

**OBJECTIVES OF THE INTEREST GROUP AIRBORNE WIND -
WORKING GROUP SOUND**

IG AW WG Sound	
FGW Technical Guideline 11 Category C	
Chair	Patrick Junge, Falko Mertens (SkySails Power GmbH)
Objective confirmed on	17.01.2022
When does the WG plan to present the results?	Revision 0 for the beginning of 2023 planned
What is the problem, what is the content?	IEC 61400-11 is mostly, but not completely applicable to AWES. The definition of the measurement positions and power-based wind speed determination are unique to conventional wind turbines.
What is the goal, what result does the WG want to work out?	Description of the measurement of sound emissions from for AWES (sound power level, tone and impulse content, octave spectra) to be used in approval decisions. Step 1: Sound measurements (Rev. 0) Step 2: Dispersion calculation (Rev. 1)
Should the document be prepared as a recommendation, test specification or certification specification?	Depending on results – recommendation or test specification
How often does the WG plan to meet (web-meetings)?	The WG intends 6 times each year in two-hour web meetings
What (lists, representations, explanations, recommendations) should the guideline contain specifically at the end?	
Should the guideline specify other documents?	IEC 61400-11, FGW TG 1 and opinion, Germany LAI, VDI 4101 , possibly ISO/TC 43/SC 1, Swiss Noise Abatement Ordinance , Måling av støy fra industri
What content should explicitly not be covered?	Prognosis of sound immissions. Measurements ordered under immission control law ensure that limit values are complied with and do not have the purpose of determining the emission of the AWES as precisely as possible.

In future, the measured sound levels from AWES will be used to make sound prognosis maps. The prognosis of sound immissions caused by sound sources at high altitudes is non-trivial and currently a subject of research due to aircraft noise and increasing height of modern wind turbines. The method currently being used in Germany (“Interimsverfahren”) tries to address this problem.

How does the WG proceed, which steps are planned?

1. Discussion of already executed measurements concepts, and models and comparison to IEC 61400-11. Assess critical modes of operation.
2. Draft a counterproposal on suitable measuring positions and suitable wind-speed calculations together with invited experts
3. Discuss the draft with expert committee FGW TG 1

Against which existing standardization does the WG or the result have to distinguish itself?

All previously mentioned

What research is needed regarding the existing regulatory framework, e.g. for the purpose of delineation or clarification?

Requirement for accuracy of wind speed on the airborne system. Maybe the current measured force at the airborne system (resulting in electrical power) is actually the important value, as it may correlate more strongly to the sound emission as the apparent wind-speed does.

Who is the guideline aimed at?

Manufacturer and operator

Which experts or stakeholders are already involved?

Manufacturer, operator, planning offices

Which experts or stakeholders need to be involved additionally?

Measuring institutes, planners, engineering offices, measuring points according to §29b BImSchG, immission protection authority, and experts responsible for environmental reports

It is planned to refer to social acceptance studies, which are currently undertaken by institutions and companies.

What other topics could be included in the future?