

ETN AGM & Workshop
27-28 March 2019 – Pau, France

Thank you Christer for your introduction,

Dear friends, dear ETN members,

It is my pleasure to host and to welcome you to ETN's 15th Annual General Meeting at the technical HQ of Total and to my home town of Pau. Before, I formally introduce this AGM, I would like to say a few words of the history of Pau while some slides will automatically scroll on the screen showing you pictures of the town and its magnificent surroundings.

The town of Pau is located at the heart of the Sovereign Principality of Béarn, being the capital since 1464 with the famous castle standing up over the town. The city stands alongside the river "Gave de Pau" and is 100 km away from the Atlantic coast and 80 km from the Spanish border with the scenery of the beautiful Pyrénées in the backyard and the hills of Jurançon with the famous world known wines. If you have time, you can take advantage of this scenery from the Boulevard des Pyrénées, especially today.

Very first traces of presence of people can be dated back to the gallo-roman period. However, the castle itself was constructed in the XIth century by the sovereigns of Béarn to protect the passage through the Pyrénées. The city of Pau finds its origin in the following century, with first houses built around the castle. The name of Pau comes from the word palisade in "Béarnais", the local language which sets the limit around the original castle. At the beginning, Pau was a very small village with a strategic position which then expanded over the following centuries under the protection of the sovereigns living in the castle.

Then, in the XVIth century, the village and its castle took a new dimension becoming the kingdom of Navarre. From this time, Pau became a primary political and intellectual place under the reign of Henri and Marguerite de Navarre. The history of Pau was sustainably marked by the birth of their grandson, Henri de Bourbon on December 13, 1553 in their castle, who accessed to the throne of France in 1589, becoming Henri IV,

cumulating both roles, king of France and of king of Navarre. The city of Pau is since associated to this monarch, still today.

In 1620, with the end of independence of the Béarn region, Pau lost its influence but remained still the capital of the region with large autonomy until the Revolution. During the XVIIIth century, another famous “palois” was born: Jean-Baptiste Bernadotte who became marshal of Empire, then king of Sweden and of Norway from 1818 until his death in 1844. There is a famous museum in Pau called Musée Bernadotte, regularly visited by the Swedish royal family.

From the end of the XIXth to 1914, during the so-called Belle Epoque, Pau has known a new rise with rich foreign people, mainly British, but also Russian, Spanish, and Americans, coming during winter time to benefit from the nice local climate as recommended by a Scottish medical doctor, named Alexander Taylor, who gave his name to a street downtown Pau. Some luxury villas and palaces were built, which you can still admire in some areas of the town, with some modern facilities such as baths, casino, and even a funicular which still exists today between the railway station and the Boulevard des Pyrénées. At the same time, Pau became the worldwide capital for aeronautics with the first flights from the Wright brothers, and the very first worldwide flight school which lots of sovereigns from the whole world came to visit.

At the end of this period of resorts holidays, the local economy moved towards the aeronautical activities in continuation with the history and petroleum activities with the discovery of the giant gas field of Lacq in 1951 located at 30 kms west of Pau, which explains the strong presence of Total in Pau. The Lacq field has been worldwide known due to its high content of H₂S, around 15%, which gave the opportunity for the Company to hold several gas treatment process patents which are known worldwide in the O&G industry. This giant field has been producing gas from 1957 to 2013, a world record with peaks over 80 MMSCMD.

Today, the population of Pau is around 78 000 people and 200 000 people with the surrounding suburbs. Pau remains the main economic and administrative capital of the region and, due to its history and its industrial and cultural activities, Pau has been awarded the prize of “Ville et Pays d’art et d’histoire” in 2011.

Now, I come back to the formal introduction of this AGM.

An annual general meeting is always a special moment in the life of an organisation like ETN. It is a privileged time together, giving us a chance to discuss what we have been doing, to review our past achievements and prepare for the challenges ahead. It is an opportunity to discuss where our organisation and our community - the Turbomachinery community which includes our prime focus on gas turbines, - are going and how we can influence this and commonly decide the direction we wish to take.

As the President of ETN, and on behalf of our board of directors, I am extremely pleased to see what a dynamic organisation ETN has become since its creation 14 years ago, so rich of precious expertise and committed members. I like to remember the very first AGM at the University of Roma back in 2005... I am sure that the already successfully started transformation of ETN towards a global association will provide further strength that will benefit all of our Members.

ETN global, is today a highly respected international association bringing together the whole community of gas turbine technology on one platform, including a worldwide user community with power generation and oil & gas companies, OEMs, Independent Service Providers (ISPs), Universities and R&D institutes. A strong user community that shares the main challenges, concerns and common issues in a coordinated way, with experts from the turbomachinery community, is a key to this success.

Exchanging experiences, best practices and exploring solutions in our Technical Working Groups and individual projects, composed of experts across the entire value chain have proven to be an efficient way to progress towards our common goals. We should also not forget the important efforts and achievements by ETN to follow legislation, energy and research policy and highlight and advocate our needs.

“Energy & climate change” is not only on the top of the political agenda but today also a main concern among the greater population. As a result, we are going through an accelerating transformation and transition to a low carbon society. We have to embrace this trend and address this topic as a one industry or risk being left behind. This is a fact for all of us as well as for ETN as an international organization. Our community needs in a joint effort to address this topic and showcase our commitment to policy makers, investors and society and then cooperate in order to develop in the most cost-

efficient way competitive solutions. There is too much at stake to take the risk of going alone.

We have to explore the latest technology developments like digitalisation and additive manufacturing as well as low or carbon-free fuels like hydrogen and ammonia but always within the boundary condition of reliable and safe operations. It is actually the role of ETN to be on the forefront of this change and help you to position yourself to benefit of these opportunities.

ETN is the appropriate platform to enhance developments which can deliver efficient, flexible, reliable low carbon solutions, which in the end will make our whole sector more competitive.

The strategy that we have in place today has proven to be the right one but with the speed of the energy transition it needs to be reviewed and updated frequently. Our Member of the Board, Gary Lock will later this afternoon, present in more detail, the ETN Board's proposed strategy going forward.

At last year's AGM, I highlighted a number of steps that we need to take in order to take cooperation to a new level and ensure a successful implementation of our strategy. On all of these steps, we have made good progress and as a result I am pleased to announce that we are approaching our targets and vision.

However, as continued efforts in the same direction are required, I would like to highlight again these important steps and the current status.

The first step is to continue to widen the user community and ensure full support in the highest management. We have to anchor our activities by highlighting how they can use our association for their own benefits. We have to both get a better understanding of their needs and where they want to go, as well as to inform them about technology development opportunities. We have had always a good support on operational issues but we need a higher involvement on the R&D side as well. With all the available expertise among the members of our platform, it is the fastest and most cost efficient way to use the ETN network to explore and develop new solutions.

The second step will be to ensure that we continue to have a very strong, committed and well connected Board. Its role is to identify emerging trends impacting our industry,

assess the changing drivers and identify choices and opportunities in order to ensure that we are at the forefront of the market needs, both in our strategy and activities.

The third step is to have a strong and active Project Board to cover all the relevant technical fields and that represent our whole community. Their main task is to guide us and identify R&D opportunities and to translate future development needs into technical project initiatives or activities. You will hear more about this in the afternoon from Peter Jansohn, our Chair of the Project Board.

The fourth step is to ensure an active involvement by all of our Members. The way to achieve this will be to determine what is important to you and what activities that could be beneficial to your organisation and then to act on this.

ETN's role is to guide, coordinate and support the activities that we decide to do, based on your suggestions and as a result of the previous outlined steps. ETN is your association with the objective to both ensure a bright future for our industry, and to create specific benefits for your individual organisation as well as for your own personal development.

These will all be crucial steps in the coming years in order to successfully implement our common strategy which will be further explained by our Managing Director. The good news is we have already made significant successful progress in these directions, as you will see when Christer presents his activity report.

One of my objectives as President of ETN is to continue our efforts to bring in even more members, and particularly more Users. We have a strategy and roadmap in place to reach out to the higher management of the user community, but this is a time-consuming effort that also often requires face to face meetings.

As a result of these efforts, I am very pleased that Maharatna Oil and Natural Gas Corporation Limited from India joined ETN last summer and that Eni Power and Vattenfall also have decided to join ETN this year. Other users that we have approached have also reacted positively, so I have no doubt that our global user community will continue to grow both in Europe and globally.

With 108 members, from 23 countries over 3 continents, ETN is already a well-established and highly regarded international association that brings together the

Turbomachinery community with the user community in a leading position that you should be proud to be a Member of.

Since the last Annual General Meeting held in Bucharest in March last year, ETN have welcomed 9 new members that I am pleased to name:

- Fiatec Filter & Aerosol Technologie GmbH (Germany)
- Gastops (Canada)
- Maharatna Oil and Natural Gas Corporation Limited (India)
- Mechanical Field Support (Netherlands)
- Masood John Brown International (United Kingdom, United Arab Emirates)
- Braden Europe (Netherlands)
- Vattenfall (Netherlands)
- Enipower (Italy)
- Staffordshire University (United Kingdom)

As a new Member of ETN, my advice is that you actively engage in our meetings and let us know if you have any particular interest, ideas or topics that you would like to bring to the table. With an active participation, I am sure that you will find it very beneficial to be part of our community.

To conclude, considering the fast energy transition and the tough times that both Power Utilities and Oil and Gas Operators have been going through for some years now, I believe ETN global can play a vital part in helping you improving the current situation.

We need to agree on a long-term common vision that will trigger a proactive aligned approach to ensure a wide-ranging role for turbomachinery in the future. We need to invest in research and development to enable the transformation to a low carbon society. We need to ensure cost efficient maintenance and operation of our fleets. We need to exchange best practices and to take cooperation to another level in order to reduce the cost and maximize the outcome.

With a wide and strong user community working closely together with the rest of the value chain, we can reach these objectives. I would therefore like to encourage the gas turbine user community to bring their issues and development requirements to ETN and to our R&D community and technology suppliers.

Ladies and Gentlemen, these were a few words highlighting the accomplishments of ETN and the Board and our vision for its future, and where we think we need to spend our resources and focus our efforts.

As usual, you can rely on the motivation and enthusiasm of all the Board Members, our Managing Director, Christer Björkqvist, and his team.

I also wish to thank the newly elected Board Members for their dedication in leading ETN during the first year of their elected mandate as well as all the Project Board members for their work and in particular their excellent work in drafting the new version of our ETN R&D Report.

Thank you so much, Ladies and Gentlemen, for your attention. And more importantly, thank you for making ETN a success.

Bernard QUOIX
President of ETN