twofold:

- It supports the developed countries in reaching their emissions targets set by the Kyoto Protocol
- and the developing countries in achieving a higher level of sustainable development through technology transfer and financial assistance.

For a project to be approved as a CDM project it has to meet various obligations an go through a defined project cycle.

Conditions for CDM projects - Is my project CDM eligible?

The CDM eligibility depends on specific project circumstances and a quick answer cannot be provided.

The main CDM eligibility criteria are that:

- The project is not a baseline scenario;
- The project contributes to sustainable development.

How does the CDM help a project?

Increased returns

- A CDM project is entitled to receive 1 CER for every tonne of CO_2 equivalent reduced.
- CERs are market products which are allowed to be traded.
- The CER revenue becomes a source of additional cash flow for the project.

Attracting CDM investors/funds

- Various financial supporters/investors,
- financial institutions and commercial banks, etc.
- numerous CDM funds (e.g. PCF, Kfw, BioCarbon Fund)

The Economics of a Hydro Power and a Methane Project

Hydro power project:

7.5 MW installed capacity

28,448 t CO_2 ER's p.a.(10 years)

Project costs: US$ 4.5m

Carbon value:

$5/ t CO_2	= $1.42m
$8/ t CO_2	= $2.27m

Proportion of project costs:

$5/ t CO_2	= **31.5%**
$8/ t CO_2	= **50.5%**

Ag. Waste to energy project:

2 MW installed capacity

>50,000 t CO_2 ER's p.a.(10 years)

Project costs: US$3.5m

Carbon value:

$5 /t CO_2	= $2.5m
$8 /t CO_2	= $4.0m

Proportion of project costs:

$5/ t CO_2	= **71.4%**
$8/ t CO_2	= **114%**

Reason: Methane is 21 times more potent than CO_2 on ton-to-ton basis >> Opportunity for many agricultural projects

The Chinese Climate Policy

- 1992 China approved and ratified the UNFCCC
- 1998 China signed the Kyoto Protocol
- 2002 China approved the Kyoto Protocol
- 2004 DNA was founded with the Interim Measures
- 2005 On 12 October 2005, Measures for Operation and Management of Clean Development Mechanism Projects ("CDM Measures")

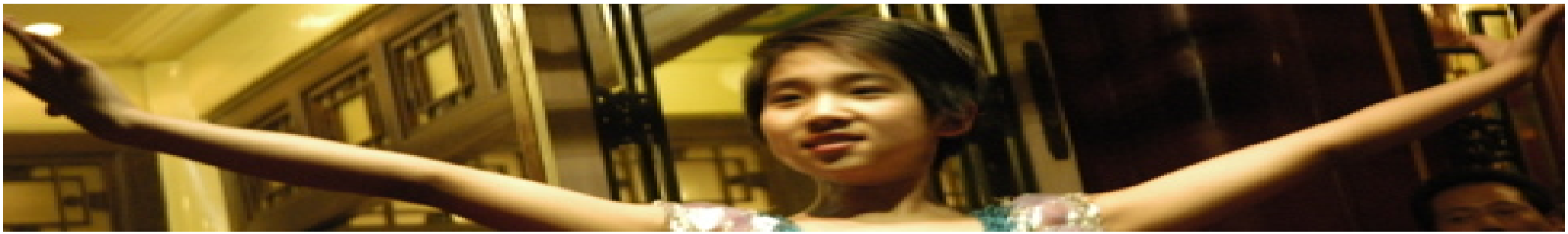
The priority areas for CDM projects in China

- Energy efficiency improvement
- Development and utilization of new and renewable energy and
- Methane recovery and utilization

(Measures for Operation and Management of Clean Development Mechanism Projects in China)

Points to Note under CDM Measures

- Resource of emission reductions owned by the PRC government
- Outputs of CDM Projects are owned by PRC project owner
- Proceeds from sale of outputs jointly owned by PRC government and PRC project owner
- PRC government entitled to:
  - 65% of the transfer price of the outputs from HFC and PFC Projects
  - 30% of the transfer price of the outputs from N_2O Projects
  - 2% of the transfer price of the outputs from new and renewable energy Projects



Chinas CDM Potential and Opportunities

Potential

- Energy demand and consumption in China ranks second in the world following the USA
- Coal baseline
- In 2000, China's energy consumption per unit of eight major products was 20-40% higher compared to international level
- Estimated CDM Potential: 50% of the global CDM Market (World Bank /GTZ Study)

Opportunities

- Energy Efficiency
- Renewable Energy
- CBM/CMM
- Fuel conversions and new technology for power generation
- Large energy losses with much potential in re-utilization of waste heat and waste energy

Chinas CDM Potential in Biogas

CDM project opportunities in landfill gas recovery

- During 2005-2008, 60-100 CDM projects for the LFG recovery and power generation are expected.
- Total annual emission reductions are around 8~13 Mt-CO_2e

CDM Opportunities for biogas power generation

- Potential number of new projects expected is over 300, with the total capacity over 1 GW.
- Total annual emission reduction may be over 20 Mt-CO2.

Status of CDM Projects - Expected CER´s until end of 2012 *1

Number of Project

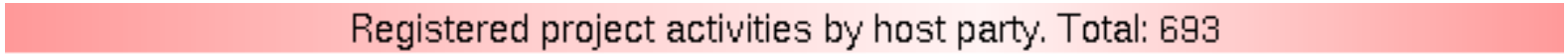
CDM project pipeline:	> 1600
Registered:	653
Requesting registration:	78

CER´s issued

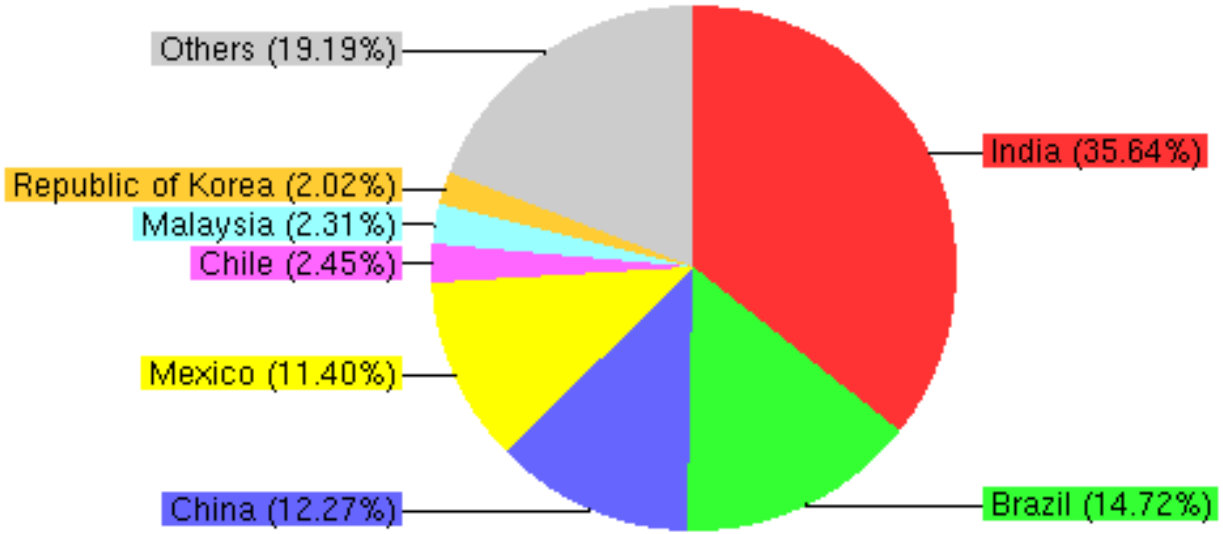
Expected CER´s until 2012:	> 1900 Million CERs
Total based on registered projects (653):	> 940,000,000
Total based on projects requesting registration 789):	> 60,000,000

*1) as of 11th June 2007

Registered project activities by host party



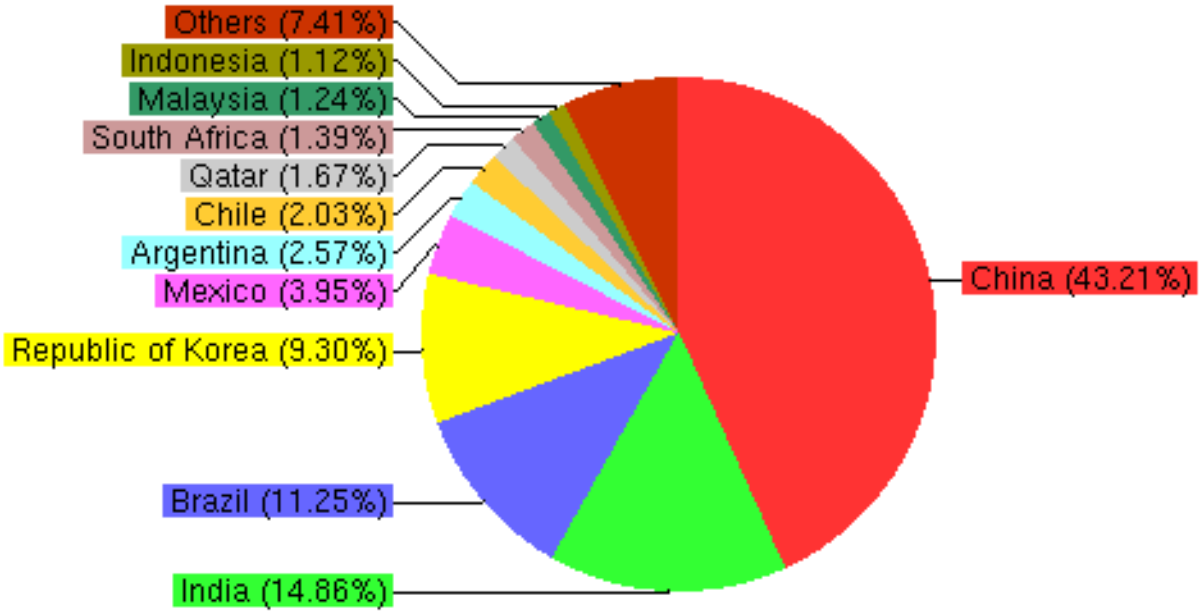
China has 85 projects up to date (11.06.2007)



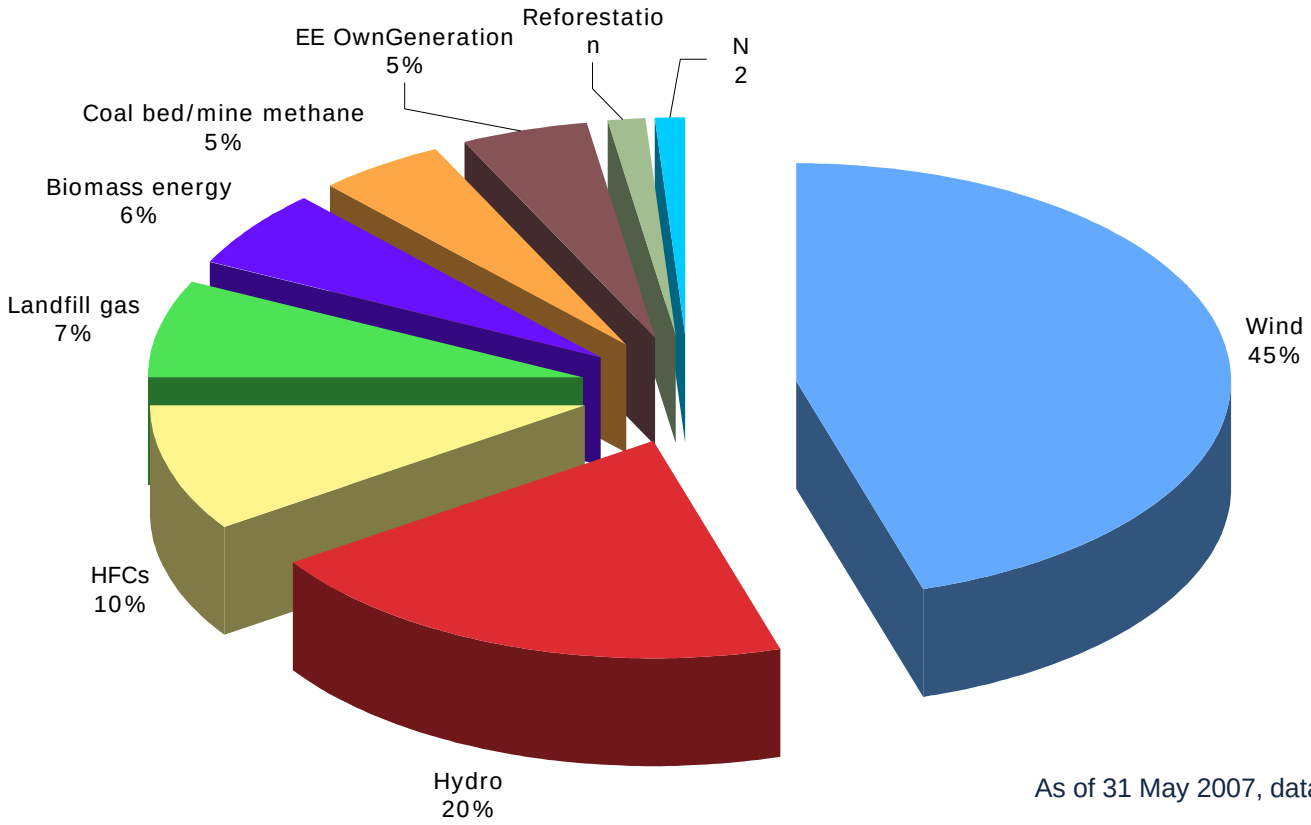
Expected average annual CER´s

Expected average annual CERs from registered projects by host party. Total: 149,712,391

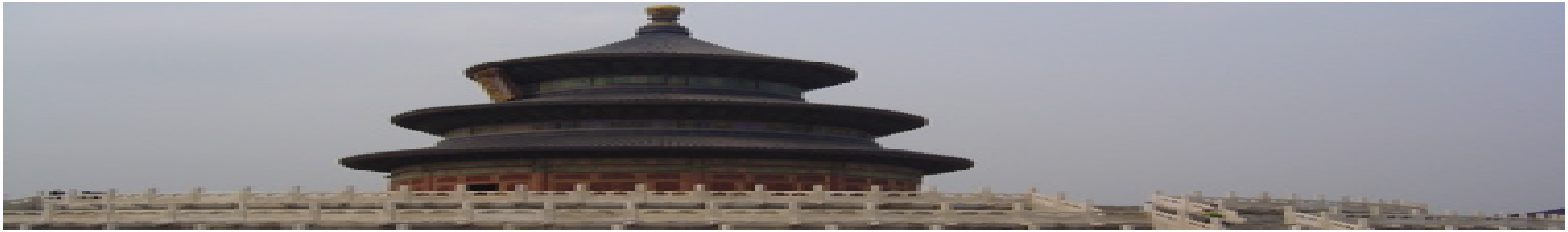
Average Annual Reductions in China: 64,695,716 CER´s
as of 11.06.2007



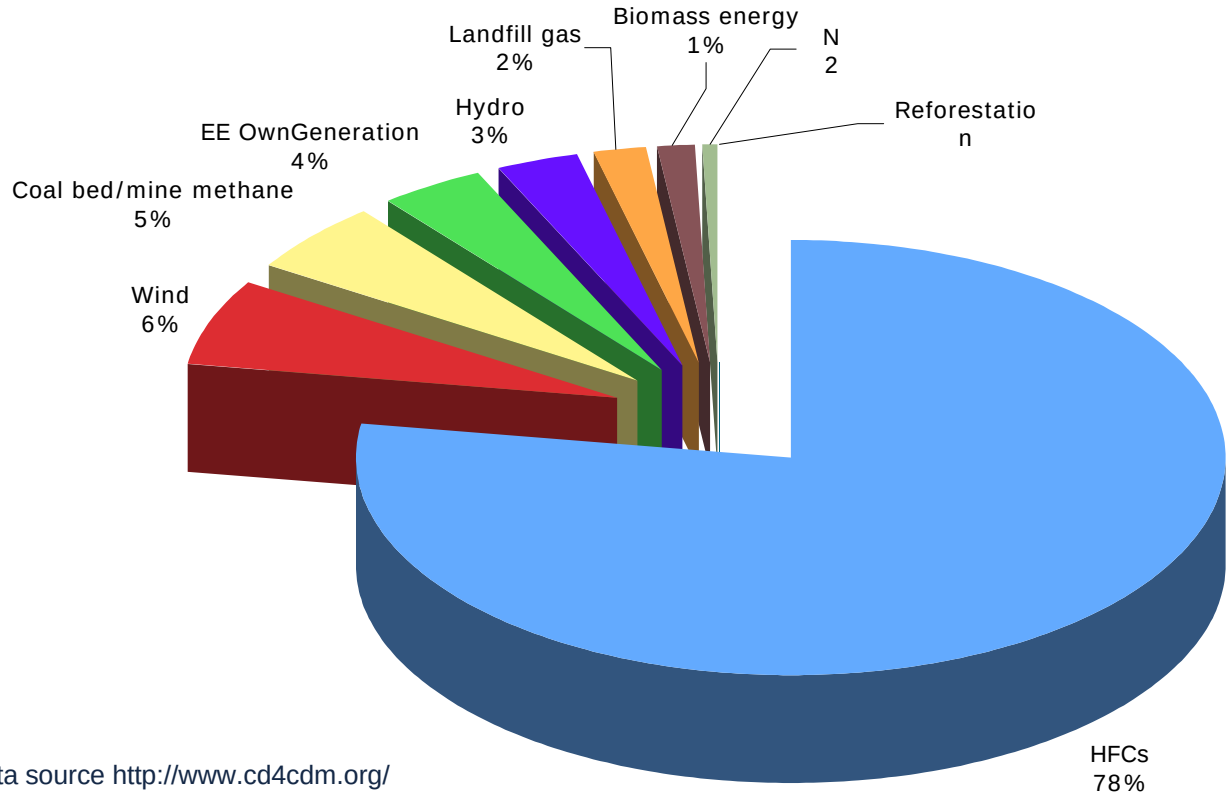
Number of Chinese registered projects per sector



As of 31 May 2007, data source http://www.cd4cdm.org/



Top sectors expected CERs (China, registered Projects)



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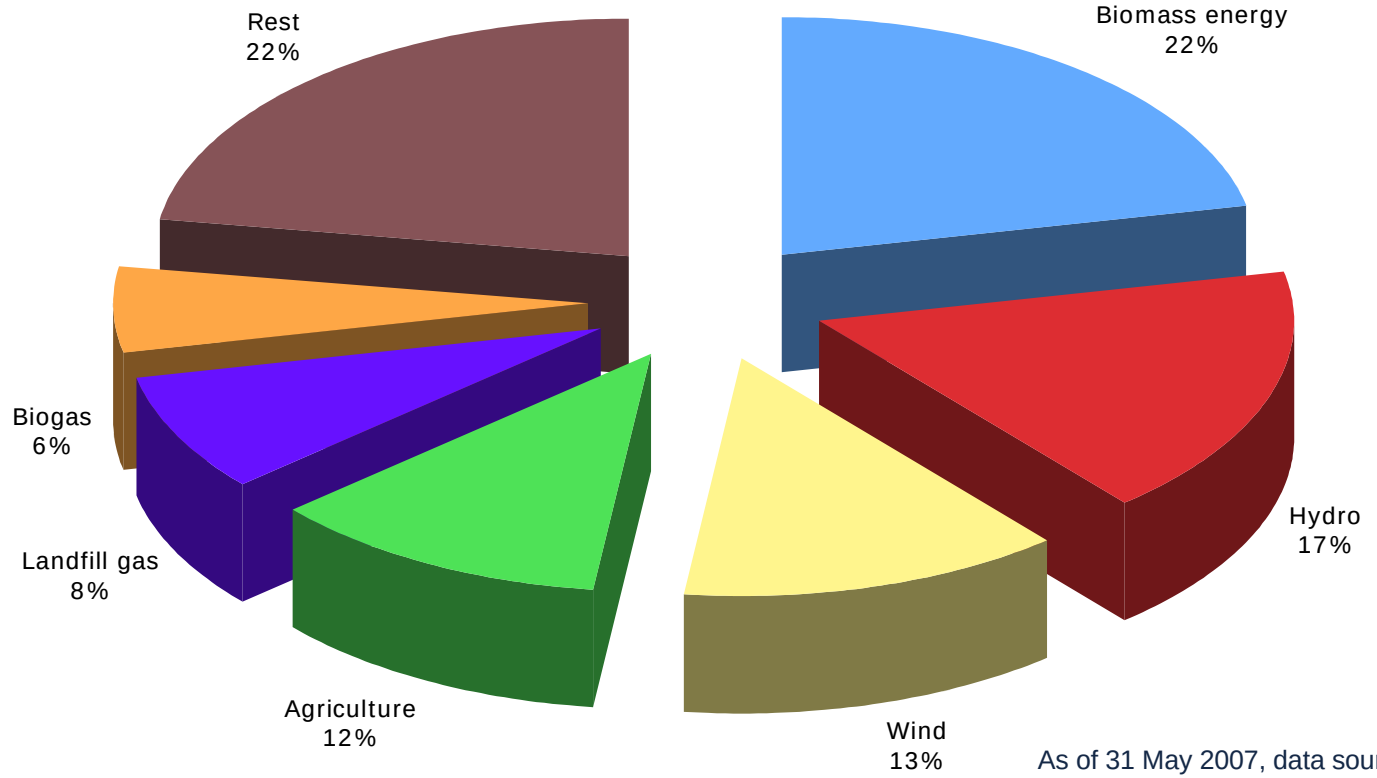
Top sectors global perspective (number of Projects)



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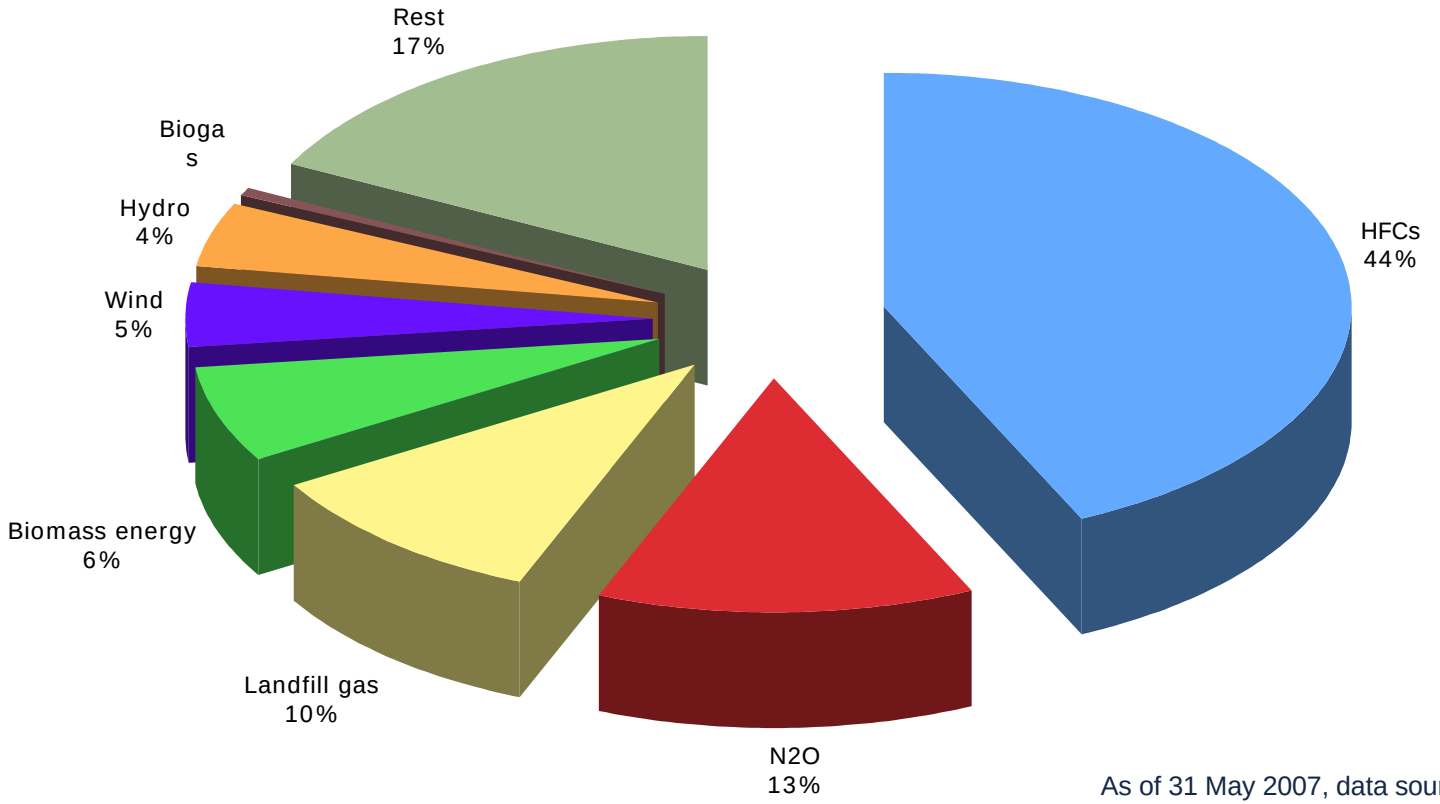

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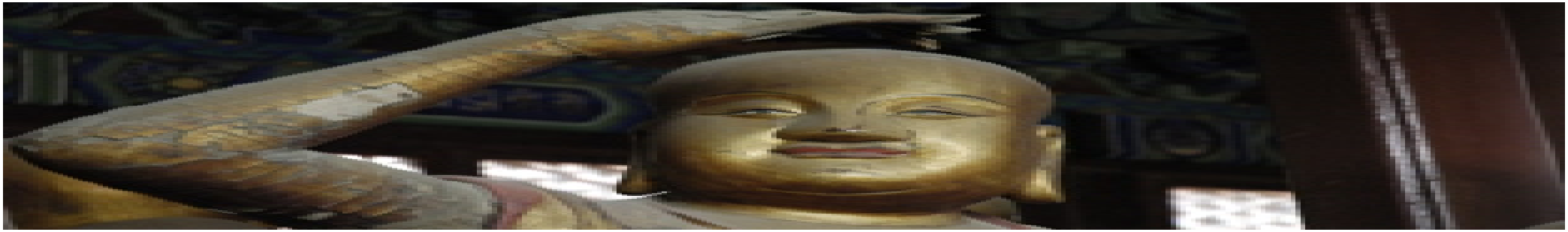
Barriers for CDM in China

- Lack of knowledge and skills to identify CDM opportunities
- Lack of experience to assess risks and develop projects
- CDM not fully accepted and understood as financial tool
- Complexity of the CDM Cycle
- Legal framework
- The currently low CER price in the buyer driven market
- Availability of data
- Confidentiality & Transparency
- Transactions costs
- Large number of different players
- Language Barrier

Conclusion and Outlook

- China has a huge energy demand due to the high economic growth
- High demand for renewable energy and energy efficiency utilization
- China needs technology transfer and financial support
- High potential for Biogas utilisation
- CDM Projects can deliver significant local economic and sustainable development co-benefits
- CDM projects must be identified and developed within the next couple of years for China to capitalize on its CDM potential during the first commitment period
- Chinese and foreign enterprises face barriers to CDM development and implementation in practice



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Email: mschwegler@mac.com