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Opportunities of Carbon Finance for Solid Waste Management & 3Rs

Nadine Dulac
Senior Environmental Specialist
Belgium Technical Cooperation

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Kyoto Protocol & Beyond

- Under the Kyoto Protocol, 38 Developed Countries and Economies in Transition (Annex I) agreed in 1997 to **reduce their GHG emissions**
- **More recently, serious commitments have been made up to 2020, which is beyond the Kyoto Protocol .**
- And at COP 15, even longer term commitments have been made until 2050 including commitments from developing economies

→ **All these commitments set out the market demand up to 2020**

Group of countries	Reduction target by 2020 from 1990,'00,'05 or '06
Norway, South Korea	30%
EU, Canada, Switzerland, China	20 %
US	17 %
Japan, Australia, Russia	15%



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Carbon Markets are driven by Policy Decisions

The carbon market trades emissions under **cap-and-trade schemes** or with **credits** that pay for or offset GHG reductions.

In other words, this means that beyond **significant amount of domestic actions** to reduce emissions and reach the goals defined in the Kyoto Protocol, **a country can use trading to purchase reductions in another country to achieve compliance with its Kyoto obligations.**

Trading options include:

- Buying emissions allowances (AAUs) from other Annex-I countries which are below their Kyoto cap known as the International Emissions Trading – with the best example of mandatory cap and trade EU ETS
- Purchasing reductions (CERs/ERUs) from projects so called (Clean Development Mechanism – CDM) for projects implemented in developing countries
(Joint Implementation – JI) for projects implemented in economies in transition



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Carbon Markets fragmented

Under Kyoto framework –Compliance Markets

- EU ETS domestic **with allowances**: The ETS is mandatory across the European Union (EU). The multisector cap and trade scheme includes about 12,000 factories and utilities in 25 countries. Each member state sets its own emissions cap, or national allocation plan, based on its Kyoto and national targets. Countries then distribute allowances totaling the cap to individual firms. Even though countries distribute their own allowances, the allowances themselves can be traded across the EU. Independent third parties verify all emissions and reductions.
- Kyoto signatories outside the EU ETS
- CDM **project based** transactions and JI project based transactions

Non Kyoto Initiatives

- Regional Greenhouse Gas Initiative (RGGI): States in the Northeastern United States have also passed carbon regulations for stationary sources
- Western Regional Climate Initiative: California is a leading participant in a regional initiative to reduce its emissions, along with several Canadian Provinces.

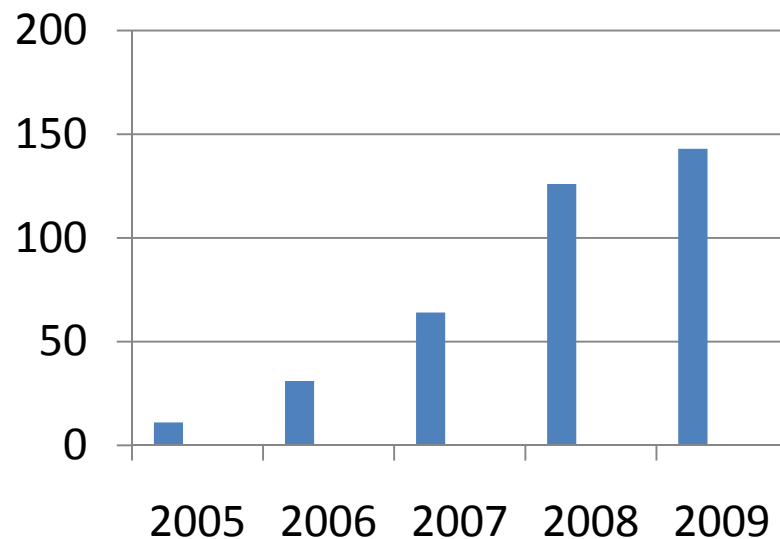
Voluntary Markets



The Value of Carbon Transactions

Billions of US\$

(Source: State and Trends of the Carbon Markets 2010, World Bank)



The carbon markets have grown very rapidly
From about US\$ 30 billions to US \$ 143 billions
in 4 years implementation

And there is more markets to come in the future with planned compliance markets and new industrial sectors to be included under a mandatory framework such as:
Inclusion of all developed countries such as Australia, Japan and new sectors like aviation, aluminium and chemicals

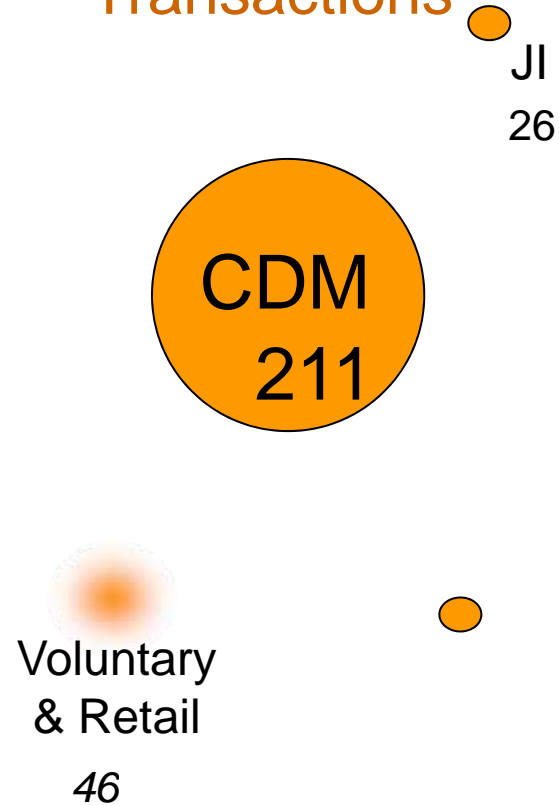


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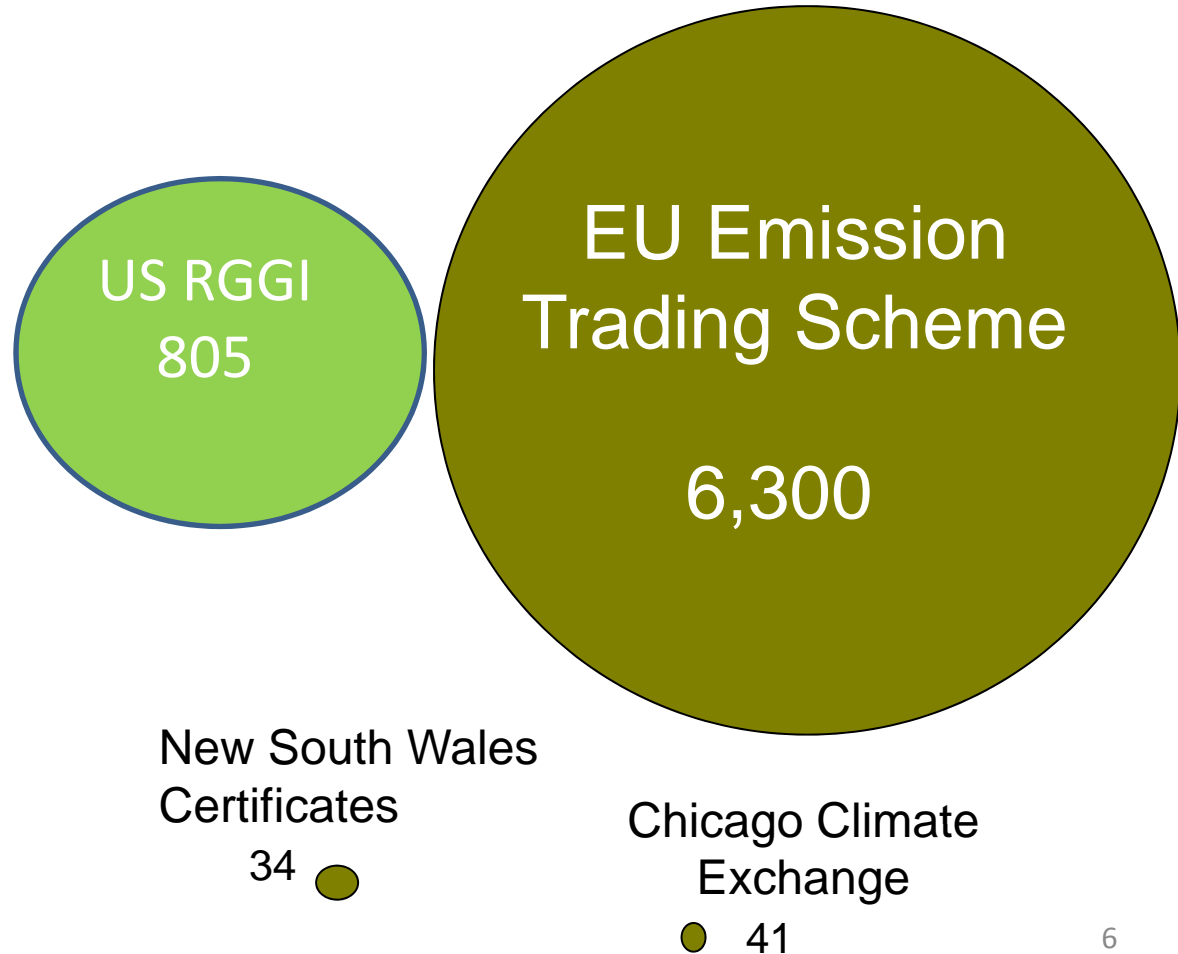
Global Carbon Markets

Volumes in 2009 (in MtCO₂e)

Project-Based Transactions



Allowance Markets





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The Clean Development Mechanism

- **The CDM has two clear objectives:**

- To assist developing countries in **achieving sustainable development**. It enables developing countries to participate in joint greenhouse gas (GHG) mitigation projects

- To assist industrialized countries in **achieving compliance with their quantified emission limitation and reduction commitments** (under KP).

→ The gains to the developing country host parties are in the form of finance, technology, and sustainable development benefits.

→ The basic requirements of a CDM project are therefore twofold: it has to meet certain measurable environmental and social criteria, and it has to fit in with the host country's development priorities (CDM project proposal must receive the approval from the host country).



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CDM Opportunities

- There are 15 sectors eligible along with more 120 methodologies available
- Projects can be developed in different sizes: small scale, large scale and programmatic
- Small scale projects required simplified modalities and procedures but apply for projects that directly emit less than 60 kilotonnes of carbon dioxide equivalent annually
- CDM is working but yet there are shortfalls such as it is a lengthy and complex process

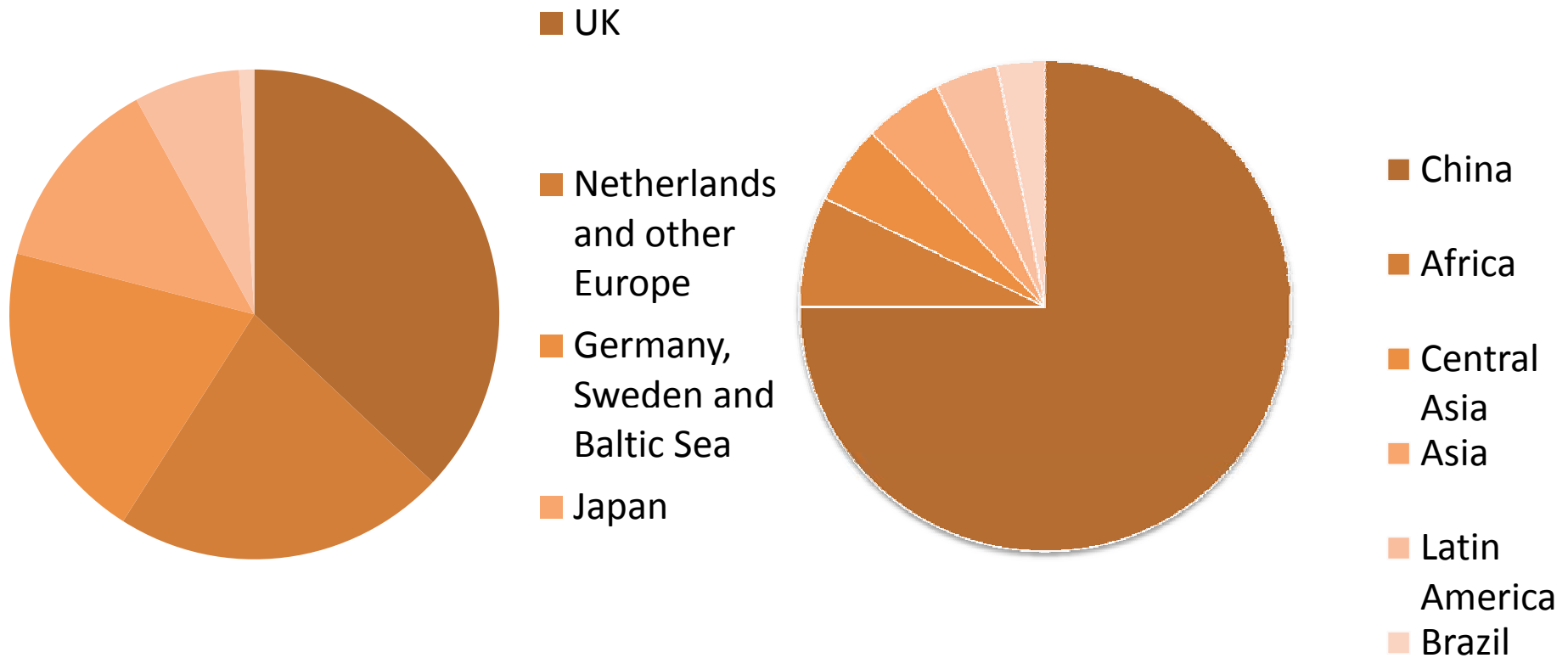


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Buyers & Sellers in 2010

(Source: State and Trends of the Carbon Markets 2010, World Bank)

% shares in volumes



Biggest Buyers are 25 largest companies accounting for about 50% of the EU 25 from 10 sectors (power generation, steel, iron, ceramics, paper, cement...)



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CDM in Asia Region

- Though it is quite new, most countries host CDM projects.

Group of countries	Number of CDM Projects, all Sectors	Number of projects in the waste sector
China	2192	116
Indonesia, Malaysia, Thailand, Vietnam	119 <X<139	24<X<90
The Philippines	80	44
Bangladesh, Cambodia, Lao PDR, Mongolia, Singapore	1<X<7	0<X<4
Myanmar	0	NA



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CDM, Waste Sector and Sustainable Development

- Until now, **some organizations have voiced concerns about the way CDM works in the waste sector:**
- In general, **there are more projects related to LFG than composting** and we know that in addition to the organic fraction disposed at landfill dumps, other usable fractions are disposed and destroyed, such as paper, metals and plastics. These fractions could be recycled and reused.
- Another comment is that, despite rehabilitation of old dumps into controlled landfill with gas recovery has positive environmental improvements, **there is little social improvements like the creation of new jobs**. Sometimes, **waste pickers are asked to move away without other alternative**. Sometimes, **the recycling informal sector can not operate anymore**. Yet, it is estimated that in developing countries, about 1% of the population is made of recyclers and their roles is fundamental within the solid waste management chain.
- **Finally, when industry is deprived of recycled materials, it increases the demand for virgin materials, which are far more energy-intensive and pollute to produce.**



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CDM and 3Rs

Aware of these remarks, **the World Bank launched in 2008 the preparation of a new CDM methodology for the activity of waste recycling & this methodology was approved in March 2010.** It is named Recovery and Recycling of Materials from Solid Waste (SSC III A J)

This methodology comprises **activities for recovery and recycling of plastics (HDPE & LDPE) materials to process them into intermediate or finished products that can be used instead of raw material**

Emission Reductions can be claimed for the difference in energy use for the production of plastics products from virgin inputs versus production from recycled materials





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Recycling Methodology



Carbon Revenues:

- **Cover the O &M costs associated with the Resources Recovery Centers.**

Project components:

- SWM project in Buenos Aires, Argentina with creation of 8 Resources Recovery Centers operated by waste pickers cooperatives (keep revenues from the sale of the recyclables) and the municipal authority purchased the machinery and provide installation and land.



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Future Outlook and Tendencies

- **Tendencies of the Carbon Markets:**

Carbon market has gained strong momentum and is 'here to stay' despite the economical situation: Inclusion of all developed countries such as Australia, Japan and new sectors like aviation, aluminium and chemicals will create demand

- **Tendencies in the CDM:**

Continuation of CDM in LDCs with :

Programmatic approach versus project based CDM

CDM Methodology must be developed for paper and metal fractions

Greater eligibility with more sectors such Carbon Capture and Storage –CCS and Reduced Emissions from deforestation and degradation-REDD

Trend towards high quality credits, based on **Additionality, Verification, Registration and Permanence**

→ Rules and procedures may need to change to strengthen further market growth

→ Capacity building remains a key requirement whatever be the 'new regime' be in COP 16



More info

- State and Trends of the Carbon Markets 2010
- Status and Barriers of CDM projects in Southeast asian countries, UNEP 2009
- UNFCCC CDM BAZAAR
- The full methodology document is available online at unfccc/cdm/methodology/ SSC III AJ

THANK YOU