Activities of the Working Group
“Roadmap”

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R&D Panel

Kristian Petrick
Policy and Regulation
kristian.petrick@airbornewindeurope.org
+34 637 710 451
Two active Working Groups since end of 2018

Working Group 1
- Safety & Technical Guidelines

Working Group 2
- Roadmap

Working Group 3
- WG Environment
A Roadmap for the European Airborne Wind Sector

- Objective: Estimate sector’s growth plans in a **bottom-up approach**.

- Ten companies collaborated in Working Group
- Data reflect their business plans until 2030 for pre-commercial and commercial projects:
  - Number of systems
  - MW installed
  - investment needs
  - jobs created.

- Top-down analysis to estimate AWE market potential for 2050
First commercial systems in 2020/21; 9 out of 10 companies plan commercial systems by 2023
At least 200 Mio Euro cumulated investment needs until 2022

Note: Two companies did not provide investment needs
Cumulated capacity in the GW-range by 2030 is seen as realistic – but companies are not confident about numbers yet

There are many unknowns:
- Technology
- Policies
- Regulation
- Markets
- Etc.
Very fast growth within a short time frame is possible

- Within 10 years a technology can grow into the GW range in a single market
  - PV Germany in 2000-10: from a few MW to 15 GW (single market!)
  - UK offshore wind 2002-12: from 0 to 3 GW

- Within one year capacity in the GW-range can double in a single market:
  - PV Germany in 2008-09: from 1.9 to 4.4 GW
  - UK Offshore Wind 2011-12: from 0.5 to 1.1 GW

- But:
  - PV and onshore wind were proven technologies when large-scale deployment started while AWE is still in the development phase.
GWEC 2016: Up to 5,800 GW by 2050

Which share could AWE have in 2050?

https://gwec.net/publications/global-wind-energy-outlook/
Global 100% RE scenario: Global wind capacities of about 10,000 GW on- and offshore by 2050

Several hundred GW are realistic, if global wind capacity reaches 3-10,000 GW by 2050

LUT_EWG 2019, Global Energy System based on 100% Renewable Energy (Lappeenranta University of Technology Research and Energy Watch Group)
Conclusions

1. GW-range by 2030 possible – but many unknowns

2. AWE commercialization 2021 - 2024

3. Pre-commercial investment needs > 200 Mio EUR by 2022

4. Several hundred GW by 2050 seem realistic

5. Detailed study of potentials and scenarios required
Thank you for your attention!

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