

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

Competitive strategy under uncertainty

While preparing our upcoming 8th International Gas Turbine Conference, making a quick review of past events, I realised that since the early start of these conferences we have asked for more stability and a more levelled playing field to boost long term investments. The question is if we will ever gain these...? The traditional approach to strategic investments that relies on accurate and precise predictions of future events has proven to be inadequate when faced with today's fast-changing environments. Instead it is today probably more appropriate to use a scenario-based strategic planning that prepares our organisations for different potential outcomes.

Another reflection looking at the market developments over the years is that manufacturing and service has become more vertically fragmented as our industry is becoming more and more integrated. At the same time the roles of the different stakeholders are also becoming more and more diverse. With such complex developments, it will be vital to have a business model with a high level of flexibility to accommodate for volatility, quick changes and diversified market demands. It will also be more crucial than ever to be well connected in a wide network of experts in order to keep a competitive edge in the future. This will be one topic that will be discussed at our forthcoming conference alongside the exploration of the impact of the latest technology developments and promising future research initiatives.

Some uncertainty, related to global climate policy, has disappeared after the recent progresses in the ratification process of the COP21 Paris Agreement. As the first multilateral agreement on climate change covering almost all of the world's emissions, it has become a historic landmark, confirming a common path to a low carbon global economy. It will be interesting to see whether declarations of intent have already translated into some progress at the COP22 in November 2016.

The Brexit process has on the contrary contributed to a lot of uncertainty. Three months after the UK's vote to leave the EU on the 23 June, we have barely started to realise the huge complexity of the three required phases of the planned exit. According to me this is a disaster for both UK and EU and a complete waste of money and resources. ETN has taken proactive approach to stay united with our British colleagues regardless of the outcome.

Finally, I am pleased to announce the publication of ETN's new Research & Development Recommendation Report, to be released on 12 October at our International Conference. This report is based on common efforts by members of ETN to predict and summarise recommendations for future R&D topics. I am also pleased to announce that the programme for the IGTC-16 has been finalised and can be downloaded on the ETN's website. We have almost reached our maximum amount of delegates, so hurry up if you have not registered! I can promise you interesting and exciting keynote sessions, panel discussions, technical papers on promising R&D developments as well as extensive networking opportunities. I look forward to welcoming you at the Conference.

The biennial International Gas Turbine Conference takes place this month!

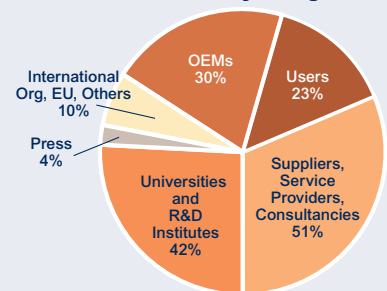


The International Gas Turbine Conference (IGTC) "The Future of Gas Turbines" is an important event not only in the life of ETN as the leading organisation of the gas turbine community in Europe, but also for the actors of the entire value chain related to this technology globally. Last edition in 2014 gathered 163 participants from 100 different organisations and 21 countries across the globe! Next edition is taking place this month, on 12th and 13th in Brussels and everyone is welcome.



The papers and abstracts presented will be accessible on ETN website for the participants. Lastly, the conference is an outstanding opportunity to meet, engage and network within the gas turbine community. You can consult the preliminary programme here. Small changes may have been made since you last read it. Do not forget, it is still possible to register to the IGTC-16. To do so, [click here!](#) ■

Attendance in 2014 by categories



Top-tier keynote sessions

The International Gas Turbine Conference is organised in different sessions, with their own focus and structures. There will be four main keynote sessions, giving the floor to officials and top-level speakers from the International Energy Agency, the European Commission, the US Department of Energy, and senior executives from Gas Turbine community. These sessions will address the political, technical and market trends for the gas turbine industry in Europe and world-wide. Presentations will be followed by panel discussions involving the speakers and the public. The final keynote, which has become a tradition, will offer a chance to have a direct dialogue with senior executives of the OEMs.

Technical sessions

The IGTC will also offer technical sessions that will focus on more specific topics, related to the operation and design of GTs:

- Gas Turbines in distributed Generation
- Optimising Oil & Gas Operations
- Innovative Low Carbon Cycles
- Optimising Combined Cycle Operations
- Combustion and Fuel Flexibility
- Maintenance and Repairs
- Flexible Operation
- Materials

"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, Secretary General of Eurogas



"The IGTC 2014 was really outstanding. It was well organised and it had the right speakers. The panel sessions, the technical sessions were informative. I particularly got a lot of information in guidance from the panel sessions [...]. It is really a high value attending this meeting."

Richard Dennis, US Department of Energy

This year, the IGTC is taking place with the support of our sponsors:

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MEDIA PARTNERS



Two members join the Project Board...

The Project Board of ETN welcomes two new members: **Mark George**, who is Sales & Business Development Director at Cullum Detuners, and **Nicola Rossi**, Head of Generation Systems, Efficiency and Flexibility Innovation, Global Thermal Generation at Enel. They are joining the remaining members from the previous term: Peter Jansohn (Paul Scherrer Institute), Peter Breuhaus (International Research Institute Stavanger), Dominique Ohron (Total) and Abdulnaser Sayma (City University London).



"I have a passion for Gas Turbine Technology which extends over 25 years from my academic studies through to my career. I am keen to support ETN's vision, working with all the members and Project Board to positively influence its future direction. I firmly believe that gas turbines are a fundamental part of the future global energy mix and are critical to

the reductions in CO₂ levels from our generating plant. In addition gas turbines are critical plant for infra-structure networks for offshore and onshore applications and their reliable operation is of paramount importance."

→ What is it?

The **Project Board of ETN** operates as a consultative forum and an independent support to new initiatives brought to ETN, and provides technical and strategic advice to maximise the potential of such projects. It also ensures the clear and positive presentation of its proposals through the ETN platform. Lastly, one of its main missions is also to produce a R&D report (see next page!)



... and the ETN family keeps on growing

The ETN family grows! The organisation has integrated two new members.

EMW Filtertechnics

This 60 year-old, family-operated, company is based in Diez (Germany) and it has specialised in air filter systems, filter media and technical foam for the treatment of wastewater. Andrew Thomson will be the ETN contact and stresses their satisfaction to join: "We hope to further develop our relationships with operators and join in a forum that allows us to understand their concerns, problems and expectations with respect to their specific operations and hope to develop new ideas with the community."



MAPNA

ETN is also welcoming MAPNA Europe. MAPNA is a conglomerate from Iran founded in 1993. It is the largest general contractor of power plants in the Middle East and West Asia and gathers companies operating in the fields of power generation, oil and gas and transport. Gas Turbine's World ranked the group amongst the top 10 power plant manufacturers in the world. The total power generated by its synchronized units, units under construction and units under negotiation is estimated around 60,000 MW. The European branch of MAPNA is based in Düsseldorf.



A new Policy and Communications Manager

Thibault Bouterin

has been appointed as the new Policy and Communications Manager at ETN, replacing Dominique Cornut. Thibault has been working in public affairs and communications for 8 years in Paris and London with business organisations, institutions and politicians. He holds two MAs in European affairs from Sciences-Po Paris and the College of Europe and a BA in Bosnian, Croatian and Serbian. He will be in charge of the communications, events and policy.



Contact: tb@etn-gasturbine.eu

ETN releases its 2016 R&D Report

On the eve of the 8th International Gas Turbine Conference, ETN is releasing the new edition of its biennial R&D Recommendation Report, which proposes an analysis of the needs and requirements of the gas turbine technology based on the organisation's expertise and in the light of the energy policy targets.



Since its creation in 2005, ETN has been working as an experts and professionals community sharing daily-experience and harnessing their knowledge of the gas turbine operation. The biennial R&D Recommendation Report that ETN publishes every second year is another input of the organisation to the reflexion around

the future of this technology in particular and to the questions related to the policies of energy, environment and climate change more generally. This effort aims at bringing up proposals for R&D topics based on interpretations of the user community's recommendations and energy policy targets. And who else than everyday practitioners and specialists is legitimate to do so?

Raising awareness to trigger action

The R&D Report has been prepared by ETN's Project board; it integrates all the aspects of the current context from an

"The report is intended to be a living document and thus revised on a biennial basis. As a consultative forum, the ETN Project Board provides support for new ideas and initiatives that have originated from the entire body of ETN members. The R&D recommendation report is supposed to be a guideline for this work."



Peter Jansohn, Paul Scherrer Institute and the Chair of the ETN Project Board

economic and technical point of view: the state of the market in Europe, the situation for oil & gas business and the operating conditions of gas turbine-based power plants. It also fully takes in consideration the current and future policies in energy, environment and climate change (increase of renewables, cut of greenhouse gas and pollutants emissions, etc.). This report tries to embrace the wide scope of critical and relevant questions in order to provide an exhaustive list of actions.

One of the key missions of this report is also to raise awareness, proposing a pedagogical presentation of the needs as it is addressed to policy-makers and the energy community at large. ■

High-Level User Meeting for owners and operators of gas turbines

The day before the IGTC-16, ETN organise its yearly High-Level Users meeting. At this event, open only to the gas turbine user community, ETN's current strategy and activities to help the gas turbine user community to address their main issues and requirements are being presented. Issues of strategic importance to the oil & gas and power generation industries are being discussed. The meeting also provide an



opportunity to exchange experiences, best practices as well as to explore col-

laboration opportunities and needs to develop common standards. ■

Engine-specific meetings...



One important activity of ETN in partnership with GTUsers.com is to ensure the existence of independent engine-specific meeting on selected frequently used gas turbine engines for both power generation and oil& gas sector. These meetings are organised as a service to the user community. The objective is to exchange experiences, best practises and to trigger a dedicated response from the specific OEM of that engine but also to bring more generic issues to ISP's and the R&D community.

Covered gas turbines:

- GE: Frame 6FA, Frame 9FA/FB, Frame 9E, Frame 6B, LM6000, LM2500
- GE/Ansaldo: GT26, GT13E2
- Siemens/Ansaldo: SGT5-4000F (V94.3A), SGT5-2000E (V94.2)
- MHPS: M701F
- Siemens (Rolls Royce): iRB211, Trent

Any user of one of the above engines can register for free on www.gtusers.com for their specific engine. "This web service is tailor-made, open only for owners and operators of these engines, with the objective to enable a safe and secure sharing of experiences and best practise", states Yrjö Komokallio, CEO of GTUsers.com. ■

... and for those of LM2500 and iRB211

Following the success of the first LM2500 User Group Meeting, ETN has initiated plans to organise an iRB211

User Group Meeting in May 2017. The set-up would be similar to the LM2500, aiming at collecting and identifying key issues for the user community ahead of the meeting in order to have a focused discussion on prioritised issues at the meeting. Anyone who is interested can contact Ignacio Lescano Carroll at il@etn-gasturbine.eu ■

Upcoming user meetings

- SGT5-2000E (V94.2): 1-3 November 2016 in Rome Italy organised by GTUsers.com
- GT26: 29 Nov-1 Dec 2016 in Madrid Spain organised by GTUsers.com
- iRB211: May 2016 (exact date and venue tbc) organised by ETN
- LM2500: 14-15 June (venue tbc) organised by ETN

THE GT INDUSTRY

A European regulation for Medium Combustion Plants

After the European Union adopted the Medium Combustion Plant Directive in November 2015, the member-states have started to transpose the regulation in their national law. This requires the attention of ETN members as it can have a direct impact on the activity of gas turbine community.

The Directive (EU) 2015/2193 on "the limitation of emissions of certain pollutants into the air from medium combustion plants" intends to curb the emission of sulphur dioxide (SO₂), nitrogen oxides (NO_x) and dust by all types of combustion plants, whether they are for industrial or residential use. It also creates harmonised rules to evaluate emissions of Carbon monoxide (CO). The regulation targets gas turbines along with engines, boilers and heaters (but with a list of exceptions such as offshore gas turbines or plants already covered by EU regulations of emissions, such as the directive on industrial emission 2010/75/EU, which regulates plants larger than 50 MWth).

A system of Emission Limit Values

The directive creates Emission Limit Values (ELVs), according to fuel category. These limitations will apply to combustion plants with a rated thermal input between 1MWth and 50MWth: in 2025 if they have a capacity larger than 5MWth and in 2030 if they are less or equal to 5MWth. In the case of new plants, the ELVs apply as of December 2018. Each member-state is required to have a public and transparent registration compiling the type of fuel and the expected amount of operating hours per year. It will be their responsibility to assure that this regulation is effectively implemented and they will have

to measure annual emissions of CO (with a report expected by the Commission in 2021) and SO₂, NO_x and dust (report by 2026). Furthermore, companies are legally bound to keep record of their emissions, total operating hours and the quantity of fuel used, annually for 20-50MWth plants and every third year for smaller ones. The Commission stressed the objective of cost-efficiency of this measure, claiming it is especially adapted for SMEs, and carries limited administrative burden. Industry concerns include that the directive favours internal combustion engines over gas turbines.

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1 directive, 28 processes of transposition to monitor

After its adoption by the members of the European Parliament and the Council (which reunites the competent ministers of each member-state), the Medium Combustion Plant directive came into force on 18 December 2015, leaving a two-year slot for transposition in national laws. Member states have hence started, which requires the vigilance of the gas turbine community. ETN had created a dedicated group for legislative work at EU level. This effort should be maintained to keep track of the national initiatives following the entry into force of the directive. If you feel that the regulation in your country warrants review by ETN, do not hesitate to contact Thibault Bouterin: tb@etn-gasturbine.eu ■

Figures and facts

143 000

medium combustion plants were in activity in the EU in 2015 (according to the European Commission)

19 December 2017

is the limit date set for the member-states of the EU to transpose the text in their national law

The "Clean Air for Europe" programme

was adopted by the EU in December 2013. It set targets for the EU in terms of pollution reduction paving the way to legislative initiatives such as the MCPD. The directive will be used as one of the bases for the revision of the National Emissions Ceilings Directive.

>50 MWth

Industrial Emissions Directive (IED - 2010) (replacing the previous Large Combustion Plant Directive)

> 1 MWth - <50 MWth

Medium Combustion Plant Directive (MCPD - 2015)

< 1 MWth

Ecodesign Directive (2009)

Emission limit values (mg/Nm³) for existing engines and gas turbines

Pollutant	Type of Medium combustion plant	Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO ₂	Engines and gas turbines	–	120	–	15 ^{(1) (2)}
NO _x	Engines	190 ^{(3) (4)}	190 ^{(3) (5)}	190 ⁽⁶⁾	190 ⁽⁶⁾
	Gas Turbines ⁽⁷⁾	200	200	150	200
Dust	Engines and gas turbines	–	10 ⁽⁸⁾	–	–

- (1) 60 mg/Nm³ in the case of biogas.
 (2) 130 mg/Nm³ in the case of low calorific gases from coke ovens, and 65 mg/Nm³ in the case of low calorific gases from blast furnaces, in the iron and steel industry.
 (3) 1850 mg/Nm³ in the following cases:
 (i) for diesel engines the construction of which commenced before 18 May 2006;
 (ii) for dual fuel engines in liquid mode.
 (4) 250 mg/Nm³ in the case of engines with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.
 (5) 250 mg/Nm³ in the case of engines with a rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW;
 225 mg/Nm³ in the case of engines with a rated thermal input greater than 5 MW and less than or equal to 20 MW.
 (6) 380 mg/Nm³ for dual fuel engines in gas mode.
 (7) Emission limit values are only applicable above 70 % load.
 (8) 20 mg/Nm³ in the case of planes with a rated thermal input equal to or greater than 1 MW and less than or equal to 20 MW.

Emission limit values (mg/Nm³) for new engines and gas turbines

Pollutant	Type of Medium combustion plant	Gas oil	Liquid fuels other than gas oil	Natural gas	Gaseous fuels other than natural gas
SO ₂	Engines and gas turbines	–	120 ⁽¹⁾	–	15 ⁽²⁾
NO _x	Engines ^{(3) (4)}	190 ⁽³⁾	190 ^{(5) (6)}	190 ⁽⁷⁾	190
	Gas Turbines ⁽⁸⁾	75	75 ⁽⁹⁾	50	75
Dust	Engines and gas turbines	–	10 ^{(10) (11)}	–	–

- (1) Until 1 January 2025, 590 mg/Nm³ for diesel engines which are part of SIS or MIS.
 (2) 40 mg/Nm³ in the case of biogas.
 (3) Engines running between 500 and 1500 hours per year may be exempted from compliance with those emission limit values if they are applying primary measures to limit NO_x emissions and meet the emission limit values set out in footnote (4).
 (4) Until 1 January 2025 in SIS and MIS, 1850 mg/Nm³ for dual fuel engines in liquid mode and 380 mg/Nm³ in gas mode;
 1300 mg/Nm³ for diesel engines with ≤ 1200 rpm with a total rated thermal input less than or equal to 20 MW and 1850 mg/Nm³ for diesel engines with a total rated thermal input greater than 20 MW;
 750 mg/Nm³ for diesel engines with > 1200 rpm.
 (5) 225 mg/Nm³ for dual fuel engines in liquid mode.
 (6) 225 mg/Nm³ for diesel engines with a total rated thermal input less than or equal to 20 MW with ≤ 1200 rpm.
 (7) 190 mg/Nm³ for dual fuel engines in gas mode.
 (8) These emission limit values are only applicable above 70 % load.
 (9) Until 1 January 2025, 550 mg/Nm³ for plants which are part of SIS or MIS.
 (10) Until 1 January 2025, 75 mg/Nm³ for diesel engines which are part of SIS or MIS.
 (11) 20 mg/Nm³ in the case of plants with a total rated thermal input equal to or greater than 1 MW and less than or equal to 5 MW.

INTERVIEW



Roger Brandwood is Senior Engineer – Innovation at Uniper and has been a lead-member of a working group for ETN monitoring the Industrial Emissions Directive and the Medium Combustion Plant Directive (MCPD). Today, he explains to ETN the process of decision and the effects of the implementation of this MCP Directive.

ETN: *The directive creates substantial duties for the companies operating combustion plants. How do you assess those from a technical point of view, especially regarding the gas turbine technology? Do they seem in keeping with the current state of the art for technology? Do they seem fair for gas turbines, in comparison with other technologies?*

RB: *The MCPD has now been adopted by the EU and is in the process of being transposed into the national regulations of the Member States. It is correct that, for many operators, it will introduce an increased level of emission monitoring and reporting compared to current requirements, and as such will increase the burden for some gas turbine users. The current state of the art technology should, in most cases, deliver the required MCPD performance, though the emission limits may be more challenging for liquid fuels. The real, and harder*

to address, issue is what to do with older items in the fleet? It is probably true to say that a suitable upgrade is not available to meet MCPD levels in all cases - for example a distillate fired black start gas turbine on a power plant. Depending on how each country adopts the regulations, it should be possible to avoid upgrades for emergency, or very low load factor, plant. Nevertheless, it is worth pointing out that the treatment of GT technology in the directive is much more onerous than that of reciprocating internal combustion engines, where more flexibility is available to users.

ETN: *Do you think that the responsibility created by this directive is well-balanced between gas turbine equipment and their operators, regarding the current and near-future advancement of technology?*

RB: *As with all directives of this type, the responsibility for compliance is always with the Operators of equipment. Operators need to be able to procure equipment that will comply when used in the real world, enact the required compliance processes and complete reporting as necessary. In the case of the MCPD, it does seem that there was a lot of focus placed on certain plant types in its development and that there was probably no great focus placed on GT technology. There is more emission headroom allowed for in the MCPD than there is in the Industrial Emissions Directive (IED), with the exception of new natural gas fired GTs where the Emissions Limit Values (ELVs) set are identical. Nevertheless, it could well be the case that the liquid fuel NO_x ELV of 75mg/Nm³ for new GTs is challenging.*

ETN: *The European Commission presents the directive as financially affordable for SMEs and introducing only minor administrative burden. Do you agree?*

RB: *Affordability will be very much*
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down to the economic situation each operator finds themselves in. It does seem likely that, if applied rigorously, there will be older gas turbine types retired early due to this environmental regulation, and I am sure there would be those who would consider that a good thing and exactly the purpose of the Directive. MCPD, like the IED, is a backstop, so what it states must be met as a minimum standard. Therefore there is no basis for a cost based derogation of the kind that exists when considering the Best Available Technology (BAT) under the IED (a so called Article 15(4) derogation). Implementation timelines are long (1 Jan 2025 and 1 Jan 2030 for existing plants) so there is time to plan in upgrades or replacements as necessary. It is worth making that observation that the increased level of testing and compliance required does in fact create an opportunity for SMEs to fill this gap.

ETN: As the chair of the ETN working-group for the Industrial Emission Directive and this Medium combustion Plant Directive, can you tell us what your strategy was and how do you think the EU institutions reacted to the initiative of the gas turbine community?

RB: Engagement in development of the Industrial Emissions Directive and Medium Combustion Plants Directive from the Gas Turbine community was probably not sufficient or sufficiently robust.

I was first approached in the context of the Best Available Techniques reference documents (BREFs) for Large Combustion Plants (LCP) when the performance of liquid fired GTs was being discussed. That piece ended reasonably well, but nothing could be done at that stage about the IED limit of 50mg/Nm³ for new plants and 90mg/Nm³ for existing plants NO (and 100mg/Nm³ for CO). I think there is a clear lesson learned here for how industry engages with Regulators in the future, and in equal measure an important role for bodies such as ETN to act for our industry.

ETN: The member states are now transposing the directive. Do you think that there are risks of countries going beyond and adopting tougher regulations? What do you think ETN could and should do?

RB: This is not a question of 'if', but 'how far?' countries will go beyond the directive. Many countries already have more rules around monitoring that they will seek to retain, and others have limits already in place for species omitted from the MCPD such as CO. Some states are also drafting additional regulations to target particular technology types. This will have an impact on all operators, large or small and there is a risk that those least able to pay could be hit hard (albeit that the lead times for needing to replace existing kit will be long enough to see it coming). There is also the risk that national implemen-

tation could lead to a disproportionate cost versus environmental benefit. ETN should act as a hub for exchange of information between its members on how individual states are implementing the rules. Ideally, this would lead to some consistency and avoid differing practices and approaches being used, with the risk being reduced that this hard wires inefficiencies of the type where vendors need to offer a range of upgrade packages to meet the needs of the rules in different countries, where a single upgrade package would be easier to roll out.

The MCPD also contains certain measures within it that could lead to future revisions. So by 2023, the Commission will have reviewed the 'New' plants Emission Limit Values, together with the need to introduce CO limits. To support this Member States must submit estimates of CO emissions from the MCP Fleet. Whilst it is some way off or, at least, feels that way today, this is an important step that ETN and Operators should be aware of. In any case, the directive and the need to tighten it will be reviewed every ten years from then on. Implementation and compliance verification will be reviewed by October 2026 and again by October 2031. ETN, and its members, should stay abreast of these processes as they develop to ensure that their technologies are being treated fairly and a level playing field maintained as far as possible between technology types. ■





The summer has been pretty quiet but the agenda for this autumn is already quite dense in terms of energy, environment and climate change policies at EU level. Have a look at what is to be expected in Brussels for the GT technology.

The COP 21 progresses towards ratification... and 22!



COP21-CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE

The COP 21 in Paris in December 2015 was unanimously recognised as an unprecedented success. All parties came to an agreement and so far, 177 of them have signed it. The next step is its ratification to allow the text to come into force. If China and the USA –the two biggest greenhouse gas emitting economies in the world - have already done it, the EU is still behind. The Union has to do it itself along with the 28 member-states and that could take time. This is why there has been a call for a strong push by EU leaders, including Heads of State and Government. The EU was indeed the first signatory; it would not want to lose its leading position in the fight to cut emissions, and to fail at being part of the governance of the Agreement when it comes into force. The ministers for Environment from the member-states met on 30 September and the European Parliament will vote in October to allow the EU to ratify the text without waiting for the completion of the process by all 28. ■

Figures and facts

55-55

55 countries representing 55% of the greenhouse gas emissions must have ratified the Paris Agreement to allow it to come into force. So far, 27 countries have deposited their ratification instrument at the UN and they represent together 39.08% of the total GHG emissions.

3 (only!)

EU member-states only have ratified the Agreement at the moment: Austria, France and Hungary.

COP 22

Will take place in Marrakech from 7 until 18 November 2016. More information on www.cop22.ma

22 April 2016

From the opening of the Agreement to signature, countries have one year to do so. Gambia and Seychelles Islands were the most recent signatories.

The EU to revise its reduction targets for greenhouse gas emissions

The reduction of greenhouse gas emission is a priority for the EU, which has clearly been a leader of this fight in the world. In order to stick to its commitments, the EU will have to define targets in the reduction of its own emissions in a longer term. At the moment, member-states and companies have to reach objectives for the period between 2013 and 2020. The EU will now to start and discuss the objectives for the following period, from 2021 until 2030. For that, the EU has two main legislative tools that will soon be revised: the EU-Emissions Trading System (EU-ETS), which covers the large facilities in the sectors of power generation, industry and aviation and the Effort-Sharing Decision that sets National Emissions Reduction Targets for what is not covered by the ETS (agriculture, housing, transport excluding aviation and waste). The process to review ETS is advanced and the Committee of the European Parliament Committee for Environment, Public Health and Food Safety (ENVI) will debate amendments for the draft report (Rapporteur: Ian Dunac MEP). Regarding the review of national emission reduction targets, we are still in its very beginning; a discussion is set to start in the European Parliament (ENVI Committee) under the supervision of Gerben-Jan Gerbrandy MEP, but no timeline has been decided yet. Those texts embrace the energy sector in a rather wide scope, calling for its modernisation of the energy sector amongst other things and they hence could have

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an impact for gas turbines in a longer term. They need to be looked at carefully! More to come in the ETN Quarterly Newsletter!

Figures and facts

20-20-20

The commitment of the EU regarding energy and climate change for 2020 are the following: a 20% cut in greenhouse gas emissions (compared to 1990 level), 20% of energy consumed in the EU will come from renewables and an improvement of 20% of energy efficiency.

45-55

45% of the EU GHG emissions are covered by the EU-Emission Trading System. 55% are under the scope of the National Emission Reduction Targets.

9.8%

That was the share of renewable in the EU energy consumption in 2010, which is half of the 2020 targets.

40-27-27

Those are the objectives for 2030: a cut by 40% of the GHG emissions (1990 level), 27 of renewable energy in the EU consumption and 27 % improvement of the energy efficiency.

No move after Brexit vote (yet.)

No real development has happened in the wake of Brexit at the EU Level... yet. Prime Minister Theresa May has installed her Cabinet and appointed David Davis MP as the Secretary of State for Exiting the European Union in view of starting the negotiations, before early 2017 (at the earliest). The other member-states have insisted that no talk should begin before the newly-famous Article 50 of the Lisbon Treaty is triggered (see below). This may open a period of potentially damaging



Bernard Quiox

Figures and Facts

Article 50

The Article 50 of the Lisbon Treaty grants the right to withdraw from the EU to any member state. Triggering it opens a two-year period during which the terms of the exit and the new relation between the state and the EU shall be negotiated. It was introduced for the first time by this Treaty and has never been implemented yet. Brexit is a first.

uncertainty on both political and economic levels. At ETN-level however, the Board of Directors has been adamant that this so-called Brexit should change nothing for the British members of ETN, as Bernard Quiox, President of ETN, underlines:

"ETN regretted the outcome of this referendum and the decision of the UK to leave the EU. Our British members have made vital contributions to the success of ETN since the early start and value their membership. Our priority within the ETN Board is to ensure to our British members that they will be able to remain part of ETN, regardless of the outcome of the Brexit process. We have consequently adopted a proactive approach and will propose a modification of our statutes of ETN to our General Assembly by the end of this year".

The State of the (Energy) Union 2016



Vice-President of the European Commission in charge of the Energy Union Maroš Šefčovič

The Energy Union is one of the 10 priorities of the Juncker Commission and aims at delivering a "low-carbon, secure and competitive economy" for Europe. The Commission is expected to publish its "State of the Energy Union" report as it did last year. This document assesses the progresses - achieved or still pending - towards a "resilient Energy Union with a forward-looking climate change policy". ETN has been informed that the 2016 issue should be released in December.

Figures and Facts

5 pillars

The Energy Union, one of the 10 priorities of the Juncker Commission, rests on 5 pillars: Security of supply, Internal energy market, Energy efficiency, Greenhouse gas emission and Research and innovation. The progress on those five aspects will contribute to complete the so-called Energy Union.

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EU Calls for Project proposals

The European Commission has published a few weeks ago several calls for project proposals for the energy sector. Those are focused on “Competitive Low-Carbon Energy”, with a total available budget of € 94.5 million:

- **LCE-06-2016:** New knowledge and technologies (total available budget: €20 million)
- **LCE-07-2016-2017:** Developing the next generation technologies of renewable electricity and heating/cooling (total available budget: € 64.5 million)

The deadline for those two calls is 29 November 2016 at 17:00 (CET).

- **LCE-28-2017:** Highly flexible and efficient fossil fuel power plants. (Deadline: 5 January 2017)

If you are interested in submitting a proposal or setting up a consortium, please contact Ugo Simeoni from the ETN Office in Brussels: us@etn-gasturbine.eu ■

To be continued...

Other topics related to the policies of energy, environment and climate change have met new developments, which ETN monitor as they could interest the Gas Turbine Community.

- The European Parliament has adopted on 13 September a resolution entitled “Towards a New Energy Market Design”, welcoming the Communication of the European Commission “Launching the public consultation process on a new energy market design”. This is part of the Internal Energy Market pillar of the Energy Union; it embraces the increased presence of renewables, calls for the recognition of the growing importance of “prosumers” in the decentralised production of electricity through renewables, and demands the reward of flexibility of generation and storage, etc.
- The European Parliament has also adopted a resolution regarding the “EU Strategy on heating and

cooling”, which “welcomes the holistic approach of transforming heating and cooling” proposed by the Communication of the Commission. It calls for better synergy between the electricity and heating sectors and supports special “attention to combined heat and power, cogeneration, district heating and cooling, preferably based on renewables”. It will be a basis for the revision of several directives: the Energy Efficiency directive, the Renewable Energy Directive and the Energy Performance of Buildings Directive. As a reminder, in the EU, almost 50% of the energy demand is used for heating and cooling, 75% of the primary energy in heating and cooling are from fossil fuels.

- The European Commission organised on 16 September the 3rd General Assembly of the ETIP Smart Networks for Energy Transition. ETN attended this meeting set to design a roadmap for R&I activities. ■



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
High-Level Users Meeting –invitation-only-	11 October 2016	Brussels
8 th International Gas Turbine Conference	12-13 October 2016	Brussels
ETN Air Filtration Meeting*	November 2016 (tbc)	Brussels
SGT5-2000E Users Conference (organised by GTUsers.com)	1-3 November 2016	Rome
GT26 User Conference Spain (organised by GTUsers.com)	29 November - 1 December 2016	Madrid
Power Generation Gas Turbine User Group (organised by Institution of Mechanical Engineers). More information on www.imeche.org (Supporting partner discount to all ETN members)	6-7 December 2016	Birmingham
Global Power and Propulsion Society's Inaugural Forum	16-18 January 2017	Zürich
12 th European Turbomachinery Conference	3-7 April 2017	Stockholm
Annual General Meeting*	April/May 2017	Tbc
LM2500 Users Meeting	14-15 June 2017	Amsterdam (tbc)

* Event open exclusively to ETN members

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