NON CO2 GREENHOUSE GAS EMISSION REDUCTIONS

N2O emission reduction projects in Brazil:

status,

challenges and perspectives

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Status

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Project Type	Number of CDM Project Activities	% Project type to total CDM Project activities in Brazil	Greenhouse Gas Emission Reductions - Total Estimate (tCO2eq) (first crediting period)	% Estimated to Total Greenhouse Gas Emission Reductions
Hydro Power	83	26%	136,349,765	37.2%
Biogas	63	20%	24,831,310	6.8%
Wind Power	52	16%	37,249,720	10.2%
Landfill Gas	49	15%	87,518,807	23.9%
Bioenergy	41	13%	16,091,394	4.4%
Fossil Fuel Switch	9	3%	2,664,006	0.7%
Avoided Methane	9	3%		2.4%
		2%		12.2%
		1%		0.8%
Reforestation and Afforestation	3	1%	2,408,842	0.7%
Materials Use	1	< 1%	119,959	0.01%
Photovoltaic Solar Energy	1	<1%	6,594	0.01%
Energy Efficiency	1	< 1%	382,214	0.1%
SF6 Replacement	1	< 1%	1,923,005	0.5%
PFC Replacement and Reduction		< 1%		0.2%
Total	323	100%		100%

N_2O Destruction

44,660,882

323

366,622,831

Issuance

Project Type	Issued CERs	% Total Issued CERs 90,782,658
Hydro Power	9,152,048	10.1%
Biogas	3,880,024	4.3%
Wind Power	343,084	0.4%
Landfill Gas	16,641,488	18.3%
Bioenergy	6,401,260	7.1%
Fossil Fuel Switch	868,928	1.0%
Avoided Methane	1	2.1
eployme		
Reforestation and Afforestation	4,072	4.5%
Materials Use	10,248	0.0%
Energy Efficiency	315,948	0.3%
SF6 Replacement	826,706	0.9%
PFC Replacement and Reduction	0	0.0%
Total		100.0%

N_2O Destruction

45,887,557

50.5%

90,782,658

Dec 31/2013

5 Projects – 50.5% of Emission Reductions

25 Dec 05	**N2O Emission Reduction in Paulínia, SP, Brazil**	**Brazil**	**Switzerland Japan Netherlands UK France**	**AM0021**	**5961165**	**0116**
13 Nov 08	Fosfertil Piaçaguera NAP 2 Nitrous Oxide Abatement Project	Brazil	Switzerland UK	AM0028 ver. 4 AM0034 ver. 2	171931	1784
21 Mar 09	Fosfertil Cubatão NAP4 Nitrous Oxide Abatement Project	Brazil	Switzerland UK	AM0028 ver. 4 AM0034 ver. 2	109555	2257
02 Jun 07	N2O Emission Reduction in nitric acid plant Paulínia, SP, Brazil	Brazil	Switzerland France	AM0028 ver. 4 AM0034 ver. 2	80109	1011
29 Oct 09	Petrobras FAFEN-BA Nitrous Oxide Abatement Project	Brazil		AM0034 ver. 3	57366	1731

AR5

GWP_{100} 264.8

GTP_{100} 234.2

5 Projects – Practically, total N_2O emission reductions in the Industrial Sector in Brazil

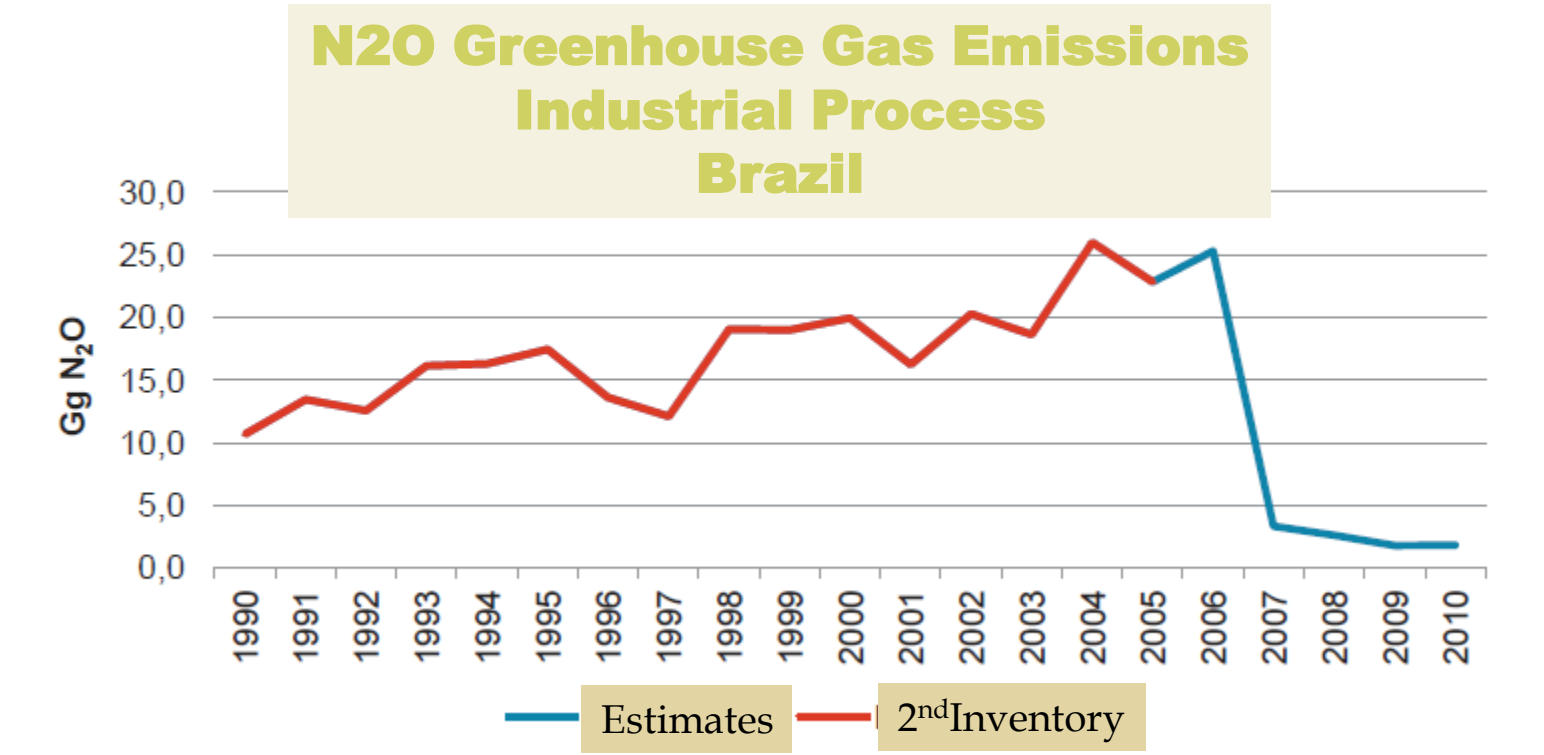
Challenges

- Prices of CERs very low
- Banned from EU ETS
- No mandatory legislation to reduce these emissions in most developing countries
- Very expensive technology
- High investment in the case of Adipic Acid
- High O&M in the case of Nitric Acid
  - 90,000 euros annually for the catalyst

Perspectives

- Industrial gases should be prioritized in future agreement
  - High GWP, GTP
  - Long lifetime, long time residence in the atmosphere
  - No natural "sink"
  - Man made ⇨ clearly anthropogenic
- Small amounts and few plants
- Alternatives have to be sought (funds, CDM+) to keep CDM project activities running

Gloomy Outlook



Thanks !