Offshore wind in Southern Europe

WindEurope Annual Event
Copenhagen, 25 April 2023

HWEA
Hellenic Wind Energy Association

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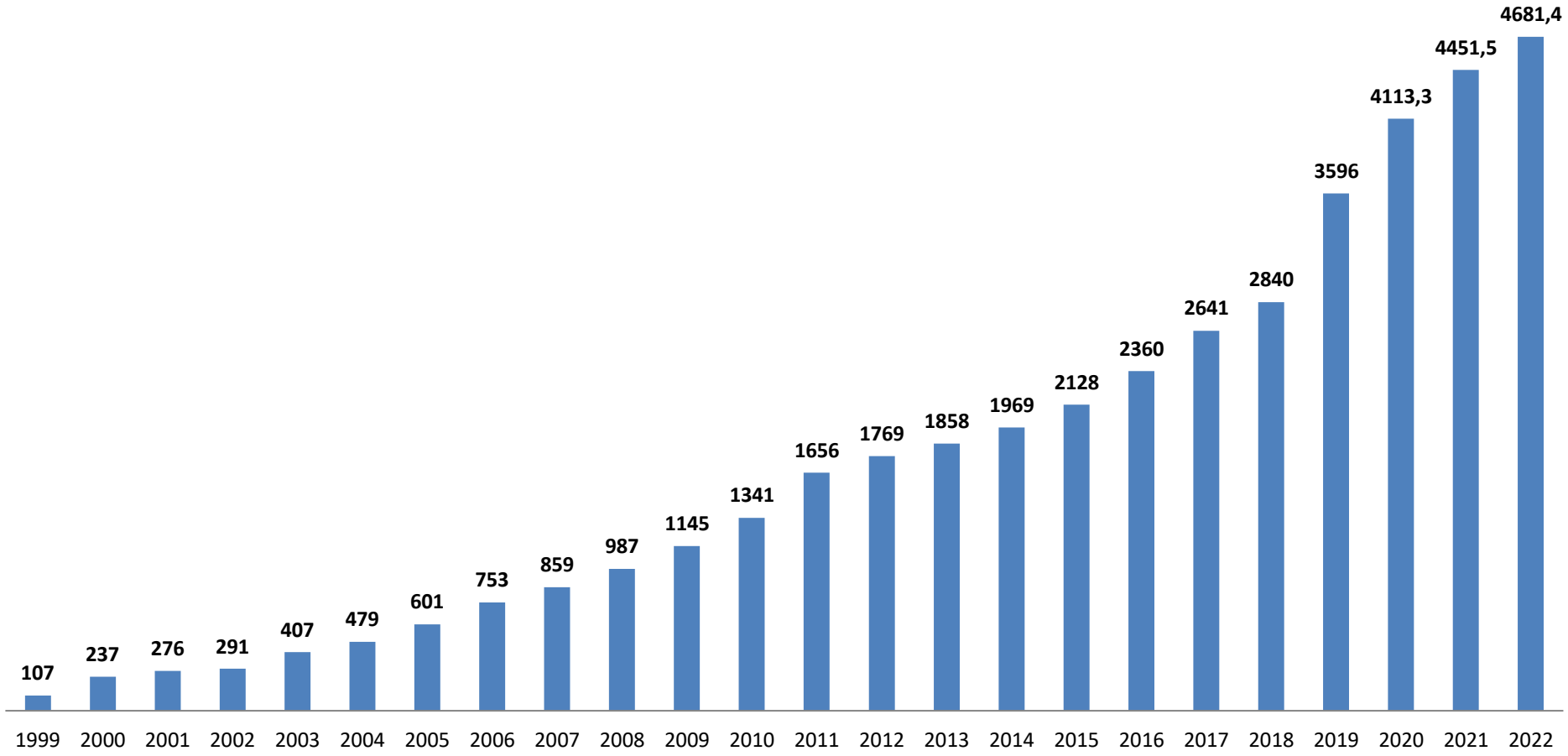
HWEA Wind Energy Statistics – 2022

Total capacity to the grid (MW) per year



The HWEA Wind Energy Statistics take into account the wind capacity which is in commercial or test operation in Greece and are based on sources from the market actors. HWEA has made effort to crosscheck and confirm the data. However, HWEA does not guarantee the accuracy of them and do not undertake any relevant liability.

HWEA Wind Energy Statistics – 2022

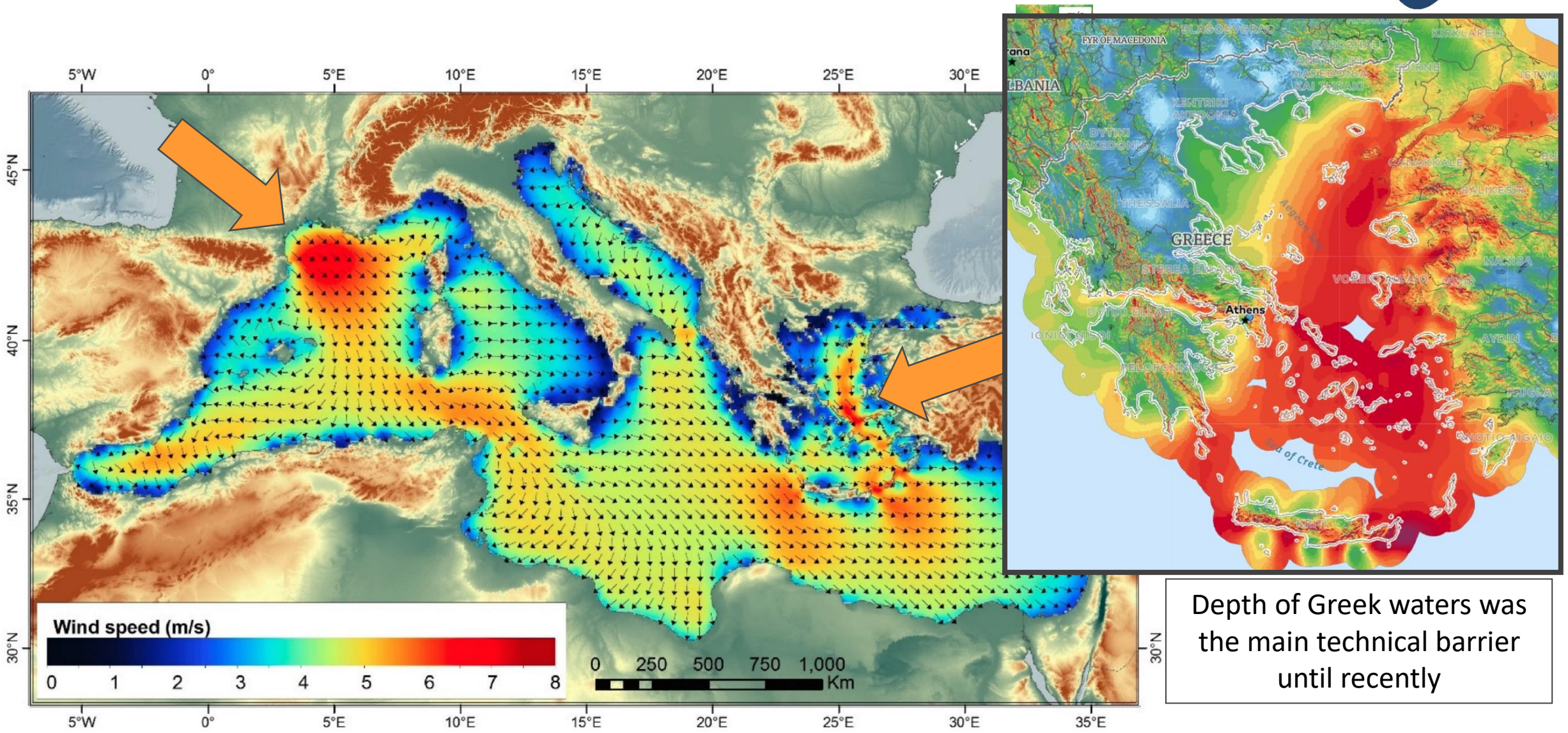
B Offshore Wind in Greece

Offshore wind has significant competitive advantages:

- It provides massive wind MWs without conflicts with other human activities.
- It supports the establishment of a significant local supply chain, providing local added value to the local Greek economy, such as shipyards, ports, cables, logistics, cement industry etc.*
- It will lead to strengthening of the country from a geostrategic point of view.
- It will make Greece producer & exporter of Green Energy

B

Offshore Wind: The opportunity for the Greek waters



Depth of Greek waters was the main technical barrier until recently

***Source**: Marine Renewable Energy in the Mediterranean Sea: Status and Perspectives, Soukissian et. al., energies, 2017*

B The Basic Stages of the OWF Framework

NDP-OWF & SEIA

The National Program for the Development of OWF includes the OWFODAs.

HEREMA takes care of the preparation of a Strategic Environmental Impact Assessment.

01

JMD for NDP-OWF

With a Joint Ministerial Decision, the National Offshore Wind Farm Development Program (NDP-OWF) **is approved, together with the Strategic Environmental Impact Assessment.**

02

OWFODA SEIA & Presidential Degree

For each OWFODA, a technical study is prepared which is subject, under the responsibility of HEREMA, to an environmental impact assessment **process through a Strategic Environmental Impact Study.**

Subsequently, OWFODA is established by Presidential Decree.

03

RESEARCH PERMIT

The interested investor submits a request for **an Offshore Wind Farm Research Permit**. By decision of HEREMA, the criteria of professional and technical ability and financial and economic adequacy of the applicants are specified.

04

RAE COMPETITIONS

The Energy Regulatory Authority (RAE) is announcing a **competitive tendering process for the granting of operational support** to the OWF Projects that will be developed within the OWF Installation Areas.

05

Offshore wind supply chain

- Many challenges for the development of the **domestic supply** chain for OW,
- but….at the same time there are significant **potential** and **opportunities**.
- Greece has already developed, at a sufficient or significant extend, critical links of this chain such as the **cable**, **cement** and the **metal** industries.
- It has also a tradition in other important sectors such as **shipyards, ports** and **shipping** and significant research experience through **academia** and **Universities**.

C

Offshore wind supply chain : Preliminary SWOT analysis

STRENGTHS

- Significant wind potential.
- Strategic location.
- Maritime heritage.
- Industry and shipyards know-how.
- Skilled workforce.
- Experience by the management of onshore wind farms.
- Political will.

WEAKNESSES

- Insufficient infrastructure in port space and equipment.
- Lack of assembly know-how in ports.
- Regulatory constraints.
- Uncertainty due to port privatization plans.

OPPORTUNITIES

- A new innovative technology that may be developed in Greece.
- Novel industrial sector with prospects of at least 30 years of activity.
- Potential high local added value for Greece.
- Side – activities development: a new industry in offshore wind maintenance.

THREATS

- Risk of delays.
- Lack of a clear legal framework.
- Bureaucracy.
- Limited or lack of social acceptance.
- Increasing costs.
- Investments required in infrastructure
- Constant design upscaling.
- Limited capacity Europewide.

Radars and Wind turbines: The ASSURE project

- HWEA participates in a project titled “Automated specialized surveillance radar application technologies for accurately assessing and mitigating the effects of wind-turbine generated electromagnetic wave scattering - ASSURE’’, funded by the Operational Program “Competitiveness, Entrepreneurship & Innovation” (EPAnEK).

- The Project Partnership consists of 5 actors: 2 Research Organizations (The Institute of Communication and Computer Systems of NTUA (ICCS) and the Telecommunication Electronics Factory of the Hellenic Air Forces) and 3 business (European Dynamics, ENTEKA, HWEA), each providing the experience, know-how and expertise to achieve the project's objectives.

- The project aims at developing specialized **radar analysis and radar management technologies for surveillance applications**, in particular facilitating detection, identification and tracking of targets, in a burdened electromagnetic environment, by reducing false alarms and increasing the probability of detection. ASSURE aspires to address the above issues by developing an automated, parametric and extensible software tool based on accurate theoretical models and simulation parameters that visualizes the effects of wind farms using topographic data in a user-friendly environment

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EPAnEK 2014-2020
OPERATIONAL PROGRAMME
COMPETITIVENESS
ENTREPRENEURSHIP
INNOVATION
ΕΣΠΑ 2014-2020
Partnership Agreement 2014 - 2020
Co-financed by Greece and the European Union

HWEA'S role in ASSURE

HWEA's role in the project :

- Contribution to the definition of user requirements
- Contribution to the development of parametric models with the technical characteristics of the wind turbines
- Examine case studies and European experience on the topic
- Undertake actions to disseminate the concept and the results of the project

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HWEA'S actions in ASSURE… so far

- The requirements of the users (wind farm operators and Licensing Services) have been defined, as well as the radar use scenarios (case studies) investigating the characteristics of effects under real conditions
- Participation in developing realistic and detailed models for the different types of WTG's, and for the different types of radar, based on technical and operational characteristics
- Participation in the assessment of WTG's effects on installed radars
- Design of the Graphical User Interface and and topographic data system (ongoing)
- Completion of the software tool (ongoing)

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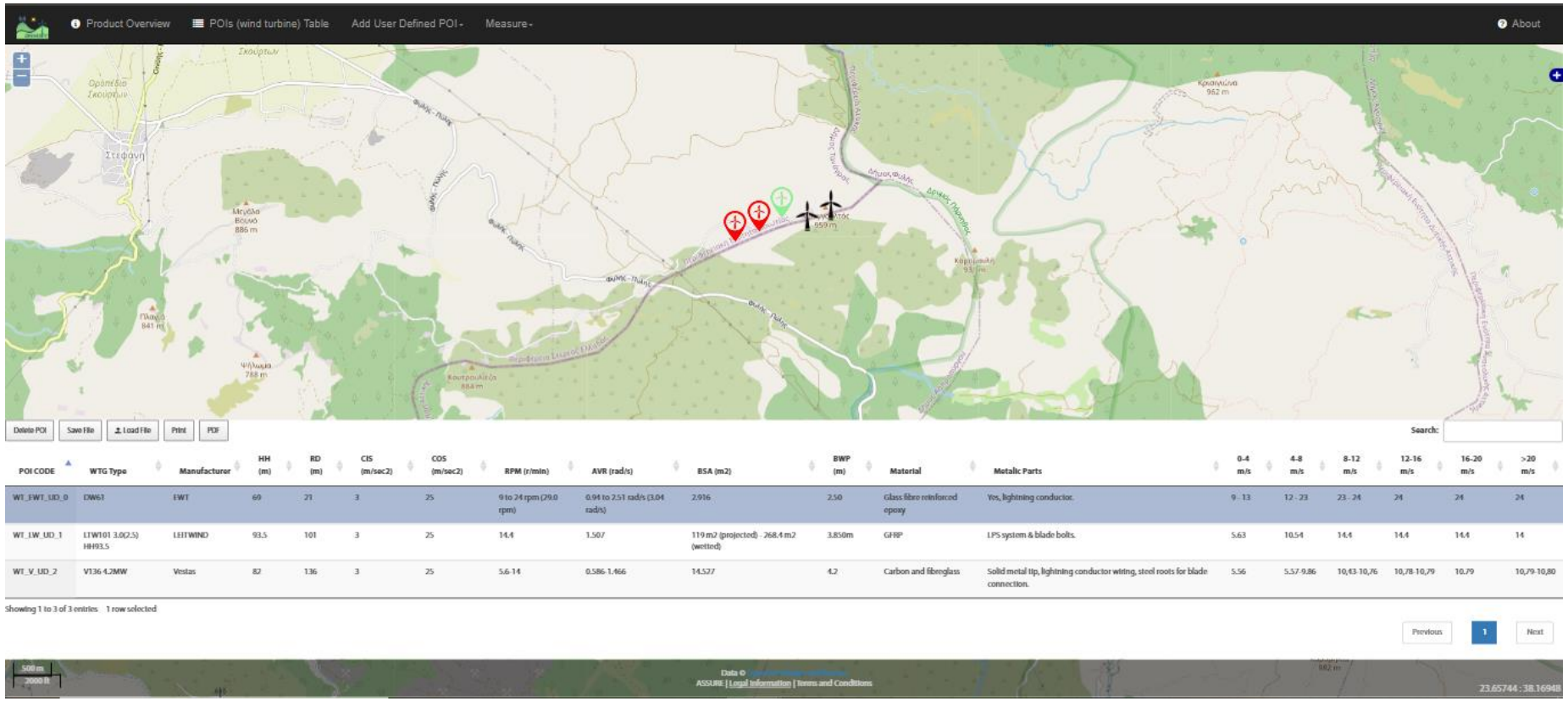
ASSURE's functionalities



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