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Innovation



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# Carbon Funds for Regions

An innovative tool for decarbonisation

17th May 2011

## 1. Underlying mechanisms today

## 2. What does investing in carbon assets mean?

## 3. Structuring carbon funds for Regions

- ▶ What projects ?
  - Renewables, fuel switch, waste, water and manure management, EE, methane avoidance, industrial gases,...
- ▶ Where ?
  - Developing and least developed countries.
  - To date, 75% credits come from China and India.
- ▶ Requisites ?
  - Additional : not compulsory, not (sufficiently) profitable or objective barriers.
  - Emissions reductions vs. a defined and quantified baseline.
  - Measurable, reportable, verifiable emissions.
- ▶ Credits : CERs (Certified Emission Reductions )
- ▶ Buyers and pricing ?
  - Compliance buyers, mainly organisations with sites under EU-ETS.
  - A few Annex 2 countries for their Kyoto compliance.
  - Pricing follows EUA with discount reflecting market equilibrium.

## Example : Tangier wind farm

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- ▶ 165 wind turbines delivering **140MW** power
- ▶ Owned by ONE, the incumbent electricity utility
- ▶ The biggest African wind farm at the time it was commissioned (2010)
- ▶ **370.000 TCO<sub>2</sub>eq/year** avoided, 2,6MT per 7 year CDM period.

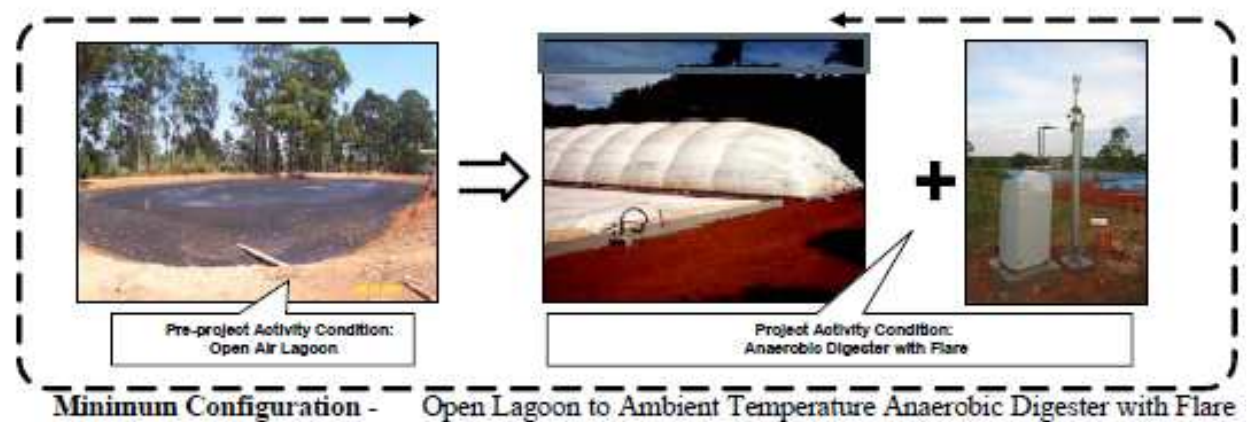


## Exemple : Sadia – GHG capture and combustion from swine manure management systems

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- ▶ In 2003, Sadia, a giant food production company in Brazil, decided to launch a pilot project of capture and combustion of methane from swine manure, on 3 of its largest farms.
- ▶ This pilot project avoided **24 277tCO<sub>2</sub>eq emissions per year** during 10 years.
- ▶ Implementation of the technology on **800 farms** of various sizes resulted in **290 000tCO<sub>2</sub>eq emission reductions in 2007**.



- ▶ What projects ?
  - Renewables, fuel switch, waste, water and manure management, EE, methane avoidance, industrial gases,...
  - In the EU, outside ETS sectors (no double count)
- ▶ Where ?
  - Annex B countries : EU, Russia, Japan, Ukraine, Australia, New Zealand,...
  - Out of these 34 countries, 14 have actually implemented JI.
- ▶ Requisites ?
  - Additionnal : not compulsory, not (sufficiently) profitable or objective barriers.
  - Emissions reductions vs. a defined and quantified baseline.
  - Measurable, reportable, verifiable emissions.
- ▶ Credits : ERUs (Emission Reduction Units)
- ▶ Buyers and pricing ?
  - Compliance buyers, mainly organisations with sites under EU-ETS.
  - A few Annex 2 countries for their Kyoto compliance.
  - Pricing follows CER (thus EUA) with a small discount due to lesser liquidity.

## Example : Coop de France déshydratation swathing project

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- ▶ Alfalfa is lain to dry flat instead of in swathes.
- ▶ Thus an extra 3,5 pts of humidity are lost.
- ▶ Pre-dried alfalfa must then be lain back into swathes.
- ▶ Implemented on **16 sites** for **317 750 tCO2eq** emission reductions between 2008 and 2012.



Flat drying process

Extra swathing process



## Exemple : Coop de France déshydratation Fuel switch project

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- ▶ Fuel switch from imported coal to locally produced biomass, in the alfalfa dehydration process.
- ▶ Implemented on **15 sites**
- ▶ Estimated emission reductions of **384 901 tCO<sub>2</sub>eq** between 2008 and 2012;



Coal +  
biomass mix



Miscanthus



Wood pellets

## Example : Fédération nationale du bois Biomass boilers project

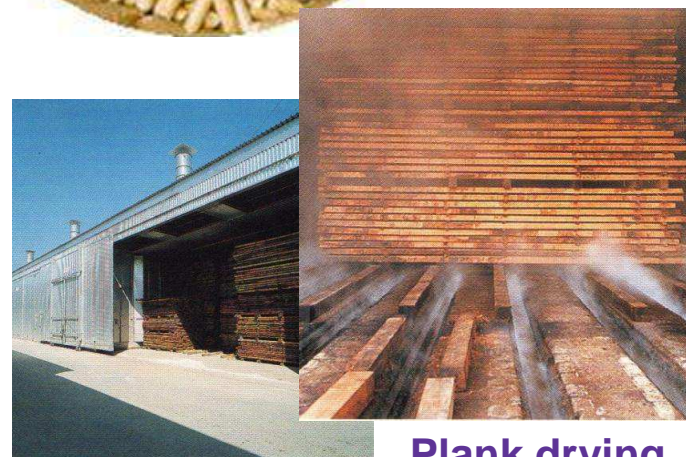
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- ▶ Fuel switch from gas to biomass in the wood drying process.
- ▶ Implemented on **9 sites**
- ▶ **205 593 T CO<sub>2</sub>eq** avoided between 2008 and 2012.
- ▶ Carbon credit revenues represent **20% of total investment.**



Wood pellets



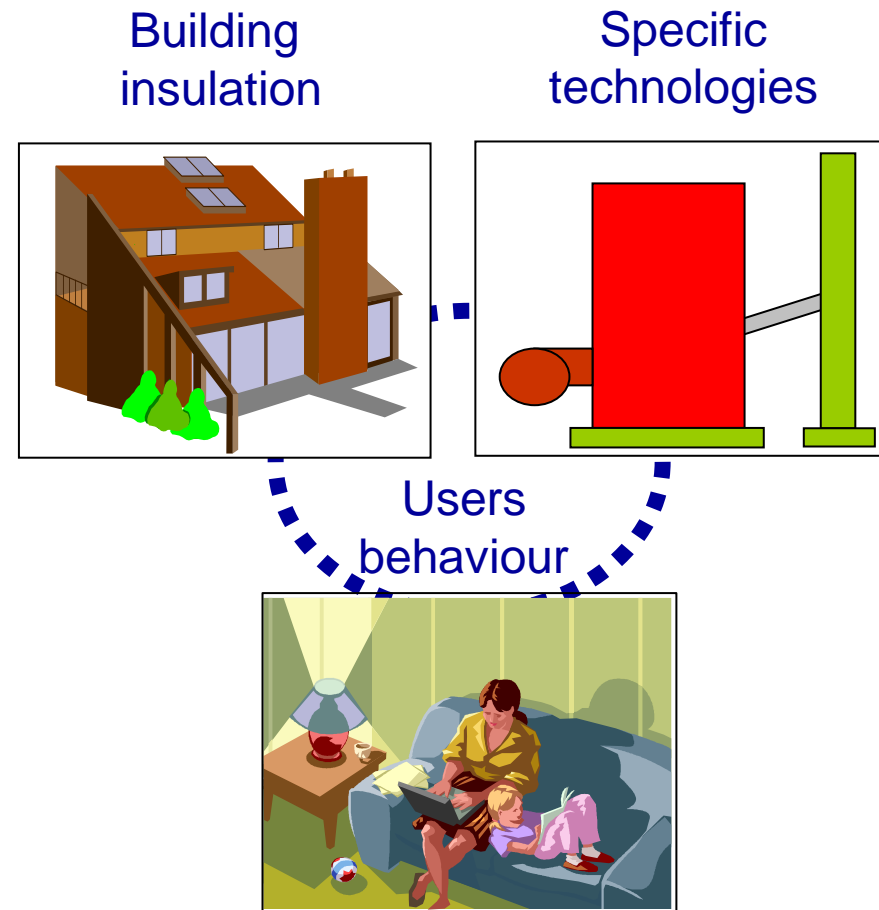
Plank drying

## Example : EWE EE bonus for households

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- ▶ Program coordinated by EWE, a German energy provider.
- ▶ Several options available for households :
  - Renewables, boiler fuel switch
  - EE : insulation, regulation
  - Change in behaviour
- ▶ Participating household receives financial incentive in proportion of achieved emission reductions, monitored through energy bill
- ▶ **84000tCO<sub>2</sub>eq** reductions expected between 2008 and 2012.



- ▶ What projects ?
  - Renewables, forestry, agriculture, domestic EE or fuel switch,...
- ▶ Where ?
  - No limit, but more complicated in Annex 2 (developed) countries, because of interactions with Kyoto registries.
- ▶ Requisites ?
  - Many different standards exists.
  - Most sought standards (Gold Standard, VCS) request quality level similar to CDM/JI.
  - Other standards add social and/or other environmental requisites.
- ▶ Credits : VERs (Verified Emission Reductions)
- ▶ Buyers and pricing ?
  - Large, often international, companies.
  - Public authorities (governments, local authorities).
  - Pricing extremely variable, from less than 1€/T up to above EUA price for certain (rare) Gold Standard projects.

## 1. Underlying mechanisms today

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## ► Buying primary credits :

- The carbon investor buys forward **non-issued (primary) credits**, from project promoters or other investors, respectively through Emission Reductions Purchase Agreements (ERPAs), or Secondary ERPAs (SERPAs).
- In doing so, the carbon investor bears part of the risks related to credit issuance and pricing : technology, construction, finance, operation, regulation, eligibility, market risks,... Risk sharing is specific to each ERPA.
- Payment generally on credit delivery, with a pricing scheme specific to each ERPA : fixed, variable (% of CER or EUA price), floor + upside, or any combination of the preceding.

## ▶ Selling credits... :

- The carbon investor usually sells the credits, once issued, on the secondary market, or hedges its position with forward sales, with a margin reflecting the risks it bore.
- The carbon investor can also sell the credits to another investor through a SERPA (cf. supra).

## ▶ ...or using credits for compliance :

- Some companies under EU-ETS are also carbon investors. These investors might prefer to use the credits they bought for their compliance.

# The carbon investor value

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- ▶ Leveraging project finance :
  - With an ERPA signed, carbon revenue becomes a financing resource for the project.
  - Some carbon investors provide advance payments on part of carbon credits to be issued.
  - Carbon revenue may leverage debt financing, especially with high grade carbon investors.
  
- ▶ Bringing liquidity to the market :
  - Credit offer suffers from uncertainties : projects often underperform or are delayed, some get rejected,...
  - Credit demand is also uncertain : depends on macroeconomic situation, weather, energy prices and margins, regulatory decisions,...
  - Without intermediaries such as carbon investor, direct transactions would remain limited.

- ▶ A carbon fund is an investment fund that focuses on carbon assets.
  
- ▶ Investing through a fund has many advantages :
  - Investment pooling
  - Transaction cost sharing
  - Risk sharing and diversification
  - Carbon asset manager expertise
  
- ▶ On the other hand :
  - Investor must accept losing some control
  - Governance can become complex
  - Conflicts of interest must be prevented and managed

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# Why project mechanisms for Regions ?

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- ▶ **JI & CDM : a whole new project revenue source**
  - paid for by the private sector (EU ETS sites)
  - at no cost for public budgets (can replace subsidies)
  - whose stream is under control of the States and the UNFCCC.
  
- ▶ **Other mechanisms may be developed (NAMAs, decentralising carbone balance sheets)...but won't be up and running any soon.**

# Why carbon funds for Regions ?

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- ▶ Regional authorities typically know how to identify mitigation projects on their territory and provide technical assistance (feasibility studies), but rarely have enough resources to finance them.
- ▶ Carbon investors typically have funds to invest but lack resources to subsidise projects' opportunity identification and development.
- ▶ Regional carbon funds could become a tool to bring together and optimise public and private funding and know-how to foster mitigation projects.

# Carbon fund structuring

## 1. Market study

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- ▶ The first step is a regional market study
- ▶ Estimating the project potential is of prime importance : What is the emissions reduction potential ? In which sectors ? Who are the key stakeholders ? What technical assistance is needed to develop these projects ?
- ▶ Estimating credit demand : would regional compliance or voluntary buyers, or local authorities, be interested in regional credits ? With a premium ?

# Carbon fund structuring

## 2. Fund characteristics

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- ▶ Based on the market study, the structuring process will address the following questions :
  - What kind of credits, projects, sectors ?
  - What emissions reduction target ?
  - What size ?
  - What lifespan ?
  - Which investors ? Manager ? Partners ?
  - What governance ? What investment policy ?
  - What business plan ?
  - What technical assistance facility ?
- ▶ Depending on national laws, Regions may or may not become a carbon investor.

## Conclusion : how Regions can promote project mechanisms

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- ▶ Spread knowledge and know-how of carbon finance to existing project developers.
- ▶ Identify and promote projects that may benefit from carbon revenues.
- ▶ Integrate carbon revenues with regional policies.
- ▶ Promote the development of a regional carbon fund.
- ▶ Invest in regional carbon fund.

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**Thank you for your attention**

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