

AWEC 2024 – Key Take-Aways

16 May 2024. By Kristian Petrick, Stefanie Thoms (Airborne Wind Europe), Roland Schmehl (TU Delft)

The 10th edition of the Airborne Wind Energy Conference ([AWEC 2024](#)) was held at the Universidad Carlos III de Madrid from 24-26 April 2024. Six key take-aways of the international event are:

1. The inclusion of AWE in Germany’s Renewable Energy Act (EEG) is a major political break-through.

The world's first AWE-specific remuneration scheme – the adoption by the German Parliament live-streamed during the AWEC – shows that the technology’s relevance is finally being recognized by policy makers. This will have major positive implications: AWE will experience increased visibility since the EEG is known worldwide as a pioneering law for renewable energy support schemes; it helps to reduce the market risk for banks and investors, making it easier to provide capital to AWE companies; and it will trigger the much-needed acknowledgment of the AWE specificities in applicable regulations concerning airspace integration and permitting. The AWE sector has already started “nudging itself into regulation”, e.g. through successful cross-border flight permits for AWE systems.

2. The first validated power curve marks a technological turning point for the energy sector:

SkySails Power presented the first validated power curve of a 120kW AWE system. This is the final proof that generating electricity with airborne wind energy is technically feasible, that it can be automated to a large degree and sustained over many thousands of hours. Together with the various Life Cycle Analyses (LCAs), that show AWE having the lowest material input and life-cycle emissions of all energy technologies, this achievement marks one of most important technological leaps in the energy sector in the last decades. SkySails’ achievement was hailed by all conference participants, sparking optimism and enthusiasm.

3. New countries show interest in AWE, namely China:

The AWEC gathered over 180 experts and stakeholders from 23 countries, with especially China, but also Poland, Iran, Pakistan and UAE as newcomers. Already in 2023, China included AWE in its National R&D Strategy; now for the first time, Chinese research and commercial activities were presented. A single company with a double-digit million-Euro budget shows how serious AWE is being taken in China – it’s time for Europe to realise that the competition on the best concepts and brains has started. Moreover, the interest in the US is picking up with very concrete plans for establishing test as well as commercial sites.

4. AWE companies seek faster market entry with smaller systems.

At the 9th AWEC, held in Milan in 2022 the majority of companies were targeting the 100kW segment for first commercial systems based on the negative experiences with too fast upscaling from Makani and Ampyx. Today, several companies turn their current 30-kW pilot systems into commercial products. This allows them to capitalise on the experience and reliability they have already achieved with these systems, significantly reducing the amount of capital requirements and generating revenues, operational hours and project experience much faster. The markets identified for these distributed systems are manifold, such as rural SMEs, farmers, energy communities, islands, hybrid systems, and more. And as they require smaller investments, they can be potentially set up quickly and provide perfect complementarity to other renewable technologies.

5. AWE research gets increasingly applied and verified in practice.

Over the last decade, the AWE research community has developed a wide range of tools, models and detailed theoretical understanding of the different AWE concepts. The AWE companies make increasingly use of this expertise, providing valuable feedback to the research teams in return. This not only applies for technical topics but also social acceptance and environmental impacts. The AWE sector has strategically included both companies and research institutes in consortia of EU and national projects (like Meridional, JustWind4All, MegaAWE, DEM-AWE, BORNE, etc.) and the IEA Wind Task 48 to foster the collaboration and accelerate learning.

6. AWE gains substantial media attention.

In the run-up to the AWEC, a particular focus was put on raising public awareness for AWE technology as a high-potential contribution to the renewable energy transition. A key success factor was to showcase hardware: The impressive 40m² kite provided by Kitepower together with the new mobile AWES ground station of CT Ingenieros/ UC3M attracted journalists and various TV stations before, during and even after the AWEC. The AWE sector can thus make more use of this unique feature of AWE – being relatively easy to transport – to increase its visibility in more countries and regions across Europe and world-wide.