

China and CDM Market

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CDM Market and China

- Trading Emissions PLC
- China in the CDM Market
- Why China?
- Regulations
- Market Characteristics Buying and Investing
- Example Projects





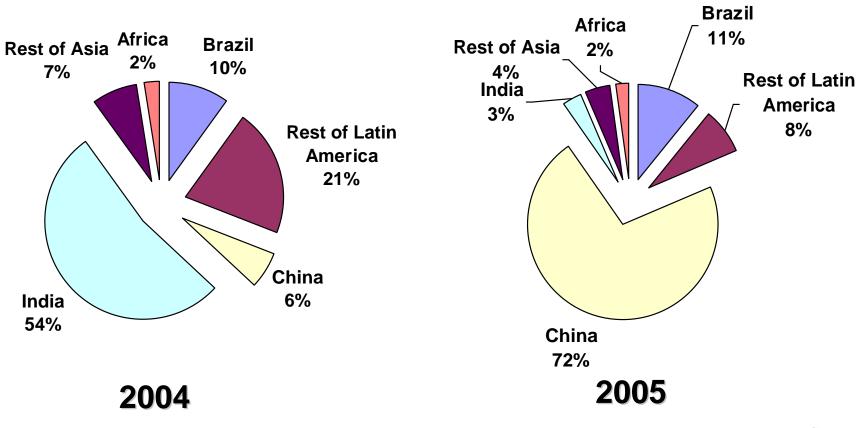
Trading Emissions PLC

- An investment company listed in London in 2005
- Has raised £310m to invest into different environmental markets
- Mostly invested into CDM market as equity, mezzanine debt or to support ERPA transactions
- Current pipeline includes over 50 projects in China across a range of sectors
- Investment Advisor is EEA





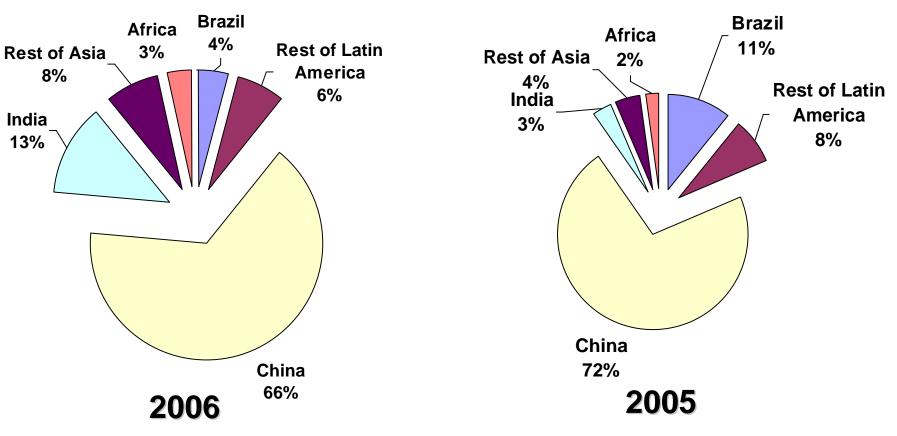
CDM Market Share (supply side)







CDM Market Share (supply side)







Chinese Project Pipeline

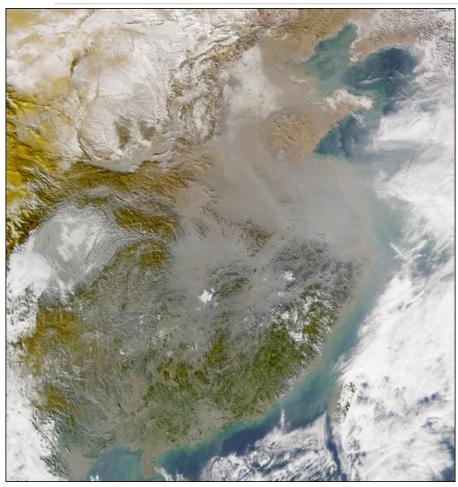
Project Type	CDM Projects at Validation	% of Projects at Validation from China	CDM Projects Registered	% of Projects Registered from China	CDM Av. CERs/yr	China Av. CERs/yr
Wind	146	64%	89	43%	80,000	107,000
Biomass	260	5%	149	3%	57,000	187,000
Hydro	295	66%	118	14%	57,000	118,000
Waste Heat	113	68%	32	13%	183,000	617,000
Fuel Switch	50	32%	17	0%	41,000	700,000
Landfill Gas	90	20%	55	11%	273,000	211,000
СММ	36	92%	4	100%	881,000	881,000
HFC	3	100%	15	53%	4,375,000	6,258,000
N2O	26	73%	9	11%	2,285,000	350,000
Biogas	169	2%	120	0%	9,000	7,000



Source: Jorgen Fenhann UNEP Risø Centre CDM Pipeline 31 May 2007



Why China?



- 1. Already large emissions easier reductions
- 2. Rapid development new power projects n particular required
- 3. Access to capital
- 4. Clear CDM Regulations

BUT

- 1. Market increasingly crowded price pressure
- 2. Difficult to structure inward investment
- 3. Portfolio risk "no HFC no China!"
- Future projects regulations don't encourage small scale or new methodologies





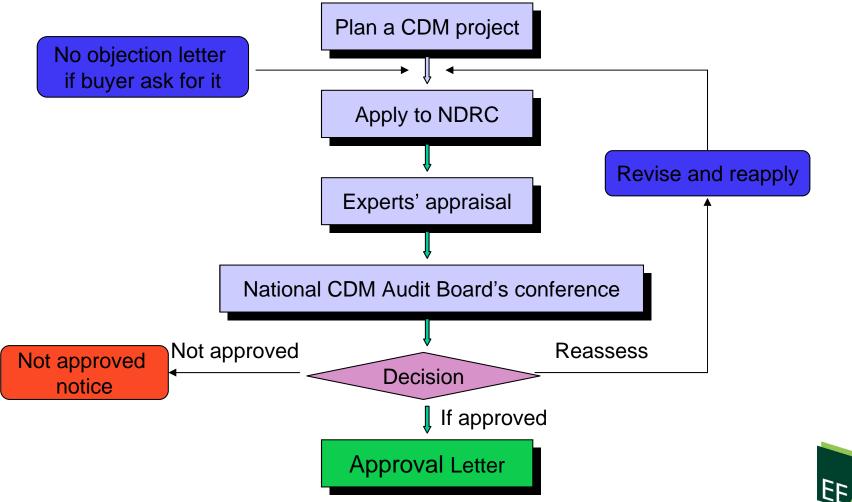
Chinese CDM Regulations

- Identified Priority areas: energy efficiency, new and renewable energy, recovery and utilization of methane
- Floor price: varies over time and depending upon project but has been around €8.00 for some time
- Project entity must be majority Chinese owned
- CERs belong to the Chinese government and the project owner, direct revenue sharing by other entities is forbidden
- Levies on CERs (impact the seller):
 - 2% for priority areas, small scale projects and forestry
 - **30% N2O**
 - 65% HFCs and PFCs contributing to sustainable development





Approval process for CDM projects



Source: office of national coordination committee on climate change 2006



Buying from Projects in China



Minimum Price rules are key to the market:

- Gives sellers confidence
- Sets a de-facto market price
- Restricts the use of market based pricing structures
- Promotes bilateral projects as easier to get approval to sell once
- Once LOA is issued difficult for seller to renege on deal
- LOA specifies volume how will price approval work for excess CERs or post-2012?





Investing into Projects in China



Little direct investment has occurred in China CDM market

49% cap on foreign equity is the major barrier

- JV structure must be approved locally
- What are your options for an exit?

Lending

- Restrictions on the assets that can be used for security
- Enforcing rulings might not be straight forward
- Must have any loan registered with SAFE to ensure the counterparty has the right to foreign currency to repay loan

Prepayment

More straightforward but really only security is the CER flow to the project





Industrial Projects in China



- HFC Large volumes straightforward almost all done registered
- N2O Volume varies upfront capital costs often provided by buyer
- Methane In China can not simply flare
- PFC Aluminium sector in China has been modernised over past number of years without paying attention to CDM – difficult additionality arguments or small benefit
- Methanol from Coke Oven Gas questionable additionality due to regulatory requirement to utilise Coke Oven by-product gas
- Energy efficiency many waste heat utilisation projects in industry but little else





Energy Projects in China



Massive growth in electricity infrastructure and very high grid emission factors

- Wind commands premium price but...
- Biomass resource availability
- Hydro additionality in certain regions
- Landfill gas climate impact on gas production
- Natural gas Critical projects for sustainable development
- USC Coal Methodology approved
- Future IGCC and CCS
- Nuclear?
- Post-2012 market need clarity now for investment decisions





Conclusions

- China is the single most important country in the market
- Strong regulations have helped secure this position
- Large projects and lots of them due to rapid economic development and historically low efficiency
- Future of market some what uncertain





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