

ETN is a non-profit association bringing together the entire value chain of the gas turbine technology community. 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

Two Brexits in one month!

June has been a tough month for many in England: first the Brexit and then the defeat of England against Iceland during the Euro football tournament. The decision by UK voters to leave the European Union has shocked not only Europe but the world. Questions now arise on the impact it will have on the UK energy policy; changes to the UK energy mix, the UK participation in EU projects, etc. Currently there are much more questions than answers. UK Energy Secretary Amber Rudd predicted earlier this year that UK energy costs could rocket by at least half a billion pounds a year in case of a Brexit. She also stated that over the next five years the UK intends to double its ability to import electricity with new connections to France, Belgium,

Denmark and Norway. Today, as Brexit is a fact, the question is if these intentions and predictions will become true. One thing that is clear is that Brexit creates uncertainty related to the generation mix, economic growth and the value of the British pound. These uncertainties will all have a negative impact on any investment plan. It will be interesting to see how Theresa May, the new Prime Minister after a fast-track political transition, will be able to address and mitigate these uncertainties as the exit negotiations will start this autumn.

In previous newsletters I emphasised the importance for our sector to highlight and demonstrate the central role that gas turbine technology can play in different system approaches, not only as a transition technology but as a technology that can be developed in the longer term to produce carbon free reliable and affordable energy. I am therefore pleased that we are now involved in the European Technology and Innovation Platform (ETIP) "Smart networks for the energy transition" as well as the one on "Renewable, Heating & Cooling".

In terms of ETN activities, the last months have been an eventful period for us. In April, we organised our Annual General Meeting (AGM) and Workshop in Prague where the strategy for the coming years was decided and interesting discussions within our Technical Committees (TCs) took place. From a project point of view, the objective is to continue the ongoing projects and to focus on one or two initiatives per TC in order to ensure successful progress. You can find more details on this event in this newsletter and on our website (members' area).

On 1-2 June, we organised our first engine-specific user meeting in Amsterdam on the LM2500 engine family, which turned out to be highly successful. Users from Europe, North and South America and Africa as well as technical experts from GE and Independent Service Providers attended the meeting. ETN will now follow up on the reported issues and actions coming out of the meeting. I believe our strategy to initiate a continuous and focused discussion between the key stakeholders has proven to be very successful and appreciated. We will now implement this strategy together with GTUsers.com for other engines as well.

In June, we also organised a policy session at the European Union Sustainable Energy Week entitled "Micro Gas Turbine put a new spin on green energy production". This session highlighted how flexible gas turbine technology is and the important contributions it can provide to a low carbon energy scenario.

The upcoming period also promises to be busy, with our yearly High Level User Meeting on the 11 October and the 8th edition of our biennial International Gas Turbine Conference "IGTC-16" that will take place the following days on 12-13 October in Brussels. I hope to see you all in October for these upcoming events!

Past meetings and events

Summary of ETN's Annual General Meeting & Workshop 2016

ETN held its Annual General Meeting (AGM) & Workshop on 26-27 April 2016 in Prague, Czech Republic. In total, 81 representatives of member organisations joined and engaged in dynamic discussions around ETN's activities over the past year, its strategy for the future as well as on the opportunities and challenges for the gas turbine industry in the future EU energy system.



Annual General Meeting

Bernard Quiox, ETN President welcomed the 11 new members who joined ETN since the last AGM and stated that ETN, with its 107 members from 19 countries, is an important player for the whole gas turbine community. During the event, Christer Björkqvist, ETN Managing Director gave an insight on the current market situation, a general update on ETN's activities of the past year and its strategy for the coming years. Participants were given an overview of ETN finances and budget by Herwart Hönen, ETN Treasurer as well as an update on the EU energy policies by Dominique Cornut, ETN Policy and Communication Manager. The latest developments on the new integrated Strategic Energy Technology (SET) Plan were presented by Ugo Simeoni, ETN Technical Project Manager followed by a fruitful debate on the opportunities for the gas turbine industry in the future EU energy system. Peter Jansohn, Chair of ETN Project Board presented a draft summary of the second edition of the R&D Recommendation Report, which focusses on key research areas that the gas turbine industry should focus on. The final version of the second edition of the report will be published in the summer.

During the AGM 2016, a special focus was given on the users' perspective on market and optimisation of operations. Hatem

Rashad, ADGAS, United Arab Emirates gave the participants an insight on the needs and requirements from the oil & gas industry in the Middle East, while Sauro Pasini, Enel presented potential automated solutions to enhance plant operations and reduce cost.

ETN Workshop

On the second day, the Chairpersons of ETN's Technical Committees (TC) provided the participants with an overview of on-going projects and new initiatives that were then further discussed in individual TC sessions. Before the split up into parallel sessions, Lubos Prchlik, Doosan Skoda Power presented the newly started Flexturbine project under the Horizon 2020 programme.

Downloads: Summary Report, Presentations and Pictures

The Summary Report of the AGM & Workshop and the presentations are available on the [ETN website](#). You need to be logged in onto the ETN website to access the webpage and the documents. If you are an ETN member and did not create a user account yet, you can do so by [clicking here](#).

Pictures of the event are available by [clicking here](#). ■

New ETN Board of Directors for 2016-2018

At the Annual General Meeting and Workshop 2016, the new ETN Board of Directors for 2016-2018 has been elected by our General Assembly. The newly elected Board nominated Bernard Quoix as President, Catherine Goy as Vice-President and Herwart Hönen as Treasurer.

New ETN Board members 2016-2018



New ETN members

[CEZ](#)



CEZ GROUP

[London South Bank University](#)



[PBS Velka Bites](#)

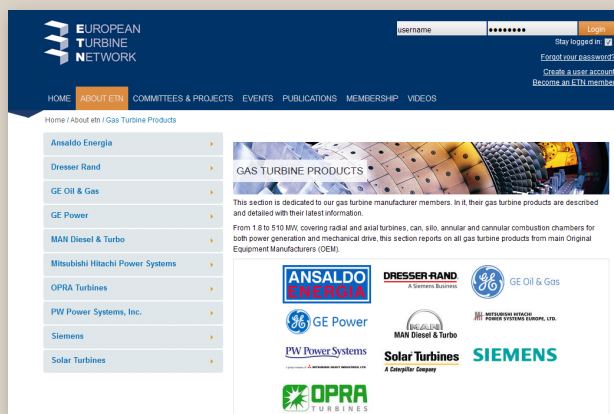


[EMW Filtertechnik](#)



With these new members, ETN has now 108 members from 19 countries!

New Webpage on the ETN Website: Gas Turbine Products



Following the input from the Original Equipment Manufacturers (OEM) members, ETN has created a new section on its website to promote the OEMs products and provide further information on the gas turbines available in the market. This includes their latest portfolio, technical specifications, design features and additional documentation, if available. To view the page, [click here](#).

ETN member of the year 2016

It has become a tradition that each year, the ETN office awards one very active member for its contribution and hard work on the ETN platform.

This year, **Peter Breuhaus** from IRIS was awarded Member of the Year for his continuous efforts and active involvement in the ETN Project Board, the Micro Gas Turbine Project, the PolyBioGT Project proposal and for his general support in several on-going ETN activities.



The two other nominees were **Jean-Louis Vignolo** from GE Power for his active role as Chair of Technical Committee 2 on Operational and Fuel Flexibility and **Andreas Huber** from DLR for his active involvement as Chair of the Combustion Working Group in the Micro Gas Turbine Project.

The ETN office would like to thank all of you for your hard work and involvement on the ETN platform! ■

Summary of ETN LM2500 User Group Meeting

On 1-2 June 2016, high-level representatives of LM2500 operator companies from Europe, North and South America and Africa met for the first ETN LM2500 User Group Meeting (UGM) at the Shell Technology Centre in Amsterdam. An overall fleet of 302 engines was represented at the event.

A high attendance of technical experts from GE was present in order to appropriately address every issue and provide their best answers to the Users' questions. A number of Independent Service Providers (ISP) also presented on the first day their services and potential help to the user community. During the meeting, a discussion was initiated with GE and the ISPs on the most critical issues that need to be addressed from the LM2500 user community and a sharing process of best practise was introduced among the user community.

ETN will now follow up on the reported issues and actions coming out of the meeting as well as widen the user group further in order to establish a strong, independent and knowledgeable LM2500 user community group with a major influence on future developments.

If you are an operator and you would like to be part of the LM2500 User Group, please contact Ignacio Lescano Carroll, ETN Technical Project Officer.

LM2500 User Group Newsletters and Sponsorship Opportunities

Following the first LM2500 Users Group Meeting, held 1-2 June 2016 in Amsterdam, ETN will connect with the Users involved in the LM2500 User Group Meeting as well as with the wider LM2500 User Community with two Newsletters. These newsletters will be sent strictly to users that own and operate an LM2500 engine.

- **The LM2500 Follow-Up Letter:** This monthly newsletter will be sent to the LM2500 Users that are already registered for the LM2500 User Group.
- **The LM2500 Newsletter:** This bi-monthly newsletter will be sent to the wider LM2500 User Community that has not yet registered to the LM2500 User Group.

ETN offers three comprehensive sponsorships packages, available to Independent Service Providers (ISP) only, which will allow them to get wider visibility by being present in these newsletters as well as being acknowledged in ETN's LM2500 webpage.

If you are an ISP and you would like to sponsor one of the newsletters, click here to download the [Sponsorship Package](#) or contact [Ignacio Lescano Carroll](#), ETN Technical Project Officer. ■



"The ETN User Group Meeting proved to be a valuable networking tool and the stepping stone for a united user front to bring attention and closure to lingering and "uncovered" LM2500 engine problems and sharing of best practices. I look forward to a continued relationship with all members and to next year's follow up meeting!"

Oscar T. Moguel, Operations Technical
Programmatics Machinery Advisor, **ExxonMobil** (Angola)



"Presenting at the ETN LM2500 Users Group Meeting was the perfect platform to interface with all types of operators to openly discuss their current issues and offer alternative Chromalloy solutions."

Ron van Gestel, Head of Business
Development Engineering, **CHROMALLOY** (The Netherlands)



"Outstanding event! Very practical and well organised, focusing on the issues that really matter. The ETN team is to be congratulated for having built an atmosphere of cooperation between all attendees, effective technical discussions and efficient format to questions and interact with OEM and ISPs. The long trip was really worth it!"

Mário Madureira, Maintenance Engineering
& Reliability Manager, **MODEC** (Brazil)



"On behalf of Statoil I must thank ETN for a well-organized and informative conference. Active participants contributed to good discussions on critical operational issues."

Geir Foss, Operation Specialist,
Statoil (Norway) **Statoil**

European Union Sustainable Energy Week Event: Micro Gas Turbines Put a New Spin on Green Energy Production

On 15 June, ETN together with COGEN Europe, AEBIOM and the Renewable Heating & Cooling Platform organised a Policy Session during the European Union Sustainable Energy Week (EUSEW) entitled “Micro Gas Turbines put a new spin on green energy production”. More than 50 participants attended the event.



Moderator
Mohsen Assadi

Professor in the Faculty of Science and Technology, University of Stavanger

Speaker
Remy Denos

Policy Officer, European Commission (DG Energy) (replacing Andreea Strachinescu)

Speaker
Andreas Huber

Head of Department Gas Turbine, DLR

Speaker
Sébastien Farinotti

Partner and Business Development Manager, Vanparijs Engineers

Speaker
Ludwig Van Wonerghem

CEO, ÖkoFEN Belgium

The EUSEW is a week-long series of sessions and exhibitions that promotes a secure energy future for Europe. It brings together public authorities, private companies, NGOs and consumers to inform and promote initiatives to save energy and move towards clean, secure and efficient power.

The objective of the Policy Session was to highlight that micro gas turbine integrated with renewable energy sources is a sustainable technology that can play an important role in a low carbon European Energy Scenario. The session presented future opportunities for high-efficiency, reliable, and environmentally-friendly combined heating/cooling and power (CHP) systems based on micro gas turbine (MGT) technology, integrated with solar and biomass energy sources given the current climate and energy policies.

During the event, it was demonstrated that MGTs have a large potential to become a highly important power generation source for different applications, in-

cluding CHP systems. In an EU context where the demand for heating power amounts to 46% of EU final energy use and where 40% of that energy consumption is related to buildings, MGT CHP systems can easily justify their place in the future energy sector.

Some strengths of the MGT-CHP technology were highlighted:

- + Low emissions & low noise
- + High fuel flexibility with high contaminant tolerances
- + High load flexibility – smart grid ready
- + Low maintenance
- + High grade heat at high temperatures
- + Compact size & light weight
- + Low installation costs
- + High design flexibility / integration potentials

However, it would be important to increase the awareness of the technology as well perform more research in order to:

- Further increase efficiency
- Reduce capital costs (low production volumes)
- Increase market awareness

The MGT technology (0.5 to 250 kW) is a promising technology that is finding its position in the market thanks to its flexibility of Renewable Energy Sources (RES) integration and the low maintenance costs. The current technology allows the distributed CHP to be adaptable with MGT integrated with RES, such as concentrated solar power (CSP) and biofuels. Such system approach would enable CO₂ neutral power generation and reduce the cost of transport compared to centralised systems.

However this poses challenges that are specific to the cycle configuration. The availability of suitable “CO₂ neutral fuel” as well as fuel flexibility (for improved reliability and availability) for small scale CHP are among the major challenges that needs to be addressed adequately to strengthen the interest for this technology. The development of intelligent monitoring tools that can support end users is also important which would facilitate an integration of this technology. ■





ETN represented in two European Technology & Innovation Platforms: “Smart networks for the energy transition” & “Renewable Heating & Cooling”

Smart networks for the energy transition

The European Commission (EC) is currently restructuring the European Technology & Innovation Platform (ETIP) “Smart Grids”, having recognised the importance of thermal power generation and its stakeholders in the development of a future energy system with a high integration of renewables. The ETIP involves all stakeholder recognised by the EC as key actors in driving innovation, knowledge transfer and European competitiveness.



The new ETIP will be called “*Smart networks for the energy transition*” and has the objective to identify the research topics, which would be the pillars of the European Strategic Energy Technology Plan for future energy systems at European level. A high level Governing Board is being constituted with representatives of the stakeholder groups who will make sure that centralised and decentralised power plants are flexible enough to satisfy the new smart grids’ requirements.

Five sectoral industry associations representing the Thermal Power Generation stakeholders – ETN (users, OEM’s, suppliers, R&D community); COGEN Europe (Cogeneration with both GT and gas engines); EUTurbines (OEMs for gas & steam turbines); EPPSA (power plant suppliers) and EUGINE (OEMs for reciprocating engine and its power plants) – have been asked by the European Commission to nominate three representatives for the three seats that are available for the Thermal power generation sector. The nominated persons that will represent the interest of the five associations will be announced soon.

Renewable Heating & Cooling

The ETIP “Renewable Heating & Cooling” (RHC) brings together stakeholders from the biomass, geothermal and solar thermal sectors – including the related industries such as District Heating and Cooling, Thermal Energy Storage, Hybrid Systems and Heat Pumps – to define a common strategy for increasing the use of renewable energy technologies for heating and cooling.

The ETIP “Renewable Heating & Cooling” is constituted by five technology panels: Solar Thermal, Biomass, Geothermal, Cross-Cutting and Heat Pump. ETN is currently in discussion with the Chairs of the technology panels in order to find areas of common interest and pave the way for new cooperation projects focusing on hybrid systems where renewable energy sources could be used for the operation of gas turbines.

Andreas Huber, DLR/Chair of ETN’s Combustion Working Group within the Micro Gas Turbine Project has been elected to be a member of the Biomass Panel Steering Committee and will represent ETN’s interests in this panel.



The Biomass Technology Panel aims to pave the way for biomass based heating and cooling in Europe. The activities of the Panel will deliver comprehensive documents, outlining a strategy for the sector. The Biomass Technology Roadmap, produced by the Steering Committee outlines a number of actions and investments needed in the short and long-term to implement the biomass strategic research priorities, and will be used by the European Commission as a consultative document for the draft of upcoming R&D calls. The main objective of the Biomass Technology Panel is to unlock national and European funds for R&D, enabling the successful deployment of biomass based heating and cooling technologies in Europe. ■

8th International Gas Turbine Conference (IGTC-16) “The Future of Gas Turbine Technology”



The 8th edition of ETN's international conference “The Future of Gas Turbine Technology” will take place on 12-13 October 2016 in Brussels. The conference offers a platform on the crossroads of science, technology, policy &

business related to gas turbine technology where attendees will have the opportunity to discuss and get an insight on future market opportunities within the current policy framework. Attend the next edition of ETN's International Gas Turbine Conference and seize the opportunity to exchange knowledge, create new partnerships and network actively with the entire value chain of the gas turbine community.

The IGTC-16 is the perfect opportunity to meet and exchange ideas with policy makers, high level industry delegates and gas turbine experts from the whole value chain attending from Europe, North and South America, the Middle East and Asia. The conference will highlight the energy market outlook in Europe and globally, as well as to present and discuss on-going R&D activities and new developments on flexible, efficient and environmentally sound gas turbines.

This event will focus on the future gas turbine technology development needs in different markets from a user's perspective and within the agreed energy and climate policies and emissions targets.

Keynote sessions



The keynote sessions and panel discussions will address critical issues related to the future energy outlook and climate change in the context of the different and fast changing markets. Special attention will be given to increased fuel flexibility and operational flexibility, while

retaining reliability, high efficiency and lower emissions for both single cycle and combined cycle operation. Energy policies, regional market opportunities and initiatives for gas turbine technology development in Europe and globally will be presented, followed by panel discussions with high level policy makers, distinguished executives and experts from the industry.

Technical sessions



ETN has received 80 abstracts for technical papers of extremely high quality, of which a maximum of 28 could be selected for the following technical sessions:

- Innovative Low Carbon Cycles
- Maintenance & Repairs
- Optimising Combined Cycle Operations
- Material and Lifetime
- Optimising Oil and Gas Operations
- Combustion
- Flexible Operation
- Fuel Flexibility

The technical sessions will address critical research and development activities necessary for the advancement of gas turbine technology, from operational, environmental and cost perspectives. Recent gas turbine technology and new innovative solutions will be explored. The technical papers will combine research initiatives, field studies of real case applications and technical review papers, with the aim to give a balanced view of current developments and future needs for research in gas turbine applications.

Sponsorship opportunities

ETN offers several sponsorship opportunities as well as flexible options that should correspond to your specific needs for visibility. You can view the Sponsorship Information Package by [clicking here](#). Please contact Dominique Cornut, ETN at dc@etn-gasturbine.eu should your organisation be interested in sponsoring the IGTC-16.

Visit www.etn-gasturbine.eu for more information.

Registration

Registration is now open! [Click here](#) to register. ■

ETN at a Glance!

Download the new [ETN Brochure](#), featuring:

- ETN Mission & Objectives
- ETN Technical Committees
- ETN Projects
- ETN Events & Activities
- ETN Membership Benefits
- And more!



Are you a gas turbine user located outside the EU? [Download the Brochure](#) showcasing the benefits of being part of ETN's global gas turbine user community.



Upcoming meetings and events

ETN Meetings/Supported Events	Date	Location
ETN Board Meeting*	19 July 2016	Brussels, Belgium
Project Board Meeting	9 September 2016	Brussels, Belgium
ETN High Level User Meeting	11 October 2016	Brussels, Belgium
8 th International Gas Turbine Conference	12-13 October 2016	Brussels, Belgium
SGT5-2000E Users Conference (organised by GTUsers.com)	November 2016 (exact dates tbd)	Place (TBD)

* Event open exclusively to ETN members

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