

Fostering International Collaboration Within IEA Wind TCP Task 48

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WP1

RESOURCE POTENTIAL AND MARKETS

AEP prediction for selected sites & toolchain documentation

Global high-altitude wind resource atlas

Recommendation on AWE entry-markets

AEP prediction toolchain

Economic metrics



WP2

REFERENCE MODELS, TOOLS AND METRICS

Common definition of metrics and KPIs

Joint reference model(s)

Centralized design tool

Simulation vs. test flights comparison

Definitions

Centralized design tool database



WP3

SAFETY AND REGULATION

Concept of operations and risk assessment

Airspace integration concept

Benchmarking concepts for safe automatic operation

Whitepaper on AWES safety



WP4

PUBLIC ACCEPTABILITY

Life-Cycle Analysis

Repository of survey and studies

Guidelines for site selection, sound measurement and impact mitigation

Circular Economy

LCA of AWE

Repository of surveys & studies



WP5

AWES ARCHITECTURES

Design space representation

Market specific deployment recommendations

AWES R&D state, trends and needs

Portal for AWES engagement and development potential

Guidelines



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Fostering International Collaboration Within IEA Wind TCP Task 48

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The International Energy Agency's (IEA) Wind Technology Collaboration Programme (TCP) is an international co-operation that shares information and research to advance wind energy research, development and deployment in member countries. Companies and organisations from these countries work together in the so-called IEA Wind tasks.

In 2021, the IEA Wind Task 48 on airborne wind energy (AWE) was established [1]. Task 48 provides a platform for the open exchange of ideas, experience, and techniques of AWE systems and aims to build a strong community that works together to identify and mitigate the barriers to the development and deployment of this emerging technology.

The objective is to jointly tackle the remaining challenges, also including stakeholders who are not primarily AWE developers, i.e., policy makers, authorities, regulators as well as other wind energy and technology experts. A key benefit of the new task will be that it opens the scope of collaboration to the whole world; it will thus foster a truly international exchange of expertise, produce and gather new data and information, allow for joint learning as well as accelerate the development of AWE technology and thus its impact on the international energy sector.

Five different work packages (WPs) were defined to structure the collaboration and to match research activities with the needs for the further development of the Air-

borne Wind Energy sector. The WPs aim to answer the following questions:

- Where to deploy AWE? → WP1 “Resource potential and markets”
- How to deploy AWE efficiently and how to assess power production? → WP2 “Reference models, tools and metrics”
- How to deploy AWE safely? → WP3 “Safety and Regulation”
- What are AWE benefits for society and environment? → WP4 “Public Acceptance”
- Which technological potential do different AWE concepts have? → WP5 “AWES architectures”

Task 48 on AWE makes use of the IEA Wind network by collaborating with other tasks, e.g. Task 28 on Social Acceptance, Task 41 on Distributed Wind, or Task 51 on forecasting. The task is managed by the secretariat of Airborne Wind Europe who acts as Operating Agent. As of 2022, participating countries are Belgium, Denmark, Germany, Ireland, Italy, Spain, Switzerland, The Netherlands, United Kingdom, and USA. Interested organisations and other countries are welcome to join.

References:

[1] <https://iea-wind.org/task48/>