

CLOSED LOOP WIND FARM CONTROL

PROJECT

CL- WINDCON

Closed Loop Wind Farm Control

CL WINDCON is focus on wind farm control and will put forward a new innovative solutions based on wind farm multi-fidelity dynamic modelling, and open- and closed-loop advanced control algorithms, which will enable the entire wind farm to be treated as a single integrated real-time optimization problem. The consortium is made up by 14 partners from 6 countries (Germany, Italy, Denmark, the Netherlands, UK and Spain); CENER coordinates this consortium in which ZABALA Innovation Consulting also participates. The project will last until October of 2019.



This project has received funding from the European Union's horizon 2020 research and innovation programme under grant agreement no 727477

14

PARTNERS

36

MONTHS

€4.9M

TOTAL COST

6

COUNTRIES



IN ONE CLICK

Coordinator	Programme	Period
CENER	HORIZON 2020	2016-2019
Sector	Web	
RENEWABLE ENERGIES	http://www.clwindcon.eu/vision/	

01

The Challenge

The **main objective** for CL-Windcon is **to carry out** the advanced control for a wind farm in an integrated way, simultaneously **improving** the efficiency and reliability, therefore **reducing** the cost of energy. Another challenge consists in the application of the new solutions developed to existing and newly-designed farms.

02

Solutions

In order **to achieve** its goals, CL-Windcon will enhance the understanding and modelling of the flow dynamics inside the wind farm, how wind turbines modify this flow by generating wakes, and are also affected by the perturbed flow. The knowledge and tools developed will be used **to design** and virtually test with a reasonable computational effort advanced open and closed-loop control concepts for wind farm optimization.

CL-Windcon **will also perform** a deep feasibility assessment at wind turbine and wind farm operation level from different perspectives: technological, O&M, reliability, economic, environmental and standards.

03

Impacts

It is expected that the project **will reduce** the Levelized Cost of Energy (LCoE) and Operation and Maintenance (O&M) costs, **improving** turbine and farm-level reliability and availability. In this way, the project **will contribute** to the policies of the European Union that face scenarios such as energy efficiency, decarbonisation, climate change or the promotion of industries with high innovation potential that **create** skilled jobs.