



**CQC'S VIEW OF SUPPLY AND DEMAND IN THE CDM OFFSET MARKET:
THE OPPORTUNITY OF THE GLOBAL METHANE FUND**

MAY 20, 2010

WASHINGTON, DC

KEN NEWCOMBE

Demand for Kyoto assets is derived from 5 major regions

Overall picture of post-12 demand is bleak

Canada

Alberta has an intensity-based GHG program that allows trading and offsets; The national government under the Copenhagen Accord committed to 17% reductions below 2005 levels by 2020; Broadly synchronized with the US. No federal action without US passage of Climate Bill

European Union

Compliance trading (EU ETS) began in 2005; Phase II (2008-2012) is the core of global carbon market; EU reductions are confirmed at 20% below 1990, maintaining modest global trade, but increase to 30% absent global agreement is unlikely

United States

East coast compliance regime (RGGI) in place but negligible demand; CA and to small degree Western Climate Initiative (WCI) active; Uncertainty at Federal level, but domestic offset market is active on small-scale, anticipating long term regulation through Congress or EPA

Japan

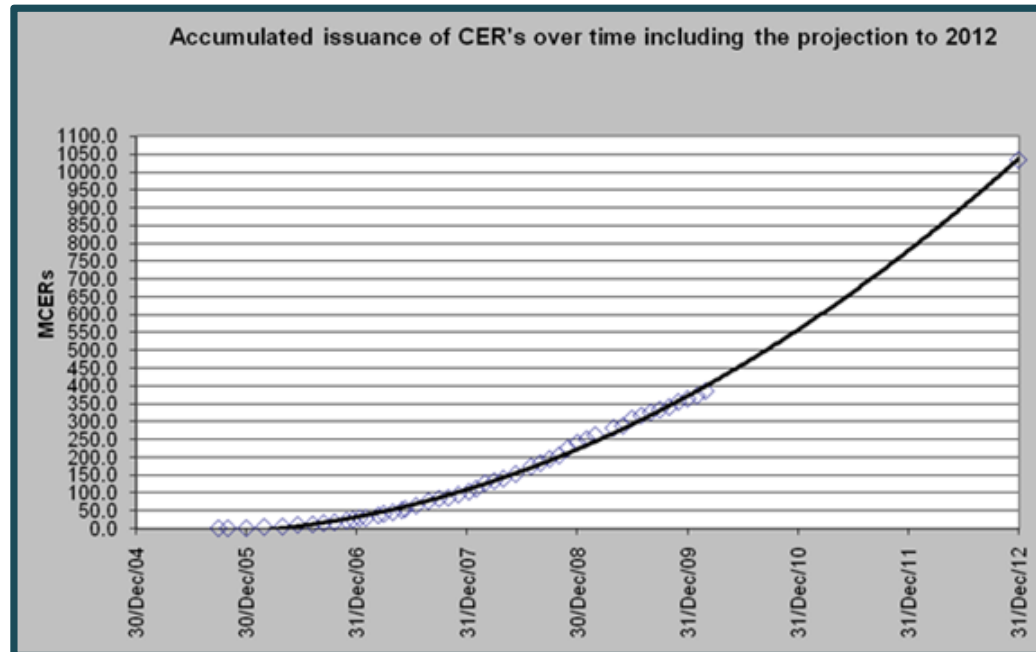
Submitted Copenhagen commitment of 2020 reduction target of 25% below 1990 levels; Government remains supportive of commitment and has approved a bill setting 1-year deadline to draft rules for emissions trading

Australia

Ratified Kyoto Protocol December 2007; Political uncertainty with national effort; however, majority of public supports action on climate change. Facing a vocal anti-climate bill opposition, Government postponed its CPRS until 2013

CER Supply is also constantly shrinking

From April 2009 through February 2010 the average CER issuance equaled 11.3 million credits per month



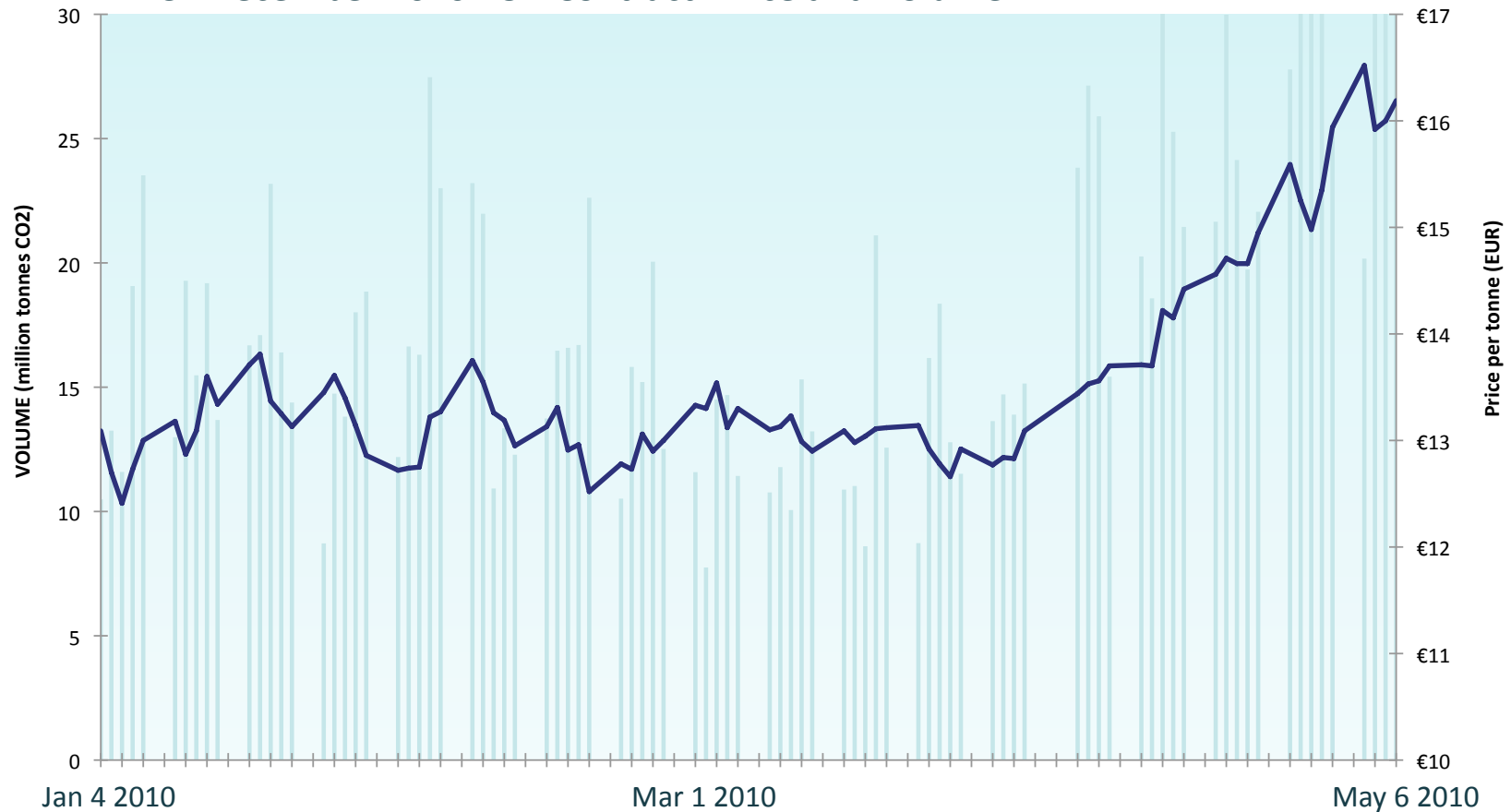
CER Issuance Figures

- Total issuance as of March 1, 2010 was **385.7 million credits**
- These totals include **all project types, including industrial gas projects, from all currently eligible host countries**
- Assuming an 11.3 million credit average through 2012, in addition to the March 1, 2010 total, **projected total issuance would equal approximately 769 million credits**
- **Uncertainty exists as to what project types will in allowed for Phase III compliance**

2010 EU ETS Allowance Values On The Rise

EU economic recovery and increased industrial output have re-energized the allowance market in 2010

ECX December 2010 EUA Contract: Price and Volume



Source: European Climate Exchange

EU ETS Allowance Value: Projected Increases

Through 2010...

“We continue to see the Dec-10 EUA contract at €16/t by June 2010, and now see prompt prices reaching **€18-20/t by y/e 2010** driven by the cost of fuel switching next winter.”

–Deutsche Bank AG, April 2010

Through 2012...

“... we think prompt prices could reach **€25/t by 2012.**”

–Deutsche Bank AG, April 2010

Through 2020...

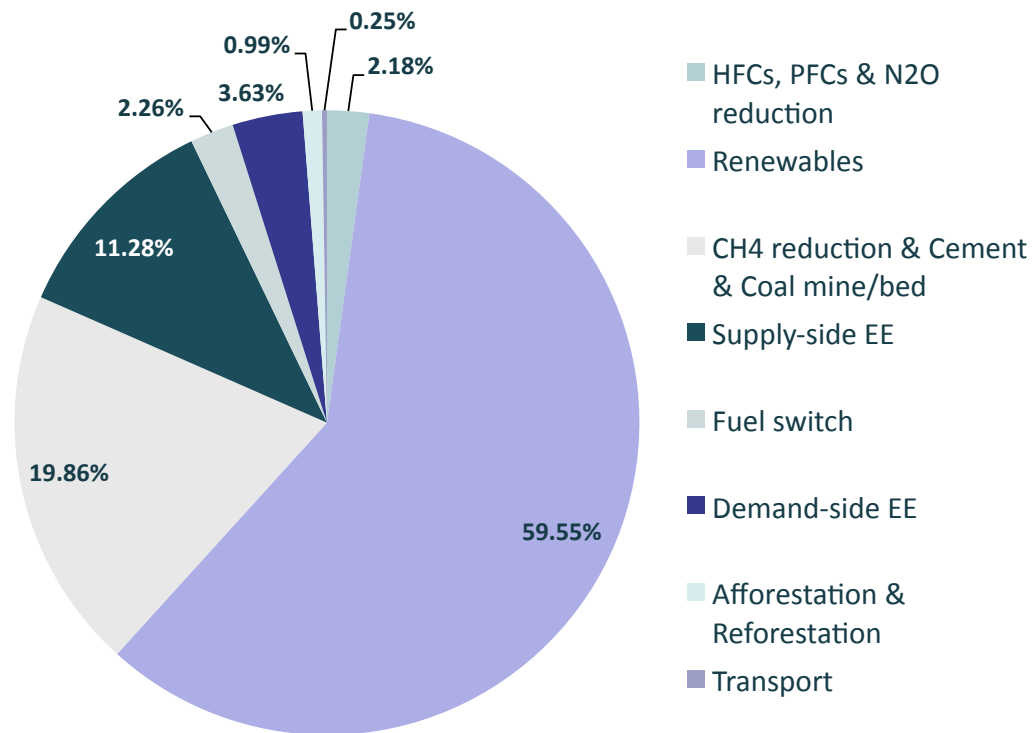
“Instead of having an average phase-three price of **€30-40** (as most analysts presently forecast), my qualitative assessment is that you would jump **above €40 before the end of the period** [with increased EU reductions to 30%].”

–Société Générale, April 2010

Projects Under the UN's Clean Development Mechanism

A wide variety of project types exists under the CDM. Renewables dominant by project type but HFCs dominate CER supply

Percentage of CDM Projects by Category

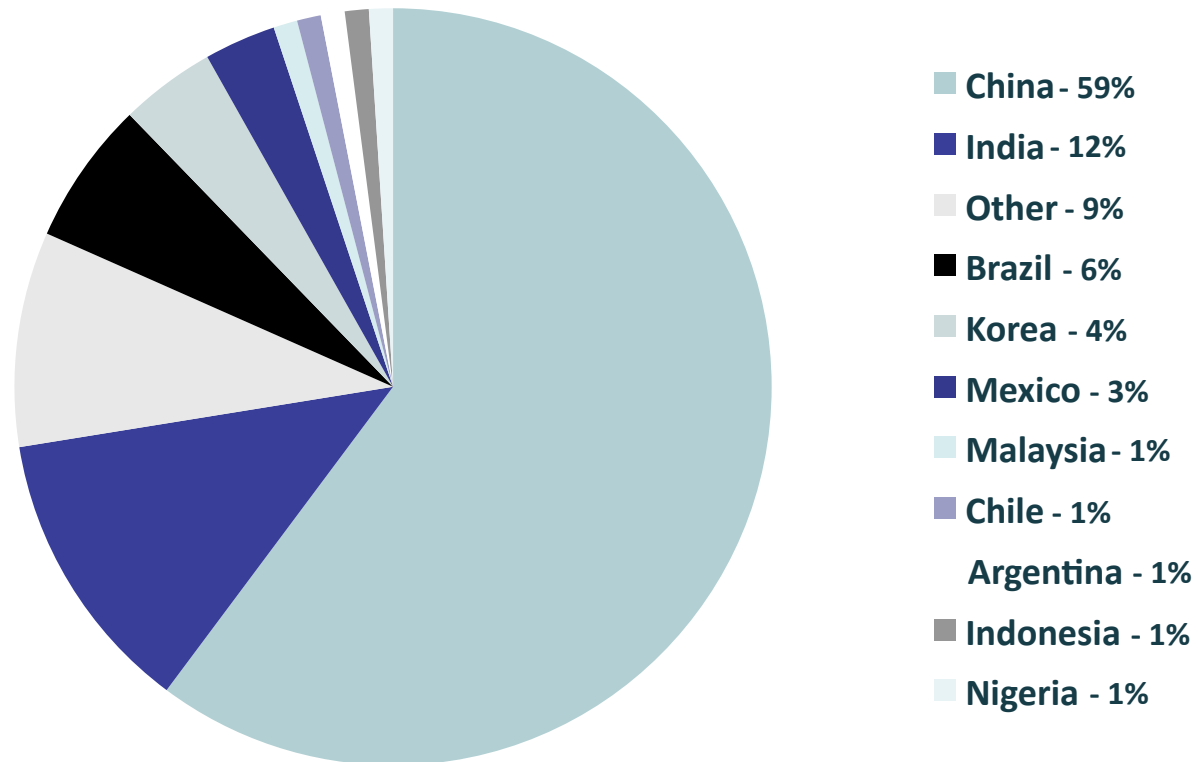


Source: UNEP RISOE

CERs: China Dominates the Landscape

Nearly 60% of annually expected CERs originate in China, as of today. Is China an acceptable supply of offsets for the post-12 market? Many buyers don't think so.

Expected Average annual CERs by Host Country

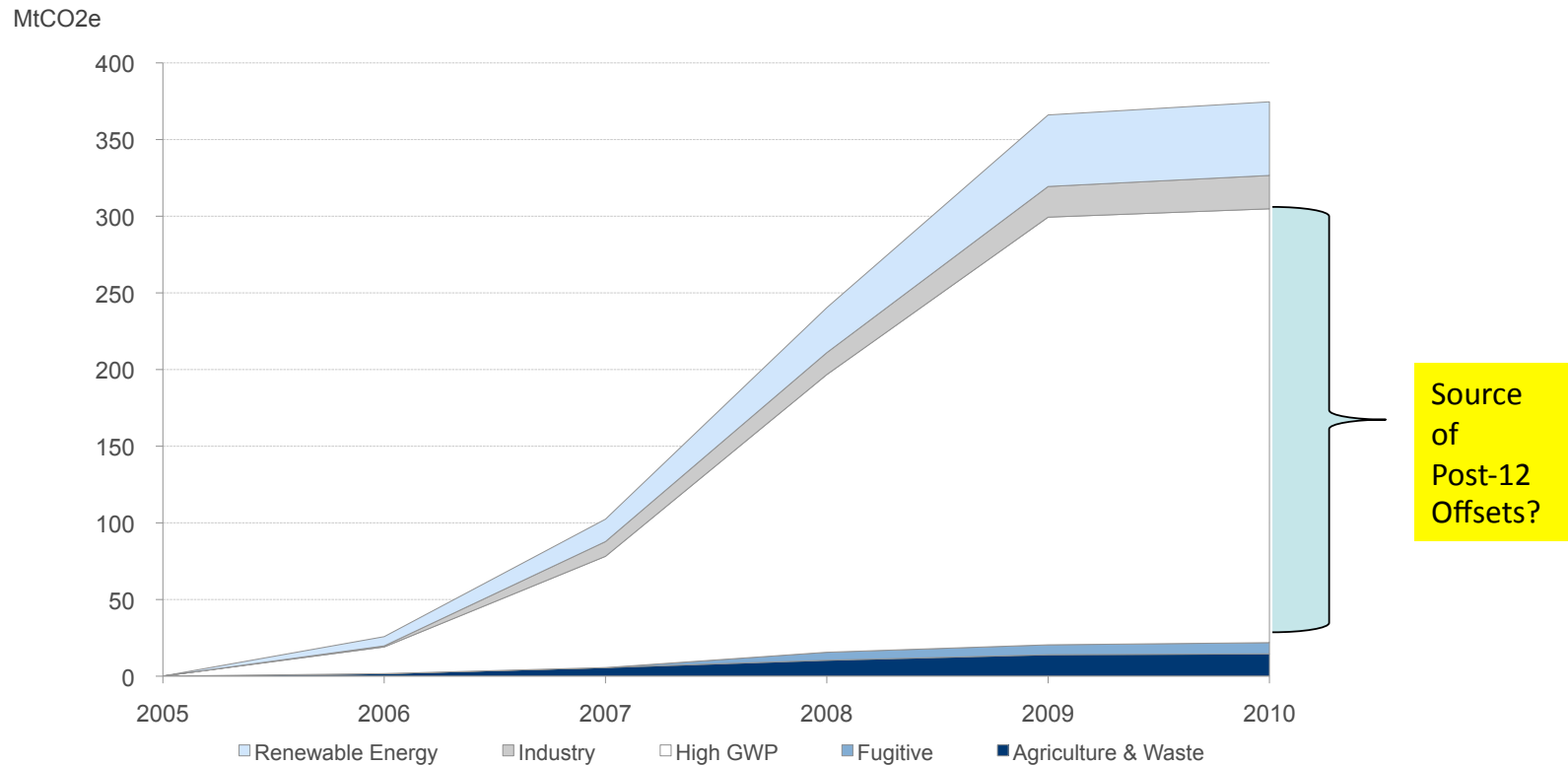


As of March 2010

Technologies of the CDM: High GWP Dominant

High GWP industrial gas destruction projects have dominated the landscape thus far, dominated by HFC23 destruction from production of Teflon and the low Ozone Depleting transitional refrigerant, HCFC22 in China. HFC23 and N2O destruction will not be favored as compliance offsets in a post-12 world.

CER issuance by technology (as of Feb 1 2010)



Source of Post-12 Offsets?

Kyoto Assets: Phase II Market Is Short

Demand Components 2008-2012*	Supply Components*			
	L	H		
Europe ETS Compliance Purchasers	750	900	CDM Registered Project Volumes	~2000
Japanese Industry	350	450	CDM and JI Pipeline Issuance March 1 2010	387
Japanese Government	50	100	Most Optimisitic CER Delivery forecast for Kyoto period (UNEP Risoe)	992
European Sovereign Demand	250	400	<u>Plausible Range of CER Issuance for CERs through 2013 for vintages through 2012</u> <u>Plus estimated Joint Implementation (JI) ERUs of 150-200 million</u>	<u>970-1150</u>
<u>TOTAL DEMAND</u>	<u>1,400</u>	<u>1850</u>		

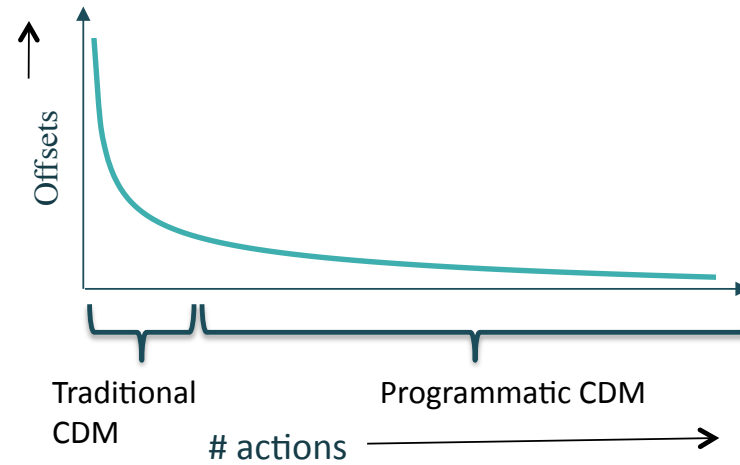
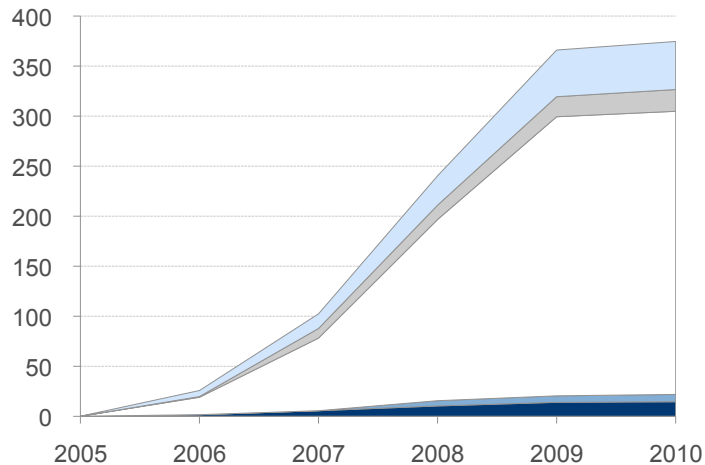
*All numbers are in million tonnes of CO2 equivalent

Assessment of 2008-2012 Market for Kyoto Assets

- The Kyoto offset market is short by 250 to 880 million tons, ensuring demand for CERs from increasingly selective buyers in EU and Japan is sufficient to maintain prices at or above current levels in the post 2012 period even without expanded demand from North American markets
- Over the next two years, market prices for Kyoto assets will be driven by confirmation of severe supply constraints for CERs issued for vintages though 2012 and continued support for the Kyoto offset market by the EU under ETS Phase II and banking into Phase III, and resurgent buying by Japan to meet voluntary commitments to further reduce emissions below 1990 level by 2020.

Source of Offsets Post-2012

The low-hanging fruit of large scale industrial gas destruction projects are gone. "Carbon Gold Rush" is over. Accessing high volume low cost and CERs for post-2012 delivery is hard work – at the frontiers of carbon finance



Depletion of Traditional High Volume Low Cost Offset Pool

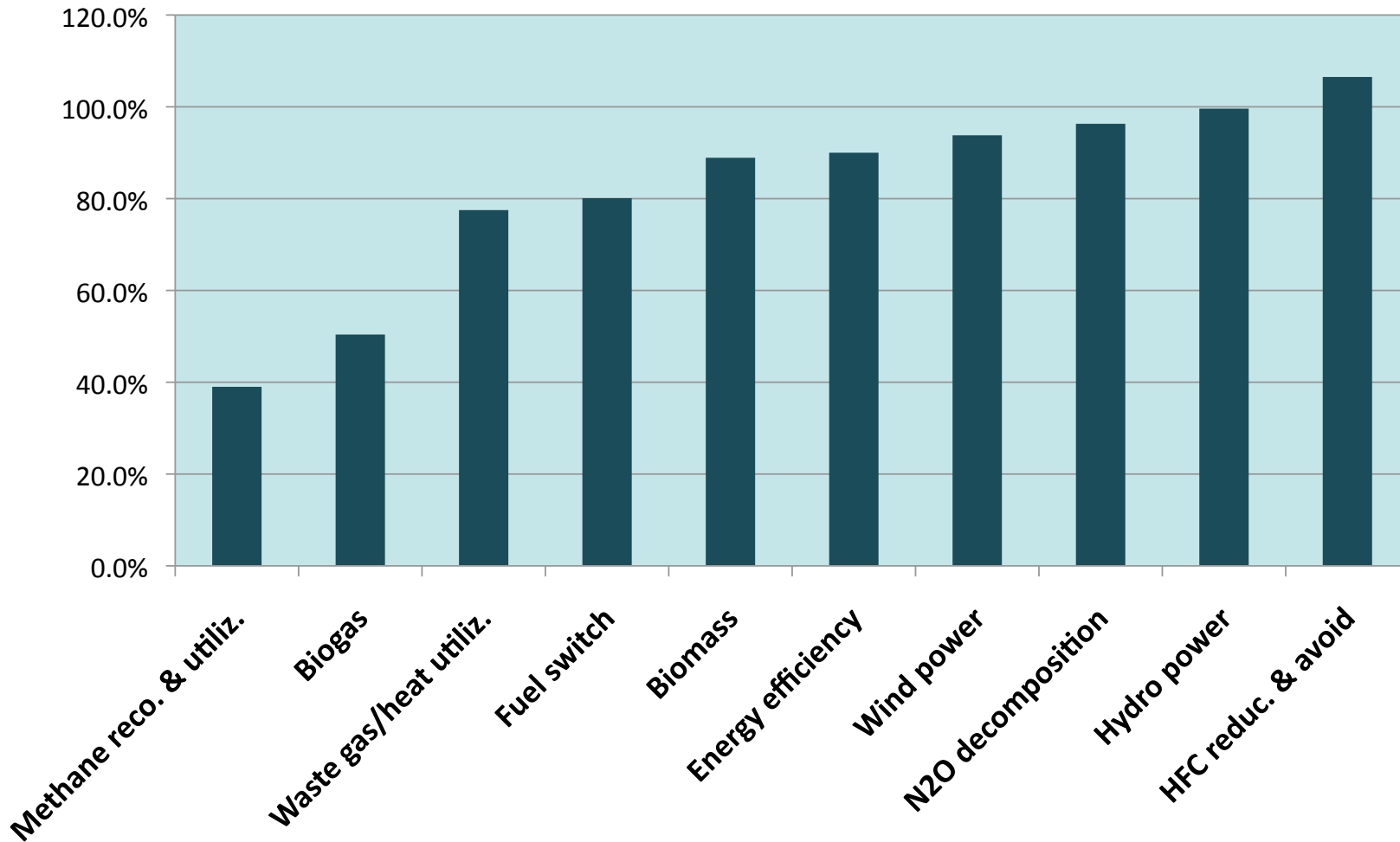
- HCFC22, N2O: almost all large deals done. Assets not favored for trade post-12
- Industrial Energy Efficiency – Iron and Steel, Cement: most major plant in China and India is covered by existing offset projects. Trade in these offsets is likely to be restricted into the US and EU directly or indirectly due to competitiveness reasons
- Fugitive gases: fell way short of promise. Difficulties in proving additionality, and getting Russian gas loss reduction carbon into trade.
- Large Hydro: severely hampered by World Commission on Dams guidelines requirements

High Volume Offset Supply Sources Post-2012

- Programmatic CDM:
 - Large programs of energy efficient appliances – CFLs/LEDs, modern high efficiency wood and charcoal stoves
 - Large programs of distributed renewables: Solar Water Heaters, Solar PV Lanterns, biogas
- Replicated Coal/Oil/Gas retrofits in industrializing countries
- Carbon Capture and Storage in oil, gas and coal industry
- Sectoral Crediting - aligned with carbon intensity targets
- REDD+ : reduced emissions from avoided deforestation and afforestation

Methane Recovery and Biogas: Risky Business

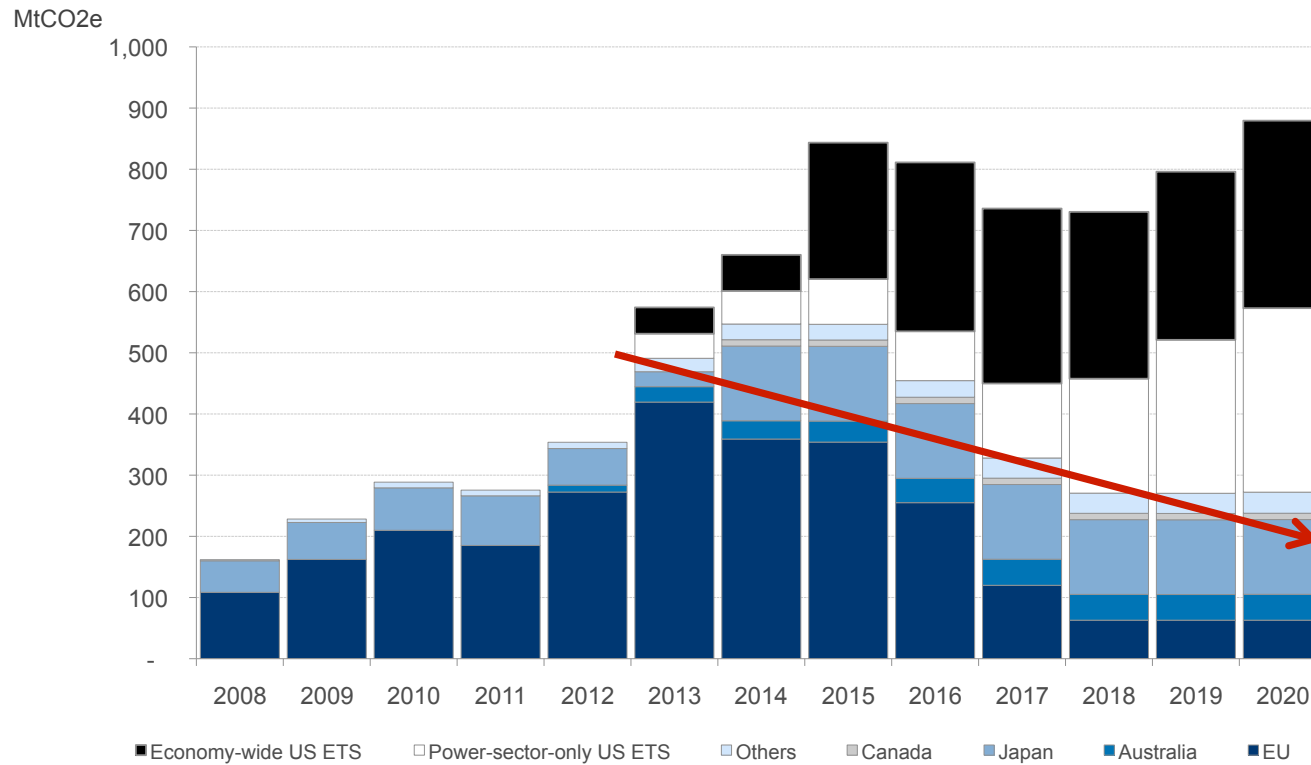
CER Issuance Rate Analysis by Project Type – all types with +15 projects as of April 2010



Source: IGES CDM Project Database

International Offset Demand

Demand for international offsets by buyer, 2010-2020. Market is seeing rapid collapse of demand as hopes of a US Climate Bill fade in face of political realities



Source: Bloomberg New Energy Finance

Carbon offsets in EU ETS: Phase III (2012-2020)

Offsets from emission reduction projects in third countries are limited to 50% of EU-wide reductions over Phase II & III

- For existing installations, this represents a total of 1.6 billion credits from 2008-2020.
- All credits must be generated by projects approved by the CDM or JI, i.e. CERs or ERUs.
- New sectors/entrants in Phase III of the Scheme will be able to use credits up to a minimum of 4.5% of their verified emissions during 2013-2020, with the aviation sector having a minimum access of 1.5%.

Regardless of the status of an international agreement, eligible emission reduction project types in EU ETS Phase III include:

- **Only the project types eligible under Phase II**; this excludes nuclear and temporary forestry CDM/JI credits and places certain conditions on hydroelectric projects bigger than 20 MW.
- **Beginning January 2013, further restrictions on project types may be implemented for quality control.**
- **Projects located in LDCs will be eligible from 2013 until 2020**, contingent upon them either ratifying an international treaty or a bilateral/multilateral agreement with the EU.
- While CERs/ERUs cannot be held, or “banked”, by Member States between Phase II and III, under certain scenarios emitters will be able to exchange through 2015 Phase II credits, or utilize credits generated by projects established with the CDM before 2013, towards compliance obligations in Phase III.

In the absence of an international agreement by Dec. 2009:	Once an international agreement has been reached:
<ul style="list-style-type: none"> ▪ CERs/ERUs from countries with bilateral/multilateral agreements with the EU can be used for compliance in Phase III, but cannot exceed 50% of the overall required reductions under the cap; ▪ CERs from projects in Least Developed Countries (LDCs) are eligible regardless of whether; ▪ The EU emission reduction target for 2020 is 20% below 1990 levels, unless a more stringent international agreement is reached; 	<ul style="list-style-type: none"> ▪ CERs must be generated in countries that have ratified the agreement, beginning 2012; ▪ The EU may increase its emission reduction target to 30% below 1990 levels, contingent upon a similarly stringent international agreement; ▪ CERs worth up to 50% of the EU’s additional reduction commitment in Phase III may be used for compliance; ▪ All project participants must be headquartered in a country party for a project to be eligible;

Japan: Ready to Mitigate

“As we all know, the global community must address the issue of rising sea levels and rising temperatures. In order to address [climate change] there seems to be a consensus today ... that we have to transform our society **from carbon intensive one to a low carbon society.**”

-Kazuo Kodama, Japan Foreign Affairs Press Secretary

Japan... Steep Global Commitment

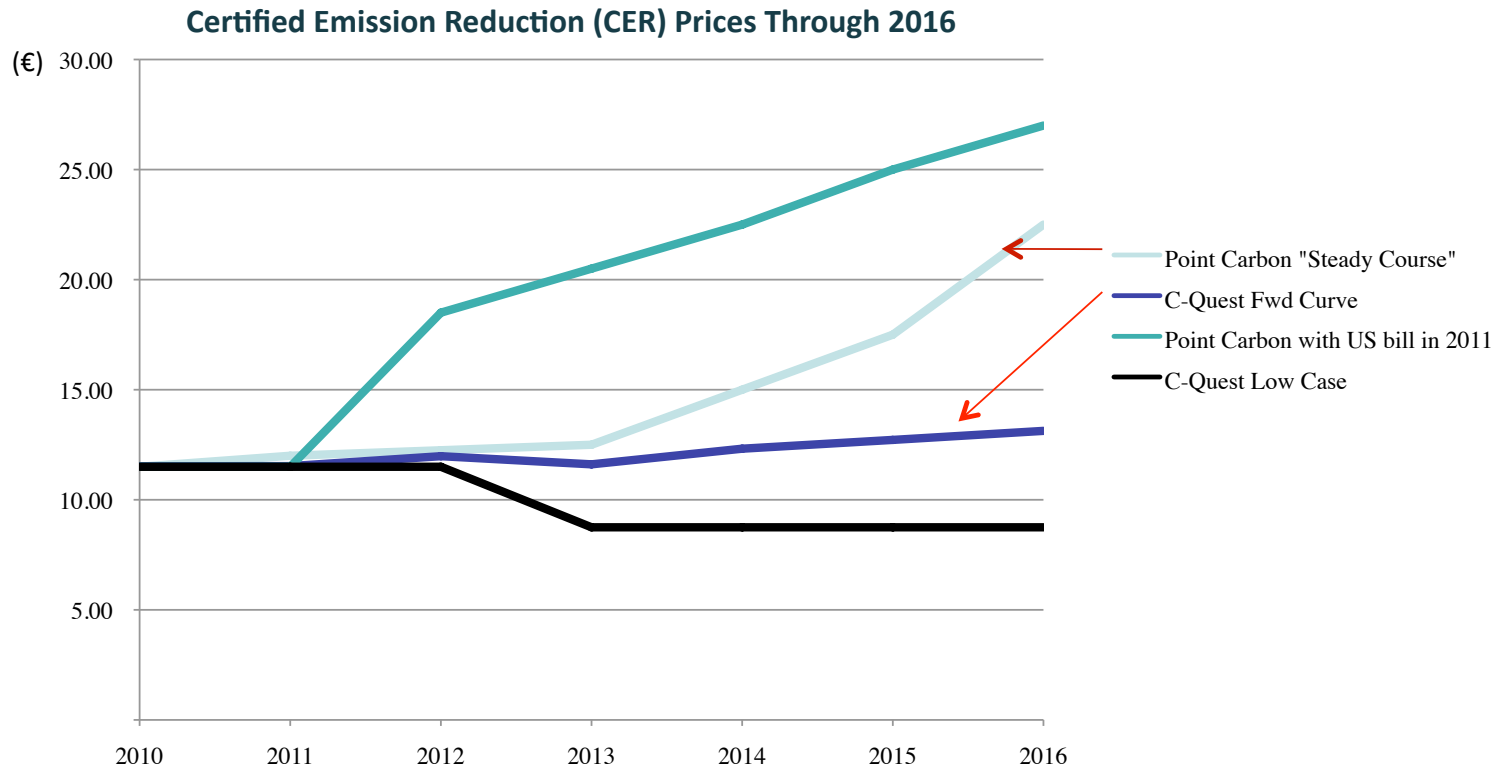
- The Prime Minister has committed to GHG reductions of **25% below 1990 by the year 2020**, contingent upon comparable actions from other major GHG emitters

And... A Legislative Solution

- The Cabinet has approved a measure, still subject to Parliament, that would do the following:
 - Cap GHGs from multiple industries
 - Allow for yet-to-be-finalized mechanisms such as cap-and-trade and carbon intensity reduction
 - Dictate that the draft design of the GHG reduction mechanisms be completed within one year of the bill's passage
 - Introduce an enhanced renewable energy target of 10% by 2020, with feed-in tariff provisions
 - Increase new nuclear reactor construction

CER Prices Through 2016: Where next?

The United States' adoption of federal climate legislation would likely drive tremendous demand for UN credits



Pricing for Post-12 Offset Supply

- Many investment Banks feel over-exposed to post-12 risk and most are not buying;
- Commercial Banks , Commodity Funds, and High Net Worth Individuals are intrigued by carbon as a commodity, but are wary of market risk;
- European regulated entities are buying but are wary of EU eligibility rules;
- Japanese utilities are buying again, but bargain hunting

Actual Bids for high quality post-12 CERs on the table right now.

Japanese entity:

- 8 Euros fixed for first 200,000, in exchange for 80% of spot for subsequent 200,000

European Entity I:

- 75% floating (of spot at issuance) with a EUR 6.85 floor and EUR 18.00 cap

European Entity II:

- 8.25 Euros fixed with 45% of difference between the floor and spot

Bottom Line:

- 1. No floor price commitment beyond Euros 8 and change!**
- 2. Sharing of upside is not helpful for investors as this does not cover post-12 market risk.**
- 3. Demand is in small quantities – diversifying project and regulatory risk**
- 4. A floor at Euros 8 reduces the number of financially viable projects substantially, leaves lots of investment capital in the Bank!**

Challenge and the Opportunity of the GMF

Horns of Dilemma:

1. There is significant capital wanting to get some “exposure” to carbon as a commodity as part of low carbon futures investing, but,
2. No price visibility for post-12 CDM offsets, and great policy uncertainty following Copenhagen and Massachusetts in Kyoto markets and the US leads to weaker demand, lower prices, and lower overall investment in carbon offsets for delivery post-12;
3. **Whereas**, insight on “acceptable” offsets to meet compliance needs post-12 suggests that compliance-eligible offset supply will shrink greatly, sustaining prices above Euro12 in the post-12 period. This supply shrinkage is further exacerbated by declining investment today.

Key Take-Aways:

1. At current low forward prices, only the lowest cost, lowest risk and most salable carbon offset projects get financed. These do not include methane projects except for fugitive gas reduction;
2. The GMF floor of Euros 12 for methane avoidance projects would result in:
 - more investment in **absolute terms** as well as
 - more investment in **Methane avoidance project activities per se**.