

# Final report

## 1. Project details

<b>Project title</b>	IEA Wind DK-2020 - Maximise the Impact of IEA WIND in Denmark 2020
<b>File no.</b>	64019-0547
<b>Name of the funding scheme</b>	EUDP
<b>Project managing company / institution</b>	DTU Vindenergi
<b>CVR number</b> (central business register)	30060946
<b>Project partners</b>	DTU Vindenergi
<b>Submission date</b>	24 February 2021

## 2. Summary

The IEA WindDK-2020 aims to increase the impact of IEA Wind EUDP funded activities in 2020, through increased visibility and dissemination within the Danish industry and research community. The project has supported the DEA participation in the IEA Wind TCP Executive Committee (ExCo), as well as the dissemination and networking activities related to IEA Wind. A key objective is to increase industry and research organizations' participation and benefits from IEA Wind research activities. The project has helped Danish companies accelerate time to market of innovative products and secure strategies of Danish research institutions to be in line with international trends as well as to bring Danish priorities into the IEA Wind agenda. The project has collected Danish research needs for DEA to propose new Research Tasks and Topical Expert Meetings within IEA Wind. The work is through active engagement as Alternate member at the IEA Wind ExCo and in active IEA Wind Research Tasks with Danish participation during the project. Further with Danish contribution to IEA Wind Annual Report and a webinar on Danish participation in IEA Wind Tasks.

Formålet med IEAwindDK-2020 er at øge effekten af IEA Winds EUDP støttede aktiviteter i Danmark ved styrket synlighed og kommunikation i den danske vindenergisektor. Projektet har understøttet Energistyrelsens deltagelse i IEA Wind TCP Executive Committee (ExCo) og styrket kommunikation og netværksaktiviteter i Danmark relateret til IEA Wind. Aktiviteterne har særligt støtte projektets målsætning om at øge antallet af virksomheder og forskningsinstitutioner, som anvender IEA Winds forskningsaktiviteter. Projektet har bidraget til at accelerere time-to-market for danske virksomheders produkter og sikret, at danske forskningsinstitutioners strategier er i tråd med internationale trends og har bragt danske prioriteringer på IEA Wind dagsordenen. Projektet har indsamlet danske virksomheders og forskningsinstitutioners prioriteter for fremtidige IEA Wind Research Tasks og specialismøder. Arbejdet er sket ved aktiv deltagelse som Alternate i IEA Wind ExCo møder samt i IEA Wind Research Tasks med dansk deltagelse i projektperioden januar til december 2020.

Endvidere ved udarbejdelse af dansk bidrag til IEA Winds årsrapport og et webinar om dansk deltagelse i IEA Wind Tasks.

### 3. Project objectives

This project focuses on all wind power related technologies that IEA Wind develops during the year 2020. The project will help big and small Danish industry players, as well as the Danish research community to benefit from the opportunities that IEA Wind brings for identifying and incorporating latest research and innovations into their products to achieve TRL9 and to reach the market internationally.

IEA Wind TCP Research Tasks cover a wide variety of technologies. In the beginning of 2020 there were 16 active Research Tasks, and Denmark is participating in 13 of them. The topics include technical research in areas like Lidar, noise, grid integration, modeling of offshore structures and wakes, cold climates, testing, forecasting as well as non-technological Tasks on cost of energy and social acceptance.

IEA Wind Research Tasks include the development of recommended practices, guidelines and technical reports as the main tools to communicate the research results within the wind energy sector. The technologies addressed in the Research Tasks are in different stages of maturity, but IEA Wind typically focuses on high TRL levels. Most IEA Wind Recommended practices are pre-standardization work based on mature technology (TRL 7-9), but not fully adopted by the market. Participation in IEA Wind Tasks is consequently an important opportunity to support and influence international consensus about how to use new technology and to update standards accordingly.

Market acceptance of the research results depends on the adoption and utilization of the IEA Wind recommended practices and technical documents. This project aims at maximizing the dissemination of IEA Wind research results within Denmark to facilitate Danish industry to take the lead in adopting and implementing innovative technology developed within IEA Wind. With this project, some of the IEA Wind research results will go from TRL 9 to the full implementation in the market by increasing the visibility and awareness of IEA Wind activities in Denmark beyond the participants in the Research Tasks.

At the same time, IEA Wind is an excellent framework to help new technologies mature and to have international visibility. Importantly, this project will bring IEA Wind closer to Danish industry - multinational companies, as well as small and medium enterprises (SMEs) - so they can make use of IEA Wind for their innovative products to reach the international market quicker and more effectively.

The project process has largely been as planned. The activities have been planning meetings with the Danish IEA TCP ExCo member Karina Remler and Alternate Mette Schultz Jessen as well as Alternate Peter Hauge Madsen and the IEA Wind TCP Secretariat (Ignacio Martí, Klaus Rosenfeldt Jakobsen and Kirstine Dahlggaard). Meetings and activities have included a review of the meeting agenda and meeting material at the ExCo meetings in May and October with focus on Danish views as well as preparation of the Danish contribution to IEA Wind's annual report 2019, which was sent to the Danish Energy Agency for approval in May 2020.

The hourly consumption has been more or less as budgeted. Budgeted travel expenses are not deductible due to the Covid-19 situation.

## Project results

The planned milestones and deliverables listed below have been achieved.

Dissemination of IEA Wind Annual Report 2019 with Danish country part and the two ExCo meetings in 2020 have been on IEA Wind website. In coming years it should be considered to use more channels i.e. the DEA website.

- M1 – DEA approved Danish Annual Report 2019 sent to IEA TCP Wind Secretariat to be included in IEA TCP Wind Annual Report 2019.
- M2 – Preparation, DEA advising and participation in IEA Wind ExCo meeting spring 2020
- M3 – Preparation, DEA advising and participation in IEA Wind ExCo meeting fall 2020
- M4 - IEA Wind event 2020 – online webinar, December 16.
  
- D1.1 Participation in IEA Wind ExCo 85 meeting online 26-29 May 2020 and IEA Wind ExCo 86 meeting online 12-15 October 2020
- D1.2 Danish contribution/country chapter to IEA Wind Annual Report 2019
- D2.1 Webinar about Danish participation in IEA Wind Tasks 16 December 2020

Documentation is added as appendices.

## 4. Utilisation of project results

The project has supported the Danish work in IEA Wind and the project results will indirectly be utilised by Danish companies and research institutions.

The project will help to accelerate time to market of new products and services for wind energy, which will contribute to make wind energy more cost effective, as well as to remove barriers for large-scale deployment of wind energy. By connecting more Danish stakeholders with IEA Wind, more Danish innovations and new wind energy products will reach the market sooner. This will facilitate and accelerate Denmark's transition to green energy, contributing to the objective of making Denmark independent of fossil fuels by 2050.

In the same context, the project has contributed to a faster development of wind energy technology leading to a larger deployment of wind energy. This leads to further reductions of CO<sub>2</sub> emissions, contributing to the policies on climate change mitigation.

IEA Wind includes in its Strategic Plan cost reduction as a key driver for the research activities. In this context, increasing the impact of IEA Wind research outcomes in Denmark will contribute to reduce cost of wind energy. On the other hand, this project will also help Danish research focused on cost reductions for wind energy to utilize IEA Wind opportunities to accelerate time to market, which will create further possibilities for cost of energy reductions.

This project has indirectly supported Danish companies to adopt quickly and effectively to recommendations from IEA Wind (i.e. using effectively new technology like lidars for offshore wind, measuring reliability, how to plan wind farms in cold climate etc., which will create a competitive advantage that can help the Danish sector to stay ahead of competitors. Maintaining technological leadership of the Danish wind energy sector will help to maintain and create employment in Denmark across the wind energy value chain. Since IEA Wind impact is international, a better use of IEA Wind potential will also help Danish companies to export innovative solutions internationally.

## 5. Project conclusion and perspective

Alternate member to the ExCo, Peter Hauge Madsen, and DTU staff from the IEA Wind Secretariat have been in close cooperation with the DEA/EUDP ExCo members Karina Remler and Mette Schultz Jessen during 2020. The planned and agreed tasks and milestones are fulfilled. A new application as Alternate for the year 2021 was submitted and granted in December 2020. The maximizing and consolidating of the Danish work in IEA Wind can continue for the benefit of companies and research institutions.

## 6. Appendices

- 1) Minutes ExCo 85 (attached pdf)
- 2) Danish presentation ExCo 85 (attached pdf)
- 3) Minutes ExCo 86 (attached pdf)
- 4) IEA Wind TCP 2019 Annual Report <https://community.ieawind.org/publications/ar>
- 5) Danish Country Chapter 2019 Annual Report (also attached as pdf)  
[https://higherlogicdownload.s3-external-1.amazonaws.com/IEAWIND/8af234a6-eecc-d-610e-4bd8cf610b3c\\_file.pdf?AWSAccessKeyId=AKIAVRDO7IEREB57R7MT&Expires=1614176400&Signature=1VOV4%2FvaiWMYQ8RqOH1z0mLhrpg%3D](https://higherlogicdownload.s3-external-1.amazonaws.com/IEAWIND/8af234a6-eecc-d-610e-4bd8cf610b3c_file.pdf?AWSAccessKeyId=AKIAVRDO7IEREB57R7MT&Expires=1614176400&Signature=1VOV4%2FvaiWMYQ8RqOH1z0mLhrpg%3D)
- 6) Webinar December 16, 2020 – Agenda (attached pdf)
- 7) New IEA Wind homepage established in 2020: <https://ieawindtcp.org/>