Save Energy
is
Save Climate

The future of CDM

Design post-2012 CDM for incentive to promote energy saving and renewable energy in developing countries.

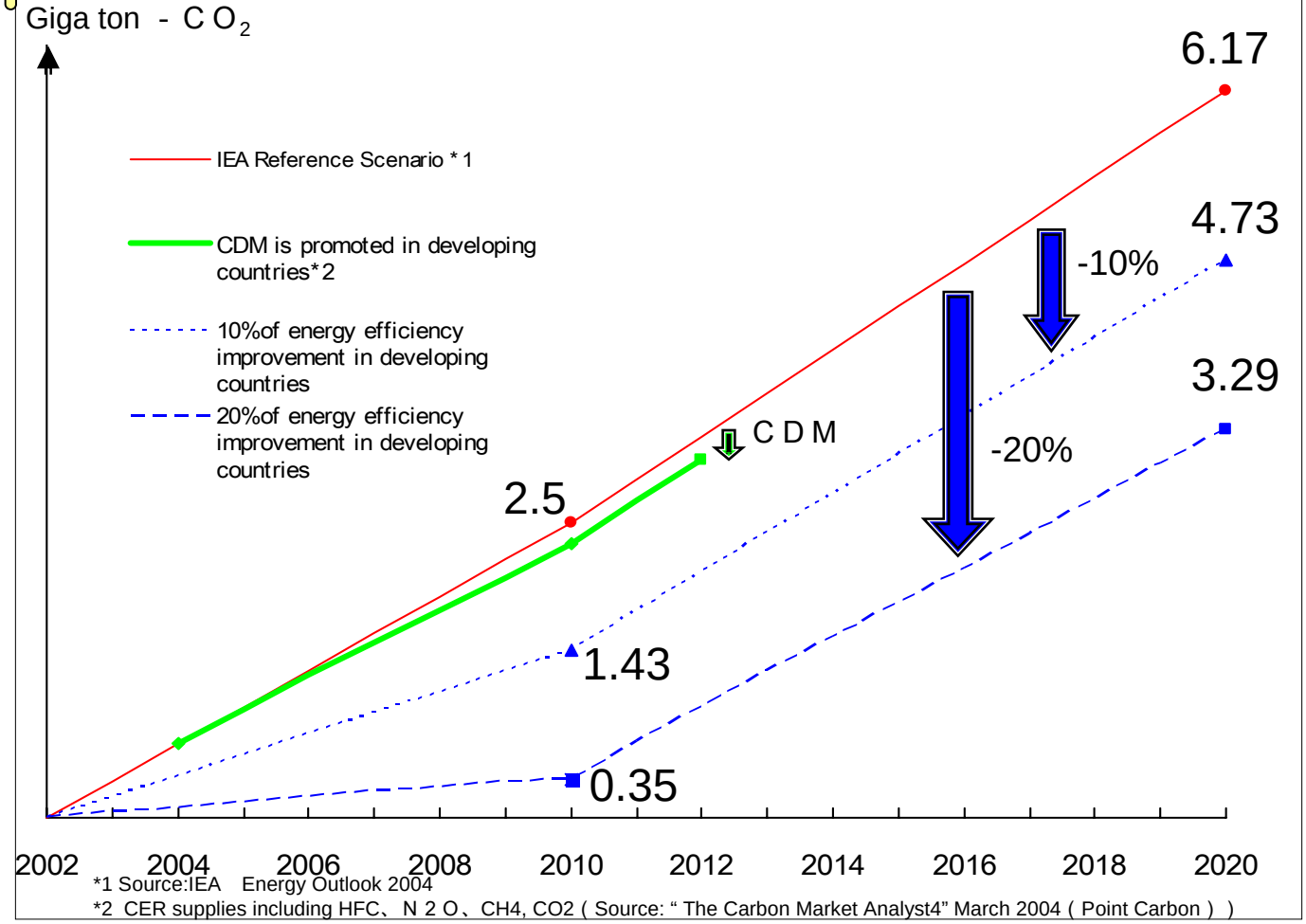
Dr. Hiroshi YAMAGATA
Director for Environmental Affairs
Minister's Secretariat
Ministry of Economy, Trade and Industry
JAPAN

The ideas expressed in this paper are those of the author and do not necessarily represent views of the METI.

CDM has Not exploited CO2 Reduction Potential by Energy Conservation

- Huge CO2 reduction potential by energy conservation
- Small projected-CER by CDM
- Negligibly small projected-CER by energy conservation CDM

CO_2 Emission Increases in Developing Countries (Compared with 2000)



*1 Source:IEA Energy Outlook 2004

*2 CER supplies including HFC、N 2 O、CH4, CO2 (Source: " The Carbon Market Analyst4" March 2004 (Point Carbon))

Japan's History

Japan's industry improved energy efficiency by 40% from 1973 to 1993.

Source: White Paper on Energy 2003

Chinese Potential

More than 26% of energy consumption would be conserved if China could adapt energy efficiency technology on a par with international standards.

Source: "Potential of Energy Efficiency in China", Jul 2003(The Institute of Energy Economics)

Issues of CDM

- Small CER in spite of rapidly increasing CO2 emissions in developing countries
- Negligibly small CER by energy conservation and renewable energy CDM
- This is because of difficulty in demonstrating additionality

  - Revenue of CER is much less than that of selling electricity and/or cost reduction.
  - Perverse incentive (Energy saving policies make it difficult to prove additionality)

- HFC-23, N2O and CH4 CDM projects are much more economically attractive because of extremely high GWPs of these gases.
- Energy-related CDM project is not economically attractive.
- CDM will be dwindling after large-scale HFC-23 and N2O projects are exploited.

- Benefit to developed countries, e.g. achievement of reduction commitment in an economically efficient manner
- Limited benefit to developing countries, e.g. HFC-23 project has little ripple effects in the economy.
- Even on a global basis if CDM reduces GHG emission in developing countries

The Future of CDM

- Energy conservation and renewable energy in developing countries where CO2 emissions are rapidly increasing could contribute greatly to preventing global warming, sustainable development and robust energy structure in developing countries.
- In the next framework CDM should be designed as incentive for developing countries to promote energy conservation and renewable energy.
- International discussion is NEEDED.

Possible Topics to be Discussed

<Accelerating Technology Diffusion>

- ESCO creates CER for its additional reduction to historical data
- CER by renewable energy is simply calculated by capacity×coefficient
- Making a list of technologies regarded as CDM.

<Promoting Developing Countries' Activities>

- Unilateral CDM
- Including GHG reduction by government regulation

<Benefit and Responsibility of Developed Countries>

- Using CER for reduction commitment. But ONLY a part of CER.
- Government's commitment of creating CER

< Simplifying Procedures, Expanding Coverage>

- CER = efficiency of installed equipment – average energy efficiency.
- Additionality criteria based upon pay-back period (ex. more than 3years)
- Sector CDM.
- Including nuclear energy

Main purpose: Accelerating Technology Diffusion of Energy Saving and RE

Bottom Up, Risk of Rejection by CDM-EB, Complicate Additionality Tool

CHANGE

Top Down, Improving Predicability, Simplifying Procedure

Making a list of technologies regarded as CDM

EX.	ESCO	CER=Additional reduetion to historical data
	Designated Technology	CER=efficiency of the installed equipment - standard
	Renewable Energy	CER=Capacity * α

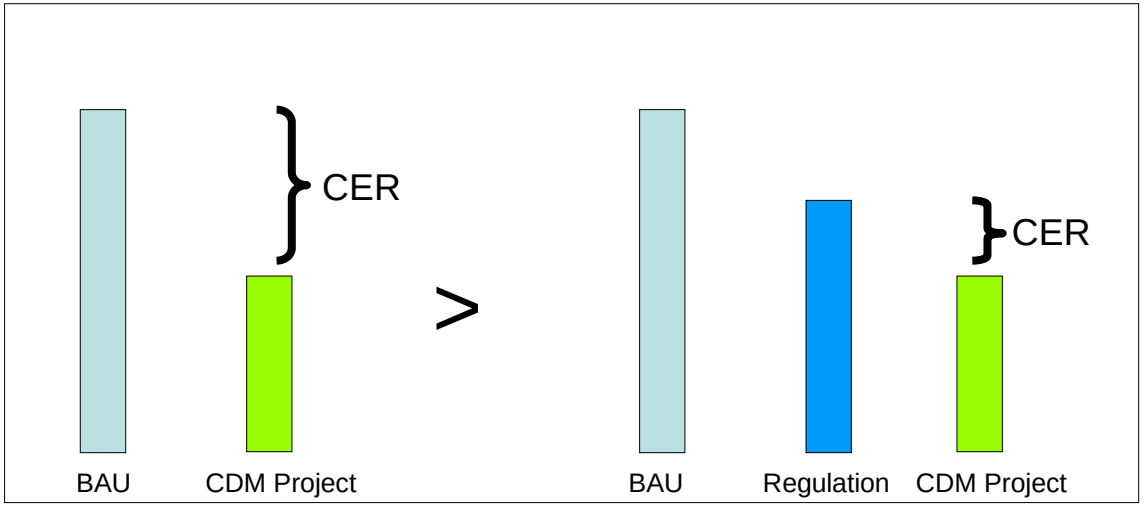
Sector CDM

EX.	Int'l Industry association	CER=Sectral target – ex-post emission

Incentive for Developing Countries

Perverse Incentive

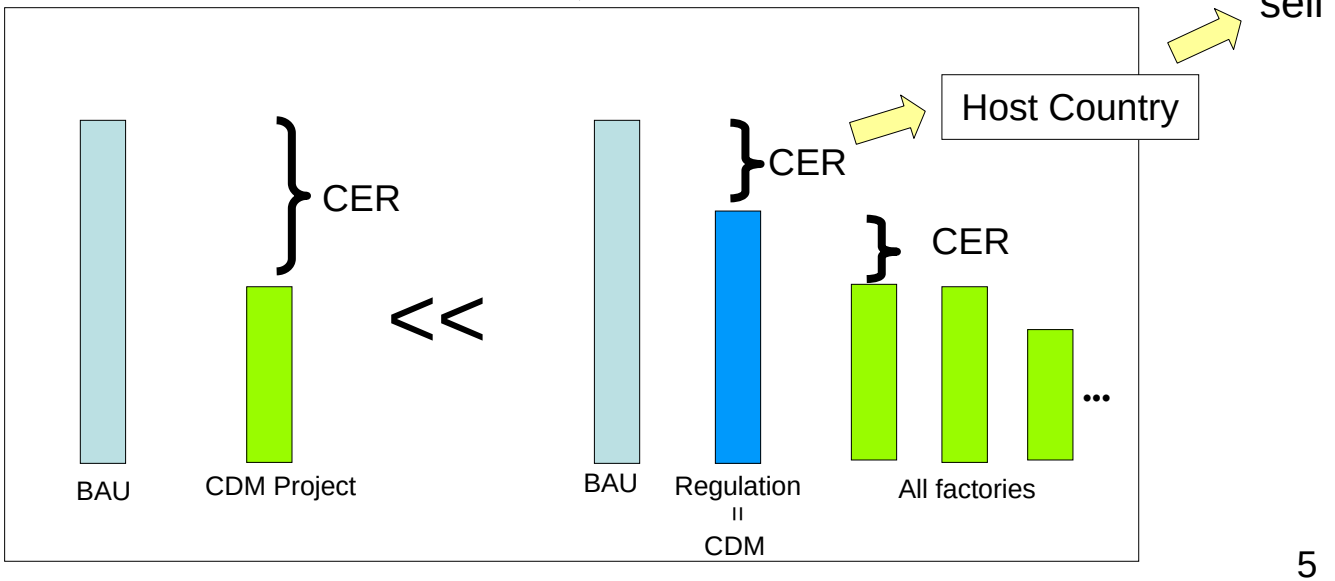
Energy saving policy may reduce the CER of a CDM project.



CHANGE

Incentive

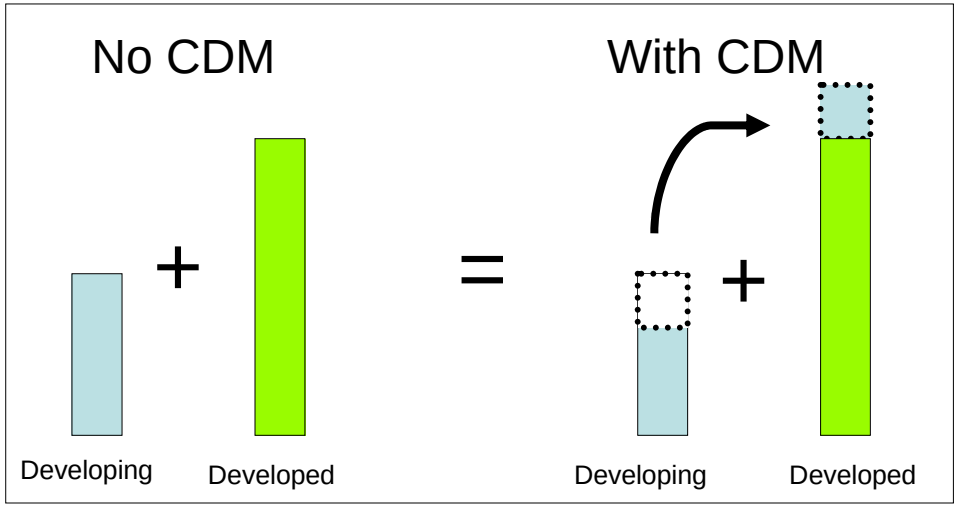
Host Country can <u>earn the much CER</u> by Energy saving regulation.



Developed Countries' Responsibility toward the Global Reduction

Purpose

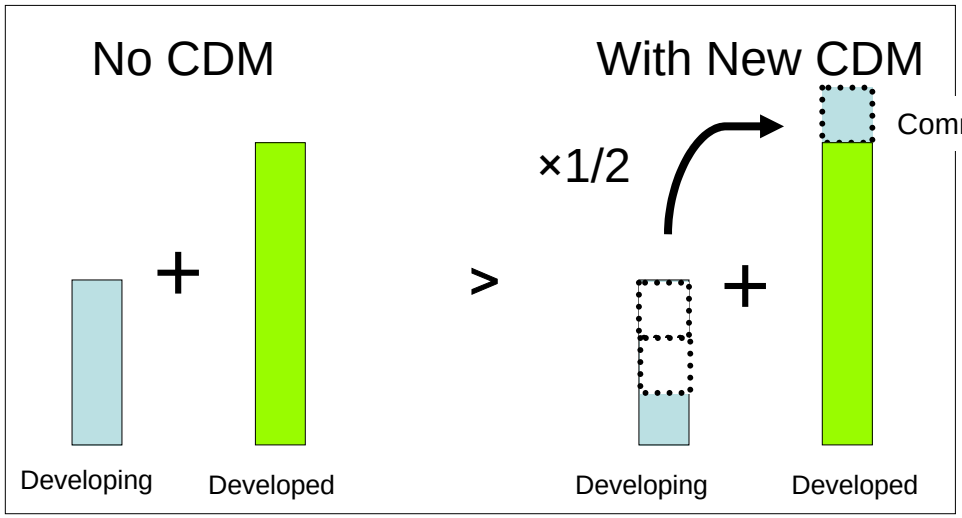
To assist Annex1 in achieving Compliance with their quantified commitment.



CHANGE

To contribute in reducing GHGs on a global scale.

To assist Annex1 in achieving Compliance with their quantified commitment.



Work Plan

COP10 — Kick off!

Side Event METI “Sustainable future framework beyond Kyoto”
Side Event METI-IETA “Long term views of the CDM”

Call for an idea

March 2005 — Workshop: CDM in the Post-Kyoto Regime

- Share common awareness of the issues
- Birth and accumulate ideas of incentive mechanism

Review the ideas

Summer 2005 — Conference

- Present the new mechanisms

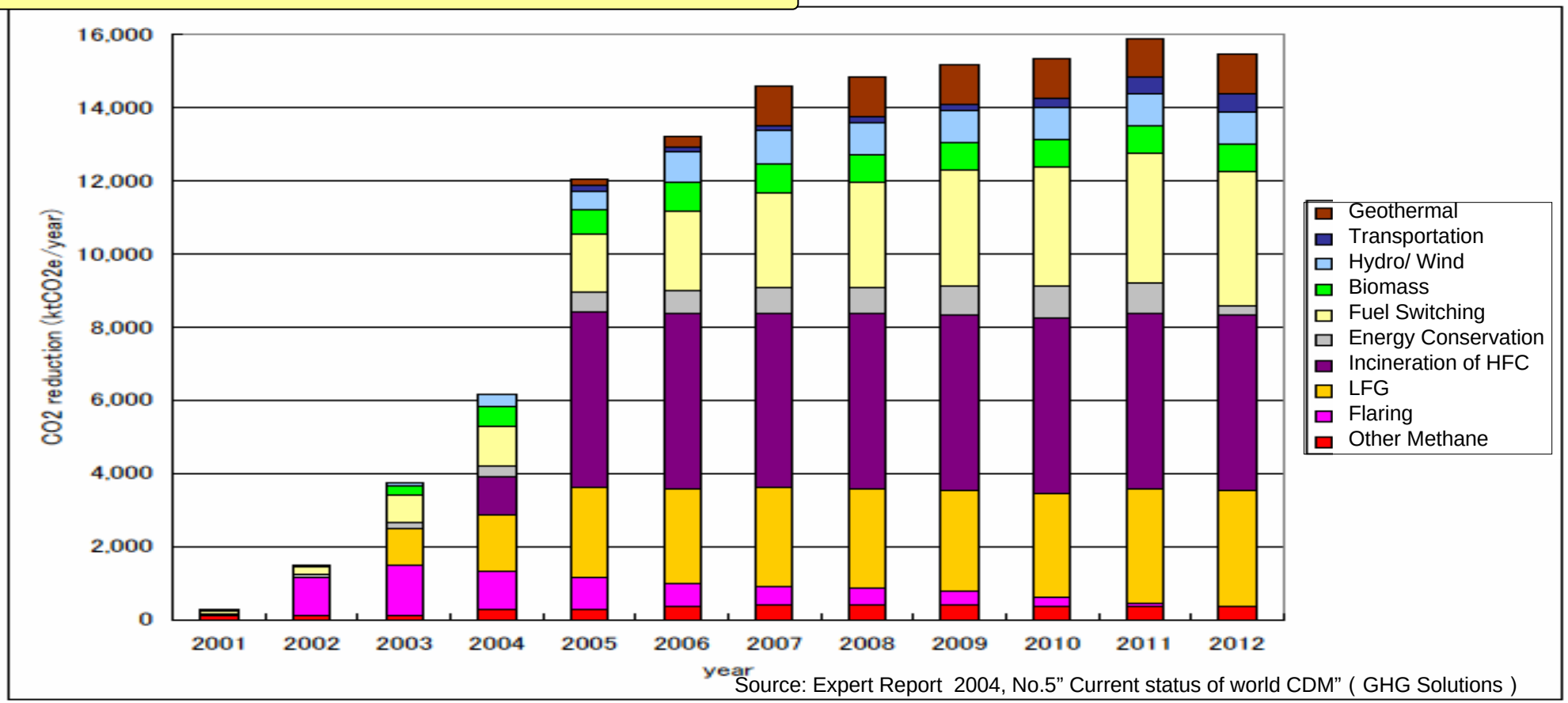
Estimate the outcome

COP11 — Proposal for post-2012

ANNEX 1　Current Status of CDM Projects

- More than half of planned projects is HFC-23 and CH4.
- Relatively small CER of energy-related CDM considering that CO2 accounts for a large part of GHG.
- Negligibly small CER of energy conservation CDM

CER of CDM projects submitted to CDMEB by type

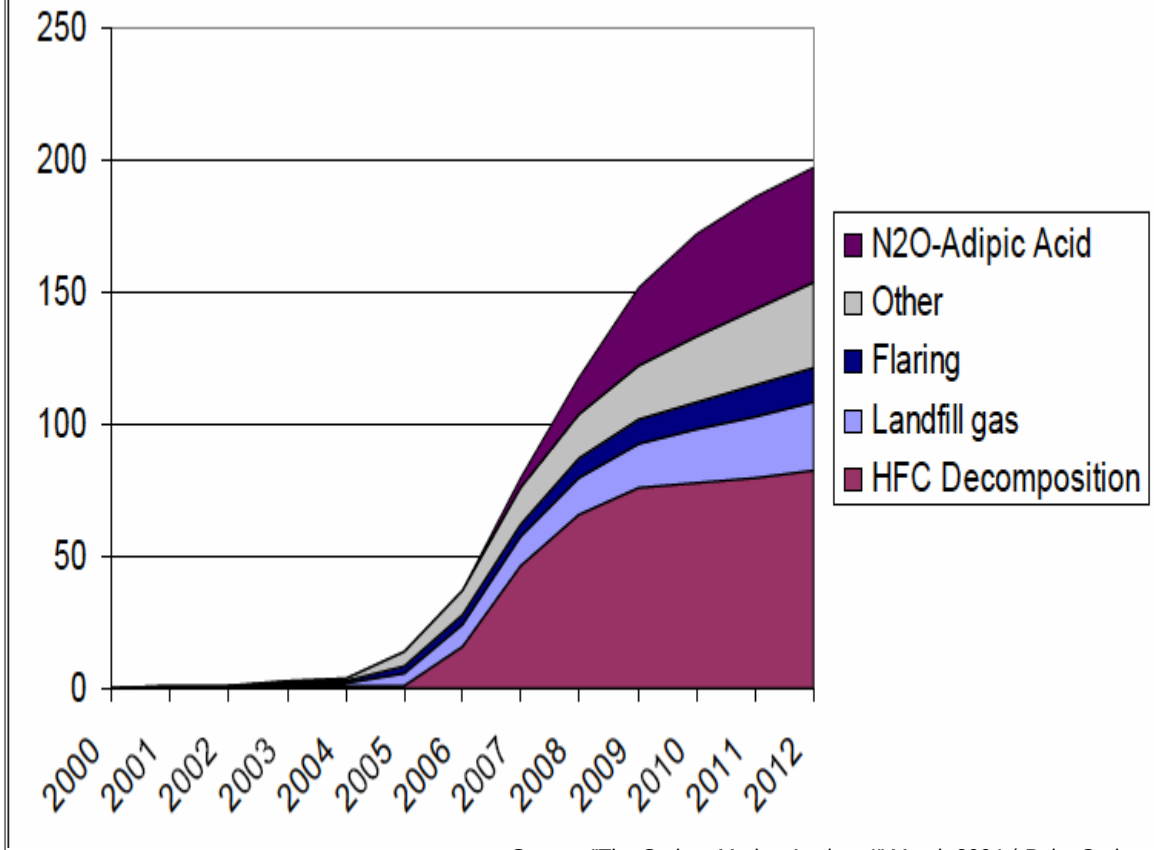


Source: Expert Report 2004, No.5" Current status of world CDM" (GHG Solutions)

ANNEX 2 CER Supply Forecast

- Almost 200 Mt CER of HFC-23, N2O, CH4 and other projects around 2012.
- Potential of HFC-23 and N2O projects are limited in the long run.
- CDM will be dwindling after large-scale HFC-23 and N2O projects are exploited.

CER supplies towards 2012 (million CERs p.a.)



Source: "The Carbon Market Analyst 4" March 2004 (Point Carbon)

Potential large-scale projects

	Methodology Approval	CER production, 2010 (million p.a.)	Number of projects*	Risk
HFC-23	Yes	84	17(11)	Low
Adipic acid N2O	No	3	5(3)	Low
LFG	Yes	12	19	Medium /high
Flaring	Pending	12	NA	Medium /high
Sum		142	41	

*Parenthesis indicates the number of projects in China

Source: "The Carbon Market Analyst4 March 2004 (Point Carbon)

ANNEX 3 Characteristics of CDM Projects by Type

- HFC-23 and CH4: Easy to set baseline. Large GWP. Large-scale CER per-project. Low cost of CER.
- CO2: Small-scale CER per-project. High cost of CER. Small change of IRR by CER.

Summary characteristics of CDM projects by type

Project types	F-gas reduction	Reduced CH4 from Landfills, Coal-beds, oil & gas	Energy efficiency	Renewable electricity	Cement	Sinks
Gases reduced	HFC-23	CH4	Mainly CO2	Mainly CO2	Mainly CO2	CO2
Scale of per-project reductions	Very High	M-H (also varies)	L	L-M (sig. Variations)	H	L-H
Technology transfer potential	L	M-L	M-H	H	M	n/a
Cost of CERs	Very Low	L-M	L-M (depending on sector)	L-H	L-H (depending on where in production chain)	L-M
Difficulties in assessing additionality and baseline	L	L	M	H	L-H	H

Source: "Taking Stock of Progress under the Clean Development Mechanism (CDM)", OECD report

Change of IRR on CO2 Project

Project	Before CDM	After CDM
Optimization and Co-Generation of Energy from Steel Making Process in Brazil (NM0064)	19.5%	20.5%
Bio-Energy Cogeneration in Thailand (NM0060)	9 ~ 16%	+2%
Introduction of coal fly ash and fuel switching in cement production process in India (NM0048)	4%	12%

Source: PDDs submitted to CDM EB