



CDM projects in South America

SUSTAINABLE TECHNOLOGY AT WORK

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Overview

- General situation in Brazil
- Initiative started by EUBIA with ETA
- Conclusions



General situation in Brazil

- Growing economy
 - GDP/inhab. +13% between 1990 and 2000
 - “Two countries”: Belgium/India
 - 5.6%/yr ave. growth energy consumption (Goldemberg, MME, 2001)
 - 13% of USA prim. energy consumption/inhab.
- 90% of electricity from hydro
- 60% of energy from renewable sources



General situation CDM

- Brazil is signatory of the UNFCCC
 - Obligation of producing the Inventory 1994
 - What is emitted?
 - 1030 Mton CO₂, 75% in change in land/forest use
 - 13 Mton CH₄, 85% agro/animal, eq: 273 Mton CO₂
- How does this relate to our CDM?



How does this relate to our CDM?

- Sugar cane activities (fuel ethanol)
- Much biomass unused → residues in field are burned (CO_2) or decay (CH_4)
- Solution proposed
 - Upgrade biomass but keep it simple
- Our approach
 - Technology transfer
 - Form a group but ... all should see clear benefits



And our CDM?



- Co-firing of agri-pellets
 - Huge logistics require modern and standard format
 - Isn't it the success factor of oil and gas?
 - Alternative pellet market (industrial quality)
- Local
 - Industrials users generate Carbon Credits
 - Production of process steam
 - Power
- Alternative to CDM: use it in the EU
 - CDM? Probably not
 - Solution to the EU (pellets for consumers in NAP): definitely yes

Additionality



- Situation
 - Bagasse often used, but low efficiency (50% hum.)
 - Thrashes remain in field and degrade or are burned
 - Brazil uses fossil fuel
 - Oil, gas, coal in PJ: 3630, 320, 114 in 2000 (Goldemberg)
- What is exactly avoided?
 - Burning trash in field (now in boiler, so not avoided)
 - Degradation ($\text{CH}_4 = 21 \times \text{EQ}$ is avoided)
 - Trashes are 7×5.5 milion tons/year
 - Even if 5 % degrades into CH_4 , this is $7 \times 5.5e6$ EQ/y
 - Use of fossil fuels (avoided)

Social value

- Avoided parasites and pests
- Work in many (new) sectors (A, I, S)
- Brazil proud of fuel ethanol because
 - It is sustainable
 - It pays for itself
 - More national independence (it is much!)
 - It is a high value fuel

Agri-pellets respond to the same criteria!

Cooperation principle for technology transfer

1. Transfer technology
 2. Produce technology locally
 3. Technology produces biomass
 4. Biomass produces energy & Carbon Credits
- Investor pays (1 and 2) and receives C-credits
 - Local organiser gets contacts and keeps control
 - Kyoto experts define CDM



How about Brazil?

- Financers are found
- Technology transfer of pelletising technology
- Users of technology: some of largest sugar mills
- Users of agri-pellets?
 - National (then it is CDM)
 - Power plants
 - Fuel ethanol producers
 - Positive prestige: car fuel yet more sustainable!
 - Ethanol still cheaper
 - EU (not CDM but anyway GHG reduction)



Conclusion



- Valorisation of agricultural residues
 - A problem becomes a resource
 - Biomass easy to store, transport, use
 - National advantages
- Every party in the coop is a winner
- Large scale → big step towards Kyoto
- Replication to Asian countries is easy



Thank you for your attention
Grazie per la Vostra attenzione
Dank u voor de aandacht

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