

Proc. 434: Environment and Energy - A Business Opportunity for Fertiliser Producers?

by J Ward and M Morrell

Discussion following the presentation of the paper:

David Thompson, Consultant, UK:

First of all could I thank Mike and John for a very interesting presentation; I certainly heard much which was new to me. I would remind colleagues of the eight EFMA BAT booklets for the fertiliser industry which are available from EFMA in Brussels, and also the Mineral Fertiliser and the Environment booklet from IFA in Paris.

My question concerns the situation for many fertiliser manufacturers. What are your suggestions for a chemical plant which, by reducing the energy input by 20% would then be below the stoichiometric limit for energy consumption? This would be the case for many ammonia plants, the major consumers of energy in the fertiliser industry, which nowadays operate at around 15% above the theoretical minimum of the energy required to break that triple bond of nitrogen. You cannot reduce that by 20%.

Mike Morrell:

I think that targets given to industry will be targets for average improvement. I think that all companies can make improvements in terms of energy efficiency. It will vary from company to company and process to process as to how much that improvement will be.

Hans van Balken, European Fertilizer Manufacturer Association, Brussels.

I agree; I think a lot of savings can be made both in energy and in water use. If you look at large chemical sites, many of the processes are quite integrated. You might think that you have sorted the problem at one end, but find you have created a problem at the other. Have you considered using a technology called 'PINCH' - energy 'pinch' and water 'pinch' - that was originally developed, I think, in Manchester? Some American software companies now have programmes on the market. Have you considered that as a tool for a more methodical approach?

Mike Morrell:

Thank you for that question, to which I have two answers. Under the original energy efficiency best practice programme we did a lot of work to encourage companies to adopt process integration techniques, including 'pinch'. So that's the first point and yes we would encourage it. The second point concerns the energy audits that we are sponsoring now. We have a panel of consultants ranging from single man consultancies to larger companies and we choose a consultant appropriate to the size of the company. I know the consultancies at

the top end of the range that are dealing with large size companies actually do use process integration both for energy and also for water use minimisation.

Bjorn Persson, Hydro Agri, Landskrona, Sweden.

It's a question about financing. Quite often you see ideas in different plants for projects with a payback time of five or six years. But we don't get money for schemes with that timescale, although the power industry has a payback time of 30 years. What can you do about this general problem?

Mike Morrell:

Yes, I agree that's a difficult problem. We come across many opportunities for energy efficiency where the payback time is short enough for companies to be expected to adopt them. As far as I know there is no scheme within the UK for some sort of soft loan or part-financing of longer term measures. It is a good idea; maybe something will happen in the future. I am sorry I can't be more helpful than that.

Ken Sharples, retired.

We have the water companies trying to maximise profits by selling more water to our companies. If we use more water we help them. These water companies have high losses of water and have accidents with chlorination and aluminium sulphate, for example. My question is whether people such as John going to the water companies and promoting energy management and efficiency to them?

John Ward:

I couldn't agree more. There is a lot that the water industry itself could do in terms of getting its act together and cleaning up its operations. There may well be in the future a water industry element of the environmental technology best practice programme. This programme is developing. It started with a few sectors first, mainly in the heavy engineering side. It has moved on into chemicals. Adding a water element to that programme is under discussion, that water element to be concerned with the practices and technologies adopted by the water industry.

I certainly agree with your view. Our industry is at the down-stream end; if we could solve the upstream problems then certainly water would become a lot cheaper to us as the customer. However at the moment the environmental technology best practice programme is not concerned with the practices of the water industry. I agree with you that it should be.

The Chairman thanked the speaker for the paper and the discussion,