Small-wind environment characterization

Objectives

- metrics for characterization of obstacle/environment-affected turbulent flow ;

- filling in details of proposed high-turbulence classes and/or confirming it.

Description:

Many small turbines sit in turbulent flow conditions, due to their relatively low hub-heights compared to nearby built structures and terrain; their performance and lifetime (loads) can be heavily impacted. From syntheses of obstacle modelling and validation, engineering turbulence parameterizations, basic turbulence, micrometeorology, and scaling analysis—along with evaluating more performance and associated wind measurements, we aim to identify site-dependent (potentially turbine-dependent) metrics for characterizing the flow environment.

This supports the update and pre-validation of new small turbine/turbulence classes, as well as power-performance measurements, reporting, and requirements.

Stakeholders

Various small turbine manufacturers; Nordiske Folkecenter for turbines, NREL, IECRE

Potential funding source(s):

Innovation Fund/Small-Scale

Digital data catalogue for wind energy sector

Objective

To establish a catalog of the digital objects needed to make the wind energy sector at the forefront of the digital transformation.

Description

Data, models, workflows and data science tools created by the digitization of assests and in research processes are spread within several organizations and in each organization sometimes are stored in differen places. Organise data in catalogs is a much painless process than create huge databases because it needs only ttThis can be done at Organization level and inter – organization level: for the former the goal is the internal efficiency of an organization and for the latter is a innovation/research process efficient and fast by share data with other stakeholders and join force to co-create solutions.

Stakeholders

Various wind turbine manufacturers

Potential funding source(s)

Horizon Europe has calls about digitalization