THE FUTURE OF GAS TURBINE TECHNOLOGY

8TH INTERNATIONAL GAS TURBINE CONFERENCE

12-13 October 2016, Hotel Le Plaza, Brussels, Belgium

PRELIMINARY PROGRAMME

The International Gas Turbine Conference is a well-established and renowned biennial conference. Its objective is to raise the awareness of gas turbine (GT) technology development needs – from both oil & gas and power generation operators' perspectives – and to explore and exchange ideas with GT experts from the whole value chain attending from Europe, America, Middle East, and Asia. It also provides the opportunity to meet and discuss with policy makers the role of gas turbines in future energy scenarios. The conference will highlight the energy market outlook in Europe and in key markets globally, as well as to present and discuss R&D activities on flexible, efficient and environmentally sound gas turbines.

The 8th International Gas Turbine Conference (IGTC-16) will focus on the required future GT technology developments from a user's and a political point of view, with special focus on:

- The role played by gas turbines in the future international energy policy mix, where intermittent sources of renewable energy will significantly increase, nuclear capacity may drastically decrease, while the emerging economies' demand for cheap and secure energy will rapidly rise to assist their economic growth in coming decades;
- Current and future technology trends and the different stakeholders' views on required technology developments to ensure **flexible, efficient, reliable and environmentally sound gas turbine operation**.

The **keynote sessions and panel discussions** will address critical issues related to climate change mitigation in the context of the different and fast changing markets. Special attention will be given to increased operational flexibility, fuel flexibility, retaining reliability and lower emissions for both single cycle and combined cycle operation. Energy and climate policies and initiatives for GT technology development in Europe and globally will be presented, followed by panel discussions with distinguished experts and high level policy makers.

In parallel, the **technical sessions** will address critical research and development activities necessary for the advancement of GT technology, from operational, environmental and cost perspectives. Recent GT technology and new, innovative solutions will be explored. The technical sessions will combine research initiatives and experience reports of real case applications, with the aim to give a balanced view of current developments and future needs for research in GT applications.

Organiser
ETN
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For conference updates and further details, please visit ETN's website:
www.etn-gasturbine.eu

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We very much look forward to welcoming you at the IGTC-16!

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11 October 2016

17:00-20:00	**Registration will take place in the lobby of Hotel Le Plaza**

DAY 1 – 12 October 2016

07:15	**Registration will take place in the lobby of Hotel Le Plaza**
08:15	Welcome note: Key points from the 2014 Conference and Introduction to IGTC-16 • *Christer Björkqvist, Managing Director, ETN* • *Bernard Quoix, ETN President/Head of Rotating Machinery Department, Total*
08:30	**International energy policy and market outlook towards 2030** **Opportunities for the gas turbine sector** **Chair**: *Christer Björkqvist, Managing Director, ETN* **Speakers:** • **Global energy trends and the role of gas in current energy and climate policy framework** *Tomi Motoi, International Energy Agency* • **The design of a sustainable EU Energy Union to enable a competitive low-carbon energy sector by 2030** *Tudor Constantinescu, Principal Advisor, DG Energy, European Commission* • ***Global Energy Outlook*** *Nikolaas Baeckelmans, Vice President European Union Affairs, ExxonMobil* **Panel Discussion** with the above speakers will take place after the presentations. **Moderator:** *Junior Isles, Chief Editor, The Energy Industry Times*
10:20	**Coffee break**
10:50	**Development needs for utilities and oil & gas operators for their current and future gas turbine fleets** **Chair:** *Shell Global Solutions International* **Speakers:** • **Presentation from the Power Generation sector** *Pedro Lopez Estebaranz, CCGT Fleet Director, Uniper* • **The Challenges for Gas Turbine Operators of Changing Fuel Compositions and the Availability of Alternative Fuels** *David Abbott, Independent GT Combustion Specialist* • **Creating customer value: Alternative Operations and Maintenance business models** *Shaun West, Lecturer Service and Product Innovation, Lucerne School of Engineering and Architecture* **Panel Discussion** with the above speakers will take place after the presentations. **Moderator:** *Andy Williams, Director, Chromalloy*

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12:45	**Lunch**

14:00	**Gas Turbines in Distributed Generation** **Chair:** *Pierre Dechamps, European Commission* Improving the Flexibility and Efficiency of Gas Turbine-based Distributed Power Plant *Michael Welch, Siemens* Steady-State Experimental Characterization of a flexible Humidified micro Gas Turbine *Svend Bram, BURN joint research group* Challenges in the Development of Micro Gas Turbines for Concentrated Solar Power Systems *Abdulnaser Sayma & Jafar Azaili, City University London*	**Optimising Oil and Gas Operations** **Chair:** *Olaf Brekke, Statoil* Optimisation of gas turbine driven compressor trains by online monitoring *Holger Berghaus, MAN Diesel & Turbo* Shell SmartConnect to improve reliability and production in Shell Oil & Gas Facilities *Gert Hoefakker, Shell* On Line Condition Based Maintenance *Antonino Graziano, GE Oil & Gas*
15:30	**Coffee break**	
16:00	**Innovative Low Carbon Cycles** **Chair:** *Mohsen Assadi, University of Stavanger* Selective Exhaust Gas Recycling for Carbon Capture Applications: Combustion and Operability Measurements *Richard Marsh, University of Cardiff* Turbomachinery-based engine: Concurrent production of power, cooling and desalinated water *Giovanni Cerri, Roma Tre University* Experimental exhaust gas recirculation and selective exhaust gas recirculation on a micro-gas turbine for enhanced CO_2 capture performance *Karen N. Finney, University of Sheffield*	**Optimising Combined Cycle Operations** **Chair:** *Charles Davis, ENGIE* Start-up time reduction for Combined Cycle Power Plants *Pascal Decoussemaeker, GE Power* Increasing competitiveness of CCGT plants in a dynamic market: An owner's approach *Artur Ulbrich, Uniper* A diagnostic & corrective action system based on deep learning and natural language processing *Thomas Hubauer & Giuseppe Fabio Ceschini, Siemens AG*
18:15	**Reception and Gala Dinner:** Our sponsors for the Cocktail reception and the Gala dinner welcome you to a memorable evening at the Colonial Palace in Tervuren. Please meet at 18:15 in the lobby of Le Plaza Hotel. 	

DAY 2 – 13 October 2016

08:00 — **Networking coffee**

08:30 — Opening and introduction
Catherine Goy, Vice President ETN, Uniper

08:40 — **National and Regional Gas Turbine Markets: Opportunities and Challenges**

Chair: *Charles Davis, ENGIE Director of Thermal Generation*

Speakers:

- **The US Gas Turbine Market and current R&D program**
  Robert R. Romanosky, Deputy Director, Office of Coal & Power R&D, National Energy Technology Laboratory (NETL), United States Department of Energy
- **Gas Turbine Opportunities in Latin America**
  Marcelo Accorsi Miranda, Senior Consultant, ETM Energy & Turbomachinery
- **Gas Turbine Opportunities in Russia**
  Franco Rosatelli, Vice-President for Technological Development, JSC REP Holding

Moderator: *Nigel Blackaby, Director PennWell Global Power Group*

10:40 — **Coffee break**

11:10

Combustion and Fuel Flexibility	Maintenance and Repairs	Flexible operation	Materials
Chair: *Catherine Goy, Uniper*	**Chair:** *Hatem Rashad ADGAS (tbc)*	**Chair:** *Niko Cornelis, Engie*	**Chair:** *John Oakey, Cranfield University*
Gas Power Systems Fuel Capability *Jeffrey Goldmeer, GE Power*	Impact of HEPA Air Intake Filtration on Gas Turbines Operating in Middle East Offshore Applications and Fueled with Sour Gas *Dominique Orhon, Jeroen van der Kaag, Total & Scott Taylor, AAF*	Gas Turbine Flexibility and Life assessment Method *David Bosak, Cranfield University*	Liquid feedstock plasma spraying as an emerging process for advanced thermal barrier coatings *Nicolaie Markocsan, University West*
Gas Fuel Flexibility in Dry Low Emissions Combustion Systems *Michael Welch, Siemens*	F-technology Gas Turbine Retrofit with EPA Filters (Case Study) *Victor Litinetski, Israel Electric Corporation*	Advancements in H class Gas Turbines for Combined Cycle Power Plants for Higher Efficiency, Enhanced Operational Flexibility and Broad Fuel Flexibility *Laurent Cornu, GE Power*	Gas Turbine Low Conductivity Thermal Barrier Coating Validation and Demonstration *John Scheibel, EPRI*
Development of gas turbine combustors for fuel flexibility *Tomohiro Asai, MHPS*	Experimental investigation results of a hybrid ceramic and actively cooled ball bearing for gas turbines Peter Glöckner, *FAG Aerospace*	Advances in Using Associated Gases in Solar's DLE Industrial Gas Turbines *Luke Cowell, Solar Turbines*	Impact of Engine Operation on Gas Turbine Component Durability using Ductility Exhaustion. *Richard J. Green, Solar Turbines & John Douglas, Frazer-Nash Consultancy*
Panel discussion with the speakers moderated by David Abbott, *Independent GT Combustion Specialist*	A Novel Approach for Non-Destructive Testing of the Adhesion of Thermal Barrier Coatings Jochen Manara, *Bavarian Center for Applied Energy Research (ZAE Bayern)*	Data modeling to quantify relationships between changes in maintenance and operating regime on power plant reliability *Angelo Nicotra, Sciemus*	Additive Manufacturing for Hot Gas Path Parts *Julius Schurb, GE Power*

13:10 — **Lunch**

14:15	**Panel session: Gas turbine technology advancements foreseen by OEMs to satisfy the current and future market** **Chair:** *Bernard Quoix, ETN President/Head of Rotating Machinery Department, Total* Five minutes presentation by each panellist. **Panellists:** • *Tom Scarinci, Vice President, Siemens* • *Akimasa Muyama, Director, Executive Vice President, Head of Turbine Products HQ, MHPS* • *Michael Leary, Systems Engineering Manager, GE Power* • *Stefan Florjancic, Chief Technology Officer for R&D, Ansaldo Energia* • *Mark Keith, Vice President, Solar Turbines* • *Sven-Hendrik Wiers, Vice President Gas Turbines, MAN Diesel & Turbo* **Panel Discussion and Q&A:** with the above speakers. **Moderator:** *Gary Lock, Business Manager, Frazer-Nash Consultancy*
16:00	Closing remarks • *Bernard Quoix, President, ETN/ Head of Rotating Machinery Department, Total*
16:15	**End of Conference** **Networking Coffee and Drinks**

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