



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.

In this issue

Micro Gas Turbine in the European Energy Scenario	2
ETN LM2500 User Group Meeting	3
8 th International Gas Turbine Conference "The Future of Gas Turbine Technology"	4
Upcoming meetings and events	4
Strategic Energy Technology (SET) Plan: The technology pillar of EU's energy and climate policy	5
Upcoming meetings and events	7



Christer Björkqvist
Managing Director

Is the European energy market up to the challenge to achieve a successful sustainable energy transition, ensure its security of supply and preserve its competitiveness?

Every week there are a number of meetings debating EU's Energy transformation to a low carbon, secure and competitive energy system in Brussels. The main difference from the past is that the European Commission, in its revised version of the Strategic Energy Technology (SET) plan, is now taking a system approach rather than betting on individual technologies. Therefore future R&D calls will be much wider and less technology specific.

It is therefore vital for our sector to highlight and demonstrate the important 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.

From a security of supply point of view I believe Europe is today in a much better position since there is a large amount of LNG on the way to Europe. Last week the first US shale gas shipment arrived to Europe. Parallel to this we are moving closer to an accepted agreement on the construction of a Nord Stream 2 pipeline from Russia to Germany.

Since the COP21 meeting in Paris and the wide global agreement on CO₂-reduction among 195 countries, there is a number of promising market reports that predict a global growth of the gas turbine market. A lower price and increasing availability of natural gas owing to the shale gas boom and the higher efficiency & lower carbon emission characteristics of natural gas-fired power plants are the major factors driving the gas turbines market globally. In Europe we see the start of a slow comeback for natural gas-fired power generation with the UK in lead where the "switch" from coal to gas is already happening due to a carbon price floor set at £18/tonne, which is way above the price in the EU's emissions trading scheme.

With the increasing amount of intermittent renewable generation in Europe, it is clear that there are many opportunities for fast starting simple cycle gas turbines for peak-loading and back-up power. The International Energy Agency's new chief economist, Laszlo Varro, recently stated at the Gas Forum in Brussels that Europe will need around 90 GW of dispatchable capacity to balance power demand due to intermittent renewable power generation. This is good news but these plants will probably only run for 1000 hours each year.

Within ETN we have highlighted the important role that gas turbine technology can play in a future sustainable energy system by submitting contributions to the SET-plan. Earlier this month we also held a successful high level Micro Gas Turbine meeting with the European Commission and selected key stakeholder discussing potential integration opportunities.

In the next quarter we have many interesting events and meetings coming up. First our Annual General Meeting and Workshop on 26-27 April in Prague with an optional visit to Solar Turbines facilities on the 25 April. We then have our first engine specific gas turbine meeting (LM2500) for the user community on 1-2 June in Amsterdam. On top of that there are several ongoing project meetings so the upcoming period promises to be a busy one. I hope that you will be able to join us in our upcoming activities.

Micro Gas Turbine in the European Energy Scenario

ETN has created a working group for Micro Gas Turbine (MGT) technology that includes over 30 organisations from the whole MGT value chain, whose objectives are to explore and identify cooperation opportunities for technology developments. As part of the MGT working group's activities, ETN organised a high level meeting "MGT in the European Energy Scenario" on 18 March 2016 in its offices in Brussels.



In total 22 participants joined the meeting including representatives of the European Commission (Andreea Strachinescu, Head of Unit New energy technologies, innovation and clean coal and Kyriakos Maniatis, Bioenergy Expert, both from DG Energy and Piero De Bonis, Research Programme Officer from DG Research). Industry stakeholders also joined the meeting including AEBIOM (Biomass Association), COGEN Europe (Cogeneration Association) as well as MGT technical experts from industry (Ansaldo, MTT, Compower, Bosal ACTE), and from R&D Institutes and universities (Cranfield University, City University London, IRIS, University Roma Tre, University of Genova and RSE).

The objectives of the meeting were to highlight how a MGT integrated with RES can help in achieving the EU 2030 climate and energy targets. The objective was also to define medium & long-term research needs (generic but specific in nature) for the integration of MGT and Renewable Energy Sources (RES).

MGT Technology Report

The MGT working group is currently drafting a MGT technology summary that aims to be a reference document for MGT technology but also to highlight opportunities and benefits of further research and development for the integration of MGT technology with RES. The report will provide a full understanding of how the MGT integrated with Combined Heat and Power (CHP) and Renewable Energy Sources (RES) such as biomass and Concentrated Solar Power (CSP) could con-

tribute in reaching the EU 2030 targets. The document will include an overview of the MGT technology, its applications in the energy sector and the technical challenges that need to be addressed in order to develop the technology further. It will also include some information on the impacts and contribution to the EU energy targets. The first draft of the report should be finalised in the course of the summer.

MGT is an attractive technology that can facilitate, in the short term, the integration of RES into the grid by absorbing the fluctuations and by using natural gas, biogas, industry waste gas, or landfill gas. In the long term, it can support the EU in the decarbonisation of the energy system and to the full deployment of RES in the grid through hybrid MGT applications that can assure high utilisation of RES and ensure security of energy supply thanks to the use of natural gas or other gas if needed.

For more information, visit the [MGT webpage](#). ■



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Upcoming ETN events and meetings

ETN LM2500 User Group Meeting

ETN is organising its first User Group Meeting for the LM2500 engine on 1-2 June 2016 in Amsterdam.

ETN User Group Strategy

In 2015, the Gas Turbine (GT) user community within ETN decided to set up independent user meetings on selected frequently used GT engines among the user community for both power generation and oil & gas sectors. It was done in order to address GT users' issues and trigger a dedicated response from Original Equipment Manufacturers (OEMs), Independent Service Providers (ISPs) and the Research & Development (R&D) community.

In partnership with GTUsers.com, ETN aims to strengthen independent engine user groups and meetings and to optimise the benefits for the GT user community through a wider participation in independent user groups and a structured process and engine specific communication with the OEMs and ISPs.

The ETN strategy incorporates three phases:

1	Collection	The GT user community reports operational and technical issues as well as future requirements.
2	Review & Investigation	Issues are reviewed and short-listed based on frequency and economic impact. Key GT issues are reported to OEMs, ISPs and R&D community.
3	Solution	Solutions to the major GT issues and requirements are being explored with the OEMs, ISPs and R&D community.



© LM2500+G4 from General Electric

LM2500 User Group Meeting

Date: 1-2 June 2016

Venue: Shell Technology Center, Amsterdam, The Netherlands

Agenda: [Click here](#)

The first engine to focus on is the aero-derivative LM2500 engine including the different models and configurations. This engine was selected based on the large fleet within the ETN User community. GE has agreed to work with ETN in a cooperative way.

Collection of specific issues from this user community is already in progress and a database of reported issues has already been initiated.

The objectives of the LM2500 user meeting are to:

- Provide a continuous and focused dialog between the user community, GE and ISPs in order to define and develop solutions to prioritised operational issues/requirements;
- Identify more generic issues that can be brought to ETN's Technical Committees in order to explore potential solutions together with leading experts from the R&D community;
- Explore opportunities to reduce issues through development of standardisation of GT packages. ETN already has two on-going successful projects in this field related to exhaust systems and air filtration.

Supportive organisations that provided data in the collection phase



Registration and Information

All LM2500 operators are invited to register to the meeting. For more information or to register, please visit the [LM2500 User Group webpage](#) or contact Ignacio Lescano Carroll, ETN at LM2500@etn-gasturbine.eu.

**LM2500
Users Group
Meeting**
LM2500@etn-gasturbine.eu

Shell Technology
Center, Amsterdam
1 & 2 June 2016
LM2500/+G4
PGT25/+G4
 **GTUsers.com**

Upcoming ETN events and meeting

8th International Gas Turbine Conference “The Future of Gas Turbine Technology”

12-13 October 2016, Brussels, Belgium

The eighth edition of ETN's international flagship conference “The Future of Gas Turbine Technology” will take place in 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 partner-

ships and network actively with the entire value chain of the gas turbine community. Registration will open in the spring.

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. ■

New ETN members

■ [Boldrocchi](#)



■ [Fogale Nanotech](#)

FOGALE nanotech

■ [Freudenberg](#)



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asme.org/events/turbo-expo





Strategic Energy Technology (SET) Plan: The technology pillar of EU's energy and climate policy

Creating a global economy that emits a fraction of its current greenhouse gas emissions will not only require changes in the way economies are structured, but it will require a new innovation drive in the EU and beyond. The economic growth, welfare and competitiveness of the EU depend on the EU's success to develop, deploy and compete in new low-carbon technologies. As a result, the EU has launched in 2007 a research and development strategy targeting the energy sector, the Strategic Energy Technology (SET) Plan and in September 2015, the European Commission has published an updated and integrated SET Plan in order to achieve Europe's 2050 energy and climate targets.

Research and Innovation for Climate: The Fifth Dimension of the Energy Union

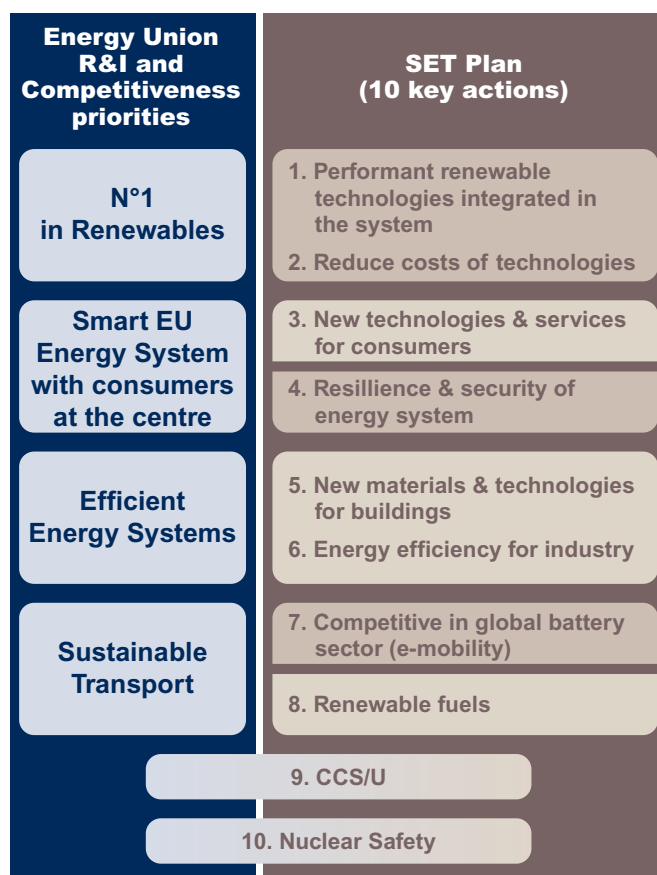
The updated SET Plan is the first deliverable on which the fifth dimension of the Energy Union Strategy (research and innovation for climate) will be built. The European Commission's Energy Union strategy, adopted in February 2015, dedicates one of its five pillars to research, innovation and competitiveness. This dimension will be developed along three policy priorities: the integrated SET Plan, the Strategic Transport Research and Innovation Agenda and the Global Technology and Innovation Leadership Initiative. The integrated SET-Plan will play a central role in a new European energy Research & Innovation (R&I) approach designed to accelerate the energy system transformation.

The European SET-Plan is Europe's technology response to the pressing challenges of meeting its targets on greenhouse gas emissions, renewable energy and energy efficiency over the coming decades. It aims to accelerate the development and deployment of low-carbon technologies, improve new technologies and reduce costs by co-ordinating research and co-financing selected projects. It promotes research and innovation efforts across Europe by supporting technologies with the greatest impact on the EU's transformation to a low-carbon energy system and also encourages cooperation amongst EU countries, companies and research institutions.

More specifically, the Integrated SET-Plan:

- Identifies 10 focused research and innovation actions, based on an assessment of the energy system needs and on their importance for the energy system transformation and the potential to create growth and jobs in the EU;
- Addresses for these actions the whole innovation chain, from basic research to market uptake, both in terms of financing as well as in terms of regulatory framework;
- Adapts the structures set-up under the SET-Plan to ensure a more effective interaction with Member States and stakeholders;
- Proposes to measure progress as part of the annual reporting of the State of the Energy Union via overall Key Performance Indicators (KPI's), such as the level of investment in R&I, as well as specific KPI's to measure progress on the performance and cost-reduction for the priorities.

The 10 focussed R&I actions linked to the Energy Union's priorities:



continued on page 6

continued from page 5

Consultative Process on the New Integrated SET Plan

The European Commission is currently organising a consultative process with stakeholders in order to translate the 10 actions of the new integrated SET-Plan into concrete work. On each action, the EC prepares Issues Papers in order to trigger the discussions towards the targets, priorities and implementation measures. The Issues Papers are published on the [SETIS website](#) in order for all interested stakeholders to provide their comments and inputs. The European Commission will take some input from the updated SET Plan to build the upcoming Horizon 2020 Work Programme.

ETN has so far provided comments on the following Issue Papers:

■ **Actions 5: Develop new materials and technologies for, and the market uptake of, energy efficiency solutions for buildings**

Following the online publication of the draft issue paper on SET-Plan Action 5 where the EC identified “Efficient and smart cogeneration (CHP) for buildings (e.g. micro and small scale CHP)” and “innovative heating and cooling systems” as relevant technologies and solutions, ETN and COGEN Europe have jointly prepared an input paper highlighting the importance of micro-CHP in the future energy sector, with a particular focus on micro-CHP coupled with micro gas turbines.

[Download ETN & COGEN Europe joint statement on Action 5](#)

■ **Action 6: Continue efforts to make EU industry less energy intensive and more competitive.**

To ensure the continuation of efforts to make EU industry less energy intensive and more competitive, ETN and EUTurbines have jointly prepared an input paper stressing our strong interest and willingness to collaborate with the energy intensive industries and contribute to the discussion how to best achieve the outlined targets.

[Download ETN and EUTurbines joint statement on Action 6](#)

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Upcoming meetings and events

ETN Meetings/Supported Events	Date	Location
ETN Air Filtration Meeting*	11-12 April 2016	Brussels, Belgium
F6FA Users Conference (organised by GTUsers.com)	12-14 April 2016	Rome, Italy
ETN Board Meeting*	26 April 2016	Prague, Czech Republic
ETN Annual General Meeting and Workshop*	26-27 April 2016	Prague, Czech Republic
ETN LM2500 User Group Meeting	1-2 June 2016	Amsterdam, The Netherlands
ASME EXPO Turbo (ETN members are entitled to a special discount)	13-17 June 2016	Seoul, South Korea
EU Sustainable Energy Week (EUSEW)	13-17 June 2016	Brussels, Belgium
Combined Heat and Power Short Course	13-17 June 2016	Cranfield, UK
Power-Gen Europe (ETN members are entitled to a special discount)	21-23 June 2016	Milan, Italy
ETN Board Meeting*	19 July 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)	Location (TBD)

* Event open exclusively to ETN members

ETN Team



Christer Björkqvist
Managing Director



Dominique Cornut
Policy and Communications Manager



Ugo Simeoni
Technical Project Manager



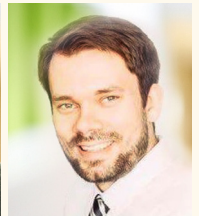
Ignacio Lescano Carroll
Technical Project Officer



Ilona Kolb
Financial and Administrative Officer



André Mom
External Consultant



David Bosak
Researcher
(Cranfield University/
ETN exchange programme)



ETN a.i.s.b.l
Chaussée de Charleroi 146-148/20
1060 Brussels ■ Belgium
Tel: +32 (0)2 646 15 77
info@etn-gasturbine.eu ■ www.etn-gasturbine.eu