



**Christer Björkqvist**  
Managing Director

*Welcome to the first ETN public Quarterly Newsletter!*

*In this first issue of the new Quarterly Newsletter I am proud to present the many developments which have occurred during the last months, which make ETN fit for its increasing number of activities and projects, as well as its growing membership – now at 92 members from 17 countries.*

*This includes the new ETN project development strategy, along with the new ETN Project Board, the fresh ETN look on the website as well as this Quarterly Newsletter.*

*The ETN Quarterly Newsletter was previously a members-only publication. It will now be distributed to a wider audience, to give more visibility to ETN activities and to the expertise and services of ETN's members.*

*I hope you will find the following pages informative, and that you will join me in wishing the entire ETN network the best of luck and success with the many new and exciting activities undertaken by the members of the association!*

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**Bernard Quoix**  
ETN President,  
Total, Head of  
Rotating Machinery

*Europe should be proud to have a unique organisation such as ETN, which represents all the key stakeholders in the development of environmentally sound gas turbine technology for power generation and mechanical drive.*

*As an ETN Board member, and as President of ETN for the last two years, I have continually promoted the active participation of the Users, because it is the Users who are the starting point of all that we do. Together with the OEMs, from whom the Users get their products, the Service Providers, which must be present on the after-sales market, the European Universities and R&D Institutes, with their world-renowned scientific and technical knowledge, the Consultants, who play an invaluable role assisting the Users, and the equipment*

*suppliers, who develop essential products for gas turbines – ETN forms a unique and powerful organisation.*

*Today, ETN has a world-class setup with our 92 members bringing together wide and varied expertise. Looking into the future, I believe our efforts must be focused on maintaining and expanding this uniquely diverse organisation, and on continuing to develop projects, that work towards meeting our vision. With the increased utilisation of gas as a major source of energy in the decades to come, gas turbines will play an increasingly important role, not only in power generation, but also in the oil and gas market. ETN can facilitate the development of the required gas turbine technology, in line with a supportive European Union policy. I very much wish to be part of this future progress.*

*In my position as a User in the Oil and Gas business, and through being a member of the International turbomachinery community, I actively promote these objectives because I believe in Europe's ability to lead the world in gas turbine technology development.*

## The EU's Energy Roadmap 2050 – striving to provide investment certainty for industry

*The European Commission published its Energy Roadmap 2050 in December 2011, which aims to show how the EU can meet its decarbonisation objectives, while ensuring security of energy supply and competitiveness.*

The EU is aiming to cut greenhouse gas emissions by between 80% and 95% below 1990 levels by 2050. The roadmap does not focus on setting new targets but presents five so-called “decarbonisation scenarios”, each of which would result in the achievement of the previously stated emissions target. These scenarios are:

- High Energy Efficiency scenario
- Diversified Supply Technologies scenario
- High Renewable Energy Sources scenario
- Delayed CCS scenario
- Low Nuclear scenario

Each scenario uses a different energy mix, placing different levels of importance on energy efficiency and new technologies, such as Carbon Capture and Storage (CCS), but with all five scenarios seeing a substantial increase in the share of renewable energy. The roadmap proclaims that renewables will “move centre stage” and achieve “at least 55% in gross final energy consumption in 2050.” The Commission’s roadmap also identifies natural gas as a crucial short-term energy source. Moreover, should CCS technology be available from 2030, the roadmap predicts that gas could play a significant role as a “low-carbon technology” in the long term as well.

With the Energy Roadmap 2050, the Commission has attempted to set out the trends, challenges and opportunities ahead in order to avoid uncertainty becoming a barrier to investment. Overall, the roadmap aims to set out “no regrets”



EU Energy Commissioner Günther Oettinger. Photo: © European Union, 2010

options for the European energy system in order to develop a “long-term European technology-neutral framework.” The report concludes that decarbonisation is possible and that it indeed can prove to be “less costly than current policies in the long run.”

ETN attended the European Energy Forum’s Dinner Debate in the European Parliament on 20 March where Günther Oettinger, European Commissioner for Energy. The Commissioner said that the EC’s Energy Roadmap 2050 provides a clear strategy and offers greater certainty for investors. The roadmap represents the first time Europe has looked so far into the future to outline its desired energy policy. The challenges Europe face, according to the Commissioner, include ageing energy infrastructure, high energy prices and increased energy demand.

Mr. Oettinger said Europe’s energy future depends on investment; some of which must come from public money and much of which must be private investment. It would be impossible, according to the Commissioner, for each member state to achieve the EU’s ambitious emissions reductions targets on their own, but by working together using economies of scale, the goals become achievable. The Commissioner said that all member states share a joint responsibility to make sure that the EU reaches its ambitious emissions targets. ■

For more information please [click here](#)

### New ETN members

- Alitalia Maintenance Services (Italy)



- Chalmers University (Sweden)



**CHALMERS**

- E.ON Anlagenservices (Germany)



- GE Energy (France)



- Pratt & Whitney Power Systems (United Kingdom)



- TechPart AS (Norway)

**TechPart AS**

## ETN call for advanced gas turbine technologies in new EU RTD programme Horizon 2020

ETN believes that there is currently significant underinvestment in gas turbine research and development (RTD) in Europe, especially in view of the new requirements of flexible and reliable operation together with high efficiency and low emissions. Higher levels of investment in RTD and demonstration are therefore required to ensure higher efficiency, lower emissions and reliable, more flexible operation.

ETN has undertaken several initiatives to influence the EU's future energy research policy, including a biennial High-Level Dinner Debate at the European

Parliament, meetings with European Commission representatives and the publication of the following position papers: "The Impact of Natural Gas Quality on Gas Turbine Performance"; and "Enabling the Increasing Share of Renewable Energy in the Grid – Technological Challenges for Power Generation, Grid Stability and the role of Gas Turbines".

ETN also supports the joint position paper of European fossil fuel associations, calling for the inclusion of reliable, flexible and efficient fossil fuels in the EU's new RTD funding framework, the Horizon 2020.

The presence of advanced fossil fuels in the future energy mix is crucial to ensure grid stability and security of supply, as the share of variable renewable energy resources is increasing. The new flexibility requirements of the grid will require the conventional power plants to operate under varying conditions. Therefore further RTD and new solutions are required to develop advanced fossil fuel power generation technologies for the future low-carbon economy with a sustainable and secure energy supply ■

### THE FUTURE OF GAS TURBINE TECHNOLOGY 6<sup>TH</sup> INTERNATIONAL GAS TURBINE CONFERENCE 17-18 October 2012 • Brussels, Belgium



**EUROPEAN  
TURBINE  
NETWORK**

Further information and registration  
[www.etn-gasturbine.eu](http://www.etn-gasturbine.eu)

“ From a User's perspective, attending the IGTC-12 will provide a unique opportunity to meet the key players within the gas turbine world. These include other Users coming from Oil & Gas and Utilities, suppliers, service providers and researchers from renowned institutes and universities. By attending an event such as this, Users will have the opportunity to exchange operational experiences and to receive the most up-to-date technological information on all aspects of gas turbine technology. ”

*Bernard Quoix, ETN President  
Total – Head of Rotating Machinery Department*



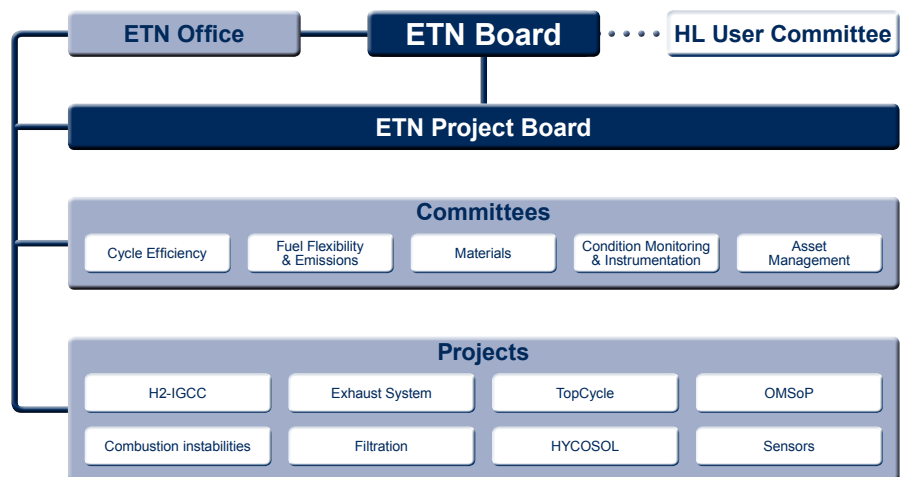


## New project development strategy

*ETN aims to become more project-focused, result-oriented and wishes to ensure a proper evaluation of all initiatives that are brought to its platform. To this end a new project development strategy and the alignment of the internal structures will be implemented. Please find an overview of the new strategy and structure here.*

ETN will continue to be headed by the **ETN Board**, who determines the strategy and decides the way forward for the organisation. The vision of the Board is guided by the biennial High-Level User meeting, which welcomes gas turbine users to discuss issues of strategic importance and future requested developments.

The Board is supported by the **ETN Office**, which is situated in Brussels, Belgium, and acts as a Secretariat for the organisation. The role of the ETN Office is to implement the strategy set by the Board, facilitate and coordinate the activities of the members, and disseminate the deliverables and results of their initiatives and projects. The ETN Office also monitors and influences EU energy and research policy as well as Research and



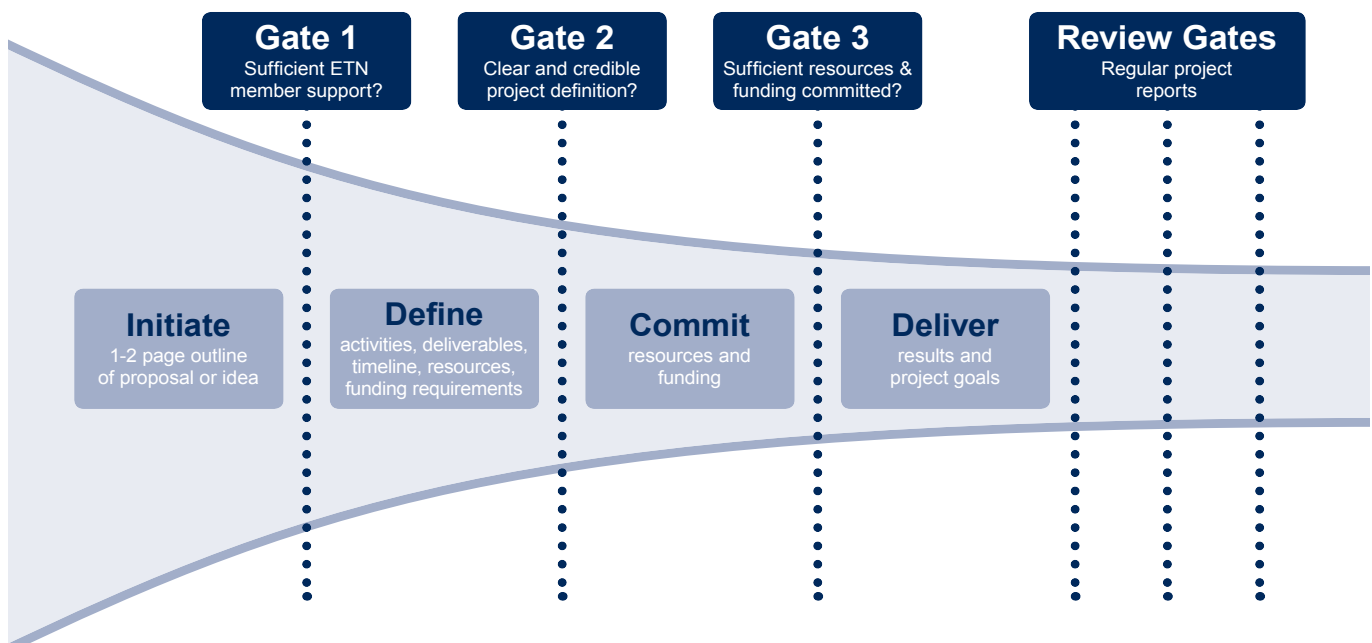
Technology Development programmes.

The ETN Office also supports the five ETN **Committees**: Cycle Efficiency; Fuel Flexibility & Emissions; Materials; Condition Monitoring Instrumentation; and Asset Management. These Committees cover the most crucial areas of future gas turbine technology development. They serve as forums where the ETN members meet to share experiences and discuss ideas and initiatives, which can later be developed into Projects.

The newly established **Project Board** supports the Committees and the initiatives which grow from these committees. When an ETN member submits a project initiative to the Project Board they will advise on how to improve and maximise the potential

of the initiative and help in developing it into a project proposal. The role of the Project Board is not to block a proposal, but rather to help present it clearly and positively to the ETN platform, where the Project proposal will be evaluated through the display of interest among the members.

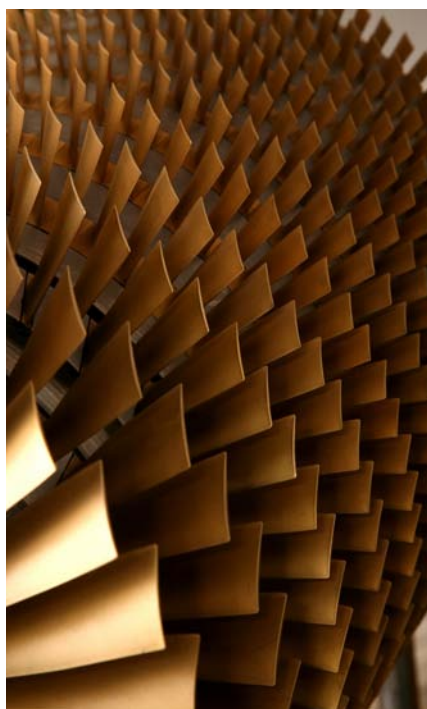
The **Project process** is represented in the funnel diagram. A Project should have a clearly defined end goal, as well as a timeline with clearly stated gate reviews and deliverables; this ensures that the Project is providing tangible results, and meeting its goal(s). The goal of Projects varies, ranging from industry or EU-funded R&D projects, to a state-of-the-art technology watch, feasibility studies, ISO standards or position papers. ■



## New Project Board members

*ETN is proud to present the new ETN Project Board and its distinguished members who will share their expertise to further the development of ETN's initiatives and projects:*

	Project Board Member	Areas of expertise
	Peter Jansohn, Department Head – Combustion Research Laboratory, Paul Scherrer Institute, Switzerland	<ul style="list-style-type: none"> <li>■ Fundamentals of combustion</li> <li>■ Gas turbines</li> <li>■ Power generation systems</li> <li>■ Environmental systems: exhaust gas clean-up and emission reduction</li> <li>■ Process technologies</li> </ul>
	Abdulnaser Sayma, Professor, University of Sussex, United Kingdom	<ul style="list-style-type: none"> <li>■ Computational Fluid Dynamics code development</li> <li>■ Aeroelasticity</li> <li>■ Compressor and Turbine Aerodynamics</li> <li>■ Micro-gas turbines, analysis, design and testing</li> <li>■ Waste heat recovery using organic Rankine cycle</li> </ul>
	Peter Breuhaus, Chief Scientist, International Research Institute Stavanger, Norway	<ul style="list-style-type: none"> <li>■ Fundamentals of aero and thermodynamics</li> <li>■ Gas turbine technology and design</li> <li>■ Power plant monitoring and diagnostics systems</li> <li>■ Power systems and systems integration</li> <li>■ Process technologies</li> </ul>
	André Zeijseink, Global Director Power Generation & Renewables, KEMA, The Netherlands	<ul style="list-style-type: none"> <li>■ Electricity generation</li> <li>■ Inlet air filtration fouling and compressor cleaning</li> <li>■ Steam cycle chemistry and failure investigations</li> <li>■ Lubrication oils</li> </ul>
	Sauro Pasini, Vice President – Research Technical Area, ENEL, Italy	<ul style="list-style-type: none"> <li>■ Combustion and fuel gas cleaning</li> <li>■ CO<sub>2</sub> capture and storage</li> <li>■ Biofuels and biomass</li> <li>■ Radiative heat transfer</li> <li>■ Furnace modeling and USC boilers</li> </ul>



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## Gas turbine short courses

*As part of ETN's new educational programmes, the Department of Power & Propulsion at Cranfield University is pleased to offer two gas turbine short courses. These courses are supported by Total and will take place in Pau, France on 4-8 June 2012.*

The objective of the course is to familiarise the delegates with engine and component design and the performance of gas turbines for the energy sector.

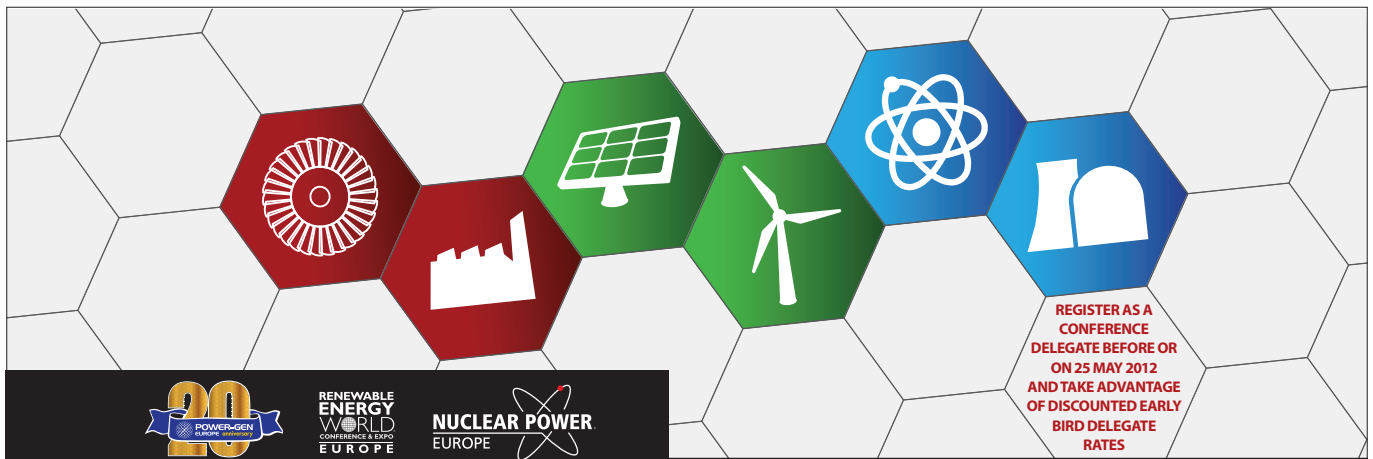
The course content has been chosen primarily to be of benefit to employees who are (or will be) involved in engine performance evaluation, operations and maintenance. The courses will be of particular value to practising engineers in gas turbine user industries who could benefit from an overview of the design and performance of the entire engine.

For more information please [click here](#)



Upon completion of the course, delegates should emerge with an improved appreciation of gas turbines, adding extra value to both their past and future experiences. ■

1	Introduction to Gas Turbines and Performance	4-6 June 2012
2	Some Aspects of GT Technology	6-8 June 2012
3	GT Technology for O&M Engineers (1 + 2)	4-8 June 2012



## INTEGRATING THE POWER SECTOR

Now in its twentieth successful year, POWER-GEN Europe offers the largest and most comprehensive conference and exhibition for the European electricity and power technology sector.

Over three days, POWER-GEN Europe will offer an insightful and thought-provoking multiple track conference including a track dedicated to Gas Fired Power Technology. Sessions on Advances in Flexibility Generation; Plant Operation, Innovation and Optimisation along with Fuels, Combustion and Emissions, are among the important topics being covered.

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**ETN members qualify for an approx. 25% discount  
For more information please contact the ETN Office**

## Fresh look and new website

*ETN has developed a new visual identity to complement its new project strategy, re-launched website and other communications tools, including the new public Quarterly Newsletter.*



The aim of this 'fresh look' is to make ETN documents and material easily identifiable. Moreover, the new 3D nature of the logo aims to reflect the new enhanced cooperation which has been taking place within ETN, stemming from new activities and the increase in membership, as well as the growing number of initiatives and projects, including the submittal of two new EU project proposals.

The public ETN website has been reconstructed, to make it easier to navigate for visitors who wish to learn more about the European Turbine Network. It reflects the new visual identity, and contains information about the reorganisation of ETN as well as the new project process.

The current "members-only" online platforms – the ETN website, the WIKI site and Membership Directory – are in the process of being merged into one single website, which is more user-friendly, and will only require one username and password for each ETN member. We look forward to presenting and demonstrating this to our members in the near future. ■

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NexTurbine 2012 is in response to industry's call for gas turbine technology advancement in support of strict emission constraint and more fluctuant renewable power. It discusses advanced GT R&D and application from manufacturer, research, and user's point of view, with special focus on:

- H<sub>2</sub>/Syngas turbine R&D findings from Europe, US, and China programs and projects.
- Modern CCGT and industrial GT technology advancement with combination of flexibility, efficiency, reliability and sound environmental performance.
- Technology development in terms of combustion, aero/heat transfer, and materials.

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