

Expanding the EU ETS to other sectors and gases after 2012:

# $N_2O$ from the production of nitric acid and adipic acid

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# N<sub>2</sub>O from nitric acid plants

- Nearly 100 nitric acid plants in EU27 + Norway
- Emission of 40 mill tonnes of CO<sub>2</sub>-eqv /year
- Average per plant = 6 kg N<sub>2</sub>O/ t HNO<sub>3</sub> (without N<sub>2</sub>O abatement)  
(range from 4-15 kg N<sub>2</sub>O/ t HNO<sub>3</sub> depending on process)
- Several N<sub>2</sub>O abatement technologies - catalytic destruction -  
have recently become available (proven technology)  
with 70-90% reduction potential  
(below 2,5 kg N<sub>2</sub>O/t HNO<sub>3</sub> for most plants)
- Cost of implementation = € 1 to 5 per ton of CO<sub>2</sub> reduction
- Main use: Fertilizers
- Global competition, with plants based in countries that can take  
advantage of JI and CDM projects

# N<sub>2</sub>O from adipic acid plants

- 6 plants in EU25 (Germany, France, UK, Italy)
- Already equipped with N<sub>2</sub>O abatement technology
- 3 different abatement technologies are in use:  
1) catalytic destruction, 2) thermal destruction, 3) recycle to nitric acid
- Annual emissions = approx 10 mill tonnes of CO<sub>2</sub>-eqv /year, taking account of 80 to 95% efficiency in N<sub>2</sub>O abatement
- Main use: In polyamide and shoesoles
- Global competition. All new capacity in the last 10 years is located in Asia (China) where the industry can benefit from CDM projects

# N<sub>2</sub>O emission monitoring

- Reliable monitoring techniques exist and a European standard has been agreed with the producers
- In agreement with EU ETS requirements

# N<sub>2</sub>O and EU ETS

- The European nitric acid producers support the principle of environmental improvements facilitated by market mechanisms such as the EU ETS, as long as reasonable allowance levels are set per plant
- N<sub>2</sub>O from nitric acid plants can be brought into emission trading in different ways:
  - as an industrial sector in the ETS Directive,
  - by national opt-in, and/or
  - by acceptance of Joint Implementation projects between all member states (which is not the case today)
- The European adipic acid industry has not developed a common position on EU ETS. Some favours JI.

# N<sub>2</sub>O emission allowance

- Should be set at a level which allows cost coverage for the implementation of new N<sub>2</sub>O abatement technology, or for further improvement of the present abatement technology used by the adipic acid industry
- Should be based on performance standards or international benchmarking
- *'Good intentions must not become its own enemy'*:  
The allowance level should be set at a **reasonable** level in order not to weaken the global competitive position of the European industry – otherwise the industry will downsize in Europe and grow in less regulated countries, resulting in an increase of the global climate gas emissions

# Way forward

- Inclusion of N<sub>2</sub>O in the EU ETS is feasible
- To avoid competitive distortion and unfair trade in the global market, the emission allowance system should be compatible with benefits that can be obtained by JI and CDM
- As far as individual countries want to gain experience with non-CO<sub>2</sub> gases, opt-in or JI of N<sub>2</sub>O can be allowed