Details
IEA WIND Task 32 Workshop #1 on

Floating Lidar System: Current Technology Status and Requirements for Improved Maturity

Date: February 23rd and 24th 2016
Venue: ORE Catapult, Blyth, UK
Workshop leader: Julia Gottschall, Fraunhofer IWES

Objective

Floating lidars (i.e. lidars integrated or placed on top of a floating platform or buoys) were recently introduced as a cost-effective alternative to offshore met masts. Today there are several system suppliers on the market, and five of the developed systems have already reached the 'pre-commercial' maturity stage. The first offshore wind projects have already been planned on the basis of floating-lidar data. Despite this fast integration into current practice, not all challenges related to the application of floating lidar systems are fully identified and resolved yet. So-called gaps on the technology's road to full maturity relate e.g. to a complete understanding of the measurement uncertainties of floating lidar measurements, detailed guidance on the system deployment or a classification of different sea climates on the expected system performance.

The workshop follows up on the activities of Phase 1 of IEA Wind Task 32 that resulted in a draft Recommended Practices document, and from other expert working groups as in the Carbon Trust OWA programme. A pre-workshop survey will be distributed and used to prepare the discussion of the key issues and the positions of different stakeholders.

Expected Outcome

A report on the state of the technology (technology review) and necessary next steps (further roadmap to maturity) will be compiled based on the contributions to and the results from the workshop. The report is to be published in a suitable format after the workshop.

Programme

<u>Day 1</u>

9:30	start with coffee/tea

10:30	start of workshop / **morning session** [chaired by Julia Gottschall / Fraunhofer IWES]
[20 min]	introduction to workshop
[20 min]	introduction to ORE Catapult
[20 min]	IEA Wind Task 32 Phase 2 *(David Schlipf / SWE)*
[30 min]	Presentation of floating lidar activities within Task 32 *(Detlef Stein / DNV GL)*
[30 min]	OWA activities *(Megan Smith / Carbon Trust)*
12:30	conclusion of morning session

12:40	lunch

13:30	start of **afternoon session** [chaired by Ines Würth / SWE]
[30 min]	presentation of outcome of web questionnaire
[90 min]	invited presentations of different stakeholders, identification and discussion of technology gaps and requirements for improved maturity

	→ end-users:	*Hugo Herrmann / EDF Energy,*
		Miriam Marchante Jiménez / DONG Energy
	→ consultancies:	*Hans Verhoef / ECN, Detlef Stein / DNV GL,*
		Peter Clive / Sgurr Energy

15:30	coffee/tea
16:00	continuation of afternoon session
[60 min]	further invited presentations

	→ lidar providers:	*Matt Smith / ZephIR,*
		Matthieu Boquet / Leosphere,
		Mitsubishi (tbc)
	→ academia:	*Andy Clifton / NREL*

[30 min]	summary of the activity
17:30	conclusion of afternoon session / end of Day 1

19:00	joint dinner

<u>Day 2</u>

8:30	start with coffee/tea

9:00	start of **morning session** [chaired by Jonathan Hughes / ORE Catapult]
[30 min]	short presentations by system providers: *AXYS, Babcock, EOLFI, EOLOS, IWES, Fugro (tbc)*
[30 min]	overview of questionnaire part 2
[30 min]	review of identified technology gaps and requirement for improved maturity
10:30	coffee/tea
11:00	continuation of morning session
[90 min]	discussion in groups – prioritization of gaps and requirements, drafting of roadmap
12:30	conclusion of morning session

12:40	lunch	
13:30	start of **afternoon session** [chaired by David Schlipf / SWE, Julia Gottschall / IWES]	
[30 min]	presentation of results from each group	
[60 min]	formulation of next steps, and updated "roadmap" to improved maturity	
15:00	conclusion of afternoon session / end of workshop	

Participant List

Name	Institution	Country
Adrian How	SSE	UK
Andrew Clifton	NREL	USA
Andy Paterson	Babcock International Group	UK
Benny Svardal	Christian Michelsen Research AS	Norway
Bernhard Lange	IWES Fraunhofer	Germany
Breanne Gellatly	AXYS Technologies	Italy
David Langohr	Leosphere	France
David Schlipf	University of Stuttgart	Germany
Detlef Stein	DNV GL	Germany
Frank van Erp	Netherlands Enterprise Agency	The Netherlands
Guillaume Sabiron	IFP Energies nouvelles	France
Hans Verhoef	ECN	The Netherlands
Hugo Herrmann	EDF Energy	UK
Ines Würth	University of Stuttgart	Germany
Jonathan Hughes	ORE Catapult	UK
Jorge García	EOLOS Floating Lidar Solutions	Spain
Julia Gottschall	IWES Fraunhofer	Germany
Matt Smith	ZephIR Ltd	UK
Matthieu Boquet	Leosphere	France
Megan Smith	Carbon Trust	UK
Mikiko Sasaki	Mitsubishi Electric Corporation	Japan
Miriam Marchante Jiménez	Dong Energy	Denmark
Nobuki Kotake	Mitsubishi Electric Corporation	Japan
Peter Clive	SgurrEnergy	UK
Rob Newsom	Pacific Northwest National Laboratory	USA
Romain Girault	EOLFI	France
Simon Toft Sorensen	Fraunhofer Centre for Applied Photonics	UK
Terry Tarle	AXYS Technologies	Canada
Theodore Holtom	Wind Farm Analytics Ltd	UK
Thomas Lamant	EOLFI	France
Will Laird	SgurrEnergy	UK
Yutaka Kajiyama	Mitsubishi Electric Corporation	Japan