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Sustainability and the world of detergents meet to wade into future together

Notes on the *Sustainability Summit 2009*

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Copenhagen - The motto "Yes, we can" may seem a little bit faded, even if it is less than two years old. In the case of the *Sustainability Summit 2009* held on December 1st 2009 in Copenhagen the real motto was not only "Yes, we can" but also "Yes, we do".

The summit was organised by the Danish company Novozymes, one of the world leading companies in the field of detergent enzymes. Experts and decision makers from the detergent and washing machine industry, The Presidency of the EU, international associations, NGOs, private label companies and great distribution companies from all over Europe - and not only - came together*). They discussed along with the people from Novozymes what has still to be done and what is underway to make the world of detergents more sustainable. The times when detergents were associated to environmental pollution are now definitively history.

The goal of the summit was to maximise business through sustainability. An ambitious one if we think about all implications. To this regard, Novozymes wants find a way of cutting 80 percent of carbon (CO₂) emissions, and to significantly reduce the usage of water and the employment of chemicals, and this within the next five to ten years. To achieve these results, the whole production cycle, from the ingredients to the final product, must be rethought, as well as the actual detergent formulations. It must be underlined that the detergent industry has already reached enormous results and is continuously innovating its products and processes.

When speaking about sustainability most people agree that it is necessary to have a more sustainable lifestyle but immediately add that they fear the associated costs and are afraid to lose some of the comfort of today's modern life. Most people do not think of sustainability as an investment with huge potential of savings and a better lifestyle. The traditional view in the production cycle is that sustainability means high investments but at the summit it was clear that in the detergent industry sustainability is considered a business opportunity that can render savings both for producers and consumers.

In addition to that, it must be stressed that sustainability is not only about the product (a more efficient and less polluting one) but has to be considered from a "cradle-to-grave" concept where everything around the product is considered. Just as an example, the carbon emission produced by employees to reach their workplace enters into the "carbon bill", as well as the energy consumed by the washing machine of the end user.

During the Summit presentations and the discussions the speakers from, among others, Henkel and from Marks & Spencer, provided actual and tangible instructions in this regard. In fact, as they explained, a concept of sustainability has to take into account

all phases involved in a given process from the ingredient to the wasting of the exhausted product: planning, organisation and logistics, production, packaging, distribution and its optimisation, use by the final consumer and, finally, disposal of the waste products. Every single step in this chain has a cost in terms of carbon emission which

should be substantially reduced to lower the resulting final CO₂ bill. Moreover, the reduction of the carbon bill must necessarily be accompanied by a substantial shift towards a greener chemistry to reduce pollution to a minimum.

But how is sustainability reached? During the summit several examples of good practice in different phases of the production were illustrated, as well as some issues and drawbacks encountered during the market introduction

of sustainable detergents. Just to provide a couple of examples, Marks & Spencer have labelled all their clothes with "wash at 30°C" and have made a profitable partnership with an electricity company

"There is a potential for the detergent industry to reduce 2-3 billion tons CO₂ when replacing petro-chemicals with bio-based materials"
John Kornerup Bang, WWF



to encourage lower energy usage among consumers. Unilever, on the other side, works hard on reducing water consumption, especially in developing countries where saving the scarce water resources is of great importance. Last but not least, Procter & Gamble, already reporting a 52 percent CO₂ reduction, has committed to a further reduction of 20 percent from 2007 to 2012. Though Procter & Gamble believes the consumer has a very important role to play in realizing substantial carbon cuts and has therefore invested in educating the consumers of the choices they can make.

Another important point of modern detergents is represented by the decrease of the volume of detergents in packaging. It is worth considering that also the energy required for the transportation of detergents from the plant to the consumer enters the "CO₂ bill" and that the reduction of packaging like plastic bottles has a significant impact both in the production and on the disposal in terms of energy consumption and of waste reduction. Procter & Gamble is trying out in Turkey a novel concept of packaging in seal-tight polyethylene bags which allow an 80 percent reduction of packaging material and 20 percent of the total volume. Henkel developed a novel laundry detergent concept allowing 62 percent of packaging reduction.

With regard to formulations, great advances have been achieved towards greener detergents from the time when inorganic phosphates had to be replaced as a consequence of the sometimes dramatic deleterious effects on the aquatic environments. Today the use of modern formulations, and of enzymes, allows the production of environmentally friendly products.

Modern more biodegradable components of detergents like non-ionic and anionic surfactants, builders, anti-redeposition agents, optical brighteners and oxygen-releasing bleaching agents are under constant development. Enzymes, in particular, have been used in detergents for over 50 years and are maybe one of the most successful applications in the field of industrial biotechnology. Detergent enzymes represent about 30 percent of the global production of enzymes. As catalysts, enzymes speed-up and reduce the temperature at which chemical reactions take place and are also allowing milder pH conditions. As a consequence enzymes are not only a green solution but allow a significant reduction of washing temperatures with a striking decrease in energy consumption by the final consumer. Today's enzyme formulations allow to efficiently breakdown soil molecules, in cold wash conditions. Research in the field of detergent enzymes is aimed at developing more and better enzymatic formulations that allow for greater environmental savings for both the detergent manufacturer and the consumer.

The "tuning" of the washing procedure plays a great role in achieving more sustainability. New washing machines need to be adapted to novel detergent formulations and to allow washing cycles using concentrated detergents at low-temperatures and short wash cycles, using less water. In this respect, Whirlpool called for a better and closer cooperation between the detergent industry and washing machine producers to achieve this goal.

Unfortunately, the way into sustainability is also paved with hurdles, which all have "human factor" at its centre and origin. The major stumbling blocks identified during the summit were: the inertia of established



production systems, the still too little overall cooperation, the different local washing "traditions" and last but not least, the huge inertia of consumers.

As already told, the inertia of the production systems represents a major obstacle to the introduction of a fully sustainable system. While it is relatively easy to reformulate a detergent in order to have a greener and more sustainable product, it is definitely more complicated to implement sustainability in the organisation and in the logistics of a company.

More cooperation was one of the targets of the summit. Cooperation is, in fact, needed at several different levels. A general cooperation between suppliers, manufacturing industry, packaging, distribution and the retail compartments is necessary to achieve a global and significant cut of the CO₂ bill

and also to realise a more accurate measurement of the environmental impact of a product. The best efforts towards sustainability would be in vain if only one member of

the production chain fails to implement it. Moreover a stronger cooperation is necessary between the detergent industry and washing machine producers. There is no advantage if a novel straightforward detergent, best performing at room temperature, in reduced water volumes, is employed in washing machines

with fixed washing programmes at e.g. 40-90°C and using large volumes of water. Standards need to be implemented in order to tune detergents and washing machines in the light of sustainable detergents. Finally, a strong cooperation is necessary to communicate to consumers a more coherent message

telling that efficient eco-friendly and cost-effective detergency solutions are available and on how they must be employed.

With regard to experiences in the field of cooperation, it is worth noticing that the industry found a very valid ally in an NGO like the WWF which provides advice and concretely helps the industry to wade into a greener and more sustainable way to produce. During his speech the representative of WWF presented some very interesting models of cooperation between its NGO and companies like Novozymes and IKEA.

Among the obstacles for implementing sustainability in the detergent industry, all Summit participants agreed that consumers represent the greatest. Several examples and consumer imputable obstacles were presented during the summit. A mixture of inertia and mistrust towards companies had, and has, a detrimental effect on the efforts to achieve more sustainability. Consumers very often perceive the sustainability initiatives from the industry as vain advertising strategies with nothing behind. In addition to that, deeply

rooted washing habits are difficult to overcome. Consumers are not ready to accept that a cold wash could achieve the

"Sustainability is only "sexy" when it makes financial sense"
John Kornerup Bang, WWF

"Customers don't normally like the environmental alternative. Our challenge is to develop options that actually appeal to the consumer"
Edward Butt, Reckitt Benckiser

"The best innovation comes from collaboration between detergent producers and washing machine manufacturers"
Jim Bartley, Whirlpool



same cleaning results as a wash at 90°C with additional bleaching or that a small volumes of a concentrated detergent is equivalent to large volumes of washing powder. As a consequence, people tend to overdose concentrated detergents and to wash at a higher temperature than needed.

These two trends were pointed out during the summit. Concentrated detergents have a low commercial success when compared to "traditional" ones and, worse than that, there is a general believe that "green" products are less efficient and valuable than conventional ones. To this regard the speaker from Henkel outlined that

companies never should use the "green value" of their products as a main feature in their marketing campaign - "green" has to be considered as a secondary "add-on". A paradigmatic practical example was provided by the speaker from Marks & Spencer. A product they first marketed as "green" and eco-compatible detergent collected several complaints from the users and turned out to be a real flop in terms of sales. When the same product was relabelled and sold as a conventional product it collected no more complains and had a good success in terms of sales. The "placebo effect" works also here.

The take-home message about consumers was that despite the fact that the industry is well aware of "green" solutions, the market is still not motivated enough to use these products. In essence, consumers don't want only a "green" product but look for performance and the best value for money. Finally, there is a huge need to inform consumers about how they can do their part in developing more sustainable detergents by

using concentrated biodegradable detergents, employing less water and lower washing temperatures. Consumers will, in this way, not only contribute to sustainability, but also make concrete savings in terms of money by wasting less water and energy and employing more cost effective products.

To conclude the Sustainability Summit 2009 represented a unique occasion to form a real "think tank" towards better, more efficient and sustainable solutions in a field which is affecting the daily life of everyone! A main point which arose from the Summit is that sustainability is an excellent driver for business. Consequently, there is also a concrete interest in the implementation of sustainable innovations, which is good news. It will be a long road to implement sustainability but we are already going forward on it!

* List of speakers

The Summit was introduced by Per Falholt, Executive Vice President at Novozymes, and Joost Welten, Industry Sales Manager at Novozymes, and closed by Steen Riisgaard, CEO at Novozymes. All speeches were held by invited experts from the companies, institutions or NGOs taking part in the summit and were coordinated by the flamboyant and genial *program facilitator* David Adams (Consultant for Novozymes). The speaker were in order of appearance: John Kornerup Bang (Programme Leader Globalisation, WWF), Anne Hilton (Chemical Strategy Manager, Marks & Spencer), H.E. Ambassador Gabriella Lindholm (Department of Environment and Representative of the EU Presidency), Edward Butt (Vice President Sustainability, Reckitt Benkiser Group plc), Jim Bartley (Director Global Alliances, Whirlpool), Hans Bender (Chairman of AISE and Vice President External Relations, Procter & Gamble), Colin McIntyre (Managing Director UK, Robert McBride), Thomas Müller-Kirschbaum (Corporate Senior Vice President, R&D/Technology/ Supply Chain, Henkel AG & Co. KGaA), and Mike Parkington (Vice President Laundry R&D, Unilever).

"We should have a cradle to grave perspective on detergents where we address all elements such as water, energy usage, etc"
Hans Bender,
P&G/AISE

"It is important to help and motivate consumers as well as provide outstanding products. So that it is very clear for the consumers what is in it for them"
Mike Parkington,
Unilever

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