Task 11 of the IEA Wind Technology Collaboration Programme (TCP) promotes and disseminates knowledge on emerging wind energy topics. This is accomplished through Topical Expert Meetings (TEMs), in which invited experts meet to exchange information on R&D topics of common interest to the IEA Wind TCP members.

With three new members in 2019, nearly every country in the consortium participates in this Task, which has been part of the IEA Wind TCP since 1978. Task 11 allows members to react quickly to new technical and scientific developments and information needs.

Task 11 reports and activities bring the latest knowledge to wind energy experts in the member...
countries and offers recommendations for the future work of the TCP. Task 11 is also a catalyst for starting new IEA Wind TCP research Tasks.

Progress and Achievements

Topical Expert Meetings

TEMs are conducted as workshops where information is presented and discussed in an open manner. Generally, oral presentations are expected from all participants. Meeting proceedings are made available to Task 11 participating countries immediately and to the public one year later. Four TEMs were held in 2019:

**TEM#94 on Large Component Testing for Ultra-Long Wind Turbine Blades:** 27 participants from 8 countries met to discuss existing testing capabilities with their
challenges and constraints in relation to ultra-long wind turbine blades. TEM#94 took place on February 25-26 at the NREL facilities in Boulder, CO. NREL’s Scott Hughes and Walter Musial took the technical lead in the organisation of the meeting.

There was substantial interest in development of subcomponent test methods that may enable shorter testing timeframes and lead to improvement in blade and rotor reliability.

TEM#95 on Improving the Reliability and Availability of Electrical Infrastructure Components: The meeting was held on April 8-9 at the Charles Parsons Technology Center in Blyth, England. Paul McKeever and Stephen Wyatt from ORE Catapult were technical leads in the organisation process. The meeting was attended by 22 participants from seven countries which included both industry and research institutes representatives. They sought consensus on the collaboration needs on the near term through a new IEA Wind Research Task: development of a common data base on cable failures, of monitoring guidelines and forensic analysis methodology, validation of new test methodologies better aligned with offshore conditions, and development of a risk model framework.

TEM#96 on Wind Plant Decommissioning, Repowering and Recycling: this TEM was hosted in Rome, Italy, on November 14-15. Technical lead was assumed by Laura Serri, Davide Airoldi and Stefano Maran from RSE S.p.A. as well as Luca Benedetti from GSE S.p.A.. The meeting gathered 35 experts from 12 countries to discuss the challenges linked to wind park end-of-life and the two available options in case lifetime extension that cannot be envisaged: decommissioning and repowering. Recycling was addressed as a central, transverse issue in both cases and will be the topic of an IEA Wind TCP Research Task proposal in 2020. Participants showed a high interest in collaboration at the meeting. DTU will lead the process.

TEM#97 on Wind Farm Control: co-hosted with the FarmConners project and co-located with the EERA JP Wind Annual Event 2019 on September 25 at the Aristo Meeting Center in Amsterdam, The Netherlands, this TEM was organised under the lead of a large team (NREL, DTU Wind Energy, TU Delft and CENER). As many as 47 experts from 14 nations were present, proof of the strong interest throughout the world regarding this topic; consequently, Jan-Willem van Wingerden of TU Delft and Paul Fleming of NREL are leading a new Research Task proposal, to be presented at ExCo 85.

Recommended Practices

Another activity of Task 11 is to develop IEA Wind TCP Recommended Practices (RP). RPs originate from research tasks and are drafted by their participants, often as a final deliverable of the task’s work plan. One Recommended Practice (RP) was reviewed and published in 2019:

• RP 20: Selecting Renewable Power Forecasting Solutions (Task 36)

Highlight

Task 11 focuses its activities on the Strategic Plan 2019-2024 of the IEA Wind TCP. In recent years, international collaboration has been increasingly attracting IEA Wind TCP member countries, and Task 11 welcomed three new countries in 2019: Belgium, Canada and Korea.
Given the success of Topical Expert Meetings and the number of new Research Tasks proposed, Task 11 members agreed on the need to define dedicated TEM types aligned with the IEA Wind TCP Strategic Plan in order to bring more focus to the outcomes of these meetings. The following TEM types were identified as strategically relevant:

- Creation of a new Research Task
- Collaboration with other technologies
- Dissemination for policy makers
- TCP internal needs & collaboration between tasks

From 2019 on, TEM topic selection occurs taking these types of meeting into account.

This is part of the dynamisation process of the Task that aims at fostering information exchange in the most responsive and efficient way.

**Outcomes and Significance**

Task 11 can be seen as the backbone of the IEA Wind TCP’s activities. Active researchers and experts from participating countries are invited to attend these meetings. Meeting topics, selected by the IEA Wind TCP Executive Committee, have covered the most important wind energy issues for decades.

If a TEM attracts sufficient interest, it can serve as a kick-off for the process of organising a new research task within the IEA Wind TCP. In 2019, three of the four TEMs organised are leading to new tasks. The work plan for the new tasks dedicated to “Wind Farm Control” and “Wind Turbine Blade Recycling” will be presented and seek approval from the ExCo in 2020. The task work plan on Electrical Infrastructure Components is under development.

**Next Steps**

The trend initiated this year will continue in 2020, making Task 11 more dynamic with fast-track and online TEMs. The IEA Wind TCP will remain a leading actor of the wind energy development while being able to react quickly to hot topics.

The TEM topics selected for 2020 are:

- TEM#98: Wind Turbine Blade Erosion, hosted by VTT in February 2020
- TEM#99: Floating Offshore Wind Arrays Challenges and Opportunities, hosted by Principle Power in July 2020
- TEM#100: Aviation System Cohabitation, hosted by Planair SA in December 2020

In 2020, Task 11 participants will hold a dedicated meeting in conjunction with the spring ExCo meeting. It will be a great opportunity to discuss the strategic orientation of the task and define priorities for the next term.

**Task Contact**

Lionel Perret, Plainair SA, Switzerland
Email: ieawindtask11@planair.ch
Web: community.ieawind.org/task11