



International
Fertilizer Industry
Association

UNFCCC Workshop on N₂O Emissions

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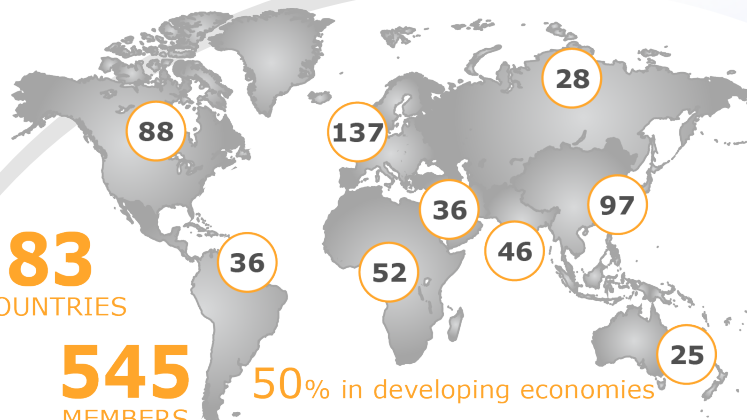


About us

83
COUNTRIES

545
MEMBERS

50% in developing economies





Fertilizer Production Overview

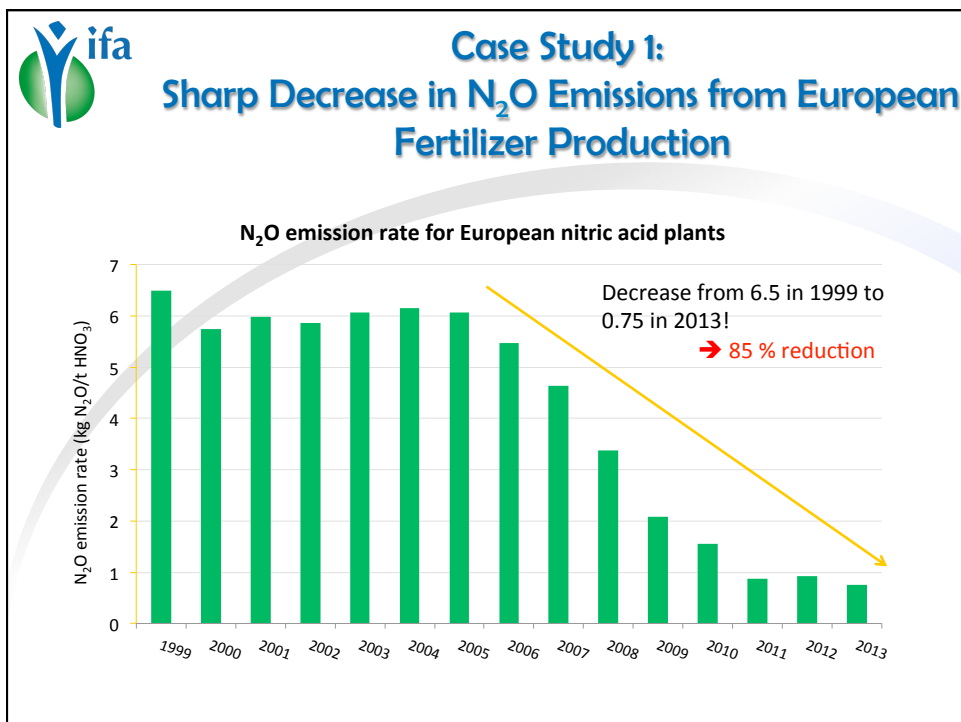
- Areas of greenhouse gas reduction in our industry:
 - CO₂ from ammonia production
 - N₂O from nitric acid production
- N₂O has about 300 times more global warming potential than CO₂
- N₂O is an unwanted by-product of the catalytic oxidation of ammonia
- Bulk of global nitric acid production is based in Western Europe, North America, and the Former Soviet Union



Good Mitigation Practices: Best Available Techniques (BAT)

- The two main *abatement* approaches are:
 - Secondary: “*in process*” technology
 - Tertiary: “*end of pipe*” (“*tail gas*” N₂O decomposition)
- Existing plants: 70-85 % reduction potential
- New plants: 90-95% range
 - Average emission value: 1.51 kg N₂O/t Nitric Acid*
- However, there are no “natural” investment incentives for Nitric Acid producers

*Source: IFA October 2014 Environmental Performance Benchmarking Report



Case Study 1 (continued):
What triggered the Reduction in N₂O Emissions in Europe?

- Technological development of “*in process*” and “*end-of-pipe*” abatement solutions
- European Union-Emissions Trading System (ETS):
A market-based scheme that creates financial incentives to facilitate investments in these abatement solutions



Case Study 2: North American Mitigation Initiative in the Fertilizer Sector

- Climate Action Reserve: carbon offset credits in North America
- For example, Potash Corp invested in “*in process*” reduction catalyst in U.S. fertilizer facility:
 - Voluntary initiative facilitated by Climate Action Reserve scheme
 - 90% reduction potential in this secondary abatement
 - Tertiary removal can be even more efficient (up to 95% reduction) but the upfront cost would be much higher



Moving forward

- In the global nitric acid sector, greenhouse gas reduction potential remains significant
- However, there are no “natural” investment incentives for the nitric acid producers
- That is why some regions have taken innovative approaches to lower investment hurdles
- IFA will continue to benchmark its producer members and to share best practices among them

