

# Workshop

# EUDP IEA Task 41 Distributed Wind (DW)

Anca Hansen

# Workshop program

- 10.00 - 10.05 **Welcome** Anca Hansen
- 10.05 - 10.15 **Short presentation of EUDP IEA Task 41** Anca Hansen (DTU Wind)
- 10.15 - 11.05 **Experience sharing on DW challenges for Danish players**
  - 10.15 - 10.25 Aeishwarya Baviskar (DTU Wind)
  - 10.25 - 10.35 Tonny Brink (Nordic FolkeCenter)
  - 10.35 - 10.45 Florin Iov (Aalborg University)
  - 10.45 - 10.55 Mark Kelly (DTU Wind)
  - 10.55 - 11.05 David Philipp Rudolph (DTU Wind)
- 11.15 - 11.25 **IEA task 41 - Task Extension Proposal** Anca Hansen (DTU Wind)
- 11.25 – 11.55 **Collaboration discussions for a new EUDP IEA Task 41**
- Final remarks

# Distributed Wind workshop – today goals

- **Share experience on needs and challenges**, the Danish players & stakeholders are facing in various relevant DW topics:
  - DW standards
  - DW integration and network support
  - DW human dimensions
- **Identify** how research can support and strengthen the Danish distributed wind (DW) players and stakeholders
  - discuss the relevance for the Danish players and stakeholders
  - generate / define **potential new collaboration ideas** of particular Danish interest in various relevant DW topics
- **Initiate** the discussion for a new EUDP IEA Task 41 project proposal
- **Support** the work in the IEA Wind TPC Task 41

# EUDP IEA Wind TPC Task 41



# About IEA Wind Task 41

## Operating Agent

National Renewable Energy Laboratory  
Pacific Northwest National Laboratory

## Period

2019-2023

No annual fee needed

## Website

<https://community.ieawind.org/task41/home>

## Distributed Wind (DW) Technology

Wind turbines deployed in a distributed application, connected at a distribution voltage (nominally 70 kV) or below – located behind the meter, in front of the meter, or in an off-grid application.

## Task 41 Participants

Austria	Fachhochschule Technikum Wien
Belgium	Vrije Universiteit Brussel
Canada	Canada Natural Resources Canada
CWEA	China Wind Energy Association (CWEA), China General Certification (CGC), Goldwind, and Inner Mongolia University of Technology
Denmark	Denmark Technical University (DTU) & Nordic Folkecenter for Renewable Energy
Ireland	Dundalk Institute of Technology
Japan	New Energy and Industrial Technology Development (NEDO)
Korea	Korea Institute of Energy Research
Spain	CIEMAT
USA (OA)	National Renewable Energy Laboratory Pacific Northwest National Laboratory

# IEA Wind Task 41 - 5 workpackages

- **WP1** - Research to support an update of existing wind standards
- **WP2** - Technical data sharing in both process and practice
- **WP3** - Research & collaboration on the integration of DW technologies
- **WP4** - Outreach & expand collaboration of ongoing R&D activities regarding specific challenges of DW
- **WP5** - DW innovation and downscaling of utility scale technology

# EUDP IEA Task 41 project

**Period:** 2020 – 2023

**Participants:** DTU Wind

**Website:** [Danish IEA Task 41 EUDP funded project | IEA Wind TCP \(iea-wind.org\)](#)

## Overall objectives

- identify and explore studies of **particular Danish interest of DW** for cost effective technology development and integration into an continuously evolving Danish electrical system.
- strengthen the **Danish players and stakeholders**, contributing to further increasing the penetration of wind power into the electricity, while still maintaining the high level of security of supply.

# Danish EUDP IEA Task 41 project

## Project is organized into 5 work-packages

- **WP0:** Management, coordination and dissemination
- **WP1:** DW technology design standards for small and mid-sized wind turbines
- **WP2:** Data information catalog for DW research
- **WP3:** Integration of DW into evolving electricity systems
- **WP4:** Outreach and expand collaboration of ongoing R&D DW activities

### Milestones

Manpower / WPs		No.	Milestones	Delivery date
Anca	VP0	M1	Project description & visibility on Vindenergi.dtu.dk, Twitter, LinkedIn	March 2020
Anca	VP0	M2	1st (kick-off) Danish stakeholders workshop	May 2020
Mark	VP1	M3	Small and medium size wind turbine standards assessment	March 2021
Mark	VP1	M4	Technical justification for the changes proposed in M3 developed	Nov 2022
Mark	VP1	M5	Conformity assessment for D'w suggested	Dec 2022
Anna Maria	VP2	M6	Data catalogue specification	June 2020
Tom	WP3	M7	Completion of review of micro-grid modelling tools	May 2020
Aeishwarya	WP3	M8	Distribution system model for control strategy assessment	June 2021
Anca	WP0	M9	2nd annual Danish stakeholders workshop	apr-22
Anca	VP0	M10	3rd annual Danish stakeholders workshop	Oct 2022
Anca / All	VP0	M11	Final report summarizing the project results	Dec 2022

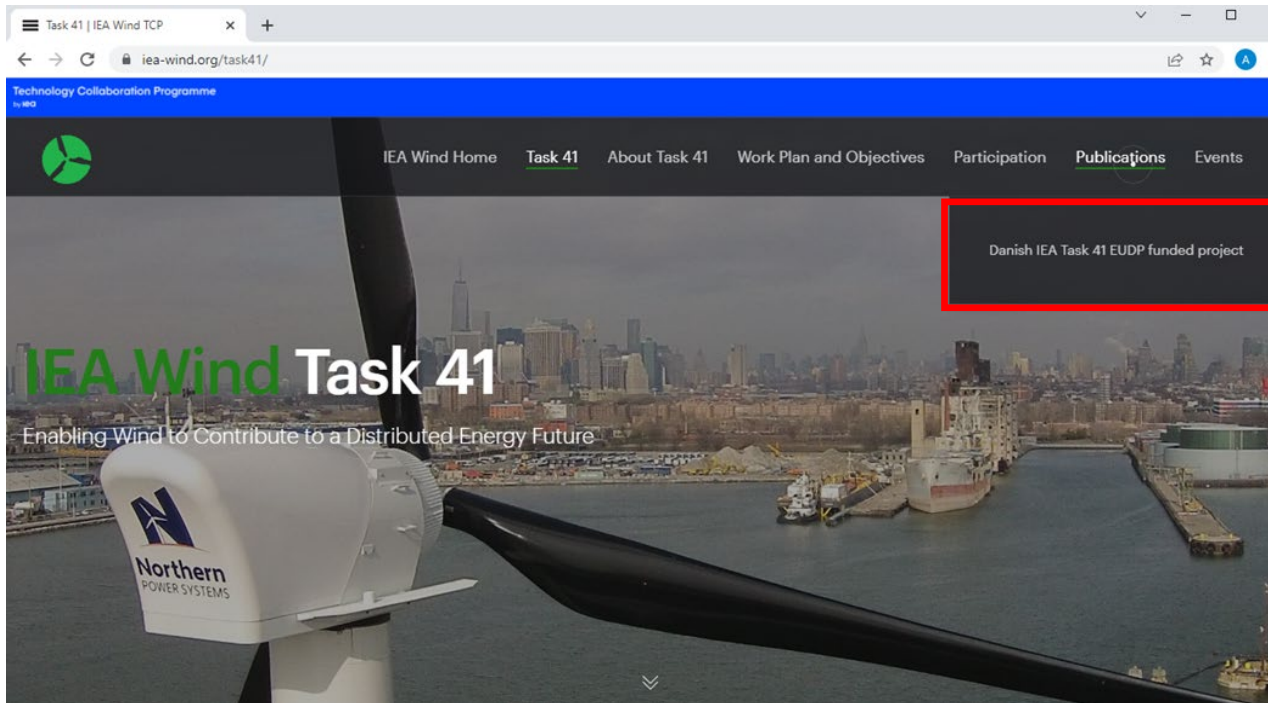
### Deliverables

Manpower / WPs		No.	Deliverables	Delivery date
Anca	VP0		1st EUDP reporting	July 2020
Anca	VP0		2nd EUDP reporting	July 2021
Anca	VP0		3rd EUDP reporting	July 2022
Mark	VP1	D1.1	Report on recommendations for potential standards changes that will be used to drive additional national and international research	March 2021
Mark	VP1	D1.2	Report on suggested changes to the current standards, and suggested conformity assessment	Dec 2022
Anna Maria	VP2	D2.1	Report on the adopted metadata and taxonomies specific for D'w and metadata catalogue.	Oct 2020
Anna Maria	VP2	D2.2	Guideline for best practices for compiling D'w distributed object catalogues. Data Management Plan Template, for Danish actors.	May 2021
Matti	VP2	D2.3	Report on suggested improvements for time series simulation tools when working with D'w.	Nov 2021
Aeishwarya	VP3	D3.1	Report on control strategies of wind turbines in future distribution systems based on the deliverable D15 of IEA Wind Task 41 and tailored to the requirements of Danish stakeholders.	Nov 2022
Tom	VP3	D3.2	Contribution to the D14 deliverable report of IEA Task 41	May 2020
Tom	VP3	D3.3	Contribution to the D16 deliverable report of IEA Task 41	Nov 2020
Tom	VP3	D3.4	Contribution to the D17 deliverable report of IEA Task 41	Nov 2021
All	VP4	D4.1	Report describing specific D'w aspects/gaps relevant for the Danish players and stakeholders.	Nov 2022
Anca / All	VP0		Final report summarizing the project results	Dec 2022



# Danish EUDP IEA Task 41 project

- <https://windenergy.dtu.dk/english/research/research-projects/iea-wind-tcp-task-41>
- <http://iea-wind.org/task41/>



## Danish IEA Task 41 EUDP funded project

**About the Danish EUDP Task 41 project – Supporting IEA Task 41**

The project aims at building up a stakeholder network of relevant Danish players within the area of DW technology and organize and strengthen the Danish influence and participation in IEA collaborations, both bringing the long experience of Danish actors into play and to learn from others around the world. By supporting the work of the IEA Wind TCP Task through various publications, data sets collections and reports, this project will achieve and consolidate the Danish knowledge and experience within this area, increasing thus furthermore the competitiveness of wind and accelerating the replacement of fossil-based fuels.

DTU Wind Energy will contribute to the IEA Wind TCP Task 41 through communication, exchanging information, sharing results and carrying out concrete analyses and investigations in the shape of reports and publications.

<https://windenergy.dtu.dk/english/research/research-projects/iea-wind-tcp-task-41>

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**Deliverables**

- [IEA Task 41 Report with recommendations on potential standards changes for DW.](#)
- [IEA Task 41 Report with guidelines for best practices – DW distributed object catalogues.](#)
- [IEA Task 41 Report review of mini-grid modelling tools and approaches.](#)
- [IEA Task 41 Report on the adopted metadata and taxonomies specific for DW.](#)
- [IEA Task 41 Report on suggested improvements for time series simulation tools when working with DW.](#)
- [IEA Task 41 Design guide for high renewable contribution isolated power systems systems.](#)

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**Publications**

- [Loss Minimization in Distribution network using wind power plant reactive power support](#)
- [Multi-voltage level active distribution network with large share of weather-dependent generation](#)
- [Open Source distribution network features and challenges](#)

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**Presentations**

- [Hybrid wind power plants – research at DTU Wind](#)
- [Towards updating the standards for small wind turbines via IEA Task 41](#)
- [WRA in the small wind regime](#)

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**Events – Stakeholders Workshops**