

Progressing commercial acceptance of floating LiDAR devices with an updated roadmap

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Summary

With an increasingly competitive auction driven offshore market, it is crucial to developers that offshore wind resource is understood as accurately and cost effectively as possible. Floating LiDAR technology has been identified as a potential solution to address this need. As floating LiDAR is a maturing technology, it requires defined industry best practice validation procedures to improve industry confidence in the performance of this technology for commercial use. Since the Carbon Trust's Offshore Wind Accelerator (OWA) Floating LiDAR Roadmap [1] was published, there has been notable progression of floating LiDAR technology within the wind industry. The OWA Roadmap [1] has therefore been updated containing clearer and updated guidelines for use of floating LiDAR devices in offshore wind resource assessments reflecting latest industry experience.

1. Introduction

Key industry stakeholders including developers, consultants and Floating LiDAR System (FLS) manufacturers have been engaged to provide input regarding user experience of the Roadmap [1] and operational experience of FLS deployments.

From the industry engagement, a repository of FLS deployments has been created which will be published by the Carbon Trust to further the industry's knowledge of the use of this technology in offshore wind resource assessments. In addition, key priority areas were identified in the Roadmap for clarifications, updates, extensions and new material.

2. Results

Synthesis of the industry engagement resulted in a repository of known FLS deployments, including trials and wind resource deployments, totalling 83. These deployments consist of 13 FLS types deployed at approximately 40 locations, mostly in northern Europe but also including North America and Taiwan. Stage 2 maturity ("Pre-Commercial") has been independently reported for 7 systems, underlining a requirement to provide an update to the roadmap to provide clarity on the requirements to reach Stage 3 maturity ("Commercial").

The updated Roadmap addresses key areas identified from industry engagement, together with input from the OWA, including:

- Clear characterization of Stage 3;
- Update to reflect guidelines from current industry Recommended Practices;
- Guidelines regarding safe operations;
- Guidelines for performing wind measurement uncertainty calculations.

3. Conclusions

Existing industry experience of the use of Floating LiDAR Systems for offshore wind resource assessments has been gathered and has resulted in two key outputs for industry use:

- a repository of floating LiDAR campaigns;
- an updated OWA Floating LiDAR Roadmap which addresses a need for clarity regarding Stage 3 maturity.

Project outputs will benefit the industry through knowledge sharing, providing real experiences of floating LiDAR technology and providing a clear framework for further progression of the commercial acceptance of this technology in offshore wind resource assessments.

4. References

[1] Carbon Trust, Carbon Trust Offshore Wind Accelerator roadmap for the commercial acceptance of floating LIDAR technology. 21 November 2013.