

**Altran Conference for Innovation Report
Innovation, the road to a Low Carbon Economy, how CO₂ influences today's executive decision-making.**

Within the framework of the 2008 launch of the Altran Foundation for Innovation, Altran organized on 22 November 2007 a high level event in the form of a Great debate on: **"Innovation, the Road to a Low Carbon Economy, how CO₂ influences today's executive decision-making."**

Innovation and new technologies for sustainable development? The answer to this question is essential to the success of tomorrow's companies. A low carbon economy offers new opportunities for investment and vast potential for technological innovation.



The debate was moderated by Jean-François Marchand, Editor in Chief of EnergyMag, and Pierre Biélande, Editor in Chief of Get Up Magazine. It was an astonishing encounter between seven personalities of the worlds of industry, finance, academia and Altran:

- **Pfr. Riccardo Petrella**, Politologist, Economist and Sociologist, Honorable Professor at the UCL and Professor of Human Ecology at the the Architecture Academy of the Swiss Italian University
- **Léopold Demiddeleer**, Director of Corporate R&D & New Business Development, Solvay
- **Florence Koelman**, Senior Corporate Sales, Dexia
- **Michiel Jak**, PhD Renewable Energy, Senior Managing Consultant, Altran Technologies
- **Guy Vekemans**, Responsible of Clean Energy Technologies Vito

- **Prf. Jean-Marie Streydio**, Honorable Professor at the UCL & FUSL, Co-president of the Ampère Commission and permanent member of the Energy Commission
- **Olivier Mushiete**, Responsible of the IBI Village Project, Carbon Wells on the batéké plateaux of DRC

The Executive Director of Altran Benelux and Scandinavia, Dominique d'Andrimont, introduced the topic of the conference by speaking about the strong implication of Altran's consultants in the fight against climate change. This introduction also enabled him to present the 2008 Award of the Altran Foundation for Innovation: **"Reducing Levels of CO₂ in the Atmosphere, our Technological Challenge."**

Pr. Riccardo Petrella immediately put the debate into perspective by insisting that technological innovation is only one of the multiple means for reaching a genuine energy revolution. This raises the question of knowing under which conditions technological developments regarding energy deserve more attention than other forms of progress. Does reducing the consumption of 4x4 trucks have more relevance than offering toilets to the 2.6 billion people around the world who are the victims of epidemics transmitted by human faeces? Or: which place should we give to energy technologies used in the housing sector when we know that 2.4 billion people in the world live today in city slums and that the figure will only increase to reach 3 billion in 2032? Indeed, shouldn't the major goal of a technological revolution be the honouring of the right to life for all? From this argument stems the Professor's conviction that a real technological rupture in the field of energy can take place only if its finality is not financial. This provocative assertion will feed the entire debate, each speaker giving their answer from the point of view of their sector.



Although he does not consider the industry's financial objectives to be an engine of the fight for better energy management, **Mr Léopold Demiddeleer** also does not see it as a brake. He confirms the Professor's opinion that the industry cannot be the single actor in this fight. It is essential for both the politics and the individuals to take their responsibilities without forgetting the role of the media and their power to raise awareness on the problem. This being said, the industry is not an alienating monster, it is it also made of men and these men are often animated by a similar social conscience than that of the Pr. Petrella. Added together, they are the ones who make the industry shift its investments and push for more energy savings - and this, even if the ultimate goal of the industry in which they work is indeed financial. For example, various networks of

energy recycling have been set up locally in order not to waste the energy produced anyway by industries like Solvay.

Mr Guy Vekemans insists on the necessity of creating networks when one deals with energy management. He quotes in particular the example of the Antwerp Harbor where various sectors (like industry, the government, landscaping, etc) work together to develop energy projects, namely as regards the exchange of CO₂ wastes. A million tons equivalent in CO₂ could be saved in the harbor simply through the recuperation of energy in the industrial processes. The inter-sectoral exchanges at the origin of the innovations that will enable these savings is located well beyond the audits and benchmarks which companies can offer individually. To ensure the advantageous exchange between the various sectors, the MIP (Milieu en Energie Platform) was created. This platform still faces challenges, such as for example the creation of a flexible and systematic inventory of all the requests and offers of CO₂ wastes, and it will certainly face many more. But it has already proven very effective in determining what concrete projects call for inter-sectoral work.



Mr Michiel Jak brought the point of view of the technician, recalling that when one speaks about new technologies, one also speaks about innovation and innovation plays an essential part in the creation of energy networks. It is precisely there that lies the real innovativeness, the one that finds the means of connecting two apparently separate concepts, of establishing more judicious links between what exists and what is new, and of creating logical ties between energy and local producers of heat. The challenge is namely to see how the industries' heat wastes can be used to heat houses, how CO₂ wastes can be the source of a new cycle of production. Mr Jak refers in particular to the recycling of CO₂ to feed algae, which are in turn used to produce biofuel (besides, this algae biofuel has an output 10 to 20 times superior to palm oil fuel, which is currently the most common of biofuels). For Mr Jak, a future which is energetically responsible is built on a centralized energy system pushed back to the position of energy back spine and of local energy productions that maximize their local sources of energy (biomass, geometry, solar energy, wind power) brought forward like energy vertebrae.

Pr. Jean-Marie Streydio approaches the question of the financial finality of our energy production from yet a different technical angle. If politicians stopped offering industries and individuals rebates on the prices of their energy, there is not any doubt that the real prices of carbon and other sources of energy would make people change their habits. This would then encourage the deployment of renewable energies and as a consequence research on the massive production of these energies. It

will then only still remain necessary to remember to diversify the different types of alternative sources of energy since the production chain of each one has as many advantages as disadvantages. Price thus does play an essential part in the energy revolution.

With her purely financial approach, **Mrs Florence Koelman** brings details on the financial realities of the carbon market, in particular regarding the price increases we should be expecting in the coming years. If during the first phase of the European regulations on carbon quotas the price of the ton of carbon was at zero, it has since then started to climb and will probably continue to do so until 2012, year which marks the end of the second phase of the regulations. This price increase can be explained both by the higher fines distributed by the authorities and by the unequal balance between the offer and the supply of quotas. This means that the first phase of the regulations was for the moment ineffective in term of investments in the energy market and thus also in the transfer of technologies from the North of planet to the South. Nevertheless, this phase made it possible for industries to evaluate their quotas - which is already a first essential step.

As the project of **Mr Olivier Muschiete** illustrates, compensating for one's production of CO₂ through the purchase of carbon quotas or through the more direct purchase of shares in CCS projects (Carbon Captures and Storage) can offer the South much more than simply technology transfers.



The objective of Mr Muschiete's IBI Village project is to plant forests in Congo so as to create carbon wells on a large scale, and by so doing counterbalance the CO₂ emissions emitted in Europe (forest of acacias, eucalyptus, pine...). In the 35 years to come, these natural wells will be able to sequester 2.4 million tons of carbon. It is then still a question of making companies and the Belgian population aware that their behavior in Belgium has direct positive effects on Africa. In fact, maintaining the development of the North can from now on contribute to the development of the South. It is the first time that the North is interested in the South in this manner, because it realizes that it needs it. And it is the first time that Mr Muschiete notices such an interest in his plateaux. The project is first and foremost one of company and rural development which will make it possible for a population to live, to organize, build schools, dispensaries and to learn how to manage, in a sustainable way, its forest.

This astonishing debate tied the financial finality of the energy chain of production/consumption in with the technological ruptures inherent to an energy revolution. All the while admitting to their inability of providing one unique method for reaching an energy management that is genuinely effective and conscious, the speakers offered two clear guidelines that should in any case be followed: place the

question of energy back in a global context both social and economic and consider the totality of the energy chain and its possibilities while not hesitating to create inter-sectoral networks to do so. The example of Germany where the possibilities for the storage of CO₂ will be exhausted in the 6 to 22 years to come gives all its weight to the argument that, instead of relying on the recycling of CO₂ or on the purchasing of CO₂ quotas, our objective should unavoidably be to save energy.



This debate was very rich in ideas. It was followed by an exchange of questions and answers with the public regarding the use of energy quotas in companies and the role of oil companies, like Total, in the fight against carbon emissions.

To conclude this conference, Olivier Englebert, in charge of the Energy Management activity at Altran Europe underlined the engagement of Altran and its Foundation in the fight against global warming.

More information on the Foundation at www.fondation-altran.org