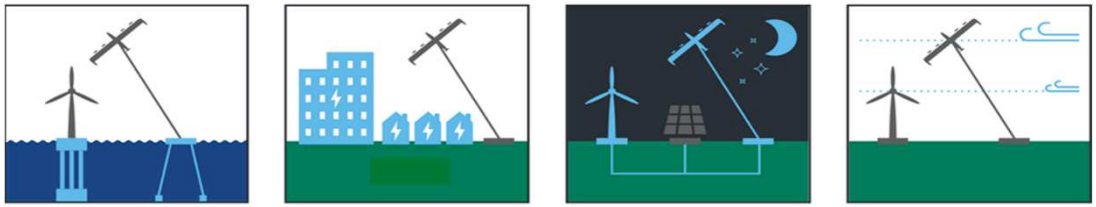
iea wind

Topical Expert Meeting TEM#102
Airborne Wind Energy



Session 2:
Environmental and social integration

23-24 September 2020

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Overview of topics

Society

1. Investigation of how AWE are perceived by local population
2. Noise simulation, measurement and reduction measure
3. Comprehensive site selection processes and involvement of local stakeholders

Environment

4. Bird collision risk modelling, validation and mitigation measures
5. Guidance for sustainable deployment of AWE

Sustainability

6. Life-Cycle Assessment
7. Sustainable Design: Circular Economy or cradle-to-cradle approach for choice of materials
8. Tether service life extension and re-use

Society

1. Investigation of how AWE are perceived by local population (visual impact, safety aspects, etc.)
   - There are no comprehensive studies
   - Interviews with neighbours of test sites and visitors could be conducted
   - Interreg project MegaAWE may give some insights
     - Communication to local population of planned test site is being prepared

2. Noise simulation, measurement and reduction measure
   - OEMs have done some measurements but not systematically, partially outdated
   - Methodology required to allow for comparison

3. Comprehensive site selection processes or involvement of local stakeholders
   - Understanding the key parameters to find suitable sites for AWE

Environment (flora and fauna)

4. Bird collision risk modelling, validation and mitigation measures
   - Two studies available, two others forthcoming
   - Validation over longer time periods required

5. Guidance for sustainable deployment of AWE
   - Similar document as Guide from European Commission (forthcoming) could be envisaged
   - May include also AWE advantages, e.g. restoration of original site conditions

Sustainability

6. Life-Cycle Assessment (LCA) for onshore and offshore AWE
   - Previous LCA showed that have has roughly half of conventional wind footprint
   - LCA planned within MegaAWE based on Ampyx AP3, together with TU Delft

7. Sustainable Design
   - Circular Economy or cradle-to-cradle approach: seen as important by European Commission
   - LCA results may be used for design for choice of materials

8. Tether service life extension and re-use
   - Idea of “renting model” for tethers: Supplier makes money on kWh transmitted from kite to ground station, not from selling tethers
   - Re-use or recycling of other components (e.g. softkites)

Thank you for your attention!

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