ETN NEWS

JAN/MARCH 2013 ■ Volume 2013 ■ Issue 01

**ETN is a non-profit association bringing together the entire value chain of the gas turbine technology community in Europe. Through the co-operative efforts of our members, ETN facilitates gas turbine research and technology development, promoting environmentally friendly stationary gas turbine technology with reliable and low cost operation.**

## In this issue



**Christer Björkqvist**
*Managing Director*

*Dear ETN members,*

*2012 has been a successful and eventful year for ETN with many fruitful meetings and conferences, as well as the publication of important positions and briefing papers. Two FP7 project proposals have also been favourably assessed by the European Commission, one to start in February 2013 and the other one on a waiting list due to EC budget restrictions.*

*In 2013 we look forward to continuing our commitment to initiate additional projects with an active involvement of the newly established Project Board and to see the results amassing from this – these should include the launch of new EC or industry funded projects, as well as further developments in the ongoing projects like the Exhaust Systems design standardisation Project and the $H_2$-IGCC Project, where the upcoming period promises to be very exciting, with full scale combustor testing and an extensive material demonstration programme scheduled for this year. I can also promise many networking opportunities as well as an increased visibility for our members in 2013.*

*The future looks bright for the gas turbine industry. Nevertheless a number of challenges are ahead of us as a new energy landscape is emerging in Europe with an important but different role for gas turbines. At our IGTC it was highlighted that the increasing amount of intermittent renewable power generation in the grid would require more flexibility when it comes to operability of gas turbines with an increasing amount of starts and stops. It also became clear that this would result in tough times ahead for European utilities with significant reduced operational hours and increasing maintenance costs.*

*In addition to the above, last year witnessed the historical descent in prices of the EU ETS allowances due to a surplus of allowances on the market following the economic crisis and a high number of layers of EU policy design. As a result the ETS system has partly failed to deliver on its intention to create incentives for industries to invest in R&D of less polluting technologies. During our IGTC Philip Lowe, Director-General for Energy at the EC, delivered the astonishing fact that US had reduced more $CO_2$ emission in 2011 than the EU. The main reason for this is the market shift from less coal to more gas but it also highlights the malfunctioning of the European climate change policy due to complex and scattered energy policies in Europe where employment and economics in many countries are prioritised before climate change. As the EU ETS has now entered its third phase, it will be interesting to see if the newly centralised EU-wide cap on emissions as well as the move towards auctioning instead of free allowances will sufficiently increase the price of $CO_2$ allowances.*

*In this perspective, increased R&D cooperation and knowledge exchange is crucial to stay competitive in the new landscape. During 2013, we will incentivise further R&D opportunities for our sector, foster clearer energy policy framework and work on identifying key R&D project proposals that could fall under the Horizon 2020 or national programmes.*

*Finally I would like to highlight the relationship between optimism and happiness based on the advice of Leo Boremans (page 4). On this note, I am looking forward to working and sharing happiness with you in the upcoming year and wish you a successful 2013!*

# High Level User Meeting and Dinner Debate

*ETN organised its second High Level User meeting, hosted by British MEP Vicky Ford, on 16th October at the European Parliament in Brussels, Belgium. The meeting took place on the day before the biennial International Gas Turbine Conference on 17-18 October 2012 and brought together users from both power generation and oil & gas industries.*


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The meeting was attended by over 21 high level representatives, and the discussion focused on the future pathways to a low carbon energy market, specifically on how to ensure high efficiency, flexibility, reliability and low emissions in power generation at a low cost in the current market scenario.

During the event, the potential role of gas turbines in global emissions reduction and in security of energy supply was addressed. Industrial needs in the EU, such as the importance of a stable energy policy framework, were also identified and discussed among the participants.

The meeting continued the discussions from the 2010 High-level User meeting, which resulted in two papers; the position paper **"Enabling the Increasing Share of Renewable Energy in the Grid" - Technological Challenges for Power Generation, Grid Stability and the role of Gas Turbines**, and the technical briefing paper **"The Potential of Gas and Carbon Capture and Storage in Meeting the EU's 2050 Energy Goals"**. In both papers the role of gas turbine technology in future pathways to meet the requirements of a decarbonised power sector by 2050 are explored.

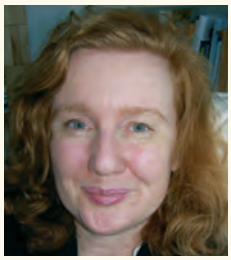
The second part of the programme consisted of a dinner debate in the members' salon at the European Parliament on **"Future Energy Pathways to a Low Carbon Energy Market: How to balance high efficiency, flexibility, reliability and low emissions in power generation?"**, with over 70 representatives of the gas turbine industry and EU policy makers from the European Parliament and the European Commission. ■

## New ETN Team

**Christer Björkqvist**
Managing Director

**Karen Geris**
Technical Project Manager

**Dominique Cornut**
Policy and Communications Officer



**Sabine Hoffmann**
Financial and Administrative Officer

**André Mom**
External Consultant

# IGTC-12 Summary

*The 6th International Gas Turbine Conference (IGTC-12) took place on 17-18 October 2012 in Brussels. High level political representatives and gas turbine specialists from the whole value chain joined the event to discuss the future of energy policy, market and technical challenges which the industry is facing.*

The successful event focused on the future of gas turbine technology from a market, research, investment and political point of view with a special focus on the role played by gas turbines in the future international energy policy mix and the current and future technology trends.

Several key issues were addressed such as the difference in the European market compared with others such as China and the US, the requirement of a higher operational and fuel flexibility in the EU and the uncertainties with regard to carbon capture and storage. One of the main conclusions was that gas turbines technology will have a key role to play in the future energy mix but a different one from the present. Additionally, further key gas turbine development needs were identified for future operations in the different market conditions. Knowledge exchange and R&D cooperation at international level were also acknowledged as essential to reduce time and cost of bringing efficient, clean, flexible and reliable gas turbine of the future to the market.

The conference welcomed more than 160 delegates, from 80 different organisations in 20 different countries and received positive feedback from various participants!

The Conference Proceedings are available to the Conference Participants and ETN members. Please click here to log in with the login details provided by the ETN Office. Do not hesitate to contact the ETN Office if you would like to purchase the Proceedings!

Hope you enjoyed participating and we look forward to welcome you to our next IGTC-2014! ■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## *ETN published a technical briefing paper:*

# The potential of Gas and Carbon Capture and Storage in Meeting the EU's 2050 Energy Goals

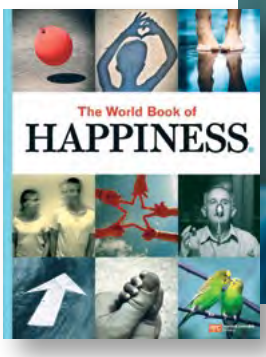
The energy sector is facing major challenges to meet the EU's goal of achieving an 80-95% reduction in GHG emissions. ETN believes that the inclusion of clean fossil fuel technologies in the 2050 scenarios is essential to ensure a stable and flexible supply of electricity in order to meet future demand.

This briefing paper clearly highlights the benefit of moving towards the application of gas in any future energy mix for power generation, in parallel with improved efficiency, an increased level of renewables and energy storage. It also compares the overall efficiency and $CO_2$ emission levels of natural gas and coal-fired power generation both with and without CCS technology applied.

ETN members have access to the complete version of the briefing paper, which can be viewed by logging in and clicking here. ■

# The importance of optimism

## *An interview with Leo Bormans*




*Leo Bormans is a Belgian author who has compiled input from 100 leading experts, from 50 different countries, on how to find and keep happiness, based on worldwide scientific research.*

Leo Bormans gave an inspiration speech at the recent International Gas Turbine Conference gala dinner, which was organised by ETN, and sponsored by MTU and Siemens. The speech focused on the importance of having a positive outlook, and how happiness and optimism can lead to a better life, as well as more functioning communities and organisations. We took the opportunity to ask him a few questions on this topic to the benefit of readers of this newsletter.

***You asked the contributors to your book to summarise the results of their scientific research into happiness in less than 1000 words. Can you please summarise the results of your studies in less than 100 words – what is the key to happiness?***

There is no "one" key to happiness. Never believe people who try to make you believe that. There are many ways and everyone has to find their own. But recent research has revealed some basic insights, for example the importance of optimism. The relationship between optimism and happiness is as strong as the relationship between smoking and lung cancer. When you smoke, you get lung cancer. When you are an optimist, you become happier, healthier and more successful in sports, career, science, friendship…

***What effect do optimism and a positive outlook have on the life of an individual and a community? And how does this translate in the sphere of professional relationships and organisations?***

Real happiness is always based on "sharing" happiness. We are social animals and we need each other's support, smile, love, appreciation… We can summarize all we know about happiness in two words: "other people". It's not about me, it's about the others (family, friends, colleagues). It's not about things (money, car, expensive things), it's about people!

***During your presentation at the IGTC-12 gala dinner your talked about the dichotomy of individuals as red and green 'buttons' – can you please briefly explain this concept.***

The red buttons are the pessimists. They only talk about themselves, the past and problems. The green buttons are the optimists. They talk about "us" and "we", the future and solutions. People at all levels want to be responsible for their job, their future, their relationships. Who are the happy workers and managers? Those who are intrinsically motivated! They don't "have to"; they "want to". Self-determination is based on these three elements: autonomy, competence and connectedness. Controlling people all the time will make them less creative, less innovative, less involved and less happy.

***If one is faced with a red button, in a private or professional situation, is there anything one can do to change their attitude, and should this be attempted?***

Sometimes the manager is a red button. But maybe his secretary is a green one. Try to connect the green buttons on the work floor and the red buttons will become less relevant after a while. The Crisis will not be solved by pessimists. Never! The manager plays a crucial role in creating a positive and hopeful atmosphere, based on respect, teamwork and positive feedback.

***ETN is an organisation that brings together all the stakeholders from the whole value chain of gas turbine technology, which have wide-ranging experiences and backgrounds. What do you think is the key to ensuring a positive atmosphere for cooperation?***

More and more organisations are working on the well-being of their people: all of them, from top to bottom. And the most important elements are not higher incomes, promotion or bonus. More important are job security, interesting and meaningful work, good colleagues and a positive atmosphere. You only get happy members in happy organisations, managed by happy people. The four basic elements for happiness in all organisations are: can I be who I am (in diversity and respect), can I become who I want to become (in growth, competence and development), am I encouraged to work together with other people (or are we competitors on all levels) and does my work contribute to a significant whole (shared mission and vision).

***Thank you for your contribution to the IGTC-12, this newsletter and hopefully to an increased awareness of the importance of optimism, cooperation and happiness in the readers of this interview.*** ■

## Horizon 2020


In November 2011, The European Commission (EC) introduced its first legislative proposal on the next EU Framework Programme for Research and Innovation – Horizon 2020. The EC proposal aims to increase support for research, development and demonstration in order to achieve the Europe 2020 growth strategy. Horizon 2020 will replace the current Seventh Framework Programme for R&D (FP7), which is set to expire in 2013.

Horizon 2020 brings together all existing EU research and innovation funding programmes under a single simplified scheme. Running from 2014 to 2020 with an €80 billion budget, the EU's future programme for research and innovation is a key to create new growth and jobs in Europe.

In April 2012, ETN published a position paper "The Importance of Flexible and Efficient Power Generation in Horizon 2020", in collaboration with EPPSA, Eurelectric, EUTurbines, Eurogas, Euracoal, GERG and Marcogaz, on the Research Priorities of the upcoming Horizon 2020 EU funded R&D Programme (2014-2020). The position paper has successfully been submitted to European Union representatives and aims to feed in to the final decision by EU law-makers, on the exact R&D priorities and funding levels. ETN is pleased to have received positive feedback on the suggested inclusion of flexible and efficient fossil fuels in the Horizon 2020 text. It has been voted positively in the European Parliament ITRE Committee on 28 November and will be additionally voted on in the Plenary Session of the European Parliament in the spring 2013. ETN will continue its lobbying efforts for the inclusion of flexible and efficient fossil fuels in the Horizon 2020 text and will keep the ETN members updated. Moreover, ETN members have access to an EU briefing paper on Horizon 2020 which can be viewed by logging in and clicking here. ■

## New ETN member

■ COMOTI (Romania)

COMOTI
ROMANIAN RESEARCH & DEVELOPMENT INSTITUTE FOR GAS TURBINES

## FP7 Projects

### *H2-IGCC Project:*

H2IGCC Energy without $CO_2$

The third year of the four year project has just been completed, and the consortium now enters the exciting final section of the project. The overall objective of the H2-IGCC project is to provide and demonstrate technical solutions which will allow the use of state-of-the-art highly efficient, reliable gas turbines (GTs) in the next generation of Integrated Gasification Combined Cycle (IGCC) plants. The fourth year will especially focus on the finalisation of the burner testing campaign and the materials demonstration.

During the third year various modeling and design activities were undertaken in all Sub-Projects. Extensive combustion testing has been performed to evaluate and optimise the design of a burner capable of combustion of undiluted hydrogen-rich syngas with low NOx emissions, while also allowing for high fuel flexibility. The set-up for the materials demonstration, during which specially coated blades will be subjected to life like conditions, is being finalised and will commence in April 2013. The viability of different options for the modification of the system and the turbomachinery components of the gas turbine has been investigated. The techno-economic modeling and systems optimisation activities have been initiated and will be finalised in 2013.

The dissemination conference will take place in October 2013 in Brussels, Belgium.

For more information on the project and its progress please visit www.h2-igcc.eu. ■

### *Optimised Microturbines Solar Power System (OMSoP) Project:*

After a positive evaluation by the European Commission, the OMSoP consortium completed the negotiations and the project will start in February 2013. The overall objective of this project is to provide and demonstrate technical solutions for the use of state-of-the-art concentrated solar power system coupled with micro-gas turbines to produce electricity. ETN would support the coordinator (City University London) and be in charge of the dissemination activities. The proposed budget is 5.5 million euro (EU funding 3,9 million euro). Other ETN members involved in the project are KTH, ENEA, the University of Sevilla and Roma TRE University. ■

EUROPEAN TURBINE NETWORK

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