

Wind Atlas for Mexico

Under the Renewable Energy (RE) component of the Mexican-Danish Climate Change Mitigation and Energy Program (CCMEP), Denmark and Mexico supports the development of a wind atlas for Mexico in order to enhance Mexico's capacity for assessing wind energy resources.

The partners in the project include the National Institute for Electricity and Clean Energy (INEEL), CFE, UNAM and the Technical University of Denmark, Wind Energy Dept. (DTU Wind) as well as SENER and the Danish Energy Agency.

The variable generation from wind and solar power is a challenge for any power system. Mexico is planning to increase its wind power capacity by a factor 3 before the end of 2018 and has further development targets beyond. There is an urgent need for precise wind resource mapping and for better planning tools for location of new wind capacity and transmission lines.

The main aim of the project is to develop and employ numerical wind atlas methods and develop capacity to enable planning of large-scale, medium-scale and small-scale exploitation of wind power in Mexico, including dedicated wind resource assessment and siting tools for planning purposes, i.e. a Numerical Wind Atlas and database for Mexico. The wind atlas will improve conditions for realization of national goals for deployment of wind energy and reduce costs of electricity from wind.

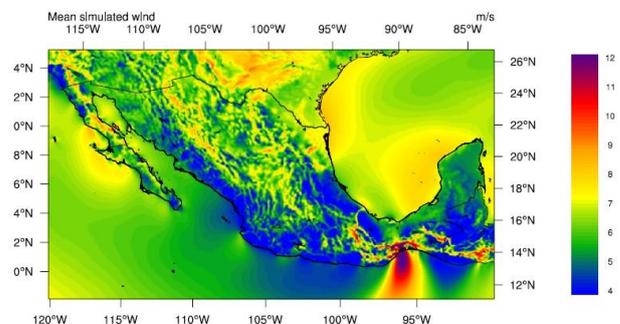
OUTPUTS:

- Co-financing from Mexico (34.6 MXN from FOTEASE and 3.9 MDKK (= 10.5 MXN) from the CCMEP);
- Complete years of data compiled from historical datasets of INEEL;
- Observed Wind Climate statistics determined, elevation and roughness maps created based on existing global data;

- Wind atlas analyses performed using the software WASP – Generalised Wind Climate (GWC) determined for comparison with WRF Pre-run;
- Strategic site selection for measuring masts, landowner agreements and tendering of 7 new masts with instrumentation completed;
- Future outputs: Installation of the masts, measurement campaigns from the new masts, resolution studies of mesoscale modelling, numerical wind atlas, observational wind atlas, scoping of extreme wind atlas, training and education.

OUTCOMES EXPECTED by end 2018/2019:

- Mexico's capacity for assessing wind resources is enhanced;
- A state-of-art wind atlas database for assessment of the wind resources in Mexico for potential exploitation of wind energy, and better planning tools obtained for location of new wind capacity. Accuracy validated at 7 high-quality measuring masts.



This important project will help all stakeholders from government to industry and academia in the planning and assessment of the wind resources in our country, and promote increased transparency and competition in the electricity supply industry. The database from the Atlas will be public and free for determining necessary parameters to estimate the production of a turbine or a wind farm in any point of the Mexican geography.

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