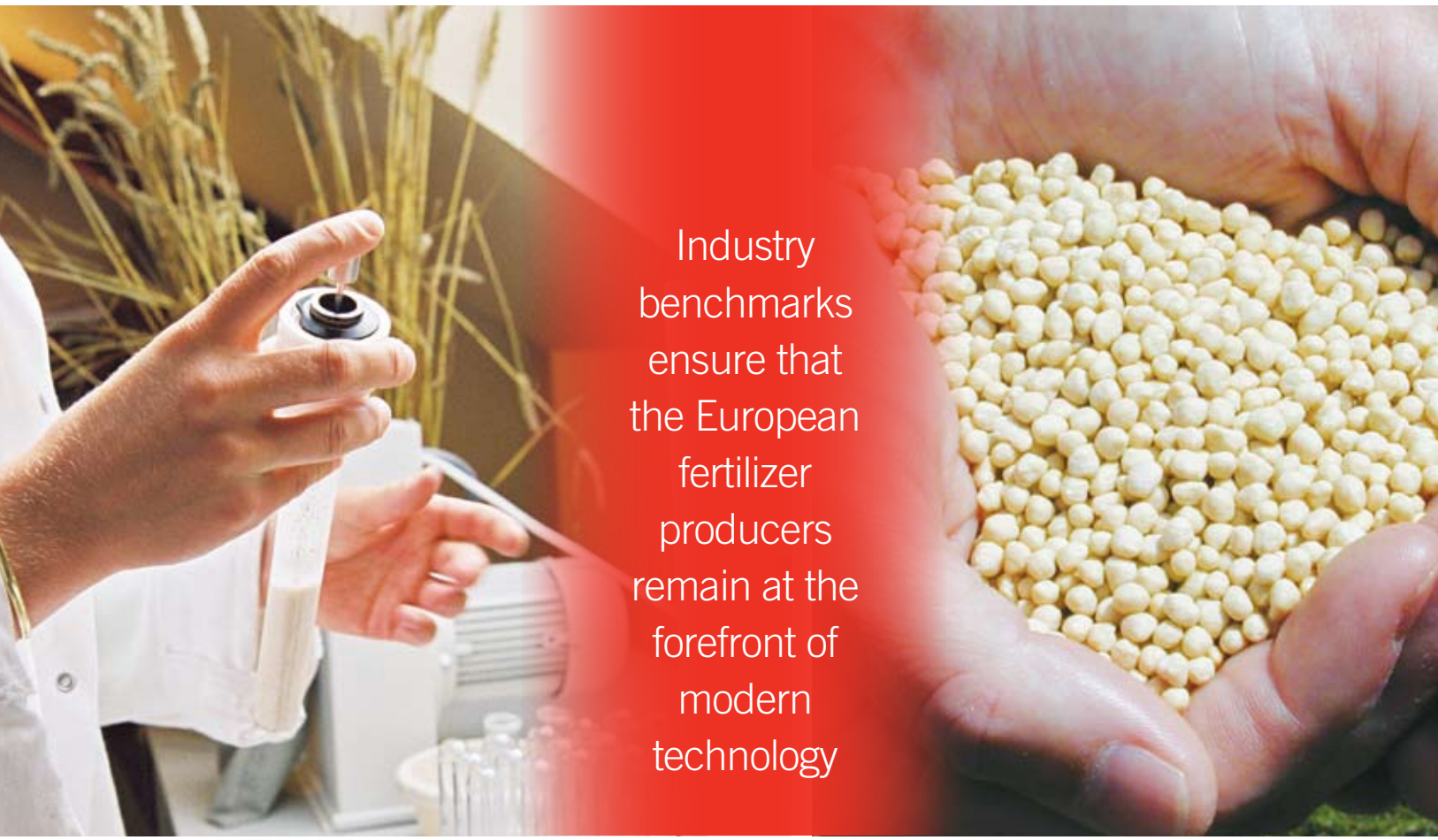

The European fertilizer industry is one of the world's most efficient

EFMA collects energy efficiency and emissions data annually from European fertilizer producers from which it publishes a variety of industry benchmarks. These not only enable EFMA members to compare their performance against others in the industry, but also form an industry point-of-reference in discussions with European and other legislative bodies.

ENERGY AND EMISSIONS DATA

On the environmental front, EFMA's latest Ammonia Energy Efficiency and CO_2 Emissions benchmark 2006/2007 was published in 2008. This benchmark is fully in line with the International Fertilizer Manufacturers Association's IFA Global Benchmark in which EFMA participates.

The emission data for CO_2 is currently playing a vital role in discussions with the European Commission's DG Environment about the third phase of the ETS III Emission Trading Scheme (see preceding section).

The EFMA Emission benchmark monitors emissions to air and water of a large number of substances and the data for N_2O is also playing its part in the ETS III proposals. Further use of this data includes discussions with the European Commission on its Integrated Pollution Prevention and Control (IPPC) Directive and the underlying EU BAT document Ammonia, Acids and Fertilizers. The benchmark was produced in 2007 and is due for revision in 2010.

Europe has some of the world's most modern ammonia and nitric acid plants. For ammonia, steam reforming natural gas technology is close to the theoretical minimum in terms of energy reduction and CO_2 emissions. In nitric acid plants, N_2O abatement technologies offer the potential for low levels of N_2O emissions. To ensure the European fertilizer industry remains competitive, EFMA is advocating allocation of emission allowances up to agreed industry benchmarks.

BEST AVAILABLE TECHNOLOGY

The two benchmarks show that the industry average is not far off the Best Available Technology of existing plants and provides a fair basis on which decisions affecting the industry can be based.

Ammonia forms the basis for nitrogen mineral fertilizers and is produced by high pressure synthesis of nitrogen from the air and hydrogen from natural gas, oil or coal. CO_2 is liberated as an integral part of the production process. EFMA members operate ammonia plants in Europe based on natural gas, which are the most energy efficient and have the lowest CO_2 emissions.

Energy consumption based on Best Available Technology (EU BAT) for existing natural gas plants is 31.8 GJ per ton of ammonia, which generates 1.8 tons of CO_2. Since existing European plants are among the most energy efficient worldwide, further improvements will only be incremental. Total CO_2 emissions are approximately18 million tons.

The industry's nitric acid plants have total N_2O emissions equivalent to approximately 33 million tons of CO_2. Two proven N_2O abatement technologies exist (catalytic decomposition of N_2O immediately on formation in the burner or in the tail gas) with high reduction potential. However, taking into account the large variety of low, medium and high pressure nitric acid process technologies in use, not all of them will achieve the same level of benefit.

Depending on the process technology, N_2O emissions EU BAT is between 1.85 - 2.5 kg N_2O per ton of nitric acid.

SIGNIFICANT REDUCTION IN EMISSIONS

The emission levels defined in the BAT documents for existing ammonia and nitric acid plants, indicate that, compared to 2005, a 9% reduction in CO_2 emissions based on energy efficiency is technically feasible by 2020 in ammonia plants and a reduction of N_2O emissions of approximately 70% in nitric acid plants.

Based on these figures, the European fertilizer industry could deliver more than a 30% reduction in its GHG emissions by this date. The necessary technical improvements, however, will require significant investment and time to implement.

EFMA therefore favours a stepwise reduction in emission allowances from 2013 onwards based on the 2005 average industry benchmark for ammonia production and a uniform 1.85 kg N_2O per ton of nitric acid benchmark for European nitric acid plants.