PO.083

# IEA Wind Task 52
# ‘Large-Scale Deployment of Wind Lidar’

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## Abstract

IEA Wind Task 52, also referred to as ‘Wind Lidar’ Task, was kicked off recently with an online Kick-off / General Meeting on 24 and 25 May 2022 [1].

It is a relaunch of Task 32, which in the last nine years supported successfully international collaboration on different wind lidar related topics and applications. In its three phases, Task 32 participants delivered two reports on recommended practices (IEA Wind RP 15 on ground-based remote sensing for wind resource assessment and RP 18 on the application of floating lidar systems) [2] now widely accepted by the wind industry, several expert reports, scientific papers and conference contributions.

Task 52 will build on these achievements but at the same time further make sure that wind lidar is used by the industry in the best way and by this support the growth of onshore and offshore wind equally.

## Mission and Vision

Task 52 mission: Our members work together on research **to make wind lidar the best and preferred wind measurement tool for wind energy applications**.

With this, our vision is that in the future, **using wind lidar will be easy and will bring advantages and opportunities that enable the deployment of wind energy**.

Values of our intended collaboration are: innovation, inclusion, diversity, cooperation, and openness.

**<u>In short</u>:** Task 52 is intended to ..

- Support the large-scale deployment of wind lidar by addressing key themes and achieving relevant deliverables
- Integrate both industry and academia for most innovative solutions and application-oriented training of young researchers
- Establish strong collaborations also with other IEA Wind Tasks to share our knowledge with other applications within the industry

## Four Themes – Six Active Working Groups

To follow up on our mission, we have specified four central themes with dedicated deliverables planned for the upcoming 4-year period of the Task.

| | Theme | Mission |
|---|---|---|
| # 1 | Universal inflow characterisation | Working towards tools and methodologies to get and use the best information about inflow conditions to any wind turbine, anywhere |
| # 2 | Replacing met masts | Creating guidelines for the selection and use of different types of wind lidar and software for site assessment |
| # 3 | Connecting wind lidar | Helping users to improve measurements and extract value from their lidar and data by making lidar data FAIR. Enable them to connect to an ecosystem of service providers. |
| # 4 | Accelerating offshore wind deployment | Promoting wind lidar as a key enabling technology throughout the offshore wind project lifecycle |

Within these four themes **six working groups** have formed so far ..

(1) Lidar Turbulence Intensity (**TI**) → round-robin exercise and expert report
(2) Lidar Assisted Control (**LAC**) → recommended practices (RP) report
(3) **Complex terrain** → overview of correction methods and expert report
(4) **Cold climate** → continuation of Task 32 activity and deliverable tbd
(5) Digitalization / **Lidar ontology** → repository and publication
(6) **Scanning lidar** offshore → recommended practices (RP) report


New (IEA Wind ‘Lidar’) Task Proposal was accepted by IEA Wind TCP Executive Committee in early 2022 – available on request and to be published on Task 52 website soon (→ https://iea-wind.org/task52/ .. currently under construction)



Activities within Theme 1 will mainly cover the use of nacelle-mounted wind lidar systems.

Theme 2 paticularly includes activities with applications of wind lidar technology both in complex terrain and cold climate.

Theme 3 (not represented by a particular picture here) covers digitalization and amongst others FAIR data principles for the application of wind lidar.

For offshore (which is in the focus of Theme 4), applications of both vertically profiling wind lidars (here as floating lidar systems) and scanning wind lidar are considered.

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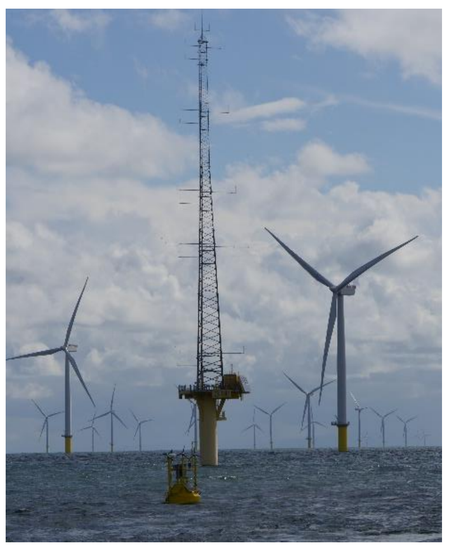

## Find us / Get involved ..

If you want to participate in one of the already active working groups or suggest topics for future online seminars or (in-person) workshops, please get in contact.

All news and invitations to our public events are found on LinkedIn → https://www.linkedin.com/showcase/4037465/ (or search for IEA Wind Task 52)

## Further reading

1. Minutes incl. all presented slides from Task 52 Kick-off / General Meeting will be published soon (IEA Wind Task 32: Wind Lidar | Zenodo).
2. IEA Wind Recommended Practices can be found on Recommended Practices | IEA Wind TCP (iea-wind.org).

Contact: **IEAwind.Task52@iwes.fraunhofer.de**