



ETN is a non-profit association bringing together the entire value chain of the gas turbine technology community in Europe and beyond. Through the cooperative 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.

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Christer Björkqvist
Managing Director

ETN celebrates its 10th Anniversary

I have a bright outlook for 2015 in sight, even though there are clouds on the horizon. ETN has several important milestones in 2015. The first is the 10th anniversary of ETN as an association, which demonstrates the importance and benefits of cooperation with the whole value chain. This will be celebrated at our Annual General Meeting (AGM) in Dublin on 21-22 April 2015. The second is the positive start to our new strategy to open-up ETN to gas turbine (GT) users in key markets outside Europe. In November I visited major companies in the United Arab Emirates who all showed interest in our activities and later this month, I will have follow-up meetings with their senior management. In January I am also visiting China

for meetings with major utilities so I am positive that we will be able to present the first non-European members from the user community at our AGM in April. I am also pleased to announce an agreement to start cooperation with GTUsers.com, which is a platform for independent user meetings on specific engine types. I believe that this will contribute to an increased flow of issues, requirements and ideas to our Technical Committees but also provide our members with important connections and opportunities in new markets.

When I look back at 2014, we have had many successful meetings, project developments as well as events, including our International Gas Turbine Conference (IGTC) in October. During the IGTC, the differences in energy policies and the diversified gas turbine markets were highlighted. While the global markets are in general very strong, the European gas turbine market is not very prosperous as the low coal and carbon prices have resulted in coal being chosen as the preferred partner for the increasing amount of renewable generation. Oil and gas companies have had a better year but the steadily increasing cost of production combined with the falling oil price at the end of 2014 has resulted in black clouds over this sector as well. This did not come as a surprise to us and it shows the importance to look at the wider markets as well as to take cooperation to a new and wider level, which will ultimately reduce both risks and costs. However, even if the industry is willing to take another step towards an increased cooperation, our sector still needs additional help from the EU and national governments. When it comes to research opportunities under the EU Horizon 2020 programme, I believe we can all agree on that it has so far fallen short of expectations. However, Ms. Wördsörfer, Director for Energy Policy, DG Energy, European Commission, made a promising statement at our IGTC conference in October, stating that "the gas turbine sector has a role to play in the future energy policy and we (European Commission) will create the necessary funding at least from an EU point of view in order to get this industry more prominent in the future". Could this be an opening for new discussions on an EU Public Private Partnership (PPP) like in the aero industry?

In 2014, the EU also agreed on a new ambitious climate and energy package for intermediate 2030 targets which will require a new mix of cost efficient energy systems that will actually deliver major emission reductions.

With an enlarged ETN community, we have the opportunity to do much more than to hope for better times. All together and with the right support, we can optimise research and technology development for a secure, competitive and low carbon energy future. I look forward to a continued and wider cooperation in 2015!

ETN's series of meetings at the European Parliament

ETN organised a High-level User Meeting and an evening debate in the European Parliament on 13 October 2014 in Brussels, Belgium. Both events were hosted by MEP Marek Jozef Gróbarczyk.



The following topics were discussed during the High Level User Meeting:

- 2030 framework for climate and energy policies: the role of gas turbine technology;
- The Industrial Emissions Directive (NOX, CO, SOX): Common pro-active approach to future emissions regulations;
- Assessment of the gas turbine users' requirements and common major issues experienced by the users;
- Opportunity to commonly address these issues of concerns in projects;
- ETN R&D Recommendations Report 2014 ;
- Open Innovation to reduce costs and risk and to bring technology solutions quicker to the market.

ETN's High Level User Meeting

The HLUM was attended by 17 high-level representatives from 12 organisations, coming from both utilities and oil & gas companies and was an invitation-only event. The meeting focused on issues of strategic importance to the gas turbine market, in particular on ways to meet future operational and fuel flexibility requirements within the European emissions targets, as well as to collectively push for higher availability and further cost reduction.

It was agreed that users in Europe need to stay competitive through increased cooperation, with the aim to enhance gas turbine technology development which can deliver flexible, environmentally sound gas turbine technology with reliable and low cost operation. By exchanging information, developing best practices guideline standards and increasing cooperative R&D activities, users can reduce the costs and risks of operations, thus becoming more informed and independent customers of current and new technologies. ■

ETN's Dinner Debate:

"How to reach 2030 energy and climate targets in a competitive way with the required security of supply"



The second part of the programme consisted of a High-Level Dinner Debate, hosted also by MEP Marek Jozef Gróbarczyk at the European Parliament on "How to reach 2030 energy and climate targets in a competitive way with the required security of supply".

The event brought together representatives from the major European electricity utilities, oil & gas companies, gas turbine manufacturers/suppliers, R&D community and EU policy-makers, namely Members of the European Parliament (MEP) and representatives from the European Commission (EC).

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ETN's series of meetings at the European Parliament

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The event was attended by over 70 high-level representatives coming from Europe, Asia and North and South America and was chaired by Christer Björkqvist, ETN Managing Director.

Understanding global and European energy trends is very important for an effective energy policy and for the development of the right technologies. On 23 October 2014, the EU Council agreed on intermediate binding targets for reducing Europe's greenhouse gas emissions by 2030 to 40% compared to 1990 levels as well as increasing the share of renewable energy in the energy mix to 27% by 2030. The intermittent renewable sources of energy is therefore expected to continue to increase, which would result in very high renewable power fluctuations that will require fast reacting, reliable and low emission backup power. As gas demand is expected to rise in the decade to come, Europe is also looking to secure its security of energy supply and lessen its reliance on Russia in the longer term, which is one of the major challenges the EU is confronted with today.

With this background in mind, Bartłomiej Telejko, Policy advisor for the European Conservatives and Reformists Group, European Parliament made some remarks on the security of supply and 2030 energy and climate package on behalf of Mr Gróbarczyk who could not attend the event due to regional elections in Poland.

After Mr. Telejko's remarks, Dieter Krapp, Senior Vice President, OMV presented the views of ETN on these issues. In his presentation he highlighted that "a high amount of intermittent renewable sources without flexible affordable back-up power available can offset the positive impact and lead to higher CO₂ and NO_x emissions per MWh, which was the case in Germany, Portugal, Denmark in 2013". He added that both "regulatory measures and technology development incentives are needed to enable gas turbine technology to use its full potential to fulfil EU's Energy policy targets together with renewables in a secure and cost efficient way."

"A high amount of intermittent renewable sources without flexible affordable back-up power available can offset the positive impact and lead to higher CO₂ and NO_x emissions per MWh, which was the case in Germany, Portugal, Denmark in 2013"

Dieter Krapp, Senior Vice President, OMV

ETN's User e-questionnaire

In November 2014, ETN issued an online questionnaire for the gas turbine user community, aiming at **identifying the major technical issues for power generation and oil & gas applications** experienced by users. The objective is to select the issues that hurt the most from an economic perspective and to address these issues in ETN's technical Committees.

The user e-questionnaire has been sent to ETN users and to participants of the High Level User Meeting, which took place on 13 October 2014 at the European Parliament.

ETN invites the global user community to complete the User e-questionnaire. If you are an oil & gas company, an industrial gas turbine user or

a utility and would like to contribute to this questionnaire, please contact the [ETN office.](#)

Results

The results of the e-questionnaire will fuel the work in ETN's Technical Com-

mittees as well as be the base for common discussions with the OEMs, suppliers and service providers. The selected major issues will be presented to ETN members at the Annual General Meeting, which will take place on 21-22 April 2015 in Dublin, Ireland.

QUESTIONNAIRE

Users Questionnaire: Terms and Conditions

ETN is committed to protecting the privacy and confidential information of respondents. The individual submitted data from data from all respondents will be visible and analysed as a group. Origin of the specific data is not asked in the Users Questionnaire.

The objective of the Users Questionnaire is to identify the major technical issues related to gas turbine components and applications experienced by ETN's Users, to address the issues that hurt the most from an economic perspective and to identify future issues to be addressed in ETN's Technical Committees as well as be the basis for common discussions with the OEMs, suppliers and service providers.

If you have any questions, please contact Dominique Cornut, Communications and Policy Manager, by phone +32(0) 491 700 000.

Company:

Gas Turbine Manufacturer: *

Gas Turbine Model: *

System: *

Subsystem: *

Offshore Onshore

Defect Location:

Confidentiality

ETN is committed to protecting the privacy and confidential information of respondents. The individual submitted data from respondents will be kept strictly confidential and only the compiled data from all respondents will be visible and analysed as a group. Origin of the specific data is not asked in the questionnaire.

Summary of the 7th International Gas Turbine Conference

The 7th International Gas Turbine Conference (IGTC-14) took place on 14-15 October 2014 in Brussels. High-level political representatives and gas turbine specialists from the whole value chain joined the event to discuss the future of gas turbine technology, current and future energy policies, key gas turbine markets as well as the technical challenges which the industry is facing.



The IGTC, organised biennially, highlighted the role that gas turbine technology could play in the future and raised the awareness of gas turbine technology development needs – both from oil & gas and power generation operators' perspectives. The energy market outlook in Europe and globally was presented, as well as recent developments and on-going R&D activities for flexible, efficient and environmentally sound gas turbines.

Several key issues were highlighted such as the difference in the European market compared with others such as China, Brazil and the US, the requirement of a higher operational and fuel flexibility in the EU and the uncertainties with regard to EU energy and climate policies.

We hope you enjoyed participating to the IGTC-14 and we look forward to welcoming you to our next IGTC, set to take place in October 2016!

Feedback from the participants

“ It has been extremely well organised and the session I have been in, including the starting point of the conference, I found very interesting, with different contributions on global policies. The combination of policy and technology discussions has been very impressive.”

Mechthild Wörsdörfer, European Commission

“ These conferences are very important because they bring together stakeholders from different spheres. We have had here today technical experts, political experts, experts in other areas and they need to discuss together in order to come to good solutions.”

Beate Raabe, Eurogas

“ It is a conference where you have a nice mix of participants. It is set in a format which encourages maximum debate and interaction. If you look at the make-up of the people that attend you have got it right across the value chain that all come together in what is the optimum size and format to promote maximum debates. It is almost becoming like a family. From time to time, from event to event, you get some of the same group coming back which gives a level of familiarity, so again that encourages a lot of debates.”

Junior Isles, The Industry Energy Times

“ It is getting bigger, it is getting more global, but the one thing that I like is the information we get about the European Union and European politics.”

Pascal Decoussemaeker, Alstom

“ I found that the ETN conference hosted here, in October 2014, was really outstanding. It was well done technically as far as the execution of the conference goes and had the right speakers. The panel sessions and the technical sessions were informative. I particularly got a lot of information and guidance from the panel sessions, in particular the perspectives of the European Union and how the industry is responding to the EU position. This is a perspective I don't get at home as much as I got here. It is really a high value attending this conference.”

Richard Dennis, US Department of Energy

“ It was my first ETN conference and I am happy to tell you that I found it a success. The topics were diverse, interesting for everyone. Especially the ones focussing on market requirements and also the non-European content, for example on China and Brazil.”

Sebastiaan Ruijgrok, Nem

“ I enjoyed the conference and found it very informative. It was a good mix of experts and administrative officials to paint the picture of the actual situation and allow an outlook into the future's needs.”

Helge Reymann, Siemens

The IGTC-14 Proceedings are now available!

The Conference Proceedings are available for free to the IGTC-14 participants and to ETN members. If you are not an ETN member and did not attend the IGTC-14 and wish to purchase the IGTC-14 proceedings, please contact the [ETN office](#).

Individual interview with key IGTC participants will also be available at the end of January.



EU news summary

Future EU Energy Policy: Towards an Energy Union

On 17 November 2014, high-level representatives of the European institutions, national governments and industry leaders met in Brussels to discuss how to tackle the climate objectives and shape the EU energy policy in order to guarantee a strong industrial competitiveness.

In this context, the European Commission highlighted the top priorities on which the EU energy policy will focus in the coming years:

- Ensure the Security of Energy Supply;
- Strengthen the Energy Union;
- Deal on the 2030 Climate and Energy Package.

The situation in Ukraine has highlighted Europe's vulnerability, and in order to face the potential risk of a disruption in gas supplies to the EU, the European Commission launched the so-called stress tests to simulate the resilience of the European gas system to cope with a severe disruption of gas supply to the EU this winter. The test results showed that a prolonged supply disruption would have a substantial impact on the EU, affecting particularly the Eastern European countries which deal mainly with one supplier. However if a strong EU internal energy market would be developed and the energy interconnections among the countries would be strengthened, the consumers would be supplied even in the event of a six-month gas disruption. To make this happen, the modernisation of the energy network has to be implemented, diversifying the suppliers and the energy sources.

This would not only allow Europe to increase the energy security but also to



Miguel Arias Cañete, Commissioner for Climate Action & Energy

fight the climate changes reducing the greenhouse gas emissions.

On 23 October 2014, the EU Council also agreed on a new climate and energy package for 2030 which has four main targets:

- At least 40% emissions reduction from 1990 levels by 2030;
- At least 27% energy efficiency increase by 2030;
- At least 27% renewable energy share by 2030;
- 15% increased energy interconnections between member states by 2030.

In addition to these targets, the EU ETS will be reformed and strengthened in line with the European Commission's proposal (January 2014) to establish a market stability reserve from 2021 onwards. This is to address the surplus of emission allowances in the EU ETS that has built up in recent years and to improve the system's resilience to major

shocks. The European Council underlined that a reformed, well-functioning ETS with an instrument to stabilise the market in line with the Commission's proposal will be the main instrument to achieve greenhouse gas emission reductions.

The leading role of Europe at international level to tackle the climate challenges was also highlighted at the conference, and Member States will return to the issue of an emissions reduction target after the Paris climate conference, which is set to take place in December 2015. The UN climate talks in Paris are supposed to produce a global agreement to cut greenhouse gas emissions to start in 2020 and last until at least 2030.

Dominique Ristori, Director General of Energy at the European Commission and Miguel Arias Cañete, new Commissioner for Climate Action & Energy, pointed out the importance of the public

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Future EU Energy Policy: Towards an Energy Union

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and private investments in the energy sector. The European Commission has already agreed on a 300 billion EUR investment package which will focus on:

- Energy Efficiency : modernisation of buildings;
- Power Generation: 60 billion EUR to replace 14% of the power plants in the following 20 years;
- Grid modernisation and interconnection.

In this context, energy has to be considered as a powerful instrument for job creation with a potential for stimulating

routes in the European economy and to increase the European competitiveness. Currently National energy policies and different energy prices are the main challenges to target in order to allow Members' states to be more competitive. Nations shouldn't change their energy policy without forecasting the potential impact on the energy system in Europe. A developed network of trust and solidarity has to be established among the Members' State in order to create an Energy Union which will be able to assure a strong internal energy market. ■



Maroš Šefčovič, Vice-President for the Energy Union

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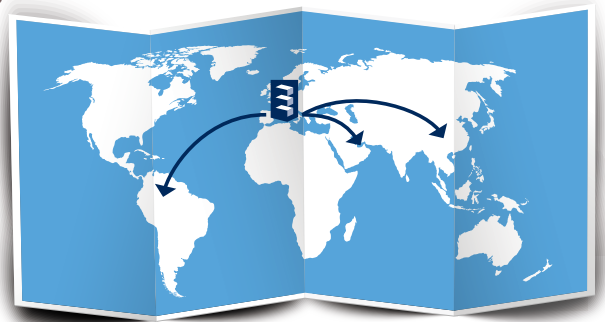
ETN is reaching out to new markets

Earlier in 2014, ETN opened its membership to user companies (utilities, industrial users and oil & gas) outside Europe and is now reaching out to promising gas turbine markets. The 7th International Gas Turbine Conference held on 14-15 October 2014 also emphasised on international gas turbine key markets, including the Middle East, Asia and South America, where high-level representatives from major global oil & gas companies and utilities attended the event.

In November 2014, Christer Björkqvist, ETN's Managing Director also attended the ADIPEC, an Exhibition and Conference in Abu Dhabi, United Arab Emir-

ates. He met with senior representatives of several companies to discuss potential cooperation in the Middle East as well as membership opportunities under the new Affiliate member category. Follow-up meetings are currently being planned from 11-14 January 2015, in Abu Dhabi. The feedback received so far on these meetings has been very positive and ETN will continue its efforts to increase the collaboration in the Middle East.

From 22 to 27 January 2015, Christer Björkqvist will also be in China for a



series of meetings arranged by Professor Jiang Hongde, Tsinghua University (Beijing) with others several Chinese utilities, in order to have a closer look at the issues that the Chinese users are having and to find out their needs and requests in order to identify potential areas of cooperation. ■

Upcoming meetings and events

ETN Meeting/Event	Date	Location
ETN Annual General Meeting*	21-22 April 2015	Dublin, Ireland
Power-Gen Europe	9-11 June 2015	Amsterdam, The Netherlands
ASME Turbo Expo	15-19 June 2015	Montreal, Canada
IAGT 2015 Symposium	19-21 October 2015	Banff, Canada
ETN October Workshop*	21-22 October 2015	To be announced
International Gas Turbine Congress (ETN members are entitled to a special discount)	15-20 November 2015	Tokyo, Japan

* Event open exclusively to ETN members

ETN's Cooperation with GTUsers



At the last ETN Board meeting, it was decided to start a cooperation with GTUsers.com

which organises independent user group meetings of specific gas turbines on behalf of the users: GE turbines: Frame 6FA, Frame 9FA/FB, Frame 9E, Frame 6B, LM6000. Alstom turbines: GT26. Siemens turbines: SGT5-4000F (V94.3A), SGT5-2000E (V94.2). Rolls Royce turbines: RB211, Trent.

The main objective of the cooperation between ETN and GTUsers.com is to increase the flow of information, development needs and requirements to ETN's Technical Committees.

GTUsers currently raise problems and share solutions among the user community. ETN will bring the additional step of addressing the problem with the help of experts coming from the

whole gas turbine value chain. A User meeting is already being planned in the ETN office later in 2015 on the Rolls-Royce GT RB211. More information on this future cooperation will be published in January 2015. ■

New ETN members

■ Helmut-Schmith University



ETN Team



Christer Björkqvist
Managing Director



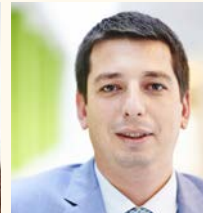
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