THE FUTURE OF GAS TURBINE TECHNOLOGY

9TH INTERNATIONAL GAS TURBINE CONFERENCE

10-11 October 2018, Le Plaza Hotel, Brussels, Belgium

PRELIMINARY PROGRAMME

The International Gas Turbine Conference is a well-established and renowned biennial conference, organised by ETN, representing the whole gas turbine community. Its objective is to raise the awareness of gas turbine (GT) and turbomachinery technology development needs – from oil & gas, power generation and industrial operators' perspectives – and to explore and exchange ideas with GT experts from the whole value chain attending from all continents. 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 disseminate current R&D activities and latest achievements for flexible, efficient, reliable and environmentally sound gas turbine technology.

The 9th International Gas Turbine Conference (IGTC-18) will focus on the required future GT technology developments from a user's and legislative 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 and nuclear and coal capacity will decrease, while the emerging economies' demand for cheap and secure energy will rapidly rise to assist their economic growth in the 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 energy transition to a low carbon and carbon neutral society. 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 policies that set boundary conditions 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 **technical sessions**, critical research and development activities necessary for the advancement of GT technology, from operational, environmental and cost perspectives will be addressed. Recent GT technology and new, innovative solutions will be presented. The technical sessions will combine research initiatives, case studies and 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.global/events/igtc-18/

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We very much look forward to welcoming you at the IGTC-18!



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DAY 1 – 10 October 2018

07:15	**Registration will take place in the lobby of Le Plaza Hotel**
08:15	Welcome note: Key points from the 2016 Conference and Introduction to IGTC-18 • *Christer Björkqvist, Managing Director, ETN* • *Bernard Quoix, ETN President/Senior Fellow and Head of Rotating Machinery Department, Total*
08:30	**Keynote session 1: "Energy transition to a global low carbon society"** **Chair**: *Christer Björkqvist, Managing Director, ETN* **Speakers:** • *Mechthild Wörsdörfer, Director for Renewables, Research and Innovation, Energy Efficiency, DG Energy, European Commission* • *Nils A. Røkke, Executive Vice President Sustainability, SINTEF* • *Laszlo Varro, Chief Economist, International Energy Agency (invited)* **Panellists:** • *Mechthild Wörsdörfer, European Commission* • *Nils A. Røkke, SINTEF* • *Laszlo Varro, International Energy Agency* • *Richard A. Dennis, US Department of Energy* **Moderator:** *Junior Isles, Editor-in-chief, The Energy Industry Times*
10:20	**Coffee break**
10:50	**Keynote session 2: "Operational needs in current and future scenarios"** **Chair:** *Robert C. Steele, Program Manager, EPRI* **Speakers:** • *Giacomo Tirone, Maintenance Manager, Enel* • *Shell (speaker to be confirmed)* • *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, Senior Fellow, Chromalloy*
12:45	**Lunch**

14:00	**Operations & Maintenance** Chair: Dominique Orhon, TOTAL **2. The effect of air filtration on gas turbine performance degradation - ISO16890 and its application to real engine data** *Ansaldo Energia and Freudenberg Filtration Technologies* **5. A digitalized approach for combining diagnostic capabilities and maintenance risk-based insights to improve machine operation** *BHGE* **75. ORAP®: The Foundation for Predictive Analytics** *Strategic Power System (SPS) International*	**Next Generation Technologies** Chair: Peter Jansohn, PSI **74. Status of the 10 MWe Supercritical Transformational Electric Power (STEP) Program** *Gas Technology Institute* **11. Fast Start and Cycling HRSGs: Siemens DrumPlus™ technology** *Siemens Heat Transfer Technology B.V.* **21. Towards Highly-Flexible Carbon-Clean Power Production using Gas Turbines: Exhaust Gas Recirculation and cycle Humidification** *University of Mons, University of Stavanger, Université Libre de Bruxelles and Vrije Universiteit Brussel*	**Next Generation Technologies** **68. An Advanced Early Fault Detection Tool for Predictive Maintenance of a Fleet of Industrial Gas Turbines** *Aramis, Politecnico di Milano and Fondation EDF, Ecole Central Supelec* **49. Using Data Analytics for Smarter Operation of a Gas Transmission Network** *DNV-GL and National Grid Gas* **72. Reference Stress Estimation for Anisotropic Materials Using Linear Elastic Finite Element Results** *Solar Turbines*
15:30	**Coffee break**		
16:00	**Operations & Maintenance** **19. Performance Analysis of a Twin-Shaft Gas Turbine during Failure in the Variable Stator Guide Vanes System of the Axial Compressor** *University of Lincoln and Siemens Industrial Turbomachinery* **61. The challenge of burning Diesel Oil in Aero-derivative Gas Turbines Off-Shore** *TOTAL* **52. Extending the Life of F-Class Gas Turbine Rotors for Improved Operational & Maintenance Life Cycle Costs** *PSM, Ansaldo Energia Group*	**Next Generation Technologies** Chair: Abdulnaser Sayma, City, University of London **25. Distributed Integrated Solar Combined Cycle Power Plants: Despatchable, reliable, affordable, low carbon electricity** *Siemens* **69. Innovative fleet condition monitoring concept for a 2MW gas turbine** *B&B-AGEMA and OPRA Turbines* **6. Hybrid Gas Turbine (GT) mech drive from Baker Hughes, a GE company** *BHGE*	**Next Generation Technologies** **45. Digitalization and its role in the Oil and Gas and Power Generation industries** *GE Power and DNV-GL* **70. Overview of Digital Asset Management for Industrial Gas Turbine Applications** *Solar Turbines* **71. Data driven predictive maintenance information to enhance human decision making in gas turbine operation & maintenance** *VBR Turbine Partners*
18:15	**Reception and Gala dinner:** Our sponsors for the Cocktail reception and the Gala dinner welcome you to a memorable evening at Centre Belge de la Bande Dessinée – Belgian Comic Strip Center in Brussels. 		

DAY 2 – 11 October 2018

08:00	**Networking coffee**		
08:30	Opening and introduction		
08:40	**Keynote session 3: "National and regional gas turbine markets: opportunities and challenges"** **Chair:** *John Oakey, Professor of Energy Technology, Cranfield University* **Speakers:** • **The US gas turbine market and current R&D program and projects,** *Richard A. Dennis, Technology Manager, US Department of Energy* • **Chinese energy policy and market forecast** *Ronnie Tian, Founder, NexTurbine*		
09:40	**Keynote session 4: "Ways to optimise and reduce cost of operations"** **Chair:** *Bernard Quoix, ETN President/Senior Fellow and Head of Rotating Machinery Department, Total* **Co-chair:** *Simon Balmer, CCGT Fleet Performance Manager, Uniper* **Speakers:** • *Thorbjörn Fors, CEO Distributed Generation and O&G Services, Siemens* • *Maria Sferruzza, President LNG & Global Services - Turbomachinery & Process Solutions, BHGE* • *Mark Keith, Vice President TBI, Solar Turbines (invited)* • *Sven-Hendrik Wiers, Vice President Gas Turbines, MAN Energy Solutions* **Panel discussion** with the above speakers will take place after the presentations.		
10:45	**Coffee break**		
11:15	**Manufacturing & Repair** **3. Development of life predictive methods on NovaLTTM16 combustor with simplified physics based models** *BHGE* **22. Hot Section Life Management Through Improved Material Property Recovery** *Electric Power Research Institute and TEServices* **47. Industrialization and Current Field Experience of Additively Manufactured Gas Turbine Components** *Siemens* **60. Internally Cooled & Lightweight Radial Turbine Wheels for Gas Turbines** *HiETA Technologies*	**New Component Developments** Chair: Peter Kutne, DLR **42. Ammonia Gas Turbines (AGT): Review** *Cardiff University* **53. "Future-Proofing" Today's Industrial Gas Turbines: Combustion System Fuel Flexibility Improvements for Hydrogen Consumption in a Renewable Dominated Marketplace** *PSM, Ansaldo Energia Group* **73. Development of Hydrogen and Natural Gas Co-firing Gas Turbine** *MHPS* **41. Capstone Turbine applications in: Flare recovery in natural gas compression turbines** *Capstone Turbine Corporation*	**Next Generation Technologies** Chair: Aristide Massardo, University of Genoa **57. Towards Flexible Co-Generation: Techno-economic Optimization of Advanced Combined Cycle Combined Heat and Power Plants Integrated with Heat Pumps and Thermal Energy Storage** *KTH Royal Institute of Technology and EPS Europe Power Solutions* **54. Integration of Heat Pump and Gas Turbine Combined Cycle: Layout and market opportunity** *University of Genoa and IREN* **56. High Temperature Heat Pump – A novel Approach to increase Flexibility and Efficiency of CCGT and CHP Power Plants** *Mitsubishi Hitachi Power Systems Europe* **59. Intelligent predictive control of a PUMP-HEAT Combined Cycle: introduction and first results** *Siemens PLM and University of Genoa*
13:15	**Lunch**		

14:20	**Keynote session 5: "Technology developments for a low carbon society"** **Panellists:** • *Junichiro Masada, Deputy Head of Turbomachinery HQ, MHPS* • *Peter Flohr, GT Engineering Executive, GE Power* • *Barbara Stanley, VP, Power Generation & Strategic Growth, Solar Turbines* • *Sven-Hendrik Wiers, Vice President Gas Turbines, MAN Energy Solutions* • *Mauro Moretto, Head of Technology Development, Ansaldo Energia* • *Siemens (speaker to be confirmed)* **Panel discussion and Q&A:** with the above speakers. **Moderator:** *Gary Lock, Senior Business Manager, Frazer-Nash Consultancy*
16:15	Closing remarks *Bernard Quoix, ETN President/Senior Fellow and Head of Rotating Machinery Department, Total*
16:30	**End of Conference** **Networking Coffee and Drinks**

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