



Advanced Wind Energy Systems Operation and Maintenance Expertise

11 PROJECTS

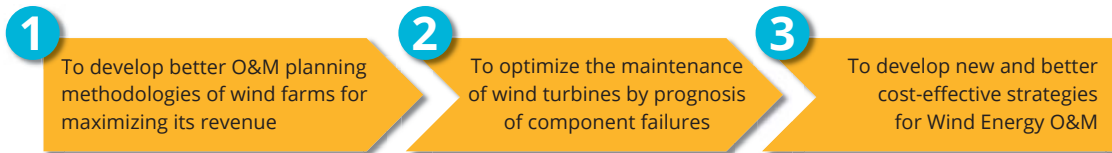
AWESOME is a Marie Curie Innovative Training Network (ITN) for early stage researchers (ESR) funded by the European Commission under the H2020 Programme, the EU framework programme for research and innovation

AWESOME network aims to educate eleven young researchers in the wind power operation and maintenance (O&M) field by constructing a sustainable training network gathering the whole innovation value chain. The main EU actors in the field of wind O&M have worked together, under the umbrella of the European Wind Energy Academy (EAWA), in

order to design a training program coping with the principal R&D challenges related to wind O&M while tackling the shortage of highly-skilled professionals on this area that has been foreseen by the European Commission, the wind energy industrial sector and the academia

OBJECTIVES

The main goal of AWESOME is to shape a critical mass of new expertise with the fundamental skills required to power the scientific and technological challenges of Wind Energy O&M in order to achieve the following specific objectives:



- > These main goals have been divided into **11 specific objectives (projects)**, which have been assigned to the fellows, for them to focus their R&D project, PhD Thesis and professional career.
- > Each fellow will be exposed to **three different research environments** from both, academic and industrial spheres.

- > The established training plan answers the challenges identified by the SET Plan Education Roadmap.
- > Personal Development Career Plans will be tuned up for every fellow, being their accomplishment controlled by a Personal Supervisory Team.

THE CHALLENGES

INDUSTRIAL SECTOR



Wind energy sector: 10% of annual increase in the last 10 years, mainly offshore

Aging of existing onshore parks

O&M costs might have an average share of 20%-25% of total levelised cost per kWh produced

ACADEMIC SECTOR



Networks of universities and other relevant higher education institutions

Programs to be developed linked to the current EAWA status

High education programmes, Masters and PhD levels

PARTNER ORGANIZATIONS



BENEFICIARIES



TRAINING ACTIVITIES

LOCAL TRAINING

- PhD enrollment

INTRA-NETWORK TRAINING

- Academic & Industrial Secondments
- Specific AWESOME Courses

INTER-NETWORK TRAINING

- Scientific Conferences coordinated with EAWA
- Summer schools
- Industrial Workshops

- ESR 1** Performance monitoring techniques for operation and maintenance of wind turbines
CIRCE - SPAIN
- ESR 2** Very-short term wind field forecasts for wind farm operation and grid stability improvements
FORWIND - GERMANY
- ESR 3** Stochastic Wind Park modelling and maintenance scheduling under uncertainty - a serious game
NTNU - NORWAY
- ESR 4** Improved wind farm operation and control
TUM - GERMANY
- ESR 5** Development of Wind Turbine Fault Detection Algorithms
LBORO - UK
- ESR 6** Hardware in the Loop Testing of Wind Turbine Condition Monitoring Systems
USTRATH - UK
- ESR 7** Advanced diagnosis of wind turbines
UCLM - SPAIN
- ESR 8** Structural health monitoring for wind turbine extended life operation
RAMBOLL - GERMANY
- ESR 9** Wind Farm O&M cost reduction through predictive maintenance
DTU - DENMARK
- ESR 10** Wind Farm management cost optimization
CIRCE - SPAIN
- ESR 11** Cost effective maintenance of wind turbines using components reliability
CIRCE - SPAIN

