



KITEMILL



Permission work in new national markets RE-AWE-210930

REV.	DATE	DESCRIPTION	ORIGINATOR	CONTROL	APPROVED
1	29092021	Report issued for review	ODB		
A	29092021	Report approved for use	ODB	LC	TH

	NAME	INITIALS	TITLE
AUTHOR	Otto de Besche	ODB	QA Manager
CONTROLLER	Lode Carnel	LC	Operational Manager
CONTROLLER			
CONTROLLER			
APPROVER	Thomas Hårklau	TH	CEO



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 881193

This is an electronically generated document which has been reviewed and approved in accordance with Kitemill's Management System. Dissemination level: PU

INDEX

1	INTENTION	3
2	SCOPE	3
3	EXECUTIVE SUMMARY	3
4	LEGISLATION AND REGULATION CERTIFIED CATEGORY	3
5	AWE SYSTEM ADAPTATION.....	5
6	CONCLUSION.....	6

1 INTENTION

This document is made to publicly share experience from the activity within the work package 3 market development. Originally the intention was to describe how Kitemill has communicated with the relevant authority in a specific EU country. With the coming of Europe-wide regulation for Unmanned Aircraft Systems, and national adaptation if these rules in the targeted markets, this was redefined to report how Kitemill is adapting to those and how to contribute to the way forward.

2 SCOPE

It is assumed that interested parties have a good perception of the EU legislation and Implementing rules in the field of Unmanned Aircraft Systems and an insight to the Airborne Wind Energy industry.

3 EXECUTIVE SUMMARY

It is imperative to success in operating AWE systems that the regulative framework is geared towards both safety and ease of operation for the industry to be competitive. It is important for AWE system developers to operate safely and still uphold a fair degree of elbow room to effectively progress in a step-by-step enhancement of the system under development. The regulations are still in its' youth and stakeholders need to be ongoing versus authorities in expressing their needs. The AWE industry may play a significant role in man's maybe most important challenge of our time and should be able to obtain the attention and priority needed to contribute in the most effective way.

The basic implementing rules offer opportunities to achieve this through standard scenarios, pre-defined risk assessments and concepts for the certified category. The explosive introduction of affordable drones and the social implications of irresponsible use has been a driving factor in legislative efforts and the near prospect of effective short- and long range transportation of goods by unmanned aircraft is at the moment getting a major attention. The AWE industry should prepare now to be ready when EASA is able to take on the next round of tailor-made regulation.

4 LEGISLATION AND REGULATION CERTIFIED CATEGORY

Regulations (EU) 2019/945 (airworthiness) and 2019/947 (implementing rules UAS operation), including amendments and associated AMCs and GMs are implemented in Norwegian legislation and regulation. However, implementation of regulation for those entities which will need approval under the 'Certified' category are not yet in place.

Following last year's Europe-wide hearing and feedback from member states and industry a number of clarifications and simplifications have been considered by EASA. Another hearing of concept documents is being prepared for first half of 2022 in two stages, NPA 1 and NPA 2. The first concerning manned VTOL with pax carrying capability. The second concerning unmanned transport of pax (dronetaxi) and/or goods inside and outside urban areas and unmanned transport of goods in controlled airspace.

One can read that an AWE operation even broadly described does not readily fit into any of these concepts and at the moment one cannot conclude that the AWE operation in the end will be covered by the Certified category. However, at present this is anticipated by the national CAA in Norway and accordingly since Kitemill's operations are approved under the strictest category of certified operations under the pre 2021 regulation (RO3) Kitemill will continue to operate UFN based on that approval also after end of 2021. Both in present and new regulation for certified operations one seems to pass thresholds when attempting to operate BLOS above 120 meters and/or with an aircraft of more than 3m wingspan and heavier than 25 kg no matter the limitation of consequence of a crash.

5 AWE SYSTEM ADAPTATION

According to Articles 3 and 6 in Regulation (EU) 2019/945 UAS operations shall be classified as UAS operations in the ‘certified’ category where the competent authority, based on the risk assessment provided for in Article 11, considers that the risk of the operation cannot be adequately mitigated without the certification of the UAS and of the UAS operator.

So far, the standard scenarios and pre-defined risk assessments which are implemented do not cover an AWE system operation except for very small size experimental systems. This may not necessarily exclude an AWE system operation from approval under the Specific Category or preclude establishment of an AWE system PDRA. Simplification of regulation in the form of standard scenarios may be beneficial but may also turn out to inflict too restrictive rules on particular operations like AWE systems unless the scenario is tailored to the main characteristics, most conspicuously tethered operation and the confinement to limited areas and limited volumes of airspace.

Implications of certification for operators will depend on a number of factors, whether it being a system development company or an energy production company, stage in development, resources, organisation, reputation, cost effectiveness and more.

To a system development company at an advanced stage a certification is certainly favourable for the quicker be able to adapt to new needs. Further it is favourable for the reputation as it reflect a higher permission level and is likely to be considered important to investors and customers.

To a customer buying an installation and intending to run the operation of an AWE system energy production plant a specific approval may seem more predictive and easier to handle.

Thus, continued work to prepare a broadly standardised AWE (production) concept which can be adopted by EASA should be a priority and is perhaps vital to achieve competitive framework conditions and a viable industry. Commendable initiatives are currently being undertaken by FGW in Germany and by the IEA.

6 CONCLUSION

A tool and methodology for the way forward is presented by the legislator. A SORA beginning with ConOps for a planned operating scenario will be a natural way to proceed also regarding certified category operations which are not yet covered by standard concepts. In deed Kitemill is pursuing this path at the moment. For the system development industry a certification should include a limited freedom to modify, introduce new elements, 'trial and error', learn, enhance, document and report, provided the organisation meets necessary criteria including an adequate quality/safety management system.

Establishment of AWE system (production) PDRA and/or standardised AWE system regulative concept in the certified category which can be adopted by EASA is clearly advantageous and perhaps vital both to safety, to achieve competitive framework conditions versus other energy production industries and to facilitate a level field of competition within the AWE system energy production industry which is expected to play across Europe.