Interview: The evolution of turbine-based research

17.07.2018

Dirk Goldschmidt (Siemens) has been EUTurbines TF Research chairman since 2013 – and involved in the association's activities since 2007. What is the most active group of EUTurbines benefitted from Dirk's experience and guidance in a fast-changing environment. Ahead of his well-deserved retirement this summer, he takes stock of EUTurbines activities and the evolution of the sector during his chairmanship. Dirk's position was taken over by his colleague Olaf Bernstrauch in February.

You were a key contributor to the EUTurbines Research Roadmap – was the effort worthwhile?

The preparation of the EUTurbines Roadmap started after the TF Research was re-activated back in 2011. Discussions with Commission officials at the time made us realise that we needed a Roadmap to put our thoughts together and have a clear vision of the industry and its needs by 2020. And that's what we did.

Its content has been used until recently: the document explains the R&I needs of the turbine industry and is still valid – more should be done to improve the turbine's performance in the future. But the political discussions and focus have evolved.

How have these evolved?

The focus on R&I activities has changed in different ways. There has been an evolution from technology-based to a system-based approach. This different approach also mirrors the changes in the operation of thermal power generation as more variable renewable sources are added to the system – what is important is how it contributes to the energy system i.e. ensuring the stability of the grid.

In the same way, the political and societal pressure towards coal-fired power plants and the increase of renewable energy sources complicate, in some cases, the support to thermal power generation. In the minds of many people, thermal power generation is unfortunately reduced to burning coal – and therefore not a technology with a future and need for further R&I. Thermal power, however, refers to the process used to produce electricity (and heat), independently of the fuel or source used.

Is there still a need for turbine research in Europe?

Definitely, yes! Thermal power generation is not a transitional or "old" technology. It is a technological solution that will remain in the system, albeit its role will change: providing flexibility, ensuring a stable power supply, having a more prominent role in industrial settings, etc. And as the role changes, the technology needs to adapt to continue delivering an optimum performance in each case.

One of the key challenges for thermal power generation in the future will be its decarbonisation. The adaptation of our technology to carbon-free fuels will play a major role in the decarbonisation of the energy system and of industry. More support, especially in this area, is urgently needed!

EUTurbines

Transparency Register
ID number: 75093131694-63

www.euturbines.eu

European Association of Gas and Steam Turbine Manufacturers
President
Dr. Michael Ladwig
Secretary General
Ralf Wezel

Lyoner Str. 18
60528 Frankfurt/Main
Germany
Phone +49 69 66 03-19 36
Fax +49 69 66 03-29 36
Patricia.seizer@vdma.org

Boulevard A. Reyers 80
1030 Brussels,
Belgium
Phone +32 2 706-82 12
Fax +32 2 706-82 10
Magdalena.kurz@euturbines.eu

The activities related to the SET-Plan seem to increase with time. What do you think about them?

EUTurbines was actively involved in the preparation of the previous SET-Plan Communication in 2013 – one has to admit though that, ultimately, the Plan was not too successful. I believe that the efforts of the past couple of years to prioritise activities and to try better engaging the EU Member States are a step the right direction. But more coordination and a greater commitment from all parties is still needed.

The new "Action" approach provides some more focus and allows for different stakeholders to better position themselves in a given area. This is the case for EUTurbines: we are involved in several actions and stakeholder groups – including those related to Concentrated Solar Power, Energy Systems and Energy Efficiency in Industry. Our involvement reflects the variety of turbine applications and of our association's activities.

What would be the biggest achievement(s) of the association in the past years?

While I would, of course, have wished for more, the fact that in the 3 work programmes of H2020 there has been a specific call for thermal power generation is an achievement. The success has continued with two awarded projects: FLEXTURBINE and TURBO-REFLEX. Those projects are of special importance because they not only contribute to developing the turbine and the thermal power plant of the future, but they also show the commitment of EUTurbines members – the fact that most of the association's membership has been able to work together in a project is an achievement in its own. And I hope that, in 2019, another project is awarded – this time showing the benefits of integrating storage solutions into thermal power plants.

What would you tell the policy makers who are currently finalising the next EU R&I funding mechanism?

First and foremost: do not stop R&I funding for thermal power generation! It is a technology with great benefits in the future as well – in Europe, it can provide dispatchable flexible and decarbonised energy and it can provide highly efficient power in other parts of the world, where energy poverty is still a topic. All energy technologies can have a role to play in a future decarbonised system and should be accordingly supported to adapt themselves to new challenges.

Specific to our technology, I would remind policy makers that turbines can be a carbon-neutral technology. In the case of a steam turbine, this component can work with any kind of steam – whatever the source used to produce the steam. In the case of the gas turbine, commonly used fuels, such as natural gas, will slowly be replaced by carbon-free fuels, such as biomethane, synthetic methane or hydrogen. This, however, means that the turbine needs to be adapted to the new type of fuels.

In a system with an increasing share of variable renewable sources, the integration of the gas and heating sectors with the electricity sector will play a key role. Power-to-Gas solutions will increasingly be used as a storage solution that can deliver when other sources cannot. Making sure that the system is enabled and that the relevant technologies are adapted will be of most importance – and R&I funding support is needed for this purpose!

What would you recommend to your successor?

I sincerely hope that he will be able to preserve the co-operation spirit among heavily competing companies within our TF Research. I would advise him to use and continue the line of work that we have developed in the past years.

In times when the demand for new thermal power plants in Europe is low compared to other regions, it is important to ensure that the globally leading R&I centres and know-how for this technology stay in Europe. To achieve this, new approaches to ensure a continuous (financial) support for thermal power generation research in Europe will need to be defined.

Raising awareness of the role and contribution of turbines in their different applications should remain a priority – which should even increase with time. Active participation in the different ETIPs and other

EUTurbines

Transparency Register
ID number: 75093131694-63

www.euturbines.eu

European Association of Gas and Steam Turbine Manufacturers
President
Dr. Michael Ladwig
Secretary General
Ralf Wezel

Lyoner Str. 18
60528 Frankfurt/Main
Germany
Phone +49 69 66 03-19 36
Fax +49 69 66 03-29 36
Patricia.seizer@vdma.org

Boulevard A. Reyers 80
1030 Brussels,
Belgium
Phone +32 2 706-82 12
Fax +32 2 706-82 10
Magdalena.kurz@euturbines.eu

stakeholder groups should also be an essential part of EUTurbines research activities. On top of this, the TF Research should also develop new narratives: the integration of storage in thermal power generation and the use of carbon-neutral fuels are two important topics which show the evolution of our industry and its contribution to a decarbonised system – but present some research challenges which should best be addressed with public R&I funding.

And I would wish him good luck and success in this challenging, yet very interesting period ahead!

EUTurbines takes the opportunity to thank Dirk again for his commitment and support over the past years and wishes him all the best in this new phase of his life!

About EUTurbines

EUTurbines is the European industry association representing all leading gas and steam turbine manufacturers in Europe. The member companies represent a business volume of 25 billion Euro and directly provide jobs for 70,000 employees in Euro

EUTurbines

Transparency Register
ID number: 75093131694-63

www.euturbines.eu

European Association of Gas and Steam Turbine Manufacturers
President
Dr. Michael Ladwig
Secretary General
Ralf Wezel

Lyoner Str. 18
60528 Frankfurt/Main
Germany
Phone +49 69 66 03-19 36
Fax +49 69 66 03-29 36
Patricia.seizer@vdma.org

Boulevard A. Reyers 80
1030 Brussels,
Belgium
Phone +32 2 706-82 12
Fax +32 2 706-82 10
Magdalena.kurz@euturbines.eu